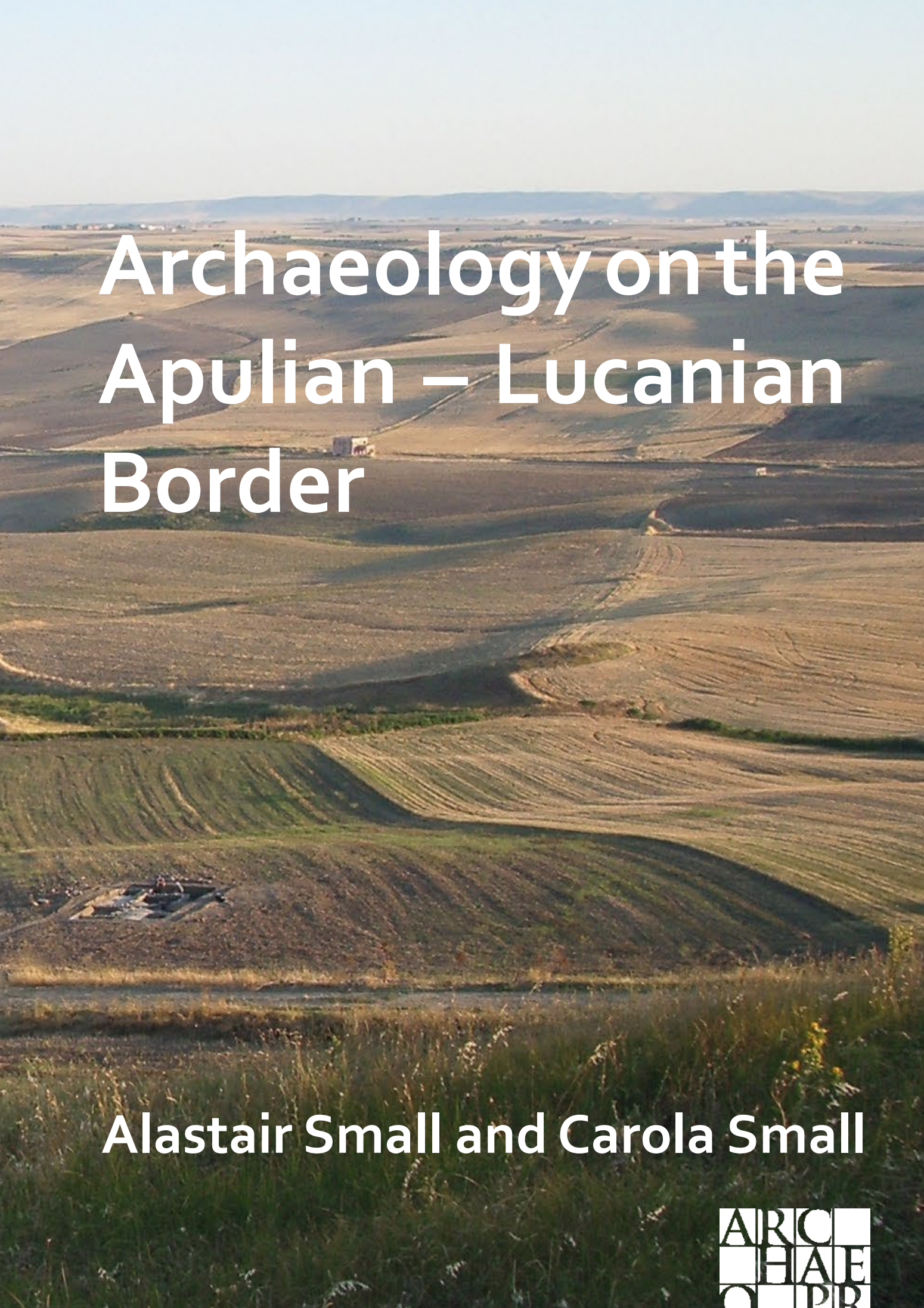


Archaeology on the Apulian – Lucanian Border

Alastair Small and Carola Small

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Alastair Small and Carola Small

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View from San Felice (Site 223) towards the ridge of Lamiecelle. The Canadian excavation in the Roman villa on Site 229 is visible beyond the van, and the Masseria Vagnari in the middle distance;
back cover: Loomweight with seal impression of a bull-stag with monogram between the horns, from Site 813, No.1949 in the catalogue.

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APPENDIX Le anfore dalla valle del Basentello: ricostruire la rete dei commerci e dei consumi delle derrate 835

Preface

The subject of this book is the archaeology of the broad geological rift known in Italian as the *Fossa Bradanica* (in English, the Bradano Trough). It separates the limestone plateau of the Murge in South East Italy from the Apennine mountains in the Central South of the peninsula and forms a natural corridor linking Central Italy with the southern Ionian coast. The part of the Fossa which particularly interests us extends from Venosa in the North to Metaponto in the South. Communications from the one end to the other are easy, following the river system of the Fiumara di Venosa to its headwaters, and then by an almost imperceptible watershed to the valley of the Basentello, a tributary of the Bradano which reaches the sea at Metaponto. This natural route is crossed at various points by others which run from East to West linking the Adriatic Sea with the mountain valleys. The most convenient of these, which is followed by the main modern road connecting the provincial capitals of Bari and Potenza, descends from the Murge in the vicinity of the medieval and modern town of Gravina, crosses the Basentello river a little to the North of the flat-topped hill of Monte Irsi, and then follows a tributary of the Basentello into the interior.

The area where these two routes intersect is the primary focus of this study. It was the subject of an intensive archaeological field survey carried out between 1996 and 2008 over an area of ca. 100 km^2 by a team of archaeological students directed by ourselves. Inside it, we identified 130 sites and numerous casual find-spots which range in date from Upper Palaeolithic to Late Medieval. The sites are described in the List of Sites (Section IV) in which the material found is listed and analysed. All the more diagnostic pieces – the fragments of pottery and other artifacts which provide the main evidence for the chronology, economy and social function of each site – are classified and illustrated in the Catalogue of Artifacts (Section V).

Beyond this area of primary focus is a much larger study area which was surveyed by several scholars in the 1960s and 1970s in connection with the excavations carried out by the British School at Rome on the Iron Age site of Botromagno in the vicinity of Gravina. The data accumulated in these surveys are also presented here, extending the scope of the study.

The results of all these surveys are integrated into a broader interpretative framework in twelve chapters organized by period in which the data from our surveys are related to other archaeological studies of sites in the Fossa Bradanica and adjacent regions. Various factors are considered which affected the pattern of human settlement in the Fossa including climatic change, the introduction of new species such as the grape vine and olive, technological development and malaria.

Apologia

(AMS)
This study has had a very long gestation period. My interest in the area goes back to 1965 when I began my term as a research scholar at the British School at Rome. The director of the School, John Ward-Perkins, had been invited by Attilio Stazio, the *Soprintendente alle Antichità della Puglia* at the time to organize a British archaeological excavation on Botromagno where the Peucetian tombs were being ravaged by clandestine diggers. Ward-Perkins was renowned for his work on the topography of Southern Etruria and for his use, then novel in Italy, of field survey techniques to reveal how the patterns of settlement shifted over time within geographical areas defined by ancient Roman roads. He visited Botromagno and quickly grasped its importance as a nodal point in the communications of pre-Roman Italy. But before organizing the excavation it was necessary to have a clearer idea of the extent and chronology of the site, so I was sent, together with Campbell Macknight, at that time a visiting Australian student at the School, to survey the hill-top and its surroundings using the techniques of field-walking which Ward-Perkins had applied in Etruria. The results of the survey are briefly summarized in *Gravina I*, 25-27. The excavation began in a small way in 1966, and was expanded in 1967 under the direction, first of Molly Cotton, and then of Joan du Plat Taylor of the Institute of Archaeology in London. Between then and 1970 the team excavated several parts of the hill-top under Joan's direction, revealing a large number of Peucetian burials of the 6th–4th centuries BC, and substantial parts of a settlement of the late Hellenistic period which overlay the remains of the Peucetian city. I took part in these excavations with special responsibility for recording and classifying the Peucetian pottery.

The excavation was supported in part by the University Museum of Pennsylvania under its director, Froelich Rainey, who sent a PhD student, Sterling Peter Vinson, to carry out a field survey of South Etrurian type in the surrounding area with the idea of defining the route taken by the Via Appia between Botromagno (Roman *Silvium*) and Venosa (Roman *Venusia*). Vinson published the preliminary results of his search for the road in the *Papers of the British School at Rome* for 1972, and in 1974 and 1975 he brought out two articles on his excavation of a Neolithic Site at Casa San Paolo which he had discovered in the course of this fieldwork. But much of the topographical work which he carried out in the area in the early 1970s remained unpublished. Two other field surveys were organized in connection with the project on Botromagno. In 1970 the late Hugh Chapman surveyed part of the area between Gravina and Altamura, and in 1971–2, Dennis Aldridge undertook a small survey of the valley of the Torrente di Gravina between the edge of the town of Gravina and the border with the province of Matera for his MA thesis at the Institute of Archaeology of the University of London. Neither survey was published.

In 1968 I was appointed to a position in the University of Alberta, and in 1969 and 1970 I brought Canadian students to work on the excavation on Botromagno. In 1971 and 1972, however, I moved at the suggestion of Dinu Adamesteanu, *Soprintendente* for Basilicata, across the provincial boundary and, with Edith Wightman of McMaster University and Marie Odile Jentel of the Université Laval, I directed a Canadian excavation on Monte Irsi. As on Botromagno, it revealed remains of an Iron Age site and of a Late Hellenistic and Roman settlement which superseded it.

The excavation of Monte Irsi was published in 1976, but the publication of the much more complex excavation on Botromagno took longer, and Joan Du Plat Taylor was not able to see these various projects through to publication. Some time before her death in 1983, she wrote to me in Canada asking me to coordinate the publication of the field surveys carried out in connection with the excavation on Botromagno, which I undertook to do. Sterling Vinson put a full typescript of all his discoveries at my disposal; as did Hugh Chapman for the area between Gravina and Altamura and Dennis Aldridge for that in the valley between Gravina and Matera.

I had not progressed far with editing this intended survey volume when Joan wrote to me again saying that she was seriously ill and asking me to edit the volume on the excavations on Botromagno for publication. This was the more urgent task, so I set aside the proposed volume on the surveys and began editing the two volumes of *An Iron Age and Roman Republican Settlement on Botromagno, Gravina di Puglia. Excavations of 1965–1974*, which was published as an Archaeological Monograph of the British School at Rome in 1992. I then returned to editing the volume on what we now call the "Older Surveys" and with the help of John Hayes retrieved as much as could be found of the material collected by the original surveyors and reclassified it in the light of more recent comparanda, and especially of Hayes' work on Late Roman Pottery. In 1996 I submitted a text based on the original surveyors' notes with a revised catalogue of artifacts, and an interpretative outline to be considered for publication. It was very long, and in the view of the editorial committee of the British School it required substantial recasting. The committee's decision was reasonable, but I was reluctant to act on it, since the methodology of these surveys of the late 60's and early 70's by then seemed out of date. Moreover, a large part of the area originally covered by Vinson to the North-West of the Basentello watershed was the subject of a new survey directed by Maria Luisa Marchi who, in 1996, published the first of three volumes on the territory of Venusia, together with Giulio Sabbatini. The third volume, most directly relevant to Vinson's survey, written by Marchi, followed in 2010.

The Re-formulated Project

(AMS and CMS)
We therefore decided to put the publication of the Older Surveys on hold, and in 1996 we began a new, much more intensive survey at the confluence of the Bradano and Basentello valleys below Monte Irsi with the aim, initially, of investigating the ancient environment of Monte Irsi, which had not formed part of the excavation project of 1971–1972. We also wanted to compare settlement patterns at the confluence of the two rivers with those being revealed by Helena Fracchia and Maurizio Gualtieri, our colleagues at the University of Alberta, in the upper reaches of the Bradano near Oppido Lucano. A further aim was to compare our results with those of the Older Surveys, and especially with Vinson's work further up the Basentello valley. That was our original plan which we put into effect in our first year, with a small team drawn largely from the University of Alberta. In the second year (1997) we were obliged to change direction and re-formulate the objectives of the field survey after encountering administrative problems which made it difficult for us to work that year in Basilicata. The area where we had begun the survey in the previous year was immediately contiguous with the territory of Gravina in Puglia, and with the goodwill of Angela Ciancio, then *Ispettrice* of the *Soprintendenza Archaeologica per la Puglia*, and of the *Soprintendente*, Giuseppe Andreassi, we crossed the border of the *Regione* and extended the survey North-West along the valley of the Basentello as far

as the artificial reservoir created by the Diga (dam) del Basentello. In 1998, however, we were permitted to return to Basilicata and surveyed the area around the village of Santa Maria d'Irsi where the regional boundary crosses the Basentello, as well as a strip of fertile land on the W bank of the river.

By then we had retired from the University of Alberta and returned to the United Kingdom where we were both given Honorary Fellowships at the University of Edinburgh. The rest of the project was carried out with the help of colleagues and students from Edinburgh. Karen Stears of the Department of Classics and Mark Trewin of the Department of Scottish Studies worked on the project in 2000 and 2001, and Robert Leighton of the Department of Archaeology directed part of the project on San Felice in 2006.

The site recording was done by Carola Small assisted for much of the time by Tracy Prowse from MacMaster University and in several years by Michael MacKinnon, then a Ph.D student at the University of Alberta, both of whom had worked with us previously on Botromagno as graduate students at the University of Alberta. In the early years of the project we were greatly assisted by Annalisa Di Zanni and Pasquale Favia who were recommended by Giuliano Volpe, then at the University of Bari.

The reformulated project had enormous advantages which gradually became clear as the work progressed. It enabled us to discover a series of Iron Age hill-top sites above the left bank of the river, of which the most important was San Felice (Site 223) which we surveyed in great detail. Below it was Vagnari, the largest Roman site in this part of the valley, where in 2000 we began the excavation which enabled us to prove that the site was both a *vicus* (village) and the centre of a vast imperial estate. Beyond Vagnari we surveyed the ridge which extended eastwards above the seasonal river of the Pentecchia di Chimienti to a point where it impacted on Vinson's survey of the environs of Botromagno. As a result we have the evidence to reconstruct the settlement landscape between Monte Irsi and Botromagno, and we have a more valid base for assessing the results of the Older Surveys in the light on the new data.

Writing up the Project

The field work finished in 2008, but as always in such projects, the study of the material has taken much longer. Most of the detailed recording of the artifacts was done during the course of the project by Alastair Small, assisted by several students, and in 2000–2001 by Karen Stears. We are grateful to two of our contributors, John Hayes and Philip Kenrick for much invaluable help with this part of the project.

Most of the artifacts illustrated in this book were drawn by Sally Cann, though some are by John Hayes and Alastair Small. The preliminary drawings of amphorae were done by Giacomo Disantarosa and the final versions by Vincenzo Acquafredda of the University of Bari. The photographs of artifacts are by Franco Taccogna, Philip Kenrick and Alastair Small. The maps and Site plans were done in ArcView GIS and edited in Paint Shop Pro by Carola Small. The small-scale maps were produced by Alastair Small in AutoCad14 and edited in Paint Shop Pro.

We are very grateful for help with specialised aspects of the publication. The late Ian Campbell was with us for five years (1996–9, 2001) studying the geomorphology of the area. The project benefited greatly from his expert study of the land forms round Vagnari. A synthesis of his work can be found in the publication of Vagnari, but he made considerable studies of Sites 401 and 407 (see List of Sites *sv*). Some parts of the catalogue we have been able to entrust to expert colleagues, and thank especially Philip Kenrick for his sections on the Hellenistic relief wares and the Roman fine wares, Giacomo Disantarosa for the amphorae, Vito Volterra for the lithics, Pasquale Favia and Vincenzo Valenzano for the medieval ceramics and Jeremy Rossiter for the lamps. Angelica Portagnuolo helped to find comparanda for the Bronze Age pottery when she was an archaeology student at the University of Bari. The late Giuseppina Canosa gave advice on the red-figure pottery. We are grateful to all our collaborators for their patience during the long process of preparing the publication.

For most of the Catalogue of Artifacts, however, Alastair Small is responsible, and any errors of identification or interpretation must be laid at his door. There will inevitably be some because it is next to impossible to keep fully up-to-date with such a wide range of material. The last 20 years have been a time of intense archaeological activity in South Italy spurred on by the archaeological institutes of the principal universities in this part of the peninsula – the Universities of Bari and Foggia, and of the Salento (at Lecce) and Basilicata (at Matera); and there has been a great increase in the archaeological work carried out by the archaeological superintendencies, often in advance of major construction works for new gas lines, aqueducts and wind-farms. We are tempted to view our project as a mosaic in which we hope to be able to interpret the broad picture, even though some of the tesserae are missing. Because of time constraints, we have not been able to take proper account of new works published after the beginning of

2020. We have, however, been able to make use of some of the chapters in the important book on the new phase of excavations in the settlement at Vagnari directed by Maureen Carroll which she has kindly made available to us as she received them. Like our own book, it will be published by Archaeopress (Carroll, ed., forthcoming).

Our book has been finished during the Covid19 pandemic. The restrictions on movement imposed by governments to prevent the spread of the virus have allowed us to work intensively on the text, but they have made it impossible for us to visit libraries to read publications not available on the internet, or to return to Italy to check a few last things in the deposits. We are, however, unwilling to delay the publication any further in order to cross and dot a few more metaphorical "i"s and "t"s.

The degree of detail may seem excessive to some, but we have been motivated throughout by the belief that most archaeological field surveys are inadequately published, and that the evidence on which important conclusions are based is often only mentioned in summary form. By publishing all the diagnostic evidence on which we have based our arguments, we hope to have made it possible for others to check them and, where desirable, to challenge and revise them.

Acknowledgements

We have incurred numerous debts of gratitude during this long project. It was made possible by various granting agencies and other organizations in Canada, Italy and the United Kingdom to all of whom we are deeply grateful. The first three years of the survey were financed by generous grants from the Social Sciences and Humanities Research Council of Canada (1996, 1997-9).[1] From 2000 onwards the survey formed part of the broader Vagnari project, which included the excavation, and was supported in the United Kingdom by The Society of Antiquaries of London (research grants in 2000, 2001 and 2002) and by the British Academy (2003-4, 2007). The University of Edinburgh made funding available to Karen Stears and Alastair Small through grants from the University's Development Trust Research Fund and Munro Lectureship Research Fund, and a Research Travel grant. In Italy the project was sustained by a series of grants awarded by the *Comune di Gravina in Puglia* (2001-3), by the *Fondazione Ettore Pomarici Santomasi* of Gravina (2001-4, 2007-9 and 2012), by the *Banca Popolare di Puglia e Basilicata* (2000, 2002-4, 2007-8), and by *Nuova Energia srl* (2009 and 2010). The British School at Rome provided welcome administrative support thanks to the then Director, Andrew Wallace-Hadrill, and Secretary, Maria Pia Malvezzi. Nevertheless, the grant money had to be stretched a long way. Many of our volunteers paid for themselves, and small contributions were of great value. Susan Arculus lent a car which was driven by her daughter Alessia and greatly simplified the problem of getting to San Felice for the intensive survey in 2007 and 2008. John Hunt, who was undertaking a resistivity survey on Vagnari, came briefly to San Felice in 2007 in advance of the construction of the wind turbines to carry out three small surveys there.

We are immensely grateful to successive *Soprintendenti* for their support: in Basilicata to Angelo Bottini, Maria Luisa Nava, Marcello Tagliente and Antonio De Siena; in Puglia to the late and much missed Giuseppe Andreassi, to Teresa Cinquantaquattro and Luigi La Rocca. Other senior staff of the *Soprintendenze* – the *ispettori* and *direttori* of the museums – helped us greatly at various times. They include Angela Ciancio, Francesca Radina and Maria Rosaria Depalo in Gravina, Donata Venturo and Elena Saponaro in Altamura, Beatrice Amendolagine and Anna Maria Patrone in Matera. Special mention must be made of Giuseppina Canosa, a generous and kind friend, who, as director first of the *Museo Ridola* in Matera and then (after 2003) of the *Centro Operativo* at Gravina, arranged for the consignment of our finds and provided us with work-space and encouragement in both places. The personnel of the *Centro Operativo* (most of them now retired) were invariably helpful: Maria Ceriaca Digiesi, Francesca Ariani, Giacomina Cacciapaglia and Michele Colonna. We are grateful too to the staff of the *Museo Ridola*, especially Pino Loforese.

We also received much generous help from the municipal authorities at both Irsina and Gravina. At Irsina in 1996 the *Sindaco*, Giuseppe Gurrado, and *Assessore alla Cultura*, Angelo Candela, found accommodation for the team at the expense of the *Comune* in the *masseria* of the late Giovanni Lorusso, who treated us with great kindness and generosity and allowed us to field-walk inside his vineyards. At Gravina, where Alastair Small has been an Honorary Citizen since 1994, we are grateful to successive *Sindaci* for their interest in the project, including Remo Barbi, Rino Vendola, Giovanni Divella, and Alessio Valente. The contribution made to the project by the *Banca Popolare di Puglia e Basilicata*, already mentioned, was of great importance, and we honour the memory of the then President of the bank, the late Raffaele D'Ecclesiis, for his exceptional support of our work. In the last years of the project the firm of wind-farm contractors, *Nuova Energia*, was given permission to erect two wind turbines on the plateau of San Felice where we

[1] The grant in 1997-1999 was for a joint project with Helena Fracchia and Maurizio Gualtieri in the Bradano valley, for which Fracchia was the principal investigator.

had carried our our most intensive field survey. We thank Agostino Terenzini, *Amministratore unico* of the firm, for his concern to avoid damage to the site and for his interest in our project.

The *Fondazione Santomasi*, mentioned above, is a wonderful cultural resource for Gravina. The Council of the *Fondazione* saw our project as contributing to the cultural assets of the city, and under a series of Presidents, Ugo Rubini, Mario Terlizzi, Agostino Giglio and Mario Burdi, provided the grants for it mentioned above, and gave us precious work space during our many visits to study our material stored there. The staff of the Fondazione have been invariably kind and helpful. Many of those who were there at the beginning have retired, but among past and present members, special mention must be made of the late Adele Iannuzziello Vitucci, Secretary for most of the time we were there, of Marco Sallicati and Rosa Di Benedetto, successive librarians, and of Leonardo Cucuglielli, Isa Cicala, Paola Elia, Donato Nardulli, Romina Alfonso and Maria Teresa Di Noia. The late Pasquale Vitucci, for many years a member of the Council of the *Fondazione* was an invaluable friend and mentor, passionately interested in the history and archaeology of Gravina, who guided us in our dealings with landlords and local granting agencies and generally promoted the project in Gravina. This book is dedicated to his memory.

Many other Gravinesi contributed in one way or another to the success of the project, *in primis* Franco Taccogna, our informal consultant in information technology including graphics and photography, who surveyed and laid out the grids of 10×10 m squares on most of our major sites, including San Felice. He helped us with GIS and offered us generous hospitality during our many out-of-season visits to Gravina to work on the survey material. Other friends of Gravina gave up their time to assist him with the survey, notably Filippo Garibaldi. Antonia Petrafesa cleaned the coins and restored the metal artifacts. We learned much on history and customs of rural life (the *civiltà contadina*) of the territory from Giuseppe Schinco. He also helped to find accommodation for the team in the city, as did Don Saverio Paternoster, parish priest of the church of Sant'Agostino. This recurring problem was eventually solved by Giovanni Paternoster who made a large apartment available to us. Others put their knowledge of local history and archaeology at our disposal. Fedele Raguso guided us in the local archival sources, most importantly the copies, then little known, of the lost Angevin registers. Giuseppe Ardito provided information on cartography, and copies of local maps. Antonio Florido shared with us his close knowledge of the archaeology of the area. Vito Nicefalo advised us on many matters, notably on the contents of the ecclesiastical archives of Gravina, then difficult to enter. Salvatore Pace, landlord of our largest site at San Felice, gave us willing access to it and welcomed us to his *masseria*. Eufemia Iannetti did important work on some of the Roman material from the Older Surveys for her doctoral thesis, which she placed at our disposal and of which we have made considerable use. We have enjoyed the hospitality of numerous friends at Gravina. It would be impossible to list them all, and invidious to name only some of them.

In Irsina, Giuseppe Basile, President of the *Archeo-Club di Irsina*, helped us with arrangements in the town, and Michele Calia, local historian, shared his great knowledge of the archaeology of the territory with us, and accompanied us frequently in field-walking in the first year, as did Donato Masiello. In Gravina Emanuele Caroselli and Innocente Cataldi, successive Presidents of the *Archeo-Club di Gravina,* worked with us from time to time in the field and inspired some of the numerous volunteers who helped with field-walking and washing pottery. Those *Gravinesi* who worked with us most regularly are listed below with an * along with other team members. The list includes several people who assisted with the organization and classification of the material between 2009 and 2012, after the end of the field work.

Our thanks go to the following scholars who gave us generous advice and contributions on particular artifacts: to Paul Pettitt for some identifications and many helpful comments on the lithics; to Custode Fioriello for observations on the lamps; to Giuseppe Sarcinelli for his identification of the near-illegible Tarentine diobol No.2021; to Andrew Rich for the identification of the Medieval coins; and to Paolo Poccetti for his comments on the transcription and interpretation of the inscribed loomweight No.1961.

Most crucially our thanks go to the student members of the field-walking teams without whom the Survey could not have been carried out and who cheerfully put in long hours of work often in intense summer heat.



Team of 2007

Students and other members of the team, in addition to those mentioned above, who worked full time on the Survey for one or more seasons.

Tana Allen 1996; Maria Giuseppina Allogio* 2003–4; Tertia Barnett 2006; Matthew Biwer 2008; Andrea Bradley 1997; Lauren Burnett 2007; Sausan Cameron 2007–8; Ewen Campbell 1996; Innocente Cataldo* 1998–9; Clare Chapman 2007; Genevieve Close 2006; Pasqua Colonna* 2006; Maria Grazia Conca* 2003; Alan Dalton 2008; Onofrio Derosa* 1999; Isabella Digiesi* 2002; Giudita Dimattia* 2004; Grazia Dimattia* 2004, 2006; Aaron Dublenko 1998; Alessia Elia 2007–8; Edward Fisher 2006; Giuseppe Garofalo* 2002, 2007–8; Grazia Giovanniello* 2006, 2008; Claire Herbert 2001–2; Hazel Johnson 2007–8; Anna Maria Labellarte* 2003; Maria Lorusso* 2003; Michele Maiullari* 2006; Luciana Matera* 2002–3; Katy Molyneux 2007; Giacomina Montemurro* 2008–2012; Rita Muncipinto* 2008–2012; Domenico Paternoster 2006; Concetta Pepe* 2004; Angelica Portagnuolo* 2003–4, 2006–12; Anastasia Porter 1999; Lucia Ricciardi* 2002; Andrew Rich 2006–8; Beth Richert 2007; Kim Robertson 2006; Brent Roe 1996–7; Anita Ross 1998; Antonella Rubino* 2004; Melodie Sept 1997; Charmaine Sipe 1996–8; Margaret Small 1997, 1999, 2001, 2003–4; Sandy Small 1996; Victoria Suzman 2003; Maria Turturo* 2002–3; Chris Vallis 2007–8; Julie Williams 2008; Ian Whalley 1996–7.

In addition to the above, other students from the University of Edinburgh, McMaster University in Canada and the Università di Foggia working on the excavation at Vagnari occasionally joined the field-walking team, as did students from Mount Allison University and St Mary's University in Halifax, Canada excavating the villa on San Felice. We also had some help in the last two years from High School students in an Italian field school organized by Angelica Portagnuolo.

Sterling Peter Vinson was an especially welcome member of the team when he returned in 2001–2 and 2004 to join us on the scene of his former labours. His wife, Mary Kierzeck, joined us in 2002. We are very grateful to them both.

The cost of publishing this work in Open Access has been met with the help of a legacy from our good friend Eva Mitchell, an enthusiastic amateur archaeologist with whom we spent many happy hours exploring archaeological sites in Scotland.

Finally we are most grateful to Archaeopress for undertaking to publish this large book, and especially to Mike Schurer who guided us initially in our dealings with the Press and to Rajka Makjanic who formatted the complex work and dealt with our corrections with great patience and good will.



Pasquale Vitucci,
20 July 1943 – 9 June 2012

The book is dedicated to the memory of the late Pasquale Vitucci of Gravina, great friend and mentor of the project.

I. GENERAL INTRODUCTION

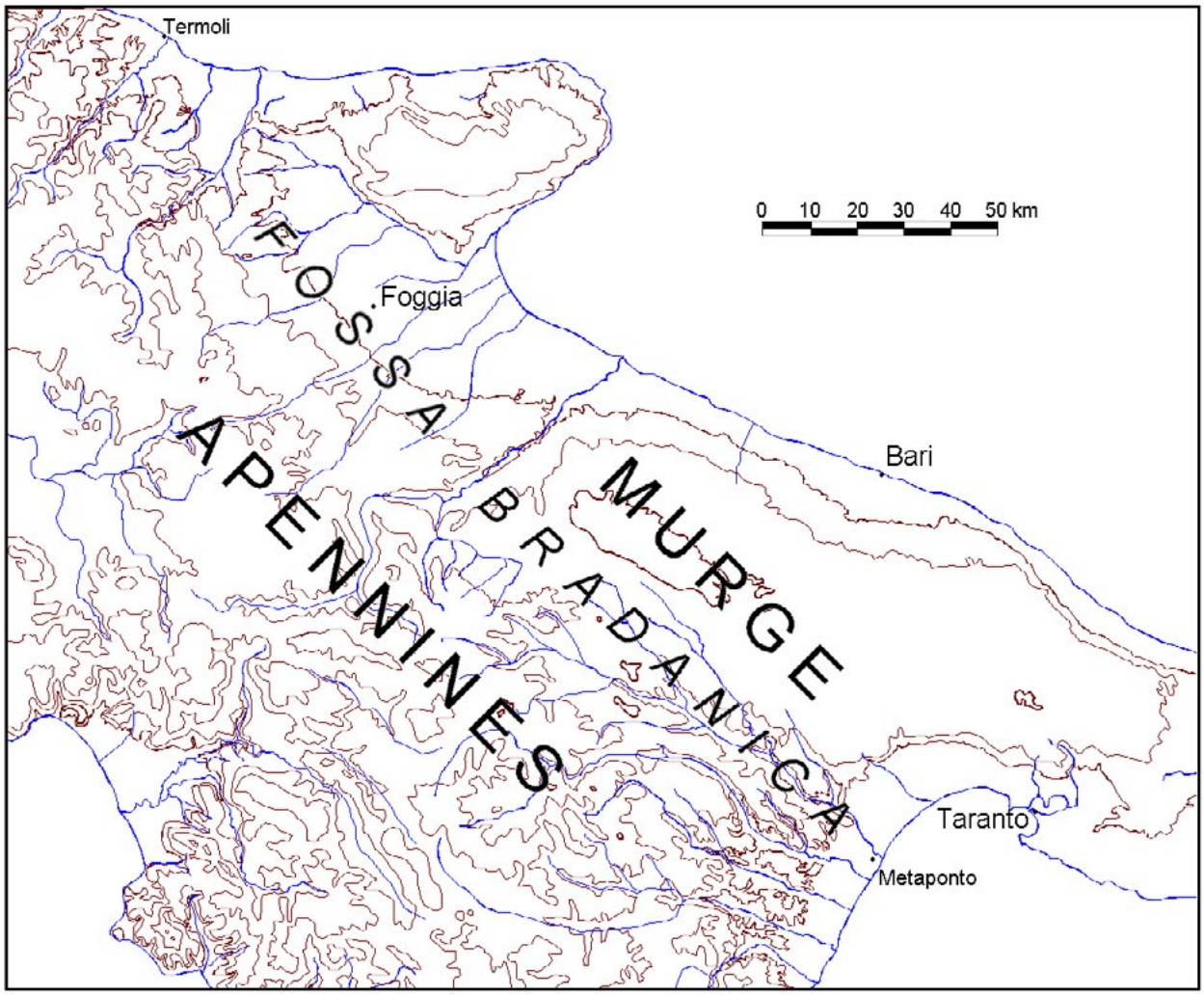
The *Fossa Bradanica* (Bradano Trough) runs roughly NW–SE from the Ionian Gulf to the Adriatic Sea near Termoli separating the Apennine mountains to the W from the Cretaceous limestone plateau of the Murge to the E (Map Introduction-1). It consists of a deep series of sedimentary marine deposits laid down in the Pliocene and thrust up to varying heights above sea level in the momentous seismic upheavals of the Pleistocene. The same events created the volcanic masses which fringe the W side of the Apennines in broad areas of Etruria, Lazio and Campania, and (uniquely) at Monte Vulture on the E side of the mountain range. This extinct volcano fringes the Fossa at its N-W edge, where the surrounding terrain of the Melfese has been crumpled by the upthrust of the volcano (Map Introduction-2). Deposits of tephra derived from the volcano extend into the Fossa as far as Venosa. To the E the plateau of the Murge rises steeply above the plain of the Fossa, reaching its highest point at Torre Disperata (671 masl) near its N end, and slopes down more gradually in a series of terraces towards the Adriatic. It is a karstic formation, so porous that normal rainfall is absorbed into the bedrock, and there are no large river valleys to give easy access to the high tops from the bottom of the Fossa. Such routes as there are follow ravines cut into the scarp by seasonal *torrenti*.

Beyond the Melfese and the N scarp of the Murge the landscape is dissected by the valley of the Ofanto, which rises deep in the Apennine mountains. The Fossa Bradanica continues across it as the North Apulian plain, the Tavoliere (table-land), fringed at its N end by the limestone massif of the Gargano.

In strict geological terms, the Fossa to the S of the Melfese includes the sedimentary pre-Apennine hills above the lower reaches of the Basento river, but our main area of interest is limited to its E edge below the Murge, where the Basentello river (not to be confused with the Basento) joins the Bradano to form a natural corridor leading into the interior from the Ionian Gulf.



Photo ntroduction-1. The arable land of the Fossa Bradanica and the scarp of the Murge between Gravina and Spinazzola. Photo Margaret Ward-Perkins 1965.



Map Introduction-1. The Fossa Bradanica.

1. Communications

i. Land routes

Since the beginning of the Neolithic period the Fossa Bradanica has formed a natural route of communications connecting the coastal plain of the Ionian Gulf near Metaponto with the middle reaches of the Ofanto valley and the Tavoliere. There was no single track through the Fossa, but the terrain is easily traversed on foot or on mule-back, and more than one route ran through the central part of it. Two which are of special importance for this study linked the territory of Venosa with the lower Bradano valley following different courses. One passed below the scarp of the Murge to Gravina and then followed the valley of the Torrente di Gravina to its confluence with the Bradano in the vicinity of Matera. It was the route taken by the main drove road (*tratturo*) through the Fossa until the abolition of transhumance in the 1950s, and it is followed, as far as Gravina, by the *strada statale 97*, and by the now-disused railway that connected Foggia with Taranto by way of Candela and Gioia del Colle. The other, which is of even greater interest to us, followed the valley of the Matinella to near Palazzo San Gervasio where it crossed the low watershed to the headwaters of the Basentello which it followed to its confluence with the Bradano below Monte Irsi.[1]

Other routes ran E-W across the Fossa and linked the settlements there with those on the Murge and the Adriatic coast. The easiest point of access to the Murge from the central part of the Fossa is at Gravina where the plateau shelves down to a lower terrace and there is a gap in the scarp. It was the preferred route used by shepherds driving sheep to and from the plateau, and in recent times it was flanked by *jazzi*, large sheep folds with makeshift accommodation for the shepherds, where the migrant sheep could be corralled for milking or shearing (Photo Introduction-2). Traders must also have passed this way at all times. In the Iron Age the route connected the Peucetian settlements on the Murge (especially those at Altamura and Monte

[1] Small 2019.



Photo Introduction-2. The Jazzo Pantano at the edge of the Murge scarp.

Sannace) with Botromagno, the principal Iron Age settlement in this part of the Fossa. Other tracks led over the Murge to the Gulf of Taranto where the Spartans founded the settlement of *Taras* (Roman *Tarentum*) in the late 8th century BC. As the city grew in power in the 5th and 4th centuries, the route across the Murge was increasingly used. It acquired still greater importance after the Roman conquest when the Via Appia was extended from Campania through *Venusia* and *Silvium* (Botromagno) to *Tarentum* (Taranto) and *Brundisium* (Brindisi). Its primary purpose was to facilitate the movement of Roman troops destined for the Greek East, but it also had an economic role, and its construction led to the revival of settlement in South Italy in the period following the 2nd Punic War (see Chap.VIII.5.vi and 8.ii). There is still some controversy over the precise route chosen by the Roman engineers where it passed through the Fossa but it most probably followed the Matinella and Basentello valleys from Venosa as far as Vagnari, and then crossed the plateau of San Felice to Botromagno/ *Silvium*.[2]

Another route of great importance for our study led westwards from Gravina in the direction of the pre-Apennine mountains. It crossed the seasonal *torrente*[3] of the Pentecchia di Chimienti below Botromagno and ascended the ridge beyond it by way of the pass of Sferacavallo (so named because of the risk that horses might lose their shoes there), then descended again to cross the more serious obstacle of the Basentello river below the medieval and modern hill-town of Irsina.[4] From here a small anonymous tributary of the Basentello leads westwards into the Lucanian mountains. This was the most convenient route across the central part of the Fossa Bradanica, and for hundreds of years it was followed by shepherds who led their flocks this way along a defined drove road between their winter pastures in the plains and their summer pastures in the mountains.[5] The practice continued until the post-World War II agricultural reforms put an end to the age-old practice of transhumance. It was the route used for the narrow-gauge railway, now called the *Ferrovia Appulo-Lucana*, which was built through this area in the early 1930s to link Bari with Potenza deep in the Apennine mountains.

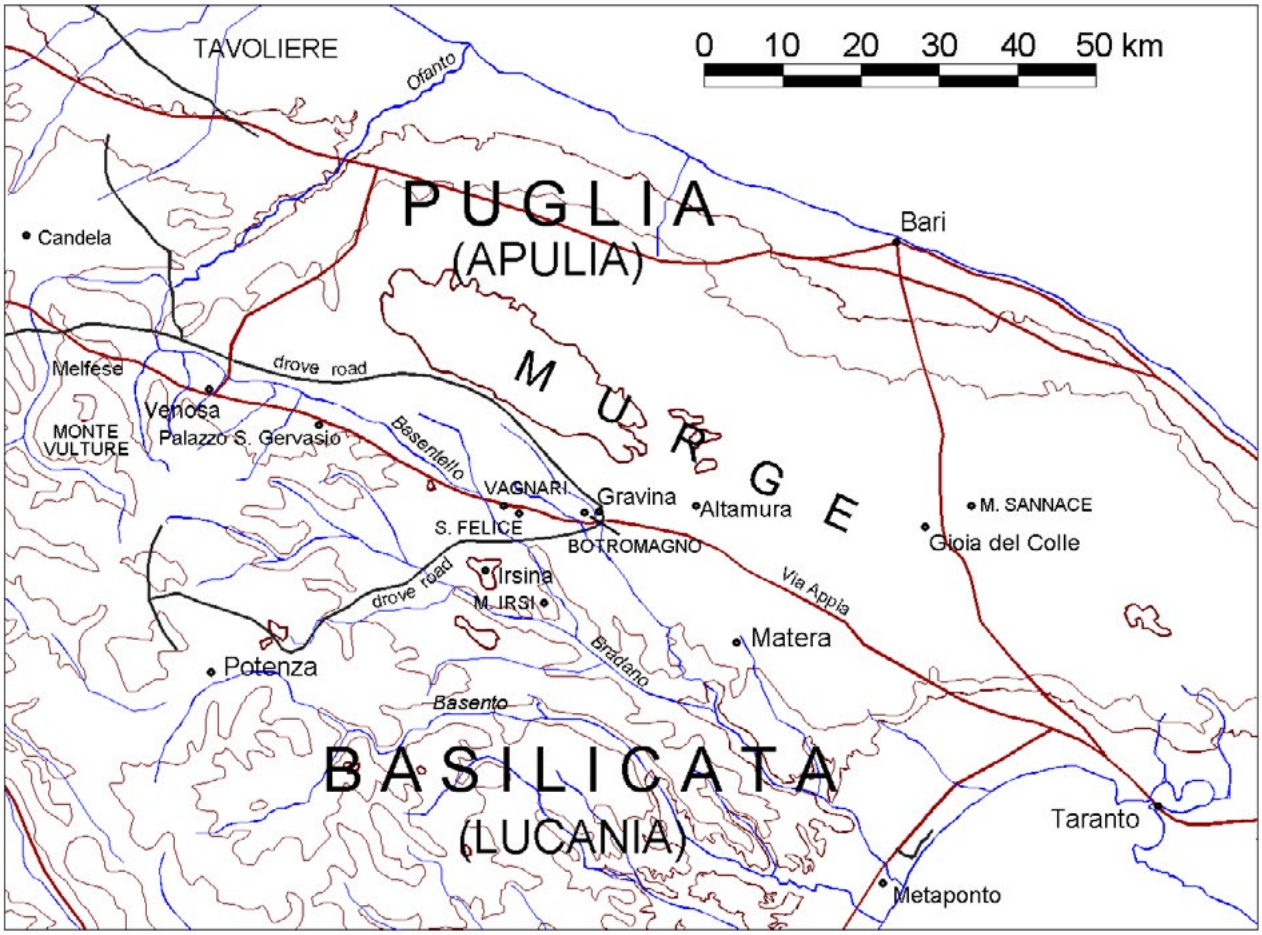
These are the principal routes in the central part of the Fossa Bradanica, and they give special importance

[2] Small & Small 2011

[3] *Torrente*: i.e. a watercourse liable to drastic seasonal fluctuations.

[4] The town was for long known as Montepeloso, but was renamed Irsina in the late 19th century, to the disgust of the local antiquary and historian Michele Ianora (1901, *Introduzione*, esp. XIX-XXIII). Earlier historical writing and all of the pre-20th century documentation appear under the earlier name.

[5] It is documented in the archives of the *Dogana della mena delle pecore*, which, from the mid-15th century until Napoleon, controlled and taxed transhumance, throughout South Italy (See Chap.XII.8.iii.d), but there can be no doubt that it was already in use in the Roman and Hellenistic periods (see Chap.VIII.5.ii.b).



Map Introduction-2. Places mentioned in the Introduction.

to our Survey Area which extends along the Basentello river from its confluence with the Bradano below Monte Irsi to the point 15 km further N where the valley is flooded by a modern dam (the *Diga del Basentello*). The area covered by the Survey is divided by the E–W drove road, and includes the course of the Via Appia where it passes Vagnari and skirts the plateau of San Felice. The Older Surveys, which are also considered here, extend the study area further to the N and E through the central part of the Fossa.

ii. The Bradano – Basentello river

After the foundation of Metapontion in the 2nd half of the 7th century BC there was intensive interaction between the Greek settlement and the indigenous inhabitants of the interior, including our Survey Area. The goods traded are likely to have been brought on baggage animals following tracks that were never formalized as roads. For the whole length of the river valley at least as far as the confluence between the Bradano and Basentello, the low hills flanking the river provided no serious obstacles for this kind of traffic. In the Hellenistic and Roman period, however, there were heavier goods to be transported including amphorae and *dolia* which would have been more easily carried by river barges. The importance of river transport in the Roman state is shown by various responses in the *Digest* which aimed to protect rivers and their banks from any actions that might impede navigation.[6] Major rivers in N and Central Italy were equipped with wharves and warehouses where freight could be loaded and unloaded. Examples have been identified at various points on the Tiber and its tributaries where goods were loaded for shipping to Rome.[7]

The flow of the South Italian rivers is less reliable, but there are nevertheless some indications in the literary sources that they too were used for transport, at least in their lower reaches. Strabo, referring to Heraclea, says that the two rivers of the territory, the Sinni and the Agri, were both navigable, though he gives no indication of how far the river transport would have reached into the interior.[8] He says nothing about the navigability of the Bradano, but we may suppose that if the Sinni and Agri were navigable, the Bradano was so too. Much later, the Arab geographer, Idrîsî, writing at the court of

[6] *Digest* XLIII.12-15.
[7] Summarized in J. Patterson 2004, 63. See also Keay, Millett *et al.* 2004, 232 for the wharves and other installations at Seripola near Orte.
[8] Strabo VI.1.14.

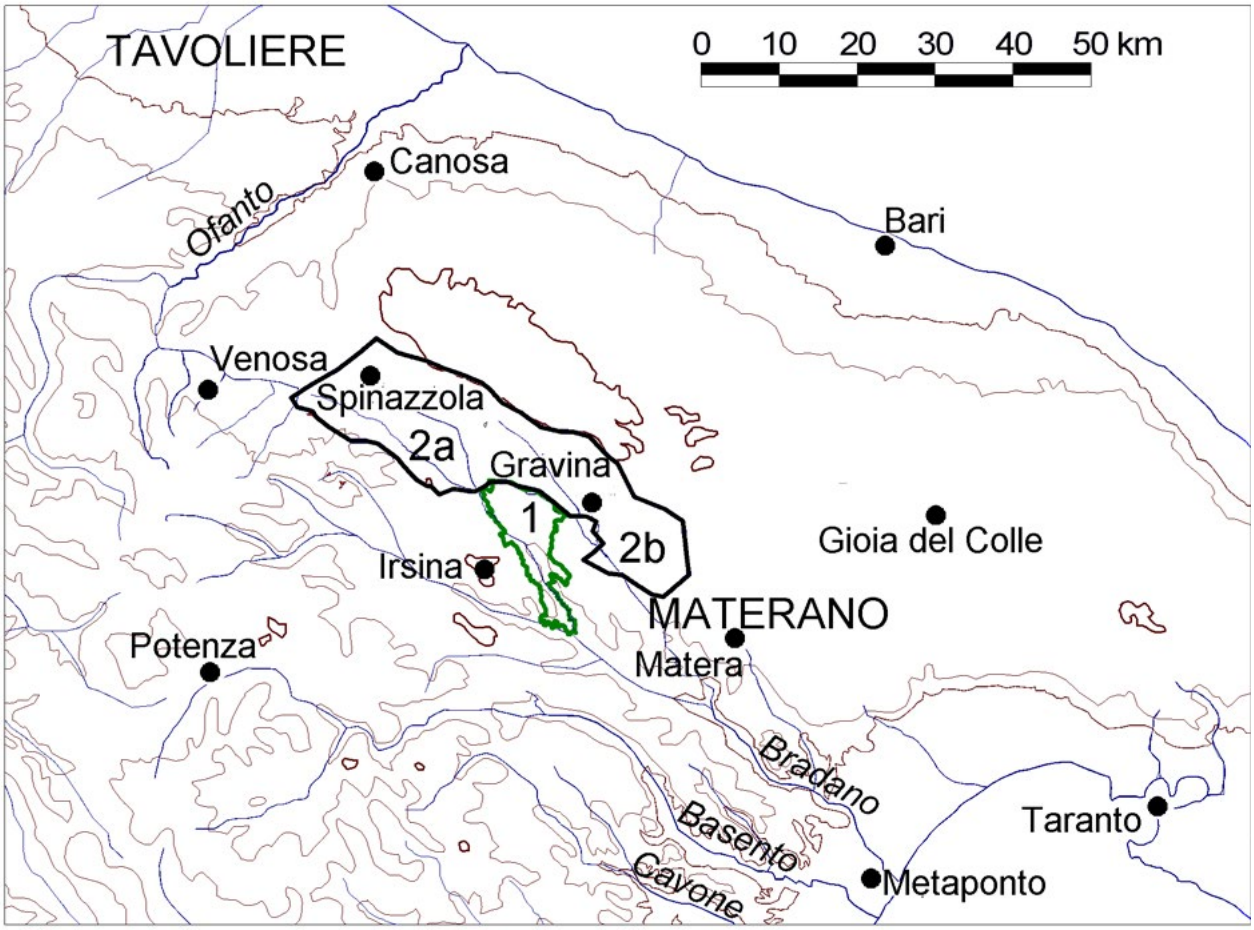


Photo Introduction-3. The pass of Sferacavallo showing the modern *superstrada*, the narrow-gauge railway, and 19th century Masseria Capone. The line of the drove road can be seen behind the Masseria. Monte Irsi is visible in the background, partly covered with oak forest. Viewed from the *Strada Statale* 96, looking S.

Roger II in Sicily in the 12th century describes the river as used for shipping timber (willow and pine) that was floated down it,[9] and in a document of 1271, Charles of Anjou gave instructions for boats to be got ready on the Bradano and Basento rivers for transporting men and supplies.[10]

Now that the rivers have been dammed and much of the water is extracted for irrigation, it is very difficult to imagine that the Bradano could have been navigable. Even before the post-World War II works of *bonifica* the river cannot normally have been used for transporting goods, since Lacava, writing in 1891, described it as the river of Basilicata which carried least water in summer time when it sometimes dried up completely, and as the one which collected most water in time of rain.[11] His description might seem to rule out its suitability for navigation, but Lacava was writing after the massive deforestation of the Lucanian Apennines in the 19th century which must have had a drastic effect on the hydrography of the region,[12] and J.T. Abbott's geomorphological studies in the hinterland of Metaponto have shown that at various times during the Greco-Roman period low-energy conditions prevailed in the rivers, during which thick accumulations of mud were deposited in the channels, indicating that the streams were not simply flashy, intermittent watercourses.[13] It is possible, therefore, to imagine that in some periods the river could be navigated, even if only in rainy seasons, at least from its confluence with the Basentello to the sea at Metaponto. Since the river-bed at the confluence is at 121 masl, and its present-day course is ca. 64km long, the gradient of the river in this reach was approximately 1m in 1.89km and would present no problems for navigation when the water level was high other than the numerous meanders that would have to be negotiated; but these are an unknown factor since the course of the river has changed many times.

[9] Idrîsî in his "Book of Roger", Bresc & Nef ed. 1999, 298
[10] *Reg. Ang,* 1,273-277; cited in Carter, *Chora* III.2, 625.
[11] Lacava 1891, 11.
[12] Tichy 1957.
[13] Abbott 2011, 53-55.



Map Introduction-3. Map of the central part of the Fossa Bradanica with the approximate areas of Our Survey (1) and the Older Surveys (2a = Vinson Survey, 2b = Chapman and Aldridge surveys).

There are also some archaeological indications that that the Bradano was navigable as far as our Survey Area in the Roman period. In particular our Site 145-9 is unusual in being situated close to the river. It yielded fragments of several very large Roman *dolia*, the largest found on the survey, and numerous sherds of amphorae of various kinds. We have suggested that it should be interpreted as an entrepot where goods going down the river could be loaded, and those coming up the river could be unloaded to be stored and redistributed to other places in the interior (Chap. IX.14.1.a,b). At the other end, there were wharves on the river at Metaponto where goods could be transhipped.[14] This argument assumes that goods could be moved up-river as well as floated down-river. The river bank was perhaps adapted for towing with draft animals, but there can be no proof of this since it is impossible that traces of towpaths could have survived the centuries of erosion.[15]

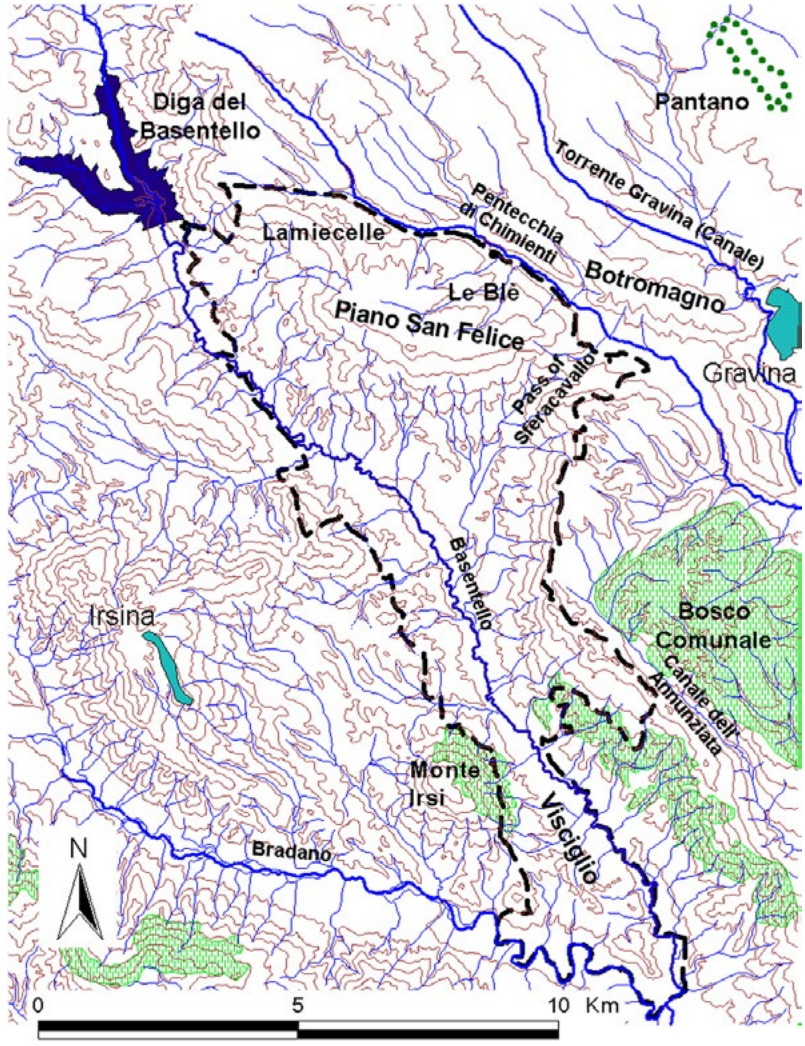
[14] Giardino 1999, 185; Carter, *loc. cit.*
[15] For towing with draft animals, see Casson 1971, 332.

2. Three levels of focus

Our study has three levels of focus which correspond to the degree of detail in which the archaeological evidence for settlement and land use in the area is presented and analysed.

i. The Basentello valley survey (Our Survey Area)

The primary level of focus is the central part of the Fossa Bradanica where, as we have said, the route from the North Apulian plain to the Ionian coast crosses that from the Adriatic coast to the heart of the Apennines. It was chosen for special study with several objectives in mind. The first was to investigate the area between two sites which Alastair Small had already been involved in digging, Botromagno in Puglia and Monte Irsi in Basilicata, in order to throw further light on their economic and social context (see Preface). Botromagno just outside the town of Gravina-in-Puglia was a very large Iron Age site which was founded around 1000 BC and prospered (with some vicissitudes) down to the time of the Roman conquest at the end of the 4th century BC. It declined thereafter, but was re-founded in the late 2nd century BC as a village centred on an



Map. Introduction-4. The area of Our Survey giving the river names and topographical areas used by us in this study. Shaded area is woodland.

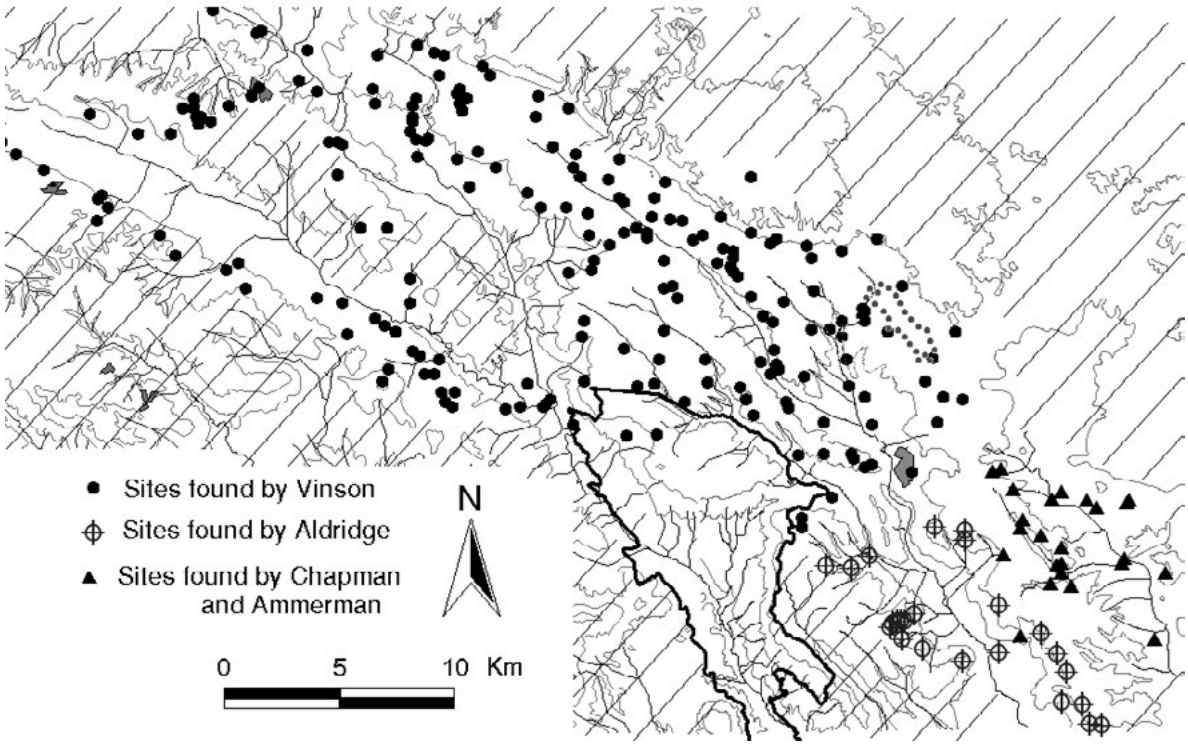
early courtyard villa.[16] This failed in the 1st century BC and the latest ancient building erected on the hilltop was a house built in the Augustan period. The second site on Monte Irsi was a smaller Iron Age hill settlement, situated some 15 kilometres away beyond the pass of Sferacavallo and across the valley of the Basentello river from Botromagno. Here too the Iron Age settlement was replaced in the Late Hellenistic period by a Roman villa which was abandoned early in the 1st century BC and replaced after an interval by another which lasted into the Middle Imperial period,[17] but unlike Botromagno, Monte Irsi had an after-history in the form of a small medieval village and castle.[18]

A second aim was to extend the area covered by the Older Surveys, mentioned in the Preface, which had been undertaken in the 1960s and 1970s, and to provide a control on the information that can be derived from them. Their nature and scope is explained below and in Section VI of this book. Essentially our plan was carried out. We surveyed just under 100km^2 along the valley of the Basentello. To the S-E the Survey Area is bounded by the ridge between the Basentello valley and the communal forest (*Bosco comunale*) of Gravina, and to the W by the first (and lowest) of a series of ridges running N from Monte Irsi that separates the valley of the Basentello from the upper reaches of the Bradano. To the N the artificial reservoir of the *Diga del Basentello* provided an obvious stopping point, and to the N-E the Pentecchia di Chimienti marked a clear boundary. Within these limits we were able to link up with the Older Surveys along the N and NE edge of the area (see Map Introduction-2), and we covered the whole of the intervening ground between Botromagno and Monte Irsi. We have as a result been able to understand much better the relation of these pre-Roman settlements to their environment.

Vagnari

At the centre of our Survey Area lies the Roman *vicus* of Vagnari which we identified early on in our field survey as the most important Roman settlement in

[16] Small *et al.* 1994, Small 2020.
[17] Small ed. 1972
[18] Cotton, Cherry & D. Whitehouse, 1971, 138-170.



Map Introduction-5. Sites found on the Older Surveys. The diagonal lines indicate roughly the areas which were not then surveyed. The perimeter of our own Survey Area in the Basentello valley is indicated by the heavy black line.

the central part of the Fossa Bradanica and began excavating in 2000. The excavations are still going on, now under the direction of Maureen Carroll and Tracy Prowse (see Preface). The discovery that Vagnari was a *vicus* at the centre of an imperial property is crucial for understanding the economic development of the whole Survey Area in the Roman period.

ii. The Older Surveys

The second level of focus is the analysis of the Older Surveys. The three earlier campaigns of field survey had their origins in the late 1960s when the British School at Rome was excavating the Peucetian and Hellenistic settlement on Botromagno. Although the methodology used in these earlier surveys would now be considered out of date, the principal surveyors recorded numerous sites and collected much material on the surface which is still of great value for reconstructing the settlement history of the central part of the Fossa. They worked in three principal areas.

a. The Vinson Survey

By far the greatest area was covered by Sterling Peter Vinson who explored a large part of the Fossa Bradanica between Gravina and Venosa, especially along the routes most likely to have been followed by the Via Appia which his study aimed to trace – i.e. below the scarp of the Murge, and along the right bank of the Basentello river. Part of this vast work[19] was published by him in 1972,[20] but a large number of sites subsequently discovered by him in 1974-5 and 1977-1978 have remained unpublished until now, although a few more recent articles incorporate some of the data.[21] In a later study he followed the route of the Via Herculia S from Venosa. Since, however, the present study focusses on the border between Apulia and Lucania, we have not used his finds from the Via Herculia survey which took him far into Lucania, though we hope to do so in a future article. At present we have concentrated on his work NW from Gravina to the watershed between the Basentello and the Matinella, the area most relevant to our own survey. Beyond it lies the territory of Roman Venusia which has since been surveyed much more thoroughly by Maria Luisa Marchi and Giulio Sabatini.[22]

Since finding the route of the Via Appia in this area was his primary objective, Vinson aimed to investigate the land within 1–2km on either side of the presumed

[19] He estimates that he covered in all some 1,059 km^2.
[20] Vinson 1972, 58-90. There is a partial publication of his work on the line of the Via Herculia in Vinson 1985.
[21] Alastair Small made use of some of Vinson's data in his study of Late Roman rural settlement in Basilicata and W Apulia (1991), in his articles on Grain from Apulia (1994), and on Changes in the pattern of settlement and land use around Gravina and Monte Irsi (4th century BC–6th century AD) (2001). Andrew Sargent used Vinson's prehistoric data in his study of changing settlement location and subsistence in later prehistoric Apulia (2001).
[22] Marchi & Sabbatini 1996; Marchi 2010.

road. In practice, he sometimes went further, but he did not usually investigate areas through which roads were unlikely to have been built, nor did he establish very clear-cut boundaries for his survey. The larger areas which he did not cover are indicated by light diagonal shading on the maps in the diachronic section of this publication, but there were some smaller areas which he also ignored. Within the very considerable areas which he did cover, however, his search was exhaustive and revealed a very large number of sites, for some of which his work remains the only evidence (for example in the area now flooded by the Diga del Basentello). Deep ploughing, then only just beginning in much of the territory of his survey, is also likely to have destroyed much of the evidence for the sites which he found. The quality of his finds is often remarkably good. Many of the sherds are large, some giving whole shapes, in notable contrast to our much more fragmented survey material. We have published a selection of the pieces found by him (Plates 50-56 with a Table containing brief descriptions (Section VI.III)). He did not, of course, have the benefit of any GPS system, but in cases in which his sites have been revisited, his mapping has generally been found to be accurate to within 50–100m, despite the absence of landmarks which makes surveying by compass difficult in this terrain. He collected and recorded enough pottery and other finds to make it possible to give broad dates to his sites and he frequently gave some indication of site size although not consistently.

b. The Chapman and Ammerman survey

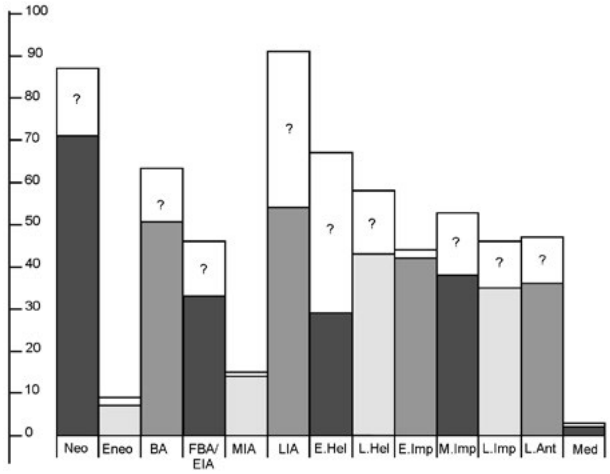
The second earlier study, now published here, was carried out over two summer seasons in 1969 and 1970 by the late Hugh Chapman, assisted in 1970 by Albert Ammerman, between Gravina and Altamura, and was written up by Chapman for publication before his death in 1992. It adds considerably to our knowledge of the archaeology of the lower slopes of the Murge to the E of Gravina, and is especially useful for sites of the Roman period. Chapman and Ammerman aimed at a full record of the sites in a relatively small area. They listed all pottery found, but removed only selected diagnostic pieces for closer analysis.

c. The Aldridge survey

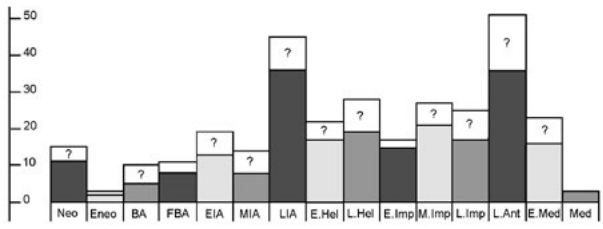
The third of these earlier studies was carried out by Dennis Aldridge between Gravina and Matera and followed the course of the Torrente Gravina as far as the Puglia/Basilicata border. The field work, which was carried out in 1972 and 1973, formed the basis of his MA thesis for the Institute of Archaeology in the University of London.[23] It was accepted for the degree, but has remained unpublished. Like Chapman and Ammerman he aimed at full coverage of a fairly small area. He collected for analysis all diagnostic shapes (rims, bases, handles, lids), all worked stone, and a sample of wall sherds. He worked along the ridges on either side of the valley, and recorded 18 sites in detail, and listed more summarily another 8 which he had investigated only partially. He did not explore the valley bottom fully since it is covered with an infill of alluvium which is likely to have buried ancient sites, but he surveyed a transect across it at roughly 2km intervals. No sites were found in these transects, though occasionally slope-wash from higher sites was identified.

d. A comparison between the New and Older Surveys

A comparison of the two histograms showing site occupancy by period in the Older Surveys and our own provides a useful basis for assessing the reliability of the Older Surveys and the inferences that can be drawn from their records. Differences between the histograms may reflect real differences in site distribution between micro-regions, or they may result from differences in the intensity of the surveys or in the methods of analysis of the results.



Graph Introduction-1. Histogram showing site occupancy by period on the Older Surveys. "?" = period classification uncertain.



Graph Introduction-2. Histogram showing site occupancy by period on our Survey. "?" = period classification uncertain.

[23] Aldridge 1973.

The most remarkable discrepancies are in the prehistoric period. In the Older Surveys the Neolithic period saw the highest number of dated sites, with a total of 71 certain and 16 possible instances, equivalent to between 29.5% and 36% of all sites. This compares with 11 certain and 4 possible Neolithic sites in our own Survey Area, amounting to between 8.5% and 11.5% of our sites. There is no need to doubt the much higher numbers in the Old Surveys since they echo the very high numbers of Neolithic settlements identified in the North Apulian plain and in the Materano, and most of them were located in the low arc of terrain below the scarp of the Murge which links those two areas. By contrast, the Neolithic sites in our Survey Area are outliers on the margin of the region of Neolithic settlement in an area which had probably not yet been cleared of forest.

Both surveys register a steep decline in site numbers in the Eneolithic period when settlement density reached an extreme low. It rose again in the Bronze Age, but to a much greater extent in the area of the Older Surveys, and probably for the same reason, that the arc of fertile land below the Murge was especially favourable for settlement. There was also access from it to rough pasture on the plateau for communities which depended in part on stock-raising. But some caution is needed in interpreting the data since without drawings and detailed fabric descriptions it is difficult to distinguish between pottery of the Middle and Later Bronze Age on the one hand and the Final Bronze Age/ Early Iron Age on the other. It is possible, therefore, that the decline in settlement numbers in the latter period was less severe than appears in the histogram. In our own Survey Area, the trend was in the other direction with an increase in sites in the Final Bronze Age which continued into the Early Iron Age.

After this point the trends in the two analyses are in better relation with each other, with settlement numbers falling perceptibly in the Middle Iron Age and then rising dramatically in the Late Iron Age, only to fall again precipitously in the Early Hellenistic period. Numbers then rise again in the Late Hellenistic period, but more steeply in the Older Surveys, and fall off slightly in the Early Empire in both cases. From this point on the histograms diverge more significantly. In the Older Surveys the number of occupied settlements declines gradually through the Middle and Late Empire then rises slightly in Late Antiquity to 36 reliably dated cases, equivalent to 15% of the total number of sites. In our own Survey Area the numbers rise in the Middle Empire, fall off slightly in the Late Empire, and then rise much more dramatically in Late Antiquity, also to 36 which is equivalent to 28.5% of all our sites. The difference between the two trajectories can be explained in several ways. Comparison with other surveys in North Apulia and elsewhere suggests that it is our own field survey that is anomalous rather than the Older Surveys, in which case its unusual pattern can best be explained by the subdivision of the imperial estate at Vagnari. On the other hand, the fact that the rise in settlement in the Late Antique period is much less steep in the Older Surveys may result from the fact that the type-ware of the period, Late Roman Painted Ware, was not generally recognized at the time the surveys were carried out. It also seems probable that some of the small sites without tiled roofs typical of the period in our own Survey Area were missed. The Early Medieval period is not registered at all in the histogram of the Older Surveys because details of tiles were not recorded by the surveyors, and so nothing is known of the combed tiles which provide most of the evidence for settlement of the period in our own Survey Area. Finally, both histograms indicate a drastic reduction in the number of settlements inhabited in the Middle Ages.

Although there is some reason to think that the data from the Older Surveys may be defective or may have been misread for some periods, in general the comparison between the two surveys confirms the value of the Older Surveys as evidence for trends in site occupancy. Although the earlier surveys were generally less intensive than our more recent work in the Basentello valley, the conclusions that can be drawn from them are broadly reliable for most periods. They vastly expand the distribution map and make it possible to draw conclusions about the broader pattern of settlement in the Central part of the Fossa Bradanica.

The reasons for the fluctuations in settlement are an important theme in the diachronic chapters of this book.

iii. The Fossa Bradanica

The third level of focus is more general. In order to understand the development of our Survey Area more fully, we have expanded the comparative study to include other sites in and around the Fossa Bradanica. An understanding of the broader context of the first two levels of survey data is essential for their interpretation in all periods. The development of the Neolithic in our Survey Area has to be viewed in relation to other developments of the period not only in the Tavoliere and the Materano, but also on the Adriatic coastal fringe. In the Bronze Age the cultural contact with the Tavoliere was less important, but other connections took their place, especially with sites in the middle Ofanto valley, the Materano and the Adriatic fringe. In the pre-Roman Iron Age, the most important single factor affecting the development of the indigenous cultures of the Fossa Bradanica was the foundation of Greek settlements on the Ionian coast, first at Incoronata, then at Metaponto, while the Spartan colony of Taras (Tarentum) exerted an increasingly powerful influence. Equally important

was the interaction between the indigenous cultural and ethnic groupings in and around the Fossa Bradanica. They shifted over time, but by the 4th century BC had consolidated with Lucanians to the W of the Bradano-Basentello corridor, Samnites to the N-W, Daunians to the N and Peucetians to the E. The last two shared numerous cultural and ethnic traditions common to the broader group of Apulian peoples.

With the beginning of Roman conquest around the end of the 4th century BC the interconnections between the regional and local cultures in the Fossa Bradanica changed. Botromagno/ Silvium was reduced to minor importance, Metaponto was eclipsed, and a new pole of attraction was created by the Romans at Venusia near the N end of the Fossa. Vast changes in land use followed. The territory of Venusia was centuriated and parcelled out in lots to small farmers, but elsewhere in the Fossa much land that had once been arable was allowed to revert to pasture (especially in the aftermath of the Hannibalic War), and long- distance transhumance trails were developed for sheep which were moved between winter pastures on the plains and summer pastures in the mountains. As we have seen, one of the most important drove roads passed through the Bradano-Basentello corridor and linked with other trails which led into the Lucanian mountains. The Via Appia was extended from Venusia to Tarentum, passing through the northern part of the Fossa by way of the Basentello valley, before crossing the Murge to reach the Tarentine plain. The central part of the Fossa Bradanica was effectively ruralized, with no convenient city to act as a market centre.

Under the Empire the state of affairs established in the Late Republic continued but was gradually modified over time. An important new element was the creation of a large imperial estate centred on the village (*vicus*) at Vagnari which developed as an alternative economic centre for the area in the absence of any municipality to provide for the needs of the rural population. During the Middle and Late Empire much of the estate was subdivided into small-holdings which could be rented out to long-term tenants (*coloni*), so simplifying the administration of the imperial property, but the *vicus* at Vagnari continued to function; indeed its role was extended in the Later Empire when Italy was provincialized and subjected to taxation in kind. There is good reason to think that Vagnari, situated on the Via Appia was a collection centre for the surrounding area – but only on the left bank of the Basentello, since the right bank fell in Lucania and was subject to a different taxation regime. This state of affairs survived the end of the Empire in the West, but it did not outlast the Greco-Gothic war of the mid-6th century. Nevertheless, many settlements lasted well into the Early Medieval I period when new centres of power emerged in the Fossa Bradanica, especially in the Materano which began to recover some of the importance that it had had in the prehistoric period. The Central Middle Ages were characterized by the concentration of the population in the countryside into villages often with a small castle, and hamlets, while a few towns grew in importance, notably Matera, Gravina, Montepeloso/ Irsina and, beyond the watershed of the Basentello, Venosa.

Our third focus is therefore a study of interactions within and beyond the survey areas, and of the role of the Fossa Bradanica as both a communications corridor and a regional boundary, albeit a rather fluid one. This aspect of the study draws on the work of other groups in several parts of the Fossa, and especially in the territories of Venosa and Metaponto at opposite ends of the Bradano-Basentello corridor.[24] Among recent studies within our Survey Area, articles by Myles McCallum and Hans Vanderleest (2011, 2014) on their excavations in the villa at San Felice are essential to this study as is the volume on San Felice edited by Lara Cossalter and Maria Rosaria Depalo (*PSF* 2017). References to many other publications of sites in the Fossa Bradanica will be found throughout the text.

3. The limits to contextualizing

This study therefore aims to contextualize the results of the surveys published here. To do so in a manageable way we have rather arbitrarily constructed a geographical frame within which we have looked for useful comparanda for our survey material with some consistency (though inevitably we will have overlooked much that might have been useful). This is the frame used in the relatively small-scale maps that illustrate each period. It has been designed to include Taranto and Metaponto to the S, the Adriatic harbours between Egnazia and the mouth of the Ofanto to the E, Salapia and Ordona to the N, and the important Late Roman/ Late Antique villas of Faragola, San Giovanni di Ruoti, and the Masseria Ciccotti in the Upper Bradano valley to the W. We believe that many of the questions of economic interaction and cultural exchange which affect our Survey Area can be resolved by drawing on comparative data from sites within this frame. Beyond it we have referred to numerous other sites for comparanda, but less systematically: to have tried to do more would have made this publication impossible.

Underlying our selection of this area is an awareness that the material culture of South Italy was never uniform. Certain products, especially high-quality table

[24] The archaeology of Metaponto and its hinterland is particularly well known, thanks to the admirable work carried out by the Archaeological superintendency for Basilicata and the programme of surface survey and excavation by teams from the Institute of Archaeology of the University of Texas directed by Joseph C. Carter (*Chora Metaponto I-VII)*. The archaeology of Venosa is less accessible but there are recent studies by Mariarosaria Salvatore, Maria Luisa Marchi and others; and important surveys of the hinterland (Marchi & Sabbatini 1996, Sabbatini 2001).

wares, had a wide distribution in some periods, but most plain and cooking wares were locally produced and distributed within much smaller regions. Even within the frame of the map there were subregional variations – differing patterns of land use determined partly by the long-term factors of soil conditions and micro-climates, and partly by more changeable circumstances such as the availability of markets for the produce of the land. Even the modes of landholding and organization of labour might vary from one sub-region to another, as the discovery of the imperial estate at Vagnari makes clear: it resulted in a pattern of settlement which was significantly different from that in the surrounding area, and remained so for more than 500 years from the time of its creation early in the Principate until well into the Gothic period, even though the way it was administered changed over time.

Our Survey Area can therefore be seen as one of many micro-ecologies within the Italian regions which had their own distinctive characteristics but were nevertheless linked to other adjacent micro-ecologies in ways that might change with changes in external circumstances. The regions of Italy and indeed of the whole of the Mediterranean world were composed of just such inter-connected micro-ecologies, as a recent study by Peregrine Horden and Nicholas Purcell has emphasized.[25]

But the ceramic evidence also shows how our Survey Area always formed part of larger economic and cultural sub-regions which had fluid boundaries and varied over time. There are some indications of this already in the Neolithic and Bronze Ages, but the phenomenon becomes much more evident in the Middle Iron Age when the indigenous geometric wares were decorated in styles that circulated freely in some areas and were sometimes exported beyond them. The pieces listed in our Catalogue show that the sites in our Survey Area had close cultural links with others, both in the Bradano basin and on the central and W part of the Murge. These cultural subregions corresponded only loosely with the tribal territories of the Oenotrians and Peucetians in so far as they can be made out from the later historical sources. In the 4th century BC, after the formation of the Lucanian *natio*, the political configuration of this part of Italy becomes clearer, with Lucanians, broadly speaking, occupying the area to the W of the Bradano/ Basentello river and the Peucetians to the E, although this notional border was infringed at several points. In this period the material culture of our Survey Area was more closely integrated with the Peucetian culture which had become more homogeneous and extended across the Murge to the Adriatic coast.

In the Greek sources, the region now known as Puglia was defined in terms of the principal ethnic units inhabiting it: Daunians, Peucetians and Messapians. They spoke a common language (Messapic) and shared various social and funerary customs. This tribal structure came under strain as the larger settlements began to envisage themselves as autonomous units, equivalent to Greek city states, and it broke down completely in the Roman period when the former ethnic groupings effectively disappeared. In their place the Romans created the geographical region of Apulia and Calabria (Calabria meaning the Salentine peninsula), unified by roads – the Via Appia and the Via Minucia (redeveloped by Trajan as the Via Traiana), which linked the component parts together and tied them firmly into the economy of the city of Rome. It was one of eleven regions into which Augustus divided Italy, supposedly based on ethnic traditions which were already moribund, but reinterpreted to suit the geographical factors more conveniently. In naming *Regio II* "Apulia et Calabria" Augustus abandoned the ancient tribal names (Daunians, Peucetians and Messapians) found in earlier Greek historians and chose instead the names of minor sub-tribes (the *Apuli* and the *Calabri*) known to more recent Roman writers, and he included in the region the territory of the former Samnite tribe of the *Hirpini* whose name did not even appear in the title of the region. Lucania to the W of the Bradano-Basentello corridor was linked with the territory of the Bruttii in *Regio III*, extending to the Straits of Messina.

The micro-region of our Survey Area straddled these two Augustan regions and was connected economically to both – to Regio II by the Via Appia, and to Regio III by the drove road; but as time went on and transhumance declined in this area (for reasons discussed in Chap. IX.14.iv.d) the Lucanian link became less important to the imperial estate on the left bank of the river. The division between the two regions was reinforced by the reforms of Diocletian and Constantine at the end of the 3rd century and beginning of the 4th, which effectively converted the regions into provinces (with slightly altered borders) and imposed different requirements for the payments of taxes in kind. Our Survey area now formed part of two more distinct economic zones. In the W part, on the Lucanian side of the river the agricultural economy must have been geared to producing pigs required for the distribution of pork in the city of Rome; the E part, in Apulia, was probably directed to the production of grain. The pattern of settlement revealed by our field survey is compatible with this interpretation.

After the end of the Roman empire the economic forces tended in the opposite direction. The Late Roman Painted Ware which was widely distributed in inland South Italy, shows that E Lucania and central Apulia were linked by internal markets in a trading network

[25] Horden & Purcell 2000, esp. 59-65 on Southern Etruria.

which barely reached as far as Naples. New sub-regional types of cooking pots emerged which reflect the incipient de-centralisation of the material culture, no longer dominated by the production centres of Latium and Campania. Such centrifugal tendencies increased after the Lombard invasion which finally broke down the economic and administrative unity of Italy and loosened the interconnection between the regions and the city of Rome. These factors confirm the view that Italy had split into micro-regions.[26]

In the confused period of the Early Middle Ages, there were numerous changes in the administrative regions as Lombards and Byzantines struggled for control of South Italy. These are outlined in Chapters XI and XII. Generally, however, the concept of the Bradano/ Basentello corridor as a significant border between economic and cultural regions seems to have survived, perhaps more as a symbolic than a real frontier. In South Italy it was not until the 13th century that administrative units were established by Frederick II in areas roughly similar to those now in use. These comprised one in the "toe" (*Calabria* – the name was transferred from the Salentine peninsula under the Byzantines), a second, broadly speaking, in the area of the former Lucania which he called *Basilicata*, and a third, the *Capitanata*, which roughly corresponded to the area of modern Puglia. He soon afterwards divided the Capitanata into three by creating new units, the *Terra d'Otranto* and the *Terra di Bari*, the last including Gravina and the E part of our Survey Area. North of the *Terra di Bari*, the Tavoliere and the coastlands N of it continued to be called the Capitanata. Its centre of administration is uncertain, possibly Lucera.

Our study therefore adds to the kaleidoscope of micro-regions and their changing relationship to larger regions which has been a recurring theme in recent studies of the Italian countryside, but by enlarging the interpretative framework we have aimed to avoid the pitfall of seeing the micro-region of our Survey Area as a unique phenomenon only loosely related to developments elsewhere.[27] Moreover, by combining the archaeology of Central Apulia with that of Eastern Basilicata this study breaks with the long established tradition of regional scholarship that generally prevails in Italy. The Italian regions are still powerful entities in Italian culture today, not least in archaeology. The archaeological superintendencies are admirable institutions, but being regionally organized, they determine the conceptual parameters of much scholarly work. As a result, there are numerous histories and archaeologies of Puglia and of Basilicata in which vision is restricted to analysis of significant factors within each region without considering their implications beyond the regional boundaries. We have ourselves contributed to such studies.[28] This work, however, aims to look across the regional boundary in the hope of establishing how the cultural development in the one region (or sub region) affected that in the other.

4. Changes in land-use

There are two fundamental factors which have always contributed to regional and sub-regional differentiation, namely the agricultural capacity of the land and the availability of markets for its produce. In the central part of the Fossa Bradanica much of the land is fertile, especially on the eroded sedimentary plateaus like that at Vagnari. The soil and climatic conditions are well suited for cereal cultivation, especially of durum wheat; but much of the land in and around our Survey Area is well-watered and can also be used for growing vegetables and vines. "Granum dat et vina / clara urbs Gravina" is a ditty cherished by the city, traditionally attributed to Frederick II. But the optimum use of the arid lands on the high plateau of the Murge is as rough grazing for sheep, which could be driven down from the plateau to graze among the stubble after harvest time, or, under a different economic system, could be driven to summer pastures in the high Apennines. The land therefore offered various possibilities for balancing the traditional subsistence economy which must have prevailed in the sub-region throughout the prehistoric period and well into the 1st millennium BC, and surfaced again in Late Antiquity and the Early Middle Ages. But the changed conditions of the Hellenistic world offered different possibilities. Cheap slave labour was available; war and poverty had reduced the local population, and the new class of rich landowners could extract more economic value from the land by converting arable to pasture and raising transhumant sheep to produce wool, which could be woven in commercial workshops into fabrics that could be marketed in Taranto or beyond. Later, for various reasons connected with the complexity of managing the vastly increased number and size of imperial estates, the policy was adopted of subdividing the land and leasing parcels on long contracts to tenants whose first aims were to provide for their own subsistence, and only secondarily to produce a marketable cash crop. With the introduction of taxation in kind, they must have been required to produce cereals to meet the levy of grain. When the system of taxation broke down after the Lombard conquest, the wheel had turned full circle, and the peasant population reverted to subsistence agriculture.

[26] Wickham 2005, 481.

[27] See the remarks by Attema, Burgers and van Leusen in their introduction to their comparative study of the Pontine Plain in Lazio, the territory of Sybaris in Calabria, and the Salento isthmus in Puglia, emphasising the need to set regional studies into a broader interpretative context (2010, esp. 7-8).

[28] Small 1999.

5. Climate and the environment

The changes in the pattern of land use were not, of course, brought about just by economic factors. Climate change must also be taken into account, although the evidence for it is often controversial. Much of it depends on proxy factors which may have alternative explanations: it may be agreed, for instance, that the alternating sequences of incision and infill of alluvial deposits in the mountain valleys correspond to periods of greater and lesser erosion,[29] but whether the erosion was caused by climatic factors, including long spells of heavier rainfall, or by human activity (typically involving the clearing of forest for grazing or agriculture) cannot be proved without additional evidence, especially for agricultural practices. Analyses of faunal and vegetable remains may give a picture of the environmental conditions of a site in the period from which they come, but it requires a further step to argue from these to broader climatic conditions of the time. As the volume of evidence increases, so the argument becomes more reliable. Much progress has been made in recent years, both in collecting and analysing relevant data and in combining them in works of synthesis,[30] but the coverage is still very uneven both by period and by region, and there is still little agreement on some of the theories that have been proposed.

In the diachronic chapters we have summarized some of these arguments where they seem most relevant, but we have not tried to impose a comprehensive theory of the effects of climate on settlement and land use, for which we do not have the evidence – or the competence. There are, however, some changes which can hardly be explained without recourse to climate theory, for example, the rapid decline of Neolithic settlement in the 5th millennium BC.

6. Plague and malaria

Another factor which may have affected the pattern of settlement distribution is the occurrence of disease. Epidemics were no doubt a normal feature of life in Ancient Italy, though they were probably more frequent in towns than in the countryside. Most are unlikely to have had a long-term demographic effect. The sources, however, record two major pandemics which might have a bearing on population levels and so on settlement patterns more broadly in the ancient world. One, under Marcus Aurelius, originated in Babylonia in AD 165 and swept across the Roman Empire at least as far as Gaul, reaching Rome in AD 166.[31] In Italy, according to Orosius, it led to widespread abandonment of farms, fields and towns.[32] The second, which broke out under Justinian, has been shown by palaeobiological analysis to have been bubonic plague, *Yersinia pestis*.[33] It is said to have appeared first in Egypt, and to have spread by way of Palestine to Constantinople which it reached in AD 541. From there it passed westwards to Italy, where, according to Paul the Deacon, it ravaged Liguria.[34]

Both plagues affected Italy to some degree, and both may have had a lasting impact on population numbers in the peninsula as a whole; but since there are no reliable statistical data there is much argument about their prevalence and long-term economic consequences. No doubt some parts of Italy were affected more seriously than others, especially ports and areas that were frequented by long-distance traders. Our Survey Area, being relatively remote, may have escaped the worst effects of both plagues. At any rate there is no sign of any reduction in settlement numbers that might have been brought about by the plague in the time of Marcus – on the contrary, the number of small rural buildings increased in the course of the 2nd and 3rd centuries. The Justinianic plague may have had more serious effects, but it is impossible in the present state of the evidence to correlate the plague with the settlement data since the main dating tool, Late Roman Painted Ware, can only be dated broadly to the Gothic and Early Lombard period; but the fact that the number of sites occupied within the time range of the ware shows no decline must at least cast some doubt on the extent to which it affected communities in this part of the Fossa Bradanica. We cannot rule out the possibility that the decline in settlement numbers seen in the early Lombard period may have been brought about at least in part by the plague, but there are other causes of demographic decline at that time including war and famine (see Chap. XI.5.i).

These are unlikely to have been the only plagues to affect South Italy. There must have been other local outbreaks of disease not recorded by the meagre literary sources, but which may leave archaeological traces. Among these, perhaps, are five communal pit graves containing the remains of at least 48 individuals found in the remains of the Roman bath suite near the

[29] Vita-Finzi 1969; Boenzi *et al.* 1989, 2008 (Basilicata).

[30] See esp. Costantini & Stancanelli 1994 (Neolithic); Fiorentino 1998 (Bronze Age); Fiorentino *et al.* 2013 (Neolithic); Lentjes 2016 (Iron Age and Hellenistic). There is no comparable synthesis yet for the Roman period in South Italy.

[31] See esp. Duncan-Jones 1996. The epigraphic evidence from Rome used in the article is disputed by Bruun (2003).

[32] Orosius (VII.15.5-6) sees the plague as following Marcus Aurelius' persecution of the Christians: *secuta est lues plurimis infusa prouinciis, totamque Italiam pestilentia tanta uastauit, ut passim uillae, agri atque oppida sine cultore atque habitatore deserta in ruinas siluasque concesserint*.

[33] McCormick 2015, 343; 2016, 1004.

[34] *Historia Langobardorum* II.4. There is much controversy on the effects of the plague, For a recent article asserting its long-term consequences, see Meier 2016, with bibliography on p. 268, fn 5. For a contary view, Eisenberg & Mordechai 2019.

complex of the SS. Trinità at Venosa. They are datable before the 8th century AD.[35]

Malaria must have been a more serious problem in the longer term, as recent and ongoing studies are showing. It used to be argued that the Greek cities on the Ionian and Tyrrhenian coasts could not have succeeded as they did between the late 8th and early 3rd centuries BC if malaria had already been endemic in those parts; and some scholars held a similar view of the Roman period. Kahrstedt, writing in 1960 about the economy of Magna Graecia in the imperial period, stopped short of denying that malaria was endemic in South Italy, but he argued that it can have had little effect – as is shown by the string of villas along the coastal strip of Calabria which was a hotbed of malaria in recent times.[36] Even the desolation of Metapontum and Heraclea could, in his view, have had nothing to do with malaria, since the few villas that there were in the vicinity of Metaponto lay mainly in the coastal fringe; and Heraclea could not have died of malaria if Lagaria was flourishing a couple of kilometres down the coast.

More recently, however, the study of malaria in ancient Italy by G. Sallares gives a very different picture of the prevalence of the disease, based partly on palaeopathological evidence that was unknown when Kahrstedt was writing.[37] Malaria, he argues, was endemic in low-lying coastal plains already in the Neolithic period and remained so until it was eradicated at the end of World War II; but its prevalence varied from one period to the next. New strains of the *Plasmodium falciparum* parasite may have developed from time to time, but the main factor affecting the spread of the disease was the availability of suitable breeding conditions for the *Anopheles labranchiae* mosquito (the main vector species in Italy) – especially a warm climate and swampy water. The progressive alluviation in the coastal plains and the consequent rise in the water table after the 6th century BC (Chap. VII.2.ii) created just the kind of swampy conditions that the mosquitos needed.

Mosquitos do not normally travel more than 2-5km,[38] so sites out of range of their breeding waters may escape the worst ravages of the disease. This must have been the case with the rare Metapontine villas which were situated on terraces above the coastal plain, as it was also with Roman Salapia which was moved, with authorization of the senate, from the site on the edge of the lagoon where Salapia had existed since Daunian times to a new site further inland, 4 Roman miles from its predecessor.[39] The move must have been made necessary by the gradual silting up of the lagoon which created a swampy environment ideal for the spread of malaria.

It is probable that malaria impacted especially severely on communities living in the coastal plains. The high incidence of porotic hyperostosis found in the human skeletons in the Pantanello necropolis in the Chora of Metaponto is probably an indication of malarial infection,[40] but absolute proof requires DNA analysis of the parasite remains. The discovery by Tracy Prowse and her team of Canadian palaeo-osteologists of mtDNA fragments of *Plasmodium falciparum* in the skeletons of two individuals from Velia and Vagnari, now provides absolute proof of the existence of the disease in South Italy in the 1st–2nd centuries AD,[41] and it shows that in the Roman imperial period malaria had penetrated well into the interior.

If, as seems likely, malaria was endemic at Vagnari in the Mid-Imperial period (and perhaps long before then), then it is worth considering what impact the disease may have had on the pattern of settlement in and around our Survey Area. There can have been no lack of suitable breeding areas for the mosquitos. It is likely that in summer-time the Basentello river, the Pentecchia and other *torrenti* were reduced to slow-flowing streams with marshy edges – as they still are today. Most Roman sites were situated well above the valley bottoms. The *vicus* at Vagnari was founded on a low natural terrace 2.5km from the Basentello, and the Roman villas on Sites 229 and 372 were built on higher ground. The sites located closest to the Basentello in the Hellenistic period, Sites 302, 303 and the more doubtful site 318, had disappeared by the imperial period, leaving only Site 124 within 1km of the river. It stood 50m above the flood plain on gravelly terrain. The arable land surrounding it is good, and the owner may have thought it was worth maintaining a small villa here to exploit it, in spite of the health risk to his work-force. He did not, after all, know of the connection between malaria and mosquitos, and may have thought that his site was sufficiently high above the river to avoid the *bad air* associated with the disease. Another site to be considered here is Site 145-9 situated 400–500m from the Bradano river at the extreme S end of our Survey Area. It was conspicuous among our survey sites for the number and size of the *dolium* rims and

[35] Marchi & Salvatore 1997, 337; McCormick 2016, 1024 no. 53.
[36] Kahrstedt 1960, 124.
[37] Sallares 2002.
[38] European Centre for Disease Prevention and Control "Anopheles labranchiae – Factsheet for experts." https://www.ecdc.europa.eu/en/disease-vectors/facts/mosquito-factsheets/anopheles-labranchiae.
[39] Vitruvius I.4.12. The date is uncertain but was presumably after the municipalization of Italy in the mid–1st century BC, and ca. 15 BC when Vitruvius died.
[40] M. Hennenberg & R. J. Hennenberg in *Chora Metaponto I,* vol. 2, 503-559. A similar argument has been used by D. Soren (1998, 519-523) to explain the traces of porotic hyperostosis in the skulls and long-bones of 6 infant skeletons buried at Lugnano in the Tiber valley in the Late Antique period.
[41] Marciniak, Prowse *et al.* 2016.

the variety of amphorae found on it, which suggest that the settlement may have been an entrepot where goods going down the valley could be loaded on carts or barges, and those coming up the river system could be unloaded and redistributed. Such activities must always have continued in areas where the prevalence of the disease was moderate and the local population had developed a degree of immunity.[42]

7. Periodization

There is much argument both about the periodisation of South Italian archaeology and the dates to be assigned to the periods used. This is not the place to pursue that discussion. Suffice it to say that for the prehistoric periods we have followed recent tabulations of cultural phases and radiocarbon dates, which generally suit our survey data well. In the transition from Bronze to Iron Age the problem becomes more complicated, and a conflict opens up between radiocarbon dates and the traditional chronology derived from literary sources, and especially from the dates given by Thucydides and other ancient historians for the foundation of Greek colonies in Sicily and Italy. Here too we have preferred to follow the new "high" chronology founded on the radiocarbon readings with its implications for the structure and date of the earliest Greek settlements in the West. After the end of the 6th century BC when the literary evidence starts to become more abundant and there are fewer radiocarbon dates available, we have attempted to strike a balance between dates linked to pottery typologies and significant historical turning points, so as to fit information about the development of settlements and material culture into its historical context. This issue is discussed separately at the beginning of each chapter in the diachronic section. We have deliberately avoided the use of the terms "archaic" and "classical" used by many scholars who have written on the indigenous cultures of Apulia and Lucania, since these concepts are derived from Greek culture and come associated with problematic ideas of Hellenization. Instead, we have used the neutral term "Iron Age" to refer to the whole period of the pre-Roman indigenous cultures in Apulia and Basilicata from their beginnings ca. 1,000 BC down to the beginning of Roman conquest in the late 4th century BC, and have subdivided this long period into three phases: Early, Middle and Late Iron Age, following the system Alastair Small used thirty years ago to classify the material from Botromagno in *Gravina* I and II. We have, however, given the term Hellenistic to the subsequent period when the particular cultural characteristics of the indigenous peoples had practically vanished, subsumed in the vast cultural complex of the Hellenistic world.

For the Roman period we have followed the conventional divisions into Early, Middle and Late Imperial, and have identified the ceramic types most indicative of those phases in our Survey Area. After the end of the Roman Empire in the West, however, we have deviated from established period definitions so in Chapter XI we have used the term Late Antique to refer to the period which immediately followed the end of the Roman Empire in the W and ended with the Lombard invasion of ca 570 AD. We have however combined it with the post-Justinianic Greek/ Byzantine period in South Italy which comprised also the early phases of Lombard Settlement since LRPW, the principal archaeological dating tool, continued in use into the second half of the 7th century. We have used the term Early Medieval I rather than Early Lombard, to refer to this later period since the initial boundary between Lombard dominated territory and the part of South Italy which remained in what is now called Byzantine hands was precisely in our area and the Byzantine presence was thereforefore as important as that of the Lombards.

Our period Early Medieval II begins in the 660s with the Lombard exapansion into all of South Italy except the "toe" (modern Calabria) and the "heel" (the Salento peninsula). By that time LRPW ceased to be used and our archaeological dating evidence is largely restricted to combed tiles. For this time and for the subsequent Norman and Angevin periods we have very few data from our Survey Area, but the site of San Felice (Site 223) lasted into the 14th century and perhaps the 15th, so we discuss them together as the Medieval period in a final interpretative chapter. The Middle Ages also present some problems of nomenclature. The period from 660 to about 1000 can be regarded as Early Medieval II. The period from about the year 1000 to about 1300 is conventionally referred to as the High or, less often, Central Middle Ages. Since the Italian term "alto medievale" denotes the Early Middle Ages, we have avoided the use of the word "High", which could be confusing, and used Central when necessary.

The structure of periods and phases used, with their approximate dates, is as follows.

Palaeolithic (Pal). (No Lower Palaeolithic material was found)
- Middle Palaeolithic (ca. 300,000–50,000/40,000 BC)
- Upper Palaeolithic (ca. 50,000/40,000–11,000 BC)
- Epipalaeolithic/ Mesolithic (ca. 11,000–6,000 BC)

Neolithic (Neo) subdivided where appropriate into:
- Early Neolithic (ca. 6200–5600 BC)
- Middle Neolithic (ca. 5600–4800 BC)
- Late Neolithic (ca. 4800–4300 BC)
- Final Neolithic (ca. 4300–4000 BC)

Eneolithic (Eneo) (ca. 3650–2350 BC)
Bronze Age (BA) subdivided where appropriate into:

[42] For the acquisition of a degree of immunity to malaria by local populations constantly exposed to it, see Sallares 2002, 36-38, 82-83, 223-224.

Early Bronze Age (EBA) (ca. 2150–1700/1600 BC)
Middle Bronze Age (MBA) (ca. 1700/1600–1350/1300 BC)
Late Bronze Age (LBA) (ca. 1350/1300–1200 BC)
Final Bronze Age (FBA) (ca. 1200–1000 BC)

Iron Age (IA) subdivided into:
Early Iron Age I (EIA I) (ca. 1000–750 BC; Period Gravina I)
Early Iron Age II (EIA II) (ca. 750–675 BC; Period Gravina II)
Middle Iron Age (MIA) (ca. 675–500 BC; Periods Gravina III and IV)
Late Iron Age (LIA) (ca. 500–300 BC; Periods Gravina V and VIa)

Hellenistic (Hel) subdivided into:
Early Hellenistic (E.Hel) (ca. 300–200 BC; Period Gravina VIb)
Late Hellenistic (L.Hel) (ca. 200–90/70 BC, Periods Gravina VII and VIIIa)

Roman Republican (Rom RP) (ca. 90/70–30 BC; Period Gravina VIIIb)

Roman Imperial (Rom Imp) subdivided into
Early Imp (E.Imp) (30 BC–ca. 100 AD)
Middle Imp (M.Imp) (ca. 100–280 AD)
Later Imp (L.Imp) (ca. 280–470 AD)

Late Antique (L.Ant) (ca. 470–570 AD)

Early Medieval I (E.Med I) ca. 570–660 AD

Early Medieval II (E.Med II) ca. 660–I000

Medieval (Med) (includes Central Medieval ca. 1000–1250/1300 AD and Late Medieval ca.1250/1300– ca.1450 AD)

II. THE BASENTELLO VALLEY FIELD SURVEY 1996–2008: AN OVERVIEW

The decision to undertake the field survey in the Basentello valley was timely. The practice of deep ploughing was slow to arrive in South Italy but has been widespread since the early 1970s and is gradually destroying the surface archaeology of this area. This is a problem that has been noted in many parts of Italy.[1] In the Basentello valley some sites have been totally ploughed out and others are in the process of disappearing. The pottery is being continually battered and fragmented. A comparison between the material found by Sterling Vinson in the 1970s and ours makes the problem clear: ours is markedly more fragmented so that many fragments are too small to classify by form. The consequences of deep-ploughing can be seen at San Felice, our most intensively studied site. The pottery there is abundant, but highly fragmented. More seriously, large parts of the plateau have been ploughed to bedrock, leaving the archaeology intact only in pits and hollows where the mantle of soil is deeper, as at the W end of the plateau where the recent excavations carried out by the Superintendency prior to the erection of two wind-turbines have produced important results (see List of Sites, Site 223). In other parts of the Survey Area, some relatively recent constructions marked on earlier maps have been totally destroyed leaving only fragments of pottery and tile.[2] Nevertheless, what remains on the surface is still good evidence for settlement in the area, and for the characteristics and possible function of the sites.

Other major man-made changes in the 20th and 21st centuries have drastically altered the landscape. The reforms undertaken under Mussolini in the Battle for Grain and Battle for Land involved resettling small-farmers on the land in small-holdings and the construction of new villages in various parts of Italy. Some settlement was carried out under this programme inside our Survey Area at Santa Teresa just W of Gravina and in the vicinity of the Diga del Basentello (see Map Introduction-1) where the empty shells of some of the houses erected under the scheme can be seen rising above the vast ploughed fields where the small-holdings had been laid out (Photo Overview-1). Other re-settlement was carried out in a more comprehensive agrarian reform undertaken in the 1950s which put an end to the age-old practice of transhumance. The drove roads (*tratturi*) were abolished, and large areas of arable land were confiscated from local landlords and reallocated to peasant proprietors in lots averaging 6-8 hectares, each with a small house. A typical cluster of them was created on the plateau of San Felice close to the IA site. The initiative had some success further N but by and large it failed in Puglia and Basilicata. The holdings were too small, the dwellings too isolated and the infrastructure almost non-existent. Most of the houses on San Felice are now abandoned though a few have been repaired to be used as weekend houses.

Another major development that impacted on our Survey Area was the construction in 1974 of the dam (the *Diga del Basentello*) across the Basentello river near its confluence with the Roviniero, 3.5km N-W of Vagnari. It created a reservoir of 41 million cubic metres of water which was used to irrigate a vast area of South Italy making it possible to grow vines, tomatoes and other water-dependent crops – and which flooded an area of 267km^2 where Vinson had identified several archaeological sites a few years previously (see V7, V8, V98). An inevitable consequence of the construction of the dam is that the flow of the river below it is reduced to a mere trickle of water which feeds the dense growth of rushes which are the main indication now of the course of the former river.

A more recent development which is having a dramatic impact on the landscape is the erection of wind-turbines. A series of them straddles the plateau of San Felice and is a conspicuous feature of the landscape when seen from Vagnari. Two of the turbines were built inside the IA site after we had surveyed it.

1. Methods

We aimed to cover the entire area on foot, walking in teams about 15m apart. This was labour-intensive but we rejected the alternative of working in sample areas since we were interested in the changing details in the pattern of settlement rather than in the statistical analysis of trends extrapolated from samples, however defined.

The size of the teams varied. The optimum was five or six people walking in line. Occasionally more were used but the lines became difficult to control and communication between field walkers rather unreliable. All ceramic

[1] E.g. in the Roman Campagna: J. Patterson 2006, 10; in the Biferno valley Molise: Barker 1995, 6-7, 46; in the Metapontine plain: Carter in *Chora Metaponto III*, 1, xix; in the Salentine peninsula: Burgers 1998, 19.

[2] A case in point is the destroyed Jazzo Ribelli marked on the IGM 1:25,000 scale map Fo. 188 II SE of 1956 at 613300/4511700 where we found a little tile, brick and glazed ceramic but no other sign of its presence.



Photo Overview-1. Abandoned reform houses of the fascist period on the alluvial fill beside the Basentello.



Photo Overview-2. The reservoir created by the Basentello dam, seen from near Vagnari.

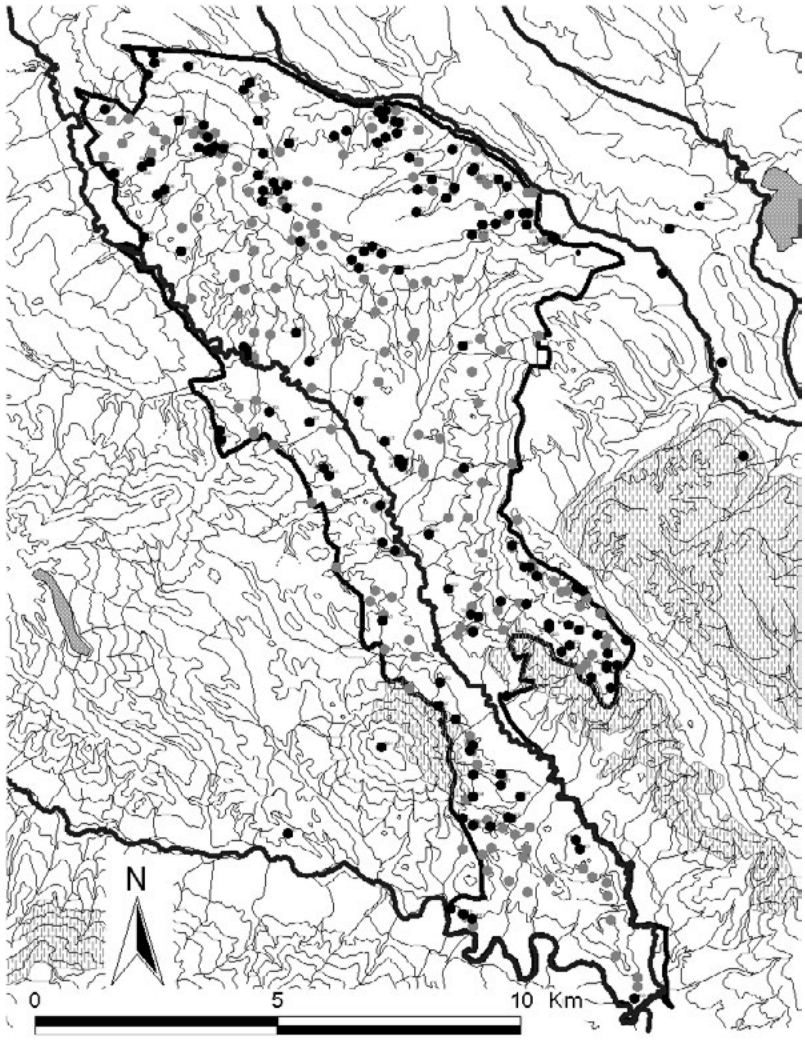


Photo Overview-3 Wind-turbines on San Felice seen in 2018 from the site of Vagnari.



Photo Overview-4. Sherding above the left bank of the Basentello.

artifacts and all lithics were picked up and their approximate position noted. When we began the survey in 1996, GPS was already available but the results were being distorted by the U.S. military so that readings were accurate to only about 200m, barely adequate for our purposes. Site locations were checked on the map with compass and ruler, but we were content with approximate locations for casual field scatter. All topographical information was subsequently entered in an ArcView GIS programme using UTM coordinates. Latterly the GPS readings became much more reliable.



Map Overview-1. All sites (black dots) and findspots (grey dots) in the Survey Area. Wooded areas lightly shaded.

i. Findspots and sites

If five or more artifacts were noted within about 20m, we gathered together to check the area more intensively and locate the finds more precisely. Every such cluster of sherds was then classified as a 'findspot' or a 'site'. By 'sites' we mean places where regular human use is indicated. Most are habitation sites, whether occupied permanently or seasonally; but some are places of industrial activity such as pottery or tile kilns, and a few are likely to have been burial places. All are evidence of human settlement either on the spot or somewhere in the vicinity. By "findspot" we mean places where a small group of artifacts seem to indicate casual or episodic frequentation. The presence or absence of such findspots may be valuable evidence for land use, as discussed below (re Maps Overview-4.1–5). Most of our lithic finds were also recorded as from findspots: places where hunters may have stopped for a while to knap a stone tool but which they did not regularly frequent. The approximate location of isolated sherds or pieces of tile was noted and used, together with the material from the findspots, as evidence of some sort of activity in the countryside. The classification of scatter inevitably involves some judgment calls.

ii. Gridding

On the richer sites, if the conditions seemed to warrant it, we laid out a grid of 10×10m squares over the area where the finds were concentrated and undertook a much more intensive collection inside each square. We found that this technique of gridding was an extremely useful procedure, facilitating both the surface collection and the analysis of a site. It was first used in Southern Italy by a Dutch team from the Free University of Amsterdam under Gert-Jan Burgers at Muro Maurizio near Brindisi in 1991,[3] and employed by them effectively on other sites in the Salentine peninsula; but they used a grid based on 25×25m squares which we found too large to allow the degree of in-site interpretation which we hoped to achieve. It was also unwieldy to lay out on much of the terrain where we were working. We experimented once (on Site 120) with squares of 2×2m, but laying out the squares took considerably longer and the analysis of the data became excessively complicated. We therefore settled, early in the first season, on using a grid of 10×10m squares. It was easily laid out, and two students working together in a square could normally finish the surface collection in an hour. On a few large sites we tried sampling by leaving intervals between grid squares which gained us much needed time, but the results were so unsatisfactory that in every case but

[3] Burgers 1995, 408-413; 1998, 48.

one – that of Site 401 (Crocevelina) which was too large to deal with in the time available – we later completed the survey.

The purpose of gridding was partly to enable us to determine the rough area of concentration of a given site, partly to establish the distribution of artifacts within a site, and partly to enhance the chances of recovering artifacts by making it easier to scrutinize the surface effectively. Inevitably material on the surface moves to some extent through ploughing or erosion but on a reasonably flat surface – and most sites of any size in our area tend to be on roughly flat terrain or on platforms on slopes – the movement is not great. The site of Vagnari, where both gridding and excavation have been carried out, shows a strong correlation between the surface finds and the excavated remains. On San Felice, the largest of our gridded sites, although the soil had been ploughed to bedrock so that excavation was pointless except where there were pits or natural depressions, the pattern of distribution suggests that the artifacts were still roughly in place, and on this basis we have been able to reconstruct much of the layout and history of this important site.

Some aerial photographs and satellite images on Google Earth were used and were occasionally informative, as at Site 401 (Crocevelina), but most were high altitude photographs in direct light and were less helpful than we had hoped in either identifying or clarifying sites.

iii. Processing of finds

Once a site had been gridded, all tile fragments were collected, classified (as *tegula*, flat tile, *imbrices*, and occasionally other shapes such as ridge tiles, hypocaust vents, floor tiles or bricks), weighed in the field and then, except in special cases, discarded. This was time-consuming, but it produced important results. The size and distribution of the tile fall, and the proportion of one tile type to another, can give considerable information about the buildings that had existed on the site. Low-curved Laconian tiles were much used in the pre-Roman period, but they were generally listed together with the *imbrices* since it is frequently impossible to recognize their shallower curve in smaller fragments. Flat pieces between 2.0 and 2.5cm thick are likely to come from *tegulae*: we listed them separately but have included them in the *tegula* totals for each site. Thicker pieces (usually 4–6cm thick) were recorded as bricks, although on Roman sites they are most likely to be fragments of thick tiles (*bipedales*) used in hypocaust floors.

Pottery was returned to our headquarters to be washed (this was essential as many pieces were too encrusted for decoration to be visible), classified by ware and primary shape (rims, bases, handles and wall sherds), counted and recorded on paper forms. The information was then transferred to an Excel spread sheet after the end of each season. Diagnostic and other interesting pieces were then given a specific P- (Piece) number and the information on them was filled in on forms, from which it was subsequently transferred to an Access database. Given the large number of contributors and changing computer programmes, the paper record, which should have been superfluous, has proved an invaluable safeguard. The database has been continually updated as the study progressed, and forms the basis of the entries in the Catalogue published in this book.

Of 4042 P-numbered finds, a selection of the most informative, totalling 2294 is published in the Catalogue. They provide the most useful evidence for the date range of a site, but the numbers and distribution over the site of the general classes of ceramics are just as important for determining its size and nature. The special pieces make up a very uneven proportion of the total numbers of sherds of each category on the various sites. For example, on the Late Antique site 134 they constituted only a little over 3% of the sherds found, whereas on the other major Late Antique site in our area, Site 408, they made up 11% of the total. The difference can be explained largely by the degree of ploughing: on Site 134 deep ploughing had been carried out for many years before we came to it and the sherds were therefore more highly fragmented (and so less diagnostic) than on Site 408 which had only recently been ploughed for the first time.

iv. Field-walking

The area of our survey lends itself well to field-walking. We aimed to identify all sites of human activity by covering the whole area of the survey in considerable detail. But there were inevitably some omissions. We may have missed some small sites in areas of restricted visibility, especially if the ancient inhabitants had left few durable remains. Areas where there were farm buildings generally had to be avoided, including the derelict houses of the *Riforma Agraria,* and we may, as a result, have missed some sites. Site 213x at the Recupa di Scardinale is a case in point. It was found during construction of a wind-turbine and excavated by the Superintendency. We had missed it in our survey of the area because it lay in a modern farmyard. Otherwise there were very few areas within the boundary where surface collection was impossible, although we did not attempt to survey the thick scrub which grows in some of the seasonal watercourses or highly wooded areas. Occasionally, if a field was under cultivation, we had to avoid it, but since most of our work was undertaken in high summer after the harvest, this was not normally a problem. We were able to survey inside most vineyards and olive groves. Inevitably variable field conditions affected the visibility of material on the ground. We gave a visibility rating of 1 (poor) to 5 (excellent) to



Photo Overview-5. Clearing the stubble on Site 223.



Photo Overview-6. Sherding on burnt fields.

the areas surveyed. This, while subjective, was arrived at by consensus and enabled us to summarise the conditions for the survey quickly. The best were after the stubble had been burnt, the worst when the fields had been deep ploughed but not yet harrowed, which made walking difficult but also tended to create holes into which pieces of pottery could fall. The majority of the fields contained stubble (rated 4 or occasionally 3). This was not, as we had thought it might be, a major obstruction, though it was sometimes necessary to clear loose stubble by raking, particularly on the site of San Felice where a large area had to be gridded. The results from the site show that the rate of artifact recovery was not significantly different between burnt areas and areas where the stubble had to be cleared manually.

Re-surveying the same area was problematic. We proved this both at Vagnari where one or two squares were surveyed twice in consecutive years and found to contain notably less material in the second year, and at San Felice where the squares sampled in 1997 were re-surveyed in 2007-8, and again yielded markedly less material than previously. Evidently the first surface collection had seriously depleted the evidence. Moreover, both areas had been ploughed between the surveys, San Felice repeatedly. There is another example of the loss of evidence between surveys at Site 715 which corresponds to Vinson's site V91. A precise comparison is not possible, since Vinson did not quantify his finds, but the material which he found in 1970 was largely Bronze Age with a little from the Late Iron Age and later, and he recorded that it was fairly abundant. We found disappointingly little: some impasto pottery, but only two pieces securely datable to the Bronze Age and no Late Iron Age or Hellenistic sherds, though on a part of the site we found some Roman material. The theory that the plough would bring up new material each year did not seem to be the case, while the converse, that over time deep ploughing is likely to make a site disappear, seems all too probable.[4]

[4] Cf. J. Patterson's remarks (2006, 15) on experiments in the Liri and Biferno valley surveys regarding whether survey is a repeatable exercise. Some sites were not rediscovered when the area was re-surveyed, but some new ones were found. In the Biferno valley, only 75% of sites found in 1978 corresponded to ones found in 1974. But it was mostly smaller sites that were subject to such variability, and general trends tended to be confirmed.

Normally we did not make a full collection of post-medieval material, although its existence was noted. It tended to occur in the vicinity of ruined *masserie* (large farms, generally intended for cereal cultivation), *jazzi* (sheep farms) and field huts, and was sometimes the only clue on the ground to their existence, though they could usually be found on old maps. Time constraints, however, forced us to set aside the study of recent material which is therefore not usually discussed in this volume. It could not be entirely ignored, however, since in some cases its presence tended to complicate the analysis of a site.

v. Distorting factors and limitations of the Survey

Archaeological surface survey is not an exact science, although it may make use of scientific techniques. In analysing surface collections archaeologists have to deal with incomplete data haphazardly preserved by unknown actors and factors, and to interpret them as best they can, using their own informed judgment, just as historians of the pre-modern period have to reconstruct historical processes using incomplete evidence subject to a variety of distorting factors. We can, however, try to reduce distortions in the collection and interpretation of the data, and in this study we have aimed to do so by collecting and recording all visible artifacts, including tile fragments. If there is a bias in the collection, it results from fatigue or faltering eyesight, not from any preconceived decision of what is or is not significant.

In analysing the data, we have aimed to classify and publish all potentially diagnostic pieces using the comparative material known to us. But the pottery has generally been fragmented by decades of ploughing,

so that we have usually had to deal with small sherds some of which could not be identified with certainty. Some pieces could be better dated if we had better comparanda. Nevertheless, nearly all our sites produced at least a little diagnostic material which we have used to date the occupancy of each place within the main cultural/ historical periods listed at the end of the General Introduction to this book.

This process also involves judgment-calls. On some sites only a few sherds can be used as dating evidence and if these belong to different periods it may be unclear whether we are dealing with occupation or frequentation at any given time. Another problem arises in the interpretation of the data when a site has yielded a considerable number of sherds of one period and one or two of another. In some cases we have considered the anomalous sherd(s) to be casual scatter from another site, especially if there is one of that period in the vicinity.

This problem arises frequently with amphorae which might stray in various ways from the settlements where their original contents were consumed. They might be reused for a variety of secondary purposes, for example as water carriers, or building materials. Some may have been used as containers for infant burials especially in the Hellenistic period when this custom was widespread. Others may have been broken and dumped on the fields along with other household waste. Amphora sherds found on sites where they clearly belonged to a different period from the majority of the finds, as on Sites 124 and 126, are therefore treated here as sporadic scatter, along with pieces found in isolated locations (see Appendix Map-1). But although these amphora sherds cannot always be taken as evidence of site occupancy, they nevertheless give some indication of the extent of the land attached to the nearest site from which they could have come; so we have suggested that in the Late Empire the farmland of Site 145-9 stretched across the peninsula between the Bradano and Basentello rivers and probably southward to the confluence. Some amphorae found on the plateau of San Felice (Site 223) which date after the end of the main phase of occupation on the site may have been deposited in tombs connected with Site 229 on the shoulder of the hill where occupation continued well into the Roman period.

There are, however, two exceptional cases where relatively large numbers of late amphorae suggest a different interpretation of the date of a site from that indicated by the rest of the material. On Site 147-9 the large number of 5th–7th century amphora fragments indicates that the site lasted into the Late Antique and Early Medieval periods. Similarly, on Site 810, four 7th century amphorae, two centuries later than most of the pottery, are likely to imply that there was an Early Medieval phase of frequentation of the site.

Two medieval amphorae (of the 11th century AD or later) found on Sites 124 and 372 and other possible ones on Sites 147-9 and 401 must indicate some frequentation of the countryside at a time when there was little settlement in the Survey Area except for the *casale* at San Felice.

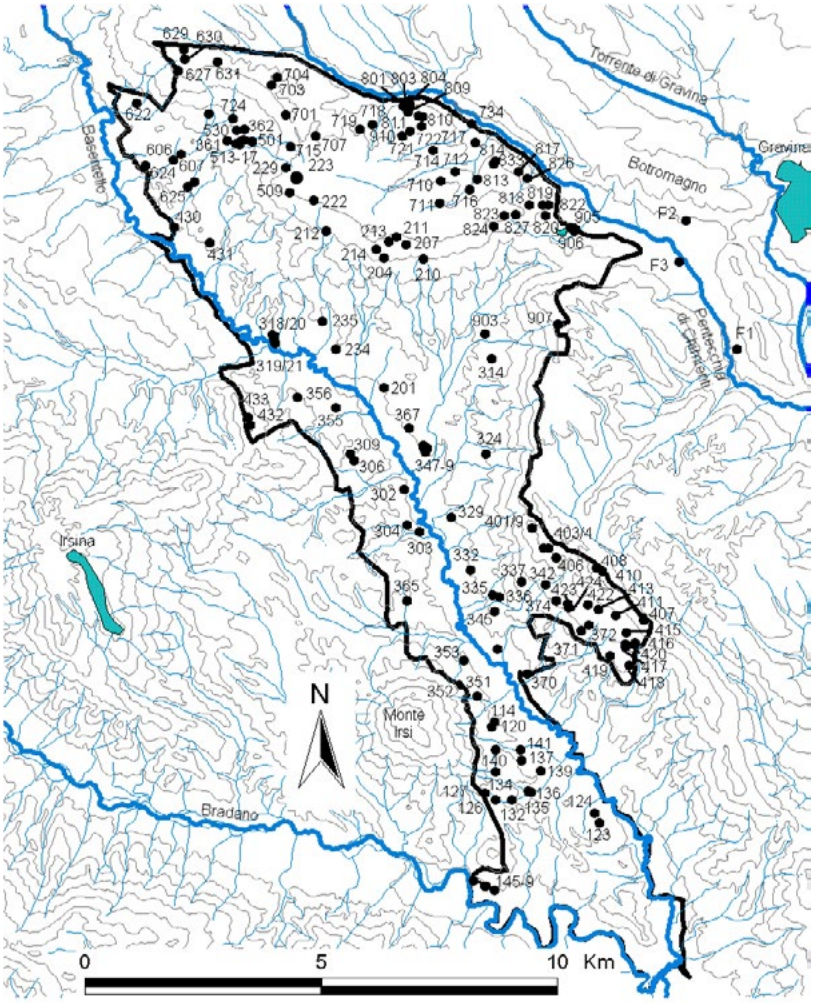
2. The results of the Survey

The questions that can be most easily answered by evidence from surface survey concern the pattern of settlement and how it changed over time. The data from our survey are given in the List of Sites, in which each site is classified by the period or periods when it was occupied according to the evidence of the material found on it. This is presented in summary form and then discussed. Other questions concern the nature of the site, its size, plan and function. Storage areas may be indicated by concentrations of *dolium* fragments, tileries or potteries by wasters and kiln debris, and smithies by slag. Cooking pot fragments may be taken as signs of domestic life; fine wares may give some idea of the status of the occupants, and loomweights and amphorae may point to their economic activities. On sites which were gridded, the distribution of roofing tiles within the grid can frequently show whether one or several buildings were present on the site; and the grid may allow us to locate specific functions with some degree of precision. All of this needs to be approached with caution and obviously the possibilities of extracting information from surface material vary greatly according to the preservation and topography of the site, but in the List of Sites we have aimed to give as full an account as the relevant data permit.

i. Changing settlement patterns

The following brief summary of fluctuations in the pattern of settlement takes no account of the broader context in which they occurred, which is the subject of the interpretative chapters in this study.

Some 130 sites were identified. Their locations are shown on Map Introduction-4, and the periods in which they were occupied in the Table of Site Occupancy at the end of the Section. In all periods the majority of sites were located close to the spring line, a little below the rims of the plateaus, but many of those further S in our area were situated on the low slopes above the Basentello river or close to seasonal tributaries of it, while others were located in the valley of the Pentecchia di Chimienti to the NE of the plateau of San Felice. They cannot have relied on the streams in summer, but with the advances in hydraulic technology in the 4th century BC, the inhabitants of such sites may have collected water in plaster-lined cisterns. An example is Site 734 close to the Pentecchia which had a bottle-



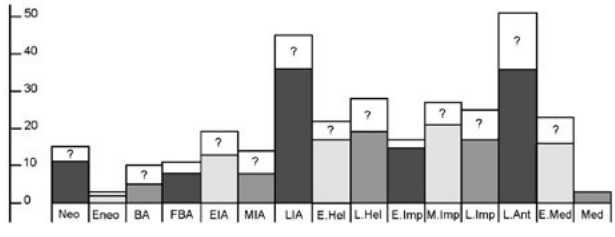
Map Overview-2. All sites in our Survey area reported in the List of Sites.

shaped cistern. In some periods the need for defence seems to have outweighed the need for a convenient supply of water, notably in the Iron Age hill sites at San Felice (Site 223), Crocevelina (Site 401/9), Serra Meschina (Site 407) and Serra del Corvo (Site 627), all of which were sufficiently above the spring line for water provision to have been inconvenient although they too may have made use of cisterns (clay- or plaster-lined) or wells. The fragment of a well or cistern head found on Site 407 on Serra Meschina (No.1923) might have come from either. No doubt the inhabitants of these hill sites also collected fresh water from the springs and carried it up-hill in pots on their heads or on donkey-back.

The histogram (Graph Overview-1) summarizes the information given in the Table of Site Occupancy. Needless to say, not all sites listed as occupied in any one period need have been in use at the same time. The likelihood that they were not must increase with the length of the period. Site sizes can be found in the List of Sites. They are not taken into account in the Table which is not therefore a reliable guide to overall population density, though it is indicative of changing patterns of settlement and land use. Some of the changes are quite drastic.

The eleven sites that could be dated reliably to the Neolithic period were mostly located on easily cultivated slopes well above the river valleys. The majority were abandoned before the end of Middle Neolithic, but two (Sites 223 and 347/9) were still occupied in Late Neolithic and one (Site 347/9) continued to be frequented in Final Neolithic. It was situated close to the Basentello only a little above the floodplain at a point where there must have been a river-crossing, and it has the longest history of occupation (with some interruptions) of all our sites.

After the Final Neolithic there was a hiatus, only partly filled by limited occupation on Sites 432 and 347/9 in the Eneolithic period. The 5 reliably dated Bronze Age (BA) sites were founded on new ground. None of them can be dated with certainty before the Middle Bronze Age (MBA), so the displacement in the area of settlement is not surprising, given the chronological gap. Presumably land cleared for settlement and farming in the Neolithic period had reverted to forest, and the BA inhabitants began again from scratch some 3000 years later. But the new pattern of land use was not drastically different from the old. The BA sites were generally located fairly close to Neolithic ones on slopes above the valleys, though they tended to be a little lower down on slightly heavier soils, which the inhabitants were now able to plough. An exception to this general pattern is Site 347/9, which continued to be occupied. As in the Neolithic period some pastoralists crossed the river and set up a base for



Graph Overview-1. Histogram showing numbers of sites occupied in each of the main periods. "?" = period classification uncertain.

their activities, in this case on Site 433 on the fringes of the Sub-Apennine mountains.

There was another drastic change after the end of the Late Bronze Age (LBA). None of the sites occupied in the MBA and LBA lasted into the Final Bronze Age (FBA), but 8 new ones were founded in the FBA in different locations, mostly on the higher parts of plateaus with steep scarps on at least three sides that offered some defensive capability. Most were much larger than their predecessors of the MBA and FBA. At this stage of their development, they appear to have consisted of various nuclei of huts loosely distributed within the perimeter of the site. Some of the smaller FBA sites did not outlast the period, but others were consolidated in the EIA and expanded over several hectares. More new sites were founded, so that in the EIA the number of reliably dated sites rose to 13. They included Site 223 on the plateau of San Felice, the largest site in our Survey Area (ca. 9ha.), Site 401 (ca. 5ha.), and three smaller sites, Site 407 (1.5ha.), Site 629 (0.6ha.) and Site 431 (nucleus 0.2ha. but with a wide scatter over 7ha.). In general, the new settlement pattern of the FBA/EIA implies that there was a large increase in overall population, and much land must have been cleared for agriculture to support it.

In the Middle Iron Age (MIA), corresponding broadly to the 7th and 6th centuries BC, a few new sites were founded, all small, but they included Site 627 where there was an élite building. On the other hand, more of the smaller sites of the EIA were abandoned, so that the total number of inhabited sites declined to 8. It is probable, therefore, that the process of settlement consolidation continued, and that the inhabitants of some of the smaller sites transferred to other larger ones, including Botromagno where the vast settlement on the plateau was reorganized during the course of the 6th century.

In the Late Iron Age (LIA) the largest settlement in our Survey Area, San Felice, continued to flourish down to the end of the 4th century BC, although the other large hill-top settlements, including Sites 401 and 407, declined. But the salient feature of the period is the remarkable increase in the number of reliably dated sites which rose to a new maximum of 36 (plus 9 doubtful cases). This is to be accounted for by the foundation of new much smaller sites, most of which must have been small farms, in the open countryside. They included a modest farm building at Vagnari. The scale of the development suggests that there was a deliberate policy of settling families on new sites in the open countryside where the inhabitants could farm the land more efficiently. Most of the settlements were very small, and the poor quality of the ceramics found on them suggests that their occupants were living at a low level of subsistence.

This pattern of settlement was disrupted by the Roman conquest. At least 25 of the LIA sites were abandoned, either at the time of the Roman invasion of 306 BC, or soon after, implying a drastic reduction in the rural population. They included the large settlement on San Felice and the farm building at Vagnari. In the course of the 3rd century BC (in the Early Hellenistic period) the number of reliably dated occupied sites fell to 17 (plus 5 doubtful instances), but of these nearly half (8) were new foundations. The numbers are indicative of the widespread changes in land-use that followed the conquest. A distinction can be made between the settlement pattern in the S half of the Survey Area where the sites were unevenly spaced, perhaps reflecting existing patterns of landholding, and the N half where the more even distribution of small sites may be accounted for by the assumption that each was the centre of a unit of *ager publicus*. The relatively poor quality of the associated material may indicate that the buildings were occupied by herdsmen, perhaps slaves of the graziers who rented the land from the Roman state.

The number of occupied sites in our Survey Area rose slightly to 19 (plus 9 doubtful) in the Late Hellenistic period. They are easily recognized by the grey-gloss pottery characteristic of the last half of the 2nd and most of the 1st century BC. Among them was Vagnari where a new settlement, probably a farm, was founded in much the same area as its LIA predecessor. Most were small sites, probably farmhouses, but there was also at least one larger development, namely Site 813, with one fairly large house and 1 or 2 smaller buildings, which replaced, or grew out of, a smaller settlement of the LIA. But this mini-economic revival did not outlast the disturbances of the 1st century BC and the changes in land use that resulted from them, and few of these sites survived into the Roman Imperial period.

The changes that took place in the course of the 1st century BC were the result of economic factors on a macro-scale. In South Italy ambitious landlords seized the opportunities that had been opened up by the disturbances in the first third of the century (the Social War, the Sullan proscriptions, the War of Spartacus) to create large sheep ranches, with the result that extensive areas which had previously been arable were converted to pasture. This must have been the fate of much of our Survey Area, including the terrain surrounding Vagnari where a vast estate was created around the middle of the 1st century BC (we have suggested by Pompey). It passed into the hands of the emperor at the beginning of the principate. Further to the S there was another large estate centred on Site 372. Only on the W bank of the Basentello in the vicinity of Monte Irsi were there smaller agricultural units. With the creation of these huge estates given over to pastoralism, it is hardly surprising that the number of occupied sites datable to the Early Imperial period fell back a little to 15 (plus 2 doubtful). With much land taken out of agricultural

production the settlement pattern in the Survey Area was extremely thin.

This downward trend in site occupancy was reversed in the Middle Imperial period when a new policy was initiated of subdividing the large estates into smaller units which could be leased to tenant farmers. It was probably applied first on the imperial estate, and subsequently copied on other privately owned properties in the vicinity. The number of sites occupied in our Survey Area rose to 21 (plus 6 doubtful). Most of the new ones appear to have been small farmhouses which have left few signs of prosperity. It is likely that their occupants were living little above subsistence level.

The precarious nature of these small sites is shown by the fact that the majority of them failed before the beginning of the Late Imperial period. There were then some new foundations, but not enough to compensate for the losses, so that the total number of occupied sites fell back to 17 (plus 8 doubtful). As in the previous period, the poor quality of the surface finds suggests that the inhabitants on the smaller sites were living close to subsistence level, though they must have been expected to make a surplus with which to pay their rents and taxes in kind. The few villas of the previous period had disappeared, but the *vicus* at Vagnari gained in importance as the social and economic centre of these dispersed settlements.

The number of occupied sites rose again spectacularly to 36 (plus 15 doubtful) in the Late Antique period. Much of the increase took place inside the area of the former imperial estate which was subdivided into still smaller units presumably farmed by *coloni*. Most of the new foundations were tiny and apparently very poor, but a few larger settlements, including Sites 134 and 408, were founded (or in the case of Site 134, refounded) in this period. They were perhaps *vici*. The principal settlement in the area, however, remained at Vagnari. There was another probable *vicus* at Santo Staso (our Site F1) located on the Via Appia below Botromagno. It lay outside the boundary of our Survey Area, but was studied as an addendum to this project.

The relatively peaceful conditions in South Italy which had been favourable to rural settlement in the 5th and early 6th centuries AD were disrupted in the 6th century AD, first by the Gothic-Byzantine war, and then by the Lombard invasion. At least 22 of the Late Antique settlements disappeared, but 12 others lasted into the 7th century, and at least 3 new ones were founded in that period, so that not less than 16 reliably dated sites (plus 7 doubtful) can be assigned to the Early Middle Ages. They are all small, but they provide some indication of the extent of habitation in the countryside at a time when it is widely supposed that the rural population had practically disappeared. After the end of the 7th century the evidence becomes very meagre. The only site which shows any sign of continuity of occupation into the Central Middle Ages is San Felice where a few sherds of Early Medieval painted wares and a glass vessel datable between the 7th and 11th centuries help to fill the gap between the end of the Late Roman Painted Ware in the mid-7th century and the foundation of the medieval *casale* overlying the IA site at the W end of plateau. There is a tenuous documentary record of this in the 10th century and abundant archaeological remains (including two coins) of the 12th and 13th centuries. Even San Felice, however, was small, and other signs of medieval frequentation of the area are limited to a few sherds found on Sites 147-9, 423, 501 and 811.

ii. Changes in land use in the Survey Area

The fluctuations in the density of settlement must inevitably have been related to changes in land use. This is a topic which is considered in detail in the interpretative chapters, but an overview may be appropriate here. The agricultural potential of much of the land in the Survey Area is high. Currently nearly all of it is used for cereal cultivation, mainly of durum wheat, but also some barley. There are a few olive groves, and some vineyards, though the main vine-growing area round the town of Gravina where there is a long history of vine cultivation on terraced slopes. But the cereal monoculture is a modern phenomenon, brought about by the invention of the mechanical plough, which has made it possible to till the heavy clays of the valley bottoms.

A better understanding of the potential of the land for cultivation in pre-modern times can be got from the distribution of *masserie* and *jazzi* in the Survey Area. The *masserie* were large grain farms, generally inhabited by *massari*, tenants of greater landlords, who managed a large seasonal workforce of peasants, many of them landless *braccianti*, who lived in the *masseria* during peak seasons and especially during harvest. This system of farming reached its zenith in the mid-19th century, and many of the *masserie* in our Survey Area date to that period. The best arable land was located on the flat plateau tops, and the most typical location for a *masseria* was a little below the rim of a plateau close to the spring line where there would be easy access to water. During the course of the 19th century the rising cost of grain led to the expansion of arable farming into areas that had previously been reserved for pasture, including the slopes on either side of the drove road where it descends from the pass of Sferacavallo. Two of the *masserie* in this area were created after the 1865 edition of the map of the Isituto Geografico Militare.



Photo Overview-7. The Masseria Vagnari.

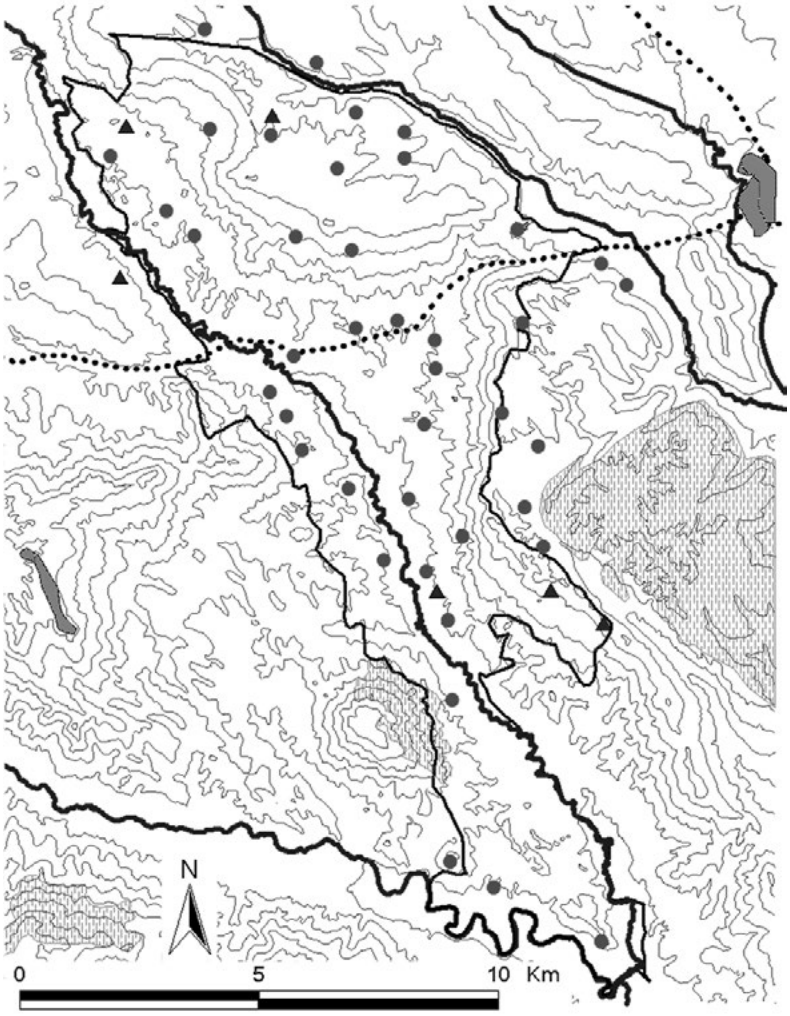
The *jazzi* are another component of the pre-modern landscape. They were compounds with accommodation for shepherds where sheep could be corralled for milking of shearing, Many of them date from the mid-19th century, when long-distance transhumance was in decline following the reforms of the Napoleonic period which abolished the traditional controls over the land which the customs office of the *Dogana della mena delle pecore* had exercised, and made it easier for landlords to maintain their own flocks of sheep locally. It became common practice for landowners to create a *jazzo* on less fertile land adjacent to a *masseria* so that the sheep could be brought from the rough pastures of the *jazzo* to graze in the stubble in the fields around the *masseria* after harvest and before ploughing, and manure the land with their droppings.

There were also extensive areas without either *jazzi* or *masserie* – mostly eroded slopes unsuitable for cultivation – and the valley bottoms where the alluvial clay was more difficult to cultivate. The other component of the landscape was extensive areas of indigenous woodland of which the communal forest (*Bosco comunale*) of Gravina on the plateau to the E of the Survey Area, and the oak woods on the N slope of Monte Irsi are the principal remnants.

iii. Off-Site scatter

The 19th century landscape gives a good indication of the capacity of the soils in much of our Survey Area for supporting agriculture, but it is an unreliable guide as to how the land was actually used in previous periods, and the analysis of the evidence given in the interpretative chapters shows that the balance between the three main components of the rural economy: agriculture, sheep-ranching and forest exploitation changed drastically from time to time.

It is difficult to find direct evidence for sheep raising or for the presence of forest in specific places, but rather easier to identify areas where the fields were cultivated, on the assumption that occasional fragments of pottery or tile found at some distance from identified sites are likely to have got there either as "manuring scatter" – casual domestic waste deliberately left on the fields, or as remains of pots accidentally broken by people working on the land. With this in mind, we have mapped in so far as possible both scatter from identified "findspots" and isolated pieces which might provide evidence of the extent of human frequentation of the Survey Area beyond the perimeters of the identified sites. We have then assumed that those areas which



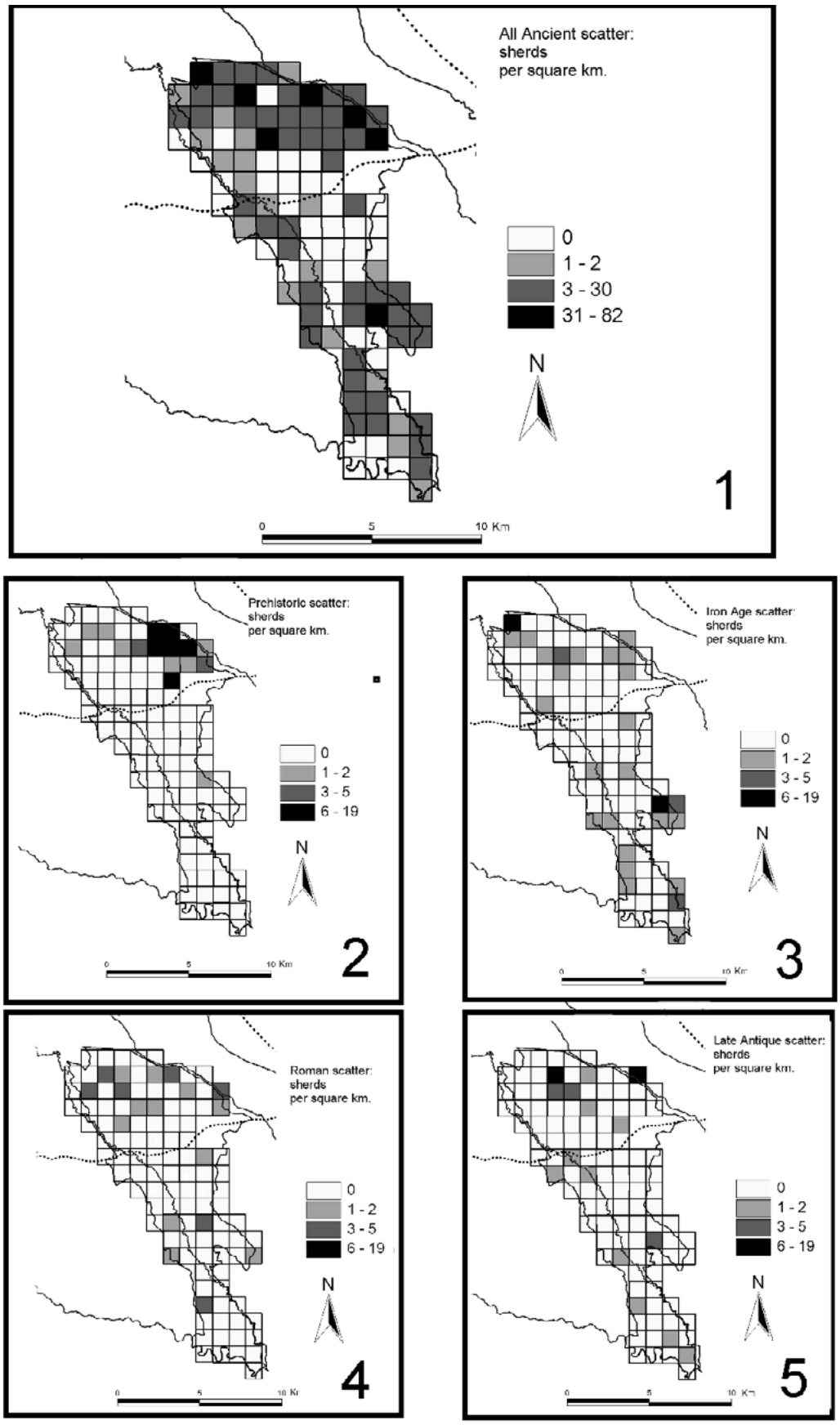
Map Overview-3. *Masserie* (round dots) and *jazzi* (triangles) in our Survey Area and its immediate vicinity.

were most frequented were most likely to have been cultivated, whereas those which were least frequented were probably left wild for a long time, either as forest or rough grazing.

A few pieces of this off-site scatter could be dated fairly precisely, but the majority were fragments of tiles and plain wall sherds which could only be dated (if at all) within four broad periods which we have defined as prehistoric (down to the end of the Bronze Age), Iron Age, Roman and Late Antique. The relative densities are shown in Maps Overview-4. The overall map (Overview-4.1) which shows all ancient scatter, including material that could not be assigned to one of the more specific periods, demonstrates that the most intensively farmed areas were the plateaus of San Felice and Lamiecelle (see Map Introduction-3), the environs of Vagnari in the N part of the Survey Area, the ridge above the left bank of the Basentello in the S part, and the low hills on the right bank of the river. The void in the central zone on either side of the drove road corresponds to the Pass of Sferacavallo, and it suggests that this area was not used for arable cultivation before the expansion into it of *masserie* in the 19th century. It could be argued that some of the voids on the map were in areas where alluvial deposits in the valley bottoms had covered up earlier scatter but, as the distribution of sites and findspots shows (above, Map Overview-1) this alluvial zone extends only for about 500m on either side of the river, and in many areas considerably less. Such details cannot be shown in the 1×1km squares of the map. Most of the void areas correspond to the barren slopes edging the plateaus.



Photo Overview-8. The Jazzo la Cattiva near Vagnari.



Maps Overview-4.1–5. Diagrammatic maps showing the density of scatter from different periods. Note that the scatter in periods 2-5 is under-represented by comparison with the total scatter (1) since much of it cannot be dated.

The period maps give more definition when they are compared with the settlement maps of the same periods shown in the interpretative chapters. The prehistoric scatter seen on Maps Overview-4.2 corresponds for the most part to the areas occupied in the Neolithic and Bronze Age, indicating that the inhabitants of the time were farming in the immediate vicinity of their settlements. It is probably right to suppose that forest had to be cleared for agriculture in this area when the earliest Neolithic settlements were founded, and that it grew back in the hiatus that followed the end of Middle Neolithic and had to be cleared again when the area was resettled in the Middle Bronze Age. The main incongruity is that we did not find much casual scatter in the vicinity of the Neolithic or Bronze Age Sites 432 and 433 at the extreme W edge of the Survey Area, close to the *tratturo*, or at Site 347-9 close to the river crossing. That suggests that these sites were used for herding rather than for agriculture.

The distribution of scatter datable to the Iron Age (Maps Overview-4.3) shows that a very large area was cleared for cultivation in this period in the S half of the Survey Area. The scatter corresponds well to the main areas of settlement, especially after the expansion away from the core sites when small farms were founded in the open countryside in the 4th century BC. The scatter on the right bank of the river in the S half of the Survey Area suggests that this area was farmed by the inhabitants of the settlement on Monte Irsi. Another incongruity is the comparative lack of scatter in the vicinity of Site 401/9 (Crocevelina) on the plateau above the left bank of the river to the S of the drove road, but it is likely that the best arable land connected with this settlement lay further E on the plateau outside our Survey Area.

The map of Roman scatter (Maps Overview-4.4) does not distinguish between earlier and later imperial phases and so does not pick up the full extent of the retraction in the arable area that must have followed the reduction of settlement in the Early Imperial period. We have argued in the Interpretative Section that much of the land inside the imperial estate at Vagnari must have been given over to rough grazing, especially in the vicinity of the drove road. Since the absence of surface scatter in part of the Survey Area continues well to the S of the drove road, it is probable that the private landlords who owned this part of the valley (as the evidence of the tile-stamps suggests) also used the land as grazing for sheep. The scatter across the plateau to the N of the drove road reflects the subdivision of the estate into smaller units that began in the 2nd century AD, and confirms that there was a return to agriculture (and probably to subsistence farming) in this area. The more dispersed scatter to the S of the drove road results from the thinner pattern of settlement, with the fields cultivated from a relatively small number of sites.

The final map (Maps Overview-4.5) shows scatter of the Late Antique period. Settlement numbers continued to increase in this period, but a straight comparison with the scatter of the previous period does not reflect a similar increase in the cultivated area. There is, however, a closer correspondence with the location of specific sites, as for example with Site 134 on the right bank of the river near the S end of the Survey Area, one of the largest sites of this period; also with Site 365 to the N of Monte Irsi, and with three new sites close to the point where the drove road probably crossed the Basentello river. There was also a small area of scatter in the vicinity of the cluster of sites on the ridge above the left bank. On the plateau of San Felice and below it at Vagnari the distribution of scatter shows that cultivation continued in this area, though it is more closely focussed on the occupied sites. These changes in the pattern of scatter may suggest that the area being cultivated from individual small farms shrank even as the number of them increased.

We were unable to identify much Medieval scatter except in the case of a few conspicuous pieces found on other, earlier, sites. They are thinly distributed over much of the Survey Area.[5] Some single pieces were found on the right bank of the Basentello below Monte Irsi, one sporadic, others at Sites 120 and 124, and a small cluster of pieces on Site 145-9 close to the Bradano. They are likely to derive from the medieval village on the hilltop, and to indicate cultivation of the area by its inhabitants, as may those on Site 355 further to the N on the same side of the river. Other single pieces found on sites 229 (the Roman villa site) and 361 (Vagnari) may indicate that this area up to 1km to the W of the medieval village on San Felice was cultivated from there. Two small clusters of material found on Sites 509 and 811 must indicate more regular frequentation and presumably cultivation of the fertile area of Le Blè on the N edge of the plateau of San Felice (see Chap. XII.7.iii.b). A single sherd of an Otranto amphora of the 11th–12th century found on Site 372 on the left bank of the river near the S end of the Survey Area can only be taken as evidence of occasional medieval frequentation of this well-watered area. In short the limited Medieval scatter points to cultivation within a radius of 2–3km of the settlements of Irsi and San Felice.

Beyond this cultivated area the landscape probably consisted of forest and rough pasture, with the pasture increasing in extent as the medieval economy became more and more geared to transhumant sheep raising.

[5] Plain ribbed strap handles on Sites 145-9, 509, 811 and one spor; medieval glazed wares on Sites 145-9, 229 (P7739), 361 (Vagnari), 509 and 811. Two medieval amphorae (of the 11th century AD or later) were found on Sites 124 and 372 and other possible ones on Sites 145-9 and 401.

3. The crossing of the Basentello

Before the abolition of transhumance in the 1950s, the drove road at the centre of our Survey Area crossed the Basentello at a ford, and at the beginning of our survey in 1996 local people could still remember sheep being held beside it waiting for the water level to subside. There is, however, no certainty that the drove road of the Roman period crossed the Basentello at the point shown in the maps of the early 20th century, and there is some reason to think that it may have done so at a point 2km further to the S near where the *strada statale* 97 now crosses the river. The road is not ancient – it was originally laid out in the late Bourbon period when the first bridge must have been built, but it is possible that there was a much earlier crossing of the river in the same area. The evidence for it is the existence here of Site 347-9, a small site which, as we have seen, was occupied in more periods than any other in the Survey Area, located in a zone otherwise bare of settlement. It would have been a suitable place where shepherds could wait for the water level to subside before crossing the river. It seems possible, therefore, that the course of the Basentello changed slightly and that the ford used by the drove road was moved from this area to the point where it is shown on the recent maps. The fact that there is a Late Roman site (Site 319) in the vicinity of the more northerly crossing, suggests that it may have become preferable to ford the river at this point already in that period, although the two crossings may have remained in use together for a while.

4. Table of site occupancy in our Survey Area

The following table shows the period in which each site was occupied according to the summaries of the dating evidence given in the List of Sites (Section IV). Note: x = reliably dated; ? = doubtful.

Site number	Neo	Eneo	BA	FBA	EIA	MIA	LIA	E.Hel	L.Hel	E.Imp	M.Imp	L.Imp	L.Ant	E.Med	Med
114								x	x	x	x		?		
120							x	x	x	x	?				
123									x				?		
124							x	x	x	x	x		?		
126							x								
127								x							
132									?						
134							x	?					x	x	
135											x				
136							x		?						
137							x								
139							x				x	x	x		
140					x		?								
141									x						
145/9						?	x	?		x	x	x	x	?	
201												?	?		
204													x		
207													x		
210	x														
211													x		
212													x		
213												x	x	x	
214					x		x				?		x	x	
222					?								x		
223	x			x	x	x	x	?	?		?		x	x	x
229						?	x		x	x	x	?	x		
234				?	?	?	x								

Site number	Neo	Eneo	BA	FBA	EIA	MIA	LIA	E.Hel	L.Hel	E.Imp	M.Imp	L.Imp	L.Ant	E.Med	Med
235													x	x	
302	?						x	x	x						
303								x	x						
304													x		
306							?						x	x	
309														x	
314							?					?			
318									?						
319	x						?					?			
324													x		
329						x									
332											x				
335								x	x	x	x		?		
337													x	x	
342						?							x	x	
347/9	x	x	?		x	x	x				x	x	x	x	
351							x								
353								x			?				
355								x							
356													x		
361							x		x	x	x	x	x	x	
362									?				?		
365													?	x	
370													x	x	
371							x								
372							x	x	x	x	x	x	x		
374													x		
401/9				x	x	x	x		x						
403/4	x			x	x										
406	?				x										
407				x	x	x	x	x	?						
408													x		
410													x		
411/2							x								
413							x								
415							x	x	?						
416							?								
417							x	?							
418					x		x								
419							x	x							
420							x								
422					x	x									
423					x		x		?				?	?	
424							?						x	x	
430												x			
431					x	x									

Site number	Neo	Eneo	BA	FBA	EIA	MIA	LIA	E.Hel	L.Hel	E.Imp	M.Imp	L.Imp	L.Ant	E.Med	Med
432	x	x													
433			x												
501										?			?		
509										?		?			x
513													x		
514													x	?	
516													x		
517													x		
530												x			
531												x			
606											x				
607							x			x	x				
622				x											
624												x	?		
625				x	?		?					x	x		
627			?			x	x								
629				x	x	?									
630					?										
631	x														
701	x														
703								x	x	x					
704											x				
707										x			?		
710			?	?	?						x	x			
711							x								
712			x				?					x			
714												x			
715				x	?	?		x			x				
716	?		x	?											
717							x		x						
718												x			
719											?	?	?	?	
721			x												
722											x				
801							x								
803														?	
804			?				x								
809													x		
810							x	x	x	x	x	x	x		
811															x
813			?				x	x	x	x					
814	x														
817														?	
818									x						
819								?			?	?		?	
820											x	x	x		

Site number	Neo	Eneo	BA	FBA	EIA	MIA	LIA	E.Hel	L.Hel	E.Imp	M.Imp	L.Imp	L.Ant	E.Med	Med
821													?		
823													x		
824	?	?	x												
826							x		?				?		
827	x														
833	x														
903									x						
905										x	x	?	?		
906									x	x	x				
907														x	
910														x	
Total x	11	2	5	8	13	8	36	17	19	15	21	17	36	16	3
Total ?	4	1	5	3	6	6	9	5	9	2	6	8	15	7	
Total all	15	3	10	11	19	14	45	22	28	17	27	25	51	23	3

Table Overview-1. Site Occupancy by period on our Survey Area.

III. DIACHRONIC INTERPRETATIONS

Note on the maps: Except in Chapter I, maps are included to illustrate the text. On the maps of the Older Surveys, the locations of modern towns are indicated for clarity. The towns are labelled with initials only, as follows: A=Altamura, B=Banzi, G=Gravina, GZ=Genzano, I=Irsina, P=Poggiorsini, PSG=Palazzo San Gervasio, S=Spinazzola. The area of our survey is indicated with a dark line on all relevant maps. (It is labelled on Map Intro-4). Unless otherwise indicated in the caption, sites of each period are indicated by black dots, doubtful sites by hollow dots.

"Cat." refers to our Catalogue of Artifacts (V in this study).

Chapter I. The Palaeolithic period

by Vito Volterra, Alastair Small and Carola Small

1. Middle Palaeolithic (ca. 300,000 – 50,000/40,000 BC)

Although there are much earlier traces of human presence in high lands to the west of the Fossa Bradanica,[1] the earliest artifacts recovered in our survey in the Basentello valley are a few lithics in the Mousterian technique typical of the Middle Palaeolithic period. They point to some frequentation of the valley by Neanderthals during the first part of the Würm glaciation, ca. 120,000 – 35,000 BC. Within this period, there were at least two glacial peaks (Würm I and II) punctuated by a warmer interstadial ca. 65,000 – 55,000 BC.[2] In the colder phases, forest retreated giving way to a steppe-like environment.[3] Deciduous species, especially oak, predominated, and the normal fauna, hunted by the neanderthals, included cervids, bovids, equids and suids.[4] Mousterian lithics are scattered over the whole of Apulia,[5] showing that Neanderthals ranged widely over the region in pursuit of their prey, but there is remarkably little evidence for their habitation sites in the vicinity of our Survey Area. The nearest is the Grotta dei Pipistrelli near Matera where the lowest levels are Mousterian.[6] The fauna from the cave include species typical of the Würm II glacial period: cave bear, hyena, horse, deer, wild cattle (*Bos primigenius*), ibex, wild boar, fox and porcupine.

Neanderthals were frequenting the western edge of the Murge considerably earlier, as is shown by the fossilized remains of Altamura man, discovered in 1993 in the Grotta di Lamalunga a little to the N of Altamura about 20km NE of our survey area.[7] Recent analyses show that the skeleton should be dated between ca. 174,000 and 132,000 BC.[8] At present it remains an isolated find.

2. Upper Palaeolithic (ca. 50,000/40,000 – 10,000 BC)

The cultural period corresponds to the last part of the Würm glaciation with at least two more cold peaks, Würm III and IV, punctuated by another rather warmer and wetter interstadial ca. 19,000 BC. The pollen record for the latest glacial phase from the Laghi di Monticchio on Monte Vulture near the N end of the Fossa Bradanica confirms that the general environment was tree-less and steppe-like.[9]

A clear break with the previous period is marked by the arrival of *Homo sapiens* and the disappearance of Neanderthals. The new inhabitants used a greater variety of tools and weapons (including bows and arrows), they buried at least some of their dead,[10] and they began to express ideas in artistic form, painting cave walls with pictures of the animals they hunted,[11] and incising images of them on bones and stones.[12] The

[1] Lower Palaeolithic hominid activity, indicated by Acheulean bifacial lithics, is attested at various places on the Gargano peninsula (Palma di Cesnola 1979, 21-28), at Notarchirico and Loreto in the Venosa basin (Gambassini *et al.* 1995; Piperno, 1989), at Irsina, about 1.0km from the survey area, dated by+ K-Ar at 850,000 BC (Segre, 1984), and at various locations in the Materano (Piperno & Tagliacozzo 1999).
[2] Cremaschi, 1993.
[3] Cattani 1993.
[4] Palma di Cesnola 1979, 37.
[5] Palma di Cesnola 1979, 28.
[6] Lo Porto 1988, 81-90; Piperno & Tagliacozzo 1999, 21-23. For cave sites in Puglia with Mousterian occupation, see Palma di Cesnola 1979, 28-37.
[7] Fabro & Giunchi (eds.) 1996, 16.
[8] Lari *et al.,* 2015.
[9] Watts *et al.* 1996.
[10] Notably in the Grotta Paglicci on the Gargano (burial dated by radiocarbon analysis to 14.720 BC: Palma di Cesnola, 1979, 48 and fig. 3); in the Grotta delle Mura at Monopoli (a baby of ca.18 months: L'Abbate 2013a, 148); in the Grotta Agnano near Ostuni (two burials dated ca. 22,500 BC: Coppola *et al.* 2008, 204-205).
[11] In Puglia, in the Grotta Paglicci: Palma di Cesnola 1979, figs 49 (horse) and 50 (group of hands); *idem* 2003, 108-114; Skeates 2005, 43, 47, 52.
[12] In the Grotta Paglicci: Palma di Cesnola 1979, figs 59 (bird on bone), 61 (horses (?) attacked by a flight of arrows, on bone); 62 (bovid on

most remarkable assemblage of Upper Palaeolithic cave paintings in Apulia, in the Grotta Paglicci near the W edge of the Gargano plateau, shows horses, aurochs and deer surrounded by spears and massed human hands. The fact that some of them are located in the innermost recesses of the cave suggests that they set the scene for secret ritual practices,[13] perhaps involving rites of passage for young males to adulthood. In Apulia, as in much of Europe, the population increased, although overall population densities were still low.

The evidence for Upper Palaeolithic settlement in Apulia is mainly found on or around the Gargano massif and along the Apulian coast.[14] During the last glacial maximum which lasted from ca. 25,000 to 13,000 BC the increase in the polar ice caps led to a lowering of the sea level to ca. 120m below its present-day level.[15]

The coastal plain was much more extensive, and there can be no doubt that many Upper Palaeolithic settlements are now submerged under the sea. What now appear to have been coastal settlements would have been located a considerable distance inland. A good example is the cave settlement at the Grotta delle Mura at Monopoli, in Central Apulia, now very close to the sea, which has yielded a sequence of layers ranging from Middle Palaeolithic to Neolithic.[16] The Epigravettian layers show a large variety of tools produced towards the end of Upper Palaeolithic, especially blades and choppers. The faunal assemblages are dominated by species typical of an open prairie environment, especially aurochs (*Bos primigenius*), horse (*Equus caballus*) and hare (*Lepus europaeus*). Red deer (*Cervus elaphus*) and wild boar (*Sus scrofa*) are rare at this site.

Less is known of occupation sites in the Materano,[17] but the Grotta dei Pipistrelli continued to be inhabited. There choppers outnumber blades in the Upper Palaeolithic layers, and the fauna consisted predominantly of red deer and roe deer (*Capreolus capreolus*),[18] both woodland species. The contrast between prairie environment on the coast and forest in the interior is striking. There are no comparable faunal analyses from the Fossa Bradanica, but the fact that Upper Palaeolithic material appears to be very thinly scattered there suggests that the forest environment of Matera extended through the Fossa at least in the last cold phase.

No Upper Palaeolithic cave settlement is known in the vicinity of the surveys reported in this volume, and only a few lithics found in our Survey Area can be dated reliably to this period by their technical characteristics. There are no certainly Aurignacian pieces, but a few pieces are possibly Uluzzian, Gravettian or Epigravettian. They show that groups of hunters based on the cave settlements in the coastal fringe moved seasonally through the area in pursuit of their prey as the animals migrated to higher ground in the summer.[19]

After ca. 13,000 BC the climate began to warm up and the sea level gradually rose until by ca. 7,000 BC it had reached a height of ca. 35 m below its present level. The vegetation responded to the changing conditions as open grassland and mixed woodland spread over the coastal plain, providing grazing and shelter for wild animals.[20] The faunal assemblage from the Late Upper Palaeolithic contexts at the Grotta Scaloria, radiocarbon dated to between ca. 9,000 and 8,000 BC, shows a new variety of fauna. The wild horse has disappeared, but its place is taken by the wild ass (*Asinus hydruntinus*) which is by far the most numerous species, represented by 376 instances, 53.7% of the total assemblage. It is followed (in numerical order of number of identified specimens) by the auroch (8.7%), red deer (7.6%), fallow deer (7.6%) and hare (2.4%).[21] The area of human settlement expanded, but did not yet reach the Fossa Bradanica, though a thin scatter of Epipalaeolithic/ Mesolithic artifacts found in our Survey Area shows that hunters continued to visit the Basentello valley.

In addition to the few lithics already mentioned, it is possible that some of the blades and other stone tools found on our field survey which we have classified as Neolithic are really of Upper Palaeolithic date. The technique of manufacturing them remained essentially the same, and without stratified contexts it is often impossible to be certain of the attribution. But as we have argued below, the fact that in many cases they are associated with Neolithic pottery suggests that most, if not all, are likely to be Neolithic.

bone); idem 2003, 116-128. In the Grotta delle Mura: Coppola 1981, 29 figs 11 (bovid on stone) and 12 (equids on stone).

[13] Skeates 2005, 52.

[14] Palma di Cesnola 1979, 37-48.

[15] Shackleton *et al.* 1984, 309.

[16] Coppola 1981, 28.

[17] Piperno *et al.* 1999, 24-28.

[18] Lo Porto 1988, 86-87 (stratum 11).

[19] Barker 1975, 122.

[20] Watts *et al.* 1996 (pollen record from the Laghi di Monticchio); Skeates 2005, 54-56.

[21] Bartosiewicz & Nyerges 2016, 77.

Chapter II. The Neolithic Period

Alastair Small, Carola Small, Angelica Portagnuolo and Vito Volterra

The Neolithic revolution reached South Italy towards the end of the 7th millennium BC, earlier than in other parts of the peninsula.[1] It was brought by colonists who arrived by sea in successive waves from NW Greece and the South of Albania. They probably came in dug-out canoes and crossed the Adriatic by two main routes – a more northerly one from the Dalmatian coast by way of the Tremiti Islands to the area around Siponto at the edge of the Tavoliere, and a more southerly one by the Strait of Otranto, reaching the Apulian coast at several points.[2] There was probably some degree of overlap and acculturation with the existing mesolithic peoples, especially in the coastal sites at the N end of the Tavoliere and along the Adriatic shore of the Salentine peninsula where for some time communities continued to gather sea-food,[3] but there is no evidence of that in our Survey Area where there are no indications of Mesolithic culture. Generally there was a radical transformation in the modes of subsistence. The new settlers brought with them domesticated animals, and introduced techniques of cultivation.

1. Chronology

For the four-fold subdivision of the Neolithic period followed here, and the chronology of the sub-phases, see the introduction to the Neolithic in the Catalogue of Artifacts. Early Neolithic is taken as lasting from ca. 6200–5600 BC, Middle Neolithic from ca. 5600–4800 BC, Late (or Recent) Neolithic from ca. 4800–4300 BC, and Final Neolithic from ca. 4300–4000 BC. The subdivisions are to some extent artificial in that they inevitably cut across continuities, but they are useful in that they provide a rough chronological framework in which other aspects of South Italian Neolithic – the development of settlements, the innovations in agriculture and commerce, the changes in social organization etc – discussed in this chapter can be set.

2. Climate and agriculture

By the end of the 7th millennium the prevailing conditions in South Italy had become warm and moderately wet, and so were favourable to the development of agriculture based primarily on the cultivation of cereals.[4] In Apulia einkorn (*Triticum monococcum*), and emmer (*Triticum dicoccum*) are attested in the late 7th or early 6th millennium BC. Spelt (*Triticum spelta*), barley (*Hordeum vulgare*) and club wheat (*Triticum compactum*) were also introduced at an early stage. Naked wheats including bread wheat (*Triticum aestivum*) and durum wheat (*Triticum durum*) are attested before the end of Early Neolithic, but only on a few sites.[5] Since it is common to find more than one cereal type on Neolithic sites, it is probable that the farmers had learned to vary their crops to guard against the failure of any one species. The cereal crops were harvested with chert- or flint-bladed sickles.[6] The hulled forms were de-husked by pounding, but the naked types were ground on quern-stones with rubbers (attested on many Neolithic sites from Early Neolithic onwards). Lentils (*Lens culinaris*), broad beans (*Vicia faba*) and peas (*Pisellum sativum)* were also cultivated, but to a lesser extent. Fruits were of only minor importance. The foodstuffs were stored in large coarse-ware pots or in underground pit-silos. There were no ploughs, so the soil must have been turned with sticks, antlers or the pelvic bones of cattle.

Faunal remains are not abundant on Early Neolithic sites,[7] so it is probable that the economy of the period depended primarily on cultivated crops – an inference that is confirmed by isotope analyses of Neolithic skeletons.[8] Nevertheless the more sophisticated analyses of some faunal assemblages of the period show that stock-raising was carefully managed to maximize

[1] Robb 2007, 24.

[2] Broodbank 2013, 190. The topic is much debated. Italian scholars generally support the view that there was significant migration from across the Adriatic, perhaps in several waves: cf. e.g. V. Tiné 2009a, 601; Corrado 2010, 67. That view is accepted cautiously by most anglophone scholars writing recently: cf. Robb 2007, 163; Skeates 2005, 76; and it is strongly supported by J.-D. Vigne's (2003) interpretation of the faunal data from Torre Sabea on the Salentine coast. Spataro (2002, 14) and V. Tiné (*loc. cit.*) emphasize the disjunction between Mesolithic and Early Neolithic sites. *Contra:* R. Whitehouse 1986, 42. Brown & Alexander (2013) apply Bayesian statistical analyses to the radiocarbon measurements for Early Neolithic contexts and demonstrate that on present evidence Neolithic settlement began earlier in Southern Apulia than on the Tavoliere.

[3] Skeates 2005, 76-77, Geniola 1979, 52-53. Costantini & Stancanelli (1994, 220) list eight sites which have produced evidence of Epipalaeolithic or Mesolithic industries and of Neolithic cultivation, but they point out that the lack of good stratigraphic sequences makes it impossible to know whether the cultures overlapped in these sites.

[4] Sargent 1983, 232; Costantini *et al.* 1997 (re Scamuso). Costantini & Stancanelli (1994) review all the archaeobotanical evidence from Neolithic sites in Italy and Sicily S of the N border of Tuscany and the Marche available at that time, much of it from sites in Apulia, and wherever possible give calibrated and uncalibrated radiocarbon dates.

[5] Notably at Ripa Tetta: Tozzi 2002, 586.

[6] E.g. at Passo di Corvo: S. Tinè 1983, 110-113.

[7] As noted in Curci *et al.* 2016, 68.

[8] Robb 2007, 132; Radina 2002b, 623 (Pulo di Molfetta); Tafuri *et al.* 2016a, 134-135 (Grotta Scaloria).

the production of meat and (secondarily) milk. J.-D. Vigne (2003) has argued that these stock-raising practices are generally similar to those already in use in Greece, which must imply that they were brought to Apulia from Greece by groups of migrants who came by sea, bringing their livestock with them.[9]

The picture that emerges from the available studies of faunal assemblages is fairly consistent.[10] Sheep and goats formed the majority of domesticated animals in most assemblages. Where it has been possible to distinguish between them, sheep predominate numerically. But a simple calculation of numbers of individuals that takes no account of meat yields is likely to give a misleading impression of the role of the species in the economy, and when the meat-yield is factored in, cattle emerge as the most important component of the livestock on almost all sites.[11] At Ripa Tetta at the N end of the Tavoliere, and at Rendina in the Ofanto valley some bovines were of the size of aurochs and others were intermediate between the two species, which suggests that wild cattle were still present in this part of the peninsula, and inter-bred with the domesticated animals, a proposition that is denied by Vigne, but needs more investigation.[12] Both sheep and cattle were raised primarily for their meat, and secondarily for their milk. Vigne has argued that the pattern of slaughter of cattle at Torre Sabea indicates that cows were maintained for their milk as well as their meat, and this idea is confirmed by the discovery of utensils for cheese making found at Rendina before the end of Early Neolithic.[13]

Domestic pigs were introduced before the end of Early Neolithic but remained relatively rare, perhaps because they were less easily integrated into the agricultural economy of the settlements.[14] Dogs are attested in small numbers on many sites. They appear to have been bred selectively for guarding sheep, and perhaps also for hunting.

Wild fauna, especially deer, appear in faunal assemblages from many sites, but as a small proportion of the total. Wild game must therefore have been of little importance in the Neolithic economy until the latest phase.[15] Nevertheless hunting must have had a special role in Neolithic culture since bones of wild animals were frequently deposited in cult contexts, as in the Grotta Scaloria at the N end of the Tavoliere,[16] and scenes of deer-hunting were painted on the cave walls in the Grotta dei Cervi at Porto Badisco on the Salentine coast (Late or Final Neolithic).[17] They are discussed further below.

3. Neolithic settlements in the Fossa Bradanica and adjoining areas

Map II-1 compiles the information on settlement in the Fossa Bradanica provided by our own studies and those of Vinson, Chapman and Aldridge, and puts it together with information drawn from various other sources to provide as complete a picture as possible of a broader pattern of Neolithic settlement extending from the S end of the Tavoliere, across the Ofanto valley down the Adriatic coast of Central Apulia and through the Fossa to the Materano and the coastal plain between Taranto and Metaponto.[18] The picture is distorted by the fact that thousands of years of erosion and alluvial deposition have destroyed some sites and must have buried many others in the valley bottoms and in the coastal plain. Moreover, some areas have been much more extensively studied than others, so that gaps in the distribution pattern may be more indicative of a lack of archaeological research than of a dearth of Neolithic settlement. But where archaeological coverage has been intensive, and the terrain has not been subject to alluviation, the gaps are likely to reflect the real pattern of settlement and land use in the Neolithic period. They include the highest part of the Murge in the territory of Altamura, a vacant area above the lower terraces where settlement was relatively dense, and the area between the NW scarp of the Murge and the valley of the Fiumara di Venosa where the surveys carried out by L. Marchi and G. Sabbatini found few traces of Neolithic settlement. A more recent survey by Myles McCallum and his team of some 200km^2 in the area of Monte Serico and Banzi also produced no traces of Neolithic settlement, although a thin scatter of stone

[9] Vigne 2003. He argues that stock-raising practices were transmitted from Apulia to the rest of Italy and the W Mediterranean.

[10] S. Bökönyi's pioneering study of 1983 is now out-of-date. Vigne (2003) includes a synopsis of faunal remains from other Early Neolithic sites in his discussion of the animal bones from Torre Sabea. Various other faunal reports have been used in writing this chapter, including Sorrentino 1983, Passo di Corvo; Wilkens 1988, Ripa Tetta; Lo Porto 1998, Murgia Timone; Curci *et al.* 2004, Masseria Candelaro; Bökönyi 2010, Incoronata; Curci *et al.* 2016, Masseria Pantano and Palestra ex GIL.

[11] Vigne 2003.

[12] Tozzi, 2002, 585. Contra: J.-D. Vigne (2003, 325, 344), who sees no evidence for the domestication of the auroch.

[13] At Torre Sabea: Vigne 2003, 328; at Rendina in phase III: Cipolloni Sampò 1977–1982, 280-281 and 289 fig. 76.

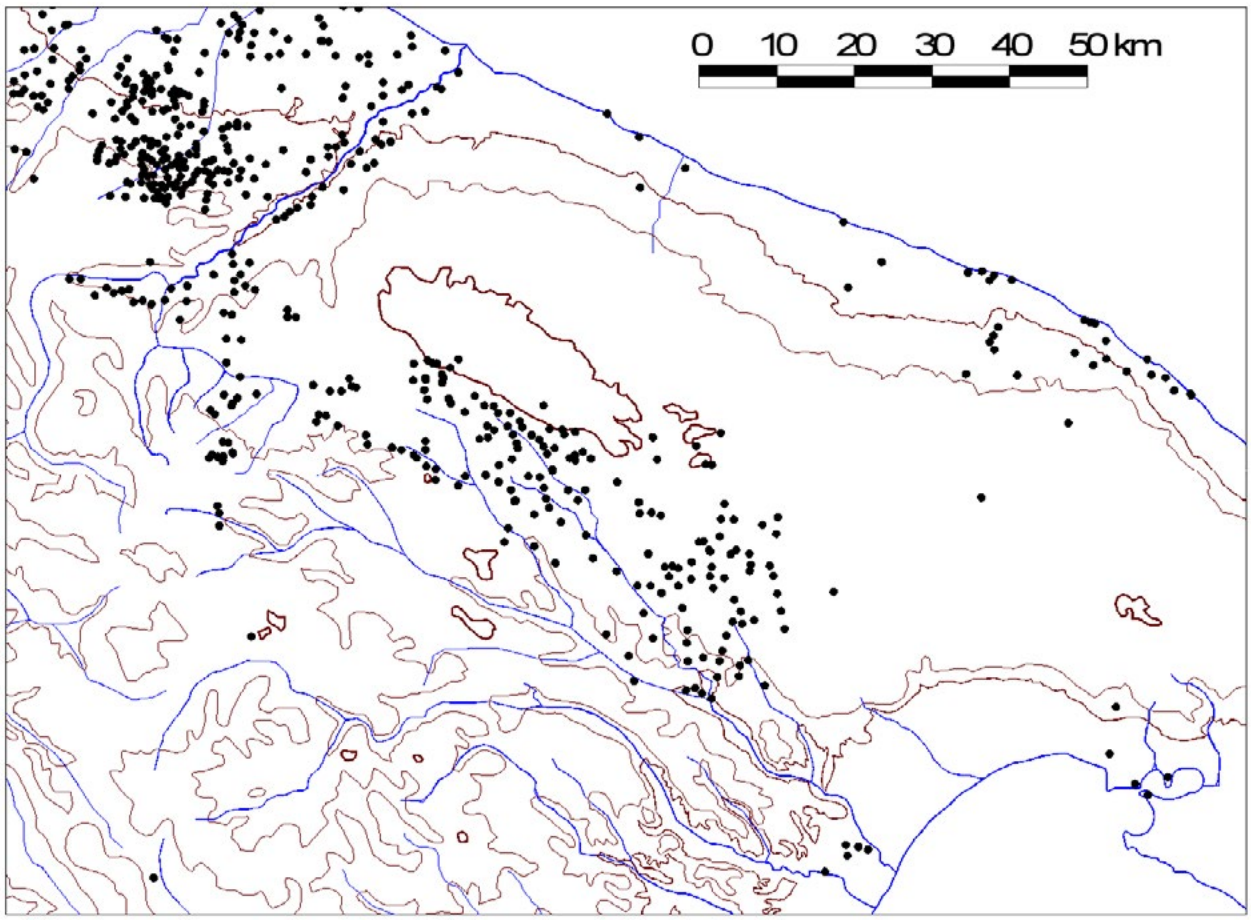
[14] Tagliacozzo, 1993; cf. Vigne 2003, 331.

[15] Robb 2007, 288. Cf. Cassoli & Tagliacozzo 1997, 229 at Scamuso, in the Serra d'Alto phase.

[16] Bartosiewicz & Nyerges 2016, 76-77.

[17] Graziosi 1980. Their date and cultural context have been controversial, but analysis by X-ray fluorescence of the cinnabar used as a red pigment to decorate pottery recovered in the Grotta has yielded a date in the 5th millennium BC: Quarta *et al.* 2018.

[18] The principal sources used (apart from the surveys published here): for the Tavoliere and Ofanto valley: R. Whitehouse 2013, 58 fig 1; for the territory around Venosa: Marchi & Sabbatini 1996; Marchi 2005; Sabbatini 2001; for the Materano: Lo Porto 2006–2007, map on p. 253; for the Metapontino, *Metaponto III*, map p. 570 fig. 17.1; for the hinterland of Bari: Coppola 1981, fig. 20; 1988, 35 fig. 11; for the territory of Altamura: D. Santoro 1998, fig. 1; Carrasso & Coppola 2015, fig. 1.



Map II-1. Neolithic settlements in the Fossa Bradanica and adjoining areas, all periods.

tools showed occasional Neolithic frequentation[19] The dearth of settlement in the mountainous area to the S of the Venosa cluster is also likely to be significant, although Vinson noted a few sites in his study of the route of the Via Herculia, which are included in the map. The pattern suggests that Neolithic settlement was adapted to several quite different environments, including the plain of the Tavoliere, the coastal fringe, the lower E facing terraces of the Murge and river valleys with access to fertile land. What is most relevant to the interpretation of our data is the remarkable number of settlements in the Fossa Bradanica where the pattern was at least as dense as that in the Materano, and roughly equals that in the Ofanto valley, though it falls short of the extreme density of the Tavoliere. The Fossa Bradanica was not a backwater in the Neolithic period. It was an area of considerable importance in the development and spread of Neolithic "civilization" in South Italy.

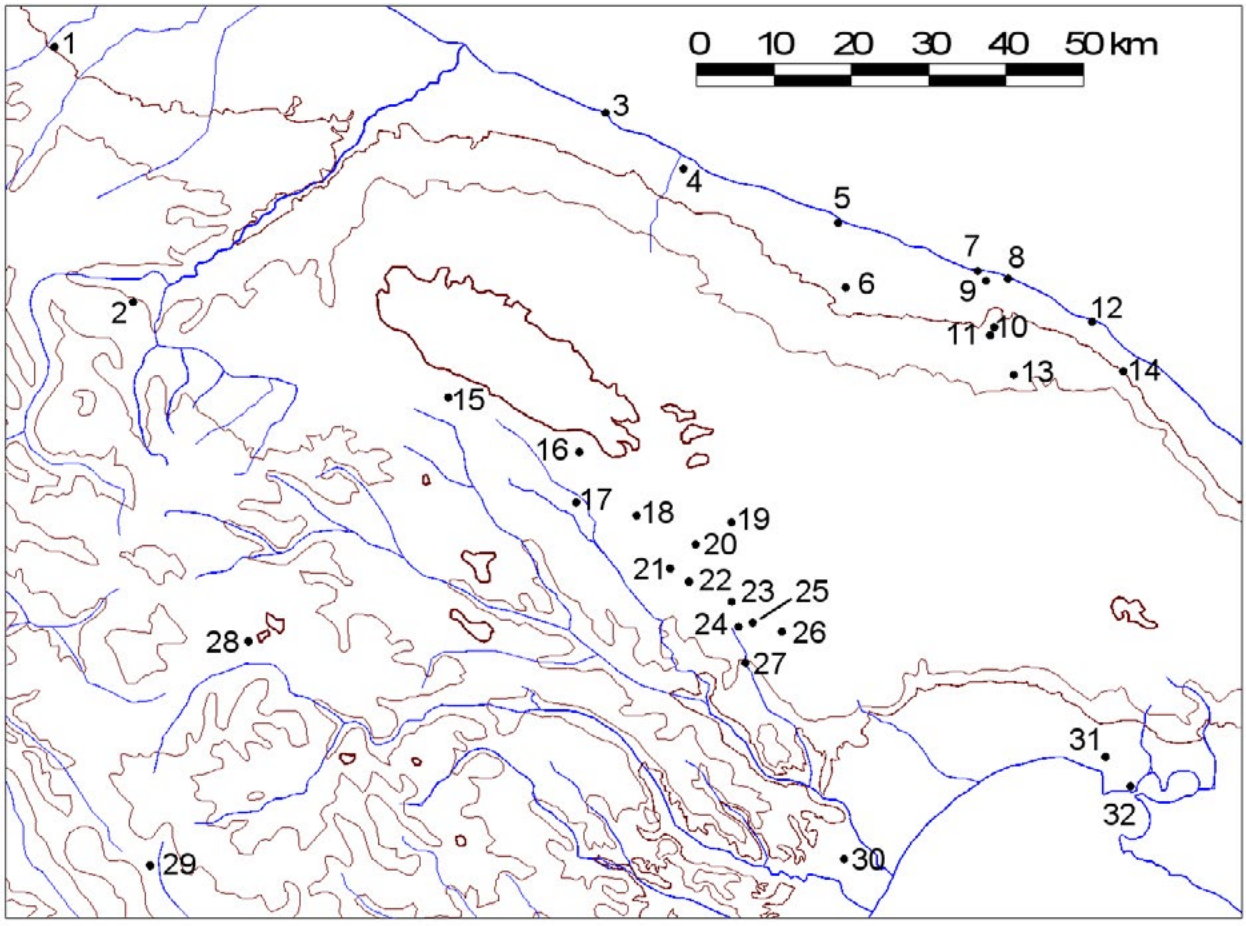
i. Early Neolithic settlements (ca. 6200 – 5600 BC)

Stratigraphic sequences from a large number of sites show that the inhabitants of the Early Neolithic settlements used two types of pottery: large coarse-ware pots for storage and cooking, and undecorated semi-fine vessels with lightly burnished surface for preparing and consuming food. The coarse pots had thick walls decorated with simple impressed marks made with fingernails, the edge of a cockle shell or the point of a stick, without any coherent pattern (see Cat. II, 1, *1a*). They stand at the beginning of a pottery tradition which spread throughout Apulia and marks the region out from the rest of Italy in the Neolithic period.

Radiocarbon dates, now available for a significant number of sites, show that the settlements of this phase were founded between ca. 6000 and 5750 BC at various points around the coast from the Tremiti Islands to the Gargano peninsula, and along the Apulian coast from the Tavoliere (Coppa Nevigata and the Masseria Candelaro) to Central Apulia (Pulo di Molfetta, Scamuso, Grotta del Guardiano and Torre Canne), then S around the Salentine peninsula to Torre Sabea, and across the Ionian Gulf to Favella on the Crati river in Calabria.[20] There was also a small group of sites founded further inland, at Rendina and Lago di Rendina in the

[19] McCallum *et al.* 2013; McCallum & Hyatt 2014.

[20] Natali 2009, 276-277.



Map II-2. Neolithic settlements in the Fossa Bradanica and adjoining areas mentioned in this chapter and/or the Catalogue. 1. Masseria La Quercia; 2. Rendina; 3. Capo Colonna; 4. Pulo di Molfetta; 5. Titolo; 6. Balsignano; 7. Grotta Cala Scizzo; 8. Scamuso; 9. Grotta della Tartaruga; 10. Torre delle Monache; 11. Madonna delle Grazie; 12. Grotta del Guardiano; 13. Chienna; 14. Mortara Zupparello; 15. Le Grottelline; 16. Casa San Paolo; 17. Ciccotto; 18. Masseria Santoro; 19. Malerba; 20. Masseria Sant'Agostino; 21. Masseria Serra Loparco; 22. Dirienzo; 23. Serra d'Alto; 24. Murgia Timone; 25. Trasano; 26. Tirlecchia; 27. Grotta dei Pipistrelli; 28. Ciscarella; 29. Paterno; 30. Pantanello; 31. Masseria Bellavista; 32. Scoglio del Tonno.

Ofanto valley, and at Trasano near Matera where the earliest phase of occupation has been securely dated by radiocarbon analyses between 6300 and 5300 BC.[21] Between them is the site of Ciccotto on Botromagno near Gravina where the earliest contexts contain material that can be assigned typologically to this phase,[22] as can the earliest impressed wares from the Older Surveys and from our own Survey Area. The fact that many of the impressed motifs were made using shells of marine bivalves raises interesting questions about the origin of the pots. Either they must have been made and decorated at some centre near the coast, and exported from there to the settlements in our Survey Area, or the pots were made locally by potters who decorated them with marine shells acquired specifically for this purpose. Since the pots decorated in this way were generally large and heavy and at the same time easily broken, they would have been difficult to transport, so the latter alternative is more likely. It indicates how deep-seated was this tradition of decoration, and how firmly the potters maintained their links with the communities on the coast.

Early Neolithic sites were particularly numerous in the huge plain of the Tavoliere where the typical settlement was a small village enclosed by one or more ditches, measuring 100–300m in diameter. Many show up remarkably clearly on aerial photographs.[23] Keri Brown has listed 566 documented sites of this kind,[24] and Ruth Whitehouse has added others, to a total of 776. The original total would have been much higher, probably more than 1,000, though given the probable capacity of the plain to support human subsistence in the economic conditions of the period, only a fraction of these could have been occupied at the same time.[25] Some, perhaps

[21] Radi 2002, 703-704.
[22] Muntoni 2003, 237-299.
[23] Bradford & Williams-Hunt 1946; Bradford 1949; 1950; Jones 1987; Riley 1992.
[24] Brown 2001, 140.
[25] R. Whitehouse 2013, 58-59, 70 with map fig. 1.

most, of the enclosures were small hamlets of a few huts, with around 15–20 inhabitants, and some space for animals or crops.[26] It has been supposed that these settlements were short lived, and that the inhabitants would move on when the surrounding land was exhausted,[27] but they must have been intended to last for several years at least since the labour expended on digging the ditches (ca. 2–3m wide and 2–3m deep) was considerable;[28] and in fact all the main excavated sites show multiple phases of construction.[29] Whatever the case, the great number of settlements implies that there was a large population in the plain.

Ditched settlements are best known from the Tavoliere, but many of the Early Neolithic sites outside the plain were also ditched, as at Rendina in the Ofanto valley,[30] at Malerba on the Murge in the territory of Altamura,[31] and at Tirlecchia and Traxanox in the Materano.[32] It is often supposed that the ditches were not defensible, and that their purpose was to contain browsing animals, and ward off predators;[33] but several other Neolithic sites had defensible dry-stone walls.[34] Moreover, an increasing amount of evidence for violence in Neolithic societies in Italy shows that there might well have been conflict between communities, which supports the idea that the ditches were at least partly defensive.[35] But they may also have had a ritual function as visible sacred boundaries, separating the area of domestic settlement from the external wilder world of nature.[36]

In Central Italy, settlement began to spread into the Apennine mountains before the end of Early Neolithic. The new villages were often founded on hill-tops or high natural terraces overlooking river valleys which provided routes of communication into the mountains.[37] They were not enclosed by ditches but were usually located in positions which had some natural defences. The site of La Starza, situated near the watershed not far from Ariano Irpino is a conspicuous example.[38] It dominated the main route across the Apennines between the North Apulian Plain and Campania. Such settlements must have depended on pastoralism rather than on agriculture for their subsistence.[39] In the valley of the Biferno river, which rises in the high Abruzzo mountains, Graeme Barker recorded settlements with impressed ware pottery of the Early or Middle Neolithic extending into the middle reaches of the valley,[40] and in Central Lucania, nearer to our Survey Area, there were a few remote settlements near the headwaters of the Bradano and Agri rivers, and, most surprisingly, at Ciscarella near the Apennine watershed in an area which would be dominated later by the Iron Age settlement of Serra di Vaglio.[41]

Recent excavations, and reassessments of old ones have shown that there was no standard form of hut inside these Neolithic settlements. At Rendina in the first phase of the village the settlement consisted of rectangular huts, their perimeters delimited by large post holes which supported walls of wattle and daub.[42] At Balsignano, in a later phase of Early Neolithic, huts were rectangular (and in one case roughly apsidal) with stone socles.[43] In some cases hearths were inside the huts, in others, outside. Open areas between huts were usually cobbled. On many Early Neolithic sites however, there are no traces of post holes even though there is abundant occupation debris, including pits of irregular shape filled with large pieces of burnt daub derived from hut walls. This is the case at Favella where V. Tiné has argued that the huts must have been timber-framed sub-rectangular structures clad with daub, resting directly on the ground or on a socle of cobbles.[44] They would have been set adjacent to the pits from which the clay used in the daub was taken, and which then served as refuse pits. These pits were, in due course, filled with the daub when the hut was destroyed. Many other sites which have yielded varying quantities of daub but no post-holes, can be interpreted in this way, including Casa San Paolo close to our Survey Area, which was inhabited in the Middle Neolithic period.[45] Within our own Survey Area, six sites have yielded scatters of daub associated with Neolithic pottery (see below).

Accumulations of burnt daub are so common on Early and Middle Neolithic sites in South Italy that they cannot all be accounted for by the assumption that

[26] Outside the Tavoliere most settlements were probably small, as at Favella in Calabria where the excavator estimates that only 9–12 huts may have been occupied at any one time, representing a population of ca. 35–70 people: V. Tiné 2009a, 592, with further refs.

[27] R. Whitehouse 1968, 346, 355; Geniola 1979, 59: The high density of settlements in the Tavoliere was perhaps determined by the limits of exploitation of the soil: when it was exhausted, the inhabitants were obliged to move on.

[28] Brown 1991.

[29] R. Whitehouse 2013, 71-72.

[30] Cipolloni Sampò 1977–1982; 1980. Settlement begins after the initial phase in the Tavoliere.

[31] Geniola & Ponzetti 1987; Santoro 1998, 13-14: she records ditched sites of Malerba I and III, and at several other locations on the Murge in the territory of Altamura.

[32] Tirlecchia: Bernabó Brea 1984; Lo Porto 1992. Trasano: Tramonti 1978; Guilaine & Cremonesi 1996; Fabbri & Angeli 2010.

[33] R. Whitehouse 1968, 356; Jones 1987, 181, 193; Geniola 1979, 58.

[34] Lo Porto 2006–2007, 352-354. There was a stone enclosure wall at the Pulo di Molfetta in an advanced stage of Early Neolithic: Radina 2002b 618-619; Skeates 2005, 82.

[35] Robb 2007, 93, 259.

[36] So V. Tiné 2009b, 172. Skeates (2005, 85-86) emphasizes the visual impact of the ditches changing the way people saw the landscape and transforming parts of it into socially meaningful places.

[37] Malone 2003, 258.

[38] Trump 1957, 1963; Albore Livadie 2002.

[39] cf. Barker 1981, 143-148.

[40] Barker 1995, 103.

[41] Bellino 1991: surface sherds of Early and Late Neolithic. At Paterno in the upper reaches of the Agri valley a few pieces of Neolithic pottery were found in the excavation of the BA site: Bianco 1994.

[42] Radi 1999, 38.

[43] Radina 2002a, 630-633.

[44] V. Tiné 2009b, esp. 126-164.

[45] Vinson 1975, esp. 58-59; V. Tiné 2009, 165

the huts were accidentally burnt, baking the daub. They must have been deliberately set on fire in a ritual that marked the death of the house and the end of the community that lived in it, and perhaps the death of the headman of the group.[46]

This was not, however, a society in which leading individuals were given conspicuous burials. Very few Early Neolithic burials are known – so few in fact that one must infer that most corpses were simply left exposed, without accompanying grave goods or any other sign of funerary ritual.[47] Consequently there is no evidence for an elite class, and the communities have been described as bands, not necessarily based on kinship groups.[48] Yet they must have had some form of communal organization to undertake works requiring coordinated manpower, if only to dig the ditches which were the defining features of these settlements. It has been suggested that the communities were *heterarchical*, implying that decisions were taken by individuals or groups with different skills, as circumstances required.[49] Individuals would have emerged to provide the leadership needed, but they were not accorded hereditary status.

ii. Middle Neolithic settlements (ca. 5600 – 4800 BC)

In this phase the climate began to turn dryer.[50] It was a gradual process, but conditions for agriculture became more difficult, with hot summers, and seasonal rainfall occurring mainly in the winter months.[51] Pollen evidence shows that mixed deciduous forest began to give place to species more tolerant of dry conditions, such as holm-oak. There were, however, subregional variations. Aridity became most extreme in the Tavoliere where most of the ditched villages were abandoned by the end of this phase; but on the Gargano, on the Murge and in Salento there was still sufficient rainfall to support agriculture and settlement. On the Murge, the preferred crops were still hulled wheats – einkorn and emmer.[52]

There was no drastic cultural change from Early to Middle Neolithic. The transition from the one phase to the other is marked principally by the introduction of new more ornate types of pottery – painted wares, at first of impasto, but soon of purified *figulina* clay, and so-called scratched ware (discussed below) which emerged before the end of Early Neolithic and continued well into Middle Neolithic. Throughout the period there was an improvement in potting technique, especially in the *figulina* pottery which had to be fired at a minimum of 800° C. This was made possible by the development of kilns.[53] The technology improved gradually. The earliest (at Trasano), which go back to Early Neolithic, were essentially ovens in oval-shaped pits.[54] One of the Late Neolithic period (at Ripa Tetta) was a two-storey structure which allowed the pottery being fired to be separated from the burning fuel.[55] The technology required a much greater degree of skill and this fact may account for the development of regional wares, produced in local workshops by more skilled artisans, which show that the uniformity of Early Neolithic was beginning to break down. The old impressed technique continued to be widely used, however, for larger and coarser pots.

Many settlements continued from the previous period, though often with significant changes, as at Rendina where the enclosing ditch was filled in and the village of Phase III expanded beyond it.[56] On the Tavoliere there was a process of consolidation as smaller settlements were abandoned and larger ones were founded. The biggest, at Passo di Corvo towards the N end of the plain, was the largest Neolithic settlement in Europe.[57] It was founded towards the end of Early Neolithic and occupied throughout the rest of the Neolithic period. It extended over ca. 130ha within its enclosing ditch,[58] but aerial photography has shown that habitation was confined to an enclave occupying about a third of this area, separated by a ditch from the remainder of the site. The larger space beyond it was presumably reserved for animals or for cultivation. Within the inhabited area there were at least a hundred discrete huts in compounds partially surrounded by C-shaped ditches. They were not all occupied at the same time, and the total population at Passo di Corvo may have numbered less than 200.[59] Excavations have also exposed a large apsidal hut, and underground silos. Several other settlements in the Tavoliere expanded at about the same time and show similar features.[60]

But the main focus of Neolithic settlement shifted in this period from the Tavoliere to the Materano and the plateau of the Murge between Altamura and Santeramo, where the number of occupied settlements reached its highest level in this period.[61] They are

[46] Robb 2007, 88-89.; V. Tiné 2009b, 164-165.
[47] At Rendina, a body appears to have been left exposed for a time before the remains were buried in a pit: Radi 1999, 39.
[48] R. Whitehouse 1984; Lo Porto (1998, 67) suggested that groups of huts at Murgia Timone may indicate family groupings.
[49] Robb 2007, 241.
[50] Fiorentino *et al.* 2013, esp. 14-16.
[51] Corrado 2010, 82.
[52] Large amounts of carbonized remains of these species were found in a core sample from the Pulo di Molfetta: Caldara *et al.* 2011, 187. At Trasano einkorn was the preferred species in the later phases of the site: Radi 2002, 703.
[53] See esp. Cassano *et al.* 1995, 39, and *schede* 7-9.
[54] Radi 2002, 697.
[55] Tozzi 2002, 580.
[56] Cipolloni Sampò 1977-1982, 212-214; Radi 1999, 38-39.
[57] Acc. to Peroni 1967, 36.
[58] Passo di Corvo: S. Tinè 1983; Trump 1987, 117-131.
[59] S. Tinè (1983, 184-186) suggests 180.
[60] Cassano *et al.* 1987, 71.
[61] Radi 1999, 5. For the chronology of the sites in the Materano and

marked by the presence of Matera scratched ware alongside red-painted painted *figulina* wares, and some coarse impressed pieces in the tradition of the previous phase. Some were large ditched villages as at Murgia Timone and Murgecchia, which continued the predominant settlement type of the Early Neolithic period;[62] At Murgia Timone the surrounding ditch had a forework which appears to have been defensive, enclosing a settlement of miscellaneous huts, some more or less less rectangular, others apsidal, elliptical or round.[63] Some smaller settlements were in caves, as at the Grotta dei Pipistrelli near Matera.

Numerous settlements were also located along the Adriatic fringe of Central Apulia, especially in the stretch to the S and SE of Bari.[64] Many of these were in caves at the shore-line, but there were new open sites founded in this period, as at Titolo near Palese where excavation has revealed substantial remains of a settlement constructed within a wall of massive stone blocks.[65]

Some Neolithic settlements, including some in our Survey Area (see Table II-2) were very small, and are likely to have resembled one recently excavated at Penitenzeria near Bova Marina in Calabria which consisted of a small cluster of one-room huts which were occupied over a period of between 100 and 400 years but with never more than two or three in use at any one time.[66] Such tiny settlements cannot have existed as autonomous social and economic units. Occupants of such hamlets must have grouped together with others in the vicinity for common projects, and it is probable that there was a hierarchical structure with the smaller ones being dependencies of the larger. It is also likely that there was easy migration between these settlements. Strontium isotope analysis of human bones from the Grotta Scaloria has shown that a significant proportion of the population of the cave originated from elsewhere.[67]

The settlement types are so disparate that it is hardly possible to draw any firm conclusions from them about the social structures of the communities who inhabited them, and the funerary evidence is equally inconsistent. The complexity of the settlement at Passo di Corvo has been seen as indicating that the inhabitants had reached a new level of social organization, perhaps with a single central power,[68] but there is nothing in the meagre burials found on the site to suggest that the status of a ruling individual was supported by elaborate funerary rituals.[69] Burials are known from some sites,[70] but they are mostly simple: individual interments in pits, with the body laid flexed (*rannicchiato*) on one side and the knees drawn up to the chest, usually without grave goods. In some areas, however, caves were used for communal burials, notably at the Grotta Scaloria,[71] and in the Materano, anticipating the funerary practice of the Late and Final Neolithic and Eneolithic periods.[72] They suggest that these were closely-knit communities without any hierarchical structure.

Caves were also used for the sacred rituals of the living. There were two inter-connecting caves in the Grotta Scaloria, an Upper Cave in which the burials were concentrated, and a Lower Cave which was given over to a water cult in which drips falling from stalactites were captured in ritual vessels.[73] Water also collected in a small rectangular basin, near which was a hearth, where food could be prepared in the dark conditions of the cave. It exemplifies a type of cave sanctuary studied by Ruth Whitehouse.[74] They were generally in hidden locations with difficult access, restricted space, and darkness. In the Grotta Scaloria a high proportion of wild animal bones in the faunal assemblage suggests that hunting was an important part of the rituals performed there. In the Grotta di Porto Badisco in Salento the walls of the cave were decorated with hunting scenes which Whitehouse interprets as providing the setting for initiation rites by which a small group within the broader society controlled its cult practices and legitimized its political power.[75] We have already noticed glimmerings of the same idea in the paintings in the Grotta Paglicci in the Gargano which are normally dated to late in the Upper Palaeolithic period. The hunting of wild animals, especially red deer, would have played an important part in these rituals.

No terracotta figurines were found in the Grotta Scaloria, but a piece discovered in a Middle Neolithic context in a settlement at Titolo near Palese shows that figurines with exaggerated female attributes to invoke fertility had begun to be produced in this phase.[76]

iii. Late Neolithic settlements (ca. 4800 – 4300 BC)

The evidence for the climate of this phase is ambiguous. According to one analysis, the beginning

the Terra di Bari, see Muntoni 2003.
62 Lo Porto 1998a.
63 Lo Porto 1998a,
64 Coppola *et al.* 1981; Coppola 1988a.
65 Radina & Dell'Anna 1988; La Rocca 2017, 570-573.
66 Robb 2007, 33-34.
67 Tafuri *et al.* 2016b, 141.
68 Corrado 2010, 79.
69 Malone 2003, 293.
70 See esp. Robb 2007, 56-67. A notable group of 56 individual burials was found in the Pulo di Molfetta: Mosso 1910, and others by Mayer (1904). Most had no grave goods, but some were provided with Serra d'Alto pottery: Radina 2002b, 623.
71 Elster *et al.* 2016.
72 Notably the Grotta Funeraria connected with the Grotta dei Pipistrelli near Matera: Ridola 1912, 23 ff.; Lo Porto 1988, 137-146.
73 Elster *et al.* 2016.
74 R. Whitehouse 1991; 1992.
75 R. Whitehouse 1991, 1992. Cf. Vigne 2003, 338-340, 344 (maintenance of the social hierarchy).
76 La Rocca 2017, 573, fig. 24b.

of it corresponds to a temporary improvement in the climatic conditions, though a gradual decrease in winter rains led to a change in cereal cultivation with even more emphasis on barley and emmer.[77] But analysis of carbonized plant remains in a core drilled in the Pulo di Molfetta suggests that cereal cultivation had ceased in this part of the Murge plateau by ca. 4700 BC, and that drought-tolerant species such as the (wild) European olive (*Olea europaea*), myrtle (*Myrtus communis*), *Cistus* sp. and *Erica* sp. had colonized the area.[78]

In the Materano, settlements continued to flourish for much of the 5th millennium BC, but they showed significant changes from those of the previous period.[79] They are characterized by Serra d'Alto pottery, named after the site 3km NE of the centre of Matera where the ware was first identified.[80] The Late Neolithic settlement there spread across the hill-top over the remains of three ditched villages of the Middle Neolithic period.[81] The ditches were filled in or adapted as paths, and the new settlement consisted of looser clusters of round or oval-shaped huts not surrounded by a ditch. Towards the end of this phase a number of individuals were buried in the contracted position in pits cut in the bedrock. Some were supplied with grave goods, and one tomb was marked by a prominent stone, showing that more elaborate funerary rituals were being developed.[82] Indications of religious cult became more widespread, normally in cave sanctuaries and rock-cut hypogea. The general area of the Murge offered many suitable cave sites, especially in the vicinity of Bari,[83] and in the Materano.[84]

The most characteristic pottery of this phase was Serra d'Alto ware, a high-quality product which required a good deal of technical skill. It originated in the Materano, perhaps in Serra d'Alto itself, but it was imitated in specialist workshops in various parts of South Italy and beyond.[85] It is attested on two of Vinson's sites (V48 and V62), and on two in our own Survey Area (Sites 223 and 347-9). Pots of this type have been found in Malta, Sicily, N Italy and even across the Adriatic (whether imports or local imitations) – signs that much more extensive trade contacts developed in this period. There is other evidence for long-distance trade in axes in polished greenstone acquired from northern Calabria or southern Basilicata,[86] and obsidian tools from Lipari.[87]

iv. Final Neolithic settlements (ca. 4300 – 4000 BC)

The palaeo-environmental evidence shows conditions in Apulia fluctuating from relatively wet to dry to wet again during this period.[88] The general trend in the Italian peninsula, however, was to increasing aridity, and the Neolithic settlements that lasted down to the end of the M5 were mostly located close to rivers or lakes which offered a perennial source of water.[89]

The period is characterized by Diana-Bellavista ware, named after the type-sites at the Contrada Diana on Lipari where the primary centre of production was located, and the Masseria Bellavista near Taranto where a regional variant of the ware is well attested in burials. The connection with Lipari is significant since the island was the main source of obsidian which reached its maximum distribution in this period. It is found on many sites in Apulia and the Materano, though generally in small pieces used for thin blades.[90] The burials in the site at the Masseria Bellavista on the Gulf of Taranto illustrate a new development in the Neolithic culture: they formed a small necropolis of pits containing several burials furnished with grave goods. The last to be buried was laid flexed (*rannicchiato*) at one side of the tomb, and the bones of earlier inhumations were piled in the centre.[91] Similar burials are known from nearby Scoglio del Tonno and some other sites of the period.[92] They suggest that greater importance was now attached to kinship groups and perhaps ancestor worship.

Although the Diana-Bellavista ware was widely dispersed throughout South Italy, it is found on comparatively few sites, suggesting that Final Neolithic culture was both more homogeneous and more widely dispersed. Not many settlements of this period have been excavated, but survey evidence suggests that they were more loosely organized than previously and penetrated further into the mountains.[93] This change in settlement pattern is likely to have been brought about by a further deterioration in the climate. As the drying trend persisted, the population came to depend more on pastoralism for subsistence. Spindle-whorls and possible loomweights provide evidence for weaving (whether for wool or flax).[94] The practices of stock-raising must

[77] Fiorentino *et al.* 2013, esp. p. 16.
[78] Caldara *et al.* 2011, 187.
[79] A good summary in Radi 1999. See also Lo Porto 2006-2007.
[80] Rellini 1934.
[81] Ridola 1926; Rellini 1925; Lo Porto 1989, 61.
[82] Lo Porto 1989, 55-56, fig. 8.5.
[83] E.g. the Grotta Cala Scizzo: Geniola & Tunzi 1980.
[84] E.g. the Grotta dei Pipistrelli near Matera: Lo Porto 1988.
[85] Cf. Muntoni 2008.
[86] Leighton 1992; O'Hare 1990.
[87] The obsidian found by Ridola on Neolithic sites in the Materano has been shown to come from Lipari (Lo Porto 1988, 129-130), as has that found on Neolithic sites in the territory of Altamura (Santoro 1998, 40). For the trade in obsidian, which reached its greatest height in the Late Neolithic and collapsed in the Eneolithic, see Robb 2007, 192-204.
[88] Fiorentino *et al* 2013, esp. 16-19.
[89] Skeates 2013, esp. 8, 21 with further refs.
[90] Robb 2007, 190.
[91] Quagliati 1906; Cremonesi 1979, 115-117.
[92] Malone 2003, 294; Robb 2007, 205-206.
[93] For increased pastoralism, dispersed settlement and frequentation of the mountains in Late Neolithic, see Robb 2007, 337.
[94] Late Neolithic spindle whorls: Skeates 2005, 99 and fig, 22. Bradford (1950, 87) reports finding 2 "broken sherds fashioned to produce ... a

have changed to provide for this new need, with an increased emphasis on sheep. Sheep and goats form a higher proportion of domesticated species in most later Neolithic assemblages,[95] and it is likely that flocks were moved greater distances between winter pastures in the plains and summer pastures in the mountains.

The last phase of Neolithic culture in North and Central Apulia – and the transition to Eneolithic – is represented by a number of sites which have produced Macchia a Mare ware typified by hard grey impasto bowls with flaring walls meagerly decorated with an incised zigzag below the rim. It has been found at various sites in the Gargano and on the Murge in the vicinity of Bari. They are mostly caves, used for habitation and burial, and they represent a further decline in open settlement and the transition to the cave-bound culture of the Eneolithic period.[96]

4. The Older Surveys in the Fossa Bradanica

Vinson recorded 87 certain and 14 possible Neolithic sites in the area between Gravina and the Basentello watershed; 4 others (plus 1 doubtful) were recorded by Aldridge in his survey of the valley of the Torrente Gravina di Picciano between Gravina and the Basilicata border and 3 (plus 1 doubtful) by Chapman and Ammerman between Gravina and Altamura. They are shown on Map II.3, together with the sites in our own Survey Area, and a few other sites reported by others, including Le Grottelline between Spinazzola and Palazzo San Gervasio noted by Roberta Lorenzi and Marco Serradimigni,[97] and several sites on the Murge near Altamura recorded by Damiana Santoro.[98] As the histogram in Section VI.I.4 shows, the Neolithic settlement pattern was denser than in any other period. It must be remembered, however that most of the Neolithic sites fall within a time span of ca. 1,500 years (ca. 6000-4500 BC), and it is extremely unlikely that all the sites were occupied at any one time.

It can be seen from Map II.3 that most of the Neolithic sites are concentrated in the well-watered plain land to the N and NW of Gravina below the scarp of the Murge beside the watercourses which transect this part of the Fossa Bradanica (the Torrente di Gravina, the Pentecchia di Chimienti and the Roviniero), and close to the now drained lake of the Pantano, the former location of which is shown on the map. The Pantano basin contains some of the best arable land in the area. The sites are spread, for the most part, fairly evenly across the terrain at distances of 1 to 3km, but there are several denser clusters which may represent villages. The pattern here suggests that the inhabitants were all engaged in cultivating cereals and no doubt other crops, but a small group of sites at the N end of this settlement zone, near the headwaters of the Roviniero, is situated at one of the best access points to the Murge. This suggests that some of the Neolithic farmers may have kept sheep on the plateau. To the E and W of this environmental niche the settlement pattern thins out. To the E, Aldridge found fewer Neolithic than Bronze Age sites in the valley of the Torrente di Gravina, and to the W, Vinson found fewer Neolithic sites towards the watershed of the Basentello. The reduction in the number of sites here is confirmed by M.-L. Marchi's survey of the *Ager Venusinus* which overlaps with Vinson's in this area. She found no additional sites just W of Spinazzola and very few at all in the areas of Palazzo S. Gervasio and Banzi, though both she and Vinson found greatly increased numbers of sites to the S and W of Venosa.[99] The pattern suggests, therefore, that there was a distinct Neolithic group of communities which inhabited this part of the Fossa Bradanica.

Andrew Sargent has analysed the locations of the Neolithic sites recorded by Vinson in this area and compared them with those in the Amendola plateau just S of the Gargano.[100] He found that "the only positive selection demonstrated for Neolithic sites was for locations near the valley edge", and that they showed only a "weak preference for perennial springs and wells". He also noted that the tractability of the soil was one of the most important factors in settlement location, and that the Neolithic sites in the Vinson survey area were generally located on sandy soils which were easily cultivated without the use of traction animals.

61 of the Neolithic sites found by Vinson and one from each of the Aldridge and Chapman surveys had a readily definable nucleus of about 50m or more in diameter, and 11 had a nucleus over 100m in diameter. Several sites consisted of loose scatters with small concentrations indicative of huts. Site V101 had at least two separate concentrations of ca. 5×5m with fragments of daub and traces of hut foundations. Other hut foundations were noted on Site V87B. Site V198 had one concentration of sherds and daub. On Site V213/V216 there were 2 concentrations, one very dense.

circular spindle whole" in his excavations at Passo di Corvo, but this interpretation of such pieces was doubted by S. Tinè who published seven such "rondelle fittili" with central hole and two without it from Passo di Corvo, and reports that 232 were found. He argued that the fact that some do not have the central hole casts doubt on the interpretation of them as *fusaiole*. Lo Porto 1998, tav. XLII, nos. 374 and 375, reported two loomweights from Murgia Timone. both round, found in pits associated with the settlement, most of which are said to have contained Late Neolithic or "Subneolithic" material. It is possible that these whorls and loomweights were used for weaving flax rather than wool: cf. Harris 2013, 108-109.

95 Robb 2007, 302.

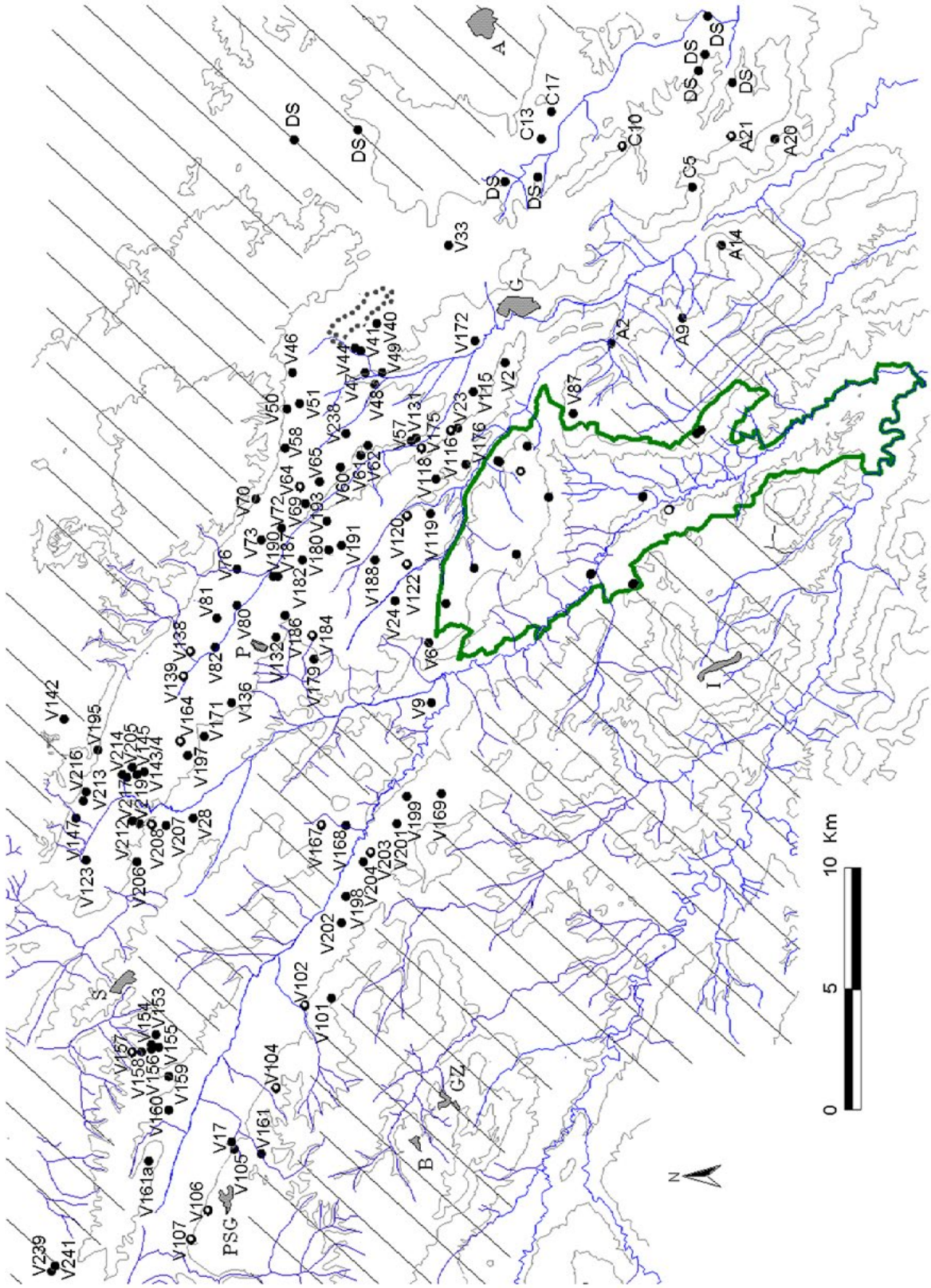
96 Corrado 2010, 93-94.

97 Lorenzi & Serradimigni 2009.

98 Santoro 1998.

99 Marchi 2010 esp. distribution maps on pp. 242-246

100 Vinson 1972, 1978; Sargent 2001.



Map II-3. Neolithic sites on the Older Surveys and in our Survey Area. Sites on the Older Surveys are numbered. For Site numbers in our Survey Area, shown outlined, see Map II-4. Doubtful instances are indicated by hollow dots. DS = Sites recorded by Damiana Santoro (1998). LG = Le Grottelline. The approximate outline of the Pantano is shown dotted.

On V72 part of the foundations of a round hut, some 5m in diameter, survived. Other fragments of daub from hut walls were found on Sites V123, V131, V132, V198 and V206. The site with the greatest quantity of Neolithic pottery and possibly the largest in the area was Site V44 at Casa San Paolo.[101] Vinson directed an excavation there for the University Museum of Pennsylvania in 1971–2 but found much of the site ploughed out almost to bedrock. The original nucleus of the settlement was not located, but the excavation produced abundant Middle Neolithic and some Late – Final Neolithic material, as well as two successive hearths of the Middle Bronze Age, some fragmentary buildings, and various pits.[102]

More recently, a joint excavation by the University of Pisa and the Superintendency for Puglia at Le Grottelline near Spinazzola just S of V171 exposed substantial traces of a rectangular Neolithic hut.[103] It had a burnt clay floor and walls of wattle and daub resting on a dry-stone socle. Outside it there was a cobbled surface on which there was a cluster of quern-stones. The pottery sequence begins in Early Neolithic and ends with late Diana-Bellavista ware. It was therefore a long-lasting site, engaged in agriculture.

i. Classes of Neolithic pottery and their distribution within the Older Survey Areas

The distribution of the main classes of Neolithic pottery inside the Older Survey Areas shows some interesting sub-regional patterns, as well as indicating changes in settlement density and location over time.

Sites reported as Neolithic where the ware is not specified in the records of the surveys (of which there

Site	impressed	Scratched	Red painted	Serra d'Alto	Diana/ Bellavista	*figulina*	Site	impressed	Scratched	Red painted	Serra d'Alto	Diana/ Bellavista	*figulina*
A2	y						V72	y					
A14	y	y					V73	y		y			
A20	y						V76	y	y				
C13	y						V80	y					
V2	y		y				V81	y		y			y
V6	y					y	V82	y		y			
V9	y						V87	y					
V17						y	V101						y
V23	y					y	V105					y	y
V24	y						V115						y
V28	y	y					V118	y					
V33	y		y			y	V131	y	y				y
V40	y	y	y			y	V132	y					
V41	y		y				V136	y					
V44	y	y					V142			y			y
V46	y					y	V143/4			y			y
V47	y	y	y				V145	y					y
V48	y	y	y	y			V159	y					y
V49	y		y			y	V161						y
V50	y		y			y	V168	y				y	
V51	y		y			y	V172	y					y
V57	y		y				V182	y					
V58	y				y	y	V187	y					
V60	y					y	V198	y					y
V61	y						V199	y					
V62	y		y	y			V207	y					y
V65	y						V212						y
V70	y						V213	y					y
V71	y						V241	y					y

Table II-1. Sites and Neolithic wares on the Older Surveys.

[101] Vinson 1974, 1975; Whitney 1979.
[102] Vinson 1975.
[103] Colombo *et al.* 2009, 69-70; Lorenzi & Serradimigni 2009.

were at least three) have not been included in this analysis, nor have those which were only doubtfully datable to the Neolithic period.

a. Impressed ware (Early/ Middle Neolithic)

Neolithic impasto pottery with impressed decoration was found on 49 sites. Where there is a photographic record of the pieces (Plates 51-52) it can be seen that only a few have random patterns of pock-marks made with the fingers or the point of a stick which are characteristic of the earliest phase of Early Neolithic (notably no.9 from site V50 and no.13 from V168). In the great majority of cases the decoration is organized in columns of narrow linear impressions made with a cockle shell or a broad-pointed instrument typical of an advanced phase of Early Neolithic, perhaps extending into Middle Neolithic. In some cases the decoration is of "rocker" type with vertical columns of zigzag made by rocking the cockle shell in a straight line down the surface of the pot (nos 10, 19, 21, 22 from Sites V28 and V47). These too must be from an Advanced phase of Early Neolithic or Middle Neolithic. The ware was found in both E and W halves of the survey area.

b. Matera scratched ware (Advanced Early Neolithic/ Middle Neolithic)

The distribution of scratched ware in and around the Older Survey Areas is uneven. It was common in the Materano,[104] and Santoro reports it on several sites in the territory of modern Altamura and the immediately adjacent part of the territory of Matera.[105] Aldridge found it on one site near the Matera border (Site A14), and Vinson recorded it at Casa San Paolo (V44) and adjacent sites (V40, V47, V48, V76), in the valley of the Torrente di Gravina (V81 and V131), and at V28 in the Vallone Impiso, a tributary of the Roviniero, between Poggiorsini and Spinazzola. All these lie below the scarp of the Murge on an obvious line of communication from the Materano. None, however, was found in the Superintendency's excavations at Ciccotto on Botromagno.[106] That may be because the site had come to an end before the ware was introduced, but the fact that only one piece (No.170 from Site 432) was found in our own survey suggests that there was another factor involved here, and that Botromagno and the settlements in Basentello valley were less closely linked economically and culturally with those in the Materano.

c. Masseria La Quercia ware (Advanced Early Neolithic)

A painted ware resembling La Quercia ware was found by Aldridge near the Matera border (Site A2). A similar piece from Dirienzo in the territory of Altamura has been published by D. Santoro (1998, 25, fig. 11d). None, however, was identified in the Vinson survey.

d. Red painted wares (Ceramica a fasce rosse) (Middle Neolithic)

Red painted wares were found on 16 sites, all in the E half of the Older Surveys – on Botromagno (Site V2), and around the upper reaches of the Torrente di Gravina and the Canale Capo d'Acqua.

e. Serra d'Alto ware (Late Neolithic)

Serra d'Alto ware was identified on only two sites (Sites V62, V48). Both are close to Casa San Paolo, but Vinson found none in his excavations there.

f. Diana – Bellavista ware (Final Neolithic)

Vinson found some sherds of Bellavista/ Diana ware in his excavations at Casa San Paolo, and on three sites in his survey: one, Site V58, near Casa San Paolo and the other two further W in the upper reaches of the Basentello valley (Sites V105, V168).

g. Unpainted figulina ware (Middle – Final Neolithic)

Unpainted *figulina* ware was widespread, found on 25 sites, mostly located in the W part of the surveyed area.

ii. Lithics on the Older Surveys

Site V119 had only lithics (débitage and one obsidian blade). It was perhaps a stone-working site. Otherwise, the earlier surveyors only rarely recorded lithics other than those found on sites where there was also pottery, so stone-working sites are probably under-represented. Some pieces found with LIA or later material may be considered sporadic, indicative of Neolithic activity but not settlement. Many, however, were associated with Neolithic, Bronze Age and even Iron age pottery. It is likely that they can be assigned to the same date as the sherds. The pieces recorded with Neolithic sherds show a fairly even scatter across the area. Most were of locally sourced chert pebbles, but flint (probably from the flint mines in the Gargano[107]) and obsidian (from Lipari) were imported for making finer pieces, such as the flint blade from Site V159 (Pl. 50.20) or the obsidian blade from Site V105 (Plate 50. 25). Flint, found on at least 26 sites, was relatively common, and since a core was found on Site V28, and débitage on various sites (including V119, V122, V187, V188), it is likely that it was normally imported as raw pieces to be worked locally. Obsidian was rather rarer, but was found in ten locations including Casa San Paolo and three sites

[104] Trump 1966, 46-48; R. Whitehouse 1969, 296-298; Radi 1999, 49-50.
[105] Santoro 1998, 23, figs. 8 and 9.
[106] Muntoni 2003, 248.
[107] Galiberti 1999.

in its immediate vicinity. A core found on Site V81 (Pl. 50.26) shows that at least some of this material too was imported as unworked pieces rather than as ready-made tools, as Vinson has noted.[108]

iii. Summary

In short, the Older Surveys show that Neolithic occupation in this part of the Fossa Bradanica began in the Early Neolithic period, both in the valley of the Basentello and near the head waters of the Torrente di Gravina. It is likely that in this period the Neolithic settlements in the area of the older Surveys provided a link between the Neolithic of the Tavoliere and the incipient Neolithic of the Materano. But the great majority of settlements must be dated to an advanced phase of Early Neolithic extending into Middle Neolithic. The settlements of this period were concentrated in the well-watered fertile land below the Murge, around the lake of the Pantano and in the upper reaches of the Torrente di Gravina and the Canale Capo d'Acqua. The scratched wares and red-painted wares found in this area show that it had close cultural links with the Neolithic of the Materano, but it cannot be regarded as simply continuum of that culture since the scarcity of sites of this phase revealed by Aldridge's survey of the valley between Gravina and Matera shows that the occupants of these sites formed a distinct community. It cannot have extended further W than the valley of the Roviniero since no scratched wares or red-painted areas were found in this area.

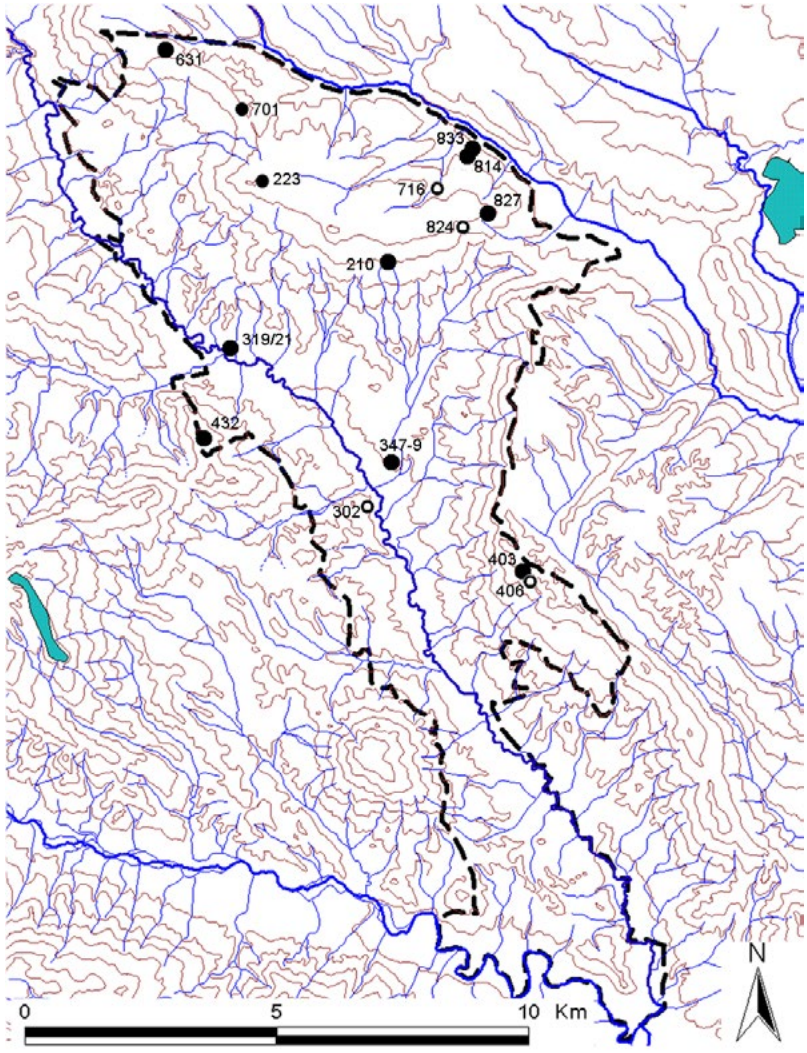
Towards the end Middle Neolithic, however, settlement was in decline in this part of the Fossa Bradanica. The exuberant Serra d'Alto phase of the material culture that was centred on the Materano is poorly represented in the Older Surveys. The fragments of Diana-Bellavista ware found on a small number of sites show that settlement continued at a low level into the Final Neolithic period.

5. Our Survey Area

Our work in the Basentello valley adds substantially to this picture and suggests some new lines of interpretation. Neolithic pottery was found on at least 15 locations in the Survey Area. On 11 of these the concentration of material was sufficient to suggest that they were occupation sites inhabited at some point during this period. Site 701, although very small, is included because the presence of daub suggests that the finds here were more than casual scatter along a route.

i. Wares, types, and the chronology of the sites

The following table summarizes the main categories of material found on these sites. As the Table shows, except on Site 432, impasto sherds with impressed motifs typical of the Early and Middle Neolithic period, were found on most sites with plain or *figulina* ware but not with the painted wares typical of the Middle and Late Neolithic. This suggests that undecorated *figulina* pottery may have been introduced in this area before the painted wares. The only category which normally overlaps the two sets is the plain impasto which might belong to either sub-period.



Map II-4. Neolithic Sites in our Survey Area.

[108] Vinson 1978, 451.

Site	Impasto Impressed	Impasto Plain	Painted	Plain/ *figulina*	Total Neolithic sherds	Lithics	Daub noted	Area (m^2)
210	17			3	20	7	yes	200
223		5	4		9	18	yes	90,000
319/321	31			1	32	1	yes	850
347-9*		91	3	19	113	7	no	24,700
403/404	44	87			131	69	no	6400
432	125	81	24	66	296	14	yes	5300
631	91	39			130	61	yes	900
701	2	1			3	4	yes	150
814	9	30		2	41	1	no	6000
827	26	25		1	52	1	no	1500
833	6	9		1	16	0	no	100

Table II-2. Neolithic sites, with areas, wares, lithics and daub in our Survey Area. *On Site 347-9 the painted sherds include red-and-white and Serra d'Alto pieces; the plain impasto includes 2 Bellavista ware and 1 Macchia a Mare ware sherd.

This broad distinction can be clarified further by tabulating the pieces listed in the Catalogue under a number of headings which are most indicative of each sub-phase of Neolithic. It should be borne in mind that there is a quantitative bias in favour of impressed impasto which is immediately identifiable and fairly easily recorded, whereas wall sherds of plain impasto were hardly ever catalogued as special pieces.

As Table II-3 shows, pottery with impressed decoration of archaic type is found on 9 sites. Of these, Site 631 produced no late material, so it can be presumed to have been abandoned before the end of Early Neolithic (i.e before the middle of the 6th millennium BC). Site 403 probably also belongs entirely in this Early phase of Neolithic. It admittedly produced a single sherd with micro-rocker decoration which might be Middle Neolithic, but the motif is already attested at Rendina in a late stage of Early Neolithic. These early sites in our Survey Area combined with those from the Older Surveys fill in the gap in distribution map in the Fossa Bradanica, linking the earliest Neolithic sites in the Materano with those in the Ofanto valley and the Tavoliere which was particularly densely inhabited in this phase.

The Middle Neolithic period is indicated by the dense rocker patterns found on many of our coarse impasto sherds, and by *figulina* pottery. Sites 432 and 833 which yielded impressed impasto together with sherds of plain/ *figulina* wares (shown in Table II-3) are likely to have continued into the second half of the 6th millennium, as are Site 210 with 3 uncatalogued *figulina* sherds, and Sites 319/321 and 827 each of which had 1 (not shown in the Table). Of these by far the most important site to show continuity of use throughout Early and Middle Neolithic is Site 432 which accounts for 16 catalogued impressed fragments as well as 12 painted pieces, 2 of *figulina*, and a fragment of scratched ware. The site must have lasted well into the second half of the millennium – but probably not beyond, since no Serra d'Alto pottery was found there.

By the Late Neolithic period all the earlier sites had been abandoned and only 2 show traces of activity: Sites 223 and 347-9. Site 223 (San Felice) which yielded two pieces of Serra d'Alto ware and a polished miniature axe blade (No.73), must have been a very small habitation, probably occupied only briefly, if at all, at that time: the Neolithic on it is very widely dispersed. The miniature axe suggests that it may have had some ceremonial function. Site 347-9 is the only site to have produced evidence of occupation in the Final Neolithic period, in the form of Diana-Bellavista and Macchia a Mare pottery (Nos.203-204). It was a small-medium sized settlement, and the only one in our Survey Area likely to have had continuous if slight occupation from Middle Neolithic to the end of the Neolithic period.

ii. Site locations

As Map II-4 shows, Neolithic habitation was limited to the NE part of the Survey Area. Except for Site 319/321 the Early/ Middle Neolithic sites are all situated on slopes well above the valley floor at an altitude of roughly 400–450m. This corresponds broadly to the spring line. These locations conform reasonably well to Sargent's locational analysis of Neolithic sites in the Vinson survey area in that they are "near the valley edge", but they imply a much stronger association with water sources than he found. They are also well located to exploit the best arable land on the tops of the

Site	Early Neolithic Impressed motifs			Middle Neolithic Impressed/ scratched/ *figulina*				Late Neo.	Final Neo.
	Finger-tips or -nails	Cockle or clam shell	Other tool	Rocker	Scratched	Plain	Painted	Serra D'Alto	Bellavista Macchia a Mare
210		95	158	79 159 160 162		206?			
223								200 202	
319/321	81 98 110	83	125 152	108 166					
347- 9						181 180	192 rw 193 rw	201	203 B 204 B 205 M
403	106 107 109 122? 127 135 138 403 143 144 145 161	87 118 121	77 114 120 123 140 141 142	161					
432	78 102 103 117 128 134 147	105 111 119 124 129 130	89	165 167 168 169	170	178	186 b 187 b 188 r 189 r 190 r 191 r 192 r 193 r 194 rw 195 rw 196 rw 197 rw 198 rw 199 rw		
631	80 92 99 100 115	82 86 88 93 96 126 131 132	112 115 133 136 137 139 154 156 157						
701		104	155						
814		97 113 149	148 153			183 185 i			
827	94 150	85 90 90	151	164					
833	116	84				179			

Table II-3. Sites and catalogued pieces, by phase and ware, in our Survey Area.
Key: b = burnished; B = Bellavista; i = impressed (*figulina*); M = Macchia a Mare; r = red; rw = red and white. Undecorated fragments of impasto (Nos.171-177) and base fragments with woven mat impressions (Nos.206-208) are not tabulated because they cannot be fitted precisely into this time-frame. The sporadic piece No.182 is also omitted.

plateaus where the conglomerate cap has disintegrated through weathering. As in the areas studied by Sargent, they avoided heavy clay soils which would have been difficult to work with the primitive tools available.[109]

The only exception to this pattern, Site 319/321, is significant since it was situated close to the Basentello river, near to the point where it could be crossed most easily on the route leading from Central Apulia into the Pre-Apennine hills. The position of the site suggests that already in the Neolithic period there was some movement of flocks from low to high pastures across the river,[110] but the Site may also have been a centre for stock-raising.

The change from Early/ Middle to Late/ Final Neolithic in our survey marks a distinct break in the preferred type of settlement location. All the earlier settlements on the high plateaus were abandoned. One of the two new sites, Site 223 (San Felice), was on a plateau near to a water source, but the evidence for occupation is slight. The other, Site 347-9, the only really significant site of the period, was founded in the heavy alluvial soils of the valley bottom, near to the river. It therefore illustrates the change to better watered locations closer to the rivers which is seen elsewhere in Italy in the Late Neolithic, and especially in the Final Neolithic period (see above). It had another locational advantage in that it was situated just above the flood plain near the confluence of the Basentello where there was a river crossing in historical times. It is the only site in our Survey Area where Neolithic pottery was found together with material of the Bronze Age – and indeed of the Iron Age, Roman and Late Antique periods. Presumably the need to control the crossing ensured some sort of continuity of occupation for the site. It seems likely, then, that Site 347-9 took over the role of Site 319/321 (abandoned before the beginning of Late Neolithic) as a small settlement exploiting the movement of flocks from the Fossa Bradanica into the Pre-Apennine hills and back again.

iii. Internal organisation

The distribution of sherds on very small sites is unlikely to give much idea of internal organisation but some useful information emerges from it. Sites 631 and 701 both had some daub which indicates the existence of a building or buildings, but they were too small to have been more than isolated huts. Site 814 was rather larger. The scatter lay in a 30m wide strip for some 200m with marked concentrations at each end of the strip. These presumably indicate discrete dwellings or small groups of dwellings, and there was another a little uphill, a further 200m away, called by us Site 833 but possibly better interpreted as another hut or group of huts associated with those on Site 814. In the valley, separate concentrations also characterized Site 347-9 and Site 319/321. Similar loose scatters with small concentrations were recorded by Vinson on several sites (as noted above). This kind of dispersed settlement is well established for Neolithic South Italy, so it need come as no surprise that it was prevalent in our area.[111]

Neolithic scatter tends to be fairly sparse, as both Vinson and Marchi found in the more northerly part of the Fossa, though with some exceptions;[112] but on our two largest Neolithic sites, Sites 403 and 432, the density of sherds was appreciably greater than on the others, suggesting that they conformed to a rather different model without separate concentrations of huts. Site 403, however, was probably linked with Site 404, which was perhaps a stone working area, 100m away.

The Neolithic sites in the Tavoliere were surrounded by ditches, as were many of those in the Materano. We could detect no evidence for such ditches on the ground or in aerial photographs of our Survey Area, but that is hardly surprising since the whole area is regularly deep ploughed. In at least one case, however, (Site 432) the topography virtually rules out a ditched enclosure since the site is located around the brow of a hill on a steep slope. On the other hand, all our sites, except the two anomalous ones in the valley bottom which can never have been defensible, were on platforms protected by at least moderately steep scarps on one side.

The larger sites which show both Early and Middle Neolithic, and Site 347-9 with Late and Final Neolithic features, may have lasted for half a millennium. There is no reason to assume that they were seasonally occupied; indeed, the fact that many of the sherds come from very large pots which would have been difficult to transport suggests the contrary. The prevailing impression is that these were long-lasting stable communities which were engaged in settled agriculture and stock-raising, and which stored their produce in large ceramic containers.

iv. Site sizes and hierarchies

Neolithic sites varied greatly in size all over South Italy, the largest being Passo di Corvo estimated by G.D.B. Jones at 172ha,[113] but the great majority were much smaller. Most of the numerous sites on the Tavoliere identified by Jones were less than 7ha (95%).[114] The

[109] Sargent 2001, 151. He argues that even if later Neolithic people used animal traction (and the extent to which they did so is unclear) they could not easily have ploughed heavy soils.
[110] Similarly, Bökönyi (1983, 239) argues that the Neolithic shepherds in the Tavoliere must have driven their flocks to the Gargano for summer grazing.
[111] Robb 2007, 264-265. It is also well attested by Marchi for the area W of Venosa: Marchi 2010, 243-245
[112] Vinson's site 392 was dense.
[113] Jones 1987, 173.
[114] Brown 2001, 144

majority of those, however, were over a hectare in size.[115] The sites found by Vinson were on the whole smaller: 11 were around 1ha, and 63 were about 6000m^2. The sites in our Survey Area were smaller still, only the largest, Site 403, with an area of roughly 6,400m^2 reaching the size of Vinson's middle range. It also had one of the largest accumulations of lithics, with a possible lithic working floor a small distance from it, but it can hardly be classed as a major site. On Site 432, our second largest site, the distribution was denser than on the other sites of this period, but the total area, a nucleus of some 1075m^2 with scatter extending to 5375m^2, was still small. On most of our other sites the distribution is uneven, with intermittent small but fairly dense areas of sherds suggesting huts or at any rate discrete dwellings, but on none of them is the total area very great (see Table II-2). Our smallest sites were smaller still, like Penitenzeria, referred to above, which consisted of only a few huts. Site 701 may have been just a single isolated hut. In general, the pattern conforms well to that already noted on Vinson's survey.

Jones argued that there was a hierarchy of sites in the Tavoliere, although the relationship of the larger sites to the smaller ones is not clear. If there was a similar hierarchy for our area, the main site is not yet known. Our largest site on the left bank of the Basentello, Site 403 seems hardly large enough to have fulfilled that function, and Site 432, on the right bank of the river and of similar size, would probably have formed part of a different grouping. There does, however, appear to have been some deliberate grouping in the NE of our Survey Area where the majority of the Neolithic sites were found. The fact that the sites here were spaced 1.5–2.5km apart suggests a certain degree of organisation, or at least an agreement on dividing the natural resources. The general Neolithic scatter is also greater in this area implying some coming and going between the sites. It would be unwise to make too much of this, since there is no way of knowing whether any two sites were in fact contemporary, but if they did exist at the same time, they can hardly have been hostile to each other, and it is likely that they belonged to some form of regional grouping.

Such regional groupings must have existed. As John Robb has pointed out, a hamlet or even a cluster of hamlets is insufficient to maintain either the genetic health of a community or to provide an adequate pool of skills.[116] The size of community needed is conjectural but would have to be at least 175 people,[117] while ethnographic parallels in New Guinea and North America range between 1000 and 5000 people for a self-recognized tribe.[118] Presumably the inhabitants of the small settlements in our survey had close links with others over a wider area, as seems to have been the case at Penitenzeria.

v. Regional communications

As we have seen, the Neolithic settlements in our Survey Area were components in a much wider pattern of Neolithic settlement which was at its densest in the Early/ Middle Neolithic period, and which changed significantly in the Late/ Final Neolithic. In the Early/ Middle Neolithic, the area most densely occupied was in the Tavoliere, but there were also settlements on the Adriatic coast, and in the Materano. Our earliest sites in the Basentello valley help to fill in the gap between the Tavoliere and the Materano – as do some of the earliest of Vinson's sites, and the small Early Neolithic settlement (perhaps of just one hut) excavated at Le Grottelline.[119] There must have been frequent communication with both areas. The numerous comparanda given in the Catalogue with pieces from sites in the vicinity of Bari and Ostuni suggest that there were also frequent communications with communities on the Adriatic coast which perhaps provided the cockle and clam shells used to decorate the impasto pottery.

In the Middle Neolithic the climatic change that caused a drastic reduction in settlement in the Tavoliere at the end of the Middle Neolithic also affected our part of the Fossa Bradanica. Most of the sites in our Survey Area which had been occupied in the Early Neolithic came to an end before the introduction of painted wares typical of Middle Neolithic. The area was not depopulated: one important site (Site 432) continued to be inhabited, and two new sites were founded, but there is less material altogether. The almost total absence of Matera scratched ware suggests that the sites in this area did not have close cultural links with the Materano and should be considered rather as outliers of the Middle Neolithic settlements of the Tavoliere and the Ofanto valley. By contrast, painted wares of the Middle Neolithic and Matera scratched ware were well represented in the sites located around the Pantano and the headwaters of the Torrente di Gravina and the Canale Capo d'Acqua which were more closely linked with the Neolithic culture of the Materano further down the river valley.

Settlement continued into the Late and Final Neolithic period on a smaller scale. The Serra d'Alto and Masseria Bellavista types of pottery found on one or two sites in our Survey Area suggests that they had resumed links with the Neolithic settlements in the Materano which were among the most successful of this period.

[115] Jones 1987, 173.
[116] Robb 2007, 252.
[117] Cf. Jones 1987, 185: Ethnographic work amongst "Neolithic" cultivators of New Guinea suggests that to maintain internal order relatively egalitarian societies such as the Tavoliere sites appear to represent functioned best as population groups of between 70 and 350 persons.
[118] Robb 2007, 253.
[119] Lorenzi & Serradimigni 2009; Colombo *et al.* 2009.

A few lithic artifacts point to more distant contacts in the Neolithic period. They include two pieces of worked obsidian, (a blade [P4140] from the plateau of San Felice (Site 223) and a flake from just below the plateau),[120] and the polished miniature greenstone axe No.73 also found on Site 223, which was probably imported from northern Calabria or southern Basilicata.[121] Such axes were fewer, and smaller in Puglia than in Calabria and most are unlikely to have been used as axes, including our own which shows no signs of wear.[122] They probably had a ritual or ceremonial function.

vi. Lithics in our Survey Area

All of the sites with Neolithic pottery except Site 833 (which was perhaps an outlying part of Site 814) also had some lithics, though not always in large quantities (see Table II-2 above). Many of the lithics we found, however, were scattered over the countryside as single items or in relatively small groups. Only 173 (roughly 23.4%) came from sites with prehistoric pottery. A few of these may have been earlier than the pottery found on the sites: for example, on Site 631 there were two lithics of earlier type, including the backed blade No.25 (Uluzzian or Aurignacian) and the two-sided blade No.46 (more generally Upper Palaeolithic); and on Site 814 there were a possibly Uluzzian denticulate No.10, a Gravettian or Epigravettian two-sided blade No. 44 and a possibly Epipalaeolithic trapezoid No.71. But in most cases it is reasonable to assume that where lithics without specifically earlier characteristics were found on sites with Neolithic pottery they are likely also to be of Neolithic date, and to have been made and used by the inhabitants of those sites. Some lithics, however, were found on sites where there was later impasto pottery, and these may have been worked and used in the Bronze Age or even in the Early Iron Age.

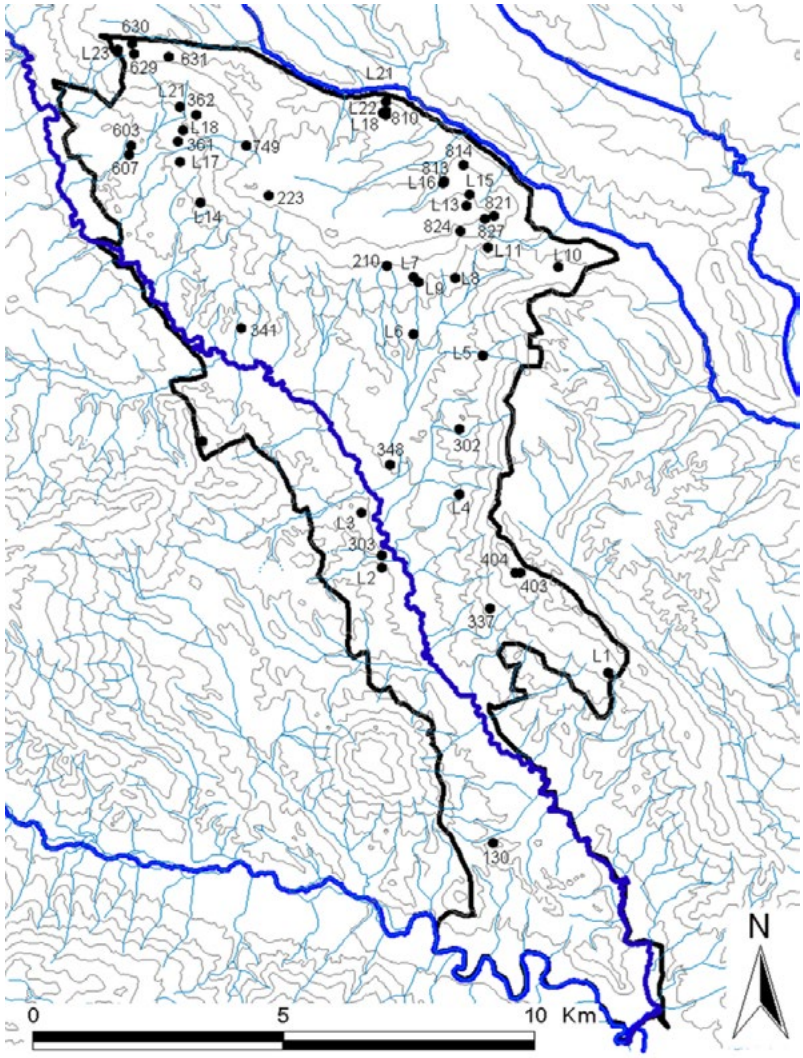
There were no exceptionally large accumulations of lithics. The largest number found in one place was 68 at site 403/404. The 44 lithics found 100m away from the main site 403 and originally assigned to a separate find-spot, 404, were perhaps from a work floor linked to the main site.

It is interesting to note that some of the larger Neolithic sites produced few lithics, notably the Late Neolithic and Bronze Age Site 347-9 which yielded some 82 Neolithic sherds and 48 Bronze Age ones, but only 6 lithics.

The evidence, then, is that lithics were widely scattered over the area, but that there were very few significant concentrations.

vii. Conclusions

On one site only (Site 814) is there any evidence for settlement in this central part of the Fossa Bradanica in the Epipalaeolithic/ Mesolithic period. It is likely that when the first settlers arrived in the Early Neolithic



Map II-5. Distribution of catalogued lithics in our Survey Area. Sporadic lithics not mentioned in the List of Sites are prefixed with an "L". For their UTM co-ordinates see Introduction to the Lithics in Cat. of Artifacts 1.

[120] An obsidian blade (P1802) and a fragment (P1801) found on Site 712 are more likely to be Bronze Age in date, since they were found with sherds of that period. We could not find the obsidian pieces in the Deposit in 2014.
[121] Leighton 1992a. They are characteristic of an advanced phase of Neolithic: Geniola 1979, 84.
[122] Robb 2007, 204-213, esp. 206-207.

period, they settled in an area which was practically devoid of human habitation, although it was no doubt exploited by hunters in the Upper Palaeolithic tradition. The new settlers, who practised both agriculture and stock-raising, must have had to clear the land of forest. They are likely to have come from the direction of the Tavoliere, the main centre of Early Medieval settlement in South Italy, and they settled along both the main routes that led through the Fossa in the direction of the Materano which also began to be colonized in this period – the N route below the scarp of the Murge, and the S route along the Basentello valley. The settlements on the N route were concentrated mainly in a broad area of fertile soil around the Pantano. Those along the valley were mostly small and lay on the fringes of the area of Early Neolithic culture in this region. One settlement in our Survey Area, however, (Site 319/321) was probably located at a crossing of the Basentello river, and another (Site 432) was situated above the right bank of the river, close to the later drove road. Its situation suggests that it may already have been a base for limited seasonal transhumance.

In the Middle Neolithic period, as settlement in the Tavoliere declined, and the cultural centre of gravity shifted from the Tavoliere to the Materano, settlement declined along the Basentello valley, but prospered still in the well-watered terrain around the Pantano which was more closely linked by the river system with the Materano. But the sites in this area were not simply a continuum of the Matera culture. They were separated from it by a stretch of the valley that was relatively void of settlement and formed a distinct micro-region. There are some manifestations of the Late Neolithic culture both in the Basentello valley and in broad area of the Pantano, but settlement declined in both areas in the last part of Late Neolithic and still more drastically in Final Neolithic, just as it did generally in South Italy.

Throughout the Neolithic period the sites in our Survey Area lay on the fringes of Neolithic culture in South Italy. The Basentello did not, however, form an impermeable boundary, and it could be crossed at recognized points by herders and their flocks who used Site 432 and no doubt other outposts as bases for their pastoral activities.

Chapter III. The Eneolithic Period (Copper Age)

1. Climate, Settlement, Economic and Social trends

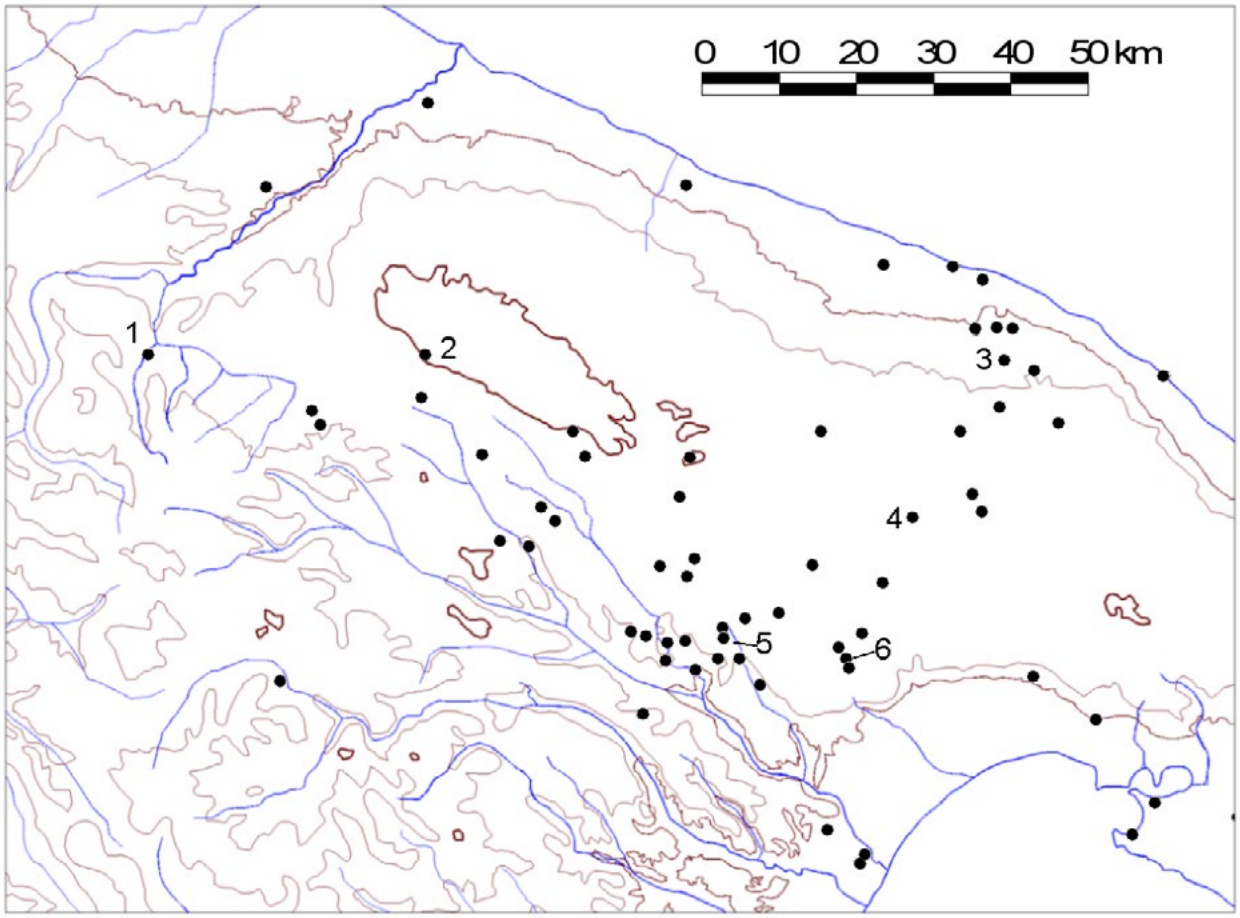
The Eneolithic (Copper Age) cultural phase emerged from the tail end of Neolithic ca. 3650 BC and lasted to ca. 2350 BC, after which there was a transitional period before the onset of the Early Bronze Age ca. 2150 BC.[1] In spite of the name, what distinguished Eneolithic from Neolithic was not the introduction of copper, since copper tools were already in use in some parts of Italy in Late Neolithic,[2] but rather a combination of new cultural traits, including new modes of settlement, new burial customs, and new types of impasto pottery with new styles of decoration. It seems that the arrival of metallurgy was slow to impact on the Neolithic culture, but that eventually it brought about a radical transformation in social organization. The comparative homogeneity of Late Neolithic in South Italy broke down and there was much regional diversity in the Eneolithic cultures that succeeded it.

In Apulia and Basilicata, the discontinuity between the end of the Diana culture of Final Neolithic and the emergence of a new Bronze Age culture seems to have been particularly severe. Whereas, in some other regions, scholars have been able to define a more-or less continuous succession of cultures that filled the gap,[3] this has not yet been achieved in the regions of interest to us here. That may change with more excavation, but at present the evidence for Eneolithic occupation is scrappy until the emergence of the Laterza culture towards the end of the period, beginning in ca. 2800 BC, to reach its climax between 2600 and 2350 BC, and coming to an end ca. 2150 BC in the transition to the Bronze Age.[4] As the name suggests, the culture appears to have developed in the area around Laterza on the Murge of Central Apulia. It spread from there across much of southern and central Italy.

The climatic trend towards increasing aridity, which had already affected the pattern of settlement in Late and Final Neolithic continued (with some oscillations) down to the end of the Bronze Age and into the Iron Age. By 3000–2500 BC, half-way through the Eneolithic period, conditions had become sub-boreal, significantly warmer and dryer than in the present day. The climatic change required further adaptation in subsistence agriculture, with more emphasis on pastoralism and less on agriculture. There are no detailed studies of faunal or botanical remains from Eneolithic sites in SE Italy to show how this worked out in practice, though a small sample from the open site of San Nicola near Rutigliano showed that the inhabitants were raising sheep/goats, cattle and pigs, and were hunting roe deer, red deer and bear. Radiocarbon readings on charcoal date the context to the late 4th and early 3rd millennium BC.[5] The horse is attested in central Italy in the Eneolithic period,[6] but there is no evidence for it as yet in the South of the peninsula. Similarly, oxen pulling ploughs and carts are shown on rock-art of the Eneolithic period in the Val Camonica in the Italian Alps,[7] but no evidence for the exploitation of animals for traction in this period has yet been found in South Italy, which appears to have out of the mainstream of Neolithic technological development.

Map III-1 shows how drastic was the change in the pattern of settlement between the Neolithic and Eneolithic periods (though it must be borne in mind that the change had already begun before the end of Neolithic).[8] The Eneolithic evidence includes both settlement and burial sites, most of them very small. The great majority are located on the S fringes of the Central Apulian sector of the Murge where the terrain begins to step down towards the Taranto – Egnazia isthmus, with notable clusters around Matera, Laterza, Gioia del Colle and Rutigliano, and above all Laterza. The string of Eneolithic continues westwards into the fringes of the Metapontine plain, and southwards from Taranto, to the area around Ostuni, and down to the tip of the Salentine peninsula. There are large vacant areas. In the Tavoliere and in the Ofanto valley only a few sites are recorded for this period. Our own survey produced evidence for Eneolithic frequentation of two sites in the Basentello valley (see below) and Vinson's survey confirms that there was a thin scatter of small settlements in the Fossa Bradanica; but there was practically nothing in the pre-Apennine hills to the W.

[1] Pacciarelli 2011, 286, table 1 gives these dates for the cultural sequence in Calabria. Skeates (1996) dates the beginning and end of Eneolithic in Central Italy to ca. 3550–2200 BC.
[2] Dolfini 2013, with further refs. There is evidence for copper smelting at Pavia in N Italy as early as the 3rd quarter of the 5th millennium.
[3] Notably in Calabria: Pacciarelli 2011.
[4] For the dates, see Pacciarelli 2011.
[5] Radina *et al* 1993, 16.
[6] At Querciola: Albarella 1999, 323, citing Corridi & Sarti 1989-90) and at Maccarese near Rome (Curci & Tagliacozzo, 1994).
[7] Fedele 2012.
[8] Principal sources used (in addition to the Vinson survey and our own): Bianco 1981, 1986; Adamesteanu *et al.* 1976, map on p. 19. Biancofiore 1979a; Carter 2011; Cipolloni Sampò 1999; Coppola 1983; Corrado 2010; Cremonesi 1976, 1980; Lo Porto 2006-2007; L'Abbate 1981b; Peroni 1967; Radina 1981c, 1988c; Radina *et al.* 1993; Carasso & Coppola 2015.



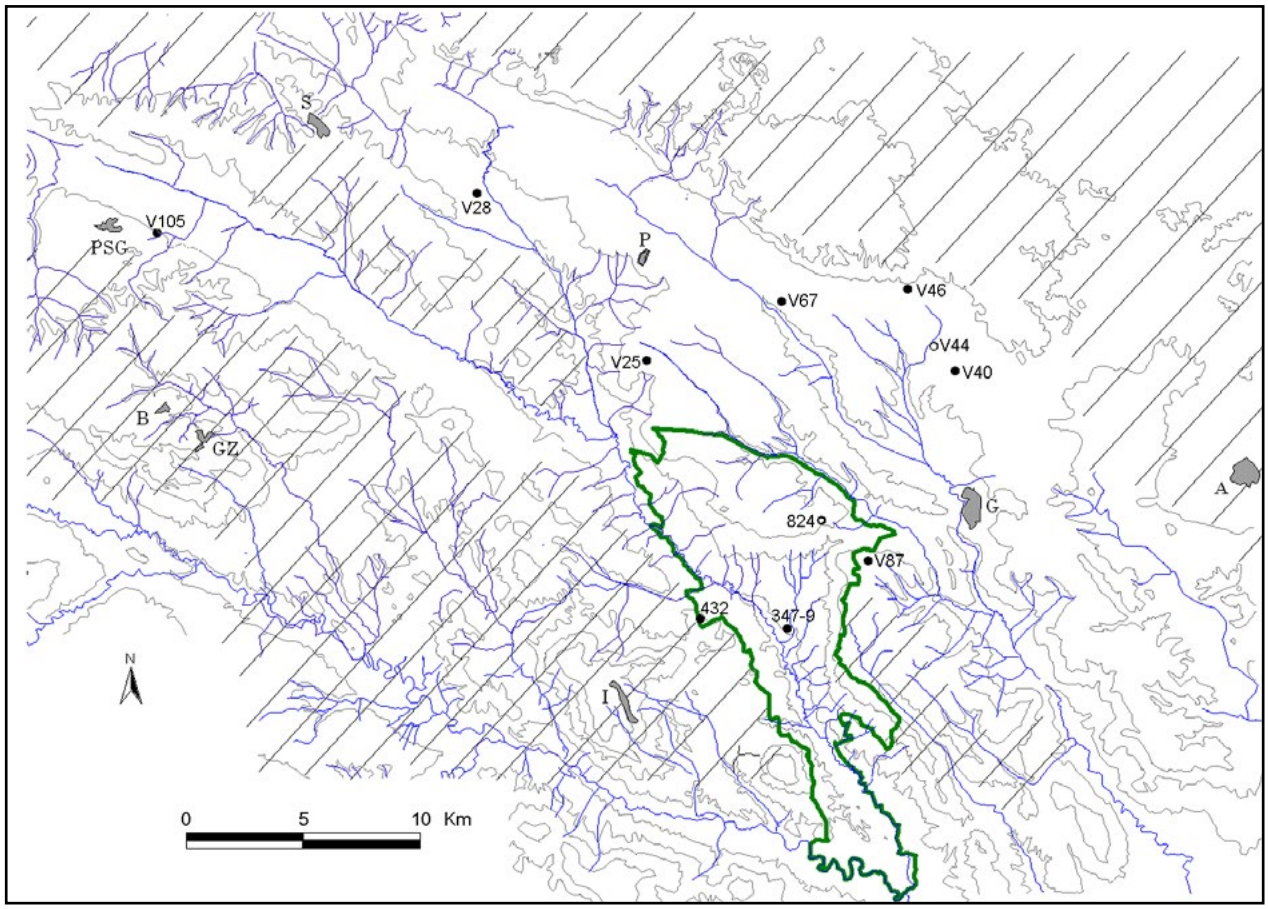
Map III-1. Eneolithic sites in Apulia and Eastern Basilicata. 1. Toppo Daguzzo; 2. Riparo del Cavone; 3. S. Nicola di Rutigliano; 4. Gioia del Colle; 5 Matera; 6 Laterza.

In spite of the number of sites known, there are still many uncertainties about the nature of the Eneolithic cultures in Apulia[9] and Basicilata.[10] Where the rock was suitable, caves were used for settlement and cult, but none have been excavated on a sufficient scale to provide a model for interpreting the social and economic conditions of the time. There were also settlements on open ground, though few have been explored in detail. The best-known is at Toppo Daguzzo, a hill-top site in the Ofanto valley, which was fortified in the Eneolithic period with a palisade, ditch and wall,[11] but the Eneolithic remains are difficult to interpret since they have mostly been obliterated by later, Bronze Age, structures. At Parco San Nicola near Rutigliano, excavation has shown the remains of a few huts, apparently built in stone-lined pits in the ground, with a superstructure of wood and daub.[12] At Santa Candida near Bari surface finds show that a new settlement was founded in this period,[13] but it has not yet been systematically investigated. The fact that the Eneolithic population abandoned the more fertile land in the valleys and plains to live in small shelters, caves and huts on the Murge supports the idea that there was a shift from agricultural to pastoral modes of subsistence.

Most of the evidence comes from rock-cut communal burials. They are a common feature of most Eneolithic cultures, but those most relevant to our study belong to the Laterza culture of the 3rd millennium BC.[14] Generally, Eneolithic burials are indicative of a social order based on kinship groups dominated by élite rulers. The dead were buried with grave goods appropriate to their status, including copper weapons, stone arrowheads, items of personal adornment, and tools of flint and bone, as well as pottery.

There were continuities as well as discontinuities at both ends of Eneolithic. At some sites, as at Pantanello in the Metapontine plain,[15] and at Cala Scizzo and probably Santa Candida near Bari,[16] there was continuity from Late/Final Neolithic into Eneolithic. At the other end of

[9] For Eneolithic in Central Apulia, see the summary in Radina 1988c.
[10] For Eneolithic in Basilicata, see the summary in Cipolloni Sampò 1999, 67-89.
[11] Cipolloni Sampò 1999, 78-79.
[12] Radina *et al.* 1993.
[13] Radina 1988d.
[14] Biancofiore 1979.
[15] Carter 2011, 573.
[16] Coppola 1988d, Radina 1988d.



Map III-2. Locations of Eneolithic sherds on the Older Surveys and our Survey Area.
Doubtful instances are indicated by hollow dots.

the period, the Eneolithic settlement at Toppo Daguzzo developed without interruption into the mature village of the Early and Middle Bronze Age.[17] There are some hints of impending change in the material from our Survey Area. The fragment of impasto pottery No.314 from the predominantly Neolithic site 432 is decorated with rows of small impressed crosses typical of the Zungri-Corazzo *facies* of the transition from Eneolithic to Early Bronze Age which is found in a few places in the Materano, but which is best attested in Calabria. It has close affinities with the Cetina culture in Croatia, and so indicates that there were close cultural connections across the Adriatic in this phase, and perhaps an influx of new migrants. But generally the Early Bronze Age is poorly represented in SE Italy, and continuity from Eneolithic into the full Bronze Age is difficult to demonstrate.

2. Eneolithic in the Fossa Bradanica: the Older Surveys

Eneolithic sherds were found on 7 sites in the Older Surveys, and possibly Eneolithic pieces on another 2. All were collected by Vinson in his survey of the territory between Gravina and Venosa (Map III-2). At his site V105, at a perennial spring a little E of Pozzo Paglione, ca 400 masl, he noted Copper Age knobbed and coarse black burnished wares. Since some Neolithic material including a Bellavista type handle was also found on the site, it seems probable that it was continuously occupied from the Final Neolithic. His site V87B, located near the head of a *torrente* at the Masseria delle Grotte, 450 masl, produced Copper Age pottery with dot punctate borders, and knobbed ware, as well as Neolithic and BA material. The sherds were concentrated in areas ca. 5.0m in diameter, some delimited roughly by circles of field stones, suggestive of hut foundations. A third site, at the Masseria Aspro V25 produced ca. 8-10kg of "Copper Age and early Bronze Age pottery", not further described. In addition, Eneolithic pieces from four other sites in his List can be recognized among the material stored in the Fondazione Santomasi at Gravina (Pl. 54). One is a highly burnished hemispherical bowl decorated with a band of oblique hatching on the outside a little below the lip typical of the Laterza culture. It was found on site V28 in the Vallone Impiso between Spinazzola and Poggiorsini (Pl.54.69). Two other impasto fragments have applied scale decoration typical of a late phase of Eneolithic, from sites V40 and

[17] Cipolloni Sampò 1999.

V46 (Fig.54.70,71); and two fragments with notched rims from Sites V44 and V67 (Fig.54.72, 73) are probably also Eneolithic. The last four sites are loosely grouped below the scarp of the Murge near the headwaters of the Torrente Gravina and around the drained lake of the Pantano. The others are more thinly distributed across the W half of the area of the Older Surveys. With the possible exception of the finds from Site V105, there are too few pieces to suggest regular occupation, but most of them show frequentation of sites that had been occupied previously in the Neolithic period.

Another feature of great interest which should perhaps be dated to this period is a small tableau of rock art incised on the floor of a rock shelter near the top of the scarp of the Murge at Riparo del Cavone, east of Spinazzola published by Astuti *et al.* (2008). The shelter was in use in the Bronze Age, as some fragments of impasto pottery with finger-impressed cordons show, but the stick-like figures are perhaps more likely to be Eneolithic. Among the confused mass of symbols, Astuti and her colleagues have succeeded in identifying a primary scenario in which a central group of stylized men is flanked on one side by an isolated individual carrying a dagger and spear or sceptre, and on the other by another individual, unarmed, with spread fingers and toes. The scene might represent a battle, or perhaps a ceremonial dance.

3. Eneolithic in our Survey Area: continuity and discontinuity

In our own Survey Area in the Basentello valley, sherds that can be classified as Eneolithic (Nos.209-211c) were found on two sites (Sites 347-9 and 432) and possibly on a third (Site 824) – see Map III-2 above. All of them had been occupied previously in the Neolithic period. Site 347-9 also yielded a fragment of Serra d'Alto ware (No.201) and 76 fragments of impasto of Bronze Age or Early Iron Age date, including Nos.322, 359 and 360. This hardly suggests continuous occupation from Late Middle Neolithic to the full Bronze Age, but rather intermittent use of the area over this long period. Site 432 produced more material extending from at least the middle phase of Eneolithic to the transitional period into the Early Bronze Age (5 sherds including Nos.210, 211b,c), but since there is no identifiable Late or Final Neolithic material from the site, it is likely that there was a gap between the Middle Neolithic and Eneolithic use of the site. Site 824 yielded two undecorated Neolithic sherds (No.177 in impasto, No.181 in *figulina*) and a single Eneolithic piece, No.209. It also produced 80 sherds of Bronze Age impasto pottery (including Nos.209, 236, 246, but nothing certainly of EBA date, so it is doubtful that the site was continuously occupied.

In summary there was some evidence for Eneolithic frequentation in our Survey Area, but none, even on the 3 sites where Eneolithic pottery was found, for any kind of long-term settlement.

Chapter IV. The Bronze Age

1. Chronology[1]

The beginning of the Bronze Age (BA) can be set ca. 2150 BC, after the transitional period that followed the end of Eneolithic. The new period is marked partly by the introduction of bronze tools and personal ornaments (which remained rare, however, until the Late Bronze Age (LBA)) but also by new types of impasto pottery including both coarse and fine wares. They signify the beginning of the Apennine culture which spread throughout the Italian peninsula in the first half of the 2nd millennium BC and reached its climax in the Middle Bronze Age (MBA), ca. 1700/1600 – 1350/1300 BC. It began to disintegrate in the LBA, ca. 1350/1300 – 1200 BC, and underwent a transformation in the Final Bronze Age (FBA) ca. 1200 –1000/975 BC, when new shapes and new fine-ware fabrics were introduced, indicative of a new cultural phase which continued to develop in the Early Iron Age (EIA). These last two phases (FBA and EIA) are discussed in Chap. V.

2. The climate, the environment and the economy

The analysis of pollen found in core samples taken from the Laghi di Monticchio in the extinct crater of Monte Vulture near the N end of the Fossa Bradanica illustrates the importance of the climatic change that took place around the end of the Eneolithic period.[2] Before ca. 2000 BC steppe-like conditions had predominated, but around that date firs appeared for the first time. Throughout the 2nd millennium BC oak, mainly deciduous, remained the predominant tree species, but there was a broad variety of other deciduous species represented, as well as olive (presumably wild), and yew. Wood-carbon analyses from archaeological sites show that in general the climate of Apulia in the BA was slightly warmer and dryer than at present, but that there were significant variations within the period.[3] At the beginning of the BA the climatic conditions were temperate-humid; in the MBA they became hotter and dryer, and in the LBA, they remained hot, but were more humid. The natural vegetation responded to the climatic conditions with deciduous forest expanding when conditions were more humid, and species typical of the Mediterranean macchia gaining ground in dryer periods. It seems likely that for much of the period deciduous forest spread throughout the Fossa Bradanica, though there are as yet no analyses of wood carbon from BA sites there to prove it.

i. Stock-raising

The climatic conditions required the kind of local and regional compromises between agriculture and stock-raising that remained normal until recent times.[4] Sheep and goats outnumbered other domesticated species on most Apulian sites where the faunal assemblages have been analysed. Milk-boilers for making cheese are a common feature on BA sites in Apulia,[5] as are spindle whorls;[6] and although the whorls could in theory have been used for spinning either flax or wool, there is at present no evidence in the palaeobotanical record to show that flax was cultivated in this period in Apulia. Sheep were therefore raised for their milk and wool as well as for their meat, and on most sites they were kept for several years before slaughter.[7] There is evidence for two distinct breeds, one with relatively small hornless ewes, the other with horned ones, which suggests that they were bred for different purposes. Since the hornless ewes are reported from coastal sites (Termitito, Roca, Monopoli and Coppa Nevigata) they may have been better suited to lowland conditions.[8] But even on some of these coastal sites there was also a more traditional horned breed, perhaps better suited to transhumant grazing.

Some of the sheep must have been taken to graze on the High Murge, where the rocky terrain provided natural shelters for shepherds, especially along the W scarp. The best example of such a site is the Riparo del Cavone E of Spinazzola where fragments of impasto pottery with finger-impressed cordons show that the Eneolithic ceremonial site was still in use in the full BA.[9] There were other settlement sites of the EBA/MBA on the highest

[1] The terminology of the Italian BA and its subdivisions is confused by rival systems. I follow here the terms laid out in Peroni 1967, 91-92, but I have used the term "Early Bronze Age (EBA)" for the initial phase of the Apennine culture before the development of incised or dot-impressed decoration (Proto-apennine B in the terminology of Lo Porto 1963). In this I follow Holloway 1975. For the dates, based on recent calibrated radiocarbon analyses, see Bietti Sestieri 2014, 110. In Apulia the distinction between EBA and MBA is largely arbitrary since the one phase merges into the other, without any pronounced cultural change.

[2] Watts *et al.* 1996.

[3] Fiorentino 1998, esp. 312. On the increasing aridity in the 2nd millennium: Fiorentino 2002, 143.

[4] Phippen 1975.

[5] Cremonesi 1979, 180. They were sometimes deposited in tombs. Cf. Trump 1958, 170; 1966, 110-111.

[6] Wilkens 1998, 232; various examples from several sites in ceramic 232-234, and bone 240-247. Loomweights are found, but are less common, perhaps because other objects were used for weighting the warp threads. For spindle whorls and bobbins associated with an MBA hut at Madonna di Ripalta: Tunzi Sisto 1996, 45.

[7] Wilkens 1996, 495. At La Starza, however, in an early stage of the MBA, more than 50% of sheep / goats were killed before the end of their second year: Albarella 1999, 323-324.

[8] Wilkens 1996, 496; Bökönyi 2010, 21 (re Termitito).

[9] Astuti *et al.* 2008; Colombo *et al.* 2009.

and most exposed part of the plateau, at Carluva and the Masseria Caterina above Minervino Murge.[10] Since the site at the Masseria Caterina was located in a depression liable to flash-flooding which was unsuitable for permanent occupation, and since it showed a succession of structural phases all falling within the same cultural period, the excavators inferred that it was inhabited seasonally by shepherds and/or hunters.

There was probably also some movement of transhumant flocks into the Apennine mountains for summer pastures since some BA settlements were established above the winter snow line on some of the main routes of penetration along the principal river valleys.[11] But such sites are exceptional and are remote from our Survey Area. Apart from a poorly documented settlement below the castle at Miglionico, situated at 461 metres above sea level, well below the winter snow line, I know of no sites of the EBA–LBA situated in E. Basilicata other than our Site 433, which is situated at about 350 masl on a hill on the E side of the Basentello, overlooking the point where the route of the pass of Sferracavallo crosses the river. It is likely, therefore, that the site was founded to exploit the possibilities of transhumant pastoralism in the Pre-Apennine hills on the W (Lucanian) side of the river which were otherwise devoid of settlement. We have noted the same phenomenon already in the Neolithic period.

Nevertheless, the role of transhumance in the economy envisaged by Puglisi in his pioneering study of the Apennine culture has probably been exaggerated. No permanent BA settlements were established along the natural transhumance routes between the Bradano valley and the Apennine watershed (see Map IV-1 below), and it is likely that this vast area remained forested until the EIA. Moreover, other aspects of stock-raising point to a more sedentary economy. Pigs are generally much better represented in BA faunal samples than they were in Neolithic ones, and in some sites they are the predominant species.[12] They are likely to have been put out to forage on acorns in the forests of holm oak which were the climax vegetation in the coastal plain in this period.[13] But on the W fringes of BA settlement in our own Survey Area the economy was based primarily on pastoralism (see below).

Oxen were now used as draft animals.[14] That development had already taken place in the Eneolithic period (see Chap. III), but probably did not spread through peninsular Italy until after the beginning of the BA.[15] With ox-drawn ploughs it became possible to cultivate heavier soils than had been possible in the Neolithic period.

The donkey was introduced from the Aegean world between the LBA and FBA,[16] no doubt for use as a baggage animal, making it easier to transport goods from one area to another. The horse, already attested in central Italy in the Eneolithic period, spread more widely through the peninsula in the MBA, but it is not attested in Apulia until the LBA, and even then on only a few sites.[17] There are some indications that it was used first as a source of meat, and only later, towards end of the BA, for riding.[18] By then horses had become prestige animals, used principally for warfare and hunting by an élite class.

Dogs of various sizes are attested on many BA sites in Apulia and Basilicata.[19] Some may have been bred for herding the sheep.

Stock-raising was therefore an important part of the economy, and the more detailed analyses of the faunal remains from some sites suggest that the animals were selectively culled at the most appropriate ages to maximize the economic value of the stock.[20] It would seem that the BA population had learned more rational ways to manage their livestock.

ii. Hunting

With the expansion of the forest there was more shelter for wild animals, especially deer and boar which formed a much

[10] Radina *et al.* 2008.

[11] R. Whitehouse 1968, 362-363. The best attested is La Starza near Ariano Irpino: Trump 1957, 1963. There was also a settlement of the MBA and FBA at Ciscarella near Vaglio: Bellino 1991, 12-14. Barker (1981, 143-147) argues that sites at the Apennine/lowland boundary in the Abruzzi were well placed for stock-keeping since they had easy access to extensive summer pastures.

[12] Wilkens 1996, 495. Pigs predominate at Punta Le Terrare, Egnazia and in the *struttura-cucina* at Roca. Pigs overtook sheep/goat in the later stages of the MBA in the settlement below the castle at Bari: Pizzarelli 2016. At Coppa Nevigata they account for 20% of the meat-yielding animals consumed in the LBA (Siracusano 2012, 242, table 8, *subappennico antico*).

[13] For holm oaks in the archaeobotanical record around the Gulf of Taranto in the BA, see Fiorentino 2002. Wood carbon analyses from Coppa Nevigata show that the inhabitants had access to several different forest environments. They include one dominated by holm oak and other macchia vegetation presumably in the vicinity of the site, and another with deciduous oak, beech etc, presumably on the Gargano massif (Fiorentino 2012, 335). Both would have been well suited to pig raising.

[14] Cf. Robb 2007, 140-142.

[15] The plough: Cipolloni Sampo 1999, 69; Robb 2007, 131. For the virtually complete plough discovered in the EBA pile-dwelling at Lavagnone, and now conserved in the archaeological museum at Desenzano, see Perini, 1982. It is uncertain when the cart was introduced into South Italy, but two-wheeled carts are represented in the BA paintings in the Val Camonica from shortly before the middle of the M2 (Anati 1964, 136-139) and a cart with two wheels, each with six spokes, sides probably of wicker, pole and yoke is incised on the lintel of a BA tomb associated with a nuraghe in Sulcis, in S Sardinia (Taramelli 1906, 80-81 and tav. VI.2). It was evidently to be imagined as drawn by a pair of oxen.

[16] Cazzella 1998, 22 (at Coppa Nevigata, Monte Saraceno and Madonna del Petto); Radina 2010b, 41-42, Madonna del Petto.

[17] Wilkens 1996, 494; Cazzella 1998, 22; Siracusano 2012, 238 (Coppa Nevigata).

[18] Antonacci Sanpaolo 1995, 81.

[19] Wilkens 1996, 497; 1998, 223.

[20] Notably at Coppa Nevigata: Siracusano 2012, 239-241.

more important part in the diet of the BA inhabitants than they had in that of their Neolithic predecessors, at least in most areas where the faunal assemblages have been studied.[21] The extreme case is the assemblage from the MBA site below the castle at Bari in which red deer outnumber all other mammals on a count of the number of identified specimens in which they account for 42.2% of the total sample; and although this is reduced to 19.2% on a count by the minimum number of individuals, slightly behind sheep/goats (23.8%) and pigs (21.8%), there can be no doubt that hunting deer was an important part in the economy of the site.[22] The importance of pigs on this site illustrates the two-fold aspect of the forest economy, in that the BA population depended on it both for wild game and for forage for domesticated pigs.

iii. Agriculture

Much the same types of cereals were cultivated in the BA as in the Neolithic: einkorn, emmer, spelt, compact wheat and barley (both naked and hulled varieties); but summer wheat, oats, rye and millet (a new introduction in this period) are also attested.[23] Small quantities of grain could have been stored in the large impasto pots with finger-impressed cordons typical of this period; greater quantities were kept in underground silos: roughly circular pits likely to have served this purpose have been found on several sites. Grindstones in the form of saddle-querns, and rubber-stones were used to grind the grain. They might be in any hard stone, but the best were in vesiculated lava from Monte Vulture[24] where there must have been a specialized workshop producing them. Legumes were also cultivated, though not in large quantities to judge by their relative scarcity in analyses of vegetable remains. Broad beans (*Vicia faba)* and lentils are both attested, however, at Coppa Nevigata,[25] and lentils, grass pea (*Lathyrus*) and vetch (*Vicia sp*) at Taranto, San Domenico in the MBA/LBA.[26]

Olives (*Olea europaea*) were collected for eating in the EBA, and were probably being cultivated in South Italy in the MBA, although there is some uncertainty because of the difficulty of distinguishing between wild and cultivated species on the basis of the form and measurements of their carbonized pits.[27] Residues of olive oil have been detected in pots of the EBA at Coppa Nevigata, but the oil may have been imported since no olive pits were found on the site to indicate cultivation.[28] There is similar doubt about vine cultivation, arising from the difficulty in distinguishing between the carbonized pips of wild and cultivated species. Grapes were undoubtedly being consumed, and perhaps used for wine production in the MBA, if not before that, but a recent study by D. Lentjes concludes that there is no proof that the domesticated species (*Vitis vinifera*) was cultivated in South Italy before the 8th century BC.[29] Renato Peroni has argued that the large quantity of fine drinking vessels at Broglio di Trebisacce in Calabria, including imported Mycenean and grey-ware cups, must imply that wine was consumed there in the full BA, and that it is improbable that it was all imported;[30] but absolute proof is lacking, and locally produced wine could be made from wild grapes.

iv. Bronze

There is as yet only limited evidence for bronze working on Apulian sites, and such as there was must have involved the reprocessing of the metal, since the ores are completely lacking in the region. Most of the bronze objects must therefore have been imported, mainly from the N Adriatic or the Aegean.[31] The volume of this trade grew gradually, but by the MBA bronze had become the preferred material, not just for weapons, but for objects used in many walks of life, including personal ornaments.[32] The most important assemblages of bronze objects have been found on sites in the Adriatic coastal strip, at or close to settlements which had established maritime links with advanced bronze-working cultures, especially in the Po valley and the Aegean. They include hoards of bronze axes and other objects deposited as votives at Cannae and Torre del Moschetto near Trani in a late phase of the EBA.[33] Bronze weapons (daggers and axes) and items of personal adornment were frequently buried with the dead in tombs.[34] The outstanding example is the hypogeum at Trinitapoli, described below (Sub-section 3) where the numerous bronze objects found with the multiple burials. provide a conspectus of types in use in the MBA.[35] But most of the evidence comes from the LBA when the quantity and range of bronze objects in use seems to have increased greatly. The bronze

[21] Wilkens 1996, 223; 1998, 494 (sites on the Adriatic coast of Apulia); Bökönyi 2010, 33 (Termitito in Lucania). Siracusano (2012) gives statistics for wild fauna at Coppa Nevigata where red deer formed an increasingly important part of the diet of the population in the MBA and LBA, accounting for 16% and 43% respectively of the identified fragments of the meat-yielding species.

[22] Pizzarelli 2016.

[23] Fiorentino & D'Oronzo 2012: analysis of two contexts at Coppa Nevigata; Fiorentino 1998: analyses from five coastal sites (Coppa Nevigata, Madonna del Petto, Giovinazzo-S. Salvatore, Monopoli-Piazza Palmieri, Torre S. Sabina). See also Fiorentino 2002; Fiorentino *et al.* 2004.

[24] Lorenzoni 1998.

[25] Antonnacci Sanpaolo 1995, 79.

[26] Fiorentino 2002, 149.

[27] A cluster of at least 85 olive pits was found in the EBA settlement at Tufariello: Phippen 1975, 79. Olive pits were found in contexts of the 15th century BC at Monopoli-Piazza Palmieri, but it is uncertain whether these were from wild or cultivated species: Fiorentino 1996, 340, 354; Brun 2003, 80.

[28] Fiorentino 1998, 210; Evans & Recchia 2001-2003; Cazzella & Recchia 2012b, 250.

[29] Aranguren & Perazzi 2007; Brun 2003, 80-82; Fiorentino 2011, 17; Lentjes 2016, *passim*, and esp. p. 146.

[30] Peroni 1994, 845; cf. Lentjes 2016, 142.

[31] Lo Porto 1998b.

[32] Bietti Sestieri 2014, 113.

[33] Lo Porto 1998b, 267. The practice continued well into the FBA, as at Salapia: Tunzi Sisto 1996, 45; 1999, 136-137.

[34] Lo Porto 1998b.

[35] Tunzi Sisto 1989, with pp. 217-220 by R. Peroni.

artifacts recovered from the important site of Scoglio del Tonno before it was destroyed in 1900 include a fish-hook, a sickle, a razor, a fibula, a nail, and a needle alongside axes, knives, swords, spears and daggers. Many of these items are likely to have been imported from the *terramare* culture of the Po Valley or from the Mycenean world. Other assemblages of bronze artifacts of the same period were found at Torre Castelluccia, Porto Perone, and Coppa Nevigata, all sites which were frequented by Mycenean traders.[36]

v. Lithics

Since all bronze implements used in this part of Italy were imported (or reworked from imported ingots or from scrap metal) they were presumably costly, and lithic tools remained in general use for many household purposes, and as arrowheads.[37] In our Survey Area lithic tools or flakes were found on five BA sites (Sites 433, 712, 716, 813, 824).

vi. The pottery

The evolution of the impasto pottery is discussed in Cat. 3. In the earlier phases of the ware there were marked regional or sub-regional divergences which can be read as an indication of the limited nature of inter-regional contacts.[38] By the end of the MBA, however, a more or less uniform repertory of shapes had been established throughout the peninsula S of the Po valley. That must imply that there were more extensive contacts between the geographical sub-regions, which are likely to have been brought about by the increased traffic of traders and artisans moving along the river valleys, and by the seasonal migrations of shepherds with transhumant flocks. But the forms of decoration applied to the basic shapes show that within this common Apennine culture, there remained strong sub-regional and even local components.[39] They are likely to have corresponded to areas with common production and market centres, controlled perhaps by a single overlord.

The quality of the impasto fabric varied according to the purpose of the pot. The fine pieces, used for eating and drinking, were easily transported, but the large storage jars in coarse impasto were heavy, and, at the same time, fragile pots which would have been less easily transported. They are therefore indicators of more stable settlement; but unstratified material of this kind from surface collections has to be used cautiously in interpreting the BA culture, because such jars continued to be made well into the Iron Age.

2. Settlement patterns and territorial organization

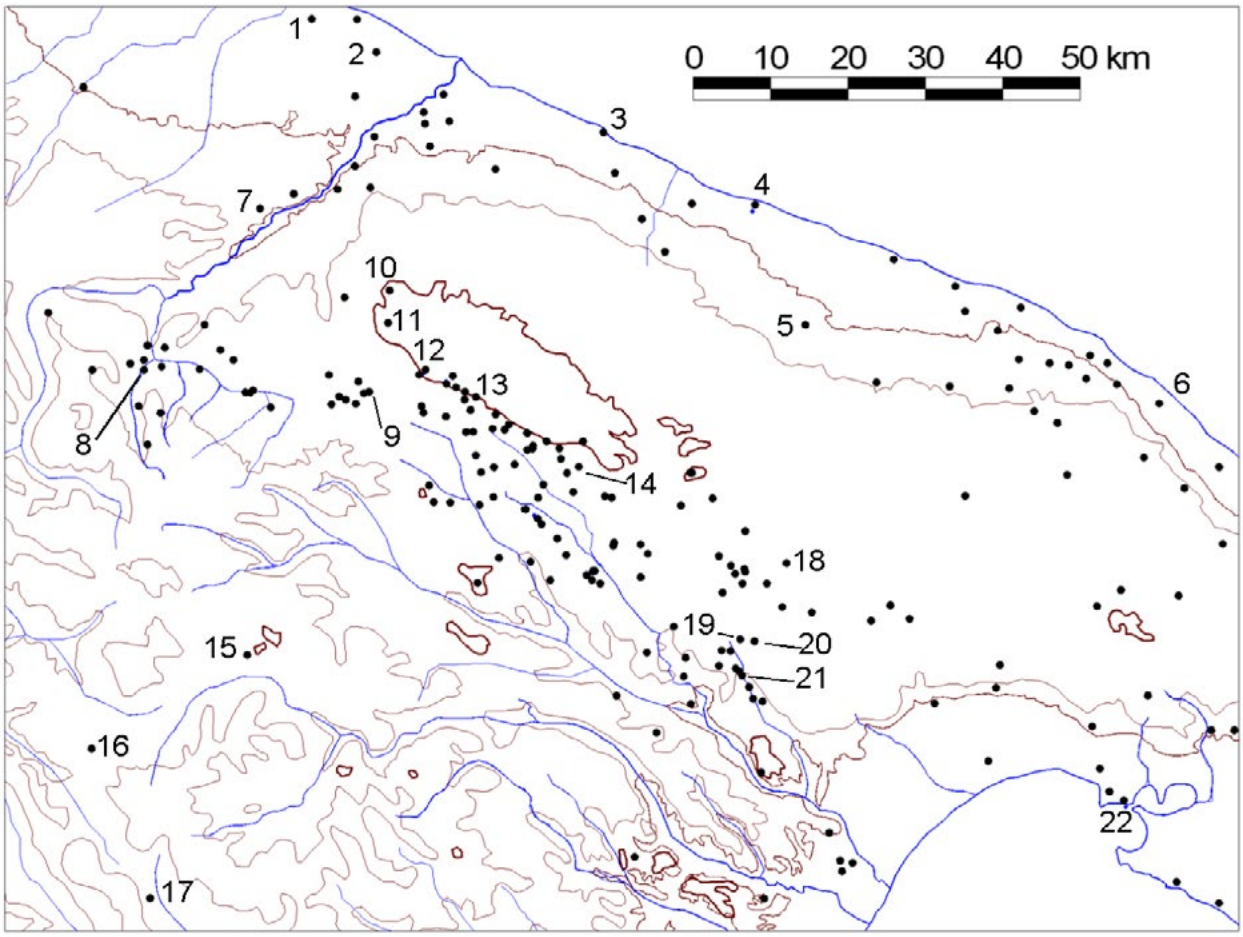
i. Distribution

The distribution of known BA sites in the broad area of interest to us is shown on Map IV-1.[40] A glance at the corresponding map showing the distribution of known Eneolithic sites (Map III-1) shows immediately that there was a great increase in the number of settlements after the end of Eneolithic which must imply a significant population increase in the course of the BA.[41] The pattern is thinner only on the lower terraces of the Murge between Gioia del Colle and Laterza (Nos.4 and 6 on Map III-1) where the Laterza culture of Late Eneolithic had been most prolific.

The settlements were not evenly distributed. Map IV-1 shows several loose concentrations along the Adriatic coastal fringe, especially to the SE of Bari (No.8 on the map), and in the lower Ofanto valley. There are then (after a gap) clusters of settlements around Toppo Daguzzo (No.11) and Spinazzola (No.12) followed by a relatively dense scatter of settlements through the Fossa Bradanica as far as the modern border between the territories of Gravina and Matera, consisting mostly of sites discovered in the field surveys published in this study. There is then (after another gap) a cluster of sites in and around Matera, and smaller groups on the Ionian coastal strip in the vicinity of Metaponto and Taranto. This pattern is subject to the same distortions that have been noted in the discussion of the Neolithic period, but with the additional problem that some of the sources used to construct the map have not separated out the Eneolithic from the EBA/MBA or the FBA from the MBA/LBA (as we have attempted to do in the Basentello valley). Nevertheless, some significant factors emerge which are relevant to our subject. One is that the Fossa Bradanica was one of the most densely settled areas in the MBA and LBA; another is that there was not much BA settlement in the mountains to the W of the Basentello valley. A few sites with BA material in the high Apennines – at Ciscarella near Vaglio (No.17 on the map), at Torre di Satriano (No.18) and at Paterno (No.19) – show that small groups, probably of herdsmen,

[36] Biancofiore 1979b, 151-157, Lo Porto 1998b.
[37] Martinelli 1998.
[38] Damiani 1996.
[39] Notably in handle forms of the carinated *ciotole*, and in the use of dot-impressed decorative motifs which is a characteristic feature of Apennine pottery on the Tyrrhenian side of S. Italy, but is relatively rare in Puglia: Cremonesi 1980, 425 (and see Cat. Nos.313-315). Some types are common to the Apennine tradition in the surrounding regions, but others, especially handles, were more local.

[40] The principal sources used: for Puglia generally: Cazzella 1998b, map p. 27 fig. 4, for Basilicata: Cipolloni Sampò 1999, map p. 72 fig. 1, for the lower Ofanto valley, Goffredo 2011, for the territory around Venosa: Marchi & Sabbatini 1996; Marchi 2005; Sabbatini 2001, for the Materano: Lo Porto 2006-2007, map on p. 253; Adamesteanu *et al.* 1976, map on p. 19, for the Metapontino:*Chora Metaponto III*, map p. 570 fig. 17.1, for the hinterland of Bari: Coppola 1981, fig. 6, for the high Murge: Radina *et al.* 2008, 177 map fig. 1, for the territory of Altamura: Carrasso & Coppola 2015, fig. 1, for the Fossa Bradanica: the Vinson surveys and our own survey in the Basentello valley.
[41] Cf. the remarks on demographic increase in Bietti Sestieri 2014, 112.



Map IV-1. Distribution of BA sites in Central Apulia and the Fossa Bradanica. Key: 1. Salapia; 2. Trinitapoli; 3. Cannae; 4. Pozzillo; 5. Trani; 6. Madonna di Ripalta; 7. Giovinazzo; 8. Bari; 9. Bitetto; 10. Monopoli; 11. Toppo Daguzzo; 12. Spinazzola; 13. Masseria Caterina; 14. Carluva; 15. Riparo del Cavone; 16. Garagnone; 17. Ciscarella; 18. Torre di Satriano; 19. Paterno; 20. Miglionico; 21. Murgecchia; 22. Murgia Timone; 23. Matera; 24. Casal Sabini; 25. Scoglio del Tonno; 26. Porto Perone; 27. Torre Castelluccia.

frequented these remote areas, but the BA inhabitants did not exploit the mountain pastures in the Lucanian Apennines in any way that resulted in the creation of a network of fixed settlements. This must cast doubt on the theory that the BA economies were based largely on pastoralism.[42]

The BA settlements on the coast were much larger than their Eneolithic predecessors, but on average they were no bigger than those of the Neolithic period. The fortified BA site of Coppa Nevigata measured only ca. 2.5 ha, Roca Vecchia ca. 5 ha,[43] and Toppo Daguzzo ca. 10 ha. No BA site even approached the size of the Neolithic Passo del Corvo. Some of the largest and most successful were on the E coast,[44] where the inhabitants could benefit from trade across the Adriatic and on to the Aegean, but there were also important settlements on the Gulf of Taranto and further along the Ionian coast. Numerous fragments of Mycenean pottery of the 15th and 14th centuries found on the coastal sites such as Coppa Nevigata, Giovinazzo, Bari, Monopoli, and Roca Vecchia on the Adriatic, at Scoglio del Tonno on the Gulf of Taranto, and at Broglio di Trebisacce further round the Ionian coast show that there was extensive commerce with the Mycenean centres of mainland Greece in this period.[45] Since most of these coastal sites were defended by massive stone walls,[46] the inhabitants must have felt themselves in danger from attack by sea.

There were also some large settlements further inland, usually founded on low hills overlooking and controlling

[42] Puglisi 1959.
[43] Cazzella & Recchia 2013, 55.
[44] Cazzella 1998, 19.
[45] Taylour 1958, Recchia 2010, 109; Guglielmino *et al.* 2010 (Roca); Vagnetti *et al.* 2012 (Coppa Nevigata); Vagnetti 1982; Vagnetti & Panichelli 1994 (Broglio di Trebisacce).
[46] Cazzella & Recchia 2013; *eidem* 2012b, 250-252. The Proto-apennine fortification wall of the 17th century BC at Coppa Nevigata is an early instance. For the massive MBA walls at Roca Vecchia, see Pagliara *et al.* 2007, 2008; Scarano 2011. For the walls of Scoglio del Tonno (demolished in the 19th century) see Schojer 1988, 276-277. The settlement at Broglio di Trebisacce was probably fortified in the MBA: Peroni 1994, 864.

major routes of communication, such as Murgecchia and Murgia Timone in the Materano. The most significant (and the best paradigm) is Toppo Daguzzo which was centred on a small natural acropolis overlooking the Olivento, a tributary of the Ofanto river. Below it, a scattered settlement of huts extended over several hectares.[47] In addition to such large sites numerous smaller settlements have been identified in some areas, some of them single huts or caves occupying suitable positions for exploiting the resources of the land.[48] The settlement pattern suggests that there was a hierarchy of settlements, and that a fairly small number of large defensible villages controlled quite large territories.

ii. Consolidation

It is probable that in much of South Italy there was a process of settlement consolidation. That at any rate appears to have been the case in the fertile N part of the Salentine peninsula between Taranto and Brindisi, and in the coastal plain of Salento in the vicinity of Ostuni where the extensive programme of fieldwork by Dutch scholars has shown that there was a rather dense pattern of settlement in the BA.[49] Douwe Yntema has argued that, in the course of the MBA, larger and more permanent settlements emerged some of which were continuously occupied for many centuries. By the LBA they had developed into substantial settlements with populations of several hundred inhabitants, co-existing with smaller settlements in a more complex hierarchical structure.[50]

The picture sketched by Yntema is compelling, but it is doubtful that it is valid for our Survey Area which lay on the pioneering fringe of BA settlement. The evidence of the surface finds and the topographical features of the sites, discussed below, suggest that none of the sites in the Basentello valley can be considered to be permanent fortified settlements comparable to those in the Salentine isthmus and on the Adriatic coast.

iii. Huts

As in the Neolithic period, there was no single hut type. Oval huts are attested on some sites, as at Bitetto in the MBA and Bari in the LBA,[51] rectangular on others, as at Tufariello in the EBA,[52] and Roca Vecchia in the LBA.[53] Rectangular huts might have a rounded end, as at Madonna di Ripalta near Cerignola (MBA).[54] On some sites there was more than one type. At Toppo Daguzzo there was a circular hut with a central hearth on the acropolis, interpreted by the excavator as a possible meeting place for a small group, and a settlement of rectangular huts below the acropolis.[55] The largest known hut in South Italy was found at Scoglio del Tonno in the rescue excavations carried out rapidly in 1899-1900 before the site was destroyed to make way for the commercial harbour. It measured at least 10m in width and 20m in length, and must have had some communal function, perhaps as the *megaron* of a local ruler, or as a communal storehouse for the community's produce. Whatever the case it must have asserted the importance of the settlement at Scoglio as the principal entrepot on the Italian coast for traders from the Aegean or the North Adriatic. It is normally held to have been built in the LBA, but in view of the circumstances of the excavation, a date in the FBA cannot be ruled out (see Chap. V.2.v).[56]

Huts were normally of wattle and daub, sometimes resting on stone socles, as at Tufariello and Cavallino, or built in shallow pits. Internal floors were usually of beaten earth. Hearths were sometimes paved with potsherds, as at Bitetto in the EBA/MBA.[57] External surfaces were usually cobbled. Few excavations have been extensive enough to show how huts might be arranged inside a settlement, but at Tufariello several were grouped around a courtyard, perhaps indicating that different kinship groups had their own defined areas within a larger settlement.

3. Burials

More about the organization of these communities can be inferred from burials. There was no single burial rite. Inhumation was the normal practice, although a cremation cemetery with more than 200 burials in funerary urns has been excavated at Pozzillo near Canosa and dated to the LBA, a precursor of the urnfield necropoleis of the FBA.[58] In most settlements the dead were buried in the crouched position in communal tombs, usually in caves or hypogea excavated in the bedrock, continuing the practice of Eneolithic times. In others they were buried in long cist tombs of great slabs covered with stone tumuli.[59] These must have been intended for extended kinship groups. Many have been robbed, or were badly recorded when excavated, but some still contained remains of prestigious grave goods which must have belonged to pre-eminent individuals. One of the burials at Toppo Daguzzo was a monumental hypogeum (Tomb 3) in which the males were buried with

[47] Cipolloni 1999, 103-104.
[48] As in the area around Tufariello: Holloway 1975, 23.
[49] Yntema 1993, 149-150; Burgers *et al.* 1998 re Ostuni (esp. p. 273).
[50] Yntema 2013, 13-24.
[51] Radina 1987b,
[52] Nabers 1975.
[53] Pagliara *et al.* 2008.
[54] Tunzi Sisto 1996, 45.
[55] Cipolloni 1999, 103-104.
[56] Yntema 2013, 15 and 18, fig. 2.7.
[57] Radina 1987b.
[58] Lo Porto 1999; Minozzi *et al.* 2006.
[59] Biancofiore 1979b, 172-174. There is a notable group of LBA burials of dolmen-type originally covered by tumuli near Bisceglie in the coastal fringe of central Apulia.

bronze weapons, and the females with precious objects in amber, quartz and glass paste.[60] At Casal Sabini, on the Murge near Altamura, there were three hypogea of the EBA cut into the bedrock, each used for multiple burials, some extended, others crouched (*rannicchiati*) or semi-crouched, supplied with some grave goods. In Tomb 1 there was a separate niche for a single burial, *rannicchiato*, deposited with a decorated bone object, probably an indication of the superior status of the dead individual.[61] The most remarkable of all BA tombs in Apulia is the hypogeum at Trinitapoli, at the S end of the lagoon of Salapia, 8km from the Ofanto river, where a cult centre of the EBA was converted to contain the burials of about 200 individuals. Adult males, females and children, were laid out in the long cavern, some supine, some *rannicchiati* and some seated, accompanied with numerous grave goods. Those of highest status were marked out by particularly elaborate jewellery in the case of women, and by bronze swords in the case of men.[62] Such burials strongly suggest that the BA society was organized in kinship groups which supported, and were controlled by, tribal chiefs.[63] An unusual tomb recently excavated within the walls of the medieval castle at Spinazzola in the Fossa Bradanica throws more light on this topic. It was the burial-place of a single individual, an adult male in his 50s, who was laid out supine on a bed of river-cobbles with a bronze dagger in his lap. A circle of stones surrounding the burial may have formed the edge of a tumulus of earth. Radiocarbon analysis of the skeleton yielded a date of 1510–1360 BC. The site at Spinazzola commands the watershed of the Fossa Bradanica between the Basentello and the Torrente Leone, a tributary of the Ofanto. It is therefore reasonable to suppose that the dead man was the ruler of a community which controlled the traffic along this important transhumance route.[64]

4. Trade

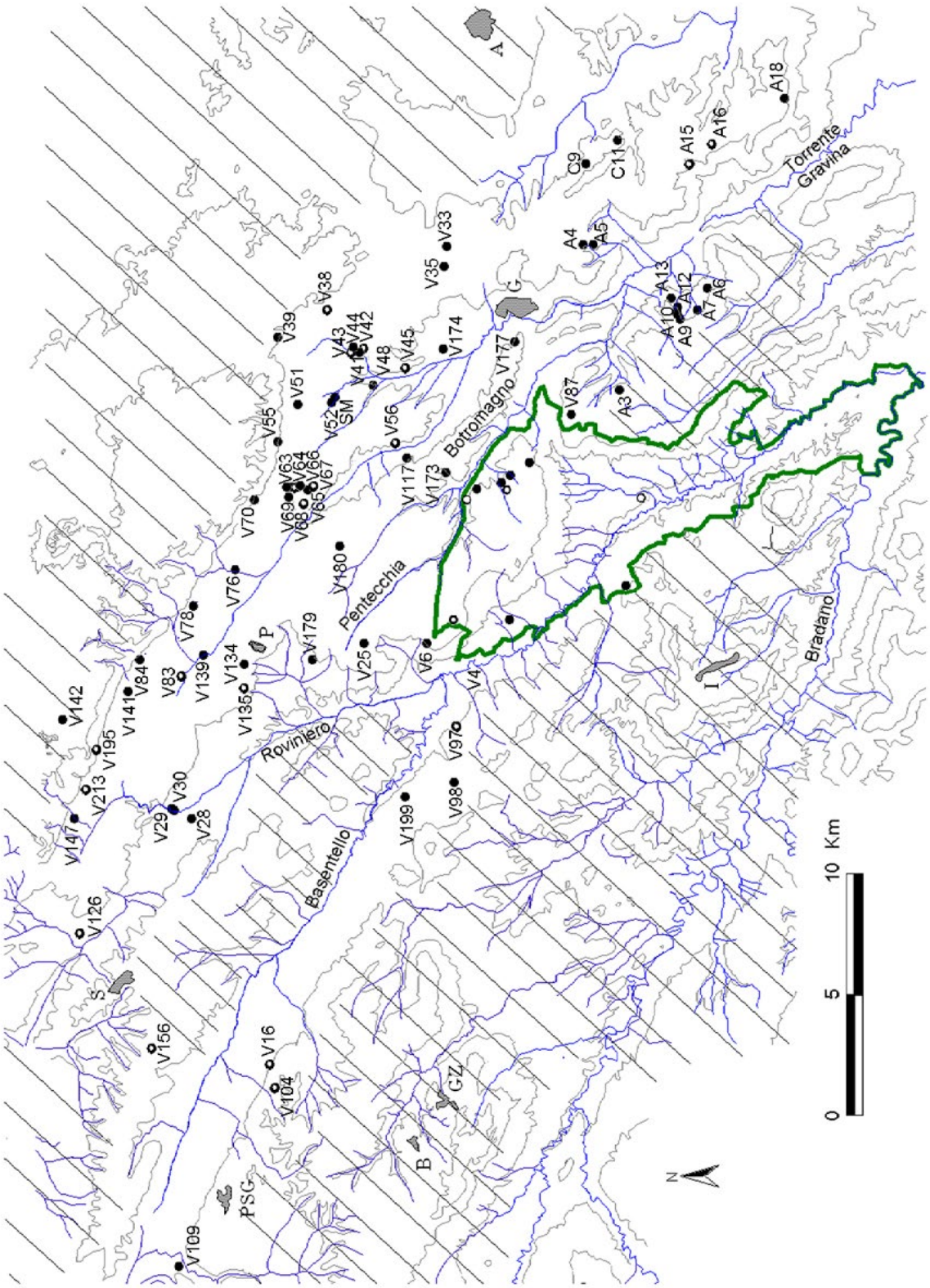
The economy of the BA settlements depended to a greater extent than before on the exchange of goods. The Mycenean pottery found on coastal sites suggests that Mycenean traders frequented these Apulian settlements, and presumably exchanged commodities there, even if they were only temporary stopping-off points on their way to more distant ports at the head of the Adriatic or on the Tyrrhenian coast. Obsidian continued to reach even inland sites, but the bronze and amber objects that turn up in burials must have been acquired by more extensive trade networks. The amber at least must have been imported by way of the Adriatic ports and carried inland, presumably along rough tracks. The heavy lava quern stones from Monte Vulture are likely to have been transported by baggage animals, either donkeys (after their introduction in the LBA) or oxen. These economic developments made it possible for the successful to accumulate wealth as demonstrated, for example, by the hoards of bronze axes mentioned above.

5. The Older Surveys

The evidence of the impasto pottery types allows 51 sites found on the Older Surveys to be assigned reasonably reliably to the Early, Middle or Late Bronze Age (Map IV-2). Another 14 can be dated to this period more doubtfully. Two of the sites, V28 and V87, also produced Neolithic and Eneolithic sherds, which show that the area had been frequented, but probably not continuously inhabited, over a long period. Neither site outlasted the BA. Ten others of the more reliably dated sites were occupied in both the Neolithic period and the BA but with no evidence for the intervening Eneolithic period.

This, however, still leaves 59 certain Neolithic sites which were not frequented in the BA and 39 of the more reliable BA sites which were not previously used in the Neolithic period. Some areas, such as the upper part of the Basentello valley near Monte Serico, which had been fairly densely settled in the Neolithic, were virtually uninhabited in the BA, but around the watershed at Palazzo San Gervasio and in the valley of the Torrente Gravina di Picciano between Gravina and Matera the settlement density was greater in the BA than it had been in the Neolithic (cf. Map II-3). Sargent has argued that in the part of the Fossa Bradanica where Vinson worked most intensively, there was a clear difference in the type of locations preferred by the inhabitants between the Neolithic and Bronze Ages: in both periods the population sought out easily cultivated sandy soils near the valley edges, but the BA inhabitants also founded settlements on the less easily cultivated detritus soils below the scarp of the Murge which were well situated for access to the rough pastures on the plateau.[65] They may have combined stock-raising with agriculture, using the new technology of the ox-drawn plough to break up the heavier soils. The idea suits the interpretation of the BA subsistence economy as based on both cereal cultivation and pastoralism, but it does not explain why large areas which had been inhabited in the Neolithic were abandoned in the BA, particularly along the W fringes of the Fossa Bradanica. Presumably they had reverted to forest in the long interval between Late Neolithic and MBA and were not cleared again for cultivation by the BA inhabitants, who had different priorities for land use. The area explored by McCallum and Hyatt in the vicinity of Monte Serico produced

[60] Cipolloni Sampò 1986; *eadem* 1999, 111-113, q.v. also for a comparable burial at Lavello.
[61] Venturo 1994; Cataldo 1996.
[62] Tunzi Sisto *et al.* 1999.
[63] See esp. the observations of Bietti Sestieri 2008.
[64] Canosa 2009; Radina 2010a, 35; Venturo 2010, 52-53.
[65] Sargent 2001.



Map IV-2. BA Sites on the Older Surveys and in our Survey Area. Sites on the Older Surveys are numbered. For numbers of sites in our Survey Area see Map IV-3. SM= San Mauro. Doubtful instances are indicated by hollow dots.

no BA material except for two sporadic wall sherds. It presumably remained uncleared forest as it apparently had been in the Neolithic.

Two BA sites in the Fossa have been excavated and throw some light on the economic and social conditions of the time. A dig at Garagnone in 1997-1998, some 500m uphill from Site V84, revealed some settlement traces, and much pottery of the EBA or early MBA (Proto-Apennine and Early Apennine) including large storage jars with cordons. There were also querns in lava from Monte Vulture.[66] It must have been an agricultural community. And the recent excavations within the medieval castle at Spinazzola have revealed traces of a fortification wall, and, inside it, the extended burial of the MBA referred to above.

6. Our Survey Area. The Early, Middle and Late Bronze Age

i. Continuity and discontinuity

At the beginning of the BA, our Survey Area was practically depopulated. The two or three locations which produced small amounts of Eneolithic material, discussed in the previous chapter, suggest only occasional frequentation of the area in that period. Broadly speaking BA settlement began *ex novo* in this part of the valley in the EBA, but only a few of our pieces can be dated with some probability to this early phase (No.214 from Site 433 and No.267 from Site 721). The main sequence of BA settlement attested by the impasto pottery begins in the MBA, i.e. around the middle of the 2nd millennium BC.

Five sites, listed in Table IV-1 can be dated between the EBA and the LBA, to which can perhaps be added five other sites shown in the Table of Site Occupancy in Section II.4 which can be dated with less certainty to this period. The BA sites are distributed over a much more limited area than their Neolithic predecessors – being practically confined to the plateau of Le Blé in the NE part of our Survey with an isolated outlier at Site 33 on the right bank of the Basentello, near the edge of the surveyed area. A comparison with the Neolithic site distribution shown in Map II-5 shows that large areas which had been colonized in the Neolithic, including a large tract around Vagnari in the NW part of our Survey Area, and the hills on either side of the river in the S half of the Area, were not regularly frequented in the BA. They had presumably reverted to forest and were unsuitable for agriculture or stock-raising with flocks managed at close quarters.

site	size	No. of impasto sherds	EBA	MBA	LBA
433	900/20000	549	?	y	y
712	1100/4500	104		y	
716	30000	120		y	
721	2000/1400000	165	y	y	y
824	450	78		y	y

Table IV-1. Sizes and dates of the main BA sites in our Survey Area. A date has been entered (with a "y") only if there is at least one piece on the site which can be assigned with reasonable confidence to the given date range. The "size" column gives the total area of small concentrations, followed where appropriate by the area of the scatter.

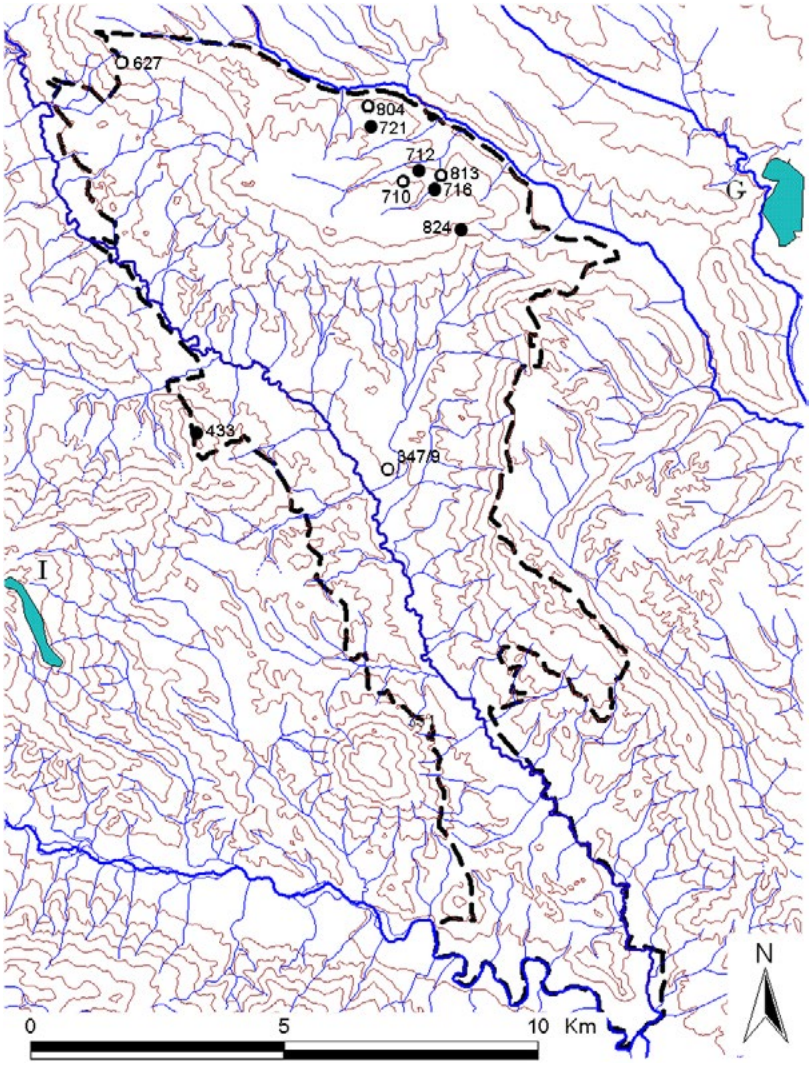
ii. The character of Bronze Age settlements in the Survey Area

The five sites in the Survey Area that can be reliably dated to this period are all represented by small accumulations of pottery within more general scatters. Like their Neolithic precursors, they were mostly situated on high ground, ca. 345–400m above sea level, well above the valley bottoms. The main difference between the settlement patterns of the two periods is that the BA inhabitants had a preference for more elongated sites. The main ones were all markedly long and narrow with several concentrations, probably corresponding to well separated huts or groups of huts. Several of them, including Sites 433, 721 and 824 were situated on terraces that followed the contour of the hill with steep slopes above and below.

The largest of these sites was Site 433, the only one on the right bank of the Basentello. It was situated on the same low ridge of hills as the Neolithic Site 432, and immediately adjacent to it, in a potentially defensible position on a narrow terrace high up the side of the hill, protected from attack from below provided that the summit of the hill was held. There are no traces of a circuit wall or ditch surrounding the site visible on aerial photographs, but without geophysical prospection and perhaps excavation it is impossible to be sure that it was not walled. The material was found in several dense concentrations separated by looser scatters. Fragments of large storage pots (including Nos.275, 319, 320, 322, 323, 325) suggest that this site may have been occupied year-round.

The other four reliably dated BA sites were all situated on the plateau in the NE part of our Survey Area overlooking the watercourse of the Pentecchia di Chimienti. The area was well-watered, and there is now a particularly abundant spring at the modern Masseria Le Blé, just below Site 716. As we have seen, there had

[66] Venturo 1998, 26-27; 2010, 51-52.



Map IV-3. BA Sites in our Survey Area. Doubtful instances are indicated by hollow dots.

already been settlements on this part of the plateau in the Neolithic period but only one site, Site 824, had been occupied previously (with traces of both Neolithic and Eneolithic use). Elsewhere on the plateau the BA peoples chose rather lower and less scattered locations than their Neolithic predecessors. The sites varied considerably in size. Sites 824 and 712 were small with concentrations of surface material suggesting that the settlement consisted of small groups of huts. Sites 716 and 721 showed larger concentrations of material within a widespread thinner scatter. The distribution pattern indicates a dispersed form of settlement in which the four numbered sites were only the most densely inhabited areas in a loose agglomeration extending over about 5 hectares.

The pottery types represented in the assemblages of material give some idea of the likely duration of these sites. Sites 710, 712, 716 and 824 produced small sherds, mostly of bowls of various types that could be easily transported. That may suggest only transient occupation. But Site 721 at the centre of the group must have been more regularly inhabited since it yielded fragments of larger storage pots (Nos.258, 267, 268, 282, 317, 318) while 2 pieces of millstone rubbers show that part of the population was engaged in settled agriculture.

It is a remarkable fact that no daub was found on any of these BA sites. This is in marked contrast to our sites of the Neolithic period, five of which yielded fragments of daub (Table II-2). The absence of daub on the BA sites can hardly be put down to the differences in modern cultivation methods which might have led to fragments of daub being reduced beyond recognition on BA sites since both Neolithic and BA sites generally shared the same cultivation histories. For example, the Neolithic Site 432 which produced several fragments of daub is immediaely adjacent to the BA Site 433 on the same ridge and is routinely ploughed in the same way for grain cultivation. Nor can it be the result of any bias in the methods used in the surface collection since Sites 432 and 433 were surveyed by the same team in the same season (1999), and although in that year Site 432 had been ploughed whereas Site 433 was under burned stubble, both sites had been ploughed when A. and C. Small revisited them in 2009. It might be supposed that the difference results from cultural practices. Daub is normally preserved only when the hut in which it was used has been burned, and we have seen in the previous chapter that the high rate of preservation of daub on Neolithic sites suggests that huts were deliberately set on fire in a ritual that marked the death of the house and the end of the community that lived in it. That custom may no longer have existed in the Bronze Age. But this explanation is hardly adequate since huts of wattle and daub must always have been at risk of being accidentally burned in a society that used open fires for heating and cooking. Moreover, daub was found on six of our sites occupied in the Final Bronze Age and Early Iron Age, as will be seen in the next chapter.

A more probable explanation is that the BA population in our Survey Area was living in more temporary shelters made of more perishable and less solid materials than the huts of either their Neolithic predecessors or their successors of the FBA. That would suit the idea, suggested by the distribution of the surface materials,

that the BA people who used this area were mostly short-term occupants, probably semi-nomadic herders who grazed their flocks on the surrounding plateau, or could drive them up the valley of the Pentecchia di Chimienti to the pastures on Monte Marano and beyond. Sites 433 and 721, which, as we have seen, were equipped with large storage pots, may have been inhabited for longer, perhaps over several years, by people who expected to cultivate crops and move on.

Given the transient character of the BA settlement pattern it is unlikely that the five reliably dated BA sites were all occupied at the same time. Frequentation may have changed from one area to another and back again, especially if the terrain became over-grazed.

1. Site	2. EBA to LBA	3. EBA to MIA	4. FBA to EIA	5. EIA to MIA	6. MIA	7. Total imp. sherds
223		301, 303 311 325 333	221, 223, 224, 231, 233, 234, 235, 243, 247, 248, 250, 251, 262, 263, 264, 271, 273, 286, 287, 297, 300, 302, 343, 344, 345, 346	306, 312, 350, 351, 352, 354, 355, 356, 357, 358	266, 279, 283, 284, 285, 305, 363, 364, 365, 366, 367? 368?	5003
234		290				29
401/409		309	227, 228, 249, 272, 309, 347	255, 269, 292, 353		962
403		276?	293			some
407					280? 281? 361, 362	107
432	314					2
433	213, 214 215, 218, 291, 315 316	238, 260, 265, 275, 320, 321, 323, 324 326, 330, 332				549
622 No gm		259, 278 288, 308 317, 329	216, 220, 222, 226, 239, 244, 308, 334, 335, 337? 338? 339? 340? 348, 349	241		436
625 No gm		261, 327	217, 219, 342			6
629 Much gm		294	225, 229, 230, 252 253, 254, 256, 257 270, 274			928
712	240, 241 296? 310?					104
715 No gm			232, 336		277?	45
716	237?	245, 307, 397	341?			120
721	258, 267 268, 282 298, 299	304, 318 319				165
724		331	295			2
824	212, 236, 313	246 328				80

Table IV-2. Catalogued BA and IA impasto sherds by site, with suggested time ranges.

iii. The change to the Final Bronze Age

Impasto pottery is notoriously difficult to date, particularly large vessels in coarse impasto, often with finger-impressed cordons, which changed little in shape during the BA and lasted well into the IA. The bowls and mugs in finer burnished impasto evolved more rapidly so that many pieces can be dated with more precision. In general these fine impasto types (and some coarse impasto types) show that there was a marked change between the fine wares (and some coarse wares) current in the LBA from those of the FBA discussed in the Catalogue or Artifacts. In order to assess how far this development corresponded to a more extensive change in settlement, we have listed the catalogued pieces of impasto in Table IV-2 in which the suggested date-ranges of the pieces are given for each site. The date-ranges are more or less broad, reflecting the degree of precision of the dating evidence.

In the Table those pieces which can be assigned with reasonable certainty to the EBA, MBA or LBA are listed in column 2, those assigned to the FBA or EIA in column 4, and those more typical of the latest phase of impasto pottery in the MIA in column 6. Pieces which cannot be assigned exclusively to either the EBA/MBA/LBA or to the FBA/EIA (normally because the type straddles both sub-periods) are listed in column 3, and those which might be either FBA/EIA or MIA are listed in column 5. Column 7 gives the total number of impasto sherds found on each of these sites, including the individually catalogued pieces.

As the table shows, the five sites already mentioned (Sites 433, 712, 716, 721, 824) can be assigned to the full BA. A single piece on the Neolithic Site 432 is best accounted for as showing casual frequentation from Site 433. Eight other sites can be attributed with reasonable certainty to the FBA/EIA: Sites 223, 401/9, 622, 625, 629, 715, 724. With the possible exception of Site 716, there is no overlap between the two lists, and it can be inferred that there was a more or less complete change in site location between the end of the LBA and the beginning of the FBA.

iv. Conclusions

In the MBA and LBA, the large well-fortified settlements on the Adriatic and Ionian coasts and in the Ofanto valley displayed a strong social cohesion, maintained by a powerful ruling class whose authority depended on their military prowess. Their economies were based primarily on agriculture and stock-raising but they were able to support a class of skilled artisans, and were linked by overseas trade with the Mycenean world. Some elements of this society can be seen in the Bronze Age culture of the Materano which extended into the area of the Older Surveys, especially along the valley of the Torrente di Gravina where there were marked concentrations of BA settlements in the area S of the modern town of Gravina explored by Dennis Aldridge, and around the headwaters of the river and the now-lost lake of the Pantano investigated by Sterling Vinson. The daub found on some of these sites, including Site A14 and perhaps V139, shows that some at least of these settlements were regularly occupied. They are likely to have been bases from which the surrounding land was cultivated, especially in the fertile territory around the Pantano, but stock-raising was an important part of the economy, and the rough pasture on the Murge was exploited by herdsmen. There are no indications that any of these sites was a large defensible seat of power comparable to those on the coast, but the warrior burial excavated at Spinazzola on the drove road through the Fossa suggests that there were powerful overlords who controlled these scattered settlements.

Our own Survey Area centred on the valley of the Basentello lay on the fringes of this BA culture. The main area of settlement on the plateau in the NE of the area was frequented mainly by pastoralists who set up short-lived shelters in areas of good pasture and moved on when the grazing was exhausted. Others stayed long enough to sow and harvest crops, perhaps over several years, but not for long enough to establish a permanent settlement. In the MBA and LBA, and perhaps already in the EBA, some pastoralists crossed the Basentello and set up a new base for their activities on Site 433 on the fringes of the Sub-Apennine mountains. On present evidence (and more work needs to be done on this subject) the BA inhabitants hardly penetrated beyond that. Except for a few isolated pockets on the fringes of the Basento valley, the core of the Apennine mountains in what is now Basilicata, remained largely uninhabited, and was probably densely forested.

Chapter V. The Final Bronze Age (ca. 1200 – 1000 BC) / Early Iron Age I (ca. 1000 – 750 BC)

The cultural changes that took place over the rest of the Italian peninsula (and indeed over the whole of the Mediterranean basin) between ca. 1200 and 1000/1050 BC have their counterparts in South East Italy. New shapes and fabrics of impasto pottery, new painted wares, new types of bronze artifacts, new burial customs and, above all, new patterns of settlement, make the last 200 years of the 2nd millennium BC (the FBA) and the first 200 or so of the 1st millennium (the initial phase of the EIA) a transformative period in which the structures of BA society gradually broke down and the bases of the Iron Age cultures were established. The two phases (FBA and EIA I) are taken together here since, at least in our Survey Area, they form, in many respects a continuum which would be obscured if they are taken separately.

1. Chronology

The beginning of the FBA can be correlated with the use of Late Mycenean (LHIIIC) type pottery on many coastal sites of Apulia and Basilicata, probably indicating the arrival of "refugees" from Mycenean Greece after the end of the palace culture ca. 1200 BC. A date around the end of the 13th or beginning of the 12th century BC is supported by the sequences of radiocarbon measurements from Roca Vecchia in Salento.[1] But the transition from FBA to EIA is less easy to date, reflecting the fact that it was a gradual process, without any clear line of demarcation valid for the whole region. It is probable, however, that the so-called "Iapygian protogeometric" pottery, which emerged in the FBA, developed into the "Iapygian geometric" of the EIA between the end of the 10th and the middle of the 9th century BC.[2.] Radiocarbon dates from EIA contexts on Botromagno confirm that the transition had taken place there by the last half of the 9th century BC.[3] The end of the EIA is also problematic. It has generally been equated with the beginnings of Greek colonization in the late 8th century, but the initial phase of that movement no longer seems as clear-cut as it used to, and radiocarbon dates suggest that the earliest contexts which reflect the impact of Greek mariners on the EIA culture in South Italy should be dated ca. 780 BC, fifty years or so before the traditional dates for the foundation of the first Greek colonies in the West.[4] The topic is picked up more fully in the next chapter. In what follows we place the end of the first phase, EIA I, ca. 750 BC, when we begin to have evidence for Greek traders settling in indigenous communities in Italy, leaving the last phase, EIA II, to the next chapter where it is considered as preliminary to the consolidation of the indigenous cultures in the Middle Iron Age (MIA) beginning ca. 675 BC. In terms of the Botromagno sequences, the EIA I phase corresponds to Gravina I, and the EIA II phase to Gravina II.

2. Climate

It would seem from G. Fiorentino's study of wood carbon from sites on the Gulf of Taranto, that the relatively hot and humid conditions of the LBA lasted for most of this period. Deciduous woodland continued to increase, but *macchia* vegetation remained a prominent part of the landscape on the coastal strip where there was a wide variety of scrub dominated by holm oak. These conditions favoured the development of olive cultivation.

Wood carbon remains from layers associated with a hut of the 8th/7th century BC recently excavated on San Felice have been studied and shown to be of deciduous oak,[5] confirming that that this was the climax vegetation in our Survey Area, as it still is today.

3. Economy

i. Stock-raising

The few available studies of faunal remains of this period from South Italian sites show a picture that is generally consistent, but with some anomalies. At Broglio di Trebisacce, the detailed analysis of the animal bones shows substantial continuity in stock-raising practice between the MBA/LBA and FBA.[6] Caprines (sheep/goats) were more numerous than pigs or cattle, but cattle were the most important providers of meat.

[1] Pagliara *et al.* 2007, 356-357: calibrated dates of ca. 1258–1112 BC at 68.2% probability for Phase III, advanced LBA, and 1117–977 BC at 64.0% probability for Phase V, FBA.
[2] De Juliis 1988, 19; Yntema 1990, 35 ("South Italian Early Geometric").
[3] Radiocarbon dates obtained by Ruth Whitehouse *et al.* for the earliest context in their excavations give calibrated readings at 1σ of 1075–900 cal. BC; and 1004–835 cal. BC.: Herring 1992; R. Whitehouse *et al.* 2000, 12-15.
[4] The so-called "high" chronology: Bietti Sestieri 2014, 109-110; cf. Nijboer *et al.* 1999-2000; Kleibrink 2004.
[5] Stellati 2017, 186,
[6] Tagliacozzo 1994.

They were generally killed as adults after having been used for work or milk. Sheep were three or four times more numerous than goats. Both sheep and goats were normally killed at two years or more, and in some cases as much as eight to ten years. They must therefore have been raised mainly for their milk or (in the case of sheep) their wool rather than for their meat. Red deer account for a significant proportion of the total bones recovered. Their carcasses were evidently brought back from the hunt and butchered on the site.

The analysis of the faunal remains from the FBA (*Subappenninico 2b*) contexts at Coppa Nevigata shows a broadly similar picture.[7] There is much continuity of practice from the MBA and LBA, but equids are now added to the record, accounting for nearly 1% of the total number of fragments from meat-providing species. Hunted animals, especially red deer, continued to provide an important component in the subsistence economy, as they had done in the LBA.

At Otranto, the faunal remains from the IA layers show much the same pattern, with caprines the most numerous species in the bone record (between 43 and 50% according to the mode of calculation), cattle second (32-35%) and pig third (18-23%). But cattle again appear to have been the most important meat providers. Red deer are also represented.[8] In the IA layers at Cavallino, also in the Salentine peninsula, caprines (at 40.5%) as usual outnumbered cattle (at 29.7%) in the main IA assemblage, with pigs a close third (23.7%). Red deer are again attested, in significant numbers (4.9%).[9]

These analyses seem to indicate a broad consistency of practice continuing the methods of livestock management developed in the previous period. A rather different picture emerges, however, from the analysis of the faunal remains from the largely FBA site at Madonna del Petto on the right bank of the Ofanto river at the edge of the Murge plateau (Map V-1 no. 2). Caprines predominated as usual (at 31.4% on a count of the minimum number of individuals – MNI), with cattle coming second at 25.7%; but the difference is smaller than on most other sites, and when meat yield is taken into account, the cattle can be seen to have been much more important as a primary food source.[10] On this site, the caprines appear to have been kept mainly for their meat rather than for milk or wool since a high proportion of them were slaughtered at a young age. Other factors were more normal. Among the cattle, adults predominated in the bone record as one would expect if they were kept primarily as draft animals. Most pigs were killed before two years of age. Red deer are attested in considerable numbers, and there are a few remains of horse.

The scanty faunal evidence for this period from Botromagno, close to our Survey Area, shows, not surprisingly, that caprines, cattle and pigs were all raised; but without a larger sample the relative importance of the species could not be determined. The only equid identified was probably a donkey. Deer, in this case probably roe deer, were also recorded.[11]

In summary, there was broad continuity in stock-raising practice from the Middle and Late Bronze Age. Even the apparent anomaly at Madonna del Petto can be brought within that picture, since there were inconsistencies of practice also in the Bronze Age. It is possible that there were at least two breeds of sheep which may have been raised for different purposes, with different ages of slaughter. Equids were beginning to be more widely used, and hunting, especially for red deer, was frequently practised.

ii. Textiles

As we have seen, several faunal analyses show that sheep were the most numerous species on most sites, and that they were generally kept to a suitable age for milk or wool production. Other factors too point to the importance of wool-working. Spindle-whorls, bobbins, and even bronze distaffs found in female burials on EIA sites indicate that spinning was a principal female occupation, and large numbers of loomweights found in some burials show that weaving was an important household industry.[12] The fact that in the necropolis at Santa Maria d'Anglona only one tomb had a spindle whorl whereas five contained loomweights, mostly in multiple numbers (with a maximum of eight in the case of Tomb 120), suggests that in this community at least there may have been some separation of female labour, with some women more skilled in spinning and others in weaving.[13]

iii. Vegetation and cultivation

As in the case of the faunal record, more studies are needed to determine what broad changes may have taken place in vegetation and the use of plants in this period. The main area of uncertainty concerns the domestication of the olive and vine.

a. Olives

Carbonized olive pits were found in FBA contexts at Broglio di Trebisacce but in smaller quantities (and from

[7] Siracusano 2012.
[8] Albarella 1997.
[9] Sorrentino 1979; De Grossi Mazzorin 2005.
[10] Curci 1996.
[11] Dobney 2000.
[12] Gleba 2015.
[13] Ferranti & Quondam 2015, 60.

a smaller sample) than in the LBA.[14] Olives are attested in some quantity at Roca Vecchia,[15] but wild olive is prolific in the macchia conditions surrounding these sites, and it has not been possible to determine with certainty whether the carbon is from cultivated or wild olives. The balance of the argument must, however, be in favour of cultivation, at least at Broglio, where residues of olive oil were found in one of five large wheel-made cordoned dolia kept in a storage hut of the FBA.[16]

b. Vines and wine production

The earliest certain evidence for the cultivation of vines in Italy and the development of species of cultivated grapes comes from this period, but it relates to Campania, and there is as yet no certain evidence to show that vines were being cultivated in South Italy outside Campania before the end of the EIA.[17]

c. Cereals and legumes

The staple crops attested in the FBA are all species already known since the Neolithic period: Emmer, barley, durum wheat and broad beans (*Vicia faba*) have been found at Roca Vecchia.[18] Analysis of a small sample from the EIA settlement on Botromagno suggests that the main cereal cultivated there was barley, but einkorn, emmer, spelt, and bread or durum wheat were also grown, as were various legumes.[19]

In short, the FBA/EIA inhabitants of the region could choose between a wide variety of cereals and legumes, and no doubt cultivated several of them at the same time to ensure against the failure of a single crop. Whether they had enough experience to rotate cereals with legumes is not yet clear.

4. The material culture

The transition from Bronze Age to Iron Age is marked by significant changes in the material culture, although there were also continuities which show that there was no drastic interruption in its development. Most large pots for storage and cooking continued to be made in coarse impasto pottery, with the same shapes as had been used in the LBA, though finger-impressed cordons became less common. It is often impossible to distinguish between MBA/LBA, LBA/FBA and FBA/EIA shapes in this ware.

Towards the end of the BA a new much larger type of storage jar, wheel-made of purified clay, came into use in many BA sites in South Italy. They are known as cordoned dolia (*dolii cordonati*) because their most distinctive feature is the horizontal cordons which masked the points of junction where the component parts of the pot were assembled (Cat. 20, A,1). They originated in the Aegean World, but like the domestic pots of Mycenean type, they were imitated by potters working in South Italy. The earliest Italian examples date to the LBA, but the type was most widespread in the FBA and continued into the EIA before the technology was abandoned. Given the great size of these containers and the difficulty of transporting them, they are most likely to have been made *in loco* by skilled itinerant artisans. A fragment from our field survey of San Felice (No.1857) is an unusual example. It indicates that there was a storage facility on the site equipped to hold large volumes of foodstuff, probably wine or oil.

Smaller vessels used for eating, drinking or pouring show more typological development. They continued to be made in finer impasto, but the ware was now regularly black, and the quality of the finish was improved so that many pieces were burnished to a lustrous gloss. The ware was widespread in S. Italy in the FBA continued into the EIA, but it became progressively rarer and less well finished after the 9th century BC. The most significant new shape is the more-or-less carinated bowl with in-turned rim, often thickened and given a "turban edge" twist, which appeared first in the FBA, and is especially characteristic of the new wave of FBA/EIA sites which began to be founded around the turn of the millennium (see Cat. Nos.227-235).

On many coastal sites, pottery of Late Mycenean type made of purified clay continued to be used for fine wares throughout the FBA. Archaeometric analyses have proved that most of it is locally made, presumably by Mycenean artisans or by local "Italic" potters trained in the Mycenean techniques of pottery making.[20] In the course of the 11th century this Italo-Mycenean pottery gave place to the indigenous "Iapygian protogeometric" pottery which bridges the transition from FBA to EIA.[21] It was hand-made, and decorated with simple geometric motifs drawn from the limited repertoire of Protovillanovan patterns, but the techniques of purifying the clay, selecting and applying the dark brown slip and firing the pots at a high temperature were taken over from the Italo-Mycenean pottery. Edward Herring has argued that production of the ware was stimulated by an economic crisis caused by the decline of Mycenean contacts in the 11th century and the consequent isolation of S Italy.[22] It was probably first produced on coastal sites where Mycenean wares

[14] Nisbet & Ventura 1994.
[15] Fiorentino & Primavera in Pagliara *et al.* 2007, 350-354.
[16] Peroni 1994, 855.
[17] Lentjes 2016, 142-143.
[18] Fiorentino & Primavera in Pagliara *et al.* 2007, 350-354.
[19] Colledge 2000.
[20] Bettelli 2012. Analysis of Mycenean type sherds from Broglio di Trebisacce and Termitito suggests that they were locally produced: R.E. Jones 1986.
[21] Yntema 1990, 19-30, Nijboer *et al*, 1999-2000; Bietti Sestieri 2008. Cf. Pagliara *et al.* 2007, 356-357.
[22] Herring 1998, 124-130.

had been used, but production, or at least the use, of the ware spread further along the Adriatic coast of Apulia. It is never found in large quantities, and so is likely to have had rarity value. A few pieces were brought into the interior along the river valleys, including two found on our field survey (Nos.369 and 370).

In the last half of the 9th century the Iapygian protogeometric pottery developed into the so-called Iapygian geometric with a broader range of motifs (see Cat. 4). It was much more widely produced, and was distributed over most of South Italy, in the interior as well as on coastal sites.[23] It was used both for small vessels for drinking and pouring (especially *kantharoi*) and for much larger storage pots (especially biconical urns/*olle*). The role of impasto pottery was correspondingly reduced, though it continued to be needed for cookpots. As production of the ware increased, regional differences became more apparent, and by the end of the 9th century distinct traditions of decoration emerged in several areas, including North Apulia (Daunia), Salento and Basilicata. Most of the geometric pottery from our Survey Area conforms to standard types found in Apulia, but a number of pieces belong to the "a tenda" class of pottery characterized by the motif of concentric splayed triangles painted in dark brown on a well-smoothed light brown surface. It appears first in contexts early in the EIA at Incoronata (Map V-1 no. 22), Sala Consilina (Map V-1 no. 26) and Pontecagnano.[24] By the end of the EIA it was common in settlements in the Agri, Sinni and Basento valleys in Basilicata,[25] and was exported and imitated over a much wider area. It has been suggested that the expanded distribution range of this pottery is an index of the growing power of some élite groups which were in the process of extending their territorial control in South Italy before their aims were interrupted by the first wave of Greek colonists.[26] There are, however, problems, as we shall see in the next chapter, in identifying regional material cultures with socio-political or ethnic groups, and it is better to see the distribution pattern as indicating the way in which increasing communications along the river valleys and coastal plains led to the development of a new shared regional culture in the mountains of Basilicata.

The Fossa Bradanica formed a boundary of sorts between the cultural groupings emerging in what is now Basilicata and Central Puglia, but it was also a channel for communications between them, linking the Lucanian mountains to the W with the Tavoliere to the N, and the plateau of the Murge to the E. This is well shown by the pottery of Period Gravina I found in our Survey Area. For the most part, it conforms to that of the Murge and adjacent parts of the Fossa Bradanica, but there are also *a tenda* fragments, some imported from Southern Basilicata and others made in imitation of them. Some decorative patterns, notably the hatched pendant rays, point to even more distant connections across the Adriatic. The motif must have been absorbed into the repertoire of Iapygian geometric by potters working on the E coast, perhaps in Salento, as Yntema (1990, 78) suggested. The fact that they were then transmitted across the Murge to the Fossa Bradanica confirms that the communities in this broad area maintained a fairly cohesive material culture.

Metalwork adds to this picture. It has been argued that many of the bronzes found in FBA contexts in Apulia, such as socketed axe-heads and fibulae with simple and serpentine bows, were locally made from ores mined in Calabria, and that some of those produced on coastal sites were made in imitation of Aegean prototypes.[27] Others again were imported, from the Balkans or northern Italy, continuing the pattern of trade established in the LBA. It is a complex picture, in which the products of long-distance trade inspired imitations produced by local artisans who depended on raw materials, themselves acquired by long distance trade. Iron technology was introduced slowly. An iron forging pit of the FBA has been discovered at Broglio di Trebisacce,[28] and there are some indications that iron may have been worked in Apulia at this time,[29] but iron objects remained rare, and presumably expensive, throughout the first part of the EIA. The earliest iron artifacts found in tombs are small items, especially fibulae and other pieces of female jewellery.[30] Iron weapons began to appear alongside bronze ones only in the late 9th century,[31] and did not become common until well into the 8th.[32] More domestic iron objects are rare in settlement contexts before the 7th century. None were recorded in the excavations of the EIA site at Parco S. Stefano at Gravina,[33] and none are reported from the excavation of an EIA deposit on Botromagno (Map V-1 no. 4) by the British team working there in 1979-1985.[34] It would seem that, throughout the EIA, iron was scarce and reserved for valued items. It was not until much later that iron-working technology had progressed to the extent that it was possible to produce iron objects cheaply enough to be used for agricultural tools other than simple pruning knives.

[23] Gazetteer of sites in Yntema 1990, 40-44 (Early South Italian Geometric).
[24] Ferranti 2012.
[25] De la Genière 1968, 37-47; Yntema 1990, 112-121.
[26] Ferranti 2012, 68; cf. Peroni 1994, II, 874.
[27] Bietti Sestieri 2014, 122-123.
[28] Peroni 1994, 859.
[29] C. Giardino 2005, 500.
[30] Bianco 1999, 150, 155: iron fibulae in burials of the 9th century at the Masseria Zagarella in the lower Bradano basin between Miglionico and Montescaglioso, and at Anglona.
[31] At Sala Consilina in Phase IIA: Kilian 1970, 132, 140.
[32] E.g. in the burials at Santa Maria d'Anglona: Frey 1991, *passim*.
[33] *Gravina (PBSR) III (1)*, 48-132.
[34] R. Whitehouse *et al.* 2000.

Lithic technology continued into the EIA. Waste from flint-working has been found in an EIA context at Monte Sannace;[35] a flint arrowhead was retrieved from a tomb of the second quarter of the 8th century BC at Sala Consilina;[36] and lithic tools or flakes were found on at least four sites of the FBA/EIA in our Survey Area (see Chap. II.5.vi).

5. Settlements

i. Late Bronze Age to Final Bronze Age

The change from LBA to FBA has left clear traces in the pattern of settlement in South Italy. In the Sibaritide, nearly half the BA sites were abandoned at the end of the LBA, and although the village at Broglio di Trebisacce continued to be occupied, it was drastically reorganized.[37] Generally, the coastal sites show more continuity of occupation from LBA to FBA, but in most instances where there has been extensive excavation, it can be seen that the settlements were re-organized in the FBA, as they were at Roca Vecchia,[38] Leuca,[39] and Otranto on the Adriatic coast of the Salentine peninsula[40] and at Torre Castelluccia (Map V-1 no. 30) on the Gulf of Taranto.[41] At Leporano, also on the Gulf of Taranto, the settlement was moved uphill from Porto Perone (no. 29) to the acropolis of Saturo (no. 28) where the existing LBA settlement had been burned.[42]

There was apparent continuity on some inland sites, as at Matera (no. 17)[43] and perhaps Ripacandida (no. 11),[44] but on others there was drastic change, as at Toppo Daguzzo (Map V-1 no. 10) where part of the settlement on the N slope of the hill was abandoned at the end of the LBA. The central part on the hill-top was destroyed by fire and rebuilt with no account taken of the previous organization of the site.[45] At Leonessa near Melfi (no. 9),[46] and at Siponto and Salapia (no. 1) in Daunia[47] the settlements were reorganized. At Cavallino in Salento the site was re-occupied after a long interval.[48]

In our Survey Area there was an almost complete break at the end of the LBA. The loosely organized settlements of the MBA/LBA were abandoned, and the settlements of the FBA were founded on new sites (see below).

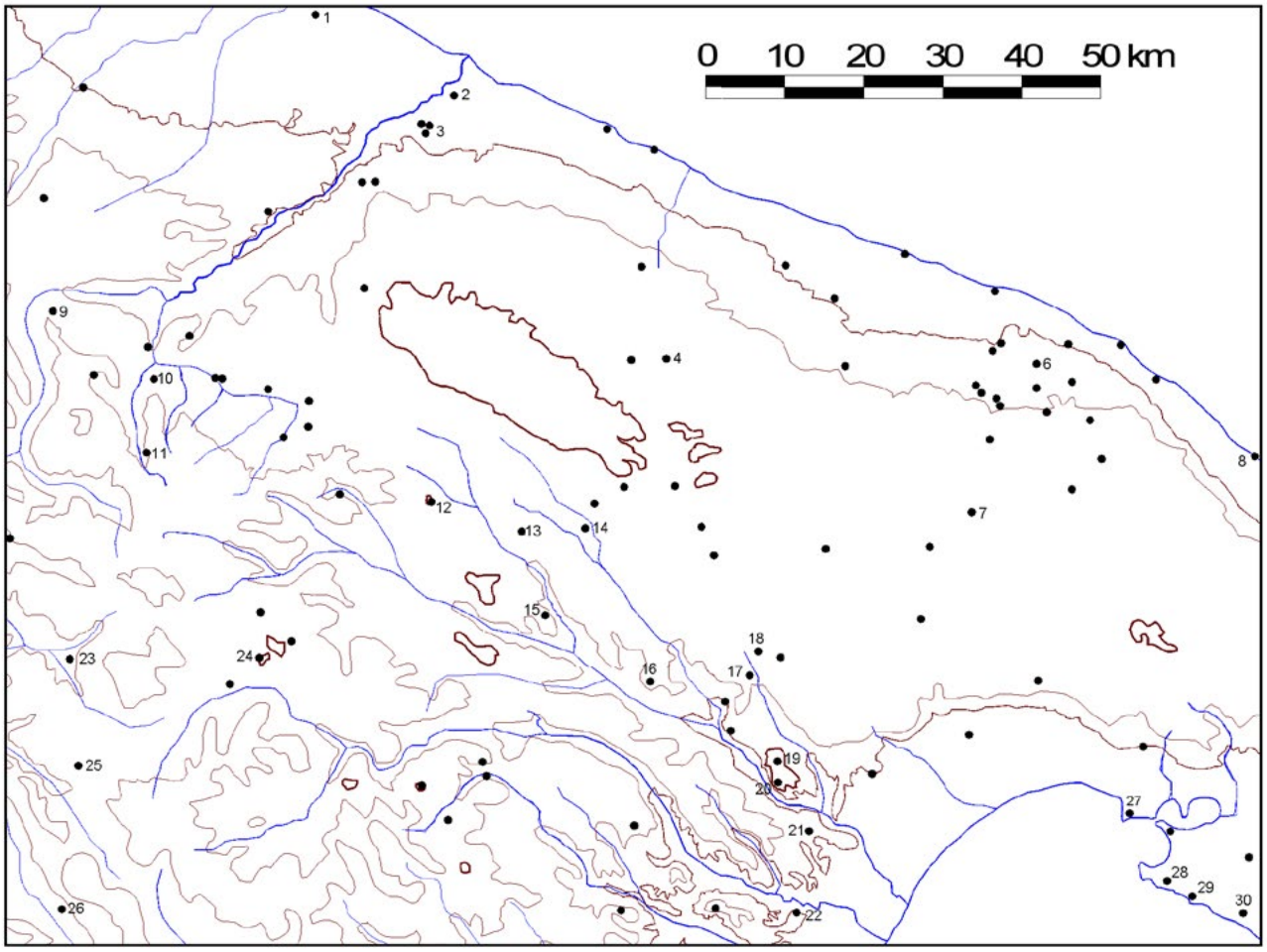
[35] Galeandro 2013, 62.
[36] Kilian 1970, 334 and pl. 19, Tomb A34.
[37] Peroni 1994, 853; Trucco 1994, 100-107.
[38] Destruction by fire at the end of FBA2: Pagliara *et al.* 2007, 311.
[39] Cremonesi 1978, 42.
[40] Orlando 1994.
[41] Gorgoglione *et al.* 1993, 78.
[42] Lo Porto 1964, 186-188.
[43] Cossalter 2012, 339 and n. 3.
[44] Carollo & Osanna 2012, 394.
[45] Cipolloni Sampò 1979, 494-495.
[46] Cipolloni Sampò 1979, 492-493.
[47] De Juliis 1979, 523-527; Alberti *et al.* 1981 (Salapia).
[48] Pancrazzi 1979, 285-286.

ii. Final Bronze Age to Early Iron Age

At Roca Vecchia, a layer of destruction separates the FBA from the EIA phases of the site, and at Termitito in Basilicata the settlement of the LBA/FBA was violently destroyed and rebuilt on a smaller scale in the EIA.[49] It is unlikely, however, that these events mark a widespread episode of destruction ushering in a new Iron Age phase. Some FBA settlements such as Otranto[50] and Porto Saturo[51] continued to evolve in the EIA without any signs of a violent transition; others such as Toppo Daguzzo,[52] Coppa Nevigata[53] and (probably) Broglio di Trebisacce, came to an end in the EIA after a period of gradual decline rather than in a sudden episode of destruction.

The decline of these settlements was far outmatched by the foundation of new ones. This process of settlement foundation, which had begun in the FBA, continued without interruption throughout the EIA before drawing to a close around the end of the 8th century. It was in this period that most of the major settlements of the later Iron Age in South Italy were founded (or in some cases re-founded after a period of abandonment). The phenomenon was so widespread that it is pointless to list examples beyond the immediate region relevant to our survey. In the Fossa Bradanica, Timmari (Map V-1 no. 16) was founded (to judge by the evidence of the cremation necropolis) in the FBA;[54] Botromagno/Silvium was first settled (on present evidence) at the beginning of the EIA, and the settlements at Incoronata, Cozzo Presepe (no. 21) and Monte Irsi (no. 15) rather later in the EIA, probably in the first half of the 8th century.[55] Other hill settlements where the earliest phases of the settlement are less well known, but which were certainly founded in the FBA or EIA, include Monte Serico (no. 12), Montescaglioso (no. 19), and Difesa San Biagio (no. 20).[56]Defence was of primary importance in site selection. Wherever possible settlements were located on the flat tops of hills with steep defensible sides and reasonable access to a water source. The process of site formation must have been driven by population expansion and migration. Many of the sites were founded in areas which had not been inhabited before or had been only thinly populated, some of them deep in the mountains. They would have had to be cleared of forest to be brought into cultivation or opened up as pasture for stock-raising.

[49] De Siena 1996, 170, 173.
[50] Orlando 1994, 231.
[51] Lo Porto 1964.
[52] Cipolloni 1976, 16.
[53] Cazzella 2012b, 313.
[54] Quagliati & Ridola 1906; Cipolloni Sampò 1999, 132-135.
[55] Cossalter & De Faveri 2012 (Incoronata); *Cozzo Presepe* 384; *Monte Irsi*, 113.
[56] Ciriello *et al.* 2012 (Monte Serico); Bianco 1986b, 22 (Montescaglioso); Roubis 1996, 243 (Difesa S. Biagio).



Map V-1. Distribution of sites of the FBA and EIA I in Central Apulia and the Fossa Bradanica. Sites mentioned in the text: 1. Salapia; 2. Madonna del Petto; 3. Cannae; 4. Cappa di Sotto; 5. Bari; 6. Conversano; 7. Monte Sannace; 8. Egnazia; 9. Leonessa; 10. Toppo Daguzzo; 11. Ripacandida; 12. Monte Serico; 13. San Felice; 14. Botromagno; 15. Monte Irsi; 16. Timmari; 17. Matera; 18. Murgecchia; 19. Montescaglioso; 20. Difesa S. Biagio; 21. Cozzo Presepe; 22. Incoronata; 23. Baragiano; 24. Serra di Vaglio; 25. Torre di Satriano; 26. Sala Consilina; 27. Scoglio del Tonno; 28. Saturo; 29. Porto Perone; 30.Torre Castelluccia.
Principal sources: Cipolloni Sampò 1979, 491, fig. 1 (Basilicata); Bianco 1999, 139, fig. 1 (Basilicata); Greiner 2003, 43 Abb. 45 (Basilicata); *ibid,* 46 Abb. 49 (Peucetia and territories of Tarentum and Metapontum); De Juliis 1984a, 138 fig. 164 (Daunia); Marchi and Sabbatini 1996; Sabbatini 2001; Marchi 2010 (territory of *Venusia*); Yntema 1990, figs 7, 18 (distribution of South Italian Protogeometric and Early Geometric pottery).

iii. Minor settlements in the Fossa Bradanica

The phenomenon of site formation in the FBA/EIA was widespread, but it was also uneven, as the map of the Fossa Bradanica and adjacent regions shows (Map V-1). The settlement pattern was much denser in some areas than others. There is a notable concentration centred on Conversano (Map V-1 no. 6) on the lower eastward slopes of the Murge between Bari (no. 5) and Egnazia (no. 8), and another around the shore of the Gulf of Taranto between Scoglio del Tonno (no. 27) and Torre Castelluccia. But the most surprising factor is the density of settlement in the Fossa Bradanica which includes not only the major hill-top sites mentioned above, but numerous smaller sites identified by the surveys published in this book (Map V-2). This pattern is not just an effect of the intensity of the surveys carried out in this area, because it is not repeated in adjacent regions which have also been the subject of detailed field surveys. In the lower Ofanto valley, for instance, the intensive survey carried out by Roberto Goffredo has revealed only a few minor sites of the early Iron Age, mostly clustered in the vicinity of the later Daunian settlement of Cannae (no. 3);[57] and the surveys carried out by Maria Luisa Marchi and Giulio Sabbatini in the extensive territory surrounding Venosa have identified only about a dozen EIA settlements in this very large tract of land, most of which are located in the SE of the area at the beginning of the corridor of the Fossa Bradanica.[58] Moreover, the pattern of relatively

[57] Goffredo 2011.

[58] Marchi & Sabbatini 1996 (sites 29, 81, 576); Sabbatini 2001; Marchi 2010. She notes (p. 247) that there is only scanty evidence for the [Early] Iron Age phase in the whole of the Melfese and in the middle

dense settlement in the Fossa did not extend as far as the coastal plain around the (later) Greek *polis* of Metaponto where the field survey carried out by the Institute of Classical Archaeology of the University of Texas revealed no EIA settlements at all.[59] The nearest ones are on higher ground above the coastal plain at Incoronata and Cozzo Presepe.

iv. The origins of the Bradano culture

These discoveries show that the Fossa Bradanica was not a peripheral area on the boundary between other cultural groupings. It had its own dynamic regional culture which emerged in the FBA and continued to develop through the EIA. The first clear indication of it is the cremation cemetery at Timmari consisting of 248 burials datable to the FBA by bronze fibulae and pins. It appears at present to be an isolated phenomenon in this area, but little is known of burials of this period elsewhere in the Bradano-Basentello valley. Field survey has shown that settlement to which the burials must have belonged spread out in the EIA over ca. 9ha along the two main parts of the plateau.[60] One of cremation urns, perhaps one of the latest pieces in the cemetery, was made of purified clay and decorated in the Iapygian protogeometric style; and other pieces of this ware have been found in the area of the settlement. Other settlements in the vicinity can also be dated to this period by fragments of indigenous protogeometric pottery found on them, including Difesa San Biagio,[61] Murgecchia (Map V-1 no. 18),[62] and Sites 401 and 407 of our Survey (Nos.369 and 350). The fragment of cordoned dolium No.1857 found on San Felice (Site 223) indicates that it too goes back to the FBA.

These exotic wares show that the inhabitants of this part of the Fossa Bradanica were in contact with those who lived in the FBA settlements on the Ionian coast. The Early South Italian geometric pottery of the EIA, found in much greater quantities, shows that after the turn of the millennium there were greatly intensified links with the population on the Adriatic side of the Murge; and in the 8th century these extended to the "a tenda" pottery-using peoples of (later) Lucania. In the middle of the 8th century there was a new wave of population expansion when new settlements were founded deep in the Lucanian mountains, at Serra di Vaglio (Map V-1 no. 24), Baragiano (no. 23) and Torre di Satriano (no. 25). Since the matt-painted pottery of the late 8th century found on these sites is predominantly of types typical of the Bradano-Basentello valley, including our Survey Area (see Chap. VI.2.iv), it has been plausibly suggested that the people who colonized these interior regions were drawn primarily from this area.[63]

The economic basis of this regional culture was no doubt the exploitation of fertile land of the Fossa Bradanica, which was able to support a growing population living in numerous settlements. But the move to colonize the remoter parts of the Lucanian Apennines suggests that part of the population may have consisted of transhumant herdsmen who used the mountain pastures in the summer months. If so, then these remoter settlements may have begun as collections of huts occupied only in the summer season, although they developed during the 7th century into permanent settlements, with their own social structures and internal organization (see Chap. VI.3).

v. Settlement organization

Although FBA contexts have been identified on many South Italian sites, few have been sufficiently excavated to give a clear impression of the organization of the settlement as a whole, and practically none from Central Apulia or the Fossa Bradanica. We have seen how the settlement of the LBA at Scoglio del Tonno was dominated by a single large, roughly rectangular hut. Given the circumstances of the excavation, the date of the hut depends more on the assumption that it was contemporary with the most significant finds from the site, including the Mycenean pottery, than on stratigraphic evidence, and the possibility that it belongs to the FBA cannot be excluded. The question cannot now be resolved, but it is likely that Scoglio del Tonno exemplifies a type of settlement that is better attested in the FBA at Broglio di Trebisacce,[64] Roca Vecchia,[65] and Torre Castelluccia,[66] where the dominant feature was a particularly large, usually rectangular, hut near the centre of the village, which may have been the dwelling of the overlord of the community, and perhaps a cult centre. They are precursors of the large huts with both domestic and cult functions found at Francavilla Marittima (the so-called "casa delle tessitrici") [67] and, probably, Monte Sannace (Map V-1 no. 7)[68] in the EIA, and at Torre di Satriano in the late 8th/ early 7th centuries BC.[69]

The new settlements of the FBA and EIA were generally much larger than those of the previous period and appear to have consisted of small nuclei of huts distributed rather loosely across broad plateaus. That

Ofanto valley.

[59] *Chora Metaponto III*, vol. 2, 577.

[60] Osanna *et al.* 2012, 167.

[61] Canosa 1986, 172, tav. 55a.

[62] Lo Porto 1972, 482.

[63] As suggested by Osanna (2015, 188-189).

[64] Trucco 1994, 100-106.

[65] Pagliara *et al.* 2008, 241-244: "capanna-tempio" of Phase VII.

[66] Drago 1948, 1949; Gorgoglione *et al.* 1993.

[67] Kleibrink 2006, 111-179 (building Vb); Kleibrink Maaskant 2003, 64-76.

[68] Galeandro & Palmentola 2013, 65-66.

[69] Osanna 2008, 161-165; Carollo 2009.

at any rate seems to have been the case at Incoronata, one of the few sites where an EIA settlement has been extensively excavated;[70] and it must have been so also at Timmari, where, as we have seen, the settlement traces of the EIA extend over ca. 9 hectares. The field survey of Botromagno showed that the core of the settlement of the EIA was located on the terrace between the scarp of the hill and the ravine, but that there were also small nuclei of huts located on several parts of the hill-top.[71] It was not, however, the case on San Felice where the evidence of our surface collection suggests that the settlement was already concentrated in the FBA/EIA phase (see sub-section 9 below).

There was no single type of hut common to these FBA/EIA settlements, just as there had been none in the Neolithic and Bronze Ages. Rectangular, apsidal, elliptical and circular forms are all found, sometimes two or more on the same site. Construction techniques also varied.[72] Most huts had walls of wattle and daub supported by posts set into holes along the wall-line. At Broglio, however, the posts seem to have supported a structure of wooden boards faced with clay. In some cases, as at Monte Sannace in the EIA[73], the walls rested on a stone socle. In one of the huts the walls were of reeds, coated in clay.

Although many of these EIA sites were founded on hill-tops with steep sides to facilitate defence, they were not at this stage defended with ramparts – in spite of the fact that many of the BA sites which they replaced had had fortification walls. Evidently the EIA population assessed the strategic needs of the community differently. The large EIA sites contained open areas where livestock could be gathered in if the community came under attack, or where the inhabitants of other smaller settlements could take refuge, as was probably the case in our Survey Area. But these EIA communities are unlikely to have had the manpower necessary to construct ramparts around their enlarged settlements.

6. Burials

i. Burial practices

New burial practices also point to changes in social organization in the FBA. The 248 burials in the urnfield excavated at Timmari show signs of clustering, perhaps by family groups.[74] Only 42 of them were equipped with grave goods other than the ossuaries themselves, and none contained arms, which must have been ruled out by norms governing funerary ritual (as in other cremation cemeteries of the period).[75] Two burials containing razors were presumably of males, and several others with bronze rings, bronze and bone hairpins, and a decorated bone comb were presumably of females. These items may have been intended to designate a privileged élite within the kinship group. A few of the graves were marked by stone stelae set to emerge for about two thirds of their height above ground, perhaps another indication of the high social status of the dead.

The cremation cemetery at Timmari was not unique in South Italy. There had already been cremation burials in the Pozzillo cemetery at Canosa in the LBA (mentioned in the previous chapter), and others of the FBA have been excavated at Torre Castelluccia on the Gulf of Taranto. But these South Italian cremation cemeteries are remote manifestations of an idea that began in the Urnfield culture of central Europe, spread from there into North Italy, and only penetrated erratically further S. The ritual became standard practice in Etruria, but in South Italy it lasted into the EIA only on the Tyrrhenian side of the peninsula, in the plain of Salerno and the river system of the Tanagro/Sele where Etruscan influence became strong. In that area cremation continued to be practised and the ashes deposited in funerary urns, as at Pontecagnano and Sala Consilina, but further E in South Italy cremation disappeared by the end of the millennium.

No single funerary ritual took its place. Generally, however, the communal burials of the Bronze Age gave place to individual inhumation burial in the EIA, with the dead laid in pit graves, either in the extended supine position, or on one side, flexed (*rannicchiato*). Flexed burial was normal in Apulia,[76] as it was on the Ionian coastal fringe, for example at Francavilla Marittima in the Sibaritide,[77] at Santa Maria d'Anglona[78] in the hinterland of Heraclea, and in the San Teodoro necropolis at Incoronata in the lower Basento valley.[79] But in the interior of Basilicata, in the valleys of the Agri and Sinni rivers, the dead were normally buried supine.[80] These regional differences in the treatment of the body continued into the later Iron Age.[81]

In the EIA the grave was frequently covered with a stone tumulus of varying size, reflecting, presumably, the importance in life of the deceased. These tumuli were generally much smaller than those of the BA, and since

[70] Cossalter & De Faveri 2012, 76-77. But the interpretation of the pits is controversial. Some had an industrial purpose: cf. Denti 2012, 2016.
[71] *Gravina I*, 25.
[72] Liseno (2007) discusses construction techniques at length.
[73] Galeandro & Palmentola 2013, 65.
[74] Quagliati & Ridola 1906; Barra Incardona 1976; Cipolloni Sampò 1999, 132-134.
[75] Bietti Sestieri 2014, 116.
[76] De Juliis 1988, 22.
[77] Zancani Montuoro 1970-1, 1974-1976, 1977-9, 1980-1, 1983-4 passim. The skeletons are rarely well preserved, but the lower limbs at least were normally contracted.
[78] Frey 1991.
[79] Chiartano 1977, 1994, 1996.
[80] Bianco 1999, 171 and map on p. 139, fig. 1.
[81] Bottini & Setari 1996, 60.

they were not intended for reuse, they had no entrance corridors. The size of the tumulus, the quality of the grave goods and the relation of tumulus burial to the emerging pattern of settlement all varied. In Central Apulia most known examples are on the High Murge, remote from any known settlements, and few of these had lavish grave goods.[82] They may be the tombs of shepherds or other members of pastoral communities, for whom it was easier to bury the dead under a pile of stones than to dig a pit for them in the exposed bedrock; but they may also be territorial markers, asserting the right of a kinship group to pasture its flocks on the land which had been claimed by the dead. There were, however, a few grander burials, including a so-called tholos tomb at Cappa di Sotto, one of a number of tumulus burials on the Murge Scorzoni in the hinterland of Ruvo (Map V-1 no. 4), in which an adult male was buried with a bronze fibula, some beads in terracotta and amber, an iron blade, and some pottery.[83] It must be dated to the end of this period. At Murgecchia in the Materano there was a group of tumulus burials associated with a nascent settlement of the EIA.[84] But below the Murge in the Fossa Bradanica, there is little evidence as yet for any burials in this period, except for some tumuli in the hinterland of Metaponto,[85] and in the lower basin of the river valley in the vicinity of Miglionico and Montescaglioso.[86] No EIA burials have been found in the excavations on Botromagno or Monte Irsi, although both sites were inhabited at this time.

How the dead were disposed of in the EIA communities of our Survey Area remains unknown. An unexcavated mound at the highest point of our Site 401/409 (see discussion and photograph in List of Sites) may be a tumulus, but that is uncertain without excavation, and at present it seems necessary to conclude that the communities who inhabited these EIA settlements had no formal burial practices – or at least that they disposed of their dead in a way that has as yet left no trace in the archaeology.

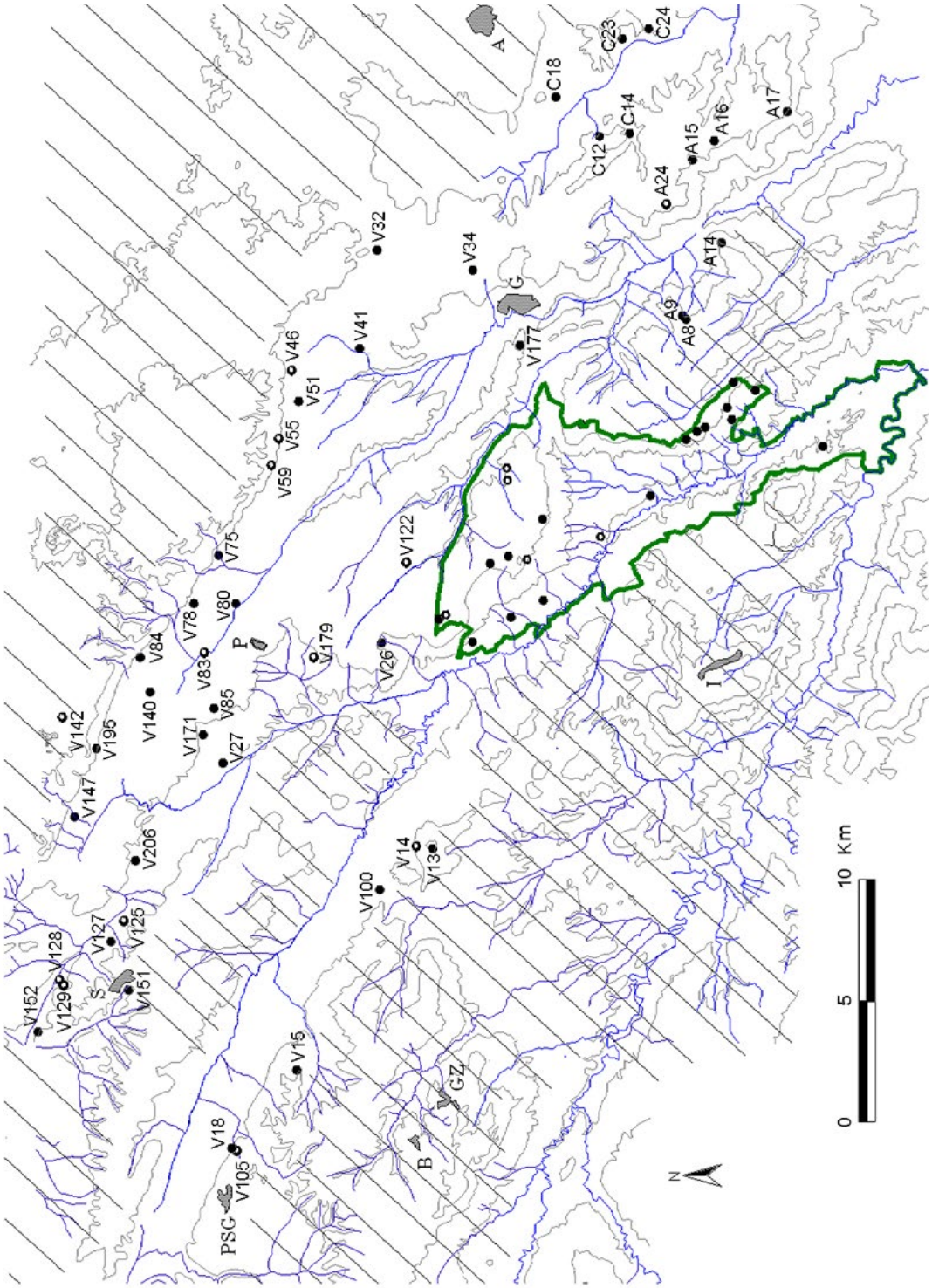
ii. Burials and social organization in the Early Iron Age

Although the evidence from grave goods in Central Apulia is meagre, analogies with burials in adjacent parts of South Italy provide an insight into the social organization of contemporary communities which may be relevant also to our Survey Area. Only a few South Italian cemeteries have been systematically excavated and published in enough detail to allow such inferences to be made. One of these is the Macchiabate necropolis at Francavilla Marittima in the Sibaritide,[87] which was closely connected to the EIA settlement on Timpone della Motta. There the dead were buried in individual pit graves, roughly ovoid and covered with small tumuli. These were organized in clusters gathered around a larger tumulus containing particularly lavish grave goods. The clusters have been interpreted as representing extended family groups, dominated by a high-ranking man and woman.[88] At Torre Galli in Calabria the 280 or so burials appear to have been organized in large groups, further subdivided into smaller groups identifiable as extended families.[89] In the necropolis of the Valle Sorigliano at Santa Maria d'Anglona, a recent analysis of the funerary assemblages shows that there was some differentiation in the quality and number of grave goods which points to the existence of an elite class. Its members were buried in the central part of the necropolis, but since they were associated there with simpler burials, it seems likely that they were the leading members of an internally stratified kinship group which also included humbler dependents.[90] Both there and in the San Teodoro necropolis of Incoronata, the burials of the élite class were marked out with more valuable goods, men being buried with spears and swords, and women with large amounts of bronze jewellery. [91] In Daunia, some rich burials in the necropoleis at Salapia and Monte Saraceno also point to a social structure dominated by a narrow ruling class.[92]

In all these EIA necropoleis, many of the male dead were equipped with weapons, in some cases of bronze, but increasingly of iron. The normal provision is one or two spears, but sometimes a short sword or long knife is found, either with or without a spear. The sword was no doubt a more prestigious weapon, and probably signified that its owner had been a leader in war. Peroni has argued that the introduction of a short sword or dagger alongside spears in grave groups in the Sibaritide is indicative of new military tactics of fighting in close formation, and implies that there was a large class of armed men, some of whom may have been dependents of elite (better armed) warriors.[93] That is likely to have been a general phenomenon in EIA Italy.

All this suggests that in the FBA/EIA, communities in S. Italy were controlled by a few powerful families in which women played a particularly important role in the transmission of power. The dominant families were probably supported by numerous dependents who may have claimed kinship with their leaders. Such a

[82] Jatta 1914, 224-239; Ciancio & Amatulli 2011.
[83] Striccoli 1994; Piergentili Màrgani & Fabiano 2016, 110.
[84] Lo Porto 1995a.
[85] Lo Porto 1969.
[86] Bianco 1999, 150.
[87] Zancani Montuoro, 1970-1, 1977-9, 1980-1, 1983-4; Kleibrink 2003, 37.
[88] Kleibrink 2011; Peroni 1994, 871-872.
[89] Orsi 1926; Bietti Sestieri 2014, 118.
[90] Ferranti & Quondam 2015, esp. 81-83. The burials are published in Frey 1991.
[91] Chiartano 1977, 1994, 1996.
[92] Mazzei 2010, 28.
[93] Peroni 1994, 864-865; cf. Bietti Sestieri 2014, 118.



Map V-2. Sites of the FBA and EIA I found on the Older Surveys. Sites with only 1 piece of the period or with uncertainly dated impasto are omitted. For site numbers in our Survey Area see Maps V-3 (FBA) and Map V-4 (EIA). Doubtful instances are indicated by hollow dots.

structure would make a clear break with the much broader based kinship groups of the Bronze Age.

7. The Older Surveys

Thirty-three sites which can be attributed to the FBA/EIA were recorded by Vinson, Aldridge and Chapman (see Map V-2**).** Another 13 sites may perhaps also be of this period. The classification is sometimes doubtful because the pottery collected in these early surveys is rarely described in detail or illustrated. Sometimes it is supported by the presence of geometric monochrome pottery on the same site. More doubt arises in the case of sites which are recorded as having geometric monochrome pottery without EIA impasto, since not all monochrome pottery need belong to the EIA, and without illustrations it is impossible to be sure that the classification is right. But since most geometric monochrome pottery does belong to the EIA in this part of the Fossa Bradanica, as our own survey of San Felice shows, we have included these sites as doubtful instances on the map and in the Table of site occupancy on the Older Surveys (Part VI, *1,* 4 and *2,* 3).

Leaving aside the 13 doubtful instances, the 33 FBA/EIA sites represent a decline from the 51 of the full Bronze Age (Map IV-2), but this need not indicate a demographic decline since some of FBA/EIA sites were much larger. Only 7 (21%) of the more reliably dated sites are likely to have continued from the previous period. All the rest were situated in new locations.

It is impossible to give a full analysis of the habitation level of these sites because there are some serious gaps in the evidence, especially in the matter of site size. In half the cases no estimate of area is given. Moreover, most sites for which there is an estimated size were occupied during several periods, so that there can be no certainty that the entire site was occupied in the EIA. Nevertheless, our experience on the IA sites in our own Survey Area shows that in all the principal sites, including San Felice, the EIA occupation already extended to their natural geographical perimeters, and this may well have been the case also in the area of these older surveys.

In fact, even the limited available evidence shows a remarkable range of site sizes. At the upper end of the scale are seven sites which occupied areas of 2ha or more. The largest by far is Site V26 which extended over ca. 66ha. The next is Site A17 (15ha) which occupied the edge of a flat hill-top with a scarp to the W and S on the ridge on the left bank of the Torrente di Gravina; then Site A9 (9ha) situated rather further N on the ridge on the right bank of the same Torrente; and C12 (also 9ha) on a terrace of the Murge plateau in the area of la Selva between Gravina and Altamura. They are followed by A16 (6ha) on a similar location to A17 and only 3km further to the SW, and V84 (2ha) situated under the scarp of the Murge just below the site of the later castle of Garagnone. But at least two others for which there are no estimates of size should be added to this list: Site V13 (Monte Serico) which Vinson records as extending down naturally terraced slopes on all sides of peak; and Site V32, which was located on the slope of Monte Castiglione above the now drained lake of the



Photo V-1. Monte Serico.

Pantano, which he recorded as occupying an enormous, but unspecified, area.

Below this level of site there were a number of smaller settlements ranging in size from ca. 1500 to 7500 m^2: Sites V140, V78, C24, C18, C14, perhaps also V51, V27 and V14 near the top of Monte Serico. The marked difference in site sizes between larger and smaller settlements suggests that the smaller settlements may have been dependencies of the larger ones.

A few of these sites have additional documentation. The only one to have been partially dug and published is Monte Serico, where a recent excavation revealed parts of two huts, and a considerable amount of impasto, geometric monochrome and plain pottery of the EIA. One (Hut A) appears from the configuration of burnt material to have been oval shaped, though only two post holes were identified. It had walls of wattle and daub. Only scanty remains were found of the other (Hut B).[94] Additional evidence for the EIA settlement in this area has been found lately by McCallum and Hyatt who have reported a large settlement going back to the 8th century on the E slopes of the hill.[95] Two other sites can be mentioned. Site A17 was dug long ago by Ridola and some finds from it are held in the Museo Ridola in Matera, but the dig was never published. Site V32 has not been dug, but excavations have been undertaken on several tumulus burials of the EIA on the Murge above the site.[96]

The location of these EIA settlements suggests that they exploited a variety of resources. Those situated on arable land, near streams in the valley of the Torrente di Gravina were probably small farms. The more northerly group clinging to the slopes at the bottom of the scarp of the Murge, often near ravines cut by small watercourses which give access to the rough pastures on the high plateau, are most likely to have been engaged in shepherding, as well as cultivation.[97] They include the large site V32 below Monte Castiglione, just mentioned. Such sites will have been founded both to exploit the access routes to the plateau, and to connect them with the age-old transhumance trail which ran below the scarp of the Murge.

The largest of all the sites in the area, Botromagno was reletively isolated, the nearest sites of this period being 8km or more away. This suggests that the surrounding terrain within a radius of at least 4 km was cultivated by people who lived in the settlement. It seems probable that they came and went to their fields on horse-or mule-back or in carts.

Some of the larger sites had defensive capabilities. Site A17 had natural defences round two sides and could have been defended on the others. V13 on Monte Serico was on, or very near, a prominent hill-top and Site V32 could have used Monte Castiglione as a defensible refuge. The small Site A14 was on a fairly steep narrow promontory and the even smaller Site C14 was on a hill-top, readily defensible on 3 sides.

All the largest EIA sites continued into the Late Iron Age, and in most cases into the Hellenistic period. The basic pattern of Iron Age settlement was therefore laid down early in the first millennium BC.

8. Excavations near the Survey Areas

i. Botromagno

The excavations at Gravina throw more light on the character of these EIA sites. The core of the settlement in this period, as we have seen, was on the terrace below the scarp of Botromagno between the hill and the ravine. The excavations of the British School at Rome in 1966 and 1970 uncovered EIA features at two points. In Site A, to the SE there was a layer of stone chips, perhaps the floor of a hut, which contained EIA sherds, and close to it, the foundations of a hearth consisting of a layer of sherds of the late 8th/early 7th century (phase Gravina II), densely packed together.[98] Rather more extensive EIA remains were excavated in the second site below the hill to the SW, in the area of Parco S. Stefano where an emergency excavation ahead of quarry operations uncovered the remains of four huts representing three different moments in the IA occupation. All were set in shallow depressions cut into the clay and filled with small stones and gravel on which the clay floor was laid. The best preserved, Huts 5A and 5B, measured 4–6m in diameter. Each had a hearth set in its own hollow in the floor. Some post holes were identified, though not enough to indicate the plan of any of the structures, and in each case there were large accumulations of stones perhaps derived from bases of the hut walls. Numerous fragments of pottery were found in or over the hut floors, including remains of several large impasto storage pots. Fragments of braziers were found in two of the huts. Yet another hut, rectangular with an apsidal end,[99] was excavated by the Superintendency in the area of Padre Eterno close to the edge of the ravine.

[94] Ciriello *et al.* 2012.
[95] *Beyond Vagnari*, 174-175.
[96] Biancofiore 1974; Lo Porto 1980, 52; Greiner 2003, 197.
[97] Sargent 2001, 161-162. He notes that the detritus soils at the foot of the Murge scarp which had been favoured for site location in the BA continued to be selected in the EIA because of their suitability for shepherding. The more easily cultivated sandy soils at the valley edges would have been worked from the large defensible settlements such as Botromagno and Monte Irsi which appeared at this time.

[98] *Gravina* (*PBSR) I*, 134, fig. 2 area 1; 136 nos. 1 and 2; 145-147 "sherd floor" with fig. 8 and pl. XXX.
[99] Ciancio 1997, 48.

Field survey has shown that there were also nuclei of settlement scattered over the plateau.[100] An excavation was carried out in one of these on the highest part of the hill-top by a British team directed by Ruth Whitehouse and John Wilkins. It uncovered EIA features stratified below the remains of a later house.[101] They included several post holes, three of which formed an arc with a diameter of 5.0m, with a fourth post hole in the centre. They are likely to have held the timbers of an apsidal hut, but the rest of its plan could not be recovered. There were also two hearths measuring about 1.0m in diameter with a base formed by limestone slabs set in a shallow pit.

ii. Monte Irsi

At Monte Irsi the earliest pottery found in the excavations is of EIA type, comparable to that of Period Gravina I, but there is little of it, so it is probable that occupation began late in the period, perhaps early in the 8th century. This early material was found re-deposited in later contexts.

9. Our Survey Area

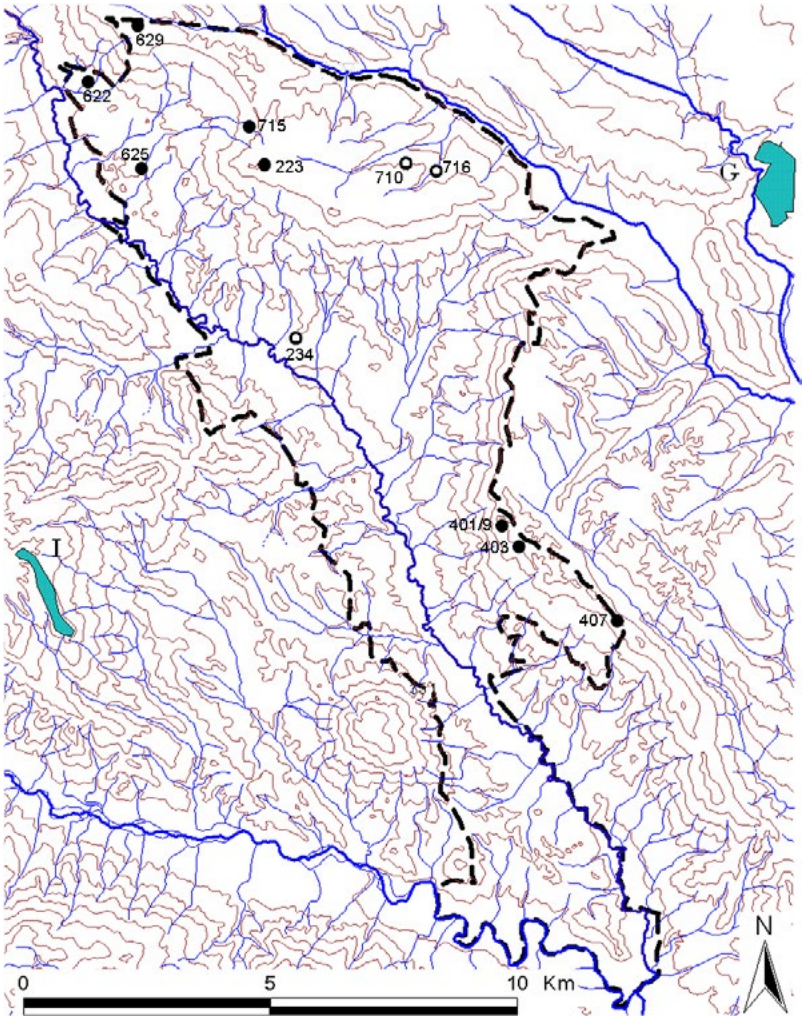
The following table lists 16 sites that can be ascribed with certainty to the FBA or EIA. The site numbers are given in the first column. The second column records the number of fragments of impasto pottery found on each site, and the third the individually described pieces with their catalogue numbers. The fourth column gives the number of geometric monochrome sherds (some of which, however, may be small fragments without distinctive features of later monochrome or bichrome pots) and the fifth column lists catalogue numbers of monochrome matt-painted pieces. Two of these, with catalogue numbers shown in bold, are decorated in the Iapygian protogeometric style of the FBA (Nos.369 from Site 407 and 370 from Site 401/9); the remainder have simple geometric motifs typical of Period Gravina I on Botromagno, and can be ascribed to the EIA.

The new settlement pattern shows an almost complete break with that of the MBA and FBA. The only instance where there may have been continuity is on Site 716 (the Masseria Leblè), but this is uncertain since the site is poorly dated.

Site	Impasto		Geometric monochrome		Period
	Sherds	Catalogue numbers	Sherds	Catalogue numbers	
140	4		1	383	EIA
214	2		1		EIA
223	5003	221, 223, 224, 231, 233-235, 243, 247, 248, 250, 251, 262-264, 266, 271, 273, 279, 283-287, 297, 300, 301-303, 305, 306, 311, 312, 325, 333, 343-346, 350-352, 354-358, 363-368	4052	375, 377, 378, 380, 386, 387, 390, 392, 393, 394, 395, 398, 405, 406, 410, 411, 413, 414, 415, 416, 420, 423, 424, 425, 426, 428, 429, 430, 431, 432, 433	FBA EIA
347	76	322, 359, 360	3	385	EIA
401/9	963*	227, 228, 249, 269, 272, 292, 309. 347, 353	139*	370, 389, 396, 397, 399, 412, 417, 418, 421, 427	FBA EIA
403/4	87				FBA EIA
406	23		1	404	EIA
407	107	280, 281, 361, 362	5	369	FBA EIA
418	4				EIA
422	2		1	517	EIA
423	10		1		EIA
431	389		48	372, 381, 389, 400, 401, 403	EIA
622	436	216, 220, 222, 226, 239, 241, 244, 259, 278, 288, 308, 317, 329, 334, 335, 337, 338, 339, 340, 348, 349	0		FBA
625	6	217, 219, 270, 342	0		FBA EIA?
629	928	225, 229, 230, 252- 254, 256, 257, 270, 274, 294	78	371, 373, 374, 376, 379, 382, 388, 391, 402, 407, 408, 409, 419, 422	FBA EIA
715	43	232, 277, 336	0		FBA EIA?

Table V-1. FBA and EIA 1 sites in our Survey Area. *From a sample grid extending over about 7% of the site.

[100] *Gravina I*, 25 (A. Small); Terrenato & Taylor 2000, 98.
[101] R. Whitehouse *et al.* 2000, 12-21.



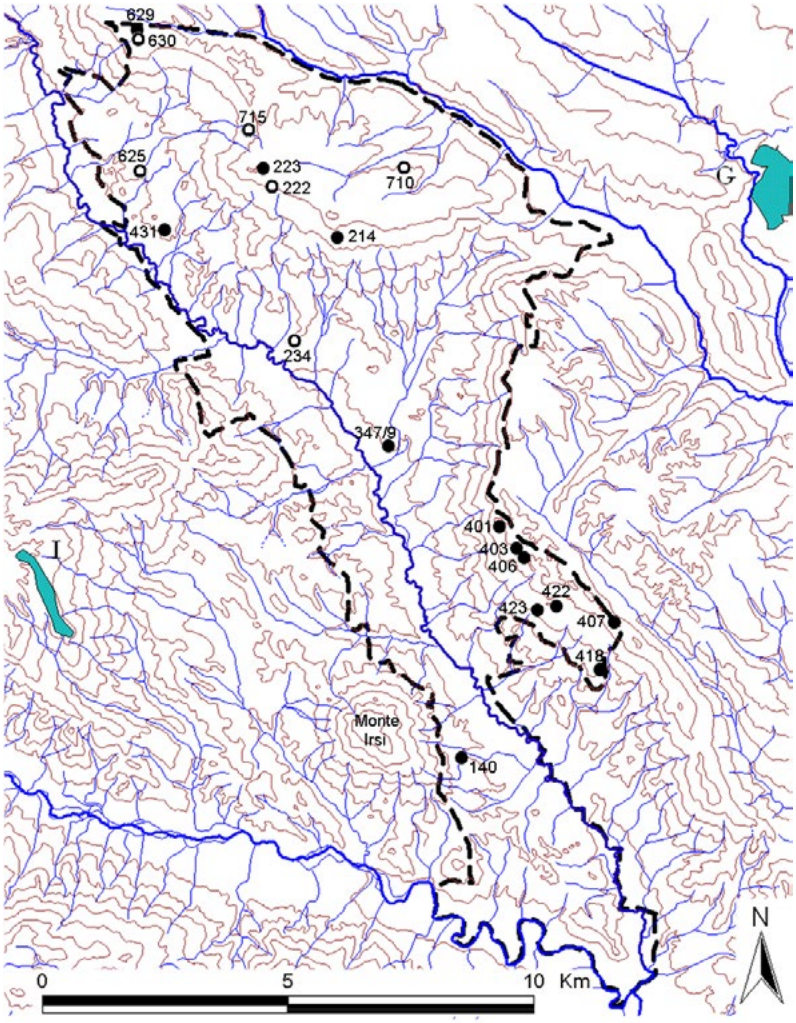
Map V-3. FBA sites in our Survey Area. Doubtful instances are indicated by hollow dots.

At least 8, and possibly 11, new sites were founded in the FBA (See Tab. V-1 and Map V-3), of which the great majority continued into the EIA and in some cases later. An exception is Site 622 which appears to have failed before the end of the FBA. Sites 625 and 715 produced small amounts of hand-made plain pottery, but no geometric monochrome. Unless the hand-made plain pottery can be dated to the FBA (which is uncertain), we can best explain the conundrum by supposing that the inhabitants could afford only the simplest form of plain ware, and that the sites did not last long into the EIA. All the remaining sites continued into the EIA, and in many cases beyond (See Table of site occupancy Part VI, *2,* 3). The process of founding new settlements continued throughout the EIA so that by the end of the period there were between 13 and 19 sites unevenly distributed across the fertile plateaus on the ridges above the river valley (See Map V-4). For this to be possible, much land must have been cleared of forest to open up the area for agriculture.

The sites differ greatly in size, and in the number of sherds they yielded. Sites 223 and 401/9 were major settlements which continued in occupation down to the period of Roman conquest. On Site 223, the scatter of FBA/EIA material shows a dense pattern of occupation extending over an area of ca. 4.5 hectares across the central part of the site. Thinner scatters at the E and W ends suggest that there were a few widely spaced huts in these outlying areas.[102] Site 401/9 was less intensively studied, but there too the settlement seems to have been evenly distributed over a large area. But several other sites, including Sites 403, 622, 625, consisted of several small nuclei of huts spread out over a large area. As we have seen, this is a common pattern of settlement in Italy in this period. On most of these sites the main nucleus of settlement could be identified by specific concentrations of sherds, beyond which there was a scatter extending over a much larger area, presumably indicating the extent of the land that was farmed from the core settlement. On Site 431, for instance, the nucleus of settlement measured ca. 2500m^2, and the scatter extended beyond it over ca. 7 hectares. It is particularly indicative since the site was occupied only in the EIA and the MIA, so that the question is not confused by the remains of later occupation, as it is in most other sites which continued to be occupied over a longer period (or were re-occupied after an interval). At the bottom end of the scale are three very small sites (Sites 140, 418 and 422) ranging between 200 and 400 m^2, each probably consisting of a single hut used for only a short time. It is likely that daub was the normal material used with interwoven lattice of small branches for cladding hut walls. Fragments of daub from burned huts were found on Sites 223, 418, 422, 423, 431 and 629, all of which can be dated to this period.

Although most of these FBA and EIA sites were founded on the flat tops of the ridges which flank the Basentello, they avoided the more open plateau overlooking the Pentecchia di Chimienti where most of the occupation in the BA had been located. That is probably to be explained by the assumption that the FBA/EIA population preferred more compact sites with more

[102] See List of Sites, 223, plan 3; also C. Small & A. Small 2017, 10, fig. 2.



Map V-4. EIA sites in our Survey Area. Doubtful instances are indicated by hollow dots.

clearly defined perimeters and natural defences. There were, however, a few sites founded on lower ground. They include Site 431, already mentioned, which was situated on a low ridge just above the river and only some 500m from it. The soil here was clayey loam, relatively heavy, better suited to stock-raising than to agriculture. Another low-lying site, Site 347-9, was probably inhabited in this period. We have come across it before. It occupied a low terrace near the flood plane, controlling a crossing of the Basentello. The settlement was not large, but it was occupied in most periods from Neolithic to Late Antiquity, although there may have been a hiatus in the BA.

It seems, therefore, that the FBA/EIA was a period of intensive and experimental site formation. Some of the experiments worked out better than others. Over time, the smaller settlements failed or were absorbed by their larger neighbours. Whether they were organized in a hierarchical structure at the time of their foundation with the smaller settlements being regarded as dependencies of the others, it is impossible at this stage to say with certainty, but it will be argued below (Chap.VI.II.3.iii) that a process of consolidation took place during the 7th and 6th centuries BC when a hierarchy of sites emerged involving a further reorganization of the territory. It is quite likely that the process had already begun in the EIA.

As elsewhere in the Fossa Bradanica, the preferred location for the new sites was on the tops of hills or ridges, where a flat plateau offered potentially good arable land with easy access to springs. This was notably true of Sites 223, 401/9. 629 and 407. Site 223 (San Felice), the largest of our sites with a total area of some 20ha and a nucleus (gridded) of some 9ha stood on the top of a ridge with natural defences on two sides and part of a third (see the entry in the List of Sites), but it was not well defended to the NE in the direction of Botromagno. Site 401/9 (Crocevelina) was also on top of a ridge above the left bank of the Basentello, with the main nucleus in a natural depression beyond which the scarp slopes steeply down to the N and W. An early air photograph shows possible traces of an earthwork on the E side, but they are very uncertain and would have left part of the settlement undefended where the scatter of ceramic material extends beyond them eastward into Area 409 (see description in the List of Sites). Site 629 was much smaller. It was almost at the top of the ridge of Serra del Corvo with a steep slope down from it to the N and E, but again no natural defences on the other two sides. Site 407 on Serra Meschina, the ridge dividing the Basentello valley from that of the Torrente di Gravina, was rather different. It was the smallest of our hill-top sites, with a total area of some 30,000 m^2 (3ha). The steep scarps dropping in all directions create a small, highly defensible plateau, but the site extended further on the lower ground below. It is not a lookout post – it is high but there are too many hills in the way for a clear view either over the Basentello or across to Botromagno. It is best interpreted as a small hill-top village. Whatever their defensive potential, these four sites were all situated on fertile plateaus well suited to arable cultivation. We have already noted that the best arable soils in the Fossa Bradanica were to be found on just such plateaus where millennia of weathering had broken down the conglomerate cap leaving light sandy soils that were much easier to work with simple ard ploughs than the heavy clay soils of the valley bottoms.

Site 223 (San Felice) was by far the most important FBA/EIA site in our survey area. It is fully discussed in the List of Sites. It may be pointed out here, however, that it was not entirely typical. Both the distribution and the nature of the finds suggest that the settlement had already coalesced before the end of the EIA to form a community with a substantial nucleus of habitation in the central part of the site and a few outlying huts. This is at variance with the pattern of small groups of huts loosely spread across plateaus that is generally supposed to have been the norm in this period.[103]

10. Conclusions

Throughout S. Italy there was a drastic change in the settlement pattern at the end of the LBA, but nowhere more so than in the central part of the Fossa Bradanica. In the area of the Older Surveys the great majority of the sites inhabited in the Middle and Late Bronze Age were abandoned; in our own Survey Area none remained. They were replaced in the course of the FBA and EIA by new larger sites often founded on hill-tops with some defensive capability. The settlements generally consisted of various nuclei of huts loosely distributed over large areas, but there were also some smaller, more tightly organized villages typified by our Site 223 on the plateau of San Felice. There are no burials of the period known from our Survey Area, but evidence from elsewhere within the broader area studied in this book shows that the population of the FBA and EIA abandoned the communal burial practices of the BA in favour of individual burials either in cremation urns (as at Timmari) – a rite that did not outlast the EIA – or in individual pit graves, sometimes surmounted by a tumulus. Analysis of the funerary customs suggests that the society was hierarchically organized and structured in family groups.

The new settlement pattern implies that there was a significant increase in overall population, and that much land must have been cleared for agriculture to support it. This can be seen in the area of the Older Surveys where new well-spaced large sites and a considerable number of smaller ones were founded along the two main lines of communication through this part of the Fossa (below the scarp of the Murge and along the Basentello valley), but it is especially evident in our own Survey Area, where new settlements, some of them extending over several hectares, were founded on plateaus which had not been occupied in the full BA. The sites studied here were all on the left bank of the Basentello, but they can be matched on the right bank by the settlement on Monte Irsi which lay just outside our Survey Area. The various gradations in settlement size may imply that a hierarchy of settlement was in the process of developing.

It was not our intention here to get into the vexed question of the origins of the FBA/EIA population: whether the new cultural traits were brought by bands of invaders who came from Central Europe or across the Adriatic or from the Aegean world – or alternatively were acquired by the indigenous population through social interaction with much smaller numbers of migrants. All these have been suggested at one time or another. It would be foolish at this stage of the discipline to pronounce on these questions which can only be answered definitively by DNA and isotopic analyses of human skeletons. What can be said with certainty is that the remarkable increase in population in the area of the Older Surveys and in our own Survey Area, and the change in settlement locations between the LBA and FBA cannot be accounted for by natural population increase and must imply that a large number of migrants arrived in the area, probably by way of the Bradano-Basentello corridor, who cleared the land for agriculture and stock-raising and colonized it.

[103] Cipolloni Sampò 1979, 503-507 (Matera); Yntema 2013, 44-45.

Chapter VI. The Early Iron Age II (ca. 750 – 675 BC) and Middle Iron Age (ca. 675 – 500 BC)

In this chapter the second part of the Early Iron Age (EIA II) is considered as a preliminary phase in the consolidation of the indigenous cultures in the Middle Iron Age (MIA). In terms of the Botromagno sequences, the EIA II corresponds to period Gravina II, and the MIA to Gravina III and IV.

I. THE EARLY IRON AGE II (PERIOD GRAVINA II)

1. Chronology

The beginning of the period is marked by the first evidence for Greek traders co-habiting with the indigenous peoples in settlements in South Italy, leading to the transformation of the material culture. The most obvious archaeological markers are the Greek pots which arrived in increasing numbers in indigenous settlements along the coast. They are indicative of a more general trade in other commodities.

It is impossible to discuss the context of Greek and native interactions in this period without referring to the string of settlements founded by communities from Old Greece along the Italian coastline. They are traditionally known as "colonies", but the use of the word has come under strong attack because of the imperialist connotations which it has acquired in later contexts, so we will avoid it wherever possible in referring to these Greek settlements in this chapter, and will use instead the term which the Greeks themselves used: *apoikia* (plural *apoikiai*), meaning away-home.

It used to be assumed that the earliest interactions between Greeks and natives resulted from the foundation of the first *apoikiai* in the West, which could be dated in the last third of the 8th century BC according to the chronological scheme for the foundation dates of the Sicilian *apoikiai* transmitted by Thucydides.[1] Other, later, sources added foundation dates for the *apoikiai* in *Magna Graecia* (i.e. on the Italian mainland) including 720 BC for Sybaris (Pseudo-Scymnus 357-360), ca. 708 BC for Croton (Eusebius, *Chron.*; Dion. Hal. 2.59), and 706 BC for Taras (Eusebius, *Chron.*). The dates may seem implausible given that "Pseudos Scymnus" was writing ca. 100 BC and Eusebius in the early 4th century AD, but they are supported by the generally accepted chronology of the earliest Greek wares found in excavations in these settlements.

But the assumption that the earliest interactions were a consequence of the foundation of the first *apoikiai* is now long out of date. Excavations at Veii and Tarquinia in Etruria, at Cuma and Pontecagnano in Campania and Francavilla Marittima in (modern) Calabria have produced Euboean or Euboean-type pottery of Middle Geometric type which shows that the inhabitants of these settlements were in contact with the traders who brought these goods (and no doubt other commodities) to Italy well before the foundation of the first Sicilian *apoikiai*;[2] and radiocarbon evidence from Francavilla Marittima and Tarquinia confirms that the earliest Greek contacts with the indigenous peoples in these settlements occurred within the period 800-750 BC. There was therefore what A.J. Nijboer (one of the principal advocates of this "high chronology") describes as a "prospecting phase" in which Greek mariners visited the shores of South Italy, exchanged goods, and sometimes settled in the indigenous communities, half a century or more before the foundation of the earliest *apoikiai*.[3] By the middle of the 8th century, the Euboeans, and perhaps other Greeks who were in the forefront of this movement, established an entrepôt on the island of Ischia (Greek *Pithekoussai*, Latin *Pithecusa*) where a mixed community of Greeks, Phoenicians and indigenous Italic inhabitants lived on the acropolis of Monte di Vico and buried their dead in tombs below the hill. Part at least of the population were artisans, and it is likely that they had dealings with the native Italic peoples on the mainland opposite.[4]

The earliest signs of Greek goods reaching the N end of the Ionian Gulf fit into this context of interactions between Greeks and natives taking place well before the foundation of the first proper *apoikiai*. The key site, or at least the one most relevant to our study, is Incoronata on the right bank of the Basento river, not far from the shore where the *apoikia* of *Metapontion* (in Latin *Metapontum*) was founded by Achaean Greeks in the third quarter of the 7th century. The nature of the settlement is discussed more fully below. The earliest Greek imports on the site are Corinthian Middle Geometric *skyphoi* of the first half of 8th century BC,[5] followed in the last third of the century by a number of Early Protocorinthian pots, mainly *kotylai*.[6] They show

[1] Dunbabin 1948, 435-471, *Appendix I. The chronology of the western colonies* is still the most useful account of the traditional chronology.

[2] Ridgway 1992, 2000.

[3] Nijboer 2016.

[4] Ridgway 1992.

[5] Orlandini 1974-1976; Denti 2010, 311 and fig. 99. Orlandini (1992, 28, note 11) refers to an unpublished Corinthian Late Geometric *oinochoe.*

[6] L. Cavagnera (1995) lists eight Early Protocorinthian sherds.

that Greek products, probably brought by Greek traders, were arriving in some quantity in this area at much the same time as the earliest Greek settlements were being founded in Sicily. They are roughly contemporary with the earliest Greek imports reaching the indigenous settlement at Porto Saturo which probably preceded the foundation of the Spartan *apoikia* at Taranto (see below).

These Greek imports provide a chronological framework in which the EIA II culture of Period Gravina II developed. There was no rupture with the culture of the previous phase: rather a continuous evolution which gathered pace in the last third of the 8th century when native potters decorated their own wares, still made on a slow wheel, with a new range of motifs derived from Greek Late Geometric and Early Protocorinthian pottery styles. This is clearly seen in some of the pottery from our Survey Area. Similarly, there is no hiatus between this period and the next which is characterized by the more flamboyant style of pottery decoration of Period Gravina III, labelled "subgeometric" by De Juliis and Yntema. It began to be produced in the first half of the 7th century, perhaps ca. 675 BC (see below).

It should be noted that the definition of this "prospecting" phase has little impact on the dates for the foundations of the *apoikiai* derived from the ancient sources, which have so-far survived the challenges of radiocarbon readings tolerably well. It is, however, relevant to the controversial problem of what the concept of the "foundation" of an *apoikia* meant in the context of the late 8th century BC (discussed below).

2. Pottery

At the beginning of this period three wares, impasto, matt-painted geometric, and plain, were in use in our area (and more generally in South Italy). They had all been in use in the EIA, but continued to evolve. Coarse impasto pottery was still used for cooking, but the fine highly burnished impasto bowls of the FBA and earlier part of the EIA practically disappeared. Indigenous matt-painted geometric wares, derived from the Iapygian geometric pottery of the previous period, were still used for the storage and the consumption of food and drink, with plain (undecorated) versions of the same shapes as cheaper equivalents.

The indigenous geometric pottery made at the beginning of this period displays a new range of motifs derived, as we have said, from Greek Late Geometric and Protocorinthian sources. Because the new style was best known from the excavations at Gravina, Cozzo Presepe and Incoronata, Yntema (1990, 154-165) labelled it "Bradano Late Geometric", but, as the comparanda given in our Catalogue indicate, it is also found on sites on the Murge and in the Adriatic fringe, including Altamura, Monte Sannace, Conversano and Bitonto, and there can be little doubt that if more contexts of the period were known, it would prove to have been distributed all over Central Apulia. Pots decorated in a similar style were in use at Incoronata in the first half of the 7th century when Greeks and natives were living together on the site, and it is very probable that they were made there in the potters' workshops where Greek and native artisans appear to have worked more or less side by side, producing pottery in their own distinctive traditions.[7] The style has close parallels with the pottery of the same period in the Salentine peninsula (Yntema's *Salento Late Geometric II*), which suggests that it had begun to emerge before the foundation of the Greek *apoikia* of Tarentum drove a wedge between the indigenous communities in Central Apulia and the Salentine peninsula. On present evidence it seems likely that the style was in vogue between ca. 730 and 675 BC, but more stratified contexts are needed to confirm (or correct) these dates.

Bichrome pottery

The use of red paint came into the matt painted geometric pottery of the Fossa Bradanica first in this period, though we have not identified any piece from the survey that need be dated so early. Yntema and Herring both hold that the red paint was not introduced until early in the 7th century BC, i.e. after the foundation of Tarentum, and Herring argues that it was inspired by the cultural impact of the Greek arrival.[8] But it has been demonstrated that the technology was already in use well before the foundation of the earliest *apoikiai* (see the introduction to the geometric pottery of Period II, Cat. 4.I.*C*). Since there is no evidence that the technique was derived from Greek pottery, it was probably discovered by native potters working in SE Italy, as Yntema suggested.[9] From the start, red was combined with black to produce a more vibrant bichrome effect. The red was at first limited to a few lines on largely black-decorated pots which had a limited distribution, but this changed in the next period.

3. Greek "colonisation"

There had been intermittent contacts between NW Greece and the Salentine coast since the late 9th century, but as we have seen, after ca. 780 BC Greek traders came increasingly frequently to Italy. Evidence of their activities can be seen at various points on the Salentine

[7] Bellamy 2010-2011, esp. 53-54; Denti 2012, 124-130, 2016, 229-230. The earlier theory that Greek migrants destroyed the indigenous settlement around the end of the 8th century after which the occupants were only Greek (Orlandini 1986) is still upheld by some scholars including Vanzetti (2012, 189-191).
[8] Herring 1998, 148.
[9] Yntema 1990, 72.

coast and around the Ionian Gulf, most obviously at Leporano, Incoronata, Termitito, Broglio di Trebisacce and Francavilla Marittima where Greek late geometric pottery has been found in contexts which pre-date the foundation of the Greek *apoikiai*. Phoenicians, Cypriots and no doubt others were involved in this resumption of trade, but the Greeks, particularly traders from Euboea and Corinth, were probably most numerous. At any rate, they had the biggest impact on the material culture of the indigenous population, triggering the process of cultural adaptation which can be seen in the new range of motifs derived from Greek prototypes used in the Iapygian geometric pottery of the late 8th century (Period Gravina II). Some Greek traders may have settled in some of the indigenous settlements, but they had little impact as yet on the development of their internal organization.

Before the end of the 8th century this pattern of communication between Greeks and "natives" based on maritime commerce was disrupted or intensified (both views are argued) by the foundation of the first permanent Greek settlements on the Ionian coast. The extent, timing and purpose of these migrations have recently been much debated. On the traditional view, which has a long history of scholarship,[10] the settlements were *apoikiai,* founded after consultation with the Delphic Oracle by one or other of a small number of cities in Old Greece and intended to be autonomous city states, linked to the mother city only by religious cults and bonds of sentiment. Argument centred on whether they were founded to relieve problems of land shortage, to get rid of unwanted groups, or to establish commercial entrepots. More recently the basic assumptions behind this view have been challenged in the light of archaeological discoveries which have shown that, on many *apoikiai,* Greeks and natives cohabited for some time in apparent harmony.[11] A revisionist interpretation sees the sources on which the traditional view is based as reflecting the conditions of their own time (the 5th century BC and later), not those of the late 8th century. The *apoikiai* were not replicas of a model of the Greek city state (which was in any case still in a process of formation in Old Greece) but were more or less haphazard settlements of Greek settlers who migrated to Italy for various reasons (but most obviously for trade), and who for the most part settled in pre-existing native communities alongside the indigenous inhabitants. It was not until later (from the middle of the 7th century onwards) that the Greek settlers formed themselves into city states and excluded the native inhabitants from the body politic.

These are controversial matters, which have not yet been entirely resolved. It has become clear, however, that there was no single model for creating an *apoikia*, and that the way that the Greek migrants interacted with the indigenous population varied from one area to another.[12] It has been suggested that there were both a "hard" and a "soft" model of "colonisation".[13] The impact of Greek settlement in South Italy was probably most drastic in the territory of Sybaris, the earliest *apoikia* on the Ionian coast, founded by Achaean Greeks before the end of the 8th century BC. They seem to have destroyed some native settlements in the vicinity of the new foundation and reduced the status of others. Torre Mordillo, the principal indigenous settlement in the region was abandoned, and (to paraphrase Renato Peroni) its attempt to establish stable territorial control over the region was truncated.[14] The settlement at Amendolara was also abandoned.[15] The important native sanctuary which centred on a large apsidal hut on Timpone della Motta at Francavilla Marittima was destroyed and replaced with a rectangular temple with wooden post holes (Building Vc) in the last quarter of the 8th century.[16] Together with two other rectangular buildings on the hill-top it is thought to have been constructed by the Achaean settlers who rededicated it to Athena. Nevertheless, fragments of indigenous pottery alongside Greek in the remains of the building show that the indigenous Oenotrians continued to frequent the sanctuary which, like other liminal sanctuaries. probably served as a place where people from various communities might meet at festivals.

At Taranto, at the other end of the Ionian Gulf, the evidence is less clear. The indigenous settlement at Scoglio del Tonno, to the W of the channel that leads into the Mar Piccolo, appears to have come to an end in the late 8th century. It lay opposite the promontory on which the Spartan *apoikia* was founded and may well have been suppressed by the new settlers. Traces of the earliest phase of the *apoikia* have been found under the church of San Domenico on the acropolis of the Greek city,[17] and rather more substantial remains at Porto Saturo, 13km to the SE of the city on the shore of the Gulf of Taranto. Lo Porto's excavations in 1958-1959 on the top of the low hill there revealed part of an indigenous settlement of the late 8th century which, he argued, was abandoned at the time of the foundation of

[10] Formative works include Ciaceri 1927-1932, Bérard 1941, Dunbabin 1948.

[11] For a radical reinterpretation of Greek "colonisation", see esp. Osborne 1998. For a recent re-assessment of the "colonisation" process and its impact on the indigenous population, Yntema 2014, 56-75.

[12] This theme is developed in Attema *et al.* 2010.

[13] For "hard" and "soft" models of "colonisation", see Vanzetti 2012.

[14] Peroni 1994, 874. The necropolis came to an end in the last quarter of the 8th century BC: Guzzo 1990, 310-312.

[15] De la Genière 1978, 344-349. The surviving native population was transferred after an interval to the hill of San Nicola 3km away.

[16] Colelli & Jacobsen 2013, 18-20; Kleibrink 2006, esp. 178, Kleibrink Maaskant 2003, 76-78.

[17] E. Greco 1981, 146; Osanna 1992, 1.

Taras. The site was subsequently levelled, and around the middle of the 7th century a shrine was erected on the site attested by a fragment of a wall and a pit filled with votive offerings.[18] Lo Porto's interpretation of the stratigraphy was challenged, however, by Yntema, who demonstrated that some of the indigenous pottery from the supposedly pre-Greek layer must in fact be dated in the first half of the 7th century, while there are some Corinthian Late Geometric pieces which must pre-date the supposed end of the indigenous settlement at the end of the 8th century, and some Protocorinthian pieces which may also do so. In other words, the ceramic evidence suggests that, regardless of what may have happened at Scoglio del Tonno, at Saturo the native settlement lasted down to the middle of the 7th century, considerably after the foundation date of Taras, and that its inhabitants had easy communications with the traders who brought the Corinthian pottery (perhaps transmitted through the Greek *apoikia*). It was not until the second half of the 7th century that the site was completely hellenized, with a Greek sanctuary and cemetery.[19] Porto Saturo, then, is evidence not of a hard but of a soft "colonisation" in the period before ca. 650 BC.

There are even clearer indications of a soft "colonisation" at L'Amastuola, ca. 20km N of Taranto on a low terrace of the Murge, where an indigenous settlement was founded in the second half of the 8th century BC. After the foundation of Taras it appears to have been inhabited by a mixed community of Greeks and "natives". The settlement developed along normal lines with huts giving place in the late 7th century and first half of the 6th to rectangular houses and workshops. The main factor that continued to distinguish the two communities may have been their burial practices. Many of the graves had been robbed, but all those found intact were of Greek type with extended skeletons and Greek grave goods. Only a stele of indigenous type found out of context suggests that the indigenous inhabitants may have been buried somewhere on the site. According to the Dutch excavators, there was no definitive Greek take-over of the site, rather a progressive hellenization which continued down to the abandonment of the site in the 5th century.[20]

Between Sybaris and Taranto, a soft model of "colonisation" also seems to have been followed, at least down to the middle of the 7th century. There are traces of Greek occupation at various points on this arc of coast datable to the late 8th or beginning of the 7th century. Some Greeks, coming probably from the E of the Aegean, settled at Policoro near the mouth of the Agri river where they appear to have set up a trading entrepot.[21] It was inhabited, to judge from the pottery, only by Greeks, but there is no indication that they displaced an existing indigenous settlement. Around the middle of the 7th century, it was absorbed into (or displaced by) the Ionian *apoikia* of Siris founded by the Colophonians who fortified the settlement with a wall of mud-brick. There may have been some conflict, however, in this area, because the indigeous settlement at Santa Maria d'Anglona came to an end around this time, perhaps suppressed by the Greek settlers.

Further along the coast towards Taranto is the site of Incoronata which has become the paradigm of soft "colonisation", although there is much debate about the character of the settlement and its development over time. It began, as we have seen, in the first half of the 8th century, as an indigenous (Oenotrian) settlement with several nuclei of habitation scattered over a low hill on the edge of the Metapontine plain.[22] Excavation has revealed numerous shallow pits filled with settlement debris and a large cobbled floor associated with the remains of potters' workshops, with traces of several kilns and basins for preparing clay. In the initial stages of the settlement the material culture was indigenous with matt-painted wares typical of the Fossa Bradanica, but an increasing quantity of Greek pottery, some of it locally made, shows that there were Greek traders and craftsmen living in it alongside the indigenous inhabitants. Around the beginning of the 7th century the Greek material predominated, and the settlement became more concentrated in the centre of the plateau. The original excavators thought that the site had fallen under Greek control;[23] but with more study of the indigenous pottery, that theory has become difficult to sustain, and it is now widely accepted that Greeks and "natives" continued to inhabit the site jointly down to the end of the 7th century BC when the settlement came to an end and the remains of the potters' workshops were systematically levelled.[24]

In the early 7th century, the Greek artisans of Incoronata produced pots of Greek type decorated in a distinctive early orientalizing style with linear, figured and vegetable motifs, which they exported along the coast to the settlement at Policoro and beyond. Fragments of the ware have been found at three points on the site of the future Achaean *apoikia* of Metapontion – in the Andrisani and Lazazzera properties near the S edge of the later city and below later structures in the so-called "Castrum" further to the E. In all three areas there are pits with traces of huts comparable to those at Incoronata, which could be dated by some associated

[18] Lo Porto 1964.
[19] Yntema 2000, 21-23.
[20] Burgers & Crielaard (eds.) 2011, 2012.
[21] Orlandini 1999.
[22] The bibliography on Incoronata is vast. See esp. Macchioro 1986; De Siena 1996; Orlandini 1999; Lambrugo 2005; Cossalter & De Faveri 2012; Denti 2012, 2013. 2016.
[23] Orlandini 1986.
[24] Denti 2012. 2016.

sherds to around the middle of the 7th century BC.[25] Most of the pottery is Greek, including some fragments of Incoronata type, but there are also some indigenous pieces which suggest that here too there were mixed communities of Greeks and natives. The settlement appears to have been destroyed by fire in the third quarter of the 7th century, probably when the Achaean *apoikia* was founded.

There are therefore indications in the archaeological evidence that the foundation of the *apoikia* of Metapontion was a disruptive event which led to the destruction of the earlier mixed communities of Greeks and natives in the area. The archaeological evidence from Cozzo Presepe also fits this picture. It is the first defensible plateau above the right bank of the Bradano on the edge of the Metapontine plain. Excavation has shown that the indigenous settlement there was destroyed ca. 600 BC. The highest part of the hill-top was fortified shortly afterwards with a rampart.[26] The material culture associated with it was purely Greek, and it seems probable that the Greek settlers who occupied Metapontion, seized the site and used it as a strongpoint to protect the plain, which they divided up into lots for individual farms in the second half of the 6th century.[27] This fits the historical tradition which Strabo (VI.1.15) derived from Antiochus of Syracuse that after the Achaean Greeks had established themselves in Metapontion they became involved in territorial wars both with the Tarentines and with the Oenotrians in the interior.

But the Metapontines did not find it necessary to evict all the indigenous inhabitants from the *Chora* (the territory of the city). The excavations in the cemetery of the village at Pantanello have shown that, alongside the burials of typical Greek type, six of the dead had been laid out in the contracted *rannicchiato* position normal in the indigenous/ Oenotrian culture.[28] Two (neither of them strongly contracted) had iron pins which held the burial garment at the shoulder, but otherwise they had no grave goods. They are not therefore closely datable, but radiocarbon readings for two of the skeletons place them within the first half of the millennium. They fit into the pattern of burials in the earliest part of the cemetery, and are likely to be the remains of "natives" who lived alongside the Greek population in the village. The lack of grave goods may suggest that they were of humble status, perhaps slaves.

The effects of the foundation of the Greek *apoikiai* therefore varied from one part of S Italy to another. In the region which affected the Fossa Bradanica most directly, in the Metapontine plain, early Greek settlers and indigenous inhabitants of the area co-existed and traded together, but they had only limited impact on the indigenous inhabitants of the interior, as the analysis of our survey results shows. This state of affairs continued for a hundred years before a new "harsh" form of "colonisation" was imposed by the Achaean settlers who founded *Metapontion* ca. 630 BC.[29] The new settlers did not attempt to conquer the indigenous communities beyond Cozzo Presepe, but the impact of the foundation of the new city was nevertheless profound, and is clearly reflected in the material culture of our Survey Area.

Greek pottery imports

The pattern of Greek pottery imports into Central Apulia and the lower Bradano valley reflects the different stages of the "colonisation" process. The first pieces include a few Corinthian Late Geometric and Protocorinthian pots which reached Monte Sannace and Altamura before the end of the 8th century BC.[30] They are followed after the beginning of the 7th century by pots of a limited number of types produced at Incoronata or perhaps in the settlement that preceded the foundation of the *apoikia* at Metaponto. The most popular were drinking cups with narrow horizontal bands on the rim – *coppe a filetti* – made in imitation of Protocorinthian examples. They are attested at Montescaglioso and Monte Sannace, and are represented in our Survey Area by the tiny fragment No.676 found on Site 223. Some more ambitious pots were produced in Western Greek workshops. They include a small fragment of a krater showing concentric circles with a central dot found on Botromagno.[31] The motif may be derived directly from a Cretan prototype but is more likely to have been made in Western Greece. It recurs on a large *stamnos* from Gela on which it is combined with a frieze of animals imitating East Greek types.[32] A fragment of an *oinochoe,* decorated with an elegant browsing goose in a frame formed by narrow black and reddish-brown parallel lines, found on our survey of San Felice (No.680), provides another example. It is inspired by the East Greek Wild Goat style, but the use of bichrome suggests that it was made in West Greece, probably at Incoronata.[33] Another unusual import in this part of the Fossa Bradanica is a fragment of a Rhodian bird bowl found on Botromagno, datable in the first half of the 7th century.[34] Since Rhodian

[25] De Siena 1986a; 2001, 21-22.
[26] Macnamara in *Cozzo Presepe*, 384-385.
[27] Carter in *Chora Metaponto III*, ch. 21.
[28] Carter in *Chora Metaponto I,* 58-59, 64-66, 168-171.
[29] There is no reliable date in the literary sources. The archaeological date is based on the latest material from the "pre-colonial" settlements: De Siena 2001, 22-24; De Juliis, 2001, 43-47.
[30] Ciancio 2010, 291; *Monte Sannace* 96-97.
[31] *Gravina II*, 42 no. 423.
[32] Adamesteanu 1953, 246, tav. CVIII.2; Denti 2000, 822 fig. 16.
[33] For Wild Goat style exports from the S of Ionia, and imitations of them by W. Greek potters, see Denti 2000, 2008.
[34] *Gravina (PBSR) II*, 150 pl. XXIX.3.

traders were active in Calabria at this time,[35] and must have stopped off along the way, it seems likely that they brought the pot to Incoronata and that it was traded from there to Botromagno. But this thin scatter or pieces suggests that the Greek settlers at Incoronata did not penetrate frequently into the interior.

II. THE MIDDLE IRON AGE (MIA) CA. 675 – 500 BC

1. Chronology

No good date has yet been established for the transition from Gravina II to III, but pottery of both styles was found together with earlier redeposited material in several of the pits excavated in Sector 4 at Incoronata, which, according to the excavators, were filled in in a single operation around the middle of the 7th century BC.[36] The transition from the one stylistic phase to the other must therefore have been completed well before then, perhaps ca. 675 BC. The transition from Gravina III to IV is equally difficult to pin down because of the lack of well stratified contexts of the mid–late 7th century, and the shortage of tomb groups datable before ca 625 BC, when new burial customs were adopted in the indigenous culture of Central Apulia. By then the stylistic features of Gravina IV had already emerged. The transition from Gravina IV to Gravina V (which marks the beginning of the next chapter) has been set here at ca. 500 BC, by which time wheel-made painted wares had practically supplanted the matt-painted geometric wares of the earlier Iron Age tradition.

2. Pottery

i. Indigenous matt-painted geometric pottery

The pottery corresponding to Period III at Gravina is known almost entirely from fragments found in settlement contexts, which can be presumed to come from pots used for household purposes. They are rarely reconstructible as whole pieces, but large fragments show that the ware differs from that of Gravina II in that it makes extensive use of red paint and is decorated with a rather narrow range of "subgeometric" motifs, principally ornate lozenges (subdivided and winged), meanders and swastikas. They are taken over from the repertoire of Gravina II, but are treated in a more flamboyant bichrome style. Similar pieces have been found at Cozzo Presepe further down the Bradano valley, and at Incoronata where they pre-date the abandonment of the site ca. 640/630 BC. Yntema labelled the style Bradano Subgeometric, but, as in the case of his Bradano Late Geometric, the term is misleading since similar pieces have been found at Murgecchia in the Materano, at Ginosa and Monte Sannace on the Murge, at Castiglione on the Adriatic fringe, and at L'Amastuola on a low terrace of the Murge near the edge of the Chora of Taranto. For fuller details see Cat. 4.I.D.

Much more is known of the pottery of Period Gravina IV because in this period, the peoples of Central Apulia began to bury their dead in pits, and generally equipped them for the after-life with at least some grave goods including pottery. The style, or rather styles, of the period can be seen in innumerable whole pots found at one time or another in burials.

ii. The function of the bichrome "subgeometric" wares

Most of the matt-painted geometric pottery of Period Gravina IV is bichrome – except in the coastal fringe where "East Peucetian" pottery (Yntema's *Bari Group*) remained overwhelmingly monochrome. Herring has argued that bichrome pottery was intended primarily for burials, and was only used in domestic contexts for high-status functions.[37] In his view, monochrome pottery continued to be used for domestic purposes in preference to bichrome until it gave way in the course of the 6th century to wheel-made painted wares and imported Greek vases. In support of the argument, he refers to the field survey carried out in 1985 on Botromagno ahead of the excavations of the British School at Rome directed by Ruth Whitehouse and John Wilkins which revealed an unexpectedly low ratio of bichrome to monochrome types. The ratio is not specified, so a direct comparison is not possible, but an analysis by N. Terrenato and J. Taylor of the material found in a subsequent survey of the site carried out in 1997 by a group directed by A. Naso shows that 110 fragments of geometric bichrome and 681 of monochrome were collected, a proportion of rather more than 1:6.[38] There are, however, two major distorting factors which prevent us drawing an easy conclusion from these figures. One is that all the matt-painted pottery in use on the site from the 9th to the early 7th century was monochrome, whereas bichrome was current for less than 200 years, from the early 7th to the end of the 6th century BC, during which some monochrome pottery almost certainly continued to be made. The second is that a monochrome sherd may be a fragment of a bichrome pot. In an earlier survey, carried out by Campbell Macknight and myself on Botromagno in 1965, we recorded 143 sherds of monochrome geometric pottery with at least part of a decorative motif, and 30 of bichrome, a ratio of 1:4.7. Since colour would normally be used in decorative motifs, there is less likelihood in this case of a monochrome sherd coming from a bichrome pot. There are too many imponderables to draw any straight conclusions, but

[35] Jacobsen & Handberg 2010.
[36] Bellamy 2010-2011, esp. 51-53.
[37] Herring 1998, 151-152, 233.
[38] Terrenato & Taylor 2000, 64-80.

it seems that bichrome pottery as well as monochrome was used in domestic contexts on Botromagno. The results of our intensive surface collection on San Felice show a roughly similar proportion, with 774 fragments of bichrome and 4016 of monochrome, a ratio of 1: 5.2. Since the main bulk of the material from San Felice must come from domestic contexts, there can be little doubt that bichrome pottery was used for household purposes on the site. Most of the shapes that can be partially reconstructed are reasonably practical: bowls, jars and larger "urns" – storage vessels with inward slanting shoulder and projecting rim that could be easily closed with a cloth tied at the neck. The only matt-painted pieces from the surface survey which were probably made primarily for ritual purposes are *thymiateria*, but these are painted in monochrome black, at least on the surviving fragments. A final proof that bichrome pottery was used in settlement contexts is provided by the floor of a hearth excavated by the British School at Rome on the plateau of Botromagno which I published in 1966. It consisted largely of fragments in the "West Peucetian" bichrome style of the first half of the 6th century BC.[39]

iii. The problem of the ethnic classification of the ceramic styles

The problems of classifying the regional matt-painted (sub)geometric wares are discussed in Cat. 4.I.F and will only by summarized here. The traditional view, which still has many adherents, is that there are three major regional classes of matt-painted wares in Apulia which can be correlated with the Daunian, Peucetian and Messapian tribes known, from historical sources of the 5th century and later, to have inhabited North, Central and South Apulia respectively. But the borders of the tribal areas are only vaguely known, and it is uncertain how far the tribal structures of the 5th century can be retrojected back to the MIA.

The question is complicated by the fact that these are not the only terms used by the sources to refer to the pre-Roman tribes of Apulia. Herodotus (VII.170.10) and Thucydides (VII.33.4) knew the indigenous inhabitants of the environs of Taranto as both "Iapyges" and "Messapioi" in contexts which imply that the Messapians were a sub-set of the Iapygians. Neither mentions the Peucetians, although they were represented on a Tarentine victory monument at Delphi in the early 5th century BC (see Chap. VII.2.i). The use of "Iapyges" as an umbrella term which included Daunians, Peucetians and Messapians appears first in Polybius in the 2nd century BC, in his account of Hannibal's invasion of Iapygia (Apulia).[40] But in a previous passage (II.14.11) in which he enumerates the troops that allies could contribute to the Roman army, he lists the Messapians together with the Iapygians as though they were distinct but related groups. In other sources of the Roman period, the inhabitants of Central Apulia are sometimes referred to as *Poediculi* or *Paediculi*.[41] Strabo (VI.3.1) implies that they included the Peucetians. The people who opposed the Roman conquest of the Salentine peninsula most vigorously were known to the Romans as *Sallentini* (or *Salentini*).[42] They appear frequently in Livy, and they are listed as defeated enemies in the Roman triumphal *Fasti* for 280, 267 and 266 BC, in the last case in combination with the Messapi.

This confusion of names may be partly explained by the different perspectives of the different writers and their degree of knowledge (or lack of it) of the tribal geography of South Italy. The terms used by Greek and Roman writers may not always correspond to those used by the natives themselves, who may have had different views of their own tribal organization. We get a hint of this in Strabo (VI.3.1) who tells us that the local population called the people who lived near the Cape of the Salentine peninsula *Salentini* and gave the name *Calabri* to the other inhabitants of what the Greeks call Messapia. But the use of these variant names also suggests that the tribes were likely to fragment and that tribal structures could change over time.

iv. Distribution of regional and sub-regional ceramic styles

Even if we assume that the three-fold division of the Apulian population into Daunians, Peucetians and Messapians was valid in the MIA, a thorough analysis of the shapes and decorative motifs of the matt-painted geometric wares produces a complex pattern of sub-regional groupings that is difficult to match with the presumed tribal areas. The problem becomes greater still when the matt-painted wares used in what is now Basilicata are taken into account, since the ancient sources are even less specific about the tribal geography of this area before the rise of the Lucanian *natio* in the 4th century BC. Recognizing these problems, Douwe Yntema abandoned the principle of classifying the pottery by ethnic names and redefined the main wares in terms of their areas of distribution and decorative features. Maps VI-1.6 show the distribution of six of his groups which are particularly relevant to Central Apulia and the Fossa Bradanica. They are based on his maps,[43] but I have added some sites from more recent

[39] *Gravina (PBSR) I,* 147-148 and pl. XXXII.

[40] Polybius III.88. He describes Iapygia as divided among three names, Daunians *** and Messapians, The text is defective, but there can be little doubt that the missing "name" is the Peucetians.

[41] Pompeius Trogus in Justin's *Epitome* XII.2 (See Chap. VII.2.vi); Pliny NH III, 38 and 102.

[42] Livy IX.42.4 (307-6 BC), X.2.3 (302 BC), cf. XXV.1.1 (213 BC), XXVII.14.4 (209 BC), 22.2 (208 BC), 36.13, 40.10,13 (207 BC).

[43] Yntema 1990, figs. 161, 187 and 310.

publications, and from our own field survey (principally San Felice which features on several of them).[44] I have also added a seventh group (Map VI-1.7), *East Peucetian miscellaneous bichrome*, which includes Greiner's class of bichrome "olle" found at Torre a Mare, Castiglione and Monte Sannace,[45] together with a rather miscellaneous group of bichrome pots listed by De Juliis which were found at Sannicandro, Turi and Valenzano in the coastal fringe.[46] Map VI-1.8 shows the distribution of Daunian pieces from North Apulia.

It may be noticed that a number of MIA sites shown on Map V1-2 below do not appear on Map VI-1. That is normally because they are described by a source as Peucetian of the archaic period, without any illustration of the pottery, and so cannot be allocated to any of these maps. They are a good indication of how important it is to publish images of these pieces, and how much still needs to be done to clarify the problem of the distribution of these wares.

To summarize the information condensed in the maps: the matt-painted geometric pottery used in Central Apulia and the lower Bradano valley in the late 7th and 6th centuries was remarkably varied in shape and style of decoration. The variations appear to result from the practices and preferences of the potters who produced their wares primarily for a local market. Some pieces were traded further afield within this broad region, but rarely outside it. The most distinctive of the wares was the monochrome pottery of the Adriatic fringe (Map VI-1.1, *Bari class*) which was the predominant ware used there in this period (at least for funerary purposes). Some pieces in this style reached as far as Timmari, Gravina and San Felice in the Fossa Bradanica. It was not, however, the only style current in the coastal fringe, and it is probable that there was at least one workshop there producing bichrome pottery (Map VI-1.7). To the W of the coastal fringe, the predominant ware in use on the High Murge was Yntema's *Poultry Group* (Map VI-1.2),[47] centred probably on Monte Sannace, which extended westwards into the Fossa Bradanica at Montescaglioso, Timmari, Gravina, San Felice and the Jazzo Fornasiello. The distribution of this group is roughly the same as that of Yntema's *Bradano Banded* wares (Map VI-1.3) which are probably best regarded as a simplified, more economical and probably generally rather later substitute for the Poultry Group. Both these overlap with Yntema's class of *Montescaglioso kraters* (Map VI-1.4) centred primarily on Montescaglioso and Gravina, which overlap in turn with the *Gravina – Oppido Class* (Map VI-1.5) of pottery assigned by Yntema to Oppido Lucano, but which was in fact most characteristic of the Basentello valley and adjacent areas from Monte Irsi through Gravina and Monte Serico to the Jazzo Fornasiello. Yntema's *M-jugs* (Map VI-1.6) were distributed primarily in the lower Bradano region, with a foray onto the Murge at Monte Sannace, and another further S to Pisticci between the Cavone and Basento rivers.

Two conclusions in particular can be drawn from this miscellany of information. One is that the E part of the region (the Adriatic coastal fringe) was relatively isolated from the W part (to the SW of the High Murge), though the use of some bichrome wares in this area shows that it maintained links with the more westerly settlements. The other is that the bichrome styles of the SW Murge and the Bradano valley were closely inter-connected. Pots produced in the one area were frequently imported into another or imitated there. There can have been no significant barriers to communication between these areas. Monte Sannace, situated on the Murge at the most convenient crossing from E to W, must have been particularly important in the traffic between these various sub-regions. It appears in all the above maps except nos. 5 and 6, reflecting its importance on this communications route. Although no kilns producing matt-painted pottery have yet been identified on the site, the best examples of the Poultry Group were found there, and there can be little doubt that Monte Sannace was the most creative centre of bichrome pottery, producing vases of high quality that were exchanged and imitated at other sites on the Murge and in the Lower Bradano valley.

Another class of matt-painted geometric pottery that circulated in the Fossa Bradanica came from North Apulia (Map VI-1.8).[48] In classifying them Yntema abandoned his principle of not using ethnic names and fell back on the term *Daunian* which was too well-established to be easily abandoned, though within it he defined more local subsets. The most southerly of these is his "Ofanto Class" which includes some of the finest pieces of any matt-painted geometric wares. It was produced in Canosa and no doubt other sites in the lower Ofanto valley and was the main decorated ware in use in the MIA in the Melfese and at the N end of the Fossa, extending as far as Banzi[49] and Casalini near Palazzo San Gervasio.[50] An early example of the ware reached Incoronata in the first half of the 7th century BC,[51] and others typical of the 6th century phase of production have been found at a string of sites which

[44] Map no. 2, *East Peucetian miscellaneous bichrome*, shows Greiner's class of bichrome "olle" found at Torre a Mare, Castiglione and Monte Sannace (Greiner 2002, 37-38) together with a rather miscellaneous group of bichrome pots listed by De Juliis (1995, 81 fn. 2), which were found at Sannicandro, Turi and Valenzano in the coastal fringe.

[45] Greiner 2002, 37-38.

[46] De Juliis 1995, 81 fn. 2.

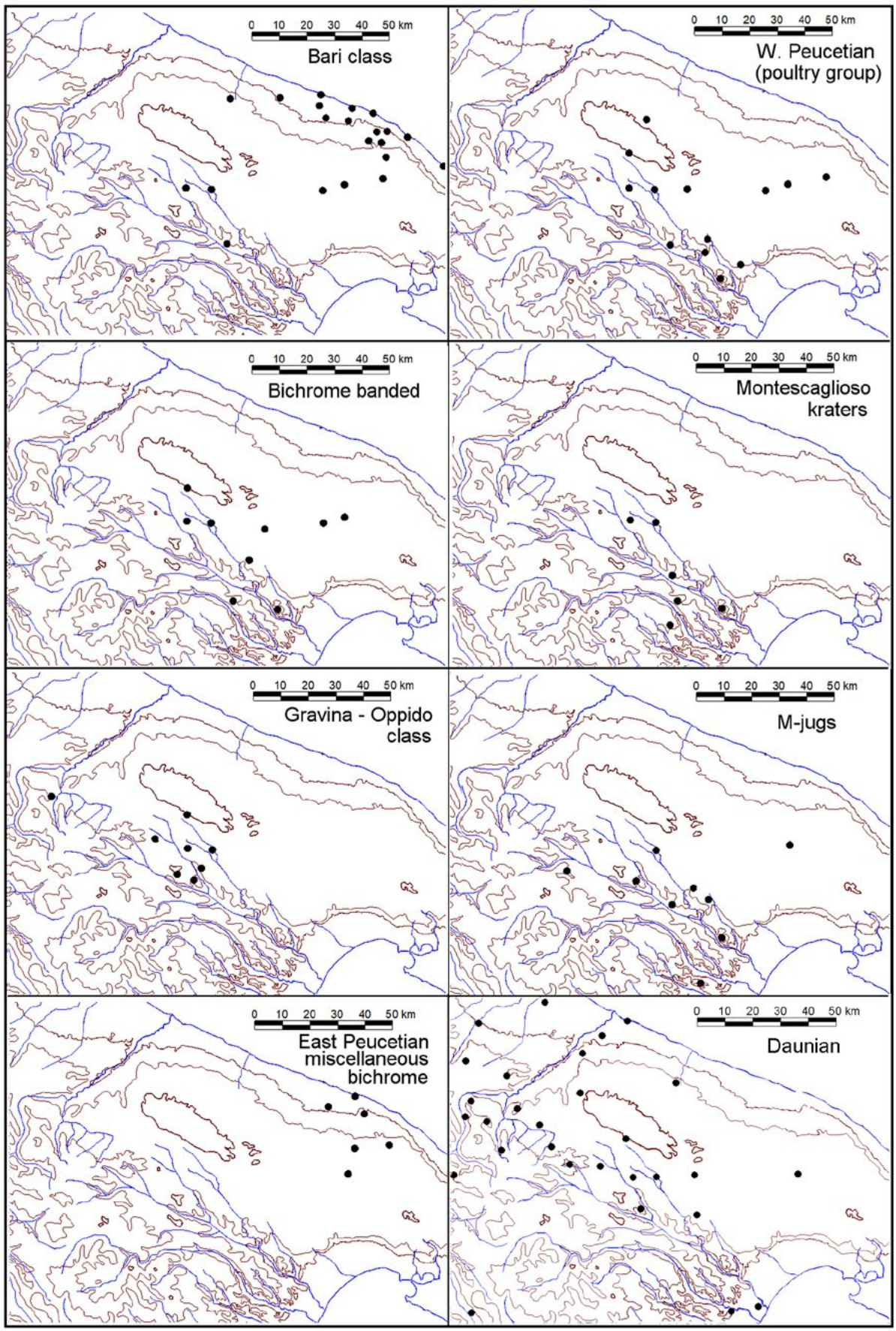
[47] Yntema 1990, 184.

[48] Sources used for the map: De Juliis 1977, carta 1; Yntema 1990, 242 fig. 221; other more recent publications noted below.

[49] Bottini 2008, 19; Ciriello 2008, 29-30.

[50] Marchi 2016, 66 no. 24.

[51] Castoldi 2006a, 38 and tav. 10.63-64 no. 67.



Map VI-1. Distribution of matt-painted geometric wares discussed in the text. 1. Bari Class; 2. W. Peucetian (poultry group); 3. Bichrome banded; 4. Montescaglioso kraters; 5. Gravina – Oppido class; 6. M-jugs; 7. East Peucetian miscellaneous bichrome; 8. Daunian.

show that it was exported down the Basentello corridor to Monte Serico,[52] Jazzo Fornasiello[53] and San Felice in our Survey Area (Cat. Nos.553-556, 559-561). From there the main route of distribution led to Gravina/ Botromagno,[54] and from there across the Murge to Altamura[55] and Monte Sannace[56] or down the valley of the *torrente* Gravina to the contrada Matinelle near Matera.[57] Some pieces were brought further down the Basentello valley to Monte Irsi.[58]

v. Ethnic units and ceramic styles in Central Apulia and the Fossa Bradanica

The question arises of how far the ceramic groups 1-7 on the above maps can be considered indicative of a Peucetian tribal area. Recent scholarship is divided on the matter. Some scholars have followed Yntema in abandoning the ethnic terminology.[59] Clément Bellamy, for example, rejects absolutely the view that just one aspect of a material culture (the ceramics) can be used to identify an ethnic group;[60] but others have been reluctant to lose altogether the idea that the cultural groupings defined by these ceramic styles might be associated with ethnic entities, even if we cannot put authentic names to them. Edward Herring, for instance, has argued that the various wares were the material expression of the cultural identity of the native population, and therefore of their ethnic self-awareness, even if this was not a conscious act,[61] but he declines to identify the ethnic units with a ny of the tribal groups known from the literary sources. Against these assaults, the traditional view has been reasserted by De Juliis who has published new typologies of "Daunian", "Peucetian" and "Messapian" pottery, each of which contains sub-regional groupings.[62] His Peucetian ware (the most directly relevant to our material) includes both a monochrome and a bichrome class of pottery which he associates specifically with the Peucetians who used the monochrome class predominantly in the E of their tribal territory and the bichrome in the West. Somewhere between these two opposing viewpoints stands Claudia Greiner who argues that, in spite of their differences in detail, the ancient sources are consistent in locating the Peucetians in Central Apulia, the Daunians to the N of them and Messapians to the S. She rejects in principle the identification of a ceramic style with an ethnic group, but argues that in fact a bichrome and a monochrome ware were used in the territory inhabited by the Peucetians, and she is therefore content to use the traditional ethnic indicator for these ceramic style(s).[63]

Since (as we shall see in the next chapter) there is no doubt that people known to the Greeks as Peucetians were involved in war with the Tarentines in the early 5th century BC, it seems excessively sceptical to deny that they were already settled in Central Apulia in the MIA (and probably already in the FBA/EIA), where they are placed by later sources. It is therefore entirely likely that the Peucetians used at least some of the pottery groups mentioned above. But they did not use them exclusively, and there is no single stylistic ceramic group which they could have thought of as an ethnic indicator.

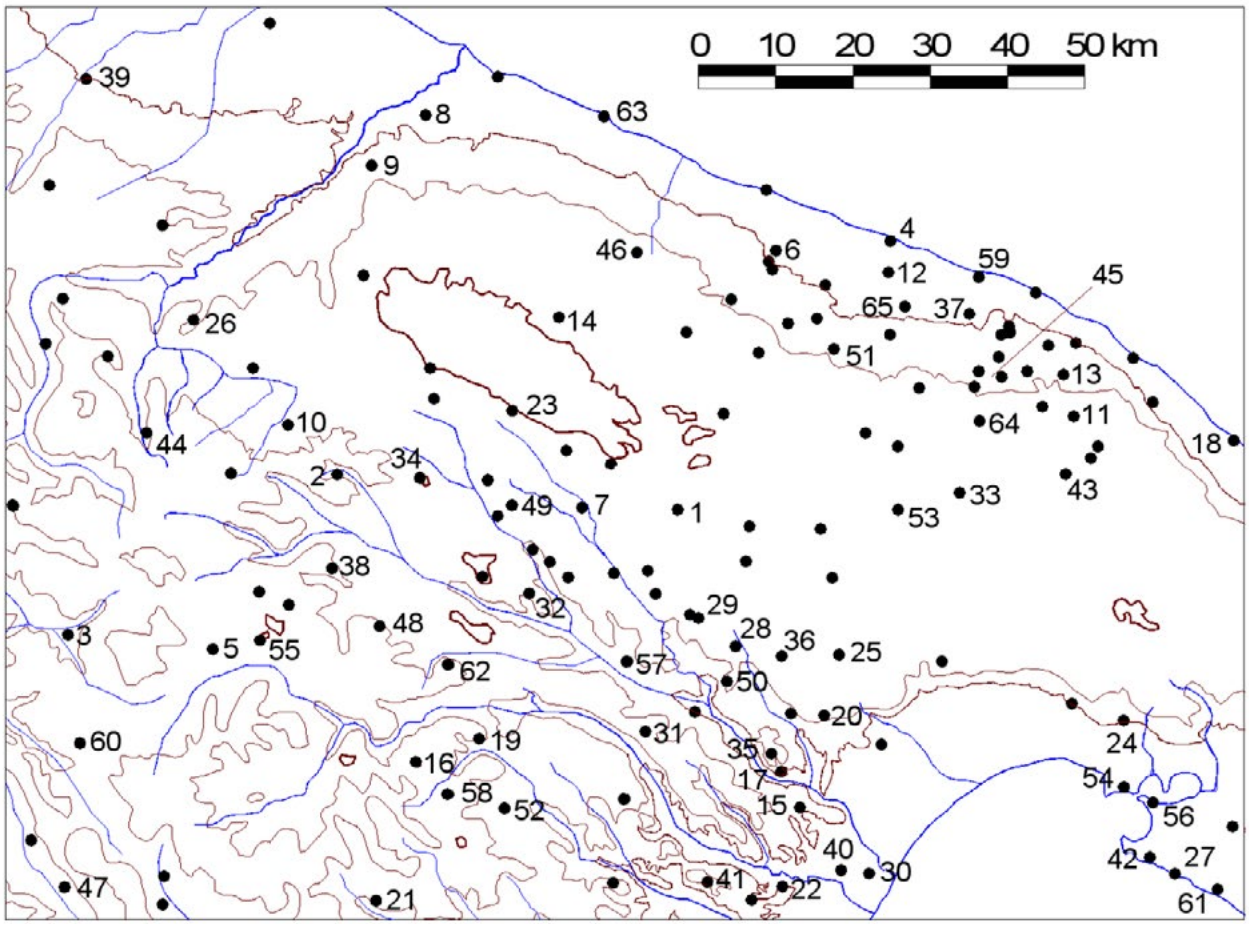
It is reasonable, then, to suppose that Yntema's Bari Class of the Adriatic fringe and the Poultry Group of the Murge – the two types of pottery most commonly thought of as Peucetian – were in fact used by the Peucetian inhabitants of Central Apulia; but that cannot be said of the main pottery classes that circulated in the Fossa Bradanica (The Montescagioso kraters, the Gravina – Oppido group, and the M-jugs) since we do not know what the geographical limits of the area occupied by the Peucetian tribe were in the MIA (or even if they conceived of their territory as having geographically defined boundaries at all). The question of the tribal affinities of the population of our Survey Area in this period is therefore best left open.

In fact, the analysis of these pottery groups suggests that whatever ethnic traditions lay behind the tribal labels, the material culture of the population was centred on relatively small sub-regional groupings of territorial units. We will see below that each unit is likely to have centred on an incipient city, controlled by an aristocratic élite.

vi. Wheel-made wares

The volume of Greek pottery imports increased greatly in the second half of the 7th century after the foundation of Metapontum. In the 6th century Greek wheel-made painted wares with simple banded decoration circulated widely. They were made at first in the Italiote cities, but were soon imitated by indigenous potters in some of their own settlements. Wheel-made cups and bowls effectively displaced the the clumsier geometric wares of the native

[52] Ciriello 2012, 313.
[53] Castoldi (ed.) 2014, 51-52 fig. 31a-c.
[54] *Gravina II*, nos. 41-49.
[55] Venturo Rubino 1976, 168 fig. 9; Yntema 1990, 258 fn. 316.
[56] Galeandro in *Monte Sannace – Thuriae,* 95 fig. 37.
[57] Jazzo Fornasiello: Castoldi 2014, 51-52, figs. 31.a-c; *Gravina II*, nos. 41-49; *Monte Irsi* pl. XIX nos, 40, 45; Mattinelle: Lo Porto 1973, 214 no. 19, tav. LXI.2.
[58] Monte Irsi, 110 no. 40.
[59] E.g. Whitehouse & Wilkins 1989, 121-122 (after the appearance of the first edition of Yntema's work in 1985).
[60] Bellamy 2017.
[61] Herring 1998,13; so too Whitehouse & Wilkins 1989, 122: Material culture may be used to express group identities. The development of regional pottery styles in Apulia, which they date to the 7th/6th centuries BC suggests that this period saw the emergence of ethnic group identities which can *perhaps* be correlated with the peoples described by the classical authors.
[62] De Juliis 1977 (Daunian), 1995 (Peucetian); De Juliis *et al.* 2006 (Messapian).
[63] Greiner 2002.



Map VI-2. Sites of the Middle Iron Age in Central Apulia and the Fossa Bradanica. Sites mentioned in this chapter and in the related parts of the Catalogue. 1. Altamura; 2. Banzi; 3. Baragiano; 4. Bari; 5. Barrata; 6. Bitonto; 7. Botromagno (Gravina); 8. Canne; 9. Canosa; 10. Casalini; 11. Castiglione; 12. Ceglie; 13. Conversano; 14. Corato San Magno; 15. Cozzo Presepe; 16. Croccia Cognato; 17. Difesa S. Biagio; 18. Egnazia; 19. Garaguso; 20. Ginosa; 21. Guardia Perticara; 22. Incoronata; 23. Jazzo Fornasiello; 24. L'Amastuola; 25. Laterza; 26. Lavello; 27. Leporano/ Porto Perone; 28. Matera; 29. Matinelle; 30. Metaponto; 31. Miglionico; 32. Monte Irsi; 33. Monte Sannace; 34. Monte Serico; 35. Montescaglioso; 36. Murgecchia; 37. Noicattaro; 38. Oppido Lucano; 39. Ordona; 40. Pantanello; 41. Pisticci; 42. Porto Saturo; 43. Putignano; 44. Ripacandida; 45. Rutigliano; 46. Ruvo; 47. Sala Consilina; 48. San Chirico Nuovo; 49. San Felice; 50. San Martino; 51. Sannicandro; 52. S. Mauro Forte; 53. Santo Mola; 54. Scoglio del Tonno; 55. Serra di Vaglio; 56. Taranto; 57. Timmari; 58. Tempa Cortaglia; 59. Torre a Mare; 60. Torre di Satriano; 61. Torre Castelluccia; 62. Tricarico Serra del Cedro; 63. Trani; 64. Turi; 65. Valenzano.

tradition, both for domestic use and to be deposited in tombs, although jars and urns made by hand or on a slow wheel and decorated with traditional geometric motifs continued to be made down to the beginning of the 5th century. Around the end of the 7th or beginning of the 6th century wheel-made cooking wares of Greek type began to appear in both Greek and native settlements. They gradually replaced the traditional impasto pots, although impasto *pithoi* continued to be made for a while to contain the bodies of infants in *enchytrismos* burials.

3. Settlement patterns

Map VI-2 shows the distribution of sites in Central Apulia and adjoining areas which have produced matt-painted geometric pottery of the last half of the 7th and 6th centuries BC (Period Gravina IV). It shows some infill in the previous pattern of the FBA/EIA which suggests that new settlements continued to be founded. In some areas there was a remarkably dense concentration of settlements, mostly of considerable size, especially in the coastal fringe in the vicinity of Conversano (no. 13 on the map) and in the middle reaches of the Fossa Bradanica.

As we have seen, the proliferation of local matt-painted pottery styles in this period shows that the various settlements belonged to sub-regional cultural groupings which frequently overlapped with one another. Presumably in all the principal centres there were potters' workshops which served the communities in the surrounding area. Herring has argued that this phenomenon was the consequence of a process of "centralisation" (a term which he prefers to

"urbanization" or "proto-urbanization" to indicate the development of the larger settlements in this period) which was in turn caused by the socio-economic impact of the arrival of the Greeks. In his view, the economic competition caused by the importation of Greek pottery into native settlements led native potters to develop new high-value products (the bichrome pottery) which asserted the cultural identity of their own communities, especially in pots intended for use in burials. The results of our field survey, however, show the matter in a rather different light. All the settlements in the area which produced bichrome geometric pottery, except Site 329 which was perhaps a tomb site, had been founded much earlier, in the Final Bronze Age, and had been consolidated in the Early Iron Age, before any impact from the foundation of the Greek *apoikiai* could have been felt. The major new factor in settlement development in the late 7th/ early 6th century in the Fossa Bradanica was indeed the general adoption of individual inhumation burial (see below) which required spaces to be allocated inside settlements for graves; but it is unlikely that this practice was learned from the Greeks whose funerary rituals were quite different.

i. Fortification

There is a small amount of evidence to show that some indigenous sites were fortified in the 6th century BC, and perhaps already in the 7th. The rampart at L'Amastuola appears to have been constructed in the mid-7th century.[64] The site was later incorporated into the *chora* of Taras/ Tarentum, but at this stage it was inhabited by a mixed community of native Italics and Greeks. The culture was predominantly indigenous, as is shown by its matt-painted geometric pottery, and the rampart is held by the Dutch excavators to have been constructed by the native inhabitants, although a similar rampart at Cozzo Presepe was built shortly after 600 BC by the Greeks who had taken over the site.[65] A few settlements in Central Apulia were more certainly fortified by the Peucetians. Castiglione was defended by a rampart before the middle of the 6th century, and the first fortification wall at Conversano was also built around this time.[66] Other indigenous peoples beyond the Basentello also began fortifying their settlements in this period, including the inhabitants of the village at Ripacandida in the Melfese.[67] There are, however, no certain traces of fortifications of this period in our Survey Area.

ii. Territorial organization

The density of the pattern of occupation in some areas suggests that the settlements must have been organized in a hierarchical structure, with minor sites dependent on larger more defensible settlements in their vicinity. This is difficult to prove on a broad scale since most of the region has never been subjected to intensive field survey; but in some areas which have been more fully studied, such as the territory between Noicattaro and Conversano and around Bitonto, smaller sites appear to have been clustered around larger ones.[68]

This pattern is evident also in our Survey Area and to some extent on the Older Surveys. Four villages– Sites 223 San Felice, 401/9 Crocevelina, 629 on Lamiecelle and 407 Serra Meschina – each occupied a distinct geographical area with limited defensive capacity. They ranged in size from very roughly 20 ha (San Felice) to 3 or 4 (Serra Meschina). They were dwarfed by Botromagno, situated within a walking distance of less than three hours, where the settlement extended loosely over ca. 140ha. The disparity is so great that one can only conclude that there were harmonious relations between the settlements, and that the smaller sites were already subordinated in some way to Botromagno, as they must have been later, in the 4th century BC (See Chap. VII.11.iv).

Less can be said of the settlements on the right bank of the Basentello river, where much more work needs to be done to understand the pattern of habitation beyond the limits of our field survey. The river was a significant barrier to transit, and seems likely, therefore, to have formed a territorial boundary. Monte Irsi, on the right bank, and on the fringes of the Survey Area, may have been an autonomous settlement with its own territory, separated by an intervening *torrente* from the neighbouring hill-settlement of Irsina 7km to the NW; but no smaller occupation sites of the period are known in its vicinity, and none were found in the limited area on this side of the river explored in our field survey.

iii. Internal settlement organization

a. Acropoleis / suburbs

Generally in this period, settlements were reconstructed with more solid buildings. In Peucetia rectangular houses made of mud-brick resting on stone foundations and roofed with tiles began to take the place of traditional huts around the turn of the 7th and 6th centuries BC. There are early indications of this development at Monte Sannace,[69] but it occurred at numerous other settlements in the course of the 6th century.[70] Some of the new buildings were large, notably a "megaron" type building, rectangular, with stone socle, mud brick walls, and tile roof erected

[64] Crielaard 2011, 47.
[65] *Cozzo Presepe*, 203, 286.
[66] Ciancio 2013a, 234.
[67] Carollo & Osanna 2012, 398-399.
[68] Ciancio 1989, 130; Fioriello 2003, 22, 25 (Bitonto).
[69] Galeandro & Palmentola 2013, 34-46.
[70] Liseno 2010.

at Monte Sannace which measured ca. 17.5×7.3 m. A gorgon-head antefix suggests that it was embellished with architectural terracottas around the middle of the 6th century. Other architectural terracottas found elsewhere on the site show that there were several buildings or groups of buildings embellished in a similar way.[71]

The same development took place in other major Iron Age communities in South Italy, such as Torre di Satriano where several nuclei of settlement were consolidated at the end of the 7th or beginning of the 6th century. Around 600 BC the large apsidal hut (mentioned in Chap. V.5.v) that had been built around the end of the EIA was reconstructed, and remained in use for another 25 or 30 years as a ceremonial building, in which the social, political and religious life of the community appears to have been controlled by a single ruling family.[72] In the second quarter of the 6th century its place was taken by a totally new structure on a projecting spur of the hill, labelled by its excavators the *anaktoron* or dwelling of the "anax", recalling the world of Homeric kings. Like the "megaron" at Monte Sannace, it was a large rectangular building made of mud brick resting on stone foundations and decorated with splendid architectural terracottas of Greek type.[73] It remained in use until ca. 475 BC. Other élite buildings decorated with architectural terracottas of Greek archaic type have been excavated at Serra di Vaglio[74] and Lavello.[75] The developing style of the terracottas shows that the custom of decorating élite buildings in this way continued down into the 5th century. They are inspired directly by Greek prototypes made in Taranto and Metaponto to decorate temples and shrines, but in these indigenous sites they were applied to buildings of a more domestic kind – large houses, presumably of the local noble families, which may also have been used for communal ceremonies and family-based cults.

These excavated contexts help us to interpret the scatters of architectural terracottas found on Botromagno and in our Survey Area. On Botromagno numerous pieces have been recovered in the various field surveys and excavations. They are distributed across the hill-top and in one of the fields below it close to the ravine. The excavated pieces are all in secondary contexts, and it is impossible to reconstruct the forms of the buildings on which they were used; but the loose distribution pattern suggests that there were several prestigious buildings at different points of the hill-top which were perhaps the dwellings of the élite members of the community. There must have been one of these on Site CZ towards the western end of the settlement, where there were four gorgon's head antefixes of the same type which probably came from the same building.[76] They were made in at least three different moulds, one of which was very worn. If, as seems likely, it was a secondary mould made to replace damaged pieces, the building must have lasted for a considerable time. Some of the scattered *sima* fragments that decorated the eaves of other buildings on Botromagno show close analogies with Tarentine types,[77] and suggest that the terracotta embellishments may have been made by migrant Tarentine artisans.

In our Survey Area, fragments of gorgon's head antefixes in Greek late archaic style were found on Sites 401 and 627, and pieces of palmette antefixes and other architectural elements on Site 223 (San Felice) (Nos.2056-2070 – see List of Sites 223, plan 5). In the discussion of these pieces in the Catalogue, we argue that they are likely to come from four or five buildings, one of which was situated on the highest part of the site. Clearly there were prestigious buildings, probably the dwellings of local grandees, on all three sites.

b. Humbler buildings

Below the acropolis of Monte Sannace, on lower ground to the W, there were smaller single-cell buildings of the lower classes. There are traces of such buildings also on Botromagno where a roughly orthogonal building measuring ca. 6.5×4.5m was constructed around the turn of the 6th/5th century,[78] only a little later than a hut of traditional type;[79] and similar one-cell huts have been identified at other Peucetian sites. But there were also more complex structures: single-cell buildings with entrance porches, two-room houses, and buildings with several rooms facing onto narrow courtyards.[80] They point to a socially differentiated society with significant inequalities of wealth.

4. Burials

i. Élite burials

Towards the end of the 7th century, the number of burials known from excavations increased all over Apulia. We have seen that in the EIA, the evidence for burials in Central Apulia was meagre, consisting mainly of tumuli scattered across the countryside. Tumulus burial continued in some areas into the late 7th or 6th century BC, as for example at Murgecchia in the

[71] Riccardi 1989b, 147-149.
[72] Carollo 2009.
[73] Serio 2009; Capozzoli 2009; Osanna 2009; Osanna, & Capozzoli, (eds.) 2012,
[74] G. Greco 1991, 37-40.
[75] Rainini 1991.
[76] *Gravina II*, 204, nos. 1511-1614.
[77] *Gravina II*, 205 no. 1621; Naso *et al.* 1998, 255-256; Andreassi 1979, 348 and tav. XXVI.3. Several find close parallels in Andreassi 1971.
[78] Whitehouse *et al.* 2000, 238-243 (Site H).
[79] *Gravina (PBSR) I*, 147-148, pl. XXXII; *Gravina II*, 34.
[80] Liseno 2010, esp. 171-172.

Materano,[81] and at Conversano on the Adriatic fringe of the Murge, where two large tombs were constructed in the first half of the 6th century and covered with stone piles.[82] But in the new custom, the tumulus was no longer a necessary component of a burial. The dead were still laid out *rannicchiati*, but in pit graves, sometimes cut into bedrock – or, as time went on, in simple sarcophagi hewn from the local limestone.[83] They were normally equipped with the usual two vessels: a larger one to contain a liquid (probably wine) and a smaller drinking vessel.[84] With the passage of time more and more vases might be added. Men were buried with weapons – usually one or two spears of different weights, and women with jewellery – necklaces of bone or amber beads, rings of various kinds, and fibulae, frequently decorated with amber pieces. Their infants including neonates were usually buried in impasto *pithoi* or *situlae*, according to the traditional rite of *enchytrismos*.

In the course of the 6th century a clear hierarchy of burials emerged in both Puglia and Basilicata. At its top is a series of splendid burials in which male warriors were provided with horse trappings, body armour (helmet, shield, belt and greaves), weapons (often two spears and a sword), bronze vessels and imported Greek fine pottery. They show the influence of contemporary burial practices of the Etruscan aristocracy. Among the earliest examples in South Italy is the Specchia Accolti, one of the tumulus burials at Conversano. It was robbed in antiquity, but when it was excavated in 1953 it still contained numerous bronze objects, including a Corinthian type helmet, and at least three bronze horse frontals (*prometopidia*).[85] Other examples date later in the 6th century. They include two lavish burials excavated at Braida, on the edge of the hill-site of Serra di Vaglio which had both frontals and pectorals (*prosternopidia*) for two horses, as well as body armour, weapons and numerous bronze and ceramic vessels, including imported Attic *kylikes*.[86] Another burial of the late 6th century with a similar array of grave goods including the frontals, pectorals and bits for two horses was excavated at Baragiano, deep in the Lucanian Apennines;[87] and yet another tomb excavated in 1936 at Ginosa had equally rich grave goods including frontals and pectorals for a pair of horses.[88] The fact that in all these burials there are the trappings for two horses suggests that the horses were used in a ceremonial connected with the funerary rite, either to draw a chariot bearing the corpse of the dead warrior, or perhaps in funeral games; and this is effectively confirmed by the discovery of two tombs of the early 5th century at Pisciolo and Chiuchiari in the Melfese in which the dead warrior was buried with a two-wheeled chariot and other magnificent grave goods.[89]

These were princely burials, but they are outclassed by the so-called *Tomba del Principe* at Ruvo which was excavated and looted in 1833. The contents were dispersed, but records kept at the time were sufficiently detailed to enable Andrea Montanaro to trace most of the important pieces which eventually found their way into museum collections.[90] The tomb was the largest in the necropoleis of Ruvo, measuring 5.3×3.97m on the sides and 2.65m deep. The dead man was laid our supine and equipped with nine bronze helmets, nine belts, nine pairs of greaves, the trappings for three horses, and numerous other bronze artifacts as well as Attic black-figure vases and other ceramic vessels. A particularly significant object is a two-faced head of Herakles in gilded silver, now in the British Museum, which is likely to have formed the terminal of a sceptre. Montanaro suggests that the nine panoplies may be gifts from military leaders (or tribute from lesser tribal chiefs?), that the sceptre is a symbol of the kingship of the dead warrior, and that the trappings for three horses indicate that they were used to pull a three-horse chariot (*triga*), associated with Etruscan kingship. This would then be the tomb of a king or at least regional overlord.

The tomb at Ruvo is datable to the end of the 6th century or beginning of the 5th, and so cannot be far removed in time from the monument in Delphi, discussed in Chap. VII, on which the death of Opis, king of the Peucetians, defeated by the Tarentines, was represented. Ruvo was situated on the probable border between Daunia and Peucetia where the material culture represented by the matt-painted vases in the geometric tradition was still predominantly "South Daunian" in the late 6th century; but as we have seen, there is no straightforward link between ethnicity and the material culture, and the possibility that Ruvo was the seat of a king who claimed overlordship over the Peucetian communities is very real. Whether his authority extended as far as the settlements in our survey is impossible to say, but it is likely that they fell under the immediate control of some tribal chief who may in turn have owed allegiance to another more distant ruler.

Other burials of the last two thirds of the 6th century contained equally lavish grave goods, but without the horse trappings. A sarcophagus tomb at Noicattaro contained much of the panoply of a Greek hoplite including a splendid shield of Argive-Corinthian type

[81] Lo Porto 1995a.
[82] Ciancio 2013b.
[83] For burials in Central Apulia, see esp. Riccardi 1989a.
[84] Colivicchi 2004.
[85] Ciancio 2013b.
[86] Bottini & Setari 1992.
[87] Russo & Di Lieto 2008, 56-59, and *Catalogo*, 513-517, Tomba 35 (one of four warrior burials).
[88] Dell'Aglio & Lippolis 1992, 76-82.
[89] Pisciolo, tomb 43 and Chiuchiari tomb F: Adamesteanu 1974, 167-186; Adamesteanu.*et al.* 1971, 99-128; Notarangelo & Mitro 2016.
[90] Montanaro 2007, 167-174; 440-488 (Tomb 103).

embellished with bronze plaques with relief decoration showing figures from Greek mythology and a belt with decorated in relief with six four-horse chariots. There were various other grave goods including, among other things, a Corinthian column krater, and a Rhodian bronze *oinochoe*.[91] A number of other tombs from the western half of Peucetia also contained grave goods of high quality, such as the fine Middle Corinthian column krater by the Memnon Painter used as a grave marker over a pit grave framed by stone slabs (*tomba a cassa*) at Monte Sannace. It showed the death of Memnon at the hands of Achilles.[92] Several tombs at Banzi, near the N end of the Fossa Bradanica, were provided with elements of hoplite armour, and a horse-bit found in one of them suggests that the dead warrior fought on horse-back.[93] Still nearer to our Survey Area, on Gravina/ Botromagno a pit grave of the third quarter of the 6th century BC excavated on Site H near the centre of the plateau can be added to this list. It had been robbed in antiquity when any precious items were removed, but it still contained several metal objects including two iron spearheads, fragments of a bronze helmet, and the remains of at least 24 pottery vessels including an Attic Siana cup, two Attic Little Master band cups, six Ionian type cups, a locally made krater, several jugs and one-handled cups and a jar.[94] Such pots were appropriate for a symposium, and when they were deposited in a tomb they asserted the good taste of the dead individual and his adoption of Greek social customs (a point which will be discussed further in the next chapter) – and by implication they made similar claims for the heirs.

ii. Lesser burials

By contrast with such splendid tombs, most burials of the late 7th and 6th century in Apulia and the Fossa Bradanica contained only a few pots, and no body armour, though males were normally buried with at least one spear. They represent a new class that was now accorded burial, probably because it had acquired new importance in war. The development of the new burial custom corresponds, broadly, to the adoption of hoplite battle tactics among the Greeks. This enhanced the value of the individual warrior, who had to stand firm by his compatriots in the battle line; and it coincides in time with the new policy of expansion into the interior followed after the middle of the 7th century by the Tarentines and Metapontines. The indigenous peoples must have responded in a similar way, adopting at least some of the hoplite practices, even if they continued to fight with a throwing as well as a thrusting spear.

The burial customs, then, attest to a culture that was socially stratified, with a conspicuous horse-loving élite, and a considerably larger group of warriors who had gained some recognition in the community. Within both groups there were, no doubt, subtler forms of economic and social differentiation. It seems probable that there was another humbler class of individuals who had less economic power and could make no useful military contribution, who perhaps inhabited the simpler houses noted above (section 3.iii.b), but they cannot be easily identified in the burials, and they may not have been buried at all.

iii. Female burials

We can infer too, from the grave goods, that women shared the same social status as their husbands. Their wealth and social importance were demonstrated by the jewellery buried with them. Amber was especially indicative, and the richest women might be buried with a necklace of amber beads, amber pendants, or with fibulae with amber attachments.[95] One such burial on Botromagno contained three pots including an urn/ krater of Peucetian Bradano type and a Greek drinking cup, two fibulae, one with amber beads on the bow, three bronze rings, twelve silver beads, three large globular ivory beads, five glass paste beads, eight amber beads and two other amber pieces.[96]

iv. Burials and Greek pottery imports

The foundation of Metaponto ca. 630 BC coincided broadly with the development of the new burial practices described above, and many of Greek pots deposited in the indigenous tombs must have been produced in the city or traded through it. Burials of the last third of the 7th and most of the 6th centuries frequently contain drinking vessels of Greek type alongside the larger urns (*olle*) in the Peucetian geometric style, making up the traditional pair of vases. Some of the drinking cups are small Corinthian *kotylai* with "running dog" decoration, examples of which have been found on Botromagno[97] and at Monte Sannace; others are regional versions of the shape made in one or other of the Greek *apoikiai* on the Ionian coast, most probably Metaponto. Our Nos. 678 and 679 from San Felice are small fragments of such vessels. But the commonest type of drinking pot was the archaic Greek type cup with reserved band (Cat.Nos. 681-693). These are found in quantity at San Felice and are attested at 3 other sites in our Survey Area (Sites 229, 329 and 401/9). Such pots are found all over S Italy from the late 7th to the early 5th century BC, and they occur in numerous variants produced by

[91] Gervasio 1921, 107-251; Nista 1978.
[92] Ciancio 2005, 8-12; 2017, 99-102.
[93] Bottini 1908, 13-16 (necropolis of Piano Carbone).
[94] R. Whitehouse *et al.* 2000, 77-120.
[95] Nava & Salerno, 2007 (with examples mainly from Basilicata); Riccardi 2010 (Central Apulia).
[96] *Gravina (PBSR) III (2),* 75-78 (tomb III).
[97] *Gravina (PBSR) I,* 141 1c.

different workshops. Most of our pieces were probably made in Metaponto, but the possibility that some were made on Botromagno or even on San Felice cannot be ruled out. The archaic type *skyphoi* (Nos 694-696) found on San Felice and on Site 401/9 share many of the characteristics of these cups and were probably also made in Metaponto.

After the first quarter of the 6th century some of the richest burials in Apulia and Basilicata were equipped with Greek figured wares of excellent quality made in Corinth or Athens. Angela Ciancio has suggested that the Corinthian pieces which were especially popular at Monte Sannace, may have been imported through the Adriatic ports.[98] The Attic black-figure vessels, however, are more likely to have been acquired through Metaponto, since they occur not only in the Fossa Bradanica (e.g. at Gravina, as noted above) but also at Baragiano,[99] and Torre di Satriano where numerous fragments of drinking vessels, an amphora and a column krater datable between ca. 550 and 520 were found in the remains of the so-called *anaktoron*.[100] They probably reached both places by way of Metaponto and the Basento valley.

Such high-quality black-figure vases were not found in our Survey Area, though a small badly incised fragment of a *kylix* (No.697) found on San Felice represents the tail-end of the tradition in the early 5th century BC.

5. The rural economy

i. Agriculture

The analyses of carbonized seed remains from eighteen contexts of the 9th–7th centuries BC on Botromagno by S. Colledge, and another of a single important context of the 7th century BC on Monte Irsi by H. Hjelmqvist give us important glimpses into the crops cultivated in this period in the Fossa Bradanica.[101] They can be set in a rather broader context by comparison with archaeobotanical remains from several other sites in South Italy, which illustrate the range of plants available for cultivation at this time, though not all of them would have been suited to the inland climate of the Fossa. They include Torre di Satriano in Basilicata, Incoronata at the edge of the Metapontine plain, L'Amastuola at the N edge of the Chora of Taranto, and several sites in the Salentine peninsula including Muro Tenente, Cavallino and the sanctuary at Monte Papalucio near Oria.[102]

The two commonest cereals represented in these lists are emmer (*Triticum dicoccum*) and barley (*Hordeum vulgare / Hordeum sativum*). Both had been cultivated in South Italy since Neolithic times. They are attested on all the sites mentioned above, though in varying proportions. The choice between them probably depended on local climatic conditions. Barley was attested by far more instances than emmer at l'Amastuola on the edge of the Tarentine coastal plain, and it was so valued at Metaponto that the emblem of the ear of barley was stamped on the silver incuse coinage of the *polis*. At San Felice in our Survey Area, a sample of carbonized seeds collected in the recent rescue excavation by the Soprintendenza consisted almost entirely of barley, with tiny quantities of einkorn (*Triticum monococcum*), and emmer. By contrast, carbonized seeds of emmer considerably outnumbered those of barley in the apsidal building at Torre di Satriano high in the Lucanian mountains, and pollen analyses confirm that wheat (of whatever species, including emmer) was by far the most important cereal cultivated in the surrounding area.[103]

Einkorn is also attested at Botromagno and Monte Papalucio, and spelt (*Triticum spelta)* is represented by a single grain at Botromagno. Free-threshing (naked) wheats (*Triticum aestivum, compactum* and *durum*, not always distinguishable) were found on Botromagno, and at L'Amastuola, Cavallino and Monte Papalucio. All these had been grown in S Italy since the Neolithic period.

Most of these grains are likely to have been used as porridge or gruel, as at l'Amastuola where a cookpot was found in a context of the 5th century BC, containing carbonized residues of barley, mixed with emmer, some olives, and small quantities of *Triticum aestivum/ compactum*, *Vicia faba*, *Vicia ervilia*, and even wild grass (*Bromus* sp.).[104]

A wide range of legumes was also cultivated. The broad bean (*Vicia faba*) was the most abundant species attested in the sample from Monte Irsi (with 36 instances). It has not yet been identified on Botromagno in this period, but it was the main taxon found with other legumes in a matt-painted storage jar in the *anaktoron* at Torre di Satriano, and it is attested at Incoronata and L'Amastuola. It was by far the most common vegetable offered in the sanctuary at Monte Papalucio near Oria. Peas (*Pisellum sativum*) are attested at Torre di Satriano (in the same storage jar as the broad beans), and at Cavallino and Monte Papalucio; and lentils (*Lens culinaris*) at Torre di Satriano and

[98] Ciancio 2010, 295-297.
[99] Tomb 35: Russo & Di Lieto 2008, 64-75 (excavation of 1996), republished by Bruscella & Pagliuca (2013) with subsequent finds.
[100] Ferreri 2012, Serio 2012.
[101] Colledge 2000; Helmqvist 1977.
[102] Torre di Satriano: Novellis 2008, 2009, 2012; Incoronata: Carter 2003, p. 382 (analyses by L. Costantini); L'Amastuola and Muro Tenente: Lentjes 2011, 2016; Cavallino: Fiorentino & Colaianni 2005; Monte Papalucio: Ciaraldi 1997; Mastronuzzi 2013.
[103] Florenzano & Mercuri 2013, 166.
[104] Lentjes 2016, 49 and 41 Table 2.3.

L'Amastuola. These too had been cultivated since the Neolithic period, but there were also new species: of special interest is the chickpea (*Cicer arietinum*) which was tentatively identified by Helmqvist at Monte Irsi. That identification seemed anomalous but has been strengthened by the discovery of other chickpeas at Monte Papalucio.[105] Bitter vetch (*Vicia ervilia*) appears to have been introduced in Italy (in Etruria) in the 8th century BC. It is found at Monte Irsi and perhaps on Botromagno, as well as at Cavallino, Monte Papalucio and L'Amastuola where it was abundant (with 1,391 instances). Most of these legumes must have been grown for human consumption – even the bitter vetch. In later periods it was used as a fodder crop for animals, but it could be made edible for humans by soaking.[106] The balance between cereals and legumes suggests that agriculture had become more "scientific" and that the principle of rotating the crops was understood.

ii. Olives and grapes

No grapes or olives were identified in the samples from Monte Irsi and Botromagno. Grape pips are attested at Incoronata, L'Amastuola, Cavallino and Monte Papalucio, but in none of these cases can it be said with certainty that they come from cultivated species.[107] Since, however, vines were already being cultivated in Campania in the EIA there is a strong presumption that techniques of vine cultivation had passed to South Italy by this time. Wine residues have been identified in pots of the third quarter of the 8th century BC at Torre di Satriano, and a small number of grape pips found in the apsidal hut on that site are assumed to have come from cultivated vines.[108] But absolute proof of cultivation in lacking. Lentjes has argued that the wine consumed in South Italy in this period must have been imported in 'SOS' amphorae (from Attica or Euboea) or Corinthian A amphorae.[109] But both types of amphora are more likely to have carried olive oil than wine,[110] and even if some of them contained wine, the small numbers attested in South Italy can hardly match the large number of Greek type cups which circulated in the Fossa Bradanica in the late 7th and 6th centuries BC, and which were probably used for drinking wine. In fact, the evidence for imported amphorae in and around our Survey Area is rather later, beginning in the first quarter of the 6th century BC (See Cat. Nos. 1408-1410 from San Felice). On Botromagno figured vases suitable for the symposium were in use among the élite in the middle of the 6th century (see above), yet no amphorae of this period have yet been found on the site. It seems therefore that most of the wine consumed in our area must have been produced locally.

Carbonized fragments of olive wood are reported from L'Amastuola (with more than 1000 fragments), Monte Papalucio, and Cavallino. They might be from wild trees (since wild olive is a common component of Mediterranean macchia) but at Cavallino a high proportion of small wood in the carbon suggests that the farmers were burning the prunings of cultivated olives. Plums were grown (or at least gathered) at Torre di Satriano and L'Amastuola, and apples (probably crab-apples) at Torre di Satriano and Monte Papalucio. Figs (*Ficus carica*) are attested at Torre di Satriano and Monte Papalucio, and pomegranates (*Punica granatum*) have been found at both places. Both fruits are novelties in this period. They are natural symbols of regeneration because of their numerous conspicuous seeds, and they may have been raised particularly for use in dedications at the sanctuaries on these sites.

In short there was a considerably greater variety of plants available for cultivation in this period, and more possibilities for the Iron Age farmers to vary their crops as a means of insuring against the failure of any one species. They probably also rotated at least some of their crops to achieve greater fertility, and they supported livestock production by growing leguminous fodder crops.

The pollen spectrum from the sanctuary at Pantanello, analysed by A. Florenzano and A.M. Mercuri, gives a broader picture of the impact of human activity on the environment.[111] Before the settlement of the Metapontine Chora in the late 7th or beginning of the 6th century BC, this was an area of open grasslands with scattered areas of deciduous woodland and Mediterranean macchia. In the course of the next 2 centuries, part of it was used as pasture for grazing animals, and part was cultivated for cereals, legumes, vines and fruit trees. There were also aquatic and wetland plants in the vicinity of the spring which was the focus of the sanctuary, and olive groves on drier land at some distance from the site.

iii. Fauna

There is a significant amount of evidence for stock-raising practices in this period, especially at the S end of the Fossa Bradanica, where it might be expected that the Greeks who settled at Incoronata, and later at Metaponto, brought new breeds of livestock and perhaps new ideas of livestock management. That at any rate is the view put forward by Sándor Bökönyi in his analysis of the animal bones found in the

[105] Ciaraldi 1997, 216.
[106] Lentjes 2016, 40, 127-128.
[107] Lentjes 2016, 145.
[108] Novellis 2009, 220, 224; Osanna 2010, 29-30.
[109] Lentjes 2016, 138.
[110] Pratt 2015 for a recent discussion of the production distribution and contents of 'SOS' amphorae.
[111] Florenzano & Mercuri 2018.

excavations of the University of Texas at Incoronata.[112] Most of the evidence comes from the phase of the 7th century when Greeks and natives were living together in the settlement. It shows cattle accounting for 24% of the identifiable bones, sheep/goat for 41.81% and pig for 32.62%. Where sheep and goats could be differentiated, the great majority proved to be sheep (47:19) suggesting that wool was a more important product from these animals than milk. These figures are taken to represent a decline in sheep and goats and an increase in cattle and pigs by comparison with the pre-Greek period, though they are broadly in line with some of the results from FBA/EIA sites of the previous period (discussed above). At any rate, the data show a mixed agricultural economy with a combination of pastoralism and agriculture, and with pigs raised for their meat. According to Carter, the proportion of cattle from sites in the Chora rose to an absolute majority after the land-reform of the mid-6th century BC, indicating that there was then more arable cultivation. There were also eight fragments of horse bones in the assemblage from Incoronata which, together with the depictions of horses on large locally made *deinoi* from the site, show the importance that these animals had in the life of the community. A single hen bone from the site is the earliest evidence for poultry in Italy. According to Bökönyi hens are likely to have been brought to Incoronata by Greek settlers. They did not however form an important part of the rural economy until the Roman period.

There is always a risk that a sample from one part of a site may not be representative of the whole, and this is shown in the case of Incoronata by another analysis carried out by S. Di Martino and C. Dal Sasso of a small sample of 338 animal bones (only 200 of which could be identified at the level of genus) from Saggio G on the site, which also dates to the 7th century phase that used to be known as "Incoronata greca", though it is now know that Greeks and natives cohabited there. This suggests a rather different picture, with pig being the predominant species (12 instances), followed by sheep/goat (11) and cattle (9), when calculated by the minimum number of instances.[113] In this analysis, the majority of the caprines were slaughtered not long after reaching full maturity, which suggests that they were raised primarily for their meat, whereas the cattle were kept longer, presumably for their value as draft animals. The majority of the pigs were slaughtered soon after reaching maturity to maximize their economic value. Equids were also represented in the sample, as are red deer.

Analysis of the relative importance of the major domesticated animals at Cozzo Presepe on the N fringe of the Chora by John Watson shows a very different picture.[114] The results are not directly comparable because of differences in methodology between the two studies, but Watson's adjusted figures show caprines in the absolute majority in all phases, and increasing in importance in the 6th century BC (after the site had been conquered by the Metapontines) at the expense of both cattle and pigs. At the same time hunting became less important. Red deer, which accounted for 8% of the animals in the faunal sample in Phases I and II (ca. 750–600 BC), form only 2% of the sample in Phase IIIB (the first half of the 6th century, after the Greek take-over of the site). This must imply that agriculture became increasingly specialized after the reorganization of the Metapontine Chora in the 6th century, when the plain was used for arable cultivation (and no doubt for vines olives, and other fruits). Cozzo Presepe lay outside the fertile strip of the plain, in the rougher land of the hills behind the Chora which must have been given over largely to sheep and goats. The decline of both pig and red deer suggests that the area in the vicinity of Cozzo Presepe had become to some extent deforested.

How this impacted on the native communities further up the valley is not yet clear. Some faunal remains from the layers of ca. 700–625 BC on Botromagno analysed by Keith Dobney show, not surprisingly, that cattle, swine and caprines were still current, as they had been in the EIA, though, given the small size of the sample, the relative importance of the species could not be determined. No wild fauna were recovered from these contexts.[115] Most of the material from Botromagno analysed by John Watson comes from the later phases of the site, but a small sample from Periods IV-V (6th–5th century BC) included seven fragments of caprines and three of swine, but no cattle, equids or deer. Without more evidence little can be said except that the pattern is consistent with a traditional subsistence economy. Even less can be said about the published faunal record from Jazzo Fornasiello where only a few animal bones could be attributed to Phase II (the 6th century BC), including 1 bovine, 1 pig, 5 sheep/ goat, and 9 indeterminate.

Further afield, at Torre di Satriano, near the headwaters of the Tanagro/ Melandro river high in the Lucanian mountains, a limited analysis of the animal bones found in the *anaktoron* of the late 8th – early 6th century BC shows a more traditional balance between the main domesticated species with 40% caprines, 25% pigs, 20% cattle, and 15% other, typical of the subsistence economy.[116]

[112] Bökönyi 2010; Carter 2003, 383-386.
[113] Di Martino & Dal Sasso 2000.
[114] J. Watson, Appendix II: the mammals, in *Cozzo Presepe*, 390-406.
[115] Dobney 2000, 46.
[116] La Mantia 2009.

The evidence is therefore still inadequate to assess the extent of innovation in stock-raising practices in the indigenous communities of our area, or the way in which they were able to adopt ideas from the Metapontine Greeks and interact economically with them. The fact that they were now able to produce specialized fodder crops suggests that settled agriculture based on ox-power was now attainable, leading to a more secure subsistence economy, and perhaps to the production of a marketable surplus. This cannot be proved yet from the faunal record, but it is a point to bear in mind in assessing the significance of the changes in the settlement pattern in this period.

iv. Commerce

The Greek pots that were imported into indigenous settlements in the Fossa Bradanica in increasing quantity from the late 7th century BC onwards are durable symbols of a trade in more ephemeral commodities which is likely to have been much more extensive. How this trade was carried out is not yet clear. Some scholars have suggested, on the basis of ethnographic analogy, that it generally took the form of the exchange of prestige goods by local élites who were motivated by status considerations.[117] But although the more luxurious objects found in native burials may have been acquired in this way, many of the imported Greek objects were of a much more banal kind, like the hundreds of "Ionian type" cups and Metapontine skyphoi. They suggest that there were traders who came and went between Italiote Greek and native communities bringing goods which were often of relatively low cost, loaded probably on pack animals.

What the "natives" gave in return for these products is equally unclear at this stage. There are no mineral resources in Apulia which would have been of interest to Greek traders, and the "natives" are hardly likely to have sold grain to Metaponto which was probably self-sufficient in wheat and barley, though other products of the land may have been exchanged. Whitehouse and Wilkins suggest textiles,[118] but although the textile industry became immensely important in the 2nd century BC (see below, Chap. VIII.5.iii), the evidence is meagre for this area in this period, since loomweights have rarely been reported from the few excavations there have been in Apulian sites of this period.[119] Other possibilities might include livestock, especially cattle and sheep, which could have been driven on the hoof to Metaponto. Slaves captured in war with other native communities may have been exchanged for more valuable commodities. After the introduction of silver coinage in the Italiote cities in the second half of the 6th century BC, the more valuable items could have been exchanged for coin, though the virtual absence of Greek coins of the period from native sites suggests that this was not a common practice.

Greek pots were not the only ceramic imports into the central part of the Fossa Bradanica. South Daunian pots also arrived in some quantities, as we have seen, crossing the watershed of the Fossa near Palazzo San Gervasio. The traders who brought these pots may also have brought the saddle querns and grindstones in lava from Monte Vulture (see Cat. 25). There must have been a reverse trade through the Fossa to the Daunian settlements in the Melfese and on the fringes of the lower Ofanto valley.

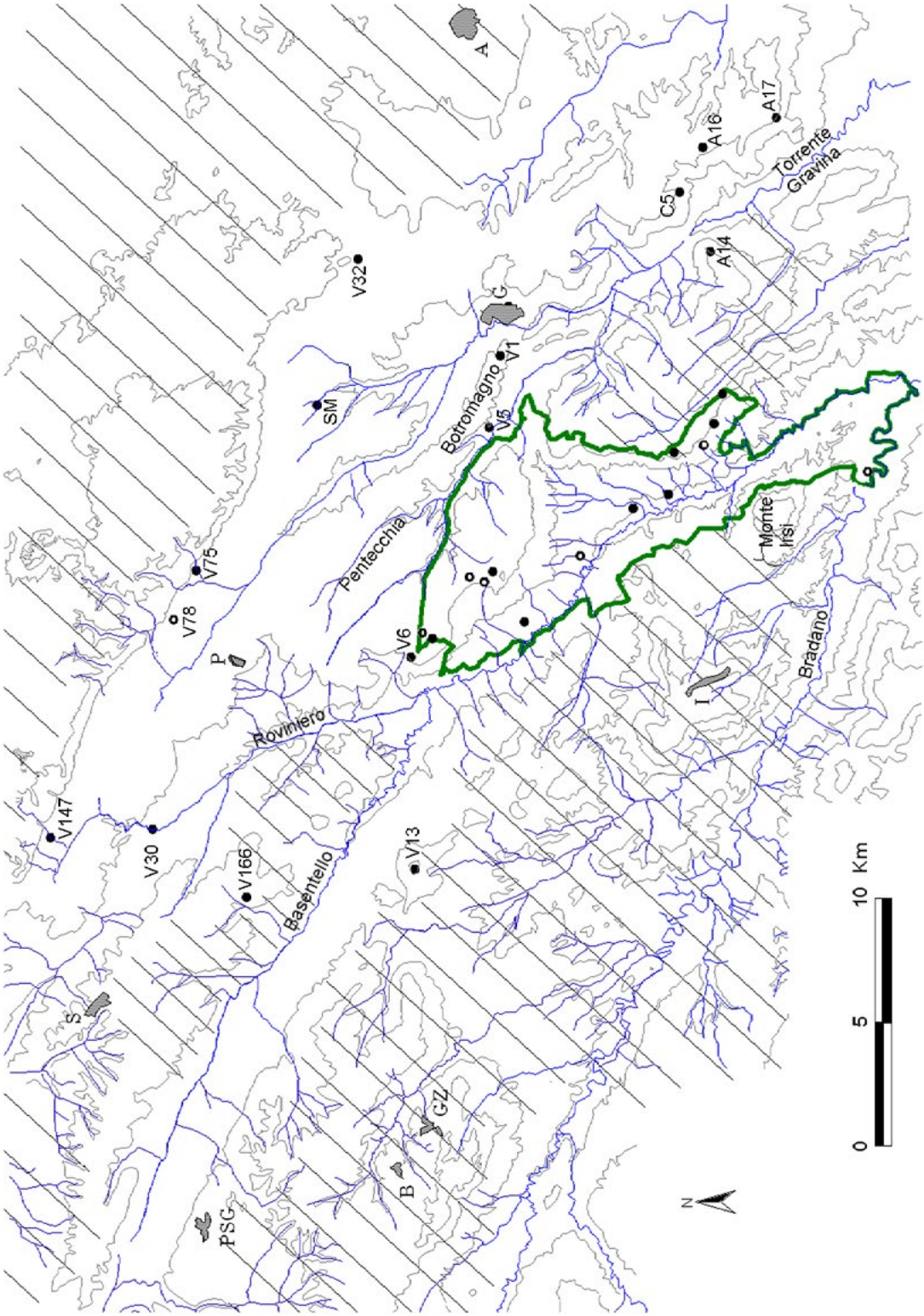
Other merchants may have brought the metal objects in iron and bronze used throughout the Fossa Bradanica, all of which must have been imported or made from imported ingots or iron bars. They may have been traded through the Greek cities, or through one or other of the indigenous ports on the Adriatic. The amber objects, however, must have been brought from the Baltic by way of the head of the Adriatic and harbours on the Apulian coast.

6. The Older Surveys

As in the case of the previous period, analysis of the distribution of IA sites in the areas of the Older Surveys, and changes in the pattern over time is complicated by lack of detail in the records. Nevertheless, 14 sites identified in these surveys (A14, A16, A17, C5, V1, V5, V6, V13, V30, V32, V75, V147, V166, and San Mauro) can be dated reliably to this period, usually by the presence on them of geometric bichrome sherds. This must be taken as a minimum number. At least one other site (V78) may also be of this period, and others could probably be added if more were known of the black-gloss and wheel-made painted sherds found on them, not to mention the plain wares, which are rarely recorded.

The best known of these sites is V75, Jazzo Fornasiello, where recent excavations by the Superintendency and the University of Milan have uncovered the remains of the Peucetian settlement. The site had been continuously occupied since the FBA (and perhaps since the full BA). At its maximum, in the 4th century, it extended over ca. 10 hectares. The earliest excavated remains are some post holes and fragments of hut walls surrounded by a cobbled area, dated between the mid-7th and mid-6th centuries BC. Adjoining them there was an open area used for burials which continued into the second half of the 6th century (phase II).[120]

[117] R. Whitehouse & Wilkins 1989, 114-116.
[118] R. Whitehouse & Wilkins 1989, 114-116
[119] In N Daunia, however, weavers at a vertical loom seem to be represented on sculptured stelae: D'Ercole 2000, Roth 2007.
[120] Castoldi *et al.* 2014, 25-26.



Map VI-3. Middle Iron Age/ Peucetian sites on the Older Surveys and in our Survey Area. Sites on the Older Surveys are numbered. For Site numbers for our Survey Area see Map VI-4. SM = San Mauro. Doubtful instances are indicated by hollow dots.

Of the other sites, one (Site V1) was certainly not a settlement: it consisted of burials found under the medieval/ modern town of Gravina, which may have been connected with Botromagno on the other side of the ravine. Of the remainder, three (A16, A17 and V32) show continuity of occupation from some of the larger sites founded in the previous period. There is continuity on smaller sites too, at A14, V13 (Monte Serico) and V147. What is more surprising is the discontinuities. Three of the larger sites inhabited in the FBA/EIA did not last into this period (C12, V26 and V84) although occupation of C12 was resumed in the 4th century BC; and none of the smaller sites in the list of the previous period survived.

There were a few new foundations. Site V6 on the ridge of Lamiecelle had some geometric pottery said to be of the 6th–5th centuries BC. It was a considerable site with dense material spread over an area of 3 ha. on the top of the hill, but since much of the pottery found there was Neolithic, it is impossible to know how much of the site was occupied by the later settlement. It is situated only 1km from Site 629 of our own Survey Area which was abandoned at the end of the EIA, so it is possible that the population moved along the ridge from the one site to the other. Other new sites include Site C5, which extended over at least 4500 m² on a limestone terrace on the heights above the left bank of the Torrente di Gravina, bounded on the E by a small ravine; also Site V30 (of uncertain size) located on the E side of the gorge of the Vallone Impiso, half way between Spinazzola and Poggiorsini; Site V166, a rather poorly documented site on high ground between the Basentello and Roviniero rivers, and perhaps the large prehistoric and Peucetian site at the Masseria San Mauro (SM on Map VI-3) where a brief survey by us produced 2 geometric bichrome sherds but no monochrome ones.

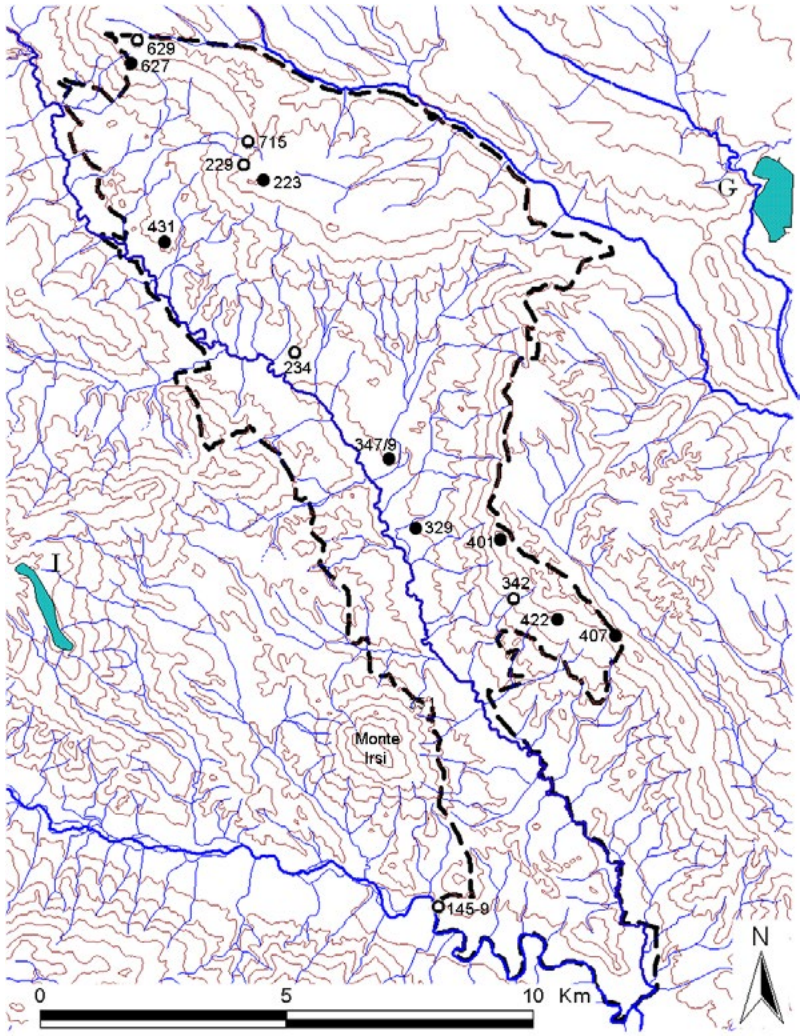
What all this appears to imply is that there was a continuing process of settlement consolidation in which most of the smaller, and even some of the larger, sites disappeared. It was only partially offset by the foundation of a few new settlements.

7. Our Survey Area

Various sites which had been occupied in the FBA/EIA probably failed before the beginning of this period since they yielded no geometric pottery or imported wares of archaic Greek type, namely Sites 140, 406, 622, 625, 629 and 715. Of these the most significant is Site 629, the hill-top site in the N part of our Survey Area on the ridge of Lamiecelle, on which 78 geometric monochrome sherds of the previous period were found. We have suggested above that the inhabitants may have migrated 1km along the ridge to Vinson's site V6 of the Older Surveys. That would confirm that the process of settlement consolidation which we have already noticed in the results from the Older Surveys also took place in this area.

No site of the period was found on the right bank of the Basentello in our Survey Area. That suggests that much, if not all, of the land on this side of the river was exploited from the hill settlement on Monte Irsi which lies a little outside our Survey Area in the SW quadrant.

The evidence for settlement on the left bank of the river is fuller. Eight sites produced material datable to this period, principally indigenous geometric bichrome



Map VI-4. Sites of the Middle Iron Age in our Survey Area. Doubtful instances are indicated by hollow dots.

pieces and cups of Greek type, namely Sites 223 (San Felice), 329, 347-9, 401/409, 407, 422, 431, and 627 which yielded the late archaic gorgoneion (see Map VI-4). Six other sites may also have been occupied (Sites 145/9, 229, 342, 629 and 715) though the evidence is more doubtful.

The three main hill-top sites founded in the FBA, Sites 223, 401/9 and 407, all continued. The largest and most fully studied is San Felice (Site 223), where the occupation of this period is attested by 747 sherds of geometric bichrome pottery, and 101 of imported wares of Greek type. During the course of the 6th century BC, the huts of wattle and daub gave place to more solid structures with mud-brick walls resting on stone socles and roofed with tiles, and the houses of the élite were decorated with architectural terracottas. San Felice flourished throughout this period. By contrast Crocevelina (Site 401/9) appears to have gone into decline. Only 20 fragments of geometric bichrome and one of imported archaic Greek pottery were found in the surface collection. A big discrepancy between this site and San Felice is to be expected since San Felice is larger and was more thoroughly surveyed, but the ratio of geometric bichrome pieces to the monochrome (largely of the previous period) is significant. At San Felice it is 1:5, and at Crocevelina 1:10. The difference might be explained on the assumption that the inhabitants of Crocevelina were poorer and less able to afford bichrome pottery (if this was indeed more expensive), but it is more probable that the population of the site was in decline, as it continued to be in the next period. At Serra Meschina (Site 407) only one bichrome sherd shows continuity of occupation from the previous period. The decline of the Sites 401/9 and 407 is perhaps to be explained by the hypothesis that some of the population migrated to Botromagno where the vast settlement on the plateau was consolidated during the course of the 6th century.

The remaining sites were all much smaller. Occupation of Site 431 is attested for this period by a single sherd of geometric bichrome. It is likely to have failed early in the period. The same applies to Site 329 which had one Ionian type cup sherd and no geometric. On the other hand, four sites which had not been occupied in the EIA (Sites 229, 234, 329 and 627) show new beginnings. Site 229 is the shoulder of San Felice immediately below the IA site, so that the single sherd of imported Greek (Ionian) type found there merely indicates the expansion of the site into this area, perhaps for burials. Sites 234 and 329 were both small and close to the river, where the heavy alluvial soils were more suitable for animal husbandry than for agriculture in the strict sense. They were perhaps seasonal shelters used by shepherds. Site 347-9, already in use in the FBA/EIA, continued to be frequented but was still fairly small. The location of all of these, close to a river, is matched by that of V30 on the Older Surveys, also new in this period. They may all have been situated near river crossings on local transhumance routes, especially Site 234. Site 627 on the ridge of Lamiecelle S of Site 629 was a small site with an élite building attested by the gorgon-head plaque No.2056, founded at the end of this period.

There is, however, one site, Site 422, which is unique as a small habitation, probably a single house, situated in good arable land on the ridge above the left bank of the Basentello not far from Serra Meschina (Site 407). It is the only site in our Survey Area which is likely to have been an isolated farmhouse datable to this period. Since isolated farmhouses had already begun to appear in the territories of Metaponto and Taranto,[121] it is possible that that Site 422 was founded in imitation of Greek practice. Its inhabitants would have been able to cultivate the land in the immediate vicinity of their house while being within easy reach of a larger community at Serra Meschina.

In this part of the Fossa Bradanica, therefore, the initial flurry of settlement foundation in the FBA/EIA was followed by a period of consolidation in which some of the smaller sites disappeared. The inhabitants are likely to have moved either to San Felice, or to the much larger settlement on Botromagno. Towards the end of the period, however, there were the beginnings of a contradictory tendency, with a few small habitations, temporary or permanent being established in the open countryside to exploit the land more efficiently.

Settlements and their territories

The two largest sites on Our Survey, San Felice (Site 223) and Crocevelina (Site 401-409), are situated 10km apart, and the arable land lying between them must have been farmed by peasants who lived inside the settlements and travelled daily to the fields. It is likely, therefore, that there were some territorial arrangements which determined what land belonged to what settlement. Moreover, since neither site was fully defensible, they must have depended on being able to take refuge from invaders in the much bigger settlement of Botromagno, which was large enough to accommodate refugees from the surrounding villages if they came under attack. It had probably already emerged as a proto-city, controlling a large territory which included the smaller sites on the left bank of the Basentello in our Survey Area.

8. Conclusions

Early in this period the matt-painted geometric pottery which had already diverged into several regional styles in the previous period, split further into numerous sub-regional styles each of which circulated within groups of settlements in more or less discrete geographical

[121] Metaponto: Carter in *Chora Metaponto III*, ch. 21; Taranto: Alessio & Guzzo, 1989.

areas. Some of these styles shared common features but others were more isolated and distinctive. If the material culture reflects the choices of the community that used it, then the overall pattern suggests that the population of South Italy in the MIA was organized in sub-regional groups. It is possible that each group was consolidated by shared ethnic traditions, but how these might relate to the tribal groups of Daunians, Peucetians and Messapians in Apulia and Oenotrians in what is now Basilicata is disputed. The earliest sources for the tribal names date to the 5th century BC, and it is possible that some of the sub-regional groupings apparent in the material culture of the late 7th and first half of the 6th century converged before the end of the MIA to create the tribes known to the Greek authors who recorded them. Whatever the case, the fact that several of the sub-regional pottery styles overlap in our survey area confirms the importance of the Fossa Bradanica as a transitional area between cultural groupings and as a communications corridor.

This was a period of settlement consolidation. Some smaller settlements were abandoned, and their inhabitants migrated to more successful larger ones which were beginning to develop into proto-cities. Settlements generally were reconstructed. Huts of wattle and daub with thatched roofs gave place to more solid structures built of mud-brick on stone socles and roofed with tiles. They varied considerably in shape and size, according to the status of their occupants. The society was dominated by an aristocratic élite who lived in grander houses embellished with architectural terracottas of Greek type. They show that the ruling class had absorbed Greek aesthetic ideas, and adapted them for their own purposes. We can conjecture that such houses were not only the residences of the ruling class; they were also centres for the reception and entertainment of their dependents and members of their kinship group. It was not a narrowly based aristocracy. Even a relatively small settlement such as San Felice might have several houses decorated with terracotta antefixes, as our field survey has shown.

The authority of the local rulers may have been based on their dominance of their kinship groups (as some aspects of their burial customs suggest), but prestige depended on their military prowess, and the men at the apex of the social pyramid were buried with horse trappings or panoplies of hoplite armour made by Greek artisans. The horse was a symbol of their status, though they may have used horses primarily to pull war chariots from which they could descend to fight on foot in heavy armour like Homeric warriors.

By the middle of the 6th century the élite class had adopted the social ritual of the symposium from their Greek counterparts, and was importing appropriate figured vases, especially kraters and cups, from Athens and Corinth to use in it. But large numbers of Greek-type cups and *skyphoi* found in field surveys and excavations on numerous sites suggest that the indigenous population generally was used to drinking wine in the 6th century. It is likely that they began to make it themselves even before they took to importing amphorae of wine and olive oil from Old Greece.

The cultivation of grape vines and olives extended the range of agricultural production in this period. Farming remained at a subsistence level, but improvements in stock-raising and crop-management and the introduction of some new species such as the chick-pea meant that agriculture could support a larger population, including the specialist artisans who made the best pieces of matt-painted geometric ware and worked the metals, including iron which was now in general use, especially for knives and weapons. We do not know how land was owned, although it seems likely that it was controlled by local chiefs, perhaps on behalf of their kinship groups, but those who farmed it lived inside the settlements and went out, presumably daily, to the fields. Towards the end of the period, however, there are the first indications that some enterprising individuals were building isolated farms in the open countryside, just as their Greek contemporaries were doing in the Chora of Metaponto and elsewhere.

Greek influence on the indigenous population in the Fossa Bradanica increased greatly with the foundation of the *apoikia* of Metapontum in ca. 640/630 BC. Although the Achaean settlers were probably involved in a struggle with the native population at the time of its foundation the large number of Metapontine cups and architectural terracottas exported to indigenous sites in the interior show that Metapontine potters frequently produced goods of only moderate value for the native market. Some may even have set up workshops in the indigenous communities.

As a consequence, there was a change in the material culture of the indigenous population. In the last half of the 7th century and first half of the 6th, they continued to use their traditional matt-painted wares made on the slow wheel alongside imported Greek cups. But in the second half of the 6th century, native potters began to produce wheel-made vessels decorated with simple bands which were inspired by Greek prototypes and gradually supplanted the traditionally decorated jars and urns. The hand-made impasto pottery began to give way to wheel-made Greek-type cooking pots.

The result was a hybrid culture, only partially hellenized. The indigenous inhabitants of the Fossa Bradanica adopted many aspects of domestic life from their Greek neighbours, but maintained their own forms of social organization, and continued to be buried *rannicchiati* with lavish grave goods.

Chapter VII. The Late Iron Age (Lucanian / Late Peucetian period)

This chapter deals with the culture of the Fossa Bradanica in the two centuries from the beginning of the 5th century BC to the end of the 4th. It corresponds to Period V and the first part of Period VI at Gravina. The beginning coincides broadly with the first recorded war between the Tarentines and their indigenous neighbours, and ends with the first effective Roman intervention in the Fossa Bradanica.

1. The pottery

In terms of the ceramics encountered in our Survey Area, the period is defined by a broad range of pottery types.

i. Painted (slipped) wares

The most abundant decorated pottery in the Survey Area is wheel-made painted ware with linear banded decoration, which came in during the course of the 6th century and by the end of the century effectively replaced the older geometric pottery made on a slow wheel. The initial inspiration for these wares came from Greek prototypes, and the indigenous potters continued to copy Greek shapes, although they also introduced others to meet their own needs. In the 5th and 4th centuries they frequently decorated pots with vegetable motifs derived from Greek sources in addition to the customary bands. Many of the shapes are long-lasting types which can only be dated within broad limits, but better dated red-figure wares, imported from Athens or (after the middle of the 5th century) from Metapontum and Tarentum, and South Italian overpainted wares help to tighten the chronology. Throughout the period black-gloss table wares, both imported and locally made, are useful dating tools. Around the end of the 4th century and in the first part of the 3rd, various changes in the ceramic repertoire mark the breakdown of the classical tradition: the end of the Italiote figured wares and the disappearance of shapes associated with the symposium such as the krater, the *skyphos* and the cup-*skyphos*.

Various new shapes typical of the Hellenistic period, such as the *unguentarium*, and the shallow plate, made their appearance before the end of this period.

ii. Plain and cooking wares

Wheel-made plain wares are abundant. Many of the shapes are found also in the wheel-made painted and black-gloss repertoires. They are likely to have been made by the same potters as cheaper alternatives. There are also larger heavier wheel-made pots used in the kitchen or store-room – *mortaria*, mixing bowls and *dolia* which follow their own slow typological evolution. Cookpots of Greek type made of clay with added sand to prevent them from cracking when subjected to heat were introduced before the end of the 6th century: first globular vessels for boiling (*chytra*i), then, in the 4th century, lidded casseroles (*lopades*). The *chytrai* in particular evolved so slowly that fragments of them are of limited use for dating. The first transport amphorae also arrived in this period from the Greek world. The earliest in our Survey Area are a few Magna Graecian products of the 6th or beginning of the 5th century. In the 4th and early 3rd centuries the so-called Greco-italics became more common, especially on San Felice. There were also a few amphorae imported from Old Greece including fragments of three Corinthian A-A' pieces and of a Chiot amphora found on San Felice (Cat.19).

2. The historical context

In historical terms, the period opens around the end of the 6th century BC with the earliest memories of political and military events in South Italy that passed into the literary tradition – the establishment of the Pythagorean societies in South Italy, the side-effects of the Persian Wars, and battles fought between the Tarentines and their Iapygian (Messapian) and Peucetian neighbours. It ends on the eve of the Roman attack on Botromagno/ Silvium in 306 BC which is the starting point of the next chapter. During these two centuries, the culture of the indigenous peoples was profoundly affected by contact with their Greek neighbours. Much of this was the brought about by war, but there was also social interaction between the Greek and native communities, especially at the level of the élite classes. The nature of this interaction changed between the 5th and 4th centuries, and it varied from one area to another. Here we are concerned particularly with Tarentum and Metapontum, the main sources of Greek influence in our area, but also with Athens since the Athenians developed their own relations with the indigenous peoples in the 5th century BC.

i. The 5th century: Taras / Tarentum

In the previous chapter we noted that the Greek communities at Tarentum and Metapontum adopted a more aggressive attitude towards the Italic peoples in their immediate hinterland in the second half of

the 7th century BC, as they gradually developed into fully-fledged *poleis* and sought to establish and then expand their territories. This new more aggressive form of Greek colonization led to increased conflict with the indigenous population. At some time early in the 5th century the Tarentines won a major victory over the Peucetians, which they commemorated with a dedication at Delphi, financed by a tithe of the spoils. It was described by Pausanias (X.13.10), and part of the original inscription and of a 4th century rendering survive.[1] According to Pausanias the monument showed Opis, king of the Iapygians who had come to the aid of the Peucetians, killed in the battle. The Iapygians in this context are likely to have been Messapians. The Tarentines must have plundered Peucetia extensively to have financed their monumental dedication with a tithe of the spoils. Probably not long after their triumph over the Peucetians, the Tarentines erected a second dedication at Delphi to commemorate a victory over the Messapians. It too was described by Pausanias (X.10.6), and fragments of the original inscription on it have also been discovered.[2]

The chronology of these events is not exactly clear, but it seems probable that both victories preceded a catastrophic defeat that the Tarentines suffered at the hands of the Iapygians in 473 BC. The event is described by both Herodotus (VII.170) and Diodorus (XI.52). It had repercussions in Tarentum where the constitution of the city was changed from a moderate oligarchy (described by Aristotle in *Pol.* I.303a as a *politeia*) to democracy. According to Aristotle this happened because so many of the élite (γνώριμοι) had fallen in battle; but it may also have been a popular reaction against the aggressive policies of the previous regime. There is no evidence of further fighting in the succeeding generation.

According to Diodorus, the Iapygians (Messapians) had been reinforced by their neighbours under the terms of an alliance. The neighbours can only have been Peucetians who had also been involved as allies of the Iapygians in the war commemorated in the first of the monuments of Delphi. We might expect to see some reflection of these events in the material culture of Peucetia, and even in the social and political structures, and it is possible to see the end of the indigenous geometric pottery tradition in this light – perhaps also the decline in imports of fine Attic figured pottery into Peucetian settlements in the late 6th and early 5th centuries, discussed below.

In the last half of the 5th century Tarentum successfully asserted its influence over the other Greek *poleis* on the Ionian gulf. It opposed the foundation of the nominally pan-hellenic colony of Thurii promoted by the Athenians to replace the destroyed city of Sybaris, and after defeating the Thurian army, founded its own colony at Heraclea on the site of the former Greek city of Siris so as to limit Thurian expansion in this direction. The move involved also the indigenous Apulian peoples, if a confused passage in Strabo (VI.3.4) relates to these events. As it stands, it states that the Tarentines fought against the Messapians over Heraclea and that the Tarentines had the kings of the Daunians and Peucetians as allies, but a simple amendment (of ἔχοντες to ἔχοντας) would mean that the Messapians rather than the Tarentines had the kings as allies[3] – an attractive suggestion which accords better with the fact that commercial relations between Peucetia and Tarentum in this period are unlikely to have been close, as the distribution pattern of the most prestigious types of pottery shows. As we shall see, imports of Attic red-figure pottery into Peucetia are unlikely to have been transmitted through Tarentum, and Apulian red-figure pots produced in Tarentum were rarely imported there until the end of the 5th century.

The Tarentines kept out of the war in Syracuse provoked by the Athenian expedition of 415–413 BC, though they closed their harbour to Athenian ships and opened it to the Spartan Gylippus; but the failure of the Athenians led to their withdrawal from South Italy and probably to the dissolution of their alliances with the indigenous peoples, and opened the way for renewed Tarentine expansion in the 4th century.

It was around this time that Tarentum began to replace Metapontum as the main centre for the production of red-figure pottery in South Italy.

ii. The 5th century: Metapontion / Metapontum

The history of Metapontum in the 5th century was different. After the initial phase of war between the Metapontines, Tarentines and Oenotrians which led to the establishment of territorial boundaries in the late 7th century BC (see above), there is no further mention of warfare between Metapontines and 'natives' in the historical sources. The wars between the Tarentines and the Iapygians and Peucetians seem to have had no counterpart in the hinterland of Metapontum. The argument from silence might seem worthless, were it not for the fact that events in Metapontum took a new turn when, shortly before the end of the 6th century, Pythagoras and those of his followers who had escaped from a "democratic" revolution in Croton took refuge in Metapontum and established themselves in the city. The sources are mostly late and unreliable in detail, but

[1] Bourguet 1912, 15; Daux 1937, 151-152 with pl.6 and fig.6; Wuilleumier 1939, 58.

[2] Bourguet 1929, 73 nos. 129-130; 1; Wuilleumier 1939, 54-55; Jeffery 1961, 281 ff, 384 no. 7.

[3] Proposed by G, Nenci (1976, 725), and followed by De Juliis (2000, 25).

they are consistent in implying that the Pythagoreans banded together in closed societies (*συνέδρια/ ἑταιρείαι)* which shared common ideals and ritual practices. And we can infer from the episode at Croton that they were opposed at this stage to the kind of social, political and economic reforms that were being pursued by radical leaders (often tyrants) in many Greek cities. We know little of their political ideology, but there is a strong tradition that they welcomed non-Greeks into their societies. Aristoxenos, who wrote in the late 4th century BC, is said by Porphyry (late 3rd century AD) to have claimed that Lucanians, Messapians, Peucetians and Romans came to Croton to hear him, and that he succeeded in removing conflict (στάσις) from among the élite (γνώριμοι).[4] If the report is to be taken at face value it must refer to Pythagorean societies of the 4th century BC when the Lucanians had emerged as an *ethnos*, and the Romans had begun to impact on the Italiote Greeks, but it is possible that the ethic of a philosophical and cultural brotherhood that embraced barbarians as well as Greeks went back to Pythagoras himself at the end of the 6th or beginning of the 5th century BC.[5]

That this was indeed the case is suggested by a remarkable stamnos-krater, found in a tomb associated with the Peucetian settlement of Santo Mola near Gioia del Colle. It is painted in the wheel-made technique with banded decoration on the main body of the pot, and with the image of a stag above the word ΓΝΩΘΙ in the shoulder zone on one side, and a young fawn on the other. The modest tomb group can be dated rather loosely in the first half of the 5th century BC. I have discussed its significance fully elsewhere.[6] It illustrates a theme dear to oligarchic ἑταιρείαι, exemplified by the poems ascribed to Theognis: the need to recognize the moral failings of the enemies of their society exemplified by counterparts in the animal world – particularly cowardice, typified by a deer, and often regarded as a characteristic quality of the common people (*δῆμος/ λαός*). Gnomic verses on these themes would be sung in the symposia which bonded the members of the oligarchic society. The stamnos-krater and the Ionian type cup buried in the tomb at Santo Mola must have been used in just such oligarchic ceremonials. But oligarchic did not necessarily imply aristocratic or wealthy. The tomb group was modest, and it is likely therefore that the circle to which the Peucetian buried in the tomb belonged was Pythagorean, linked by philosophical ideals rather than by aristocratic origins or wealth.

Other conclusions follow from this premise. The stamnos-krater by-passes the arid discussion of whether or not it is possible to infer from assemblages of grave goods that the indigenous society of the period had adopted sympotic practices. The symposium was a feature of oligarchic social reunions. The Peucetians who took part in them must have been deeply immersed in archaic Greek culture, and (at least in Pythagorean circles) must have associated freely with their Greek counterparts. Moreover, we can probably infer that in this Peucetian community, and no doubt in others, there were oligarchic societies which aimed to control public life to prevent the common people from gaining power. In other words, these Peucetian communities had reached a broadly similar state of political/ social development to the Greek *poleis* of the same period, in which the stability of the community was endangered by *stasis* as the common people demanded an equal share of political power (and of the resources of the land), and the élite of the community banded together to prevent them getting it.

Returning to Metapontum, if there is any validity to the late story that Pythagoras had to take refuge in the Temple of the Muses at Metapontum and was starved to death there ca. 494 BC,[7] then we may suppose that the *δῆμος* of the city succeeded in overthrowing the existing aristocratic constitution, and probably established a more democratic form of government. But aristocratic families continued to be influential, as can be seen in Bacchylides *Ode* XI, written at some time in the second quarter of the 5th century in praise of the Metapontine Alexidamos who had been victorious in the wrestling competition for youths at the Pythian games; and it is probable that, as in other parts of the Greek world, there was a continuing struggle between aristocratic/ oligarchic and democratic factions, since the city was in a state of internal conflict in 413 BC when it contributed two triremes and 300 javelineers to reinforce the Athenian army besieging Syracuse under the terms of an existing alliance.[8]

The political crises of this period may account for the apparent lack of building activity in the great sanctuary in the centre of Metapontum,[9] but there are also the first signs of serious environmental problems resulting from a rise in the water table which created swampy conditions in both the city and its Chora. Many of the farms founded in the last half of the 6th century appear to have been abandoned around the beginning of the 5th. The causes are debatable, but erosion, brought about by deforestation to clear land for agriculture, may already have led to problems of sedimentation in the river beds and consequent flooding; and there may

[4] Aristoxenos fr. 17 in Wehrli 1945 (= Porphyry *VP* 22). According to Porphyry (*VP* 19), the followers of Pythagoras included *basileis* and *dynastai* who came to him at Croton from the surrounding territory.

[5] For the influence of Pythagoras and later Pythagoreans on the indigenous peoples of South Italy, see Mele 2007, 259-298. It was particularly strong in Lucania (*ibid*. 262-268).

[6] Small 2003.

[7] Discussed in Minar 1942, 72-73.

[8] Thucydides VII.33.4, 57.11

[9] Carter in *Chora Metaponto III,* chap. 22, "Crisis in the Chora, 500".

have been an increase in rainfall.[10] The new democracy responded by devising the great project of draining the terraces of the Chora that was carried out in the first half of the 5th century BC.[11] Carter has argued that this programme of land reclamation is likely to have been the prelude to a broader policy of land redistribution which resulted in the creation of numerous small farms in the countryside in the last half of the 5th and 4th centuries BC.[12] That was, however, part of a much wider phenomenon since small settlements were created in the open countryside in many parts of Italy in the 4th century, including our Survey Area (below sub-section 11.ii).

Throughout the 5th century, and indeed down to the end of the 4th, potters working in the *kerameikos* at Metapontum made black-gloss pottery of good quality much of which was exported to native communities in the interior, including those in our Survey Area. Then around the middle of the century some Metapontine potters began to produce red-figure pottery of high quality, inspired by Attic prototypes. The earliest of them, the Pisticci Painter, may even have immigrated from Athens.[13] The most productive of these artisans was his principal successor, the Amykos Painter, whose works were in high demand among the Peucetian élite. His vases, especially bell-kraters, turn up in tombs in Peucetian necropoleis, but there is a particular concentration of them from Botromagno where his works must have been specially appreciated.[14] It has even been suggested that Botromagno/ Silvium may have acted as an intermediate location for the distribution of his wares.[15] These were pots designed for use in a symposium, and although some were deposited in tombs (either because they had been used in the funerary ritual, or because they were destined for use by the dead in the Underworld) there need be no doubt that others were used in real life in symposia. The single fragment of one of his pots found in our survey of San Felice is one such piece from a settlement context (No.721).

iii. The 5th century: Athens and South Italy

a. Attic red-figure pottery in Peucetia

The Italiote cities were not the only sources of Greek influence. There were also contacts between Peucetians (and Messapians) and communities in mainland Greece, especially Athens. In the previous period, good Attic black-figure pots had been imported into indigenous settlements by the aristocratic élite (Chap. VI.4.iv), but they dried up around the end of the 6th century. That cannot be explained by a break-down in communications, since black-figure pieces of poorer quality continued to be imported down to the end of the archaic period (ca. 480 BC) when the style was in serious decay. The meagre quality of these late black-figure imports is well illustrated by our No.697 from San Felice, and by a number of pieces from Botromagno.[16] The simplest explanation would be that the red-figure style adopted by the best Athenian vase painters after ca. 525 BC did not at first appeal to the Peucetian ruling class; but it is also possible that the class itself was in eclipse at this time in the indigenous settlements which may have experienced the same social and political upheavals as the Greek *poleis* in this period, aggravated by the disaster that the Peucetians suffered in the Tarentine wars.

Whatever the case, Attic red-figure pots of the first two generations are rare in Peucetia and none has yet been found on Botromagno or in our Survey Area. By ca. 480 BC, however, the Peucetian élite had come to accept the new style in its classical phase and were importing good red-figure pieces. Their passion for fine Attic red-figure pots is exemplified by various examples in the Jatta collection at Ruvo acquired by the family when the necropoleis of the Peucetian centre were looted by antiquarian grave-robbers in the 19th century.[17] Closer to our Survey Area is a series of good Attic vases deposited with other grave goods in tombs near the centre of the settlement on Botromagno.[18]

Attic pieces in our Survey Area are much rarer, which may suggest that the élite class which had been conspicuous on Site 223 in the previous period had transferred to Botromagno. We found only one red-figure piece that can be classified as Attic, No.698 from San Felice, with a depiction (probably) of the abduction of Europa by the bull-Zeus. It is badly worn but was evidently from a fine bell-krater. And there is only one certainly Attic black-gloss piece, a small scrap of

[10] *ibid*, 727.
[11] *ibid*., chs. 22, 28.
[12] *ibid*., 768.
[13] Trendall 1974, 5.
[14] Ciancio 2005, 48, 45; Ciancio 1997, 120.
[15] Riccardi 2014, 139-140.

[16] Ten fragments, all datable to the late 6th or early 5th century are listed by Prag in *Gravina II*, 43-44 and pl. VII, nos.430-439. A cup-*skyphos* in the manner of the Haimon painter ca. 480-470 is published by L. Burn in R. Whitehouse *et al*. 2000, 138 fig. 77 from tomb 9.
[17] Sichtermann 1966; Montanaro 2007.
[18] It begins with a cup-*skyphos* attributed tentatively to the Penthesilea Painter, found with a trefoil *oinochoe* probably by the Pan Painter from Tomb 8 on site H dated respectively to 480-460 and 480-470 BC, and a column-krater by the Briseis Painter datable ca. 480-470 BC from Tomb 9 (Burn in R. Whitehouse *et al.* 2000, 129-144). Five large tombs excavated on Site 4, a little W of Site 3, contained 15 Attic red-figure pieces datable within the last half of the 5th century. Some have rather run-of-the-mill scenes of the palaestra etc, but there are good pieces by the Achilles and Eretria Painters, and an excellent volute-krater by the Boreas Painter with a depiction of the sacrifice of Iphigenia, datable around the middle of the century (Ciancio 1997, esp. 80-88 and catalogue, Tomb 1, 1974; Tombs 1 and 2, 1967; Tombs 2 and 3, 1994. There is a fine *lekanis* by the Achilles Painter, in Taranto Museum: Mannino 1996, 365; 1997, 394 fig. 6).

a stemless cup of the delicate class, No.769, of the 3rd quarter of the 5th century.

Recent analyses of Athenian imports into South Italy help to set the proliferation of Attic red-figure imports in Central Apulia in a broader context.[19] In Tarentum, imports of Attic pottery, which had been abundant for most of the 6th century, began to fall off before the end of the century, and fell still further in the second quarter of the 5th, when the only Attic figured pots found in tombs were *lekythoi* of mediocre quality.[20] The lack of larger Attic pots is only one aspect of a more general decline in the quantity and quality of grave goods deposited in Tarentine tombs in this period, the reasons for which have been much discussed.[21] It might reflect the impoverishment of the city after the severe defeat inflicted on the Tarentines by the Iapygians in 473 BC; or it might be a consequence of sumptuary legislation passed by the democratic regime in the aftermath of that defeat, which limited the cost of funerals.[22] There would have been a precedent for such measures in the sumptuary laws enacted in Syracuse a little earlier in the century, which were still enforced when Gelon died in 478 BC.[23] But that is conjectural since there is no written evidence to support this theory, and the dearth of Attic figured pottery in the 5th century was not confined to funerary contexts.[24] Attic imports picked up again after ca. 440 BC but they did not reach the level of popularity that they had had in the archaic period.

At Metapontum too, remarkably few pieces of Attic red-figure pottery have been found, either in the city itself, or in the settlements in its Chora, other than the routine lekythoi.[25] As at Tarentum, that may be explained by the political and economic problems which affected the city for much of the 5th century, but it is nevertheless surprising that Attic imports did not pick up after the middle of the century in view of the Athenian involvement in the foundation of Thurii in 443 (see below) and the alliance which the Athenians formed around that time with the Metapontines. It can hardly be supposed that Athenian cargo ships did not pass this way, so it seems necessary to conclude that the new Early Lucanian red-figure wares, produced in Metapontum itself after ca. 450, more or less completely supplanted Attic pottery in popular demand. G. Giudice has shown that the distribution pattern of Attic red-figure pottery in the Peucetian centres differs significantly from that in Tarentum and Metapontum. It is not just that the quantity is greater, but also that the Attic workshops that supplied the Peucetian market were generally different from those that supplied the two Greek cities.[26] Moreover, there are numerous links between the types of Attic pot imported into Peucetia and those found at Spina and Adria in the N Adriatic where the Athenians had developed entrepots for trading with the Etruscans, whereas the Attic pots imported into Tarentum and Metapontum conform broadly to types found in Sicily and Campania. There is therefore good reason to think that the Peucetian élite acquired these pots directly from Athenian traders who called in at the Apulian Adriatic ports, rather than through Metapontum, as they appear to have done in the previous period. This was not a haphazard market. The Peucetians knew what they wanted – primarily kraters (especially column-kraters) decorated with scenes of combat or other episodes of the Trojan war cycle that appealed to their warrior ideology and helped to foster their knowledge of Greek poetry and theatre; and the traders, who must have been in contact with the potters' workshops, knew how to supply them. Some Athenian potters even made and painted pots in indigenous Apulian shapes.[27] The Peucetians were therefore important customers, but whether they were also patrons, in personal touch with the potters, is less certain.

b. Attic imports in the Fossa Bradanica

The demand for good Attic red-figure vases extended throughout most of Peucetia westwards from the Adriatic as far as Botromagno and Montescaglioso[28] on the E edge of the Fossa Bradanica, though it did not reach Ginosa, Laterza or Matera on the SW fringes of the Murge.[29] Beyond the Basentello the circulation of Attic red-figure was even more limited (at least on present evidence). A calyx-krater by the Altamura Painter, datable ca. 470 BC, was found in a burial at Irsina,[30] but no Attic red-figure piece has yet been found on Monte Irsi or any other site further up the Bradano basin. Attic vases ceased to be imported at Baragiano and Torre di Satriano before the end of black-figure. Elsewhere the distribution in what is now Basilicata was spotty. A few pieces found at Lavello, Melfi-Pisciolo and Ruvo del Monte probably reached those places by way of the Ofanto valley, but others from sites further to the S and W, including Guardia Perticara and Alianello in the Agri basin and Chiaromonte in the Sinni valley,[31] fall within a different distribution network, linked to the coast by

[19] Mannino 1996, 1997, 2008; Ciancio 1997; Giudice 2007.
[20] Lippolis 1997, 370.
[21] Lippolis 1997; De Juliis 2000, 65-66.
[22] De Juliis 2000, 65.
[23] Diodorus XI.38.1-5.
[24] It can be detected also in the materials from the votive deposit at Saturo: Lippolis 1997, 369.
[25] Mannino & Roubis 2000; Silvestrelli 2014, 100. She dates the beginning of the decline in Attic imports to the 2nd quarter of the 5th century. No Attic pieces were identified in the red-figure sherds collected in the Chora: Carter in *Chora Metaponto III*,765.
[26] Giudice 2007.
[27] Todisco & Sisto 1998.
[28] For Attic rf pots in tombs at Montescaglioso: Lo Porto 1988-1989, 332, 362-365 (Pan Painter), 371-372.
[29] Mannino 1997, 394.
[30] Lo Porto 1973, 231-232 and tavv. LXXIV-LXXV, Tomb 6 no. 3.
[31] Mannino 2008, 430, fn 20.

routes along the rivers. There is a cluster of red-figure pots found at Pisticci on the S side of the lower Basento valley which were perhaps acquired by the indigenous Italic inhabitants directly from Athenian traders putting in at Metapontum. The volume of imports began to decline before the end of the 5th century, but some Attic red-figure pots continued to reach Peucetian settlements on the Adriatic coastal fringe, especially Ruvo, until near the middle of the 4th century.[32] It seems that in this period the Athenian traders working through the Adriatic ports dealt principally with the Peucetians, stopping short of the Oscan-speaking peoples of the emerging Lucanian culture on the other side of the Basentello.

c. The political context

Although there are some indications that Athenian leaders were interested in developing contacts with Western Greece as early as the time of Themistocles in the early 470s BC, the influx of Attic red-figure vases into Peucetia began more than a decade before the first political interventions of the Athenians in the West of which we know from historical sources. These date to the time of the so-called First Peloponnesian War (459-446 BC) when the Athenians attempted to build a series of alliances against the Dorian cities of Italy and Sicily which might provide support for Sparta. In 443 they were deeply involved in the foundation of a new colony at Thurii on the site of Sybaris, which had been destroyed by the Crotoniates in 510 BC. This initiative led directly to the war between the Thurians and Tarentines, already mentioned, in which the two sides ravaged each others' territory without achieving any noteworthy result.[33] The conflict spilled over into the territory of the former *polis* of Siris (destroyed around the middle of the 6th century BC) and ended in a compromise in which the Tarentines and Thurians jointly founded the city of Heraclea near the site of the former city in 434-3 BC. The Athenians soon lost control of the enterprise, but various scraps of evidence suggest that the project involved them in conflict with the Tarentines. It may have been in this context that they entered into an alliance with the Messapians, which they renewed at the time of the Sicilian expedition in 413 BC when the Messapian dynast, Artas, provided them with 150 javelineers.[34] It may also have been the occasion of the alliance (mentioned above) which they made with Metapontum, under which the Metapontines provided another 300 javelineers in addition to those recruited by Artas. It seems likely that these javelineers too were drawn from the indigenous Italic peoples in the interior whose traditional weapon was the javelin.[35] If so, they are likely to have been mercenaries.

These scraps of information suggest that the nature of the relationship between the Athenians and the indigenous peoples of South Italy (and especially the Peucetians) changed during the course of the 5th century. At first the relationship was founded on trade in which the Athenian merchants acquired some important commodity from the indigenous population in (especially) Central Apulia in exchange for fine red-figure pots and no doubt other artifacts. That commodity is most likely to have been grain (mainly emmer wheat and barley – see below), which grew well on the coastal fringe of Central Apulia and in the plain of the Fossa Bradanica below Botromagno. But in the second half of the 5th century when the Athenians became embroiled in war with the Peloponnesian League, another factor entered into the relationship: the enlisting of Italic light armed troops into the Athenian army, probably as mercenaries.

The influx of Attic imports into Peucetia came to an end rather suddenly around the turn of the 5th/4th century BC. This was probably the result of a combination of several factors. The failure of the Athenian assault on Syracuse may have led to a drastic reduction in Athenian commercial enterprise in the West, at much the same time as the quality of Athenian red-figure painting began to fall off badly. The Peucetians had already been accustomed to buy Lucanian (Metapontine) figured vases as well as Attic ones but around the close of the 5th century they abandoned both Athenian and Metapontine suppliers, preferring the products of the Apulian red-figure workshops in Tarentum. That city was growing in political and economic power, and seems to have attracted some of the best potters from Metapontum.

iv. Peucetians

As we have seen, the Peucetian peoples begin to appear in historical narratives around the beginning of the 5th century, and in this period it is possible to speak confidently of them as the inhabitants of the hinterland of Tarentum whose territory bordered that of the Greek city on its northern and western side. This is the situation reflected by Strabo's unknown source(s), who described the territory of the Peucetians as extending along the coast northwards from Egnatia and inland as far as Silvium.[36] The problem of sub-regional cultural groupings based on styles of matt-painted geometric pottery, which had complicated the question of the relationship between ethnic and cultural identities in the previous period, disappears with the end of the

[32] Mannino & Roubis 2000.
[33] Diodorus XII.23.8.
[34] Thucydides VII.33.4
[35] Small 2000. For javelins in Peucetian burials: Greiner 2003, 128.
[36] Strabo VI.3.8: <ἐν> τῇ μεσογαίᾳ δὲ μέχρι Σιλουίου.

geometric pottery tradition, which died out in the first half of the 5th century. The wheel-made painted and black-gloss wares which are found on all indigenous sites in the Fossa Bradanica, including those in our Survey Area, represent a shared material culture. It is still possible to detect differences between the output of different production centres, but these do not have the same assertive character as their geometric predecessors, and the pots are unlikely to have carried a sub-ethnic "message".

At first sight the material culture appears to be strongly hellenized, and there is no doubt that the Peucetian aristocracy at least had absorbed many elements of Greek life-style; but how far hellenization percolated down to the rest of the population is more doubtful. Peucetian warriors kept their own military traditions: they are shown on Apulian red-figure vases with long braided hair, highly decorated tunics, typical Italic belt and conical helmet;[37] they fought with javelins as well as thrusting spears;[38] and they were buried *rannicchiati* with their armour and weapons (see below). The women too maintained distinctive forms of dress. They are shown on many vases wearing long tunics belted at the waist with a conspicuous overfold, and head-bands which are sometimes represented as studded with jewels. On ritual or ceremonial occasions they wore a distinctive form of mantle over their heads that left the headband visible above the brow. The women shown dancing on the famous Tomb of the Dancers from Ruvo were dressed in this way, with large earrings and rouge on their cheeks.[39]

It is doubtful that most Peucetians below the aristocratic class could speak or write Greek. Unlike the Messapians in the Salentine peninsula, the Peucetians have left no extended inscriptions on stone or bronze, so the evidence for the languages spoken in Central Apulia has to be found in minor objects, especially loomweights with inscribed names, and pots with graffiti.[40] This scrappy material shows that the majority of the population spoke a form of Messapic, although Greek was gaining ground, and there was some influence from Oscan (Samnite and Lucanian) contacts. The epigraphic evidence from Botromagno provides a good indication of the degree of ethnic/ linguistic integration in this central part of the Fossa Bradanica. All the documented inscriptions on loomweights that are long enough to be classified linguistically are in Messapic,[41] but a wheel-made pot (a globular *pyxis* decorated with a broad black band), said to have been found on Botromagno, has an inscription in Greek which says much about the ethnicity and cultural milieu of the potter. The first words can be translated: "Morkos made (the pot), Pyllos taught him, Morkos Pyllos". Then follow the first thirteen letters of the alphabet and the words "Morkos dedicated (the pot) to Gnaiva". We can probably infer that Morkos was an apprentice who was learning both the potter's craft and the Greek alphabet under the instruction of Pyllos. The inscription is in Greek, but the names Morkos and Pyllos are of Messapic type, and Gnaiva is Oscan, so the pot epitomizes the ethnic and cultural mix that characterized Central Apulia in the 4th century BC.[42] The incomplete alphabet suggests that Morkos was experimenting with writing. It is one of several alphabets known from Peucetia in this period: A stone on the acropolis at Monte Sannace, recently published, was inscribed with three incomplete alphabets,[43] and in the interior of a black-glazed cup from Altamura there are 22 letters of the alphabet including the aspirate used in the Doric Greek of *Taras*. Some of the letters are out of their proper order.[44]

At Monte Serico, on the right bank of the Basentello within the area of the Vinson survey, the identifiable names on loomweights are Messapic, in spite of the proximity of the settlement to both Samnite and Lucanian areas of influence.[45] They suggest that the hill site was an outpost of Peucetian culture.

v. The Oscan-speaking tribes: Samnites and Lucanians

In the 5th and 4th centuries BC the peoples who lived in the Apennine mountains W of Apulia belonged to the Oscan linguistic group, speaking dialects of the Oscan language which was closely related to Latin and Umbrian. They had no common political structure, but when they first impinge on the written history of South Italy, they were organized in two principal tribal groupings: Samnites in the mountains to the E of Campania (who were a confederacy of four tribes: Hirpini, Pentri, Caudini, Caraceni), and Lucanians further to the South. Both Samnites and Lucanians shared distinctive "Oscan" cultural traits, including kinship structures, forms of social organization, religious cults, funerary customs and modes of fighting. In spite of these common features, the Greek and Roman sources recognized the Samnites and Lucanians as distinct peoples, as they must have done themselves since they had their own federal organizations and communal sanctuaries. Moreover, they were exposed to different cultural influences since the Lucanians interacted with the Greek colonies on the Ionian coast

[37] Trendall 1971, 9; Castoldi 2006b.
[38] Small 2000.
[39] Gadaleta 2002; Small 2014, 18-19.
[40] Messapic: Santoro 1978; De Simone & Marchesini 2002. Greek: Ferrandini Troisi 2015, 17-42 (from province of Bari), esp. 22-23 no. 6 from Botromagno.
[41] Marchesini 1995, 1384-1385; De Simone & Marchesini 2002, 434-435; *Gravina II*, nos, 1774-1775.
[42] Santoro 1978, 226-234, tavv. IX-XIII; Small 2014b, 32; Ferrandini Troisi (ed.) 2015, 34-35.
[43] Ciancio & Savino 2019.
[44] Ferrandini Troisi 2010, 133-134 no. 3 and tav. XIVa.
[45] Carrabba 1989.

and on the Tyrrhenian coast south of (and including) Paestum, whereas the Samnites impinged at first on the Etruscans and then (after the mid-4th century BC) on the Romans and Greeks in Campania. As a result, the Samnites wrote the Oscan language in an "Oscan" alphabet derived from Etruscan, whereas the Lucanians wrote it in the Greek alphabet which they had learned from the Italiote Greeks.

The Oscan-speaking people who impacted most on the Central and S part of the Fossa Bradanica were the Lucanians. The rise of their *ethnos* has been discussed in many studies published in the last 40 years and will be mentioned only briefly here.[46] According to a tradition transmitted by Strabo (VI.1.2), they were colonists (in the Greek sense) of the Samnites who increased greatly in numbers and invaded the territory of the Oenotrians at some unspecified time. Strabo is undoubtedly right in identifying population expansion as the underlying factor behind their expansion. It cannot be quantified statistically, but it is shown archaeologically by the growth in the size and density of their settlements and by the foundation of new ones all over South Italy between ca. 450 and 300 BC. There is, however, no unambiguous archaeological evidence to support the idea of a widespread invasion, and the currently prevailing opinion is that behind the historical tradition there lies a more gradual process of cultural transformation,[47] in which a new Oscan-speaking ruling class imposed itself on the native Oenotrian population,[48] just as it did on the Greek population of Paestum, and to a lesser degree of Naples. But if the methods used were the same as those employed by the Samnites when they began to overrun Daunia in the late 4th century, prompting Arpi, Teanum and Canusium to form alliances with Rome,[49] they are unlikely to have been peaceful, and probably involved the imposition of garrisons in the subject cities and the enforced plantation of settlers in their territories. The new cities founded in Lucania in this period, at Laos, Pomarico Vecchio, Civita di Tricarico and probably Grumentum and Potenza, were in effect colonies designed on a Greek model, warranting Strabo's use of the term for the plantation of colonists in the region (ἀποικισάντων), which he probably derived from Timaeus.[50] The Lucanian *ethnos* had already acquired its distinct identity by the late 440s BC when a Lucanian army was defeated by the Thurians under the command of the Spartan Cleandridas.[51] By the end of the 5th century the Lucanians had expanded southwards towards modern Calabria where the Brettian people emerged by a similar process of ethnogenesis around the middle of the 4th century BC.[52]

The literary sources say nothing about the impact of the Lucanians on the communities in the Fossa Bradanica in this formative period. The first evidence we have relates to an episode in 303 BC when a Spartan *condottiere*, Cleonymus, called in by the Tarentines to ward off the Lucanians, compelled them to submit, and then induced them to attack the Metapontines who had refused to support him (Diodorus XX.104). If the Lucanians were a threat to both Metapontum and Tarentum, they are likely to have controlled at least the southern part of the Fossa Bradanica bordering on the territory of both cities. Archaeological evidence throws a rather different light on this matter. A bronze helmet of Chalcidian type, said to have come from Basilicata and now in the Museo Poldi Pezzoli in Milan, is inscribed in Oscan in the Greek alphabet used by the Lucanians. It records an Oscan *vereia* (probably a military unit) at or from Metaponto, and has been dated early in the 4th century BC.[53] Other evidence from burials also suggests that warriors equipped in Oscan fashion, presumably Lucanians, had already settled in Metaponto by the last quarter of the 4th century.[54] Whether they were there as a garrison or as mercenaries employed by the Metapontines is uncertain, but there is reason to think that the expansion of settlement in the Chora around the middle of the 4th century is at least partly the result of the incorporation of Lucanian settlers into the citizen community.[55] The broader question of whether there is an Oscan burial type that can be used as evidence for Oscan penetration deep into Apulia is discussed below.

In the Melfese and the region centred on Venosa the largely Daunian culture of the previous period gave way to Oscan in the course of the 5th century.[56] But here the mountain passes lead more easily into Samnite Hirpinia than into the Lucanian heartland around Serra di Vaglio, and the Oscan cultural elements (the language, the burials, the arms and armour and the votive deposits) are likely to result from Samnite rather than Lucanian domination. The literary evidence is meagre, but Horace knew of a tradition that the Latin colony of Venusia was founded (in 291 BC) after the Sabellians (i.e. the Samnites) had been driven out,[57] and several loomweights found in Venosa and the surrounding territory are inscribed with letters in the Oscan alphabet of the Samnites confirming that the dominant

[46] Notably Pontrandolfo Greco 1982; De Lachenal (ed.) 1993; Horsnaes 2002; Isayev 2007; Bottini 2016a, 42-46.
[47] Pontrandolfo Greco 1982, esp. 118-125.
[48] Cf. Russo 2008, 114-115; Fracchia 2004, 69-70.
[49] Salmon 1967, 232-233.
[50] Lassère 1967, 220 note 6, comment on Strabo VI.1.2.
[51] Polyaenus, *Stratagems*, II.10.2.4.
[52] In 356 BC, according to Diodorus (XVI.15.1-2). He portrays them as a horde of miscellaneous origin, mainly run-away slaves.
[53] Crawford (ed.) 2011, 1450-1452
[54] Bottini (ed.) 1994, 181-186; *Chora Metaponto I*, 15; Small 2013, 133 no. 100.
[55] For Lucanian settlement in the Chora, see Carter 2006, 169-170. 2011a, 883.
[56] Marchi 1997, 5-6.
[57] Horace, *Satires* II.1.34: *pulsis, vetus est ut fama, Sabellis.*

influence was Samnite rather than Lucanian.[58] One collected at the Masseria Casalini 11km SE of the city has the typically Samnite name Pakís (latinized as Pacius).[59] The site is located close to Palazzo San Gervasio, a short distance from the headwaters of the Basentello river, and close to the route through the Fossa Bradanica that would be followed by the Via Appia.[60] By the end of the 4th century Samnite political control must have extended as far south as Botromagno/Silvium since it was Samnites, not Lucanians, who garrisoned the city when it was attacked by the Romans in 306 BC towards the end of the Second Samnite war.[61]

Our Survey Area, lying in the central part of the Fossa Bradanica, is likely to have been exposed to Oscan influence from both Samnite and Lucanian sources, and this is reflected in two inscribed objects. One is the fragment of a *dolium* with deeply impressed *omicron*, No.1905, which has a close match in a piece from Civita di Tricarico in Lucania. I have argued that the *omicron* is the alphabetic numeral for 70, indicating the capacity of the *dolium* in (probably) *choes*, and shows that the Lucanians had adopted the Greek numerical system that was introduced early in the Hellenistic period. The other is a fragment of a Laconian-type cover tile stamped with the letter H, No.2223, which emerges in relief inside a deep frame of the same shape. The same form of stamp occurs in Samnite Pompeii.

vi. The wars of the 4th century BC

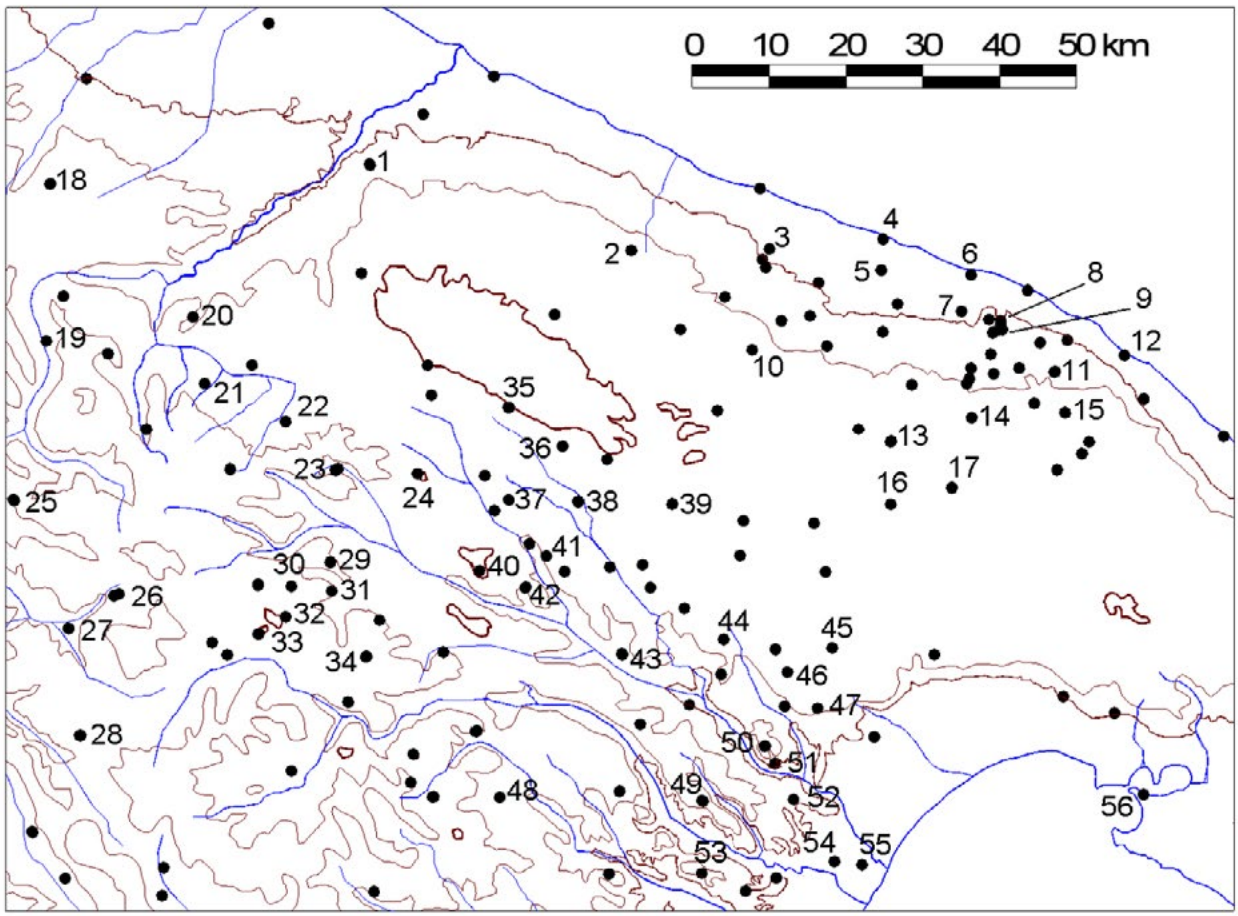
For much of the 4th century the various communities of South Italy were involved in war. The sources are mostly late and very scrappy so that it is impossible to derive a coherent narrative from them. What follows is a brief synopsis of the main episodes which are likely to have had an impact on the settlements in the Fossa Bradanica.

The rise of the Lucanians was only one factor that destabilized the political scene in South Italy around the turn of the 5th/4th century; another was the growth in the power of the Syracusans invigorated by their defeat of the Athenian expedition. Under the tyrant Dionysius I, they invaded South Italy where they formed an alliance of convenience with the Lucanians against a league of Italiote cities organized to resist them. Tarentum and Metapontum seem to have remained outside the theatre of war which mainly involved the cities on the (modern) Calabrian coast. By the time of his death in 367 BC, however, Dionysius I was again at war in South Italy, this time with the Lucanians. His successor, Dionysius II, brought that war to an end and developed friendly relations with Tarentum, but he asserted Syracusan control of the Adriatic by founding two colonies on the Apulian coast to ensure the safety of shipping.[62] One was *Neapolis* which was probably situated near modern Polignano; the other has not yet been identified.

Tarentum in the ten years 366-356 BC enjoyed a period of prosperity under the leadership of the Pythagorean Archytas. Under him the Tarentines set up a new Italiote league based in Heraclea to replace the earlier league destroyed by Dionysius I, and used it to assert their hegemony over the other Greek cities of the Ionian Gulf. The league was intended for the defence of the Italiote cities, and in 346/5 the Tarentines became involved in a new war with the Lucanians in which they were so hard-pressed that they called for help to Sparta. The Spartans sent an army under King Archidamus who fought against the Lucanians for five years before being defeated and killed in 338 BC. He was succeeded in 334 by Alexander, king of Molossus in Epirus, who was connected twice over by marriage with the Macedonian royal house, and was familiar with the Macedonian methods of war. Only the barest outlines of his campaign can be recovered from the meagre sources, but these show that he arrived, probably in 334, bringing with him numerous infantry and cavalry from Epirus, and campaigned first against the Apulian peoples in the Salentine peninsula. He then, according to Pompeius Trogus, formed alliances with the Metapontines, Peucetians (*Poediculi*) and Romans before taking on the Samnites, Lucanians and Bruttians.[63] He constructed numerous fortresses to hold down his conquests and got as far as the vicinity of Paestum, where he won a victory over the Lucanians and Samnites. But a rift with the Tarentines weakened his hold on Magna Graecia, and he died still fighting against the Lucanians and Bruttians at Pandosia on the Acheron river, probably to be identified with the Crati.

With Alexander's campaigns, the theatre of war was enlarged. The Samnites had advanced so far down the Fossa Bradanica that they posed a threat to Tarentum as well as to the Apulian peoples. The alliances which he made with the Romans and Peucetians were intended to facilitate concerted action against this common enemy and their Lucanian allies. Ultimately Alexander failed, but his initial successes secured the position of Tarentum for the time being. The city flourished economically and became the leading centre of Hellenistic culture in Magna Graecia. But it was a fragile prosperity, always at risk from the Italic peoples, and in 303 BC the Tarentines had to call on Cleonymus to

[58] Crawford *et al.* 2011, 1303-1305.
[59] Marchi & Sabbatini 1996, 90-91, no. 547. For the name Pacius/Paccius in Samnite contexts: Vetter 1953, 38 (no. 6) from Capua; idem 117 no. 174 from Castellamare (Pescara); Castrén 1975, 201-202 no. 297 (from Pompeii).
[60] Small 2019.
[61] Diodorus XX.80.
[62] Diodorus XVI.5.3.
[63] In Justin's *Epitome* XII.2. *cum Metapontinis et Poediculis et Romanis foedus amicitiamque fecit.*



Map VII-1. Sites of the Late Iron Age in the Fossa Bradanica and adjacent regions. Those mentioned in the text are numbered: 1. Canosa/ Canusium; 2. Ruvo/ Rubi; 3. Bitonto/ Butuntum; 4. Bari/ Barium; 5. Ceglie del Campo/ Caelia; 6. Torre a Mare; 7. Noicattaro; 8. Azetium (Rutigliano); 9. Madonna delle Grazie; 10. Torrito; 11. Conversano/ Norba; 12. Polignano (Neapolis?); 13. Salentino; 14. Turi; 15. Torre di Castiglione; 16. Santo Mola; 17. Monte Sannace; 18. Ascoli Satriano; 19. Melfi Pisciolo; 20. Lavello; 21. Venosa/ Venusia; 22. Masseria Casalini; 23. Banzi/ Bantia; 24. Monte Serico; 25. Ruvo del Monte; 26. Ruoti Fontana Bona; 27. Baragiano; 28. Torre di Satriano; 29. Oppido Lucano; 30. Cancellara; 31. Tolve Moltone; 32. Macchia di Rossano; 33. Serra di Vaglio; 34. Civita di Tricarico; 35. Jazzo Fornasiello; 36. San Mauro; 37. San Felice; 38. Botromagno/ Silvium; 39. Altamura; 40. Irsina; 41. Crocevelina; 42. Monte Irsi; 43. Timmari; 44. Matera; 45. Laterza; 46 Lucignano; 47. Ginosa; 48. San Mauro Forte; 49. Pomarico Vecchio; 50. Montescaglioso; 51. Difesa S. Biagio; 52. Cozzo Presepe; 53. Pisticci; 54. Pantanello; 55. Metaponto/ Metapontion/ Metapontum; 56. Taranto/ Taras/ Tarentum.

deal with the threat from the Lucanians, as mentioned above. But the much greater threat posed by the rise of Roman power was already evident. The war against the Samnites brought Roman armies into Apulia. In 314 BC they captured Luceria from its Samnite garrison and founded a Latin colony on the site, and in 306 BC another Roman consular army besieged Botromagno/ Silvium and took it by storm, with consequences that are considered in the next chapter.

It would be wrong, however, to see relations between competing ethnic or sub-ethnic groups in South Italy only in terms of warfare. There were always opportunities for indigenous warriors to fight as mercenaries in the Greek armies, and there is also plenty of archaeological evidence to show that artisans were able to move freely from one community to another (see below).

3. Settlement patterns

As we have seen, our Survey Area falls between two regions, Apulia and Lucania, which have always been characterized by different settlement patterns, conditioned by the physical geography of the two regions. In the LIA these differences were augmented by the cultural differences between the Lucanian and Apulian (here more specifically Peucetian) peoples.

i. Lucanian settlements

a. Fortifications

In Lucania numerous settlements were fortified. Nearly 70 of them have been recorded.[64] They vary greatly in

[64] Horsnaes 2002, 43-5-48 lists 67 fortified sites in Lucania. More can

size. The largest, newly founded in the 4th century, at Civita di Tricarico, extended over 47 hectares within its walls. Serra di Vaglio, over 24 hectares, was surrounded by a defensive wall 2.5km long.[65] At the other end of the scale, there were many much smaller fortified settlements, measuring less than 10 hectares.

The techniques of construction varied. Some were merely ramparts of rough stone. Others, like Raia San Basile (the ancient Numistro near Muro Lucano) were formed of large polygonal blocks individually cut to fit roughly together (an Italic technique found also in Campania and Latium). The most impressive had outer and inner faces of isodomic masonry of large oblong blocks neatly cut to form even courses. Such walls might be several metres thick with cross tie-walls at intervals, and the intervening spaces filled with rubble. The technique was learned from the Greeks, and the cut blocks in some of these fortifications display incised Greek letters which are probably to be interpreted as quarrier's marks referring to the output of the gangs of workers, probably slaves, who cut them in the quarry. The *locus classicus* for this type of wall is Serra di Vaglio, where a well-known inscription proclaims that the wall was built under the rule of Nummelos.[66] The language of the inscription is Greek, but the name of the ruler is Italic, and the use of Greek suggests that he was proclaiming to a wider world that the settlement was equivalent to a Greek *polis*.

Such walls defined the area of settlement and imposed a clear distinction between the city and the surrounding countryside. Burials were confined to cemeteries arranged outside the walls. Many settlements had an extramural sanctuary located at a spring (see below).

b. Internal structures of Lucanian settlements

In Lucania as in Peucetia the internal structures of settlements were adapted in the 4th century BC to fit within the constraints of the city walls, and reorganized to accommodate their expanding populations. The newly founded cities such as Laos, Pomarico Vecchio and Civita di Tricarico were laid out on more or less regular grid plans with streets intersecting at right angles to form roughly square housing blocks in imitation of Greek town planning schemes such as those at Thurii (444/443) and Heraclea (434/433) on the fringes of Lucanian territory. Older settlements were updated on the same principles. At Roccagloriosa and Timmari new houses were built in the last half of the 4th century, apparently on an organized street plan, overlying more haphazardly built houses of the previous period.[67] At Serra di Vaglio in Lucania, older houses of the Oenotrian period were adapted and new ones built to create two-room houses, with or without an added porch. One room was invariably used as a storage area, with *pithoi* to contain foodstuffs; the other served partly as a kitchen with a hearth, and partly as a working area with a loom. There were also some larger 3-room houses. Where the inhabitants slept or dined in such houses is usually unclear. The main spaces were probably multi-functional and could be adapted to meet the needs of the day. Other one- or two-roomed houses are known from Lavello and Oppido Lucano.[68] These were the houses of the ordinary Lucanians. There were also larger and richer houses of the élite, as at Roccagloriosa where the building known as Complex A was organized around a central courtyard containing a domestic shrine. In the countryside there were numerous farmhouses, discussed below.

ii. Peucetian settlements

In Peucetia the pattern of settlement was different. There was a much greater discrepancy in size between major and minor settlements, the most extensive being very much larger than in Lucania.

a. Fortifications

At least eight of the largest had fortification walls of which there are visible remains: Conversano,[69] *Azetium*,[70] Torre di Castiglione,[71] Ceglie del Campo[72] and Turi[73] on the Adriatic fringe, Monte Sannace[74] and Altamura[75] on the Murge, and Botromagno on the E edge of the Fossa Bradanica.[76] Ruvo, which was probably the largest and richest of all Peucetian settlements, and Bitonto which was also an important centre, must have been fortified; perhaps also Bari, but no certain traces of the Peucetian walls have been found beneath the medieval and modern cities. There are other more doubtful cases. A 19th century antiquary described traces of a wall of large squared tufa blocks at Ginosa on the lower slopes of the Murge above the Ionian coast, which were perhaps remains of a fortification wall of this obscure settlement.[77] Montescaglioso was also an important centre, to judge by the excavated burials, but as in the case of Ruvo and Bitonto, any remains of walls are buried under the modern town. The smaller,

be added, including Monte Irsi (cit., 22), where the wall has been robbed out. See also Cremonesi 1966; Isayev 2007, 65-68.

[65] The measurements in hectares are given in De Cazanove 2009, 146.

[66] Adamesteanu 1974, 9-21; Small 2013, 137-138 no. 106.

[67] Timmari: Lo Porto 1991, 4; Roccagloriosa: Gualtieri 1993, 58-68.

[68] Lavello: Russo Tagliente 1992, 151; Oppido Lucano: Lissi Caronna 1984.

[69] Ciancio in Ciancio & L'Abbate 2013, 234, 240.

[70] Ciancio, *ibid*, 239.

[71] Perfido 2013.

[72] Miroslav Marin & Siciliano 1988, 297.

[73] Labate 1986; 1995; Galeandro 2010, 203 and n. 39.

[74] De Juliis in *Monte Sannace,* 221-225.

[75] Marin 1977 (drawing comparisons with other Peucetian walled cities).

[76] *Gravina II*, 59-71; Small 1989.

[77] Fioriello 2017, 185.

adjacent, settlement at Difesa San Biagio was, however walled.[78] These last two settlements probably fell under Lucanian control in the 4th century.

The largest of all these centres (excepting the unknown quantity of Ruvo) was Ceglie del Campo which extended over ca. 178 hectares and was enclosed by a wall 5km long.[79] Monte Sannace at its greatest extent in the early 3rd century was defended by four wall circuits, with the largest, 3.9km long, enclosing ca. 96ha. The circuit at Altamura was almost equally long, nearly 3.7km,[80] enclosing ca. 99ha. The walls of Botromagno were ca. 3.75km long but did not enclose the whole of the settlement which was protected on side E side by the sheer scarp of the ravine of the Torrente di Gravina. The total area defended by both walls and ravine must have been about 140ha.

The normal technique used in constructing the outer face of fortification walls in major settlements in Apulia in the 4th century BC was isodomic, with large squared blocks, as in Lucanian Serra di Vaglio. Where the walls crossed level ground they would be constructed with outer and inner faces, held together by cross-walls at intervals, and with the gaps between the faces filled with rubble. But where the terrain was suitable, the wall might be constructed on a terrace immediately below the brow of the hill, avoiding the need to build an inner face. Both techniques can be seen on Botromagno. The labour force needed to build these walls was enormous. I have calculated that the walls of Botromagno would have needed something like 37,500 massive blocks of stone to make the outer face alone, each of which had to be quarried, transported to the building site and manoeuvred into place.[81] To achieve this, the settlement must have had vast resources of manpower at its disposal.

The difference in size between the Peucetian settlements and their Lucanian equivalents on the other side of the Fossa Bradanica divide can be partly explained by geographical factors: the Lucanian settlements occupied hilltops which offered only limited opportunities for expansion, whereas most of the Peucetian ones were founded on plateaus with few natural defences to curtail the spread of the city before the construction of the fortification walls. Botromagno, in the Fossa Bradanica, was an exception, since it occupied the tip of a long projecting tongue of land between two river valleys, with natural defences on three sides, and only its defensive wall to limit its expansion to the W. But in building cities of such vast size, the Peucetians (like the Daunians to the North) were also demonstrating a different concept of a city. In it the tombs of the dead were sacred places to be protected by the city walls, with those of the most illustrious occupying central places in the vicinity of the houses of their families. Moreover, the city walls enclosed large open areas where the population living in smaller subsidiary settlements or in farms in the open countryside could take refuge in time of danger, no doubt bringing their cattle and other worldly goods with them. But the concept was flawed, because such long walls were impossible to defend, and in fact the Peucetians proved unable to withstand any well-organized invader.

b. Internal structures of the large Peucetian settlements

In Central Apulia the only large new settlement founded at this time was Azetium, which took the place of several smaller settlements in the vicinity, but little is known of its internal organization.[82] Most of what we know of urban structures of this period in the region comes from Monte Sannace, the most fully excavated indigenous Apulian site, where much of the lower area of the city below the acropolis was reconstructed in the 4th century BC.[83] Two parts of this large area (*Insulae* III and V) were reorganized on roughly orthogonal plans which created more or less regular spaces assigned to individual houses,[84] but for the most part, the 4th century redevelopers were restricted in what they could achieve by the need to maintain the main alignments of the existing road system, so they adapted it to create housing blocks of irregular shape. The street system on the acropolis was also reorganized in the mid-4th century with a principal N-S street 5 m wide separating housing blocks.[85]

The buildings at Monte Sannace in this period conform to the same types as in Lucania, ranging from small rectangular houses with one room, or with two, the second being entered through the first, to "pastas" type houses with two or three rooms in a row opening onto a courtyard. One room was invariably used for storage of foodstuffs. There are also cases of several houses sharing the same courtyard, perhaps occupied by different components of the same kinship group.[86]

On Botromagno too, the settlement was at least partly rebuilt in the 4th century. Fragments of house walls of the period have been found in most parts of the site, but it is rarely possible to reconstruct their plans since much of the evidence was obliterated by new buildings in the 2nd century BC. But some traces

[78] D'Andria & Roubis 1998-1999, 129.
[79] Miroslav Marin *et al.* 1982; Miroslav Marin & Siciliano 1988,
[80] Marin 1977.
[81] Small 1989, 20.
[82] Ciancio *et al* 2009, 310.
[83] Galeandro in *Monte Sannace – Thuriae*, 545-559 with plan tav. I on pp. 546-547.
[84] Galeandro 2010, 204-205; Palmentola 2015, 90-93.
[85] Palmentola in *Monte Sannace – Thuriae*. 260-263.
[86] Scarfì 1962, Russo Tagliente 1992, 122-136, Ciancio (ed.) 2001, 31.

of rectangular walls excavated in Site CZ towards the W end of the settlement suggest that this part of the site was reorganized on orthogonal principles in the 4th century BC.[87] Two adjoining rooms, one larger than the other, probably formed parts of the same two-room building. They opened onto a narrow passageway, on the other side of which there were two rooms of another building sharing the same N-S alignment. A little over 200m further East, in Site H, near the centre of the settlement, another building of the same period has been excavated, of which the stone socle survived almost intact except for a gap near the NW corner.[88] It consisted of a single room measuring 6.5×4.5m with an entrance near the middle of the long west side, and a hearth made of tile fragments in the NE corner. The base of a large storage *pithos* was set in the clay floor close to the hearth. The excavators suggest that it was a water container. Below the hill, in the area of Parco S. Stefano, the remains of several houses were uncovered in an emergency excavation. The most complete, House 2, was roughly square, with sides of 5.0–5.5m. A saddle-quern and a group of 31 loomweights found on the floor show that it was used for a variety of domestic activities.[89]

c. Minor settlements in Peucetia

Much less is known of minor Peucetian settlements, though they certainly existed. Several have been noted in the territories of Conversano/ Norba and Rutigliano.[90] The site of the Jazzo Fornasiello near Poggiorsini in the Fossa Bradanica can be counted as another. Recent excavations have shown that the settlement flourished in the 5th century but was abandoned in the early 4th. It was surrounded by a wall and ditch enclosing ca 7.6ha. The inner and outer faces of the wall were made of roughly cut blocks of limestone of varying shape and size, in some cases with one or more faces smoothed, with the interstices filled with smaller stones. The gap between the two faces of the wall was filled with rubble. The date of the wall has not yet been established.[91] Mid-way between the Jazzo Fornasiello and Gravina/ Botromagno, and ca. 7km from both, was yet another settlement at the Masseria San Mauro (SM on Maps VI-3 and VII-2 and in the List of Sites on the Older Surveys) measuring ca. 7.7ha.

iii. The model of the Greek polis?

The Greek quarriers' marks incised on some of the stones used in the walls of these Peucetian and Lucanian settlements show that they followed Greek practices in the organization of the labour involved, but the overall design of the fortificaations shows only limited knowledge of Greek poliorcetics. More generally, there is little in the overall planning of these settlements to suggest that they were influenced by the model of the Greek *polis.* The buildings typical of Greek city infrastructure, the agora, theatre and civic *stoa*, are almost entirely lacking,[92] and the people continued to bury their dead inside the walls, unaffected by Greek city regulations.

iv. Farmhouses

In both Peucetia and Lucania there was another level in the settlement hierarchy below the minor settlements: small isolated farmhouses built in the open countryside, from which the adjacent fields could be cultivated more efficiently than by labourers coming and going to and from the larger towns and villages. Although a few appeared in the MIA, including perhaps, our Site 422 (Chap. VI.7), they were by and large a new feature of the settlement pattern, introduced in the late 5th and 4th century BC, and found all over South Italy in this period.[93] The upsurge of rural settlement may have been instigated by new more scientific theories of agricultural exploitation, perhaps developed in Carthage where the first serious work on agriculture was published by Mago. He is known to have advocated that a landowner should sell his town house and worship a rural rather than an urban *lar*.[94] His date is unknown, but his ideas are likely to have been current before the late 4th century since Agathocles found the Carthaginian countryside near Cape Bon divided into irrigated gardens and orchards centred, apparently, on luxurious country houses, when he attacked Carthage in 310 BC.[95] Mago's work was translated into Greek, and his theories may have been adopted in the Greek cities on the Ionian coast, including Metapontum, where the survey of the Chora has picked up traces of many rural buildings built after the land reforms of the middle of the 5th century (mentioned above), many of them datable to the 4th century BC.[96] Less intensive surveys of the territory of Tarentum have shown a similar proliferation of settlement in rural areas in the 4th century.[97]

a. Metapontine farmhouses

Several of the rural buildings in the Metapontine Chora that were occupied in the 4th century have been

[87] *Gravina II*, 37 and fig. 28, Phase IIb.
[88] R. Whitehouse *et al*. 2000, 243-147, fig. 148.
[89] *Gravina (PBSR) III (2)*, 103-108.
[90] Ciancio in Ciancio & L'Abbate 2013, 240.
[91] Castoldi (ed.) 2014, 31-36.
[92] P. Palmentola (2015, 93) identifies an open space between *Insulae* III and V at Monte Sannace as a citizens' *piazza*.
[93] See the Census of Farmhouses, mostly of this period, by E. Lanza Catti in *Chora Metaponto V,* 409-417.
[94] Columella I.15.18: *Qui agrum paravit domum vendat, ne malit urbanum quam rusticum colere*.
[95] Diodorus XX.8.3-4.
[96] Carter in *Chora Metaponto III*, 744-868.
[97] Cocchiaro 1981, 65-68; Osanna 1992, 17-18; Alessio & Guzzo 1989 (E of the Mar Piccolo).

excavated.[98] They show a range of building types. The simplest, represented by a building at a site known as Ponte Fabrizio, was a rather simple structure consisting of two short rows of rooms back-to-back, extending over 120m^2. One of the rooms was used as a domestic shrine. Another rural building at Pantanello was broadly similar.[99] At the other end of the range are more complex buildings, best represented by the so-called *Fattoria Stefan*, which had a small courtyard with rooms for cooking and agricultural processing grouped around it. The domestic rooms may have been on an upper floor. The ground floor occupied an area of ca. 333m^2.[100]

b. Farmhouses in Lucania

The concept of the isolated rural farm was transmitted early in the 4th century to the "natives" in the interior of Lucania. Their farmhouses show up in field surveys, as for example around Roccagloriosa[101] and Torre di Satriano.[102] A number have been excavated in several parts of the region and from these we can gain an idea of the range of size and internal organization of Lucanian rural buildings in this period. Some caution is needed, however, because in most cases the associated artifacts have not been fully published, and the interpretation of the development of the buildings over time has been based more on structural sequences and the stylistic development of architectural terracottas than on stratified pottery types. It is necessary to follow the published analyses, but to be aware that unusual instances that do not fall within generally understood patterns are likely to warrant further investigation.

Probably the best known of these farmhouses is one erected at Moltone near Tolve. In the phase of its construction, dated around the middle of the 4th century BC, it occupied 390m^2 and consisted of a row of three rooms of roughly equal size which opened onto a central courtyard. A fourth longer room also entered from the courtyard occupied the whole of the E side of the house, and two isolated rooms were arranged inside the courtyard on either side of the entrance door in the S wall.[103] In size and organization it is broadly similar to a Metapontine farm of the same period.

A rather more complex development of the courtyard plan can be seen in a farmhouse built at Montegiordano in the NE of modern Calabria, also around the middle of the 4th century BC. It was roughly square in plan with sides of ca. 22.0m (484m^2), and had seven rooms arranged around a central courtyard. One which contained a hearth and at least one loom (indicated by a large number of loomweights) is likely to have been the women's quarters. Several terracotta statuettes of an enthroned goddess must come from a household shrine. Another room with a second hearth was the kitchen and living room, and yet another which contained two terracotta washbasins, part of a red-figure krater, and numerous fragments of pots for eating and drinking, must have been used for banqueting. Other rooms were for storage and agricultural processing, including one which contained the base of a wine press and the remains of at least two large terracotta jars (*pithoi*) set in the floor to hold the fermenting must. A narrow space between rooms on the south side probably held a wooden stair which led to an upper storey or loft. Outside, to the S, there was a terrace protected by a lean-to roof, with an oven and a trough for watering animals.

A number of farmhouses of the 4th century BC have been at least partially excavated in the Agri valley.[104] The best preserved, in the area of the Masseria Nigra near Viggiano, was first built around the middle of the century, but the remains of this first phase are too incomplete to be interpreted convincingly. It was rebuilt in the second half of the century on a large scale, extending over ca. 700m^2, with ranges of rooms organized around an L-shaped courtyard.[105] The main domestic rooms were arranged on the N side opposite the entrance, where a vestibule led into a dining room with a kitchen and pantry for the vessels used for eating, drinking. Other vessels for pouring libations indicate that the feasting was associated with religious ceremonial. The function of most of the other rooms is not clear (and one presumes that most could be used for more than one purpose), but there were at least three storage rooms on the outer edge of the building. One contained a statuette of a seated goddess comparable to those found at Montegiordano. Outside the building to the S there were a kiln and a cistern.

A rural building excavated at Cersosimo on a tributary of the Sinni valley near the S limit of modern Basilicata was much smaller (382m^2) but was even more elaborate, with the private and ceremonial parts of the house organized along separate wings of a small peristyle courtyard, clearly separated from the functional rooms. The date for the construction in the second half of the 4th century suggested by the excavators is remarkably early, since the colonnade courtyard or peristyle was a new development in domestic architecture which

[98] Carter 2008, 196-216 with tab. 4.A on p. 199; updated by E. Lanza Catti in *Chora Metaponto V,* 100-104, Census of Farmhouses.
[99] *Chora Metaponto VI*, 1443-1456. I am doubtful that this was a farmhouse: see my review in *JRA* 2019.
[100] Adamesteanu 1974, 85; Carter 1979, 47-50, 2008, 208-209, 211.
[101] *Roccagloriosa I*, 171-201, esp. 177.
[102] Osanna & Serio 2009, 104.
[103] Tocco *et al.* 1982; Soppelsa 1991; Russo 1993b.
[104] Especially around Montemurro in the middle reaches of the valley below Grumento: Distasi 2006a, and in the upper part of the valley near Viggiano: Russo 2006.
[105] Nava 2003, 689-694; Russo 2006, 33-42.

was introduced at Heraclea only around the end of the century.[106]

There were therefore various types of farmhouse put up in the Lucanian countryside in the last half of the 4th century BC. They varied in size and complexity, with one or more ranges of rooms arranged around a central courtyard. There was an increasing tendency to separate the functional from the domestic parts of the building, and to embellish the residential quarters. Before the end of the period, the most elegant were beginning to show architectural features more typical of the Hellenistic period. The different types of building presumably reflect the differing levels of wealth and social status of their occupants. In devising new more complex types of farmhouse to suit their specific needs, the Lucanians put themselves in the forefront of the development of this building type.

c. Farmhouses in Apulia

Less can be said of rural buildings in Apulia in this period. No farmhouse of 4th century BC has yet been excavated in the Daunian or Peucetian countryside, and there are only brief preliminary reports of a few partially excavated in Messapia;[107] but field surveys have identified many around Valesio, Muro Tenente and Oria in the Salentine peninsula[108] and in the lower Ofanto valley near Canosa.[109] Nearer to our study area, the settlement pattern surrounding the Latin colony of Venusia founded in 291 BC is more difficult to analyse, since it is not easy to distinguish small rural settlements of the Samnite period from the small farms of the early colonists, but Marchi and Sabbatini report a number of rural settlements measuring ca 300-400m^2 which they assign to the pre-Roman period.[110] The same phenomenon has been noted by McCallum and Hyatt in the area surrounding Monte Serico, overlapping with the territory studied by S.P. Vinson. [111] We have found many in our Survey Area (see below).

4. Cults

i. Communal cults

One of distinctive features of the Lucanian *ethnos* was their communal sanctuaries.[112] They are a feature of Oscan culture (and of other Italic cultures in the centre and north of the peninsula), which is found much more rarely in Apulia. A few are known in the Salentine peninsula, but they are scarce in Peucetia and Daunia, although there was a Peucetian sanctuary of some importance at Madonna delle Grazie near Rutigliano.[113]

Many of the Lucanian sanctuaries were located at important springs and were dedicated to the Oscan goddess Mefitis; but at Timmari in the Bradano valley inland from Metaponto, which was more exposed to Greek influence, the goddess was identified with Persephone (Kore).[114] Each self-governing community must have had its own shrine, generally outside the settlement (as at Torre di Satriano); but the largest of all the sanctuaries, at Macchia di Rossano near Serra di Vaglio, was not closely associated with any settlement, and is likely to have been a communal centre, either for a regional subdivision of the Lucanian people (a supposed *touta outiana*) or more probably for the whole *ethnos*.[115] Some sanctuaries which went back to the earlier, Oenotrian, period were rebuilt; others were new foundations. Most of them had a small built shrine, and a characteristic feature of them all is the large number of votive offerings found in sacred deposits. They usually included female terracotta figurines, miniature vessels, and *thymiateria*.

The location of these sanctuaries is a good indication of the extent of Lucanian territory in South Italy,[116] stretching from Rivello near the Tyrrhenian coast to the Fossa Bradanica. Three sanctuaries have been discovered in the Fossa, of which the best known and the most fully published is on the hill of Timmari. It went back, probably, to the 6th century, but it was reconstructed in the 4th as a typical Oscan sanctuary and received large numbers of votives.[117] Another sanctuary at Cugno la Volta, below the hill settlement of Difesa di San Biagio, on the ridge of Montescaglioso, was probably also of this type. A limited excavation there uncovered fragments of *thymiateria*, terracotta figurines, and pottery datable to the 4th and 3rd centuries; and more pieces have been found there in a field survey.[118] There was a perennial

[106] Cossalter & De Faveri 2009.
[107] At Avetrana, S. Francesco (Alessio 1996, 400-402); in the fondo Lucernara outside the walls of Vaste (D'Andria 1996, 437-439),
[108] Yntema 1993, 181, 1999, 30; Burgers & Leonardus 1998, 41; Lentjes 2016, 103.
[109] Goffredo 2011, 91-94. According to Goffredo, isolated settlement began in this area around the end of the 6th century BC.
[110] Marchi & Sabbatini 1996, 99-103.
[111] McCallum & Hyatt 2014.
[112] Battiloro 2017.
[113] For Salentine (Messapian) sanctuaries, see Lamboley 1996, 445-450. For the sanctuary at Madonna delle Grazie see Ciancio & Radina 1983. A small sanctuary is reported at Salentino near Acquaviva delle Fonti on the Murge with ashy deposits containing burned animal bones, clusters of pots and some agricultural tools: Andreassi 1978, 518-519. The scanty evidence for religious cult in Peucetia is summarized by Greiner (2003, 183-184) and L. Todisco 2010. A few pre-Roman sanctuaries are known in Daunia, at the N end of the region, at Tiati and Lucera (though the latter dates mainly to the Roman period): Antonacci Sanpaolo 1999, 2001) and in the SW, at Ascoli Satriano where Oscan and Campanian influences were strong: Fabbri *et al.* 2000-2001. There was also a sanctuary at Canosa, San Leucio: Dally 2000.
[114] Lo Porto 1991, 65-70.
[115] Adamesteanu & Dilthey 1992, 78, 81. For the *touta utiana*, inferred from two dedications to Mefitis Outiana (Crawford *et al.* 2011, 1393-1394, Potentia 18 and 19), see Isayev 2007, 22.
[116] See the distribution map in Battiloro 2017, 45, fig. 2.1.
[117] Lo Porto 1991.
[118] Roubis & Aino 2013.

pool a short distance from the settlement. The third sanctuary, at the Bosco di Lucignano, ca. 6km NE of Montescaglioso, still in modern Basilicata, but near the border with Puglia, is known only from votive material in Matera Museum, thought to have been excavated by Ridola early in the 20th century.[119] It marks the furthest intrusion of Lucanian culture into Central Apulia.

Another cult place at Banzi near the north end of the Fossa Bradanica and towards its western edge is not included by Battiloro in her map of Lucanian sanctuaries, perhaps because she considers it to be Samnite rather than Lucanian. It nevertheless shows the extent of Oscan culture in the northern part of the Fossa Bradanica in this period. It was, as usual with Oscan sanctuaries, associated with a spring, and was located on low ground, a short distance to the NE of the settlement of the same date.[120] Two votive deposits were excavated, one of which contained typical miniature vessels and terracotta female figurines, the other mainly metal objects including iron spears, bronze belts, items of personal adornment and coins. The sanctuary continued into the Roman period and was the find-spot of the famous *Tabula Bantina* (see Chap. VIII.9.i).

It is remarkable that no Oscan type sanctuaries are known in the central part of the Fossa Bradanica in the vicinity of our Survey Area, although it might have been expected that the settlements on both Monte Irsi and Irsina would have had communal sanctuaries if they had been self-governing Oscan communities. It is of course possible that there are votive deposits connected with both settlements still waiting to be discovered, but in the present state of the evidence it must remain doubtful that either settlement was fully Oscanized.

ii. Household cults

The Oscan peoples, like the Greeks and Romans, also had household cults. At Roccagloriosa in western Lucania, the large domestic building already mentioned was centred on a courtyard in which there was a small altar for burnt offerings surrounded by a layer of ashes. Scattered across the area there were terracotta figurines of an enthroned goddess, miniature vessels and fragments of a wash-basin (*louterion*).[121] Similar figurines were found in the farmhouses at Montegiordano and Masseria Nigra near Viggiano, noted above. In other cases, *thymiateria* are the main objects indicative of cult. Three were found associated with other votives in a small shrine in a farmhouse at Tolve, Valle di Chirico,[122] and three others in one of the rooms in House D at Oppido Lucano, dated to the 4th century BC.[123]

Household cults of this kind are not a normal feature of Peucetian culture. *Thymiateria* with tall stems and complex mouldings are rare, and are associated with burials, not with domestic shrines. An outstanding example with feline feet from a tomb on Botromagno is in geometric bichrome ware and pre-dates the rise of Oscan culture in the area.[124] Similarly, miniature vessels are rare finds from settlement contexts on Botromagno,[125] but they were occasionally deposited as grave goods in burials of the 5th and 4th centuries.[126] There are also some terracotta figurines known from the site, mostly draped female figures of conventional types, standing or seated and wearing a *polos*. Small groups of them have been found deposited as grave goods in burials of the late 4th and 2nd centuries BC.[127] Most of the fourteen fragments of figurines published in *Gravina II* (cat. 1628-1642) were found redeposited in contexts of the 2nd/1st century BC and may have been derived from earlier burials. Two pieces were earlier (cat. 1628 and 1640, a plaque), but neither comes from a context of domestic cult.

By contrast, our field survey on San Felice produced a remarkable number of terracotta cult objects. They include two miniature one-handled cups (Nos.574 in wheel-made painted ware and 1215 in plain ware), a dozen or so *thymiateria* (Nos 312, 443, 566a-c, 617-623), four theriomorphic feet and legs (Nos.2071-2073), and a wheel from a miniature cart or chariot (No.2074). They probably range over a period of at least 300 years (6th – 4th century BC) since No.312 is made in the impasto technique and Nos.566A-C in the geometric monochrome technique of the Early or Middle Iron Age; the *thymiateria* supported on horses' legs also belong to the geometric pottery tradition, with comparanda in Daunia. Nos.617-623, on the other hand, are wheel-made. They may be compared with Lucanian examples, but since *thymiateria* were evidently circulating at San Felice much earlier, the use of them cannot be supposed to have been learned from the Lucanians, even if the form of the later pieces has been influenced by Lucanian examples. The fragments were scattered over too wide an area to have come from a single votive deposit, and so are unlikely to come from a communal sanctuary;

[119] Lo Porto 1973, 223-224; Battiloro 2017, 254-255.
[120] Marchi 2016, 68; Masseria 1991.
[121] Gualtieri & Fracchia 1990, 101-136.
[122] Russo Tagliente 1992, 171-172.
[123] Lissi Caronna 1990-1991, 271-272.
[124] Herring 2000, 160-163, from Tomb 9, dated by the excavators to the 2nd quarter of the 5th century BC.
[125] A solitary example in the corpus in *Gravina II* (cat. 1174) is from a Late Hellenistic context, and may have been a lid.
[126] Andriani & Laricchia 2007, 102 (jug), 118 and 119 (*kantharoi*), 149 (overpainted).
[127] E.g. *Gravina (PBSR) II*, 123-125 and pl. XX-XXI from pit grave S17, late 4th century; 140-142 and pl. XXII from pit grave S5, 2nd century BC.

but they may have originated as votives in smaller household shrines, or perhaps as grave goods in tombs which have been ploughed out. They were presumably a local speciality on San Felice.

The cult of ancestors in Peucetia

Most of the evidence for cult practices in Peucetia is linked to burials. The fact that terracotta figurines, miniature vessels, *thymiateria* and other artifacts normally associated with cult are mostly found in graves suggests that the dead were treated with religious devotion. Moreover, the custom of burying their dead inside their settlements shows a willingness to incorporate the deceased ancestors in the ongoing life of their descendants. The practice is particularly obvious at Monte Sannace where some of the tombs of the élite families located on the acropolis were incorporated in later buildings, showing the continuing importance of the ancestors in the life of the whole community.[128] The same was probably the case on Botromagno where the grandest tombs were also clustered in the central part of the settlement.

5. Burial customs

i. Extended burials

It is frequently supposed that the Oscan peoples inhumed their dead in the extended supine position, and that the spread of this custom in areas where flexed *rannicchiato* burial had previously been the practice is a sure sign of Oscanization. It is certainly the case that in the course of the 5th and 4th centuries, supine burial became the standard practice over much of Lucania, but the process was gradual and barely touched some areas which in other respects would be considered Lucanian.[129] The spread of the custom can be traced, for example, at Torre di Satriano and Tricarico-Serra di Cedro,[130] but at Cancellara, Banzi and Lavello *rannicchiato* burial, with the dead laid contracted on either the left or the right side, remained the normal practice at least down to the middle of the 4th century,[131] and at Oppido Lucano the two customs seem to have been practised simultaneously in the first half of the century.[132] At Pomarico Vecchio the inhabitants buried their dead contracted but lying on their backs,[133] as they sometimes did on Botromagno in the late 5th century.[134] In the Fossa Bradanica extended burial began to be practised around the beginning of the 4th century at Timmari,[135] and apparently at Irsina,[136] but not at Monte Irsi or Montescaglioso.[137]

Extended burial was not therefore an invariable aspect of Oscanization. Moreover, the introduction of it into areas which had previously practised flexed burial is not on its own a reliable indicator of growing Oscan influence, since the practice could equally well have been adopted from the Italiote Greeks; but, if a corpse was laid out extended and equipped with grave goods typical of Lucanian or Samnite burials, there is some reason to suppose that the deceased had belonged to that cultural group. Andrea Montanaro has argued on this basis that a number of individuals buried in the extended position in the Peucetian necropoleis at Ruvo, Rutigliano, Torre a Mare, Toritto and Gravina were Samnites.[138] Many of them were males, buried with weapons and varying amounts of body armour. He sees them as belonging to two social classes. Some, with relatively modest grave goods, would have come as mercenaries, whereas others with more splendidly equipped tombs would have been individuals of high rank, who had made their way into the ruling class of the Peucetian settlements. Montanaro's assumption that these intruders were Samnites is not improbable since, as we have seen, the Samnites controlled the northern part of the Fossa Bradanica and garrisoned Silvium on the W edge of Peucetian territory; but the argument is unsafe because it ignores the fact that some Peucetian peoples may have adopted Oscan customs and buried their dead in the extended position in imitation of Samnite or Lucanian burial practices. Nevertheless, it illustrates the profound influence of the Oscan-speaking peoples in Central Apulia in the 4th century BC.

ii. Flexed (rannicchiato) *burials*

With a few exceptions (noted above) the normal mode of deposition in Peucetia continued to be *rannicchiato*, as in some parts of Lucania. Around the middle of the 5th century a new type of tomb, the *tomba a semi-camera* or half chamber tomb, came into general use in Peucetia for élite burials.[139] They were lined and floored

[128] Ciancio 1989, 130; 2009, 315-316; 2010b, 230-231.
[129] Di Bisceglie 2015.
[130] Torre di Satriano: Holloway 1970, 10. He dates the change there to around the middle of the 5th century. Tricarico, Serra di Cedro: Bottini 1992, 387; Di Bisceglie 2015, 85.
[131] Cancellara: Fabbricotti 1976; Banzi: Nardella & Setari 2008, 17; Lavello: Russo1988.
[132] Lissi Caronna 1972, 512-514, 521-527 (three tombs with *rannicchiato* burials); Di Bisceglie 2015, 84 (extended burials).
[133] Barra Bagnasco 2000; Carando in *Pomarico Vecchio I*, 279.
[134] Ciancio 2004, 32-34. Tomb 10, late 5th century BC.
[135] Lattanzi 1980, 260; Lo Porto 1991, 60. Contracted burial remained more frequent.
[136] Bottini (2016, 82-84) publishes a report written in 1936 of the excavation of both extended inhumation and cremations burials in the area of Piano delle Croci at Irsina. There is a sketch drawing of both types of burial, but the objects found have not been identified.
[137] *Rannicchiato* burials at Monte Irsi: Laurenzana 2016; Small in Monte Irsi, 24-30; at Montescaglioso: Lo Porto 1988-1989, 359-380.
[138] Montanaro 2010; cf. Marchi 2016, 74-75.
[139] The spectacular *Tomba del Principe*, excavated at Ruvo in 1833 with lavish grave goods of the late 6th century may have been an early example of the type, but no illustration of the tomb is known: Montanaro 2007, 167-180, 440-488.

with stone slabs and roofed with transverse blocks of stone. The dead laid out in them were equipped for the afterlife with a great array of pottery vessels, bronze and iron utensils, and objects of personal adornment. Many have been robbed, either in antiquity or in recent times, but enough have been discovered intact, or only partially looted, to give a clear impression of the funerary custom. There are notable examples at Monte Sannace and on Botromagno.[140] All were of adult males who were buried with armour and weapons, and with items that proclaimed their absorption of the key elements of Greek aristocratic culture: the *symposium* (demonstrated by the principal vessels) and the *palaestra* (represented by the strigil). But aristocratic women might also be buried in such tombs as can be seen at Bitonto where the only semi-chamber excavated in the Peucetian necropolis contained the remains of a middle-aged woman who was equipped with the richest array of funerary goods of any of the tombs in the burial ground.[141] The 53 objects included spits for cooking meat for a banquet and red-figure and other vases suitable for a symposium, but no fibulae or loomweights which might have been expected in a female burial. There are usually problems in distinguishing which grave goods may have been used in a funerary feast and which may have been intended for use by the dead in the afterlife (supposing there is some validity in making such a distinction); but it seems probable in this case that the iron spits and most of the vessels were used initially by the mourners, and became taboo items to be deposited in the tomb.

In the second half of the 4th century a few proper chamber tombs appeared, built of stone slabs and approached by entrance corridors. They were intended to be reused for further burials of the same family group. A robbed example was excavated on Botromagno.[142]

These were the tombs of the élite. There were also numerous simpler burials in stone sarcophagi or simple pit graves, generally with less lavish grave goods. In the 4th century it became common practice to include a *mortarium* for preparing food, and a one-handled cooking pot (*chytra*) in the tomb furnishings.[143] Since the *chytrai* usually show no signs of burning they must be ritual objects to be used in the banquet that would be prepared for the dead in the Underworld.

iii. Neonates

The custom of burying still-born or very young infants beneath the floors of houses continued in Peucetia, though by the 4th century they were generally covered with tiles rather than being contained in pots (as *enchytrismoi*).[144] Four infant burials covered with tegulae were found on Site A below Botromagno, two of which had a few grave goods of the 4th century BC.[145] Three others, less securely dated, were found on Site DA on Botromagno, one of them covered by a tegula and two by inbrices. Three more infant burials of the 4th or early 3rd century BC were excavated on Site H, also on Botromagno. All were in shallow pits, but only one was covered by a tegula.

iv. Cremation

A few privileged dead were cremated in both Lucania and Apulia. The custom is found intermittently at Torre di Satriano in the late 6th century,[146] at Serra di Vaglio in the last half of the 5th century,[147] and at Roccagloriosa in the second half of the 4th.[148] It is well attested in the Fossa Bradanica, at Monte Irsi in the last half of the 5th century,[149] at Irsina, possibly in the same time frame,[150] and most conspicuously at Timmari in Tomb 33 which shows strong Macedonian influence in the last third of the 4th century.[151] Cremation is rarer in Apulia in this period, but has been found at Monte Sannace in a tomb dated to the second half of the 5th/ first half of the 4th century BC.[152]

6. Burials as evidence for Social structures

During this period there is evidence that the social structure of both Lucanian and Peucetian communities was becoming increasingly complex.

i. The élite: Apulia

By comparison with the lavish princely burials of the 6th century, even the most luxurious tombs of the 5th century are more modest, suggesting that a new, or at any rate a more broadly based, élite class, was emerging in Peucetia. As we have seen, some of its members had close links with the Pythagorean societies of Metaponto. They had a deep appreciation of Greek literary and artistic culture, and throughout the last three quarters of the 5th century they showed their preference for good quality Attic red-figure pottery, and (after ca. 440 BC) for some of the best products of the new Italiote red-figure workshops at Metapontum. After the end of the 5th century the direction of this cultural current changed as a consequence of the failure of Athens in

[140] Ciancio 2010b, 231-232. Monte Sannace: Scarfì 1962, 121-134; Botromagno: Silbíon, 69-115.
[141] Riccardi & Depalo 2003, 101-109.
[142] *Gravina (PBSR) I* ,137-8 and pl..25; *Gravina I*, 30.
[143] Lanza Catti 2010, 101.
[144] Depalo 1989, 95.
[145] Site A: *Gravina (PBSR) I,* 136-7, 145; Site DA: *Gravina (PBSR) II*, 143; Site H: R. Whitehouse *et al.* 2000, 192-194.
[146] Brown 1970, 47-49 and plates 93-94; Di Bisceglie 2015, 82.
[147] G. Greco 1996, 278-279.
[148] Gualtieri & Becker 1982.
[149] Laurenzana 2016, 49-50, tomb 4.
[150] Bottini 2016b, 82-86.
[151] Canosa 2005, 2007.
[152] Galeandro & Palmentola, 2002-2003, 97.

the Sicilian Expedition, the growth of Tarentine power, and the decline of Metapontum. The best red-figure workshops were now in Tarentum, and Tarentine potters produced large numbers of splendid vases specifically for élite Peucetian patrons. Around the end of the 5th century or beginning of the 4th someone in the workshop of the Tarporley Painter developed a vase form close to the traditional Peucetian version of the column-krater to suit the Peucetian market,[153] and for much of the 4th century Tarentine potters produced large column-kraters destined principally for Peucetia. Some were decorated with Greek mythological scenes of an abstruse kind which hinted at their owner's deep knowledge of Greek culture. Others show images of indigenous warriors preparing to depart for war or fighting on the battle-field. They may have been commissioned for use initially in the symposium, but their ultimate destination was the funerary equipment of the native warrior.

On many of these red-figure vases the Peucetian warrior is shown on horseback, or standing in heroic nudity beside his horse, in a funerary shrine. They show that the Peucetian élite were trained to fight as cavalry, or at any rate to ride into battle on horseback rather than riding in chariots as in the previous period.[154] In the richest burials the dead were interred with full body armour (helmet, cuirass, belt and greaves), and several weapons including one or more spears, javelin, and sometimes sword as well as pottery – but not horse bits, presumably because the horses of the dead remained in active use.[155]

ii. Lesser warriors: Apulia

More commonly adult males were buried with fewer pieces of body armour, sometimes only a belt, and with a spear and/or a javelin. There is no clear line of demarcation between these and the more opulent burials of the élite, and there are many gradations in the quality of their funerary assemblages. Two warrior burials of the early 4th century from the necropolis of Padre Eterno below Botromagno show different sets of military equipment, typical of the upper range of this class. One (Tomb 4) was buried *rannicchiato* on his right side, and provided with belt, helmet, greaves, spear and javelin; another (Tomb 10) was buried on his back with limbs contracted, wearing belt and greaves, and equipped with spear and javelin, but no helmet.[156] Both were provided with numerous other grave goods including red-figure column-kraters and other vases that might be used in a symposium. But most adult males were buried with less equipment. The analysis by De Juliis of the arms and armour found in the necropolis of the Contrada Purgatorio at Rutigliano is revealing.[157] Almost all the burials of adult males contained arms, generally a single spear, and in a few cases two. Some contained pointed iron objects which may have been javelins; thirteen tombs contained a bronze belt; one of these had two. The Accurso *necropolis* on Botromagno was much poorer in arms and armour: one burial (Tomb 4) contained a single spear; another (Tomb 5) a javelin; and a third (Tomb 14) a belt and spear.[158] There was no anthropological analysis of the skeletons, but unless the males formed a disproportionately small part of the cohort, we must conclude that most of the men buried in this necropolis were not provided with any military equipment.

It would seem that in war each adult male equipped himself as best he could. At the apex of society there was a class of élite warriors who rode into battle on horseback. Below them was a much larger class of warriors who fought on foot with whatever arms and armour they could provide. The least wealthy are likely to have fought as javelineers, like those who served with the Athenian army in the Syracusan expedition. Some may have had no military role at all.

iii. Lucania. Élite and warrior tombs

Burials in Lucania after the formation of the Lucanian *ethnos* in the late 5th century show a similar social stratification. There are full panoplies of helmet, breastplate, belt and greaves from Laos,[159] Paestum,[160] and from an unrecorded site in Lucania, now in the museum at Potenza;[161] but in most Lucanian tombs dead males of military age were buried with less armour – the norm being the belt and 3-disc breastplate of an Oscan warrior. Horse bits are rare, in spite of the fact that mounted warriors are depicted on the walls of several Paestan tombs, but a rich tomb at Timmari of ca. 340 BC contained an iron horse bit together with an array of grave goods including a bronze belt, two iron spear heads, a strigil and much Apulian red-figure.[162] An outstanding individual who was cremated and buried ca. 330 BC in tomb 33 at Timmari had an iron horse bit as well as helmet and cuirass, military grappling hooks, sword and javelin and numerous ceramic vessels.[163]

[153] Lanza Catti 2010, 102.
[154] There is evidence too for an equestrian élite in Daunia, summarized by E. Antonacci Sanpaolo (1995, 87).
[155] Cf. a burial with full panoply at Conversano: Chieco Bianchi Martini 1964, 161-164; Ciancio 2013c. Also a panoply in Lavello, Tomb 669, 2nd deposition, late 4th century: Bottini & Fresa 1991, 49-61. The same tomb contained a horse frontal (*prometopidion*) and a horse bit. The site was Daunian but under strong Samnite influence.
[156] Venturo 1988-1989, 203-204 (Tomb 4); Ciancio 2000, 2004, 29-34; 2005, 49-53; Carpenter 2003, 16-17.
[157] De Juliis 2006c.
[158] Andriani. & Laricchia, 2007.
[159] E. Greco & Guzzo 1992.
[160] Pontrandolfo & Rouveret 1992, 380-385, Gaudo Tomb 2.
[161] Bottini 1989.
[162] Lo Porto 1991, 40-43, Camposanto tomb 12.
[163] Canosa 2007.

Horse bits were sometimes also dedicated in Lucanian sanctuaries.[164]

iv. Artisans

In peacetime most warriors are likely to have been farmers or artisans, and this is reflected in some funerary assemblages. In one tomb in Peucetian Bitonto, the dead man was provided with a sickle and tongs, as well as belt and spear; in another he was buried with a pruning hook, sickle and spear.[165] The tongs suggest that even blacksmiths might be called on to fight.

There is ample evidence to show that a class of specialist artisans had developed in both Peucetia and Lucania. Much of it comes from pottery. It is clear that there were local workshops all over South Italy, in indigenous as well as Greek communities, producing a wide range of pottery types, including fine wares.[166] Some pottery kilns excavated at the site of Padre Eterno below Botromagno probably date to this period.[167] No kilns for firing red-figure pottery have yet been found in any indigenous settlement, but the distribution pattern of the products of some red-figure workshops leaves little doubt that in the late 4th century BC there were potteries producing the ware, located in Canosa, Ruvo, and probably in other Central Apulian settlements as well.[168] Such pieces may have been made by Greek artisans working in the indigenous centres. There are no inscriptions on figured pottery to prove this, but tiles stamped with the names of the artisans who made them, found on both Apulian and Lucanian sites, suggest that skilled workers in indigenous communities in the late 4th and early 3rd centuries BC were either Greeks or Hellenized natives: Dazimos, who stamped tiles found in the vicinity of the Peucetian settlement at Difesa San Biagio with the inscription ΔΑΖΙΜΟΣ ΚΕΡΑΜΕΥΣ ΧΑΙΡΕ (The potter Dazimos [says] "hail/ farewell"), had a typically Iapygian/ Apulian name although he expressed his greeting in Greek;[169] but other potters who stamped tiles from the same area had Greek names (Plator and Biotos), as did Megacles who stamped a tile found at Pomarico Vecchio,[170] and *Nikomachos kerameus* who dedicated a pyramidal clay votive to Herakles in the Lucanian sanctuary at San Mauro Forte in the upper Cavone valley.[171] More directly relevant to our Survey Area is Herakleidas whose Greek name appears stamped on a tile from San Felice.[172] The piece is discussed more fully in the List of Sites (Site 223).

v. The lower classes, slaves

As we have seen, the poorer graves suggest that there were also members of the community of lower social status than the citizen-farmers and artisans. Some may have been slaves, who certainly existed in this society, as we can tell from the shackles found in the sanctuary at Timmari which were presumably dedicated by a slave who had been liberated.[173] Most slaves are likely to have been captured in war, like the defeated warriors depicted by the Prisoner Painter with their arms tied, awaiting the end of the battle.[174] Some would have been put to work in the quarries cutting out the large blocks used in the fortification walls of the major cities, while others may have been used in agriculture, working on the new farms.

vi. Grave goods as evidence for social change

During the course of the 4th century, the funerary assemblages tended to become larger, but at the same time less opulent. Amber pendants, which had been a sign of luxury in the 6th and 5th centuries gave place in the 4th to more modest ones in worked bone.[175] Metal fibulae became rarer and were more often of iron than bronze. Some red-figure pottery of good quality was still deposited in tombs, but much of the red-figure production that made up the funerary assemblages in the last half of the century consisted of multiple pieces serially produced by less specialized artisans who painted them with standardized motifs (especially female heads), endlessly repeated. They are likely to reflect the demands of a broader class who had no understanding of the narratives implied by the scenes on red-figure pottery at its best.[176] Many of our fragments from San Felice come in this category (see Cat. 7 intro).

These mediocre products did not, however, altogether drive out more sophisticated pieces. A few more skilled artisans such as the Darius Painter and the Baltimore Painter continued to produce high-quality pots painted with narrative scenes for élite clients in the main Peucetian centres and neighbouring areas.[177] Two panathenaic amphorae found in a tomb excavated in the 1970s on Botromagno are good examples of fine

[164] As at Rossano: Adamesteanu & Dilthey 1992, 69 and tav. XLII.
[165] Ciancio 2010b, 235. Riccardi 2003, 59-65, figs. 44, 49, 60-61.
[166] Notably black-gloss pottery: Di Giuseppe 2012.
[167] Ciancio 2004, 20. The excavation of the best preserved, a circular kiln, yielded unspecified pottery wasters.
[168] Robinson 1990. The production of these two centres can be distinguished from that of Tarentum by archaeometric analyses: Robinson 2014.
[169] Lo Porto 1988–1989, 402-403; Roubis 2010–2011.
[170] Maturo 1997, 250 and tav. 98.10. Maturo suggests that Megakles was an important personage in the community, but the analogy of other stamped tiles leaves little doubt that he was the potter who made the tile.
[171] Giangiulio 1993.
[172] Small 2006, 331-332.
[173] Lo Porto 1991, 186-187 no. 308:
[174] *RVAp* I, 73-77; Herring 2006.
[175] Riccardi 2010, 357.
[176] Riccardi 2014; Ciancio 2014.
[177] Lanza Catti 2010, 110: Works of the Darius painter depicting the conflict between Greeks and Persians have been found at Irsina, Timmari, Altamura, Conversano, Ceglie, Ruvo, Canosa and Arpi.

late Apulian red-figure with scenes painted by the Underworld Painter.[178]

7. City status and state formation

i. Peucetia

As we have seen in the previous chapter, it is probable that the Peucetians in the 6th century were a tribal *ethnos* ruled by a king-overlord, who had his seat in Ruvo, and probably had authority over other Peucetian communities in the emerging proto-cities of the region. It was a period when monarchical forms of government were still in place in other parts of Italy, including Rome and Etruria. Opis, king of the Peucetians represented dying on the Tarentine victory monument at Delphi (above sub-section 2.i.) may have been just such a hereditary king. That seems less likely in the case of the king of the Peucetians (and the king of the Daunians) who, according to Strabo (VI.3.4) took part in the war over the foundation of Heraclea in 433 BC (above sub-section 2.iii.c) since by this time the funerary assemblages suggest that power had been transferred to a more broadly-based aristocracy centred on the emerging city-states.[179] It is probable, therefore, that Strabo (or rather his source, perhaps Artemidorus) was using the word king (βασιλεύς) to refer not to a hereditary monarch, but to a war-leader appointed in some way to command their combined army in war, just as in an earlier chapter in the same book (VI.1.3) he uses the same word to refer to the "king" appointed by the magistrates of the Lucanians to command them in war. There are obvious analogies with the dictators appointed by the Romans after the end of the monarchy to provide unitary command in military emergencies.

The Peucetians must have maintained some form of tribal organization since they could still come together to field an army at the time of the Social War that broke out in 91 BC (see Chap. VIII.9.ii), but other evidence supports the view that the city effectively replaced the *ethnos* as the main unit of socio-political organization in the course of this period. In Livy's narrative of the Roman conquest of North Apulia it was the "cities", Arpi, Canusium, and Luceria with which the Romans interacted, rather than the ethnic groups of Daunians and Peucetians. Similarly, Diodorus Siculus says nothing of the Peucetians in the account of the Roman siege of Silvium (see Chap. VIII.3.i), although he reports that it was garrisoned by (ethnic) Samnites. These accounts give the impression that individual Apulian communities had broken ranks with their broader ethnic group and were acting independently in their own interests. The numismatic evidence, on first sight, supports this view. The people of Ruvo (Latin *Rubi*) in the late 4th or early 3rd century issued silver diobols and obols in their own name in Greek in abbreviated form (PY for Rubestini (?) – the inhabitants of Rubi), with no explicit reference to the Peucetian *ethnos*.[180] Caelia also minted silver diobols in this period,[181] and other Peucetian cities followed suit in the 3rd century (see Chap. VIII.2.1.c). This suggests that the federal system was coming under increasing strain as the larger communities which composed it laid claim to the status of autonomous city states on the Greek model.

The evidence of the coins can, however, be seen in a rather different light. These early issues of both Caelia and Rubi included a series of obols with frontal images of a bull's head with sacrificial fillets dangling from its horns on the obverse. The motif appears first on obols of Rubi datable, probably, to the period between Alexander of Molossus and Pyrrhus, and is picked up again on obols of Caelia datable ca. 250-225 BC.[182] The name of the city, or rather its inhabitants, is given in abbreviated form (PY, KAI) between the horns. Similar stamped impressions of a frontal bull's head can be seen on two loomweights from Monte Serico (Site V13) reported by Carrabba (1989, 111 figs. 57, 58) where Peucetian influence remained strong in this period, as we have seen,[183] and it is also found on two other loomweights from Monte Sannace,[184] and on one found on San Felice in our field survey (No.1946; cf. also No.1949 from Site 813, with the discussion in the Cat. 22). The fact that the motif recurs so frequently in Peucetian contexts suggests that it was adopted by the Peucetians as an emblem of their *ethnos*, in much the same way as the Phocians in Central Greece stamped the bull's head motif on their coins as a symbol of their confederacy, from the earliest issues of ca. 600 BC down to the latest, of the Hellenistic period.[185] It is likely, then, that the coins of Rubi and Caelia conveyed a double message: these communities were both cities, analogous to Greek *poleis*, and they were also members of a Peucetian confederacy.

The process of state formation in Peucetia must have involved creating a system of territorial organization in which the smaller settlements were subordinated to the larger ones. We have seen the beginnings of this

[178] Lo Porto 1977, 734-735, tav. CIV.1-2; Ciancio 2004, 38-39; *RVAp II*, 536 nos. 303, 304.
[179] Cf. R. Whitehouse *et al.* 2000, 308, Herring 2000.
[180] Talericio Mensitieri 2004, 420; cf. Siciliano 1989; *HN.Italy2*, 91 no. 813.
[181] *HN Italy*^{2}, 6-87 nos. 757, 758.
[182] *HN Italy*^{2}, nos 760, 761 obv (Caelia); 811 rev, 812 obv (Rubi). For the early chronology of the Rubi obols, see Libero Mangieri 2010, 58; Talericio Mensitieri 2004, 420.
[183] As is shown by another loomweight from the site inscribed in Messapic with an indigenous Apulian name with the root Dazim[...: Carrabba 1989, 87-88, MS-1, fig. 1.
[184] *Monte Sannace*, 198, tavv. 286.7 and 362.12).
[185] The closest parallels are with coins of the 4th Phocian period (421–371 BC) and later, on which the bull's horns were regularly decorated with sacrificial fillets. The motif continued in use down to the C2 BC: Head 1884, p. xxvi, pl. III 14, 21-25.

process in the previous chapter. It is likely that the larger settlements functioned as the main market centres for the surrounding territory, where the agricultural produce could be sold, other goods exchanged, and the products of local workshops acquired, and provided a safe haven in time of war. We shall see below how the topography of the minor settlements around Botromagno, revealed by our field survey, fits this interpretation.

ii. Lucania

The Lucanians too had a tradition, real or invented, that they had once been ruled by kings, and a Lucanian patron erected bronze statues to them in the communal sanctuary at Rossano;[186] but when reliable documentary sources begin, hereditary monarchs had long gone. There were, however, still the "kings" referred to by Strabo who were chosen to command the Lucanians in war by those who held magistracies (ὑπὸ τῶν νεμομένων αρχάς)[187] – presumably the magistrates of the individual cities. There must therefore have existed federal institutions which coordinated the roles of the constituent communities at least in time of war, and probably maintained the communal sanctuary at Rossano.

For the system to work effectively a rather different hierarchy of settlements was developed in which minor settlements were subordinated to major ones to create larger regional units known as *toutae*.[188] Each *touta* was ruled by magistrates (*meddices*) who were elected annually from the élite of the community. How many of these territorial units there were is unknown, but *meddices* are documented only in some of the largest settlements – at Roccagloriosa (ca. 36 ha), Laos (ca 20 ha), Raia San Basile (ca. 20 ha), and Bantia (ca. 20 ha).[189] To these may be added Serra di Vaglio (ca. 24 ha) where the rule (ἀρχή) of Nummelos is proclaimed in Greek. There is also a magistrate with the title of *pomvok(os)* recorded in an inscription at the federal sanctuary at Macchia di Rossano.[190] In the present state of the evidence, the only record of Oscan magistrates in the Fossa Bradanica is from Banzi near the N end of the Fossa where the community was probably Samnite rather than Lucanian. It is likely, therefore, that there was a Lucanian *touta,* as yet unknown, nearer to our survey area, perhaps at Timmari centred on the important sanctuary.

iii. Consolidation of the urban communities

In both Peucetia and Lucania the process of city development was underpinned by the consolidation of the urban community. This is shown both by the greatly increased number of individuals given proper burial in the communities' necropoleis and by the spread of isolated farms into the open countryside in the 4th century BC. The distribution of small rural sites in both the area of the Older Surveys and in our own Survey Area illustrates this development very clearly (see below). It was a widespread phenomenon which probably implies that land previously owned by the "chiefs" (or by chiefs in the name of their kinship groups) was redistributed to small farmers. The economic status of most of these settlers is likely to have been rather low, but the policy may nevertheless have brought more of the population into the lower levels of the warrior class.[191] The development went hand-in-hand with the fortification of the main settlements with walls which enclosed a large enough area to provide refuge for the farmers, their families and their livestock in time of war.

iv. Coinage as a means of hoarding wealth

Coins minted by the Italiote cities began to appear in both Lucanian[192] and Apulian[193] settlements in the late 6th century BC. At first they were mainly staters and diobols which could be hoarded for their value as silver bullion, but by the end of the 5th century smaller divisionals were also available. Generally it was only the silver coinage that circulated beyond the territories of the Greek cities where they were minted.[194] The pattern of distribution is different in Lucania from Peucetia: in Lucania coins were frequently deposited in sanctuaries, either given as votives to the deity or entrusted to the priests for safeguarding. The contents of one such hoard from the sanctuary at Timmari gives a good impression of the range of coins that reached the central part of the Fossa Bradanica. The 253 silver coins extend in date from the late 5th century to the middle of the 3rd century BC, and came predominantly for Tarentum and

[186] Recorded in a dedicatory inscription, *Imagines Italicae* III, 1364-1365, Lucania / Potentia 1. For the controversies on its interpretation, see Isayev 2007, 130-131.

[187] Strabo VI.1.3. Strabo, writing in the time of Augustus refers to the custom as having been in use in another age (ἄλλον χρόνον).

[188] For the problems of interpretation of the term, see Isayev 2007, 21-22. For the development of civic institutions in Lucania: Gualtieri 2004.

[189] *Imagines Italicae* III, 1328-1331 (Roccagloriosa); 1344-1347 (Laos);1360-1362 (Raia S. Basile); 1437-1445 (Banzi, *Tabula Bantina*). The estimated size of Roccagloriosa is of the fortified area and includes the acropolis, much of which was uninhabitable, but excludes the suburb. The figure for Bantia is that of the Samnite/Roman city. The previous Daunian settlement had been much larger: Marchi 2008, 57.

[190] *Ibid.* 1364-1365.

[191] Edward Herring (2000, esp. 68-69) has argued that at some time in the late 6th or early 5th century the native communities experienced some form of socio-economic crisis, as contact with the Greeks reached a new level of intensity and that this tension was resolved by a period of social re-organisation which may be seen as part of state-formation. I see this as a long drawn-out process. Civil discord was already a problem in the time of Pythagoras, but social reorganisation did not take place until the 4th century.

[192] Parente 2009.

[193] Travaglini & Cammileri 2010.

[194] Gorini 2013, 119.

Thurium, with smaller quantities from Naples, Velia, Terina, Heraclea and Metapontum.

There was no such custom in Peucetia, where the evidence for coin circulation comes from excavations in settlement sites and cemeteries. Libero Mangieri has tabulated the range of coins that reached Botromagno from the Greek cities on the coast.[195] Their number and variety gradually increased from their first appearance in the late 6th century down to the end of the 4th century, after which the usage of Greek coins began to contract again as they gave place to Romano-Campanian issues (see Chap. VIII.2.i.a). Tarentum is the most constant source in all periods, but in the 6th century coins also arrived from Sybaris and Caulonia; in the 5th from Metapontum, Poseidonia and Thurium; in the 4th from Metapontum, Heraclea, Naples and Syracuse. The moderate quantity of these coins (56 pieces), and their wide distribution on the site, suggests that a significant proporton of the population was involved in commercial transactions with Greek merchants.

No coin hoard has yet been found on Botromagno, but a hoard of silver coins found in Altamura not far from our Survey Area gives a more detailed picture of the range of coins that reached the adjacent part of the Murge between ca. 340 and 330 BC. It contained many earlier pieces, some of them minted in the late 6th century. They come from various mints in Magna Graecia, in order of frequency: Tarentum, Metapontum, Veleia, Thurium, Croton, Terina, Caulonia, Poseidonia, Sybaris, and Heraclea. As usual, Tarentine coins predominated by a wide margin. The good condition of the coins, including the earliest pieces, shows that they were little used. It is likely, therefore, that the Greek coins were sometimes used for the exchange of relatively expensive items, but that their main value for both the Peucetians and Lucanians, at least down to the middle of the 4th century BC, was as a means of hoarding wealth.

The quantity of silver coins in circulation increased greatly in the second half of the 4th century when the Tarentines had to pay the "condottieri" generals and their armies whom they called in to fight off the threat from the Italic peoples in the interior. During the campaigns of Alexander of Molossus in particular, the output of silver coins was greatly increased to pay for the war.[196] Many of these coins passed into the hands of the Apulian and Lucanian "natives", perhaps in the form of payment for their services as mercenaries, or as spoils of war. At any rate, the number of coins found in "loose" contexts (i.e. not hoarded) is enough to indicate that coins were now being used by the indigenous peoples as a means of exchange, at least for major purchases.[197]

8. Private life

i. Changes in domestic activity

The artifacts from our Survey Area illustrate some significant innovations in the modes of daily life which were introduced in the Greek world and were adopted by all the peoples of South Italy in this period. They have been discussed in the introductions to the relevant parts of the catalogue but may be summarized here. The lidded casserole (λοπάς) in cooking pot fabric (Nos.1333-1343) transformed cooking and made it possible to produce the more refined meals that became fashionable in Sicily and Magna Graecia in the 4th century BC.[198] The invention of the hopper-rubber (Nos.2036-2039) made it possible to grind grain more efficiently, and so to make better bread. In black-gloss ware, the plate (Nos.836-845) was developed as a shape better suited to the new cuisine. New larger *dolia* (Type 2 in our catalogue) were made for storing produce, and especially for use in wine and oil production. Oil lamps were available but were little used in most communities.

ii. Signet rings

Another innovation was the use of signet rings made of gold, silver or bronze with bezels decorated with engraved images cut into the flat metal surface or into a semi-precious gemstone. Such rings had been fashionable in Old Greece in the archaic period, but they were not common in Magna Graecia until the 4th century when specialized workshops in Tarentum began to produce them in large numbers.[199] The use of them spread from there to the indigenous communities. Engraved finger-rings are only rarely found in native Peucetian or Oscan burials,[200] and few have been reported from the excavations of indigenous settlements, but they must have been much more widely distributed than these occasional finds suggest, since impressions made with finger-rings are frequently found on loomweights. There are notable groups from Oppido Lucano and Monte Serico in Lucania and from Monte Sannace in Peucetia. Seven were found on Sites

[195] Libero Mangieri 2001, 50.
[196] Cf. Talericio Mensitieri 2004, 413.
[197] Cf. Travaglini & Camilleri 2010, 361.
[198] Notably in Syracuse where Mithaecus and Archestratus were famous exponents of luxurious cuisine: Wilkins & Hill 1994 (Archestratus); Hill & Wilkins 1996 (Mithaecus); Dalby 1996, 108-111, 113-119.
[199] Alessio 1984, Guzzo 1993, 29-49, 178-184.
[200] E.g. Rossi 1989, 205 and tav. 376.3 and 3a from Tomb 6 on Monte Sannace, a carnelian with intaglio of ?Apollo. Cf. Mazzei 1995, 164-165 no. 97, gold ring from (Daunian) Arpi. Tomba della Medusa, end of 4th–2nd century BC. Lo Porto (1991, 49) records, but does not illustrate, a fragmentary bronze ring with oval-shaped bezel engraved with a dove sitting on the rim of a *louterion*, found at Timmari in a tomb of the end of the 4th or beginning of the 3rd century BC (tomb 24 on 1911, no. 15).

223 and five on Site 627 in our Survey Area (Nos 1941-1948). The analysis of the motifs imprinted by them suggests that nearly all should be dated within the 4th century BC, and several of them within the last quarter of the century, when the production of finger-rings with intaglio motifs reached its greatest height at Tarentum.[201]

The proliferation of engraved finger-rings in the indigenous societies says much both about the spread of a modicum of wealth among the general population in the 4th century and about the social organization of the community.[202] Seals were a mark of personal property and authority.[203] They indicated ownership and facilitated business. They might be worn by either men or women, but the individuals who used their finger-rings to stamp loomweights are most likely to have been women. They presumably used the same rings for other transactions connected with the running of their households.

9. Farming in the 5th – 3rd centuries BC

i. Carbonized seed analyses

The study of carbonized seed remains provides detail on the species cultivated in this period in South-East Italy. Broadly speaking, they show continuity from the previous period. Barley and emmer wheat are attested on all sites, and in most communities they must have formed the two principal bases of subsistence, supplemented by broad beans and other legumes. Einkorn (*Triticum monococcum*) has been identified at Roccagloriosa (by a single grain) and Monte Papalucio, but it was less popular than emmer or barley. On several sites, free-threshing (naked) wheats are well represented, confirming that the increasing popularity of bread wheats was not limited to the Greek *poleis*. Only two seeds of *T. compactum* were recorded at Roccagloriosa, but at Muro Tenente it was the most abundant cereal found in samples of the 4th/3rd centuries BC. Five seeds of *T. aestivum* were found in an amphora at Pomarico Vecchio,[204] and significant numbers of *T. aestivum* or *T. durum* were identified in the Messapian sanctuary of Demeter and Persephone at Vaste.

The analysis of the waterlogged vegetable remains in the sanctuary at Pantanello in the Chora of Metaponto by Lorenzo Costantini and Loredana Costantini Biasini shows a broadly similar picture.[205] Emmer was cultivated in all phases, but it was considerably less popular than free-threshing wheat and barley in the 4th century BC. Various forms of barley were cultivated, including 2-row hulled and 6-row naked forms. There was also a variety of legumes: lentils, broad beans and peas were grown for human consumption, and vetch and alfalfa for forage. The broad range of crops shows that the Metapontine farmers rotated cereals and legumes and diversified as far as possible to protect themselves against failures in single species.

Sue Colledge's analysis of a much smaller sample of carbonized seeds from a context of the 4th century BC on Botromagno shows a rather different picture. Hulled wheats, mainly emmer or einkorn, predominated in the sample, but there was also some free-threshing (naked) wheat and nine grains of hulled barley. There were eleven seeds of leguminous plants which might include vetches, peas, lentils or beans.[206]

By far the best evidence for the cereals cultivated in the Survey Area is provided by Angela Stellati's analysis of the carbonized plant remains from several parts of the 5th century BC building A on San Felice, excavated by the Superintendency.[207] In addition to some wood carbon (predominantly of cypress or juniper, and datable by context after the collapse of the building) she has identified nearly 2400 carbonized seed remains. Most were found in two rooms which were evidently used for storing grain. They were nearly all (97%) from cereals. A few were of hulled wheats (emmer and einkorn), but the great majority were of barley, both 2-row and 6-row. Since there were baking ovens in these rooms, we can infer that the staple food on the site in this period was barley bread.

It seems that throughout the region farmers practised a relatively sophisticated form of agriculture, alternating cereals with legumes, and insuring themselves against crop failure by growing a variety of different species. The free-threshing wheats were generally less adaptable than the hulled varieties, and were more prone to disease, but they produced a better bread and could be ground on a quern or in a mill. The hulled wheats, including emmer and einkorn were more difficult to process since they had to be pounded in a mortar with a pestle to remove the hulls, but they were more disease resistant and tolerated a wider range of climatic conditions. Barley was sometimes milled (after it had been parched over a fire to detach the hulls in the case of hulled varieties), though barley grains were more often boiled to produce porridge. The preference for good-quality bread in some areas reflects the growing interest in a more sophisticated cuisine which spread among the élite classes throughout the Hellenistic world in this period. The fragments of hopper-rubber mills found on Sites 124, 303 and 347/8 in our Survey Area

[201] Alessio 1984.
[202] Foxhall, "Loom weights", in *Chora Metaponto III*, 539-554. at p. 547.
[203] Boardman 2001, 13, 235-236.
[204] Caramiello & Siniscalo 1997, 257.
[205] Costantini & Costantini Biasini 2018.
[206] Colledge 2000.
[207] A. Stellati, 2017 at pp. 186-188.

(Nos.2036-2038) suggest that bread wheat was widely grown here too, even though it is poorly represented in the sample of carbonized seeds from building A on San Felice.

ii. Pollen analyses

Elsewhere in South Italy a growing number of studies is throwing light on the agricultural practices of the period in a broader area.[208] A few pollen analyses from different parts of South-East Italy indicate that there were significant changes in land use throughout the region. At Arpi, in the centre of the Tavoliere, which was famous for transhumant sheep-ranching from Roman times until the middle of the 20th century, the spectrum of pollen from two contexts of the 5th and 4th centuries BC points to a largely deforested landscape with only occasional trees and shrubs. Herbaceous plants suitable for grazing animals predominate, but there was also good evidence for the cultivation of barley (the *Hordeum* group, which might also include einkorn) and wheat or less probably oats (the *Avena-Triticum* group which might also include some wild grasses). A significant amount of the pollen count (4–5%) came from olives, which might have been either wild or cultivated, but which, the researchers argue, are most likely to have been cultivated, if only because the percentage count is only slightly lower than the percentage of olive pollen in modern topsoil in this area which is now intensively planted with olive trees. Vine pollen, which is never abundant, was only found in the sample of the 4th century BC, in which it accounted for only 0.3% of the total, but since vine pollen was entirely lacking in the modern sample even though vines are cultivated in the area, little can be inferred from this beyond the fact that vines, wild or (more probably) cultivated were present in the area. A comparison between the samples of the two periods suggests that there may have been a decline in cereal cultivation with cereals of the wheat/oats group practically disappearing, leaving barley as the staple crop. There was a slight increase in olive cultivation (from 3.7–5.0%), and grape vines appeared for the first time.[209]

A similar picture of mixed land-use with elements of open grassland, fallow and cereal cultivation in a largely deforested landscape emerges from the analyses of pollen from contexts of the Daunian period at Ordona.[210]

Other pollen analyses from several sites in the Chora of Metapontum illustrate the land-use patterns there in this period.[211] The samples are derived from several sites, and there are local differences between them (especially noticeable in the area of the water-source in the sanctuary at Pantanello where aquatic and wetland plants abounded), but in general they show the impact made by humans on the landscape of the Chora, with a mix of pasture, arable cultivation, and vineyards. There were olive groves in the driest areas, with a thin scatter of deciduous oak woods and patches of Mediterranean macchia. Stock-raising appears to have been the most important activity, attested indirectly by the presence of grazing plants in all three sites sampled, and more directly by the presence of spores of coprophilous (dung-loving) fungi in samples from Sant'Angelo Vecchio.

The picture obtained from the Chora of Metapontum is broadly similar to that from Arpi and Ordona, and it is seen again in the mix of pastoralism and arable cultivation with the tending of fruit trees and vines, shown by the spectra of pollen from samples at Pomarico Vecchio, although macchia shrubs and woodland trees were more abundant at that site.[212] There are no comparable pollen analyses from Botromagno or San Felice where the conditions of the soil, which dries out every summer, are unfavourable to pollen preservation; but there can be little doubt that there was a mix of agriculture and pastoralism in this area too since the geographical conditions favour both forms of land use, even if their relative importance has changed greatly over time. The proliferation of small farms in our Survey Area in the 4th century BC can easily be seen in this perspective.

iii. Olives and vines

Olives and vines are attested on nearly all these sites, either by seeds, fragments of wood carbon, or pollen grains. The evidence has been carefully assessed by D. Lentjes.[213] It is nearly impossible to distinguish between cultivated and wild species of either plant at this stage in the development of cultivated types, and the question of whether or not they were cultivated is best answered by drawing on other archaeological and historical evidence. This leaves no doubt that olives were being cultivated on a large scale in the Italiote cities in the 4th century BC. In the sanctuary at Pantanello there were numerous charred and water-logged remains of olive pits in contexts of this period. Since these were from olives deposited as dedications at the sanctuary, they are likely to have been cultivated, and this is confirmed

[208] In addition to the analyses of material from San Felice and Botromagno, cited above, I have used especially the studies of material from Arpi (Accorsi *et al.* 1995); Monte Papalucio (Ciaraldi 1997); Muro Tenente (Lentjes 2016, esp. 267-281); Pizzica Pantanello (Costantini 1983); Roccagloriosa (Costantini & Fitt 1993); Vaste (Solinas 2008) and Pomarico Vecchio (Caramiello & Siniscalo 1997). For a comprehensive assessment of the evidence, see Lentjes 2016.

[209] Accorsi *et al.* 1995.

[210] Heim 1995.

[211] In the sanctuary at Pantanello: Sullivan 1983, Florenzano & Mercuri 2018; in the rural sites at the Fattoria Fabrizio: Florenzano 2014; at Sant'Angelo Vecchio: Florenzano 2016.

[212] Caramiello & Siniscalo, 1997.

[213] Lentjes 2016, esp. 131-146.

by the discovery of remains of pruned olive wood in the waterlogged deposits of the Collecting Basin dated to the late 4th century BC.[214] The Heraclea Tablet I, datable probably to late in the century, records a requirement for the tenants of the temple of Dionysus to plant olive trees.[215] There are also indications that olives were being cultivated on the new "indigenous" farms of this period. A square sandstone press and associated *pithoi* were found in the excavation of the small Lucanian farm at Montegiordano (see above). They were probably used for pressing olives.[216]

The evidence, however, is concentrated around coastal sites where the environment was particularly well suited for olive cultivation, and there is as yet no firm evidence to show that olives were cultivated in settlements in the interior in this period. (Montegiordano, situated ca. 5 km from the sea, can be counted as a coastal site). Some olive oil may have been imported from Old Greece in the Corinthian A-A' amphorae listed in Disantarosa's catalogue, and some from (modern) Calabria or Sicily in the Magna Graecian and Greco-Italic amphorae, although it is equally likely that these held wine (Cat.19.1). In the settlements in the interior, those who could afford it may have bought oil imported in amphorae such as these. The fact that some *louteria* such as our fragment No.1312 from San Felice were decorated with impressed olive-frond motifs suggests that olive-oil as well as water was used in some households for bodily cleansing, and was scraped off with strigils in the Greek manner. But on a number of other South Italian sites large storage jars were also decorated with olive-frond impressions indicating, presumably, that they contained oil for a wider range of household uses, including cooking. It is possible, therefore, that the absence of direct evidence for local production is misleading and that some oil was in fact locally produced and stored in containers such as these. The evidence for the use of oil in lamps is also ambiguous. Some lamps were deposited in burials of the 4th century (see Cat. 21), but lamps were rare finds in our Survey Area and in that of the Older Surveys, so it is possible that oil was an expensive commodity which was reserved for cooking and bodily cleansing, and was not wasted on routine illumination.

Similarly, the evidence for vine cultivation increases in this period, in spite of the difficulty of distinguishing between wild and cultivated vines on the basis of the configuration of their grape pips. Much of it comes from ritual deposits in sanctuaries where a large quantity of grape pips can hardly be other than dedications of cultivated grapes. There is a particularly impressive quantity of pips, many of them preserved in waterlogged deposits, from the sanctuary at Pantanello where there are also pieces of vine wood preserved, one of them so large that it suggested to the excavators that there was a vine trellis covering part of the Collecting Basin.[217] Grape pips were also found in the Messapian sanctuaries at Monte Papalucio and (to a lesser extent) at Vaste in the Salentine peninsula.[218]

There is good reason then to suppose that vines were being cultivated in vineyards around the Lucanian and Peucetian settlements. The fragments of large *dolium* rims found on all indigenous sites, including those of this period in our Survey Area, show that large containers were available suitable for storing wine both during and after the process of fermentation. One of them in particular, No.1905 from San Felice, already mentioned, has the letter *omicron* impressed in the rim, probably indicating the capacity of the *dolium* as 70 *choes,* equal to between 175 and 280 litres, depending on the value assigned to the *chous*. The fact that the producer of the *dolium* found it advantageous to indicate the capacity of the container suggests that it was intended to be used for commercial production, most probably of wine.

iv. Other fruits

The analyses of deposits of palaeobotanical material found in several of the sanctuaries mentioned above reveal the variety of other fruits cultivated in South Italy in this period: figs at Pantanello and Monte Papalucio, pomegranates at Pantanello, Monte Papalucio and Vaste, apples or pears at Pantanello and Monte Papalucio, hazelnuts at Pantanello, and dates (perhaps imported) at Monte Papalucio. All of these except for the dates could have been grown in the climatic conditions of our Survey Area.

v. Stock-raising

Analyses of faunal remains from various sites provide evidence for stock-raising practices in this period,[219] but they are not easy to compare because of differences in methods of collection and interpretation of the data. The sample of bones and teeth is very small from some sites, including Jazzo Fornasiello, Locri, Pomarico Vecchio, and from Monte Irsi in contexts of this period. Moreover, bones collected in one part of a site may reflect the usage of a specific area which

[214] Costantini & Costantini Biasini 2018, 396-399, 425.
[215] Uguzzoni & Ghinatti 1968, 231: Tavola I, 115.
[216] Luppino 1981; Brun 2003, 165.
[217] Costantini & Costantini Biasini 2018, 399-408 (grape pips, with discussion of morphology), 425 (vine wood); Carter in *Chora Metaponto VII*, 283-284 (grapevine from trellis).
[218] Monte Papalucio: Ciaraldi 1997, 217 and 222-223; Vaste: Solinas 2008.
[219] The principal sources used in this chapter are: Gravina/ Botromagno: Watson 1992; Heraclea: Wilkens & Delussu 2002; Jazzo Fornasiello: Montenegro & Salari 2014; Locri: D'Errico & Moigne 1985; Monte Sannace: Giove 1989; Pizzica/ Pantanello: Bökönyi 2010; Pomarico Vecchio: Aimar 1997; Roccagloriosa: Bökönyi 1993; Valesio: Lentjes 2016, 175.

may not be typical of the settlement as a whole. The faunal assemblages from the sanctuaries at Heraclea and Pantanello derive from sacrificed animals and may illustrate the requirements of the cult rather than the normal pattern of stock-raising in the surrounding area. For all these reasons, too much weight cannot be put on occasional anomalous instances which may seem to deviate from the general practice.

On Botromagno caprines remained by far the commonest species. In John Watson's adjusted figures, they account for 72% of the four principal species (caprines, pig, cattle, red deer) consumed on the site in the 4th–3rd centuries BC.[220] At Jazzo Fornasiello in the 5th century they represent 70% of the domesticated species. These figures far outweigh those from other sites, which typically run between 40 and 50%. At Monte Irsi, for instance, they account for 45.7% of the small sample of this period, though they are still the predominant species. At Pomarico Vecchio they account for nearly half of the species by a count of the number of identified fragments, and rather more than half by the minimum number of individuals. At Roccagloriosa they represent 45.8%, at Valesio 43%, and at Locri 40%. In the sanctuary at Pantanello the proportions are significantly lower: 25% in Period 2 (the 5th century), and 20% in Period 3 (the 4th century).[221]

Since both Botromagno and the Jazzo Fornasiello lie close to the drove road which follows the most convenient route for sheep passing through the Fossa Bradanica or moving from the plains of the Fossa to the plateau of the Murge, it is very probable that the abnormally high figures for these two sites reflect the fact that this was an area of intensive sheep raising, and that a drove road already followed this route. One would expect to see a similar pattern as well in our Survey Area, since the drove road which leads from Botromagno into the Lucanian mountains crosses it within 4km of San Felice, but that is not reflected in the faunal analysis of animal bones found in Superintendency's excavations on San Felice which shows caprines accounting for only 36% of the number of identified fragments, second to cattle at 24%.[222] But the sample was so small (139 fragments datable to the 6th/ 5th centuries, of which only 61% were identifiable at species level), that no reliable conclusions can be drawn from the figures. It is possible, however, that in this period transhumant sheep could be driven along the route below the scarp of the Murge much of which must have fallen within the territory of Botromagno (see below), but not along the Basentello valley.

On Botromagno most of the sheep/ goats were killed at three years or more of age. This was true also of Roccagloriosa and Heraclea. Since there is no evidence that males were regularly culled at a young age, it is probable that the sheep were raised primarily for their wool and only secondarily for milk for making cheeses, though their meat was no doubt important in the subsistence economy. There is a significant exception to this pattern at Jazzo Fornasiello where a high proportion of the caprines was slaughtered young, perhaps to prevent them from competing for the consumption of milk.[223] That would suggest that cheese production was important in this part of the Fossa Bradanica.

On most sites, however, the production of wool must have been of greater importance, and this is confirmed by the numerous loomweights found in settlements of this period. The fact is too well-known to need detailed argument, but in the case of our Survey Area it can be said that of the 50 sites which had at least one piece of pottery assignable to the Late Peucetian period, 22 had at least one loomweight. The total for all sites is 281, of which 89 come from San Felice. Since most of these sites also had pottery from other periods (often more abundant) there is no certainty that the loomweights were datable to our Late Peucetian phase, but the 89 found on San Felice must all be pre-Roman, and that is likely to be the case with many of the others.

At Gravina, the second most important animal species in John Watson's analysis was the pig, which accounts for 16% of the instances in this period (Gravina Period VI). It ranked second in importance also at Jazzo Fornasiello, where it reached 30% in the middle of the 5th century BC (Phase IIIb), and at Valesio (29%). At Pomarico Vecchio it came second equally with cattle at a little less than 25%; but it came third in the small sample of this period at Monte Irsi (23%), at Locri (26%), Roccagloriosa (16%), Monte Sannace and Heraclea (in a sacrificial context). At San Felice pig bones account for only 13% of the total, but as we have already said, the sample is too small to allow any valid conclusions about the relative importance of livestock species in our Survey Area. It is likely, however, that there was much local variation in this aspect of stock-raising, which must have depended on the availability of suitable pannage in the vicinity of each site. At Gravina, the majority of the pigs, i.e. those not required for breeding, were killed at between 1 and 2 years, around the optimum time for meat production, and this was no doubt the normal pattern, seen at most sites. At Roccagloriosa, however, most of the pig bones were of animals slaughtered at a mature age.

Cattle were the third commonest species at Gravina in this period, accounting for 11% of the four animal

[220] Watson 1992, 103, table 6.
[221] Bartosiewicz *et al* 2018, 451 fig. 18.3.
[222] G. De Venuto in *PSF*, 193-195.
[223] V. Montenegro & L. Salari in *Jazzo Fornasiello*, 157.

resources in Watson's analysis. They were third also at Valesio (14.8%) and at Jazzo Fornasiello. But on some other sites they were more common: at Monte Irsi they were the second most frequent (27.1%), as they were at Locri (35%). At Pomarico Vecchio they roughly equal pigs as a proportion of the sample. In some cases, they out-number other species, as at Monte Sannace and in the sanctuaries at Pantanello and Heraclea. But the last two cases may be atypical since cattle may have been selected for sacrifice in the sanctuary, and the result from Monte Sannace may be unreliable, since the sample was very small. The same can be said of the faunal analysis from San Felice in which cattle predominated in the very small sample. On most sites where the ages have been estimated, the majority of the cattle were killed at a minimum of 3 years. That is to be expected if they were used mainly as draught animals, especially for pulling the plough, though their value for meat and milk products must have been an important secondary consideration.

Equids are much less common in the faunal samples. Horse meat was not normally eaten, and horse bones did not usually find their way into domestic waste. Nevertheless, 14 horse and 13 donkey bones were recorded at Roccagloriosa, and the remains of 11 horses in 5th century contexts in the sanctuary at Pantanello, and of 1 donkey in a 4th century layer. Three bones of unspecified equids were identified in the sample from Monte Sannace, and two bones of horses (or possibly mules) and one of a donkey in contexts of this period on Botromagno. De Venuto has identified 1 horse and 1 indeterminate equid in contexts of the 5th century on San Felice, a significant proportion of the very small sample.

Dogs of a large breed, probably suitable for herding sheep, are attested by 4 bones in the samples of this period from Botromagno, and there were others of varying size at Roccagloriosa and in the sanctuary at Pantanello. Hens, already recorded at Incoronata in the 7th century, were not found at Gravina or Monte Irsi in this period, though 5 hen bones were recorded in the samples from Roccagloriosa. They were sacrificed in some cults: 161 were found in the sacrificial contexts at Heraclea where they form 3.56% of the total count, but only one hen bone was found in the sanctuary at Pantanello.

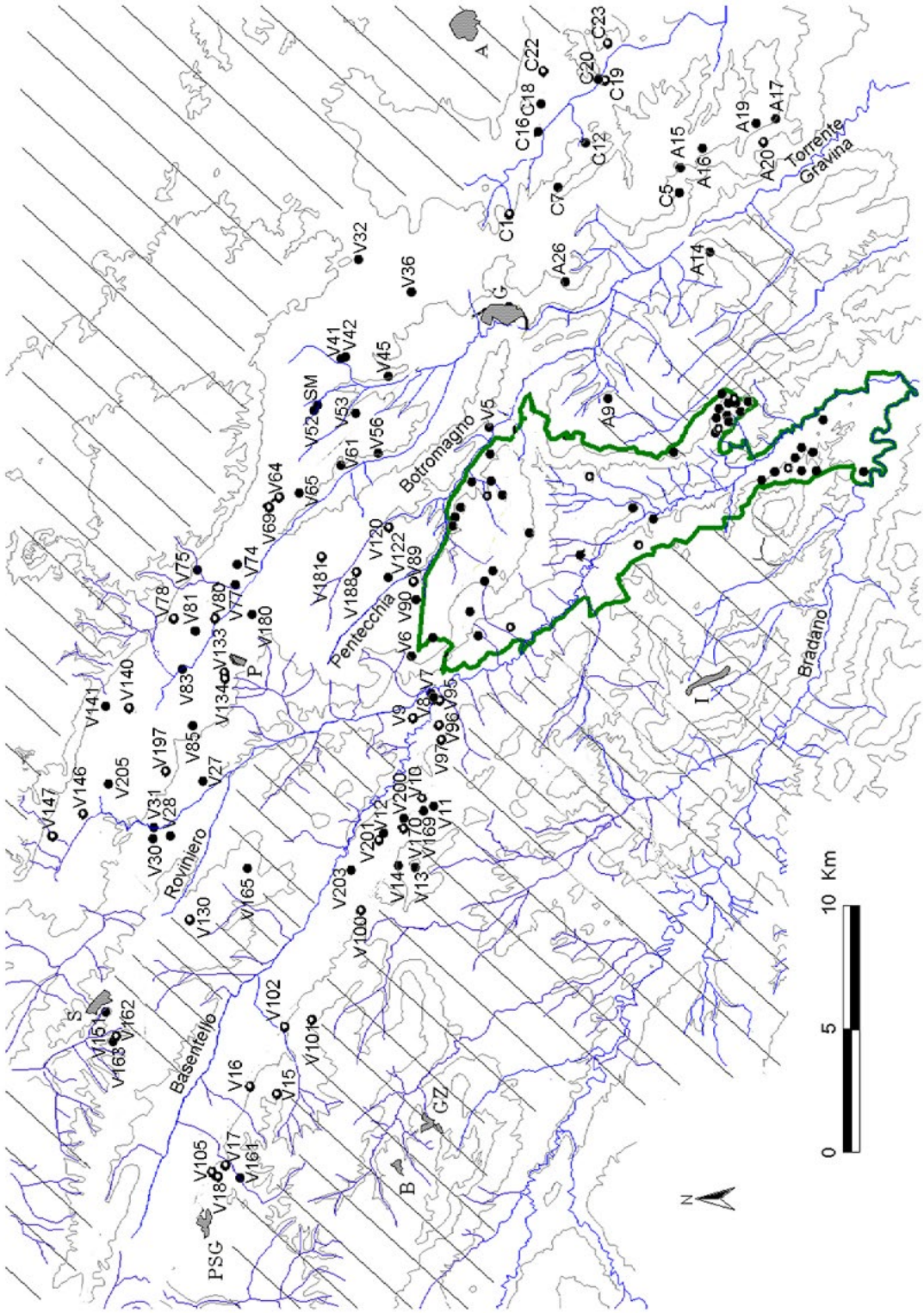
The main wild species reported on most of these sites was the red deer (*Cervus elaphus*) which constituted 3% of the four major species consumed at Gravina and a rather smaller proportion (0.9%) of the small sample at Monte Irsi. The frequency with which the species occurs is likely to be indicative of the extent of woodland in the vicinity of these sites. It is interesting, therefore, that the only evidence for deer reported from the Jazzo Fornasiello is a metacarpal of a small animal, possibly a fallow deer (*Dama dama*), a species which can adapt to a variety of habitats including meadows and deciduous woodland. In this part of the Fossa Bradanica the main land use is likely to have been open pasture for sheep, which, as we have seen, are the predominant species in the sample from the site. In the small sample from San Felice, the only wild species represented is hare (by two bones), an animal whose natural habitat is open grasslands.

10. Sources of wealth

Given the absence of any mineral resources the main source of wealth for much of the population in our Survey Area must have been agriculture and stock-raising. The evidence, summarized above, makes it clear that the area could support various forms of land use. Cereals, especially barley and emmer wheat, were grown, also some legumes. Vines were cultivated, but probably not olives. The main animal resource was sheep, but cattle, and pigs were also exploited. There was forest in the vicinity which could be used for hunting and no doubt timber.

Whether any of these goods could be made to produce a marketable surplus is uncertain. It seems probable, however, that in the 5th century some cereals were sold to Athenian dealers working through the Adriatic ports, or exchanged with them for fine products like the best red-figure vases that reached Gravina/ Botromagno. Since sheep-raising was a particularly important part of the economy, it might be expected that there was a local weaving industry that produced textiles that could be sold outside the area, perhaps through the market at Tarentum, but the evidence, such as it is, does not suggest that weaving in and around the Survey Area in this period was anything more than a household industry serving the local community. The evidence for loomweights in the (admittedly few) contexts of this period is clearest at Gravina where a group of 31, evidently derived from a single loom, was found in a house of the 4th/3rd century BC in the area of Parco S. Stefano below the hill of Botromagno.[224] A single loomweight was found in the fill of a ditch on Site DB,[225] and two loomweights in a rich tomb of the end of the 5th century.[226] No loomweights were found in any of the 5th/4th century burials excavated in the Accurso necropolis. Similarly, the evidence from the Survey Area, discussed above, points to weaving as a household industry serving local needs. The massive expansion of the weaving industry in this area was a development of the next period (see Chap. VIII.5.iii).

[224] V. Wilson in *Gravina (PBSR) IV*, 132-134.
[225] *Gravina II*, no. 1732.
[226] Ciancio (ed.) 1997, 214 no. 255 (painted, with palmette) and 215 no, 257 (plain) from Tomb 2, 1974.



Map VII-2. Sites of the LIA on the Older Surveys and in our Survey Area. Sites on the Older Surveys are numbered. For Site numbers for our Survey Area see Map VII-3 below. SM = San Mauro. Doubtful instances are indicated by hollow dots.

There must, therefore, have been some other source of wealth to account for the luxury goods, including amphorae, fine pottery, and presumably other goods not visible archaeologically that were imported into this area. One possibility is that there was a slave trade fed by regional wars, especially those brought about by Oscan expansion into this area. We have seen that there is evidence for enslavement in this period. But another and possibly more important source of wealth is likely to have been mercenary service. The javelineers whom the Metapontines supplied for the Athenian expedition against Syracuse are likely to have been mercenaries drawn from the native population in the interior (including therefore very possibly some of the inhabitants of our Survey Area), and there is evidence for indigenous warriors, perhaps of mercenary origin, settling in the Chora of Metapontum. But another indicator must be the hoards of virtually unused silver coins found at Timmari and Altamura, many of them minted in Tarentum (see above). They may have been minted to meet the costs of war, including mercenary pay, and have been hoarded by the mercenaries who perhaps handed them down from one generation to another, since they had no need to use them in a non-monetary economy, though they could exchange them for goods if necessary.

11. The Survey Areas

i. The Older Surveys

On the Older Surveys 54 sites produced pottery which can be reliably datable to this period. They are shown on Map VII-2 with solid dots, together with another 37 more doubtful instances shown with hollow dots. For completeness we have also shown sites of the period in our own Survey Area, but without site numbers. They are discussed below.

The map shows very clearly the extraordinary proliferation of settlement in the open countryside which began in the 5th century and reached a climax in the late 4th. A comparison with the map of MIA settlement (Map VI-3) reveals the extent of the change. Not only did the number of occupied sites increase enormously, there was also a shift in the location of settlement. Only 6 or 7 sites with geometric bichrome produced BG sherds (A14, A16, V13, V30, V32, and San Mauro) and perhaps V6 where the geometric pottery is said to be of the 6th–4th century BC). The other geometric sites do not seem to have survived.

The indications of site size, where these are given, show that the new foundations were generally small structures, probably isolated farmhouses. They are spread out fairly evenly across the best arable land. Although there are some clusters of sites, particularly on the SW (Lucanian) side of the Basentello in the vicinity of Monte Serico (V13),[227] there is a much more even distribution of small sites in the broad expanse to the N and NW of Botromagno where the only large site was the walled settlement at San Mauro (SM). With this exception, the pattern of settlement in this area is so even that it seems likely to result from a deliberate programme of land distribution carried out by the body politic of Botromagno/ Silvium.

Further to the W, beyond this string of small settlements, there was a more thinly occupied area in the vicinity of Site V130; but still further to the W, beyond the medieval and modern town of Spinazzola the pattern of settlement changes again. The sites in this area are more clustered, reflecting the more broken character of the terrain, and the datable pieces of back-gloss pottery are significantly later, generally datable after the foundation of the Latin colony of Venusia. They are discussed in the next chapter.

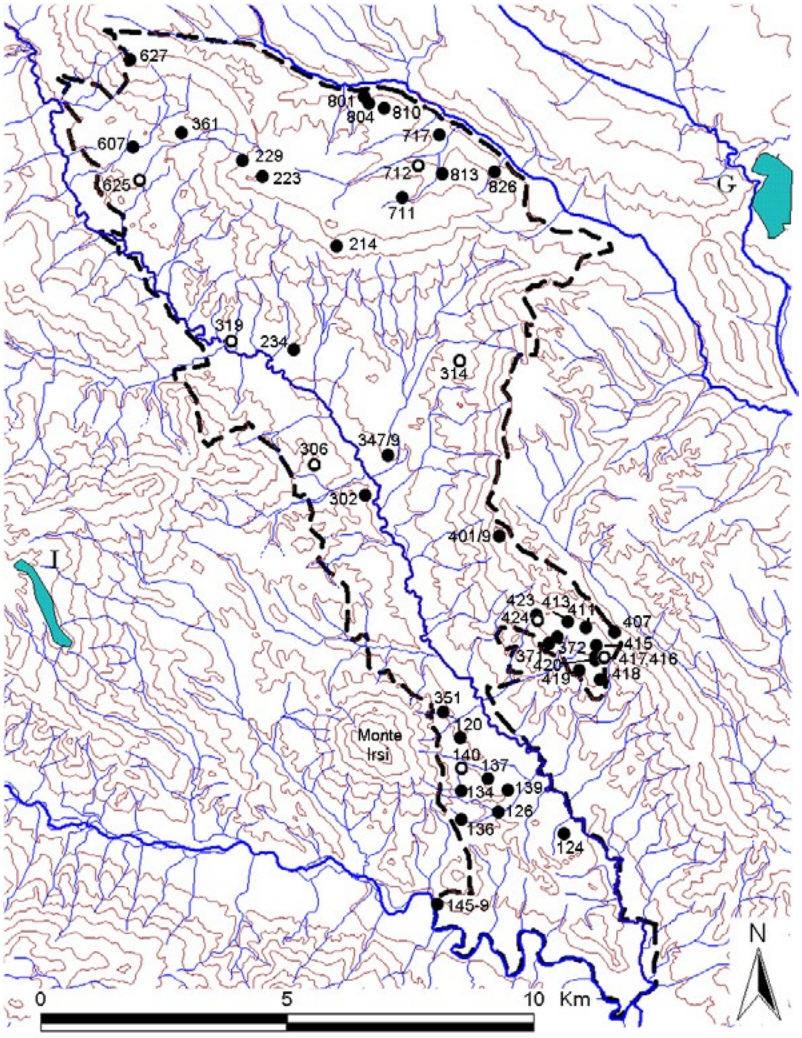
ii. Our Survey Area

As the Table of Site Occupancy (Table II-4.) shows, 36 sites could be dated reliably to this period, and 9 others more doubtfully. The 5 principal sites occupied in the MIA (Sites 223, 237/9, 401/9, 407 and 267) all continued, though 3 minor sites (Sites 329, 422, 431) did not. There was therefore a 7-fold increase in the number of occupied settlements, implying a drastic change in the organization of the countryside on both sides of the valley. The new pattern of settlement is shown on Map VII-3.

Only 2 of the 8 sites with geometric bichrome of the MIA (Sites 422 and 431), both very small, did not also have black-gloss, and so can be assumed to have failed by ca. 500 BC. The 6 continuing sites, however (Sites 223, 229, 234, 347-9, 401/9 and 407), constitute only a small proportion (some 20%) of the black-gloss sites of this period. Moreover, on all but 2 of the continuing sites the geometric bichrome was in much smaller quantities than the black-gloss – indeed on all but two of them the quantity of all geometric (mono- and bichrome) was much smaller than that of black-gloss. So not only were there many more sites, but the sites that survived were mostly growing at this time. This must imply a considerable rise in the population of the area generally. Even the two exceptions, Sites 401/9 and 223, need further qualification. Site 401/9, already shrinking in the MIA, probably dwindled further and ceased to function at some time in the LIA.

It is highly probable that the new settlement pattern implies that there was a general increase in the

[227] McCallum and Hyatt (2014, 2014) record some 30 sites with black-gloss around Monte Serico. This compares with only 6 in the area which can be dated earlier in the IA by geometric and late impasto.



Map VII-3. Sites of the LIA in our Survey Area.

Site	EIA and MIA			LIA				
–	imp.	Geom	**Total**	WMP	BG	ckpot	plain	Total
223	5003	4551	**9554**	2122	1190	4024	46144	**53480**
347/9	67	4	**71**	15	13	35	241	**304**
401/9	962	219	**1181**	30	20	74	1486	**1610**
407	107	6	**113**	40	20	32	303	**395**
627	13	0	**13**	14	59	16	478	**567**

Table VII-1. Counts of sherds of wares typical of (a) the EIA and MIA and (b) the LIA on continuing sites.

population rather than that it was merely redistributed. This is difficult to prove statistically, but a comparison of all sherds most characteristic of the EIA and MIA (impasto and geometric bichrome) with those most characteristic of the LIA (black-gloss, wheel-made painted, cookpot and wheel-made plain) found on each of the continuing sites should be broadly indicative.

No valid statistical conclusions can be drawn from the data because there are too many imponderable factors. The periods are of unequal length since the EIA and MIA together lasted for ca. 500 years, and the LIA for ca. 200, but the EIA and MIA counts have to be considered together because of the impossibility of allocating most impasto sherds to one period or the other, and because small fragments of geometric pottery with monochrome decoration might belong to either. The totals of plain sherds from all sites other than Site 223 may include some hand-made pieces of the EIA or MIA. Some of the sherds allocated to the LIA may be Hellenistic, although, as we argue below, all these sites except for Site 347/9 came to an end around the end of the 4th century BC or dwindled away in the ensuing period. Nevertheless the data show very clearly, albeit impressionistically, that on all sites there is a great increase in in the number of sherds broadly datable to the LIA by comparison with the previous periods, and there can be no doubt that this indicates that there was a considerable increase in the population that inhabited them. It is particularly marked in the case of Site 223 (San Felice) which reached its maximum development in this period, least so in the case of Site 401/9 (Crocevelina).

Except for the long-lasting Site 347/9 which was situated on low ground close to the Basentello, the continuing sites were all hill-top settlements. The new sites were generally founded on lower terraces where there was easy access to a good water source. There is a notable cluster of them below Site 407, situated along the spring line near the present-day Fontana Fico, and another on the terraces above the Pentecchia di Chimienti which could have drawn water from the river, or from side streams fed by springs on the rim of the plateau. Site 361 (Vagnari) and the nascent Site 813 were also well supplied with abundant spring water. These sites were all on the W (Apulian) side of the Basentello; but the same move into the open countryside can be seen on the E (Lucanian) side where there was a similar cluster of small settlements on the lower slopes of Monte Irsi not far from the river, and easily supplied with water from wells.

Most of the new sites in this period were very small. Only one new site occupied more than 1,000m^2 (Site 137, 1600m^2). Ten others range between 25 and 900 m^2. The smallest can only have been field huts, but seven

with an estimated area of between 150 and 900 m^2 were probably large enough to have been regularly inhabited farmhouses.

The sites just mentioned were all well above the flood plain. The only sites situated on very low-lying land close to the Basentello were Site 347/9, just mentioned, and Site 234 which perhaps also continued from the previous period. We have suggested above (in Chap. VI.II.7), they may have been situated near river crossings used for short distance transhumance.

iii. The economic status of the rural sites

a. Figured wares

Some idea of the prosperity of the LIA sites in our Survey Area may be derived from the analysis of the red-figure and Gnathian fragments on the assumption that they were relatively expensive items compared with their black-gloss and wheel-made painted counterparts. Of the sites of intermediate size, only San Felice (Site 223 with its associated collection areas 226 and 245) produced significant numbers of these wares with 66 sherds of red-figure and 14 of Gnathian. Of the other sites in this category, Lamiecelle (Site 627) yielded only two fragments of red-figure (Nos.701, 708), Serra Meschina (Site 407) a single minute fragment with part of a palmette (not catalogued), and Crocevelina (Site 401/9) none at all. The relative figures are distorted by the fact that San Felice is a larger site and the surface collection covered the entire area, but the absence of pieces from the other sites of intermediate size where the survey was also intensive, though in more limited areas, is likely to be significant. Of the small sites, only two produced a fragment of either ware: Site 229, at this time a dependency of San Felice perhaps used for burials, where the handle of a fine Gnathian bell-krater (No.757) was found, and Site 148 on the right bank of the Basentello below Monte Irsi which yielded the badly-damaged red-figure sherd No.712.

Even on San Felice the best red-figure sherds date to the late 5th century BC, after which the quality drops off. There is no sign of the great funerary vessels, column- and volute-kraters of the Middle Apulian period which have been found on most of the major Peucetian sites. The vases in use at San Felice in the last half of the 4th century were unoriginal standard pieces which showed the settlement's participation in the Apulian version of Early Hellenistic culture, but required no detailed knowledge of the iconography of Greek mythology.

b. Dolia

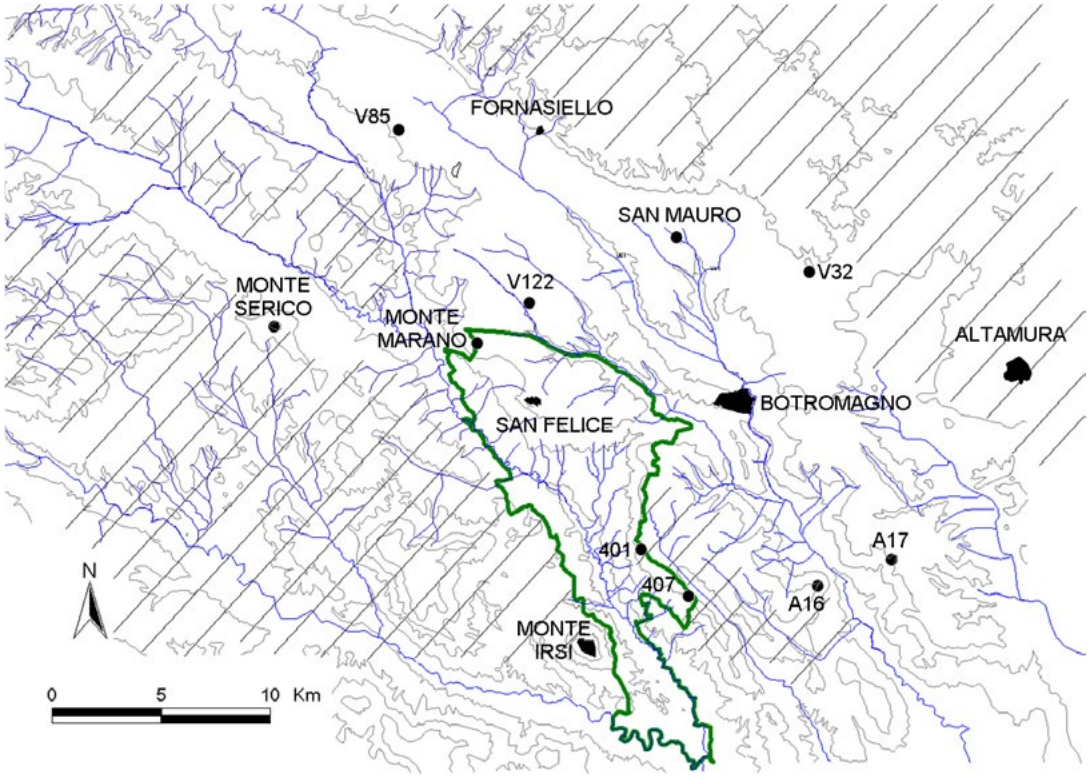
The first large plain-ware *dolia* date to the this period. They were used for storing agricultural produce, solids or liquids, and so may be useful indicators of production although their precise use on the sites of the LIA in our Survey Area can rarely be asserted with certainty. Unusually large quantities of *dolium* fragments may, however, be indicative of wine production going beyond the domestic level. Small quantities of *Dolium* fragments were recorded on 18 sites which were operative at this time but most of them yielded material of more than one period, so that their value as evidence for the economy of the site in the LIA may be doubted. On 5 or 6 sites, however, *dolia* can be dated fairly confidently to this period. The majority of *dolium* fragments with shapes large enough to be classified in the Catalogue came predictably from Site 223, but their purpose is uncertain.

In a few cases the quantity of dolium fragments (measured in kg), is large enough to suggest that several *dolia* were being used; and if the site was a rural farm, and the fragments were concentrated in a limited area, then they are likely to indicate that there was a *dolium* yard on the site, and that the *dolia* were being used for wine production. There was a cluster of such sites on the SW facing slopes overlooking the Basentello below Serra Meschina (Site 407). Site 417 had *dolia* in some quantity (17 kg) and the scatter and the ratio of *dolium* to tile (1:9) suggest a covered *dolium* yard. Site 420, also of this period, could not be fully explored but it had an unusually high proportion of *dolium* fragments (5 kg compared with only 8 kg of tile, a ratio of 1:1.6), indicating perhaps that the *dolia* were either kept in the open or (more probably) were protected by a roof of perishable materials. Site 423 is an LIA site which lasted into the Republican period. With 26.5 kg of *dolium* and a ratio of *dolium* to tile of 1.4 it probably had a *dolium* yard, perhaps only partly roofed with tiles. It may have been involved in wine production for more than just domestic consumption: there was evidence of a dwelling there, but it was very slight. We have already seen that wine was probably produced in the MIA on Site 407, not far away on the same slope. In the valley, Site 347-9 had 4 kg of *dolium* fragments, and an unusually large number of amphorae. It spanned many periods, but it too is likely to have been involved in producing wine or marketing for more than domestic consumption. Near it but on the other (Lucanian) side of the Basentello, Site 302 was a small LIA site which had 7kg of *dolium* fragments and a fairly high ratio to tile (1:7).

iv. Site grouping and territorial organization in the area of the Surveys

The pattern of settlement revealed by the surveys is detailed enough and broad enough for it to be possible to infer that there was a system of site hierarchy and territorial organization, which in Central Apulia can be matched (to a limited degree only) in the area around Conversano on the Adriatic coastal fringe.[228]

[228] Cf. Ciancio 2013a, 240.



Map VII-4. Large and intermediate sites in the S part of the Fossa Bradanica. Where the perimeter of a site is known, it is indicated on the map.

a. The left bank of the Basentello: Botromagno

Much can be said about site grouping and site hierarchies on the Apulian side of the Basentello in this period by combining the results of the earlier surveys by Vinson, Chapman and Ammerman, and Aldridge, with those of our own field survey.

In the broad strip of land between the Basentello and the scarp of the Murge there is only one really large settlement – on Botromagno where the proto-city spread over ca. 138 hectares. As we have seen, it must have provided the major economic and administrative centre for a vast area and was a strongpoint to which the rural population could retreat in times of danger. Its territory is likely to have been bounded on the west by the Basentello river, a major obstacle to communications. The extent of its territory eastwards from the Basentello can only be determined very approximately by its relationship to its nearest neighbours of roughly equivalent status (Map VII-4). The closest is Altamura (ca. 99 hectares) situated on the Murge, 11km east of Botromagno. It too must have had a vast territory. Where the border ran between the two territories is a matter of conjecture, but if it bore any resemblance to the medieval and modern boundary between the two *comuni*, it followed a series of low ridges, which left the scarp of the Murge and a strip of the plateau several km wide above it, in the territory of Botromagno, and put the main expanse of the Murge in the territory of Peucetian Altamura. All the sites explored by Vinson as far as the watershed of the Basentello would then have fallen within the territory of Botromagno/ Silvium, which would have occupied the broad and fertile strip between the Basentello river and the scarp of the Murge. Its boundaries at the north and south ends of the strip are uncertain.

b. The left bank of the Basentello: Settlements of intermediate size

Within this territory, 8 settlements of intermediate size have been identified in the various surveys, ranging in area from 2 to 50 hectares (see Table VII-2). Nearly all were situated on hill-tops or plateaus with steep slopes on most sides which offered a limited defensive capability. In at least one case (Crocevelina) this was augmented by a rampart. An apparent exception is Vinson's site V32. It was situated on low ground on the S side of Monte Castiglione, but the narrow top of the hill above it was a natural strongpoint which could have served as a refuge in time of war, in the same way that the settlement below Monte Serico on the right bank of the Basentello depended on the hill-top for its defence. The modern boundary between the territories of Gravina and Altamura crosses the summit of Monte Castiglione, leaving the arable land below the hill, along with Site V32, in the territory of Gravina. The dictates

Settlement	Hectares
V32 Castiglione	50
V122 Masseria Sgarroni	29
223 San Felice with extensions	27
A17 Fontana dei Marroni	15
V85 Paradiso	10
San Mauro	9.5
V75 Jazzo Fornasiello	7.6
A16 Serra la Stella B	6
401/9 Crocevelina	5
407 Serra Meschina	3
627 Lamiecelle (Monte Marano)	2.2

Table VII-2. Settlements of intermediate size in the area of the Surveys.

of the physical geography probably meant that in the LIA too, Site V32 was linked with Botromagno rather than with Altamura. It has not been studied in detail, and part of it is now planted with trees, but Vinson describes it as extending S from Monte Castiglione for about 1km, and east for 500m. That would imply a maximum area of 50ha, making it by far the largest site in this group. As the map shows, these sites of intermediate size are distributed rather unevenly, but they are well spaced out in a way which allowed the arable land to be cultivated efficiently, generally within a radius of 1.5–5km, by peasants living inside them.

c. The left bank of the Basentello: Small settlements

Surrounding these intermediate sites was a very large number of smaller settlements, probably mainly farms, which have yielded black-gloss pottery. Some 77 of them were found on the Older Surveys, about 30 by McCallum and Hyatt in their survey in the vicinity of Monte Serico, and up to 43 on our own Basentello survey. As usual, their size is not easy to estimate since many of them had material of more than one period. On Vagnari, however, where the debris from the Roman site extended over ca. 4 ha, the surface survey carried out ahead of the excavation showed that there was a small pre-Roman settlement in the N part of the site attested by black-gloss sherds and some other artifacts of the 4th century BC which occupied only ca. 16002m^2.[229] Elsewhere, if sites produced fewer than five sherds of the period, it can be assumed that they were small at the time. Nearly all these sites were founded or re-founded in the 4th century BC though a few could be earlier.

Because they continued to flourish after the smaller farms were founded in the 4th century BC, it is probable that the intermediate sites still had an economic role as small market centres for the surrounding area, and perhaps as dormitories for workers employed on the farms. The system for exploiting the land which developed in the 4th century, was therefore efficient, and it seems probable that it came about as a result of a land reform affecting the whole community centred on Botromagno/ Silvium. We have already seen that the pattern of settlement in an extensive area to the NW of Botromagno revealed by the Older Surveys also suggests that a civic programme for the redistribution of land and the creation of well-spaced farms was carried out by the community of Botromagno/ Silvium in the 4th century BC. It would have been part of a wider movement of this time, as we have suggested above.

The distribution of these small sites was uneven, but they tended to cluster near the sites of intermediate size. The most obvious group is on the spring-line below Serra Meschina, and consists of Sites 411, 413, 415, 417, 418, 420, 423 and probably 416, of which the two most widely separated are only 1.8km apart. The distances between sites varied from 140 to 625m. Two of them (Sites 411 and 416) had no fine wares so they can only cautiously be assigned to the group. The rest, except for Site 418 dated only by WMP, all had black-gloss pottery, but they may not all have flourished simultaneously – Site 418 may have been earlier and Site 419 rather later (see Cat. 9, 1). They are all small and perhaps were never intended as permanent establishments. The furthest from Site 407 on Serra Meschina is 1.6km away (as the crow flies) so they were all within an area from which the inhabitants could at need take refuge on the larger site.

A second group of sites, all of which fall within our Survey Area, surrounds San Felice. Much of it (Sites 711, 717, 804, 810, 813, 826) lies to the NE of the site and is, in fact, closer to Botromagno, but the Pentecchia *torrente* would have constituted a serious obstacle and it is likely that San Felice was a more usable refuge and administrative centre, at least in the first instance. Elsewhere Sites 214, 229, 361 (Vagnari) and 715 are all within 2km of San Felice. Vagnari was the largest of this group. There must have been a substantial farmhouse here.

There are some sites which cannot easily be linked to intermediate centres, notably Sites 234 and 347-9, already mentioned, situated near the river and the drove road. The isolated location of Site 607 is harder to explain. It seems to have been tiny but inhabited. It is only 1km from Vagnari and was perhaps an outlying bothy of the farmhouse there.

[229] C. Small in *Vagnari*, 53-72; A. & C. Small, *Vagnari*, 377-381, Appendix 3, Pottery of the Late Classical and Hellenistic periods.

One intermediate site is markedly isolated, namely 401, Crocevelina. To the E of it is now the *Bosco Comunale* of Gravina, a managed deciduous forest of ancient origin. We could not survey there, but since the land has probably always been used for forest it is an unlikely area for settlement. Any dependencies of Site 401 will have been to the NE of the site, on the other side of the ridge which formed the boundary of our Survey Area in this direction. The plateau and the soil here are well suited to arable cultivation (as the terrain to the W, down a markedly steep slope, is not). Local reports indicate the presence of pre-Roman material some 2km NNE at the Masseria San Domenico, and there are no doubt other sites in this area awaiting discovery.

Finally, the sites on the ridge of Lamiecelle extending towards Monte Marano (two falling within our Survey area and two found by Vinson), fit less clearly into a pattern of site hierarchy. The largest of them, Site 627, was somewhat unusual. It was small (the gridded core was only 3000m^2) but the scatter round it was heavy and extended to about 22,500m^2 (2.25 ha), and 59 black-gloss sherds give a convincing date – those datable were probably all pre-300BC. We have treated it as an intermediate site (see below), but it may have been part of a larger complex. A little over 1km from it at Site V6 on the top of Monte Marano there was a thick distribution of 4th/3rd centuries BC pottery mixed with much Neolithic. It was confused by a landslide which had carried away part of the hill but was apparently of some importance. There were two other sites in the vicinity: Site 629 (mostly earlier and perhaps no longer used by this time), and V90, which was probably a single-room dwelling. These sites were too dispersed to be classified as a single settlement, but they seem likely to have been a community, focussed perhaps on the now vanished Site V6.

d. The right bank of the Basentello

Our own survey covered a smaller area on this Lucanian side of the Basentello river, and since the area below the Diga del Basentello (and the confluence of the Torrente Roviniero with the Basentello) lay outside the limits of the earlier surveys, it is only possible to analyse the distribution pattern in limited areas. The relevant major sites are Irsina, Monte Irsi and Monte Serico (Site V32). Little can be said of Irsina since the ancient settlement lies under the Medieval and modern town and its perimeter is unknown. Monte Irsi extended over ca. 32 hectares, and Monte Serico perhaps 20.[230]

There was a cluster of sites below the slope of Monte Irsi, all of which were in use in the 4th century BC. These included Sites 114, 120, 126, 134, 136, 137, 139, 351 and probably 140, separated from each other by not much more than 1km. They formed a group, presumably of dependencies of the major settlement on the hill-top. There was a kiln on at least one of them (Site 126) and perhaps others on Sites 114, 134 and 139, though these may have been later. The kilns were probably located near forest which is still abundant on the slopes of Monte Irsi, and were perhaps used to supply tile for the buildings on the hill-top.

Between Monte Serico and Monte Irsi one isolated site of the period has been identified (Sites 302). It appears to have had two buildings, perhaps one dwelling house and one working area. The dwelling house appears to have been markedly larger than on most of our smaller sites.

The outcrop of new sites round Monte Serico was as concentrated and fully as great as in our area.[231] An unusually large number of millstones in the area E of Monte Serico is a sign of fairly intensive cereal cultivation.[232]

12. Conclusions

This was a period of frequent conflict both between the Greeks on the coast and the Italic peoples in the interior, and (less well documented) between different Italic peoples. Foremost among these were the Oscan-speaking Samnites and Lucanians who emerged as powerful tribal confederations in the Apennine mountains early in this period. The Apulian peoples met the threat posed by both Greeks and Oscans with their own tribal confederations, so that at the beginning of this period it is possible to speak with certainty of a Peucetian tribal grouping ruled (at least in time of war) by a tribal king, which was centred on the Murge.

It is impossible to know whether either the Lucanians or the Peucetians thought in terms of fixed boundaries established by common agreement, but in so far as there was a practical border between the two tribal groupings it is likely to have followed the Bradano-Basentello corridor. It was however a permeable border, and at various points cultural traits associated with one group can be found on the opposite side of the river; so flexed burial, for example, continued to be used in some places on the W side of the river even though the majority of Lucanians practised extended burial, whereas a cult sanctuary of Lucanian type was established at Timmari on the E side of the river. Language, too, crossed the notional boundary. The Messapic dialect used by the Peucetians continued to be spoken at Monte Serico, even though the Oscan language was making increasing inroads into Apulia. It is normally supposed that the

[230] McCallum & Hyatt (2014, 175) estimate the size of the settlement of the late 4th and 3rd centuries below the hill at 13 hectares.

[231] McCallum & Hyatt 2014. They note, however, that even within their survey area the survey is not yet complete, e.g. around Site A45.

[232] McCallum & Hyatt in *Beyond Vagnari.*

increasing "oscanization" of Central Apulia was the result of Lucanian conquest, and that view can be supported by some historical texts (mostly, however, referring to Samnite rather than Lucanian inroads into Apulia), but it is no less likely that some Peucetians voluntarily adopted some Oscan practices, just as they did Greek ones.

In fact, Greek was the predominant influence on the indigenous Apuian culture. The wars between the Tarentine Greeks and the indigenous Apulians at the beginning of this period did nothing to curtail the progress of "Hellenization", and may rather have accelerated it, in spit of the famous defeat that the natives inflicted on the Tarentines. The ceramic evidence shows that during this period the material culture was transformed as the indigenous population imported and imitated Greek-type pots. Only some of the wheel-made painted wares diverged from Greek prototypes, and they can be instantly recognized as indigenous rather than Greek. But the uses that the indigenous people made of the pots might differ, as can be seen most obviously in the pots used in their funerary rituals which were not limited by any of the sumptuary restrictions customary among the Greeks. Moreover, even Greek potters in Tarentum (which replaced Metapontum as the main centre of production around the end of the 5th century) were more than willing to produce red-figure pots specially designed to meet the requirements of their native clients.

It has become unfashionable to use the word "Hellenization" since it appears to indicate that the whole of the indigenous culture was assimilated to Greek, which was far from being the case. Both Lucanians and Peucetians continued to use their traditional dress and hair-styes, wore armour and fought in ways associated with their ethnic group, followed the cult practices of their own people, and were buried according to their own customs. But if taken to imply a process rather than a status, "Hellenization" is still a useful concept. The ruling class, in particular, had a taste for Greek culture which filtered down to the lower classes to some degree. Many of the artisans were Greek or else natives who adopted Greek names.

This was a time of drastic social and political change in these Italic societies, just as it was among the Greeks and Romans. The aristocratic class who had dominated their communities in the MIA continued to exist, but there are many indications that a new class had emerged below them which claimed a share of their power. This can be seen especially in the much greater number of burials, and of grave goods deposited in them, in both Oscan and Peucetian communities. The numerous males buried with arms and some armour appear to represent a new warrior class. But the lack of standardization in military equipment, particularly in amour suggests that each individual had to equip himself for battle, and that the class included individuals of varying degrees of wealth.

It was probably this new middle class which broke whatever rules there were on ownership of land and established new farms in the open countryside, such as those we have traced in our survey area. This was a widespread movement which resulted in a large increase in the rural population throughout South Italy. It is likely that in many, if not all, communities at this time, both Greek and indigenous, there was a civic programme for the redistribution of land and the creation of well-spaced farms. The idea originated in the Greek city states, but it was adapted to the needs of the indigenous society, in which the Greek democratic ideal of social equality carried less weight: the new buildings in the open countryside varied considerably in size and wealth, some being larger that their Greek counterparts, and others being very small and inhabited by peasants living little above subsistence level. The architectural model of the farm was developed most by the Lucanians, and it is perhaps significant that the largest of these new sites in our Survey was situated below Monte Irsi, on the Lucanian side of the Basentello. These new farms are not the only indications that a new concept of property ownership was developed at this time: another is the widespread use of signet rings, imported from Tarentum, which were used to make imprints on loomweights. They must have had a much wider purpose for guaranteeing commercial transactions.

The cities also were adapted to reflect the needs of the new social order, but they developed differently in Peucetia and Lucania. In both regions large building projects were initiated inside the cities to accommodate their expanding populations, and in the 4th century areas were laid out in some cities on a grid system with housing blocks of more or less equal size influenced by the theories of Greek town-planning. But the principal cities in Peucetia were very much larger than either their Greek models or their Lucanian counterparts. In the second half of the 4th century the dozen or so Peucetian cities were enclosed with massive walls, sometimes with several circuits of walls, several km long. The quarrying technique and methods of organizing the labour force (who may have consisted largely of slaves) were Greek, but the overall plan of the walls owed little to Greek military science. Their great length made them impractical for defence, but they suited the Peucetian concept of a city in which the burial grounds of the dead were intermingled with the habitations of the living; and they enclosed large areas of open ground within the walls where the rural population who lived in the scattered farms could withdraw for refuge along with their flocks.

This concept of a city involved ideas of a hierarchy, or at least a three-tier pyramid, of minor settlements which were incorporated in its territory. The city at the head of the hierarchy on the E side of the Basentello must have been Botromagno. Below it there were at least ten settlements of intermediate size which were not walled, but which must have served as local market centres. San Felice, the principal settlement in our Survey Area, was one of these. Below them were the scattered farms and small clusters of rural dwellings. The main Peucetian centres, so organized, represented themselves as territorial city states on the Greek model, and asserted this by minting coins using Greek imagery and with the name of their inhabitants in Greek. This attitude implied that the Peucetian tribal federation had no authority in civic matters, even though it was still needed to co-ordinate a tribal response in time of war.

The settlements on the West bank of our survey area fell within the Lucanian sphere of control and developed rather differently. In many cases geographical constraints limited the extent to which the Lucanian hill-top settlements could develop. Since the Lucanians buried their dead outside the area of domestic habitation, the area enclosed could be more compact than in Apulia. The largest settlements were therefore much smaller than their Apulian counterparts. The distinction between major and minor settlements was less clear than in Apulia. Even minor settlements might have their own defensive walls. There was nevertheless a hierarchy in which the main centre in a sub-region became the seat of local magistrates (*meddices*) responsible for the various settlements which made up the community (the *touta*) of the sub-region.

The Lucanians founded several new cities in the 4th century applying some town-planning ideas which they had learned from the Greeks, but they did not represent them as Greek-type city states. Lucanian tribal institutions remained strong. There continued to appoint federal authorities who looked after the communal sanctuary at Rossano and military commanders who led the combined Lucanian army in war.

The rural settlement on the W side of the Basentello in our Survey Area must have been dependencies of the settlement on Monte Irsi, but whether Monte Irsi was the principal settlement in its *touta* and the seat of the local magistrates is not yet clear; but since there is no evidence for a major sanctuary in the vicinity of the site, it is more likely that the centre of the *touta* was elsewhere, perhaps at Timmari.

The urban developments of this period (particularly the construction of massive circuit walls), and the increased imports of fine Greek pottery and amphorae of oil and wine imply that this was a society in which the majority of the population were no longer living at a bare subsistence level. There are several possible sources for its increased wealth. Some of it may have come from booty, including the sale of prisoners – the same source of income that financed Roman expansion in this period. Some of it is likely to have come as payment for mercenary service to indigenous Apulians or Lucanians enrolled in the Greek armies. But the most reliable source must have been increased agricultural production, made possible, at least in part, by the creation of farms in the open countryside. It is likely that Apulians were exporting grain to Athens and perhaps other cities already before the end of the 5th century when the move into the countryside was only just beginning; but the evidence from the *dolia* counts in our Survey Area suggests that wine was being produced commercially at least on the SW facing slopes above the Basentello. The environmental evidence shows that there were extensive areas of pasture all through the Fossa Bradanica, and it is likely that some increase in transhumant sheep-raising in this period, and perhaps in textile production, although the main development of this resource took place in the next period.

Chapter VIII. The Hellenistic Period

The period is defined here as extending from the Roman siege and capture of Silvium in 306 BC to the beginning of the Principate of Augustus, formalized in his constitutional settlement of 28/27 BC. It was a time of profound economic, social and cultural change.

1. Pottery and other artifacts

i. Black-gloss

For the beginning of this period black-gloss pottery continues to be the most abundant diagnostic tool, and it remains so until the middle of the 2nd century BC; but the types characteristic of this Hellenistic phase are significantly different from those of the late Classical period which preceded it. The typical drinking cups associated with the symposium disappear – first the *kylix* by the end of the 4th century, then the *skyphos* by the middle of the 3rd. The one-handlers continue for a while but become deeper, and by the end of the 3rd century have developed into handle-less bowls with ring foot and thickened rim. Flat-based hemispherical bowls with incurving rim also emerge in the 3rd century, and in the 2nd century, take on the form of the *mastos* with more flaring walls. Deeper bowls with flaring walls and rims triangular in section also appear in the late 3rd century and continue well into the 2nd. The "salt-cellars" typical of the 4th century develop in the 3rd into miniature bowls with thickened incurving rims. The dish with offset rim which had appeared in the late 4th century becomes wider and shallower in the 3rd, while the rim projects further and turns both up and down in an S-profile. These developments are well known from sites outside our Survey Area, especially Botromagno, Civita di Tricarico and Taranto, and the ceramic typologies established there help to date a number of our survey sites to the 3rd and 2nd centuries BC (Sites 124, 302, 303, 355, 372, 407, 419, 703, 715, 810, 813). Another characteristic feature of black-gloss pottery of our area in the 3rd and 2nd centuries is the use of the "semi-glazed" technique: the potter would hold a pot by the base and dip it into the slip, allowing it to coat the inside of the pot and much of the outside. He would then set the pot upright on its base allowing the slip to run irregularly down the outside towards the base.[1] Black-gloss pottery becomes rare in our Survey Area after the middle of the 2nd century BC when it gives place to grey-gloss ware.

ii. Grey-gloss

Grey-gloss (otherwise known as grey glaze,[2] grey ware,[3] *pasta grigia*[4]) is one of a number of grey wares in vogue in Italy and Sicily in the last two centuries BC,[5] which were perhaps inspired by prototypes in silver. The forms generally follow the same broad lines of development as other contemporary fine wares, notably the Campana wares of Latium, Campania and Sicily, but with some differences which place them in a South Italian (Apulian and East Lucanian) pottery tradition. Generally the shapes develop out of earlier black-gloss types but they are exaggerated, so that plates become larger with higher or more spreading rims, and some of the bowls develop a pronounced S-profile. The quality of the potting is often poor. Most pots were semi-glazed, and the walls of the large spreading plates frequently sag.

The date for the beginning of production of the ware has proved controversial, though the discussion concerns a fairly narrow chronological range. In her pioneering study, published in 1980, Liliana Giardino argued that production of the ware began at Metaponto after the beginning of the 2nd century BC, more particularly in the second quarter of the century.[6] The argument was based largely on comparisons with Campana C types which seemed to provide the models for their grey-gloss counterparts. She claimed that the production of the ware reached its greatest height in the last decades of the 2nd and the first half of the 1st century BC, and that it finished near the end of the 1st century BC when the latest pieces were influenced by Arretine types. Yntema however, noted that there are contexts at Valesio in which early types of grey-gloss pottery are associated with Roman asses struck between 165 and 145 BC, and with various wares imported from the Eastern Mediterranean which can be dated in the second half of the 2nd century BC, and from this he argued that production of the ware began ca. 160/150 BC.[7] This date is reinforced by

[1] See Prag's discussion of the technique in *Gravina II*, 68. Semi-glazing begins to appear on Italian sites in the 4th century BC, but was most popular in the 3rd century, especially the second half. It continues into the 1st century in grey-gloss ware.

[2] I have referred to the ware as "grey glaze" in many previous publications, but have decided to use the term grey-gloss here in conformity with most recent English-language scholarship, notably Yntema 2005.

[3] as in Vittoria 2011.

[4] as in Giardino 1980 and generally in Italian language scholarship.

[5] The best known is Campana C, produced in Sicily and widely distributed on the Tyrrhenian side of Italy.

[6] Giardino 1980.

[7] Yntema 2005, 8-11.

the earliest contexts in which grey-gloss occurs in the necropolis at Taranto which have been assigned by K.G. Hempel to a late stage of phase 2 corresponding to the first half of the 2nd century BC.[8]

Although the forms of grey-gloss pottery are more or less standardized, it is likely that it was produced in workshops distributed over a wide area of South Italy. In an early archaeometric analysis of black- and grey-gloss samples from Athens and several sites in South Italy, including Botromagno, John Prag noted that considerable differences in technique and fabric between finds from different sites could be observed which suggested that the ware was produced locally at numerous centres, even though the homogeneous character of clay deposits in much of South Italy makes it impossible to distinguish them by thin-sectioning and spectrographic analysis.[9] But further chemical and mineralogical analyses carried out on samples of grey-gloss from Monte Sannace and Botromagno show that some pieces from Botromagno were clearly distinct, although others could not be differentiated from those at Monte Sannace.[10] Since the distinguishable ones were generally inferior products, the analysis suggests that the better pieces are likely to have been imported from elsewhere (not necessarily from Monte Sannace) while others were probably locally produced. Pottery kilns of the period have been identified on Botromagno, but none of them can be shown to have produced grey-gloss pottery, and only a few kilns which certainly produced it have so far been identified on other sites – at Oria in the Salentine peninsula, at Metapontum, and at Pantanello in the Metapontine Chora.[11]

The grey-gloss found in the earlier surveys by Vinson and others in the Fossa Bradanica barely reached as far as the watershed of the Basentello near Palazzo San Gervasio which is likely to have marked the boundary of the territory of Venusia (Venosa) founded as a Latin colony in 291 BC.[12] The Venosan settlements further to the W used black-gloss pottery.

Luceria and Brundisium, the two other Latin colonies in Apulia, founded in 314 and 244 BC, also remained outside the distribution range of grey-gloss, as did Sipontum, founded as a Roman colony in 194 BC. The ware seems, therefore, to have circulated in the last half of the 2nd century BC in a Magna Graecian cultural ambience. Nevertheless, the pattern of distribution established then continued after the Social War and the municipalisation of Italy that followed it. In the latest phase of production of the ware, the potters themselves had become Roman citizens, and occasionally stamped their products with names of Roman type, analogous to those on Italian terra sigillata pottery.[13]

iii. Relief-decorated bowls

In the Late Hellenistic period, the finest ceramic drinking vessels were hemispherical mould-made bowls decorated in low relief with vegetable motifs or figured scenes of humans or animals, usually with a bacchic theme. The potters in Athens and Asia Minor who first made them were inspired by relief-decorated vessels in silver, and grey-gloss equivalents were made in imitation of them in several of the Greek cities in South Italy, including Tarentum and Metapontum. They are rare in our Survey Area, but two fragments (one of them in an anomalous orange-slipped ware) were found on Site 813, the largest site of the period in our Survey Area. Annalisa Melillo reports three fragments from Recupa di Scardinale (Site 213x),[14] and one sporadic piece (No.984) was found outside our Survey Area some 900m S of the site of Santo Staso (Site F2) below Botromagno.

iv. Plain and banded wares

The great majority of black-gloss and grey-gloss shapes circulating in our Survey Area and beyond were open vessels to be used in eating or drinking. Most closed shapes – jugs, storage jars etc, were made in WMP (banded) ware or plain ware. Frequently the same shapes occur in both. By the middle of the 3rd century vegetable decoration was dropped, but potters continued to decorate some pots with simple bands down to the end of Period Gravina VIIIa ca. 70 BC.

v. Unguentaria

Unguentaria had emerged in the 4th century as perfume flasks used especially in burials where they took the place of the *lekythoi* of the previous period. They continued into the 1st century BC becoming progressively taller and more spindly. Their disappearance from the repertoire corresponds to the end of inhumation burial. generally in Italy.

vi. Thin-walled ware

Some Romanizing wares began to circulate in the Fossa Bradanica in the 1st century BC. Unslipped thin-walled beakers, some with dotted or barbotine decoration, were found in the pit group F202 of 80–70 BC on

[8] Hempel 2001, 114.
[9] Prag *et al.* 1974, 155.
[10] Ciancio, Dell'Anna & Laviano 1994.
[11] Oria: Maruggi 1996. Metaponto: D'Andria 1976, 541 n. 9; Giardino 2000; 2005, 423-424; Silvestrelli 2016, 141. Pantanello: Carter 2011b, 910.
[12] Some was found on Site V22 near Venosa, amount not specified.
[13] Giardino 1980, 280 and tav. 86, no. 69: grey-gloss dish from the *castrum* at Metaponto with drawing of a stamp interpreted as Q. SAIR(us) with IR in ligature. A photograph of the stamp (Giardino 2005, tav. XLIV.2) shows that it should be read as SAR(-), perhaps Sar(ius).
[14] *PSF*, 203, 207, tav. I.11.

Botromagno[15] (see below sub-section 9.v) and on Monte Irsi in contexts of Phases AIV and AVI (build-up for the construction of the Augustan-period building on Site A). Others found in contexts of the occupation of the building in the 1st/2nd centuries AD were perhaps re-deposited). It is remarkable, therefore, that only three fragments of unslipped thin-walled beakers were found in our Survey Area, all from Site 813, including No.987.

vii. Glass vessels

Moulded glass vessels imported from the E Mediterranean were luxury objects, which began to reach Apulia in some numbers in the 3rd century BC. They were sometimes deposited in rich burials in Tarentum, but were especially favoured by the indigenous aristocracy, and have been found in some of the richest burials at Canosa[16] and Ascoli Satriano.[17] Several fragments of moulded glass bowls were recorded in the excavation of the settlement of the late 2nd and early 1st centuries BC on Botromagno (*Gravina II*, nos. 1832-1835). Only one piece of this period was recorded on our survey: a rim fragment of a moulded beaker, deep yellow, dated by John Hayes to the end of the 3rd or beginning of the 2nd century BC, found on Site 213 (not catalogued).

viii. Cooking ware

New Romano-Campanian types of cooking ware also came into use in the late 2nd or 1st century BC in the Fossa Bradanica, alongside the boiling vessels (*chytrai*) and casseroles or Greek type known from the previous period. Tall handleless pots with off-set rims (*olle*), mugs, open shallow pans, and baking lids (*clibani*) appear in contexts of the late 2nd or early 1st century BC at Sant'Angelo Vecchio in the Metapontine Chora (Di Tursi 2016), and continue in use throughout the imperial period with only slight changes in shape. These types are all well attested in the settlement of Period VIIIa on Botromagno,[18] but they are rare in this period in our Survey Area. A small fragment of red-slipped cooking ware of the Late Republic or Early Empire was found on Site 120, and two others on Site 124.

ix. Amphorae

The amphora types analysed by Giacomo Disantarosa (Appendix) provide important evidence for commerce (see below), and reinforce the chronology of some of the sites. The change from Magna Graecian wine amphorae of the 4th–3rd centuries to Lamboglia-2s in the 2nd and 1st centuries BC marks a significant break. The latter are attested on seven sites in our Survey Area. Two fragments of Brindisine oil amphorae of the 2nd/1st century BC were found on Sites 229 and 335, and single fragments of wine amphorae from Rhodes and Cnidus of the 2nd century BC were found on Site 303.

x. Lamps

Wheel-made black- and grey-gloss lamps of the Hellenistic period are other useful indicators of chronology, but they were found on only a few sites: a piece of the late 4th century from San Felice (Site 223) and others of the 2nd or 1st century BC from Sites 303 and 813, both important sites of this period. Two more were found in the excavation by the Superintendency of the Late Hellenistic settlement at Recupa di Scardinale in our Survey Area.[19]

2. The transformation of the economy and material culture in the last three centuries BC

The rapid economic transformation of the period in South Italy was fuelled by the profits of war in the Eastern Mediterranean, by the influx of cheap slaves, and the opening of new markets and sources of supply as a result of Roman conquest.

i. Coinage

a. Greek versus Romano-Campanian coins

Most of the Magna Graecian cities which had minted coins used in Central Apulia in the 4th century BC (listed in Chap. VII.7.iv) no longer appear in the lists of the 3rd century; but Tarentine and Metapontine silver coins continued to circulate in Central Apulia down to the middle of the century and have been found on Botromagno in some numbers. A badly eroded Tarentine *diobol* of the period following the Pyrrhic War was found in our field survey of San Felice (No.2021).

But increasingly during the course of the 3rd century the silver coins of the Italiote cities gave place to the so-called Romano-Campanian issues which were minted on the Roman weight standard in both silver and bronze.[20] The popularity of these coins suggests that Apulian and Lucanian traders were dealing increasingly with their counterparts in Rome and Campania rather than in Tarentum and the other Magna Graecian cities.

b. Roman coins

At the end of the 3rd century the emergency of the Second Punic War led to further changes. The Roman

[15] Small *et al.* 1994.
[16] De Juliis 1984, 448-450 (in the *Tomba degli Ori*).
[17] Corrente ed. 2012, 113-115.
[18] Cotton in *Gravina II*, 179-194.
[19] *PSF*, 204 (A. Melillo).
[20] Siciliano 1989, 165-167; Libero Mangieri 2001, 50 (Gravina and Altamura); Travaglini & Camilleri 2010, 362-363.

state abandoned the silver *quadrigati* that had been in use since the First Punic War and minted the first silver *denarii* and *victoriati*; and to reduce the weight of the base-metal coinage correspondingly, they issued new series of *asses* and *sestertii*. The motive for the change was the need to finance the war when Roman fortunes were at a low ebb, but the new stable coinage was an immediate success, and during the course of the 2nd century the *denarius* and its fractionals ousted all other currencies. *Denarii* circulated widely even in small rural sites. Numerous examples of the 2nd and early 1st century BC were recovered in the excavations of Botromagno, and on Monte Irsi a small disturbed hoard of 15 denarii was found in the remains of the Roman villa of the Augustan phase. They range in date from 101 BC to 2–11 AD, but most fall within small clusters dated 101–88 (4), 49–42 (6), and 29–27 BC (3).[21]

The mints of a few allied communities in South Italy continued to function for a while, but by ca. 150 BC they had all disappeared.

c. Peucetian coins

Within this chronological frame falls the bronze coinage of nine Peucetian communities (Azetium, Barium, Butuntum, Caelia, Grumum, Mateolum, Neapolis (in Apulia), Rubi, and Sidion/ Sidis*)* which continued the tradition of local mints established at *Caelia* and *Rubi* in the last quarter of the 4th century (Chap. VII.7.i). Both had minted in silver, but the last silver issues came to an end early in the 3rd century BC, and there seems to have been little if any overlap in time between the silver and bronze coinage. Various recent studies have shown that the Peucetian bronze coins were produced over a long but discontinuous period. [22] There are very few stratigraphic contexts to date them, so the chronology depends on the analysis of the weight standards used, and of the iconographic devices and mint marks displayed on the coins. On these grounds, they can be divided into two main categories. The first consists of the coins of Azetium, Butuntum, Grumum, Neapolis, Rubi and Sidion/ Silvium which were minted on the Tarentine weight standard using iconographic motifs derived from Tarentine prototypes, but without mint marks. They were minted in a Greek milieu, with the names of their communities in Greek, and they have generally dated between ca. 300 and 250 BC when Greek influence in Peucetia was still strong.[23] According to A. Travaglini they should be dated after the Pyrrhic War, i.e. around the middle of the 3rd century BC.[24] The second category includes coins which still have iconographic devices of Tarentine type, and inscriptions in Greek identifying the community which minted them, but which have value marks of Roman type and are minted on the Roman weight standard introduced during the course of the Second Punic War.[25] They include Barium, Caelia and Mateolum.

The main point of dissension concerns the bronze coins of the Sidini (i.e. the inhabitants of Sidion, or perhaps Sidis) which are the most relevant to our Survey Area. It is likely that they were minted by, or at least for, the inhabitants of the Peucetian settlement on Botromagno known to the Romans as Silvium since the only examples of known provenance come from that site. The identification of Botromagno with Silvium is discussed below (sub-section 6.iv.b). The coins have standard Hellenistic motifs: the head of Zeus facing right on the obverse, and on the reverse, Herakles leaning on his club with the legend ΣΙΔΙΝΩΝ. G. Libero Mangieri has argued that they are most likely to have been minted on the eve of the Roman invasion of Silvium in 306 (sub-section 3.i) to demonstrate the community's support of the Tarentines, who may have had an understanding with the Samnite garrison in their city.[26] The date is said to be supported by the discovery of a coin of the *Sidini* in the fill of a recently excavated cistern on Botromagno, together with archaeological material which cannot be later than the first quarter of the 3rd century BC. Some caution, however, is advisable because the context has not been published, and it is common on Botromagno to find earlier material redeposited in later contexts. Others have put the date of the coins in the 3rd century, either before the Pyrrhic War, as in the *Historia Numorum* where they are dated ca. 300–275 BC, [27] or (with Travaglini) around the middle of the 3rd century. But it might also be argued that they were minted after the battle of Cannae in 216 BC but before the Roman reconquest of 207 BC when Hannibal permitted cities which had come over to him to mint coins to supply their local needs.[28] Without stratigraphic evidence, we may agree with A. Siciliano that Peucetian bronze coins minted on the Tarentine weight standard without value signs to assist their identification cannot at present be linked with a specific historical event.[29]

Generally the coins of these Peucetian cities were minted in small quantities with only a few series of die impressions. Sidion/Silvium, with only one series, minted the fewest of them all. Libero Mangieri records only seven known examples of the coins,[30] but an eighth can be added which was sold at auction in 2019.[31]

[21] Wightman in *Monte Irsi*, 74 and 210-211, nos. 387, 389-398.
[22] Siciliano 1989, Libero Mangieri 2010, Travaglini 2010.
[23] As in *HN.Italy2*, 84-107.
[24] Travaglini 2010.
[25] Travaglini & Camilleri 2010.
[26] Libero Mangieri 1996, 12-13 and 63, *Sidion*, nos. 24-26; 2001, esp. 56-57; 2010, esp. 62-63.
[27] *HN.Italy2*, 92, no. 822.
[28] Arslan 2016.
[29] Siciliano 1989, 168.
[30] Libero Mangieri 2010, 54.
[31] *DeaMoneta, Artemide* 48E, 31 August and 1 September 2019: https://www.deamoneta.com/auctions/search/657?c=Greek+Coins

Since they were low-value coins these Peucetian bronze pieces were not hoarded, and they circulated to only a limited extent beyond the territories of the cities where they originated. Their main purpose, therefore, was to serve local needs while at the same time asserting the status of these communities as autonomous city states.

ii. Agricultural processing

The new opportunities for wealth creation stimulated new inventions in agricultural processing. The rotary mill, invented in the 3rd century BC, was, however, slow to be adopted in our Survey Area. It is attested on only one site (Site 407 No.2047) before the middle of the 2nd century BC, but it is found on others of the imperial period. It was an improvement on the hopper-rubber of the 4th/3rd century.

New equipment also improved the processing of oil and wine. The lever press for crushing olives and grapes is attested surprisingly early at Difesa San Biagio in the 3rd century BC,[32] and there was probably one on Botromagno in the 1st century BC.[33]

iii. Construction techniques

In the 2nd century BC, the use of lime-based mortar in building construction caught on in South Italy and transformed the appearance and functionality of buildings. But this development varied from one area to another depending on the resources of the landlord-builder. Mortar-bonded masonry was used in the luxurious villa at Termitito at the edge of the coastal plain between Metapontum and Heraclea before the end of the 2nd century BC (described below), but that was an exceptional instance which indicates that the owner of the villa (surely a high-ranking aristocrat) was familiar with the advanced building techniques of Rome and Campania. The more humble buildings of the late 2nd century BC on Botromagno were still made with walls of mud brick resting on stone socles bonded with clay. At Monte Irsi a little mortar was used in the construction of a terrace wall of the same period that probably supported the platform on which the domestic part of the villa was built,[34] but not in the cattle stall associated with it. Mortar was also used to make solid water-proof floors in bath buildings (as at Tolve Moltone[35]), or impluvia (as in the villas at Destra Basento and Termitito,[36] and in the more rustic villa in the centre of Botromagno[37]), or to catch water spilled from cisterns (as on Monte Irsi[38]); and it was used to line cisterns in place of clay (as at Monte Irsi, and on Botromagno).

The Laconian and Corinthian roof tiles of the Greek building tradition disappeared from our Survey Area and its environs around the end of the 3rd century BC. On Botromagno and Monte Irsi the buildings of the late 2nd and early 1st centuries BC were roofed only with *imbrices*, which must have been set in alternately inverted rows, like their pre-modern counterparts in this part of Italy. This is reflected in the tile counts from those sites in our Survey Area which were occupied mainly in the last two centuries BC.

iv. Houses

Social inequalities, which in the 4th century had been expressed most conspicuously in burials, began to be demonstrated more visibly in domestic life. Already before the end of the 4th century, the first peristyle houses, in which the principal rooms were organized around a small colonnaded courtyard, began to appear in South Italy in both Greek and indigenous areas. There is a precocious example in the Lucanian settlement at Cersosimo, mentioned in the previous chapter. In the 3rd century some domestic buildings at Heraclea had rooms arranged around small colonnaded courtyards,[39] and Monte Sannace a house with a peristyle courtyard erected in the suburban area below the acropolis which had a façade decorated with terracotta plaques showing the fight between griffins and horses.[40] At Civita di Tricarico the modest *pastas* house known as the House of the Monolith evolved in the course of the 3rd century into a house with peristyle.[41] A similar evolution has been detected at Tolve Moltone, where the simple farmhouse of the 4th century was reconstructed on a larger scale in the 3rd with a central courtyard flanked by porticoes. In the centre of the courtyard was a square tessellated feature that was initially interpreted as an impluvium; but that interpretation has been disputed since it was not sunk into the ground, and cannot have been intended to collect water. In the SW corner of the complex there was a bath suite with a hip-bath of Hellenistic-type, and a tower projected from the S facade.[42] The productive areas were situated on the E side of the courtyard, clearly separated from the residential part to the N and W. The entrance to the whole complex was enlarged and decorated with antefixes showing the heads of Pan and a maenad. In its final form, the whole complex extended over ca. 660 m^2. Perhaps the most innovative building of the period was at Arpi where an elaborate peristyle house was

[32] D'Andria & Roubis 1998-1999, 136-138, 151; Roubis & Pignataro 2016, 135. The press is believed to be for oil production.
[33] Small, Buck *et al.* 1994, 251-252; fuller publication pending.
[34] E.M. Wightman in *Monte Irsi*, 62.
[35] Tocco 1982.
[36] De Siena 2005, 451 (Destra Basento), 454 (Termitito).
[37] Small *et al.* 1992, 195.
[38] *Monte Irsi*, 41-44.
[39] Giardino 1996, 149-150.
[40] Russo Tagliente 1992,128-132.
[41] De Cazanove 2008, 122-125.
[42] Tocco 1982; Soppelsa 1991, Russo Tagliente 1993b.

built with a room decorated with a pebble mosaic floor showing a sea-monster in a central tableau surrounded by dolphins.[43]

The farmhouse at Tolve can be compared with another recently excavated in the territory of Montalbano Ionico between the Cavone and Agri rivers. It has not yet been fully published, but according to a preliminary report it was built around the middle of the 3rd century BC. It is said to have had an atrium in the centre of the building with an *impluvium* to catch rainwater and admit light, but that interpretation must be considered tentative until the excavation is fully published. As at Tolve, the lay-out of the rooms surrounding the central atrium/ court is quite different from that of a Romano-Campanian atrium house. There were domestic quarters with bath and kitchen on the S side, but the largest rooms flanking the atrium on its W side were storehouses used for agricultural produce in which several *dolia* were partly interred in the floor. The biggest room on the N side contained a grain mill. The building must have been the centre of a large agriculture estate, consisting probably of the land which in the previous century had been cultivated from several smaller farms.[44]

There is no doubt that the concept of the atrium, with inward sloping roof from which water fell into a shallow basin (*impuvium*) in the floor, was used in the design of both urban and rural buildings during the 2nd century BC in the area that interests us. A building of the C2/1 BC on the acropolis of Civita di Tricarico illustrates the building type in its purest Pompeian form with *cubicula*, *alae* and *tablinum* organized around the central atrium.[45] In such buildings the atrium had a ceremonial function; but the atrium with its *compluvium* and *impluvium* for lighting internal spaces and collecting water could also be used in the more functional parts of buildings as it was in the small villa of the late 2nd century BC on Botromagno (discussed below). The water collected in this way could be channelled to supply small bath suites equipped with hip-baths.

By the end of the 2nd century BC the component parts of Hellenistic domestic architecture – the Italic atrium and Hellenistic peristyle – were combined to create much more magnificent villas on the Ionian coastal fringe. One recently excavated at Termitito had a monumental façade built in mortared masonry with a portico more than 30m long, It bore comparison with the most advanced villas in Latium or Campania.[46]

v. Eating and drinking habits

The changes in pottery types which we have mentioned above correspond to changes in the way food was prepared and eaten, and wine was drunk. Imported wine of good quality was now drunk undiluted without being flavoured with cheese or herbs (though it would still be resinated if the *dolia* and amphorae in which it had been stored and transported had been lined with pitch). Good Greek wine was imported in increasing quantities into Apulia from the Aegean after the Roman conquest of the E Mediterranean, and new Italian vintages were produced to rival them. The symposium, in which wine mixed with water was drunk in convivial surroundings after a meal, gave place to the banquet in which guests were supplied with gourmet food, with a consequent change in social rituals.[47] The new custom required smaller drinking vessels and larger dishes, and the krater, which had been the emblem of Greek sympotic culture, disappeared from the potters' repertoire, as we have already seen.

vi. Religion and cult

Religious expressions which had given society cohesion in the 4th century disappeared or took different forms. In Lucania most rural sanctuaries were either abandoned or fell into decline around the end of the 3rd century, mirroring the destruction and ruralisation of the settlements to which they were connected. There was no single pattern.[48] A few show signs of continued use down to late 1st century BC, including probably Timmari, the nearest important sanctuary to our Survey Area, where some terracotta votive figurines in the so-called Tanagra style show that the cult continued to function for some time in the post-Hannibalic period. A few others were reconstructed in the 2nd and 1st centuries BC including most importantly the Lucanian communal sanctuary at Macchia di Rossano where the cult of Mefitis had a last manifestation, before being transferred to the *municipium* at Potenza early in the imperial period. Over time the old cults were modified or replaced by new ones that followed Roman models. At Civita di Tricarico the Lucanian sanctuary was abandoned around the beginning of the 2nd century BC and a new focus for religious cult was provided by a small temple of Romano-Etruscan type on the acropolis of the settlement.[49] In Apulia some temples were built following Roman models in the 2nd century BC: a relatively simple one at Ordona[50] and a grander one at Canosa with architectural embellishment in high Hellenistic style.[51] In Peucetia the sanctuary at

[43] Mazzei & Lippolis 1984, 245, 247 and pls. 257-258.
[44] De Siena 2005, 446-448.
[45] M.G. Canosa in Canosa & De Lachenal 1993, 111-112; De Cazanove 2001, 186-189 with revised date and interpretation.
[46] De Siena & Giardino 1994, 204-205; 2001, 151; De Siena 2005, 453-455.
[47] Small 2011.
[48] De Cazanove 2005, 786-798; Battiloro 2017, 176-189.
[49] De Cazanove 2005, 795-798.
[50] Van Wonterghem 1979.
[51] Pensabene 1992 (end of the 4th/3rd century BC). Dally (2000, 71-162) down-dates the temple to the 2nd century BC.

Madonna delle Grazie near Rutigliano seems to have been abandoned around the end of the 3rd century BC, and there is no certain evidence for cult buildings in the ensuing period.

vii. New burial customs

Burial customs also changed. In areas where *rannicchiato* burial had been practised (as it had been in most of Apulia and in part of Lucania), flexed burial gave place in the late 4th or 3rd centuries to extended burial with the corpse laid on its back. This was the case, for instance, at Monte Irsi.[52] In much of Apulia the *grotticella* tomb was the norm, at least for richer families, in the 3rd century. Each rock-cut tomb might hold several burials, with the disarticulated bones of earlier skeletons being moved aside to make room for newer ones. The grave goods deposited in these tombs were very different from those of the 4th century. Armour and weapons were no longer components of the funerary assemblage; nor were vessels for the symposium. The normal funerary equipment was an amphora of wine and a simple drinking cup. Burial in *grotticella* tombs lasted (at least on Botromagno) down to the middle of the 2nd century BC.

After the middle of the 2nd century, cremation burial began to replace inhumation in much of South Italy. As we have seen, it had been practised occasionally in the previous period in both Greek and indigenous communities for élite burials. In Rome, however, cremation had been the normal custom from the beginning of the 4th century BC onwards,[53] and Roman influence must account for the spread of the practice over South Italy in the 2nd and 1st centuries BC. The adoption of it varied in time, however, from one area to another. The best evidence comes from Tarentum, where cremation became more frequent after the foundation of the Gracchan colony in 123 BC, and gradually replaced inhumation in the course of the 1st century BC.[54] Other areas seem to have been slower to adopt the rite. Practically nothing is known of burials in the territory of Metaponto in this period,[55] but at Heraclea there are only a few cremations among the numerous burials in the necropoleis of the 2nd and 1st centuries BC. They do not begin to predominate over inhumations until the Augustan period.[56] At Venosa there is a dearth of evidence for burials of the Late Republic, but by the beginning of the principate, cremation had been established as the norm.[57] At Gravina some fragments of burned human bone were found in a tomb of the 3rd century BC.[58] After that there is a gap until the late 2nd or 1st century when two cremation burials were deposited in a makeshift tomb on Botromagno associated with the settlement of the late 2nd and early 1st centuries BC, or possibly with the short-lived Augustan period house which partially overlies the Late Hellenistic building. Each burial contained a simple ceramic ossuary and a few associated, but not easily dated, pots.[59] How the dead were disposed of in other indigenous communities is unclear. In the interior of Lucania and Central Apulia there is a vacuum where many of the old centres of population had been abandoned or were in terminal decline. Conceivably the dead were cremated, but if so, their ashes were not normally consigned to urns and buried. The end of the traditional Italic burial customs can be seen as a sign of the disintegration of the traditional kinship groups around which society had been organized before the Roman conquest.

3. The historical context: the 3rd century BC

Vast changes took place in the settlement pattern in the Fossa Bradanica during this period. As a result of the detailed work on ceramic typologies published in the numerous volumes of the Chora of Metaponto, and of our own studies published here, it is possible to track them through a number of distinct phases and to put them in a historical context.

i. The Second Samnite War and the invasion of 306 BC

The first phase of Roman expansion into Apulia took place during the Second Samnite War when the Romans began to attack the Samnites in the strongholds they had set up in Apulia. In 315 BC they besieged and captured Luceria[60] where they founded a Latin colony in 314 BC to secure their control of Samnium from its E side; and in 306 BC a Roman army commanded, according to Diodorus (XX.80), by the consuls, entered Iapygia (Apulia) and besieged Silvium (Botromagno), which had been garrisoned by the Samnites.[61] The siege

[52] Laurenzana 2016, 53, Tomb 21, end of the 4th/ beginning of the 3rd century BC.
[53] J. Toynbee 1971, 39-40.
[54] Hempel 2001, 129-130.
[55] Carter 2011, 879, 893.
[56] Giardino 1995, 264-268; Bianco 1993, 195.
[57] Cremation burial of an infant at Madonna della Scala datable between the late 1st century BC and the middle of the 2nd century AD: A. Bottini in Salvatore 1984, 49-51; seven cremation burials on the via Melfi datable between the end of the 1st century BC and the late 1st century AD: Cracolici 2003.
[58] Gruspier & Mullen in *Gravina I*, 90
[59] Small 2020, 666.
[60] Livy IX.16.11; *Fasti Triumphales, ad annum* 319.
[61] Diodorus' account is problematic, and probably confused. There is no mention of the siege in Livy, although he refers to a successful campaign in the previous year (307 BC) by the consul L. Volumnius Flamma against the Sallentini who had declared war on behalf of the Samnites (Livy IX.42.4-5). Conceivably Diodorus has mis-dated the episode by one year, or (more probably) Flamma had his *imperium* extended to allow him to complete his campaign as proconsul early in 306 (Salmon 1967, 248; La Bua 1978, 266; Small in *Gravina I*, 15, note 79). Unless Livy (or rather his source) has confused the Sallentini with the Peuceti/ Poediculi, the passage suggests that the Romans had advanced beyond Botromagno across the Murge into the hinterland of Tarentum. Grelle & Silvestrini (2013, 47) point out that the toponym *Sallentino* is found at Acquaviva, not far from Monte Sannace, and suggest that the word Sallentini in Livy, normally used

lasted for a considerable number of days. The Romans took it by storm and carried off 5,000 captives and a good deal of other booty. The figure of 5,000 is no doubt a rounded number, not to be taken as a precise count, but it conforms to what we know of Roman practice in the late 4th and early 3rd centuries when a large proportion of the inhabitants who had resisted a siege was routinely taken captive and presumably enslaved.[62] Another normal punishment for a community forced into surrender by a Roman army was the confiscation of a large part of its territory.[63] Diodorus does not tell us that this happened after the siege of Silvium, but it should not be surprising if it did. As the sequel shows, this was not a hit-and-run raid; rather it was a strategic move to ensure Roman access by land to the Ionian coast.

After Silvium had been brought under Roman control, part of its land could be exploited for the benefit of the Roman people. When Pyrrhus began to negotiate a (fruitless) peace treaty with the Romans in the course of the Pyrrhic War, one of the conditions to be met by the Romans was the return of land confiscated from his Italic allies.[64]

Diodorus says nothing about the status of the community left behind at Silvium after the Roman victory, but it was probably the same as that of other defeated Italic peoples outside Latium, who were generally treated as inhabitants of *civitates sine suffragio*. They retained their own institutions, but they were liable to serve when called on in units attached to the Roman armies, and they had no political rights in Rome.[65]

The impact of the Roman invasion on Botromagno/ Silvium

The excavations on Botromagno have shown that the circuit of walls, built some time after ca. 330 BC with an outer face of massive squared blocks (see Chap. VII.3.ii.*a*), was finished on its NE side with a rampart of rough stones which ran down towards the ravine.[66] The change in masonry styles suggests that the circuit was finished in a hurry, perhaps in anticipation of an attack. These, at any rate, must have been the walls besieged by the Roman army in 306 BC. Inside the settlement, a ditch 6m wide at the top and 2.5m deep was dug across the SW spur of the hill in the late 4th century, perhaps to enclose the Samnite garrison, or to make the spur defensible in an emergency after the rest of the settlement had fallen.[67]

No conclusive evidence of the siege has been found on Botromagno, but that is not surprising since excavations have only reached traces of the 4th century buildings in small areas of the hill-top. A trench, dug across the defensive wall at the point where it crossed the narrow neck of land which marks the W edge of the site, showed that part of the wall had been demolished to a height of less than 1m some time before the middle of the 3rd century BC, perhaps in or shortly after the siege. The main evidence for the impact of these events, however, is the shrinkage in the size of the settlement around the end of the 4th century. The E end of the plateau seems to have been abandoned,[68] and a thick yellow-grey deposit spread over this area is likely to derive from the decayed mud brick walls of the 4th century houses.

The 'suburban' settlement in the area of Parco Santo Stefano below the hill of Botromagno between the scarp and the ravine may also have been abandoned at this time. The evidence is provided by the black-gloss pottery found associated with the houses.[69] Most of the forms, including *skyphoi*, one-handled cups and salt-cellars, can be dated to the late 4th century although in some cases they may continue into the 3rd; but there is a series of plates with projecting rims, nos. 241-245 in the published article, which Prag dated within the 3rd century BC on the evidence available at the time. More recent studies, however, have shown that this form of plate with relatively short rim projecting horizontally or even tilted slightly upwards begins around the middle of the 4th century and continues into the early 3rd,[70] after which the rim acquires a pronounced downwards curve. It is likely, therefore, that these plates are of similar date to the other black-gloss pieces from these buildings, i.e. late 4th or early 3rd century BC. Even more telling is the piece no. 252 in *Gravina II*, the lower part of an open vessel with fluted body and foot with horizontal moulding, which Prag dated tentatively ca. 300–275 BC, but which can now be compared to two pieces "di tipo indigeno" from Rutigliano tomb 6, datable ca. 320–310 BC.[71] They

of the Apulian peoples in the vicinity of Brindisi, may have had a wider geographical reference.

[62] Oakley 1993, 22-26; Harris 1985, 58-59. Livy records the enslavement of approximately 60,000 persons in the climactic years of the Samnite wars between 297 and 293 BC with figures for individual communities ranging from ca. 1,500–11,400.

[63] Appian, *Bell. civ*. 1.7 (ed. Gabba 1967); Plutarch, *Tiberius Gracchus*, 8; Hyginus, *De condicionibus agrorum* (ed. Campbell 2000) p. 82, lines 23-30, etc. The modern bibliography is vast: see esp. Tibiletti 1955; Toynbee 1965, I, 117-121; Brunt 1971, 278-284. The proportion of the territory confiscated varied according to circumstances. Ancient sources rarely record the details, but we hear of a third in some cases and a half in others.

[64] Appian, *Samnitica* 10.1.

[65] Cornell, 1989, 367.

[66] Small 1989; *Gravina II*, 13, 69-70.

[67] *Gravina II*, 13, 50. Casavola (in Casavola & Curzio 1997, 245 and 248) rejects this interpretation, seeing the ditch as a drainage channel adapted to the morphology of the site. But a drain of these dimensions would not be needed in the highly porous bedrock of Botromagno. The question could be resolved by a thorough geophysical exploration.

[68] R. Whitehouse *et al.* 2000, 7-8 and 233.

[69] Prag in *Gravina (PBSR) III* (2), 110-120.

[70] Yntema 2001, 148, Subtype KI03b from Valesio; De Cazanove 2008, 412-413, *assiettes à bord en z*. See also the discussion at Cat. No.836.

[71] *Rutigliano I*, 27 and 29 nos. 6.19 and 6.21, 481, tav. 35 f.: Form 3 *brocca*, type 5 in Palmentola's classification (*ibid* p. 483).

show that the "impressed St. Andrew's cross" noted by Prag on the Gravina fragment occupies the space below the handle. Alternatively, the fragment may be from a ribbed kantharos with similar X-motif below the handle, a type found at Sant'Angelo Vecchio in the Chora of Metaponto where it has been dated to the last half of the 4th century BC.[72] The evidence of the black-gloss pottery is therefore at least consistent with the idea that the lower part of the hill was abandoned after the sack of 306 BC.

ii. The foundation of Venusia in 291 BC and its impact

a. Venusia (Venosa)

The extensive field surveys carried out in the territory of Venosa have demonstrated how the countryside was transformed by the foundation of the Latin colony of Venusia in 291 BC on land seized from the Samnites in the course of the Second Samnite War. Archaeological field surveys have identified numerous villages inhabited by the pre-Roman population which ranged in size from 10–40ha, comparable in area to most of those in the more mountainous hinterland of Lucania.[73] The Romans imposed an entirely new pattern of settlement on the colonial territory. If Dionysius of Halicarnassus (V.16-17) can be believed, 20,000 colonists were settled in Venusia, making it the largest of all Roman colonial foundations.[74] The city itself was large, occupying ca. 42 ha; and the land immediately surrounding it was divided into small lots, measuring between 16 and 20 *iugera* (4–5 ha). Field surveys have revealed traces of numerous small farms which probably date to the time of the land distribution.[75]

b. Bantia (Banzi)

The foundation of Venusia had a profound impact on the neighbouring settlements which remained at least nominally autonomous. At Banzi on the NW fringe of the Fossa Bradanica, the indigenous habitation centre was reorganized. In the pre-Roman period the Daunian/ Peucetian/ Oscan settlement had extended loosely over 200 ha, with several nuclei, and with burials intermingled with houses. It was consolidated so that it occupied only 20ha. The adjacent countryside was also reorganized, with small farmhouses, mostly of less than 100m^2, occupying parcels of land allocated within a grid system which imitated that of Venusia.[76] One such farmhouse has been excavated at Mancamasone in the immediate environs of the city. The site had been occupied previously in the 4th century, but the building of that period was replaced by another, datable in the early 3rd century BC, presumably after the foundation of the Latin colony. It occupied an area of ca. 170m^2, and consisted of three rooms ca. 4.5m long and 3–4m wide which opened onto a *pastas*-type courtyard. The largest room, which was perhaps used for dining, was connected with two smaller service rooms, one of which was entered through the other. On one side of the building there was a trapezoidal outer courtyard which contained a household shrine.[77]

iii. The conflict of Rome with Tarentum

a. Cleonymus

As we saw in Chap. VII, the Romans began to extend their area of influence in the direction of South Italy in the course of the Second Samnite War (326–304 BC), at much the same time as the Tarentines were extending their control over South Italy at the expense of the indigenous peoples in the hinterland. At first conflict was avoided, but when the Romans captured Silvium and opened up a land route to their immediate hinterland, the Tarentines must have been seriously alarmed. In 303 BC they called in Cleonymus, the younger brother of the Spartan king Acrotatus, who arrived with 5,000 mercenaries from Greece and organized an alliance of Italiote Greeks.

The main sources for Cleonymus's campaign (Diodorus and Livy) are at variance on several points, so that it is not possible to construct a coherent narrative. According to Diodorus (XX.104-105) he made an alliance with the Lucanians and induced them to attack Metapontum which had refused to join him. He then entered the city and fined the Metapontines the colossal sum of 600 talents. After an interval in which he attacked and seized Corcyra, he returned to Italy and captured two cities which had rebelled against him, before being defeated in battle by the people of the region and withdrawing again to Corcyra. According to Livy (X.2) he captured the Salentine city of Thuriae (not to be confused with Thurii on the site of Sybaris in modern Calabria), but he was driven out by the Roman consul Aemilius Paullus who restored the city to the Sallentini. But Livy had also found in some unspecified annals that Gaius Junius Bubulcus, appointed dictator in 302 BC, was sent against the Sallentini and that Cleonymus withdrew from Italy to avoid a conflict with the Romans. It was perhaps at this time that the Tarentines and Romans agreed a treaty which prohibited the Romans from sailing beyond the Lacinian promontory near Croton.[78]

[72] Cf. Conoci 2016, 249, SAV BG 40. with comparanda.
[73] Marchi 2008, 51; 2010, 36-39.
[74] Salmon (1969, 175 n. 80) regarded the figure as "impossibly high" and suggested that Venusia probably got the same number as Alba Fucens, 6,000. For a discussion of the problem, see Torelli 1995, 150-151. The calculation of the area is taken from Pelgrom 2008, 343 n. 30.
[75] Marchi & Sabbatini 1996, 111-114; Marchi 2008, 52-53.
[76] Marchi 2005, 133-134; 2008, 57.
[77] Russo 1993a.
[78] Appian (*Samnitica* 7) informs us of the treaty, but gives no date for

Despite the inconsistency of the sources, it is probable some of these events took place in Central Apulia. Some have argued that Thuriae should be identified with Monte Sannace, and others (with less probability since there was no large Peucetian settlement there) that it was at Turi.[79] Anna Mangiatordi has suggested that the people of the region who defeated Cleonymus in his final battle in Italy must have included the Peucetians.[80]

b. Pyrrhus

In spite of the uncertainties in the detail, the episode of Cleonymus shows that the Tarentines were already involved in conflict with the Romans at the end of the 4th century BC. This hostility developed into open war in 282 BC when Roman warships violated the treaty and sailed beyond the Licinian promontory. They intervened in Thurii (i.e. the Greek city on the site of Sybaris), which had been under Tarentine hegemony, to liberate it from a Lucanian army that was besieging it. They then sailed into the harbour at Tarentum, where they suffered an attack by a Tarentine mob, to which they responded by invading Tarentine territory. With war inevitable, the Tarentines called in Pyrrhus, the king of Epirus, who crossed to Italy in early 280 and campaigned over much of South Italy with varying success, until he was defeated in battle at Malventum (to be renamed Beneventum) in 275 BC, and withdrew to Epirus. The Tarentines continued the war but were forced to surrender in 272 BC.

For much of the war, Pyrrhus was supported by a grand alliance of Italic peoples including Samnites, Lucanians, Bruttians, Daunians, Peucetians and Messapians, as well as most of the Italiote cities. When he tried (but failed) to impose a peace treaty on the Romans in 280–279 BC after the battle of Heraclea, one of the conditions he wished to impose was the return of land confiscated in previous wars from the Lucanians, Samnites, Daunians and Bruttians.[81] But these tribal names transmitted by the sources conceal the fact that not all the communities followed the policy of their ethnic group. In 279, when Pyrrhus left his winter quarters in Tarentum to besiege the Latin colony of Venusia, he is said to have subjected the cities of Apulia to his rule. Those that did not come over to him voluntarily were compelled to do so.[82] Silvium, which lay directly on his route, must have been one of these. It is probable, however, that all the communities which had supported him suffered Roman reprisals when Pyrrhus ultimately withdrew.[83]

The Pyrrhic war must have had disastrous consequences for the Italian communities caught up in the struggle. The decline of many settlements around the middle of the 3rd century BC is likely to have been a consequence of it, direct or indirect. Nevertheless, the Lucanian and Apulian peoples still had enough manpower for the Lucanians to be assessed to supply 30,000 infantry and 3,000 cavalry, and the Apulians (Iapygians and Messapians) 50,000 infantry and 16,000 cavalry in the register of men at arms compiled at the time of the Gallic invasion in 225 BC and transmitted by Polybius (II.23.9-24.17). The figure for Apulian cavalry has been questioned,[84] but it is not implausible, given the suitability of much of Apulia for horse-raising,[85] and there can be no doubt that the numbers indicate that both Lucanians and Apulians still had a large population of men of military age in the decade before the outbreak of the Second Punic War. The figures conceal the fact that settlements in some areas had survived much better than in others, and that the population on the coastal fringe was more numerous than in the central and S parts of the Fossa Bradanica.

iv. The Fossa Bradanica in the 3rd century BC

The evidence for settlement in the Fossa Bradanica in this period is patchy. The most relevant sites are considered here from N to S.

a. Monte Serico

More evidence is needed – and especially more published pottery drawings – before the impact of these events on Monte Serico can be assessed properly. The recent excavations by Ciriello, Cossalter and Sodo appear to show that occupation of the Iron Age settlement on the W slope of the hill continued into the 3rd century BC and was finally abandoned in the early 2nd century BC. Among the latest datable pieces was a fragment of a relief-decorated bowl.[86] No grey-gloss pottery was found in this part of the site. The survey evidence, however, (discussed below) shows that there was later occupation on lower ground below the hill on

it. It is usually thought to have been negotiated by Alexander of Molossus who according to Livy (VIII.17.10) made a peace treaty with the Romans. Grelle and Silvestrini (2014, 45) opt for Cleonymus.

[79] For a discussion of these arguments, see Grelle & Silvestrini 2013, 46-47.

[80] Mangiatordi 2011, 31.

[81] See Appian (*Samnitica* 10,1), the most reliable source for this episode; Lévêque 1957, 347-350.

[82] Zonaras VIII.5.1; Lévêque 1957, 307, 376.

[83] Diodorus (XX.15) records that the Bruttii ceded half of the mountainous plateau of the Sila to the Romans before 264 BC, and therefore most probably in the aftermath of the Pyrrhic War: Brunt 1971, 278; A.J.Toynbee 1965 II, 545-546. There were doubtless other confiscations.

[84] Brunt (1971, 48) suggested reducing it to 6,000, "still ... a higher proportion of cavalry than most other Italians".

[85] Toynbee (1965, 499) attempted to justify the figure by pointing out that the Tavoliere provides good pasturage; he might equally have said that the territory around Gravina was even more famous for horse-raising in the Middle Ages (below Chap. XII.8.iii.b).

[86] Ciriello, Cossalter & Sodo 2012.

the W and S sides, where the settlement was perhaps re-founded in the 2nd century BC.[87]

b. Jazzo Fornasiello

Some fragments of Italiote red-figure and Gnathian wares show that occupation continued on the site well into the 4th century.[88] No material has yet been reported from the excavation that can be dated to the 3rd century BC, but S.P. Vinson found some semi-glazed black-gloss pottery and some grey-gloss sherds on the site (Older Surveys List of Sites VI.2.*A*: V75). It is possible, therefore, that the village was abandoned in the late 4th century BC and re-occupied in the 3rd or 2nd.

c. Botromagno

On Botromagno occupation must have continued throughout this period because there is a large amount of material of 3rd century date found in later contexts in all the excavated sites on the plateau; but the only securely stratified buildings of this period excavated by the British School at Rome in the late 1960s were on Site CZ near the centre of the settlement, where there were the remains of four rooms belonging to at least two houses, rectangular in plan, separated by a narrow street.[89] They are differently aligned from adjacent structures of the 5th or early 4th century which they probably replaced.

But the main evidence for the use of the site in this period comes from a series of rock-cut *grotticella* tombs, and some infant burials, many of them found stratified below the buildings of period Gravina VIII.[90] The tombs had nearly all been robbed – mostly at the time of the construction of the buildings, but the ancient tomb robbers frequently left fragments of broken pottery, and sometimes whole pots, in the tombs which allow them to be dated to the 3rd or first half of the 2nd century BC. The only *grotticella* tomb so far found intact was located in the area of Santo Stefano below the scarp of the hill close to the ravine.[91] An entrance corridor cut in the rock led to a funerary chamber consisting of two L-shaped benches, separated by a projecting pier of rock: on one, the bones of a single individual had been heaped-up in a corner with an *alabastron*, leaving several pots, including a matt-painted volute krater with Medusa heads in the volutes, isolated at the far end of the bench; on the other there was the still-articulated skeleton of a second individual in the centre, and the disarticulated remains of three others piled up in the corners. Various grave goods, including a transport amphora, were loosely associated with them. Several of the pots had been intentionally broken. The brief report on the excavation makes no mention of any metalwork, except for a few scraps of iron in one tomb.[92] None is recorded from the other robbed or partially robbed *grotticella* tombs, so it would seem that weapons and jewellery were no longer deposited in burials on Botromagno. Since the dead were frequently provided with amphorae of presumably expensive wine, it is unlikely that the change in burial practice reflects the impoverishment of the population. It is more likely to have been caused by a change in the regulations or social conventions of the community governing burial practices, which might in turn be caused by ideological factors. The absence of weapons might be explained by Greek influence since the Italiote Greeks did not bury armour or weapons with their dead, but one might have expected to find strigils or fibulae. The question needs more investigation, and above all, fresh evidence from intact tombs.

d. Monte Irsi

The pottery does not suggest any gap in occupation in the Hellenistic period. The layers associated with the settlement of the 4th/3rd century BC were only explored in a limited area where they were stratified below the Roman building of the late 2nd/1st century BC. But there is no obvious gap in the black-gloss/grey-gloss sequence, so it is probable that there was no period of abandonment before the settlement was reorganized. In this it resembles Botromagno.

e. Timmari

At Timmari, the situation is more confused, largely because the excavations in the settlement carried out in 1935 and again in the 1970s have never been properly published, but from the preliminary reports[93] it is clear that the 4th century Lucanian settlement and the associated sanctuary continued well into the 3rd century BC. A coin hoard found in the votive deposit contained 153 coins ranging in date between ca. 440/420 and the middle of the 3rd century BC.[94]

f. Montescaglioso

Not much can be said about Montescaglioso either in this period. The settlement had been of considerable importance in the pre-Lucanian and Lucanian Iron Age, but the evidence comes almost entirely from burials, and from haphazard finds made below the modern city more than half a century ago. The latest published

[87] McCallum & Hyatt in *Beyond Vagnari*, 174-177.
[88] Castoldi 2014, 31.
[89] *Gravina II*, 36-38 and 185, fig. 28, phase IIB.
[90] *Gravina (PBSR) II*, 126-140; *Gravina I*, 192-193; Curzio 1997; R. Whitehouse *et al.* 2000, 185-220.
[91] Curzio 1997, 267-271.
[92] *Gravina (PBSR) II*, 129, tomb S7 nos. 13 and 14.
[93] Lattanzi 1980; Lo Porto 1991a, 4-9.
[94] Siciliano 1978; Lo Porto 1991a, 224-225.

tomb group dates from the first decades of the 3rd century BC.[95] The settlement is likely, however, to have continued through the Hellenistic period and into the Roman Republic, if not beyond, because a gigantic *telamon* found in Montescaglioso in 1925 must come from a monumental building (perhaps a tomb) of the 2nd century BC.[96]

g. Difesa San Biagio

Only a small amount of material from the site has been published, but a preliminary report of an excavation in a limited area in 1966 suggests that two houses with Laconian tile roofs of the 4th/3rd century BC were filled in at some point in the 2nd/1st century BC within the period of grey-gloss pottery.[97] Subsequent excavations in 1994 revealed more of the Hellenistic settlement on the NW and S sides of the hill. They apparently show that occupation continued without interruption from the late 4th century to the end of the 2nd.[98]

h. Cozzo Presepe

The excavations at Cozzo Presepe have produced better evidence.[99] The site had shrunk in the 5th century, but in the late 4th century it was reoccupied and refortified, first with a watch tower, and then ca. 300 BC with a defensive wall of mudbrick resting on a stone socle 2m thick, running along the vulnerable W and NW flanks of the site (Sites D, E and F), with a gateway at the SW corner (Site E). This was subsequently blocked, and a narrow parapet was built along the N scarp so that the whole site was surrounded by a defensive wall. Some houses were constructed inside it, one of which was partially excavated. They were probably built to accommodate a garrison defending this strongpoint at the edge of Metapontine territory. The latest datable finds suggest that the site was abandoned around the middle of the 3rd century BC.

j. Metapontum

The decline of Metapontum began in the late 4th century BC, partly as a result of problems caused by the rising water table which led to the collapse of the archaic temples before the end of the 4th century, and to the final abandonment of the main sanctuary around the middle of the 3rd.[100] The theatre was burned at that time and not restored. The population began to decline,[101] as is shown both by the shrinkage in the occupied area of the city, and by a decrease in the number of burials that can be dated after ca. 250 BC.[102]

The main development in Metapontum in the 3rd century, however, was the construction of a rectangular fortified area, known to archaeologists as the *Castrum*, on the highest ground within the urban plan in the E sector of the city. It was defended by a rampart and ditch which enclosed an area of ca. 14ha.[103] No literary sources refer to this strongpoint which was detected by aerial photography and has been tested by excavation at several points. Its date, function and historical context have been much discussed. Carter has compared it to the type of a Roman maritime colony, such as those founded at Ostia, Pyrgi and Minturnae in the period between the mid-4th and mid-3rd century BC and suggested that it was most probably constructed in the fourth decade of the 3rd century, twenty years or so after the Pyrrhic war in which the Romans gained control of Magna Graecia. He argues that its purpose was to house a garrison intended to provide ships for the Roman navy in the event of war with Carthage, and to defend the agricultural land of the Metapontine plain. It would have been occupied without interruption until 212 BC when the Romans withdrew some of their troops to reinforce their garrison at Tarentum that was being besieged by the Carthaginians. Thereupon the Metapontines massacred the remaining Romans and handed the city over to Hannibal, who installed a Carthaginian garrison in its place. The argument has some force, but it requires us to suppose that both Polybius and Livy failed to mention the foundation of a maritime colony (or at least strongpoint) of such importance in the context of the First Punic War of 264–241 BC. It would be easier to suppose that the foundation went back to the Pyrrhic War of 280–272 BC, for which our sources are much less good.

There were major changes also in the Chora around the middle of the 3rd century BC which probably reflect a change in the rural population.[104] The number of occupied farmhouses fell drastically, and many of the necropoleis in use in the 4th century were abandoned. Some long-established sanctuaries of the previous period were also deserted, including those at Pantanello[105] and San Biagio, where farmhouses were erected over the remains of the shrines. It has been argued that this development shows that sacred land had been appropriated for their own use by people who had no respect for the traditions and beliefs of the

[95] Lo Porto 1973, 194-195, Tomb 13.
[96] Lo Porto 1973, 181 fn 148; Lattanzi 1987, fig. on p. 194. For the style and date: Dally 2000, 153. The telamon is now (since 2017) displayed in the Abbey of San Michele Arcangelo at Montescaglioso.
[97] D'Andria & Roubis, 1998–1999.
[98] Roubis 1996.
[99] du Plat Taylor in *Cozzo Presepe*, esp. pp. 282-284.
[100] Giannotta 1980, 30-31.
[101] De Siena & Giardino 2001, 140.
[102] Cf. Scarano 1992. She records burials of the 4th and first half of the 3rd century in the urban necropolis.
[103] Giannotta 1980, 58-60; De Siena 1990; 2005, 440-441; Giardino 1978; 2005, 406-411; Carter 2011a, 885-886 (the most recent synthesis).
[104] Carter 2011a, 869-891.
[105] *Chora Metaponto VII*, *III*, 1443-1456. But I suspect that the short-lived farmhouse at Pantanello may be a final phase of reconstruction of the sanctuary: Small 2019.

previous population.[106] The farmhouse at San Biagio occupied an area of 247m^2, rather larger than those built in the Chora in the 4th century which rarely exceeded 200m^2, and it was organized around a courtyard, with some rooms reserved for storing food.[107] It therefore represents an intermediate stage in the development of rural buildings between the small single-family farmhouses of the 4th century BC and the earliest rustic villas with domestic quarters (*pars urbana*) clearly separated from areas for agricultural processes (*pars rustica*) typical of the last half of the 2nd century BC. It was abandoned by the end of the 3rd century BC, perhaps in the Second Punic War.

4. The historical context: the Second Punic War

There can be no need here to discuss the events of the Second Punic War of 218–202 BC other than to say that many (but by no means all) of the communities in South Italy went over to Hannibal after the battle of Cannae in 216 BC. His ultimate failure brought them disaster. We have few details, but the Bradano–Basentello valley was the main route of communications between the North Apulian plain and the Ionian Gulf. These were two of the principal theatres of the war, and Hannibal's troops must have passed from the one to the other repeatedly between 212 BC, when Tarentum and Metapontum went over to him, and 207 BC when he finally evacuated Metapontum and transported the inhabitants to Bruttii.[108]

5. The historical context: the 2nd century BC

i. Confiscations

The reprisals that followed the Hannibalic war must have been extensive, though we have few details.[109] When Capua was recovered by the Romans in 211, the institutions of city government were abolished. Its entire territory became the property of the Roman people, and justice was administered by a prefect sent out annually from Rome.[110] When Tarentum fell in 209 BC, the opponents of the Romans were put to death, 30,000 slaves were taken,[111] and the city was despoiled of precious metals and works of art. When a final settlement was eventually imposed, the city was compelled to destroy its walls and pay an annual tribute. A large part, perhaps all, of its territory was confiscated and turned into *ager publicus*.[112] That was probably in 203 BC when the dictator Publius Sulpicius Galba toured the cities in Italy which had supported Hannibal, together with his master of the horse Marcus Servilius Geminus, and heard their cases.[113] The unstated implication is that he imposed appropriate punishments on them all. That the Peucetian cities suffered a similar fate can be inferred from the fact that, in many of their territories, *ager publicus* of the Roman people was later subdivided and redistributed under the land reforms of the Gracchi (discussed below, section 5.vii).

The sources do not tell what happened when the Romans recovered Metapontum after Hannibal had evacuated its inhabitants to Bruttii in 207 BC, but since the Metapontines had massacred their Roman garrison, there can be no doubt that the Romans punished whatever was left of the community by expropriating much of its land and turning it into *ager publicus* of the Roman people. Nevertheless, settlement survived in the area of the Castrum, which continued to be occupied throughout the 2nd century BC. Dumps of waste material outside its periphery show that metalworking was still carried out intensively in it, and there were workshops there producing relief-decorated bowls and grey-gloss pottery.[114]

Traditional peasant economy reinforced at Venusia

These measures did not of course affect those communities which had remained loyal to Rome throughout the war. Canusium (Canosa), which had provided refuge for Roman fugitives after the battle of Cannae, continued to prosper after the war was over. Venusia, which had lost a substantial part of its population in the war, was reinforced with a new influx of colonists in 200 BC.[115] They maintained the traditional peasant economy in this part of the Fossa Bradanica.

ii. Ager publicus

The economics of transhumant pastoralism required access to extensive pastures on either side of the drove roads for the transhumant sheep, and even more extensive grazing lands at either end of them. These could be found on *ager publicus*, generally originating

[106] De Siena 2005, 445; *Chora Metaponto III, 2*, 881-882.
[107] Giardino 2012, 3. De Siena 2005, 442-446, figs 1 and 2.
[108] Livy (XXV.22) records that Hannibal marched from Herdonea (Ordona) to Tarentum in 212 BC. In 210 he transported the population of Herdonea to Metapontum and Thurii (Livy XXVII.1). In 207 he marched from Venusia to Metapontum by night-time marches over mountain routes – *nocturnis montanisque itineribus*, and back again by the same way (Livy XXVII.42). The reference to mountain routes suggests that he crossed the upland passes that connected Venosa with the upper reaches of the Bradano valley (or even the Basento) rather than following the much easier route along the Basentello river. If so, the Romans may already have recovered control of the territory of Silvium.
[109] Frank 1933, 112-113; Tibileti 1955, 265; Toynbee 1965, 117-121; Brunt 1971, 278-284.
[110] Livy XXVI. 16, 5- 13; Frederiksen 1984, 244-245.
[111] For the view that the figure of 30,000 represents existing slaves rather than Tarentine citizens enslaved after surrender, see Lippolis 2004, 276.
[112] Wuilleumier 1939, 167.
[113] Livy XXX.24.4.
[114] Giardino 2005, 423-424. Silvestrelli 2016, 141.
[115] Livy XXXI.49.6. Venusia had been the scene of several encounters in the war. Marcellus and Hannibal fought several skirmishes in the vicinity of the city in 210 BC (Livy XXVII. 2--21) and C. Claudius Nero defeated Hannibal in a battle near the city in 207 BC (Livy XXVII. 42.15).

in the confiscations, and a class of rich sheep-dealers (*pecuarii*) soon emerged who leased large *saltus* (open areas of rough grazing) from the state for that purpose and paid a tax (*scriptura*) probably proportionate to the number of sheep grazing on the public land.[116] The owners of some of the sites of the grey-gloss period in our Survey Area (see below) may fall in this category of *pecuarii*.

The *ager publicus* would have been allocated to graziers under the terms of the so-called Licinio-Sextian laws of 367 BC which limited individual holdings of public land to 500 *iugera* (ca. 125ha), plus 250 *iugera* for each of two sons. Another provision, perhaps added later, stipulated that the number of animals put to graze on these holdings should not exceed 100 cattle or 500 lesser animals (sheep, goats or pigs).[117] In Apulia some of the land allocated in *saltus* for grazing had probably already been used for pasture, because there must have been extensive grazing lands in the region by the time of the Second Punic War when Hannibal's Numidians and Moors rounded up about 4,000 horses from Apulian *saltus* to be trained for the cavalry. They were presumably from studs for the war-horses of the Peucetian aristocracy.[118] There is no trace, however, of Peucetian cavalry after the end of the war, and it is likely that these pastures were confiscated and allocated to Roman citizens (and perhaps others) for raising cattle and sheep.

Much of the expropriated land, however, is likely to have originated as arable, and to have been converted to grazing in the punitive measures taken at the end of the war. This can be regarded as certain in the case of the large fertile areas of the Adriatic coastal fringe which were later re-allocated in small holdings for cultivation under the Gracchan reforms; but it must also have been the case in the Fossa Bradanica, and in the Apulian mountains where the arable land was more marginal, or where the commissioners for the settlement (the *triumviri agris dandis adsignandis*) preferred to leave the existing system undisturbed for other reasons. These *saltus* would have been registered as *ager scriptuarius* and subject to the tax on grazing animals.

a. Ager publicus and grazing limits

By the time of the Gracchan reforms, the limit of 500 *iugera* on holdings of *ager publicus* had been raised to 1000 if the *possessor* had two adult sons. The historical sources give the impression that these limits were widely ignored,[119] but in the early 2nd century BC some attempts were made to enforce them. In 196 BC the plebeian aediles Gnaeus Domitius Ahenobarbus and Gaius Scribonius Curio brought many *pecuarii* to trial before the people and secured the conviction of three of them. Since the fines they paid were enough to build a temple to Faunus (god of herdsmen) on the Tiber Island, these must have been rich individuals who were abusing the system, probably by ignoring the legal limits.[120] Many more *pecuarii* were condemned in 193 BC, and the fines imposed were used for various public buildings.[121]

b. Transhumance and drove roads

It is unlikely that the legislators of the 4th century BC thought of the animals grazing on rented allotments of *ager publicus* as elements in a large-scale system of transhumance,[122] but the vast extent of the confiscations made this development inevitable. There had always been short and medium-range transhumance, but with the unification of Italy long-distance transhumance became economically advantageous. The animals (primarily sheep, but also goats and some cattle) would graze on lowland pastures in the winter, and in May would be driven to upland pastures in the mountains after the snow had melted. The system maximized the resources of pastureland. At some point, perhaps early in the 2nd century BC, a system of drove roads, *calles*, was set up, with specified rights of grazing on either side. There is no detailed information on how this system worked, though something can be pieced together from incidental references in literary sources and inscriptions recording individuals involved in it.[123] The most important literary source is Varro's *Res rusticae*, written around the middle of the 1st century BC. He owned a flock of 800 sheep which grazed in Apulia in the winter and in the mountains of Reate in the summer, and was driven between the two along the public transhumance trails (*calles publicae*).[124] It is probable, given the limitations of physical geography, that the main transhumance routes of the Roman period roughly corresponded to those documented in written sources from the 16th century onwards. One of the most important began in the Metapontine plain and ran through the Fossa Bradanica below the scarp of the Murge to the extensive grazings on *ager publicus* set up in the North Apulian plain. Half-way through the Fossa, in the territory of modern Gravina, it intersected with another drove road which began on the pastures of the

116 Varro *Res rusticae.* II.1.16; Skydsgaard 1974, 13.

117 Tibiletti 1950, 247-250; Cornell in *CAH* VII.2, 326-329.

118 Livy 14.20.15. *Praedatum inde Numidae Maurique per Sallentinum agrum* ***proximosque Apuliae saltus*** *dimissi, unde … equorum greges maxime abacti, e quibus ad quattuor milia domanda equitibus divisa.* The *saltus* of Apulia adjacent to the Salentine territory are likely to have been on the Murge: see Mangiatordi 2011, 36.

119 Esp. Plutarch, *Tiberius Gracchus*, 8.

120 Livy XXXIII.42.10.

121 Livy XXXV.10.11-12.

122 The bibliography on transhumance and drove roads in South Italy is enormous. See esp. Grenier 1905; Skydsgaard 1974; Gabba & Pasquinucci 1979; Barker 1991; Corbier 1991; Crawford 2005; Buglione *et al.* 2016.

123 Gabba & Pasquinucci 1979.

124 Varro, *Res rusticae.* II.2.9; 2.10.11.

Murge, descended the scarp in the vicinity of Gravina, and headed W, by way of the low pass of Sferacavallo to cross the Basentello valley in the middle of our Survey Area. From there it continued towards the Apennine watershed near Tolve.[125]

c. Slave herdsmen

The herdsmen who accompanied the flocks on the transhumance trails were normally slaves who inevitably had much freedom of movement, and who would have needed to be armed at least with knives. By the 180s BC the shepherds employed on the public grazing lands of Apulia were so numerous that they had become a danger to security. The senate was so concerned about conditions in Apulia that in 187 BC it designated Tarentum as a *provincia* (sphere of command) to be allocated to one of the praetors.[126] Two years later there was a serious disturbance when a group of slaves banded together to carry out acts of brigandage on the roads and public pastures of Apulia, and another praetor had to be sent there again with a *provincia* of Tarentum to suppress them. [127] He condemned about 7,000 men and continued his actions against herdsmen in the following year, when his power must have been prorogued. The region was still unsettled in 183 BC, when yet another praetor was assigned to the region, this time with the *provincia* of Apulia.[128]

It is possible that the appointment of a magistrate with responsibility for the drove roads (*provincia callium*) goes back to around this time,[129] although there is no literary evidence for such a post until 60 BC when the senate offered the *silvae callesque* (forests and drove roads) to Caesar and Bibulus for their *provinciae* at the end of their consulship of 59 BC (an indication, incidentally, that conditions in the countryside of South Italy were still disturbed). The *provincia* was probably normally assigned to a quaestor. The evidence for the position is given by Tacitus who refers to the role of the quaestor Cutius Lupus, who had obtained the *provincia* of the *calles* by ancient custom, in suppressing a slave revolt in 24 AD.[130] The phrase 'by ancient custom' implies that the position was of long standing, and it seems likely that the appointment of a quaestor was made necessary in the changed conditions that followed the Second Punic War to ensure that the tax on animals grazing on public lands was paid, that the laws regarding rights of passage and grazing along the *calles* were enforced, and that any signs of trouble were dealt with.[131]

iii. The weaving economy

Although there were no doubt secondary products from transhumant pastoralism which had some economic value – mainly cheese and meat – there can be no doubt that the primary commodity was wool.[132] It is unfortunate that the literary sources tell us remarkably little about how it was processed. It has been remarked that no treatise on the subject survives from the ancient world,[133] and we are dependent on scraps of information derived from miscellaneous sources, many of them poetical, if we are to attempt to understand how the textile industry was organized. They were collected by Morel, who argued, in effect, that the fine wool of Tarentum became a literary *topos,* that in some cases the word Tarentine was used generically to refer to the type of wool rather than to its source, and that, even though some of the citations must be taken at face value, they prove only that the wool was produced at Tarentum, not the finished textiles, for which (he argued) the evidence is negligible.[134] This theme has been developed further by Jongman,[135] who holds that wool in Roman Italy was normally sold as unworked wool clip, and that it was exported, presumably from the places where the shearing took place, to the urban population centres in central Italy where it was turned into textiles for local consumers.

Morel, however, overstated the case. There are a few but none-the-less significant passages in ancient sources, collected and discussed by Mele,[136] which indisputably refer to textiles produced in Tarentum. The most illuminating are three epigrams of Leonidas of Tarentum written in the early 3rd century BC which celebrate the expertise of individual female weavers, who are envisaged as belonging to small groups of highly skilled but relatively poor women who work in their homes and produce elaborately patterned cloth for modest pay.[137] But there is a more decisive argument to be made from the kind of loomweights used in Tarentum[138] and in the adjacent territories of Metapontum and Heraclea between the end of the 4th and beginning of the 1st century BC.[139] They were not the standard truncated pyramidal weights found all over the interior, including

[125] For this part of the *tratturo* in the imperial period, see Di Giuseppe 1996.
[126] Livy XXXVIII.42. 5-6. It fell by lot to Appius Claudius Pulcher.
[127] Livy XXXIX.29.8). L. Postumius.
[128] Livy XXXIX.45.5. Lucius Pupius. On these events, see esp. Grelle 2013, 124-127.
[129] Grelle 2013, 123; Pasquinucci 1979, 140-142.
[130] Tacitus, *Annals* IV.27.1-2: *quaestor, cui provincia vetere ex more calles evenerant*.
[131] Pasquinucci 1979, 139-142.
[132] So Pasquinucci 1979, 164-165.
[133] Lippolis 2004, 284.
[134] Morel 1978.
[135] Jongman 2000.
[136] Mele 1997. Cf. Lippolis 2004, 244-246, stressing the archaeological evidence.
[137] *Anth. Pal.* VI.286; VI.288; VII.726; discussion in Mele 1997, 101-102; Meo 2016, 85.
[138] For discoidal loomweights from Taranto, see esp. L'Erario 2012.
[139] For discoidal loomweights in the territory of Metaponto, see Quercia & Foxhall 2012; for Heraclea, Meo 2016.

our Survey Area, but discoidal pieces with two suspension holes, of which our No.1098 is a clumsy example. These loomweights were devised to enable more warp threads to be suspended in the available space on a vertical loom than would be possible with truncated pyramidal weights, so as to produce a finer cloth.[140] There can be little doubt, therefore, that a considerable quantity of the fine Tarentine fabrics referred to in the literary sources was produced in Tarentum itself, in workshops in its hinterland, and in the territories of the neighbouring cities.

Many of the discoidal loomweights found in the territories of Tarentum, Metapontum and Heraclea were stamped or inscribed before firing with names which have been the subject of several recent studies.[141] They are usually male, but occasionally female, and may be given either in full, of in abbreviated form. Quercia and Foxhall have suggested that the names on the weights from the Metapontine Chora are likely to indicate the artisans or workshops where the weights were made,[142] but that does not explain why some names occur on loomweights from more than one site, such as a few found on loomweights from Heraclea which are also found on examples from Tarentum.[143] Moreover, it takes no account of the fact that a large number of the Tarentine pieces, and a few from Heraclea, are stamped with the word ἡμιωδέλιον (*hemiodelion*), either in full or abbreviated, on the opposite side of the weight from the personal name. P. Gardner showed long ago that the term *hemiodelion* is equivalent to *hemiobolion* (a half *obol*) in the Doric dialect used in these two cities,[144] but the relevance of the term is uncertain. Daniel argued in 1924 that the symbols on the discs were signatures of Tarentine merchants and were attached to merchandise to record their identity,[145] and Ferrandini Troisi has suggested that the discs inscribed with the word *hemiodelion* were fixed by customs officials to sacks of merchandise as evidence of payment of a tax.[146] L'Erario sees them as a codified system which served to record the names of merchants or producers of wool and textiles and the amount of tax which they paid to the *polis* to undertake these activities.[147] The Doric term *hemiodelion* is not found inscribed on any of the loomweights from Achaean Metaponto, but at least one is inscribed ME which is used as an abbreviation for the city's name on some of its coins.[148] It may indicate that the workshop to which the loom belonged was officially registered by the city. Other discoidal loomweights carry decorative motifs similar to those found on the truncated pyramidal loomweights discussed in our catalogue (Cat. 22), and they too may recur in more than one example.[149] They may be proxies for the names of the entrepreneurs. The details may be debated, but there can be little doubt that the inscriptions and decorative devices indicate that the textile industry in Tarentum was controlled by a small number of powerful individuals whose presence behind the scene is implicit in the epigrams of Leonidas. Evidently textile production was an important element in the economy of the city, enriching private citizens, and benefiting the finances of the cities themselves.

The woollen thread woven on looms that used discoidal loomweights is likely to have been very fine (Meo estimates its thickness at 0.2-0.3mm), and was probably plucked from the fleeces of Tarentine sheep which were famous for the soft quality of their wool. The sheep which produced it were kept on the farm year-round and jacketed with skins to protect their fleeces from being spoiled.[150] There were suitable pastures for them in the immediate hinterland of Tarentum.[151]

The study of the loomweights from stratified contexts at Heraclea has shown that far from finishing in the 3rd century, discoidal loomweights continued in use throughout the 2nd century BC and down into the first half of the 1st century. The Greek entrepreneurs who ran the textile industry centred on Tarentum must therefore have continued in business after the Second Punic War, and even after the foundation of the Gracchan colony of Neptunia at Tarentum in 122 BC. That interpretation is fully consistent with the results of recent work on the historical topography of the city (discussed more fully below) which has shown that the Gracchan colony was founded in a new urban quarter created at the E limit of the Greek *polis*, and was intended to promote rather than disrupt the economic life of the city.[152]

In the interior of Apulia and Lucania the situation was different. Discoidal loomweights are sometimes found (as in our Survey Area) but they are vastly outnumbered by others of the traditional truncated pyramidal type, which remained in use well into the 1st century BC. They were set on looms in which the warp threads were thicker and more widely spaced, and were used for weaving ordinary cloth from the wool of sheep which

[140] Mårtensson, Andersson *et al.* 2007, esp. 9-10; Mårtensson, Nosch *et al.* 2009; Meo 2016.
[141] For discoidal loomweights from Taranto, see esp. L'Erario 2012; from Metaponto, Foxhall 2011, 2018; Quercia & Foxhall 2012; Foxhall & Quercia 2016. From Heraclea, Meo 2015.
[142] Quercia & Foxhall 2012.
[143] Giardino 2005, 420-422; Meo 2015, 200, C115 *Agatheas*; 230, C175 *Nikasos*.
[144] Gardner 1883, 156.
[145] Daniel 1924, 44.
[146] Ferrandini Troisi 1986, 96; 1992, 81.
[147] L'Erario 2012.
[148] Lo Porto 1966, 153 and tav. V.11.
[149] E.g. the motif of Eros with bow and arrow stamped from a signet-ring or seal-stone occurs on discoidal loomweights in a rural building at Bosco di Andriace in the NE of the territory of Heraclea, and in Tarentum: Meo 2015, 308-309.
[150] Varro, *Res Rusticae.* II.2.18; Columella VII.4 1-3; Mackinnon 2004, 115.
[151] Osanna 1992, 20.
[152] Mastrocinque 2010, 29-30.

were presumably moved backwards and forwards on the transhumance trails. Even in these cases the evidence of the loomweights suggests that in the interior too the weaving industry was restructured along more commercial lines between the 4th and 1st centuries BC. As we have argued in Chap. VII.10, the fibula impressions of the 4th century and the motifs stamped with finger-rings of the 4th and first half of the 3rd centuries reinforce the idea that weaving was a household craft, in which most of the work was done by women, but the evidence of the inscriptions is more ambiguous. Both male and female names are found in Messapic inscriptions on loomweights from Apulia, and although it has been asserted that the male names represent the producers and the female the owners of the loomweights,[153] that interpretation involves a purely arbitrary assumption about gender roles. Some loomweights from Samnium and Lucania are also inscribed with male names alongside female ones, but in the Oscan language, and Ulrike Roth is surely right in arguing that they show the involvement of men as weavers in the textile industry.[154] That was perhaps a consequence of the commercialization of the textile industry in the Hellenistic period.

Two inscriptions from indigenous sites support the idea that powerful entrepreneurs were controlling the production and marketing of textiles on the inland communities as well as in the Greek cities on the coast. One is a loomweight from Lavello inscribed with the Oscan name *nio(msi) (?) papi* written in a hybrid Oscan/ Latin alphabet. It was discussed by Mario Torelli who identified the individual with Numerius Papius, a member of the important Samnite gens of the Papii.[155] The stamp must record him as an owner or manager of the textile workshop rather than as a humble weaver. The second is the loomweight No.1949 stamped with the monogram ΠΑΥ (or ΑΠΥ) found on Site 813 in our Survey Area. The monogram is likely to represent the first syllable of a name. Since no Messapic or Oscan name can begin with either syllable (Pau- or Apu-), it most probably stands for one of many Greek personal names that begin with ΠΑΥ, such as *Pauson* recorded on a lost lead tablet from a hypogeum at Tarentum.[156] The owner of the monogram was presumably a Greek immigrant (perhaps a merchant from Tarentum), or a member of the indigenous élite who had taken a Greek name, and who probably controlled the textile production in the N part of our Survey Area. The high quality of the stamped motif sets it apart from all other loomweights found on the survey.

Tarentum must have been the most convenient market for the products of the looms of Botromagno and our Survey Area, especially after the construction of the Via Appia and the refoundation of the city with the *deductio* of the Gracchan colony in 122 BC; but it need not have been the only one. Canosa, which was certainly an important centre for textile production in the imperial period, may already have become so in the period immediately after the Hannibalic war if the fine distaff and spindle found in the tomb of the Canosan princess Opaka Sabaleida can be taken as indicating the source of her wealth.[157]

iv. Use of the Greek language

A small fragment of a bronze plaque in Bari Museum said to have come from Botromagno provides some tantalizing evidence that Tarentine Greek may have become the normal language of the settlement. It is inscribed with dot-impressed letters in the Greek alphabet. The surviving part of the text is too small to be readily intelligible, but the use of the aspirate in place of sigma in the word *[pa]redohan.* (for *paredosan*) seems certain, and is characteristic of the Laconian Greek used in Tarentum and Heraclea. It can be dated by letter-forms only loosely to the Late Hellenistic period.[158] The word, meaning "they transferred/ transmitted/ surrendered", suggests that the inscription recorded some important property transaction.

v. Commerce

The loomweights provide indirect evidence for the textiles that are likely to have been the most important commodity exported from Botromagno and our Survey Area in the Hellenistic period. The ceramic remains are an indication of goods that were imported from beyond the region. The most significant are the amphorae which arrived from various parts of the Mediterranean to the principal sites occupied or re-occupied in this period in our Survey Area. The details can be found in Disantarosa's analysis (see Appendix 1). The series begins with the later Greco-Italic amphorae produced in the territories of several Greek cities in South Italy in the 4th/3rd century BC to contain wine and oil. They are attested on Botromagno and at Vagnari; they were abundant on San Felice; and one or two fragments of them have been found on nine other sites in our Survey Area. There was also a late Corinthian A' amphora of the 3rd century (or a regionally produced imitation of the type) found on San Felice. These amphorae must have been imported principally for domestic use, although they were also deposited in the *grotticella* tombs of the period. After the end of the Hannibalic War new larger types of amphora came into use, matching the increased output of the expanded olive farms and vineyards of the Late Hellenistic period. They include the Lamboglia 2s found at Vagnari and seven other sites in our Survey Area, as well as on Sites A14, C20 and

[153] Marchesini 1995, 1361.
[154] Roth 2011.
[155] Torelli 1990; *Inscriptiones italicae* II, 1306.
[156] *Inscriptiones Graecae* XIV 668; Ferrandini Troisi 2015, 96-97.
[157] In the *Tomba degli Ori*: Corrente 1992.
[158] Ferrandini Troisi 2015, 22-23, no. 6.

V42 on the Older Surveys (all, it may be noted, at the S end nearest to our own Survey Area), and on Botromagno.[159] They normally carried wine; but alongside them, in smaller quantities, came oil amphorae from the territory of Brindisi where intensive oil production had developed in the Late Republic. They are attested at Vagnari, at Site 335 in our Survey Area, and on Botromagno.[160] There are also some fragments of Aegean amphorae which brought fine wine from Rhodes (attested on Site 223) and Cnidus (on Site 303). These amphorae show how completely our Survey Area was linked to the trade systems of the Adriatic side of Italy, extending on to the Aegean. The Dressel 1 wine amphorae of Campania and Latium, which were widely distributed in the W Mediterranean, are not represented at all in our Survey Area, though one has been identified by E. Ianetti on Vinson's Site V42 and McCallum and his colleagues (2013, 57) have reported one Dressel 1 and one Dressel 1C on their site mhB64 further up the Basentello valley.[161]

vi. Roads: the Via Appia

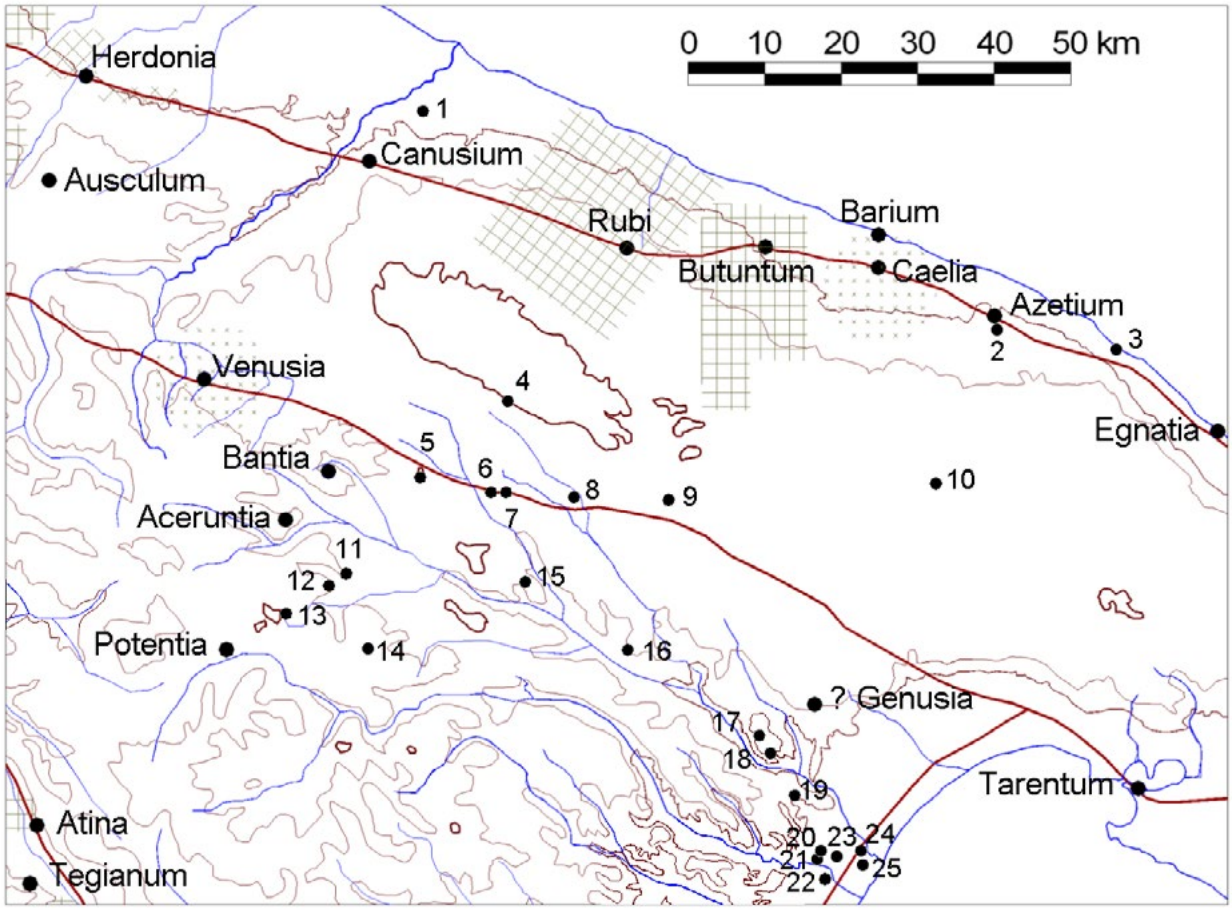
The centres of population which fared best under the new economic conditions of the 2nd century BC were all connected with roads following the main lines of communication. In the second half of the century the Romans made considerable efforts to extend and improve the network of roads in the South. The central part of the system was the Via Appia which was extended from Venusia to Tarentum and Brundisium. It is usually supposed that this section of the road must have been built in the 3rd century, probably in connection with the foundation of the Latin colony at Brundisium in 244 BC,[162] but several factors suggest a later date.[163] The road by-passed Altamura 11km to the E of Gravina/ Silvium which had been a flourishing settlement in the 4th century and was still inhabited in the 3rd, but was more or less abandoned by the beginning of the 2nd century.[164] On the other hand, there are signs of economic revival in a small number of settlements which were founded or extended along the line of the road through our Survey Area, which can be dated by the presence of grey-gloss pottery to the later 2nd or early 1st century BC (Maps VIII-5, VIII-6). These circumstantial factors suggest that the road was not extended beyond Venusia until the second half of the 2nd century. It was perhaps constructed, as Radke suggested, in connection with the new Roman colony of Neptunia founded at Tarentum in 122 BC under the law promoted by Gaius Gracchus.[165]

The road from Capua to Rhegium which opened up the Tanagro valley to a new phase of settlement was also built around this time, in the late 130s BC.[166] The fact that the Roman magistrate who had it built claimed to have made herdsmen give way to cultivators (see below) emphasizes the importance that access to the road system had for farmers. In Eastern Apulia several roads were built in the late 2nd or early 1st century BC (the Via Aemilia, Via Minucia, and Via Gellia), which opened up the area for the new Gracchan settlers and encouraged the revival of the cities on the Adriatic seaboard of Apulia.[167]

vii. The Gracchan land reforms

The aims of Tiberius Gracchus' agrarian law (the *lex Sempronia agraria*) of 133 BC have been endlessly discussed, and only salient points will be mentioned here.[168] Under the laws, vast tracts of the public land of the Roman people that had been confiscated from defeated communities during the wars of conquest and rented out for grazing animals, were surveyed, centuriated, and reallocated in small lots to Roman citizens. The majority of the land was in South Italy There is no need to doubt that Tiberius Gracchus was concerned with the decline of the free peasant farmers who had traditionally provided the manpower needed for the military levy; though whether he envisaged his reforms as embracing the allied communities as well as Roman citizens is less certain. It has been supposed that this attempt to restore the small farmers to the countryside was economically regressive and doomed to failure, as the sequel showed: that broader economic forces led inevitably to the absorption of small rural units by larger ones, ending in the great estates of the imperial period. But in fact the resettlement had long-term beneficial effects which can be seen in Map VIII-1. It was the communities which were reinvigorated by Gracchan settlement which survived and were recreated as municipalities after the Social War in the course of the 1st century BC. Many others which were not touched by

[159] Cotton in *Gravina II*, nos. 1534 and 1537.
[160] Cotton in *Gravina II*. nos. 1538 and 1539.
[161] McCallum *et al.* 2013, 57.
[162] Cf. Salmon in *Oxford Classical Dictionary* ed 2, 1970, 1117-1118 *s.v.* Via Appia: "It had probably been extended by 244 [BC] through Beneventum, Venusia and Tarentum to Brundisium (234 miles)". Quilici (1990, 48) argues that the road was progressively extended, matching the progress of Roman conquest: with the submission of Tarentum and Samnium in 272 and the foundation of the Latin colony at Beneventum in 268 BC it was prolonged to that city; then to Tarentum, and a few years afterwards, with the suppression of Messapia and Salento in 266 BC, to Brindisi which was reached before 191 BC. Ceraudo (2015, 217-219; 2019, 118-119) also argues that it was constructed in a series of stages, to Tarentum after the war with Pyrrhus and to Brundisium after the conquest Messapia in 267-266 BC in connection with the foundation of the Latin colony of Brundisium in 244 BC – and in any case before the campaign against the Illyrian pirates in 229 BC. Radke (1971 col 90), however, suggests that the stretch of the road from Aeclanum to Brundisium by way of Venusia and Tarentum was adopted as a *via publica* in connection with the foundation of the Gracchan colony of Neptunia at Tarentum in 122 BC.
[163] See Small 2019.
[164] Marin 1977, 64-65.
[165] Velleius Paterculus I.15.4; Lippolis 1997, 35-55 (for the Gracchan colony).
[166] Wiseman 1964, 1969.
[167] The details are disputed in each case. For a summary with further refs, see Mangiatordi 2011, 55-82. Ceraudo (2015, 228-230) argues that the Via Minucia was built by M. Minucius Rufus, cos 110 BC.
[168] For recent discussions, see Roselaar 2010, 221-156; Sisani 2015.



Map VIII-1. Areas centuriated in the Late Republic. *Municipia* (named) and other sites mentioned in the text: 1. Cannae; 2. Madonna delle Grazie; 3. Polignano (Neapolis?); 4. Jazzo Fornasiello; 5. Monte Serico; 6. Vagnari; 7. San Felice; 8. Botromagno/ Silvium; 9. Altamura; 10. Monte Sannace; 11. San Gilio; 12. Tolve Moltone; 13. Macchia di Rossano; 14. Civita di Tricarico; 15. Monte Irsi; 16. Timmari; 17. Montescaglioso; 18. Difesa San Biagio; 19. Cozzo Presepe; 20. Fattoria Fabrizio; 21. Sant'Angelo Vecchio; 22. Destra Basento villa; 23. Pantanello; 24. Santa Teresa; 25. Metaponto.

the Gracchan programme (such as Botromagno/ Silvium, Altamura and Monte Sannace) failed.

It is difficult, however, to be certain precisely what areas were centuriated under the law.[169] The problem lies largely in reconciling the four different types of evidence. The first is the *Liber Coloniarum* (in two recensions), which records Gracchan *limites*, i.e. the agrarian divisions surveyed under the *lex Sempronia*, in the territories of various Apulian cities.[170] Secondly aerial photography has revealed the vast extent of centuriated areas, sometimes with overlapping systems of more than one phase, extending over much of the Tavoliere and along the Adriatic fringe of Central Apulia.[171] Some of these very probably belong to the Gracchan period, but some may be earlier (connected with the foundation of the Latin colony at Luceria in 314 BC) and others may be later, created under the triumvirs in the late 40s BC, or by Augustus, or by Vespasian. Thirdly surface surveys have provided much evidence for the distribution on the ground of small farms which may have fallen within centuriated areas.[172] Fourthly there is inscriptional evidence in the form of 23 boundary stones (*cippi*) recording the activities of the Gracchan commissioners in Picenum, Campania, Lucania and Apulia.[173] But where these layers of evidence overlap it may be difficult to reconcile them, as in the area around Celenza Valfortore at the extreme N end of the Tavoliere from which the only two *cippi* so far found in Apulia come. Several centuriated schemes can be detected in this part of the

[169] For Gracchan land divisions in the Tavoliere, see Volpe 1990, 50; in Central Apulia: Grelle 2010, 122; Mangiatordi 2011, 88-98 (all periods); Fioriello 2017, 46.

[170] Campbell 2000, 164-168 (rec. I), 200-203 (rec. II), with commentary on pp. 404-405, 431-432. See also Roselaar 2009; Sisani 2015, 291-293

[171] Bradford 1949, 1950; G.D.B. Jones 1980; Volpe 1990, 209-223, esp. 218-219 (Daunia); Riley 1992; Compatangelo 1994; Guaitoli 2003, 468-474; Ceraudo 2008; Mangiatordi 2011, 88-98 (Central Apulia).

[172] e.g. Around Teanum Apulum: Antonacci Sanpaolo 2003. In the Celone valley: De Fino & Romano 2001; Volpe 2001, 321-332; Volpe *et al.* 2004. In the Carapelle valley: Goffredo & Ficco 2009. In the territory of Canosa: Compatangelo 1994.

[173] Sisani 2015, 294-300, with further refs.

plain in aerial photographs, but it is uncertain to which of them the *cippi* belonged.[174]

In spite of these complexities, the broad picture is clear. In Apulia the Gracchan commissioners concentrated on parcelling up and redistributing relatively level ground near the watercourses on the N Apulian plain, and on the coastal fringe of the Murge. The territory of Canusium which had remained loyal to Rome in the Second Punic War was excluded, though it was centuriated much later when the city was re-founded as a colony under Antoninus Pius.[175] In the subdivided areas, small farms of ca. 7ha were set up. Since no municipal system had yet been developed, these settlements founded on land of the Roman people were administered in *praefecturae* by *praefecti* appointed by the urban praetor.[176] There was a striking exception in the Roman colony of Neptunia, which, as we have seen, was founded at Tarentum by a separate law promoted by Gaius Gracchus in 122 BC,[177] but it was a later development in the Gracchan programme. Moreover, there is as yet no proof that the new settlers were established on plots of land in the territory of the defeated Greek city. [178] Instead the archaeological evidence suggests that they were settled in a new urban quarter created at the E limit of the Greek *polis*, close to the harbour. Since, according to Plutarch, Gracchus' colony was to consist of the most refined citizens (τοὺς χαριεστάτους τῶν πολιτῶν),[179] it is likely, as Gianluca Mastrocinque has suggested, that the new settlers were prosperous individuals who might be expected to engage in trade and commerce and contribute to the revival of Tarentum as a mercantile city with links to the E Mediterranean.[180] The new colony must have been founded on land confiscated from the Greek *polis* after the Hannibalic War, but if the Greek city continued to exist as a dependent federated city (*civitas foederata*), it must either have been absorbed into the Roman colony of Neptunia or co-existed with it.

The compiler of the first recension of the *Liber Coloniarum* records that there were other areas or territories which were allocated in *saltus* and divided up (*praecisa*) according to an estimation of their fertility.[181] The next sentence explains these two processes further: in several places (including Bari) the land was centuriated, but other places and territories (evidently those which were allocated in *saltus*) were registered and assigned at a later period to the persons in possession of them, just as each one had occupied them, and this registration took place by order of the emperor Vespasian. Boundaries in the province were walls, dry-stone walls, heaps and piles of stones, and boundary markers of (imported) travertine: the list is significant because it points directly to the higher ground of the Murge where such topographical features (other than the travertine markers) abound.

It is not certain when the registration of the *saltus* recorded in the *Liber Coloniarum* took place, but since the compiler mentions it in the context of the centuriation of the territory of Bari, which probably happened under the Gracchan legislation, it was probably the work of the Gracchan commissioners. There must at any rate have been much land confiscated at the end of the Second Punic War, which the commissioners did not centuriate. That is likely to include vast stretches of terrain in the upper Bradano valley, [182] in the central part of the Fossa Bradanica, and in the coastal plain along the Ionian Gulf S of the Bradano river[183] where recent intensive field surveys have revealed no sign of land divisions in this period.

There is no evidence either literary (in the *Liber Coloniarum*) or archaeological for land subdivisions at Silvium. Given the fertility of the terrain around Gravina, it is unlikely that the land was exempted as being unsuitable for intensive agriculture. More probably it was treated differently because it lay at the intersection of two major transhumance trails and, as in the Metapontine plain, the land was needed for the pastoral economy. Similary, the public land in the mountains must have been used for summer pasture.

6. Settlement and land use: The Fossa Bradanica in the 2nd and 1st centuries BC

The many field surveys carried out at various times in the Fossa Bradanica have shown considerable variation in land use in different parts of the Fossa, which can be seen as resulting from different historical processes.

i. Venusia

The development of the territory of Venusia in the 2nd century is enigmatic, Analysis of the data for this period from the field surveys in the *Ager Venusinus* is more difficult than it is further S in the Fossa Bradanica because the instantly recognizable grey-gloss ware which was introduced around the middle of the 2nd century hardly circulated in the territory of the Latin colony. Many sites

[174] Russi & Valvo 1977; Grelle 1994.
[175] Grelle 1993, 140-141.
[176] Grelle 1994, 2002; Grelle & Silvestrini 2013, 176-178; Gallo 2018
[177] Velleius Paterculus I.15.4; Plutarch, *C. Gracchus* VIII.3; IX.2; Strab. VI.3.4. Lippolis 1997, 35-55 (for the archaeology of the colony).
[178] Cocchiaro 1981, 71.
[179] Plutarch, *C. Gracchus* IX.2
[180] Mastrocinque 2010, 29-30.
[181] Campbell 2000, 166, 5*: PROVINCIA CALABRIA. Territoria Tarentinum Lyppiense Austranum Varinum in iugera n. CC limitibus Graccanis. et cetera loca vel territoria in saltibus sunt adsignata et pro aestimio ubertatis sunt praecisa. nam variis locis mensurae acte sunt et iugerationis modus conlectus est. cetera autem prout quis occupavit posteriore tempo censita sunt et ei possidenti adsignata, ab imp. Vespasiano censita ex iussione iter populo non debetur. nam eadem provincia habet muros macerias scorofiones congerias et terminos Tiburtinos…*
[182] Fracchia & Gualtieri 1998-1999; Fracchia 2008.
[183] *Chora Metaponto III.*

which produced pieces of black-gloss and other wares without distinctive shape have therefore been only broadly dated to the period between the foundation of the Latin colony in 291, and the Roman veteran colony of the triumviral period, although Marchi and Sabbatini have argued that the majority of them are likely to go back to the time of foundation of the Latin colony.[184] The community was reinforced in 200 BC with new settlers to make good the loss of population which the city had suffered in the Hannibalic war,[185] and if an entry in the *Liber Coloniarum* (1st redaction L 210) can be believed, the territory of the city was centuriated with Gracchan *limites,* but it has not yet proved possible to detect signs of either measure on the ground.[186] Nevertheless it is likely that many of the small sites of the 3rd century continued (or were repaired and reoccupied) after the Hannibalic War, and that there were also some new foundations. Nine of Marchi's sites certainly had late (2nd and 1st century) black-gloss, of which seven had no black-gloss securely datable to before the 2nd century, and there is evidence to suggest that some farmhouses were redeveloped as early Catonian type villas, with wine or oil presses, and walls in *opus incertum* masonry. At La Santissima near Spinazzola there was a cluster of sites occupied in this period. On one of them a terrace wall was built to support a platform on which the structures of the first phase of a villa stood.[187]

ii. Monte Serico

McCallum and his team report finding seven sites S and W of Monte Serico, on the edge of Vinson's survey, datable to this period by grey-gloss pottery. On several of these it was associated with black-gloss, seemingly of the same period. Another (site B071) had no grey-gloss but could be dated to this period by black-gloss. The area lies within the catchment of the Basentello, and hypothetically outside the territory of Venusia.[188]

iii. Metapontum

The pattern of settlement in the territory of Metaponto at the other end of the Fossa Bradanica was very different. The intensive field survey carried out by the Institute of Classical Archaeology of the University of Texas at Austin under J.C. Carter has shown that there was a drastic decline in the number of farmhouses occupied, from a maximum of 142 at the end of the 4th century to 19 in the middle of the 2nd. The huge decrease must imply that much land which had previously been farmed had gone out of cultivation. The farmhouses of the 3rd and 2nd centuries were more isolated and surrounded, therefore, by larger expanses of land. Whereas in the 5th and 4th centuries there had been numerous small cemeteries scattered across the Chora, hardly any were found datable to this period, which may indicate that the inhabitants of some of the farmhouses buried their dead elsewhere, and perhaps did not live there all the year round. Since a high proportion of the farmhouses were located on sites which had not previously been occupied, it is likely that there was a drastic change in property ownership and probably also in land use, marking a pronounced break from the previous period.[189]

These factors have led Carter to suggest that the new pattern reflects the reorganization of the territory of Metaponto after the Hannibalic War. As we have seen, it is highly likely that much if not all of the city's territory was expropriated. It would then have been rented out under the Licinio-Sextian law to graziers in lots of 500–1,000 *iugera*, equivalent to roughly 125–250ha (see above). Carter has argued that the distribution of sites in the Chora is consistent with that hypothesis and illustrates how the policy worked in practice. The graziers who rented these lands from the state must have expected to have the use of the land for a sufficient length of time for it to be worth constructing farmhouses for themselves, or more probably, for their dependents to live in. In other words, the land was on the way to becoming privatized – exactly the scenario that preceded the reforms of Tiberius Gracchus.

Two partially excavated buildings in the Chora throw some light on the economic and social aspects of this development. One is a small farm building at the Masseria Durante in the area of Santa Teresa situated near the temple of Hera (the so-called "Tavole Palatine") a little to the N of the city. It was built on a new site in the 2nd century BC, using some materials robbed from the temple. In this Late Hellenistic phase it consisted of an enclosure measuring 11×14m with 2 large entrances and five smaller ones. E. Lissi Caronna, who excavated it in 1969, has interpreted it as a cattle shed with entrances wide enough to allow the animals to pass in and out.[190] Since there was no evidence for domestic accommodation, at least in the excavated area, it is possible to see the building as the work-station of a cattle ranch.

[184] Marchi & Sabbatini 1996, 111, note 129; Marchi 2010, 258.

[185] Livy XXXI.49: *triumuiri item creati ad supplendum Venusinis colonorum numerum, quod bello Hannibalis attenuatae uires eius coloniae erant, C. Terentius Varro T. Quinctius Flamininus P. Cornelius Cn. f. Scipio; hi colonos Venusiam adscripserunt*.

[186] It is highly unlikely that the territory was centuriated by the Gracchan commissioners since the city had held out bravely in the Hannibalic War and would not have had its land confiscated as *ager publicus*. The data on which the compiler drew probably related to the land distribution of the triumviral period.

[187] Marchi 2010, 230-239 nos. 1029, 1047, 1051, 1052, 1054 (villa); p. 261.

[188] McCallum *et al.* 2013, 28 A051, 33 A062, 35 B021, 48 B050 (one frag), 50 B052, 53 B058, 59 B067m (one frag). For black-gloss continuing in the area down to the end of the 1st century BC: p. 76.

[189] *Chora Metaponto III*, *2*, 869-891.

[190] Lissi Caronna 2000; Giardino 2012, 5; Meo 2015, 331-336.

The other is an early example of a new luxurious type of villa situated on a terrace above the right bank of the Basento river (and so known as the *Destra Basento* villa). It lay outside the area of the University of Texas survey, and shows a very different form of land-use in this part of the Chora of Metaponto, involving intensive exploitation of the arable land. Only part of the building was excavated in an emergency dig ahead of the construction of a pipeline, but it revealed several features typical of a Hellenistic villa including a central atrium which opened onto a courtyard with peristyle. Some of rooms surrounding the atrium contained *dolia* partially sunk into the floors.[191] In spite of the limited extent of the excavation, it is clear from the explored parts that the structure exemplified a new more luxurious type of villa which was the domestic and administrative centre of a large agricultural estate farmed by slave labour. It has a close counterpart in the villa of the same period at Termitito, already mentioned, where there were installations for wine and oil production as well as magnificent living quarters. Both villas appear to have been abandoned early in the 1st century BC, perhaps in the war of Spartacus (see below).

There were still some productive industries in the Chora, including a tileyard and pottery at Pantanello which produced both grey-gloss ware and Metapontine amphorae – a late Hellenistic type which was produced also in the diminished city of Metapontum.[192] They were widely used in the territories of both Metapontum and Heraclea, and were exported E to various points of the Salentine coast, and S-W to Syracuse.[193] They must have contained wine or olive oil.

The evidence therefore suggests that there were two very different forms of land-use in the Metapontine Chora. Much of the terrain was now given over to large-scale ranching of sheep and cattle, but there were also areas close to the rivers where rich landowners had developed agricultural estates.

The devastation of the city and its territory by the army of Spartacus in the late 70s BC probably accelerated the decline of this subregion. But there were other fundamental factors involved, including the progressive degradation of the plain lands as silt continuously brought down by the rivers impeded the flow or water and created marshy conditions. These in turn favoured the proliferation of mosquitos and the spread of malaria.[194]

[191] De Siena 2005, 450-451; Carter 2011, 912.

[192] Giardino 2005, 424 and tav. XLII.1; Swift in *Chora Metaponto III*, I, 465, 486.

[193] De Siena & Giardino 1994, 201 fig. 3; Colucci 2014, 395-396.

[194] That the malaria parasite was present in the region can be regarded as certain. The effects of the disease have been recognized in the skeletons of the population of Pantanello between the 6th and 4th centuries BC (Hennenberg & Hennenberg 1998, 527-529); and mitochondrial DNA of the most deadly form of the parasite (*Plasmodium falciparum*) has been identified in a skeleton of the imperial period at Vagnari: Marciniak *et al.* 2016. The topic is discussed more fully in the General Introduction, above.

iv. Botromagno / Silvium

It is not clear what happened on Botromagno in the aftermath of the Second Punic War. The site was certainly not abandoned, because the sequence of *grotticella* tombs continues apparently without interruption. The latest datable examples, which precede the reconstruction of the settlement in the second half of the 2nd century BC, include tomb S7, located on the edge of the S spur of the hill. It contained the remains of at least four burials, and a group of 2 iron objects and 12 pots, including a grey-gloss plate with extended down-turned rim, corresponding to Yntema's Form 2 which he dates from about the middle of the 2nd to within the early 1st century BC.[195] The robbed *grotticella* tomb S26 must also have been in use in this period since several grey-gloss fragments were found in the fill of the dromos.[196]

a. The re-foundation of Silvium

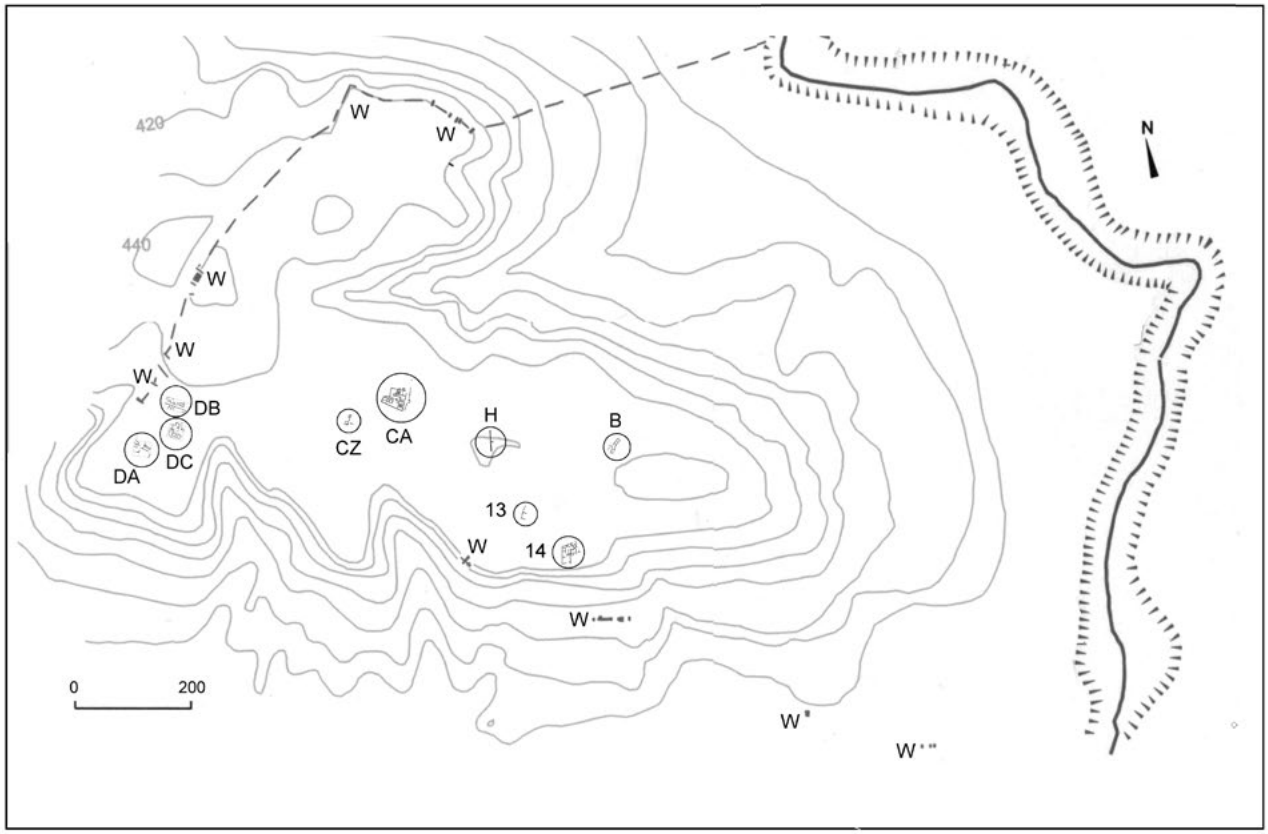
The Gracchan commissioners, as we have seen, did not impose an agrarian reform on *ager publicus* in the Fossa Bradanica. Nevertheless, an ambitious attempt was made to revive the economy of the area at roughly the same time which involved constructing a new settlement over the remains of the former Peucetian city on the top of the plateau. The suburban area between the scarp and the ravine was left unoccupied.

Large areas of this Late Hellenistic settlement have been revealed by the excavations carried out at various times in the last 50 years. Buildings, or clusters of buildings datable to this period were uncovered in nine parts of the hill-top.[197] They are shown on Map VIII-2 together with the Peucetian walls of the later 4th and early 3rd centuries which must still have been visible even if not fully functional at the time these buildings were occupied. In all these subsidiary sites, the houses were built over the remains of earlier structures, often including rock-cut *grotticella* tombs. At the centre of the settlement, in Site CA, there was a simple villa with residential and agricultural

[195] *Gravina (PBSR) II*, 127-129 and figs. 17-19; Yntema 2005, 22-23.

[196] *Gravina (PBSR) II*, 136-140; *Gravina II*, 44-45, assemblage 81 on pp. 184-185.

[197] The relevant bibliography is as follows. **Site B**: Macnamara in *Gravina (PBSR) II*: 144-152; *Gravina I*, 29-32. **Site CA**: *Gravina I*, 32-35; Small, Buck *et al.* 1992, 1993, 1994a, 1994b. **Site CZ**: *Gravina (PBSR) I*, 139, 147; 35-40. **Site DA**: *Gravina I*, 40-47; S. Curzio in Ciancio 1997: 259-262. **Site DB**: *Gravina I*: 47-54; L. Casavola in Ciancio 1997: 245-253; Santoriello, 2000: 124; **Site DC**: *Gravina I*: 54-6; Casavola in Ciancio 1997: 253-259; Santoriello, 2000: 125-6. **Site H**: R. Whitehouse *et al.* 2000. **Site 13**: unpublished. I am grateful to T. Deantoniis, former Director of the Cooperativa Petra Magna, for the plan. **Site 14**: G. Ricci (2000). The numbers of the last two sites are those assigned to them by A. Ciancio (1997).



Map VIII-2. Botromagno/ Silvium. Excavated parts of the Late Hellenistic settlement and known sections of the Late Peucetian walls (W). From Small 2020, 660, fig.2.

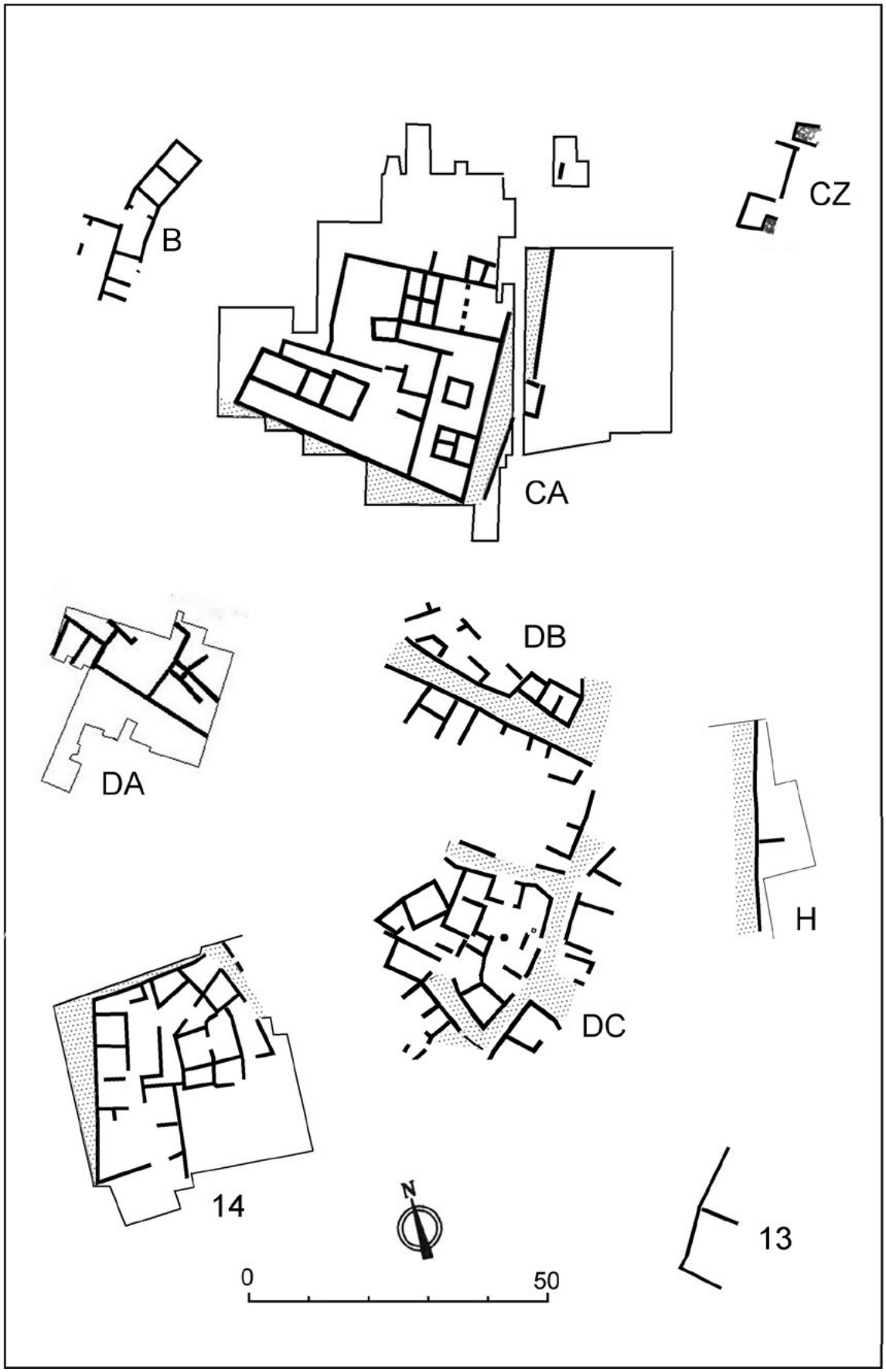
spaces arranged around three courtyards. Adjacent to it, on Site CZ, there were agricultural buildings. Two spaces floored with stone slabs were perhaps pig sties. Further to the E, on site B there was a building used in part for storing and milling grain. In all other parts of the site there were houses arranged around courtyards which opened onto streets laid out without any coherent grid.[198] The whole settlement amounts to a village organized around an early example of a villa structured on Catonian principles with a *pars rustica* and a *pars urbana*.[199] Great numbers of loomweights found in these contexts show that textile production was an important part of the economy of the settlement.

A *terminus post quem* for the foundation of the settlement can be derived from a few fragments of grey-gloss pottery found in contexts which immediately preceded the construction of the buildings, and particularly in the infill of the *dromoi* of chamber tombs of Period VII which were robbed at the time of their construction. Grey-gloss came into production shortly before the middle of the 2nd century BC (as mentioned above), and the pieces include some fragments of hemispherical bowls of a type found at Tarentum in the 2nd half of the century. It is likely, therefore, that the redevelopment of the settlement took place after the middle of the 2nd century BC, but not long after, because the majority of the datable coins found associated with the buildings of Period VIII were minted in the second third of the 2nd century (see Table VIII-1). If we allow some time to elapse between a coin being minted and its being

Date	Mint	Coin	Published
238-168	Epirus	AE	*PBSR* 1994 no. 1
180?-149	Bithynia	AE	*Gravina* II cat. 1849
169-158	Rome	*Denarius*	*PBSR* 1994 no. 2
169-158	Rome	*As*	*Gravina* II cat. 1853
169-158	Rome	*As*	*Gravina* II cat. 1854
169-158	Rome	*As*	*Gravina* II cat. 1857
148	Rome	*As*	*PBSR* 1994 no. 3
148	Rome	*As*	*Gravina* II cat. 1856
147	Rome	*Denarius*	*EMC/CV* 1992, 197
138	Rome	*Denarius*	*EMC/CV* 1992, 197
132	Rome	*Quadrans*	*PBSR* 1994 no. 4
109-108	Rome	*Denarius*	*EMC/CV* 1992, 197
86?	?	*Quadrans*	*PBSR* 1994 no. 5
85	Rome	*Denarius*	*PBSR* 1994 no. 6

Table VIII-1. Datable coins found in contexts of Gravina VIII.

[198] The settlement is analysed at greater length in Small 2020.
[199] Interim reports in Small, Buck *et al.* 1992, 1993, 1994.



Plan VIII-1. Botromagno. Plans of the buildings of the late 2nd century BC. From Small, 2020, 661 fig. 3.

deposited on Botromagno, an acceptable date for the foundation of the settlement would be some time in the third quarter of the 2nd century BC.

b. The toponym Silvium

The new settlement on Botromagno can be identified with virtual certainty as *Silvium*, the most westerly Peucetian settlement according to Strabo (VI.3.8),[200] where a slave of Pontius (otherwise unknown) met Sulla on his return from Greece in 83 BC and prophesied his victory in the coming civil war.[201] But as we have seen, several coins of the period preceding the Hannibalic War (or perhaps issued during it) which bear the legend ΣΙΔΙΝΩΝ– of the Sidini– were in all probability minted by the inhabitants of the Peucetian settlement on Botromagno. Calderoni-Martini argued that the original name of the community was *Sidion* in Greek, which would have been pronounced as *Sivion* in the Apulian dialect (meaning presumably Messapic), and that this was changed by the Romans to *Silvium* for reasons of assonance.[202] But the change of name may have been prompted by a connection with the forest (*silva*) which is likely to have been as conspicuous a feature of the surrounding countryside then as it still is today,[203] as the faunal analyses discussed below suggest. Whatever the motivation for the change, it seems probable that the name was given to the new settlement, and that it was applied anachronistically in the Augustan period by Strabo and Diodorus to the preceding city of the *Sidini*.

It is not possible at present to say with certainty whether the construction of Silvium took place before or after the reforms of Tiberius and Gaius Gracchus, but it should nevertheless be seen in the context of the agrarian controversies of the third quarter of the 2nd century BC. Problems of the misuse of *ager publicus* had often preoccupied the senate, but they took a new turn in 140 BC when one of the consuls, Gaius Laelius, friend of Scipio Aemilianus, attempted to carry a bill to reform the abuse by which rich individuals acquired vast holdings of public land, forcing the poor off it, but gave up the attempt in the face of fierce opposition from powerful individuals (δυνατοί).[204] Another echo of reform can be heard in the *elogium* of Polla in the Tanagro valley in N. Calabria, in which the nameless magistrate of the late 130s BC boasts that he was the first to make herdsmen give place to ploughmen on *ager publicus*.[205] It is likely, therefore, that the political struggles of Tiberius Gracchus' tribunate were at least as much between rival proponents of reform as they were between reformers and preservers of the status quo. The refoundation of Silvium can be seen as representing an alternative programme for reviving the rural economy which left economic power in the hands of a local aristocracy.

The drastic change in the nature of the settlement, and the despoliation of the burials of the previous population suggests that the inhabitants were newcomers; but their material culture was nevertheless rooted in Magna Graecia. A clue to the identity of some of the inhabitants may be seen in two bronze coins found stratified in contexts of Period Gravina VIII – one of Prusias II, king of Bithynia (180?–149 BC) found on Site CZ near the centre of the settlement,[206] the other of Oeniadae (early 2nd century BC) found on the floor of House 1 (Room 1) on Site DB.[207] They may have been brought back by veterans who had served in the units of Italian allies called on to fight with the Romans in one or other of the eastern wars – perhaps in the war of 133–130 BC against Aristonicus in Asia Minor, in which the Roman army was supported by numerous client kings including Nicomedes of Bithynia.[208] But they may also have been acquired in the course of trade in the eastern markets that had been opened up to Italian entrepreneurs by Roman conquest. Coins of Apollonia, Corcyra, the Epirote Republic, Sicyon and Acarnania are also thought to have reached Botromagno in the 2nd century BC, and they too may have been acquired by individuals engaged in the eastern trade, but the evidence must be treated with caution since the coins have no known context and were sequestered from *clandestini* by the carabinieri.[209]

The construction of the village/ *vicus* on Botromagno around the time of the Gracchan reforms (or slightly before them), indicates that there was an alternative model for the repopulation of the Apulian countryside, based primarily on the exploitation of *saltus* as pasture for sheep, and on the production and marketing of textiles. Unlike the coastal fringe of Central Apulia, where settlement continued at a significant level,[210] the territory of Silvium was not repopulated by large numbers of small-holders living in the open countryside. Instead, a new type of settlement was established consisting of a village (*vicus*) centred on a villa where the owner of the estate or perhaps his bailiff (*vilicus*) lived. Many of the inhabitants of the village earned their livelihood by weaving, though others were engaged in cultivating the surrounding land or tending vines, as a few iron tools found in contexts of this period indicate.[211] Beyond the village there was a

[200] For the identification of Botromagno with Silvium, see Small in *Gravina II*, 121-122.
[201] Plutarch, *Sulla*, XXVII.6.
[202] Calderoni-Martini 1921, 5.
[203] The *Bosco Comunale* of Gravina, which extends over 1890ha to the SW of the modern town is the largest area of indigenous forest in the whole of Puglia, and is likely to be of ancient origin.
[204] Plutarch *Tiberius Gracchus* VIII.5
[205] CIL I(2) 68: *primus fecei ut de agro poplico / aratoribus cederent pastores.*
[206] *Gravina (PBSR) I*, 150; *Gravina II*, cat. 1849
[207] *Gravina I*, 53; II, cat. 1850.
[208] Eutropius IV.20.
[209] Libero Mangieri 2001, 50.
[210] Mangiatordi 2010, 403-413 at 406-409; 2011, 40, 122.
[211] Macnamara in *Gravina II*, 239-249, nos 1917 (hoe), 1918-1919

scattered rural population distributed in a relatively small number of units, none of great size.

c. The economy of Silvium: weaving

The inhabitants of the settlement were certainly engaged in agriculture, but its main economic base was weaving. This is shown by the enormous number of loomweights recovered in the excavations: more than 500 were found in the British School's excavations of 1965–1974, mostly in contexts of the late 2nd or early 1st century BC. They include a group of 37 which must represent the remains of a single loom.[212] 147 loomweights were found in the excavations carried out by the British team directed by Ruth Whitehouse and John Wilkins in Site H, of which most of the stratified examples came from Hellenistic levels. [213] The Canadian excavations of 1990–1993 in the Hellenistic villa produced 165 loomweights,[214] and numerous others were found on the hill-top in the course of the Progetto Sidin of 1996–1998: A. Naso and his colleagues report finding 137 in the field survey which they carried out there,[215] and A. Santoriello refers to a "forte concentrazione" of loomweights in the excavation of a house on Site DC which led the excavators to reconstruct it in a drawing with a loom on a mezzanine floor.[216] In an excavation in another part of the hilltop G. Ricci found 105.[217] The total is well over 1,000. Most of the loomweights were dispersed objects which must derive from many different looms, so the enormous number must betoken a quasi-industrialized level of textile manufacturing.

The commercial production of textiles at Silvium must have required a larger market than the local population could have provided. They are an easily transported commodity and could have been carried by pack-animals or in carts along the Via Appia to the market at Tarentum (discussed above), or by trails across the Murge to one or other of the developing ports on the Adriatic coast.

d. The economy of Silvium: industrial activities

The excavations have also produced some evidence for industrial activities which suggest that Silvium in this period was a productive centre, probably serving smaller settlements in the surrounding area. The excavation of 1993 uncovered a horse-shoe shaped kiln with central pier (Cuomo di Caprio, Type I/a) situated outside the villa on site CA, on its N side. A few wasters show that it was used for firing plain pottery.[218] G. Ricci reports another excavated in 1997 in the Fondo ex-Lucatuorto nearer the E end of the site which, to judge from wasters, was used to fire tiles, both *tegulae* and *imbrices*.[219] Another round kiln with central pier identified below a terrace wall on the N side of the hill may also have been of this period, but no wasters were found associated with it to date it or determine its function. Other kiln wasters of tiles and pottery were found on the surface on several parts of the plateau, some at least of which are likely to be of this period.[220] A comparative chemical-mineralogical analysis of 16 samples of grey-gloss pottery from Botromagno and 8 from Monte Sannace published by A. Ciancio, A. Dell'Anna and R. Laviano suggests that two of the samples from Botromagno were sufficiently distinct for it to be probable that they were produced on the site or in its close vicinity. They could be distinguished visually by their darker gloss.[221]

There is also some evidence for iron working. Some pieces of slag were found on the floor of Room 1 in House 1 on site DB on the SW spur of the plateau, and others on site CZ nearer to the centre of the settlement.[222] A. Naso and his colleagues also report finding slag in their field survey of the site, though this cannot be dated by context.

e. The economy of Silvium: animal resources

John Watson's faunal analysis of the material from the British School at Rome's excavations on Botromagno shows that in most parts of the site there was little change in the relative importance of the main domesticated species slaughtered and consumed in Silvium.[223] Caprines were still by far the most important (at 76%), followed by pigs (13%), cattle (8%) and red deer (2%). Some of the sheep were hornless, descendants, perhaps, of the hornless breed raised in several parts of South Italy in the Bronze Age (see above). The pigs were generally killed at less than 3 years, most of the sheep/ goats and cattle at above that age. All this suggests that there had been little change in the peasant economy, with sheep kept for wool, some pigs for meat, cattle for traction and a few asses and horses for transport. But the sample of animal bones from the eastern (domestic) courtyard of the villa in Site CA was significantly different. The proportion of sheep and goats was notably lower (28%); those of pig (25%) and

(puning knives or reaping hooks); 1920 (bill hook).

[212] From Site DA (50-125 g): V. Tatton-Brown, in *Gravina II*, 218-226, cat. 1816.

[213] R. Whitehouse, personal comment, October 2013. For the excavations: R. Whitehouse *et al.* 2000.

[214] Publication pending (ed. A.M. Small).

[215] Naso *et al.* 1998, 258.

[216] Santoriello 2000, 125 and fig. p. 131.

[217] In the Contrada Lucotuorto: G. Ricci 2000, list on p. 151.

[218] Small, Buck *et al.* 1994, 250, 258 pl. 1.1. Cuomo di Caprio 1971-1972, 404-409.

[219] Ricci 2000, 145 and 156 fig. 8.

[220] Naso *et al.* 1998, 253-254 and 257; tavv. XCII.1 and XCIII.1.

[221] Ciancio *et al.* 1994.

[222] Slag from Site DB: *Gravina II*, 39 (CZ) and 52 (DB); Naso *et al.* 1997, 259.

[223] Watson 1992.

cattle (27%) rather higher, and there was a much higher proportion of red deer (19%). This picture is confirmed by Michael MacKinnon's analysis of the faunal remains found more recently in the pit F202 in the S part of the villa, which shows a predominance of young lamb, and the presence of both sucking pigs and old male pigs or wild boars. The bones of three young chickens show that poultry raising was beginning to be practised. There were remains of freshwater fish, a marine fish of large size, a tortoise and a variety of wild game including red deer, rabbit, hare, rock dove and song thrush. All this indicates a privileged diet, presumably of the owner of the villa and his family. [224]

These animal bones are all the remains of food consumed on the site, and the domesticated animals from which they came may have been raised and kept year-long in the vicinity for local consumption. They may say nothing about the importance of transhumant flocks in the economy of the area. There is, however, a significant number of bones from very young lambs, including some new-born or foetal animals which could have been the produce of transhumant flocks if they were stationed in the vicinity of Botromagno during the lambing season. They would have been born in winter or early spring and killed off before the flock set out for the mountain pastures in May.

An unusual species in the faunal sample analysed by John Watson is the pine marten or beech marten (*Martes* sp). Since it is unlikely to have been hunted as game, it was perhaps killed while raiding the farm-yard. It suggests that there was extensive woodland in the near vicinity of the site (but not beech which grows at altitudes over 800m in South Italy). This evidently sheltered the red deer, roe deer, and perhaps wild boar identified in these samples. On the other hand, the presence of hares shows that there were also open areas of grassland.

f. The wooded environment of Botromagno

The analysis by Stephen Monckton of a small sample of wood carbon from the pit deposit (F202) of ca. 80–70 BC shows that beech, maple, elm, ironwood, oak and an unidentified deciduous tree, possibly poplar, were all present.[225] The assemblage probably represents the remains of a domestic fire and gives an idea of the variety of tree species growing in the vicinity of the site. They are all species which can still be found in the *Bosco Comunale* of Gravina today and would have been prevalent in our Survey Area.

[224] M. Mackinnon, 'The faunal remains' in Small, Roe *et al.*, 1994, 243-257.

[225] S, Monckton, 'The plant remains and soil', in Small, Roe *et al.*, 1994, 257-259.

v. Monte Irsi

At Monte Irsi excavation has shown that a stall for up to eight cattle was erected in the last half of the 2nd century BC over the remains of the Late Iron Age settlement on the SW edge of the plateau (Site B).[226] The domestic buildings to which the stall belonged were not found in the excavation, but are likely to have been somewhere in the vicinity, perhaps nearer to Site A, 150m to the E, where more material of the same period was found in later contexts. Such a big stall must imply that a large area of the hilltop or on the slopes below it was given over to intensive arable cultivation. It is therefore another example of the transformation of agricultural practices in the second half of the 2nd century BC.

The importance of cattle in the economy of the site in this period is confirmed by Graeme Barker's analysis of the animal bones found in layers associated with the building, which show cattle accounting for more than a quarter of the sample (27.1%), as compared with caprines (45.7%), pigs (22.9%) and horse (2.5%), the balance being made up by a single bone each of red deer and tortoise. The value of the cattle in terms of their meat yield would have been much higher.

It is interesting that there are significant differences between the agricultural economies of Botromagno and Monte Irsi in the same period, with sheep raising and weaving being specially important on Botromagno, and cattle raising and (probably) arable cultivation being more so on Monte Irsi. These differences reflect the different environment of the two sites, with Botromagno situated at a nodal point in the transhumance routes, and Monte Irsi more remote and less accessible on the right bank of the Basentello. The difference between them demonstrates the increasing specialization in agriculture typical of the Late Hellenistic period.

7. The Older Survey sites in the Hellenistic period

i. Sites of the 3rd and early 2nd centuries BC

The key chronological indicator for this period in the records of the Older Surveys ought to be the later forms of black-gloss pottery, but the records of the forms found are uneven, and on some sites which produced significant amounts of black-gloss pottery, there are no classified pieces. It is surely significant, however, that two of Vinson's sites W of Spinazzola, Sites V162 and V163, yielded black-gloss sherds datable after the foundation of the Latin colony of Venusia in 291 BC, and that Site V152 in the same general area had sherds of the 3rd/2nd century and Site 109 sherds of the 2nd/1st century BC. They confirm the pattern of distribution

[226] *Monte Irsi.*

found by Marchi in the same area (see the Introduction to the Older Surveys).

A number of sites in the E half of the Old Survey Area can also be dated to the 3rd or early 2nd century BC by comparisons with Morel types or with dated examples from other sites. They include V74, V75, V83, V200, A15 and A17. Site V53 yielded a black-gloss lipped bowl of the late 3rd or early 2nd century BC (Fig. V-5.11), Sites V117 and V165 are said to have had black-gloss of the late 3rd/ early 2nd century, and Sites V91, 149, 152, and V219, less well documented, may have been of similar date. Other black-gloss sherds can be dated to this period if they are slipped in the semi-glazed technique described at the beginning of this chapter. They are recorded on 20 sites, nearly all in the E part of the Older Survey area (V5, V8, V13 (Monte Serico), V27, V31, V49, V68, V71, V74, V75, V81, V83, V85, V162, V163, V180, V181, V183, V184, V191 and V200).

Most of the sites dated to the 3rd century on this evidence also produced material typical of the LIA (including wheel-made painted, red-figure and Gnathian sherds, and fragments of earlier black-gloss). They are likely to have remained in use from the previous period. A few which produced semi-glazed sherds but no earlier material were probably new foundations in the 3rd century (V181, V183, V184, V191).

The 29 sites which can be dated to the 3rd or early 2nd century BC on this basis are shown on Map VIII-3. The very large number of additional more doubtful instances (38) listed in the Table of Site Occupancy (II. 2. 4) suggests that the real number may have been considerably higher, but it is nevertheless likely that there was a drastic reduction in the number of inhabited sites after the end of the 4th century when at least 54 sites had been occupied, just as there was in our own Survey Area (see below).

The new thinner pattern of settlement is shown on Map VIII-3. Many of the surviving sites were small habitations located along the transhumance trail below the scarp of the Murge. This is at least consistent with the idea that after the capture of Silvium by storm in 306 BC this part of the Peucetian city's territory was expropriated as *ager publicus* of the Roman people, and rented out to graziers who would have used the buildings as dwellings for their herdsmen. The Via Appia is shown on the map in deference to those who believe that this section of the road between Venusia and Tarentum was constructed shortly after the end of the Pyrrhic War. There are good grounds, however, (sub-section 5.vi) for believing that it was not built until after the middle of the 2nd century BC. There are few sites reliably dated to the 3rd century BC situated along the line of the road.

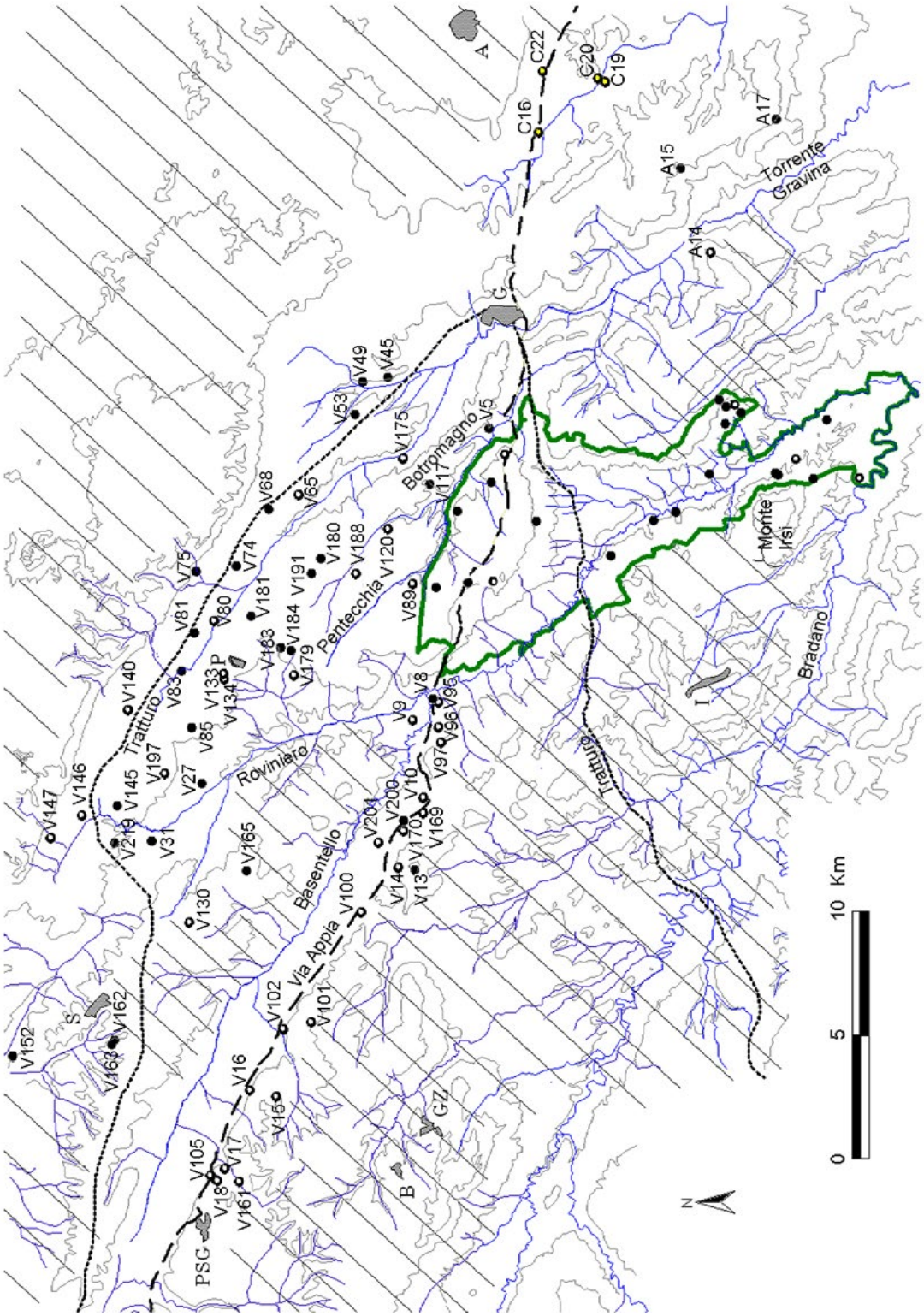
ii. Sites of the mid-2nd – late 1st century BC

The main indicator of date is grey-gloss pottery, fragments of which were found on 34 sites, but a few others could be dated to the 2nd or 1st century BC by late black-gloss (as Sites V53, V71, V116, V145, perhaps also V109, V135 and V238) or by fusiform *unguentaria* (as Site C6). In all, 43 sites could be dated with some certainty to this period, and another 15 more doubtfully. The number probably indicates a significant increase on the previous period when only 29 sites may have been occupied, but the number of doubtful cases is considerably less.

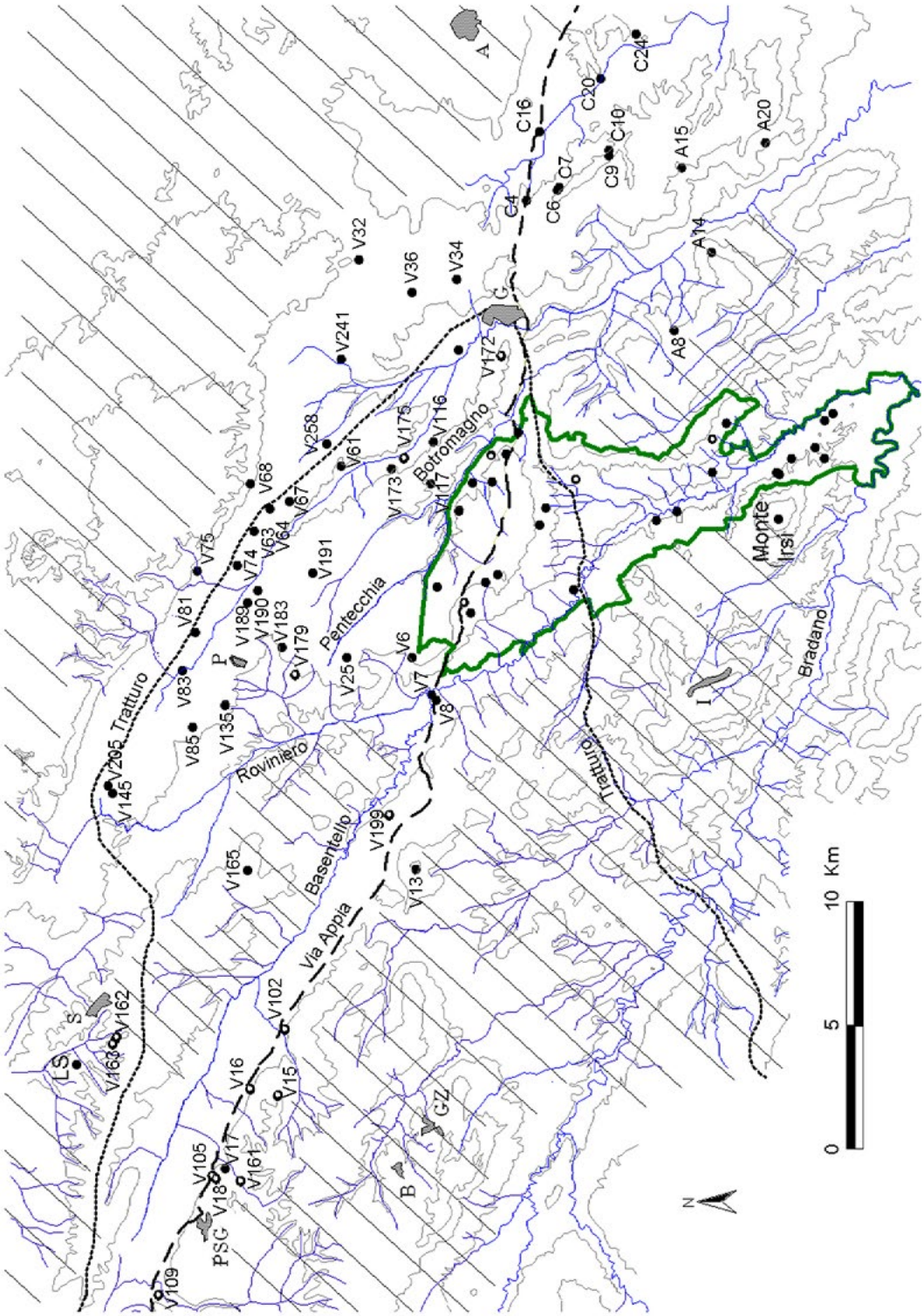
A more detailed analysis reveals the extent of settlement change. At least 27 of the sites were new, or had been occupied in the LIA and were re-occupied after apparently being abandoned in the 3rd century. They include sites C7, V6, V7, V32, V36, V41, V61, V93, V205, perhaps also A14, C16, C20, V17. Only 11 of the sites had certainly been occupied in the previous period, and the comparison with other sites in the vicinity (notably Botromagno) suggests that even on these the settlement may have been drastically reorganized.

It is unlikely that any site was very large. The evidence is complicated by the fact that nearly all were occupied in other periods as well so that the extent of the Late Hellenistic occupation in uncertain. But Site V71, which was occupied only in this period, measured 2000m^2. It may have been unusually large. Four sites measured less than 500m^2 and must have been small in all periods (A14, V36, V83, V183). Another three measured between 600 and 900m^2 (A20, V41, V189). Most sites measured between 1,000m^2 and 10,000m^2, but on these the principal phase of occupation appears to have been earlier (in the LIA) or later (in the Roman imperial period). In a few very large sites, including the Iazzo Fornasiello (V75, ca. 10 ha) and Castiglione (V32, described simply as enormous) the main occupation was certainly in the Iron Age. Rather more can be said about Monte Serico (V13/mhA019), where McCallum and Hyatt in their recent survey found black-gloss on the main part of their site and grey-gloss and ITS on its W and N fringes.[227] Taking all the known sites on the hill together (V13, mhA019, V14 and the excavation on the top) it appears that there was no hiatus in occupation between the Iron Age and Hellenistic periods, but that there was more than one shift in the main concentration of settlement. Since the direction of this shift was down-hill, it is probable that the later inhabitants abandoned the hill-top in order to live on the plain below the hill, particularly after the construction of the Via Appia in the last half of the 2nd century BC.

[227] *Beyond Vagnari*, 175.



Map VIII-3. Early Hellenistic Sites on the Older Surveys and in our Survey Area. Sites on the Older Surveys are numbered. For Site numbers in our Survey Area see Map VIII-5. Doubtful instances are indicated by hollow dots.



Map VIII-4. Sites of the Late Hellenistic period on the Older Surveys and in our Survey Area. Sites on the Older Surveys are numbered. For Site numbers in our Survey Area see Map VIII-6 below. Doubtful instances are indicated by hollow dots. LS = La Santissima.

To the W of Monte Serico the evidence for settlement is less immediately evident because grey-gloss pottery is much rarer. Vinson found only two fragments of grey-gloss between Monte Serico and Venosa (at V17 in the OS List of Site (VI.2.*2*), and at V22, very close to Venosa), and on his later survey of the Via Herculia he found only three grey-gloss sites in an exploration which took him some 30km S of the city.[228] Maria Luisa Marchi in her survey of the *Ager Venusinus* found almost none.[229]

Little can be said about the quantity of the material found on any site of this period in the Older Surveys, but the figure of 20 grey-gloss sherds recorded on Site V173 is unusual and suggests that the site may have been densely occupied. It extended over 3500m^2. It is likely that most sites of this period were relatively small rural habitations, probably farms, although there may have been some larger early villas or small *vici*.

8. Our Survey Area

i. Our Survey Area in the 3rd and early 2nd centuries BC

If we discount the black-gloss ceramic types which began to circulate in the late 4th century and continued into the early 3rd, there are remarkably few pieces which can be dated reliably in the full 3rd or early 2nd centuries BC. Some of the types most typical of the 3rd century BC such as the plates with z- and s-shaped rims (Cat. 9.21) and cups with two vertical handles are rare finds on our survey sites (see the discussion of San Felice below). Even semi-glazed pieces are attested by only a few instances (on Sites 223, 335 and 372). Nevertheless 17 sites can be dated to this period on reasonably reliable evidence, and another 5 rather more doubtfully (see Map VIII-5, and the Table of Site Occupancy, II.2.*4*). The numbers show a drastic decline from the previous period. There can be no doubt that the period between the Second Samnite War and the Second Punic War was a time of drastic socio-political and economic change in our Survey Area as it was in the whole of South Italy, but in order to see how the settlement pattern was affected by these developments we have only a limited range of ceramic evidence to draw on. As always, the most useful dating tool is the black-gloss pottery.

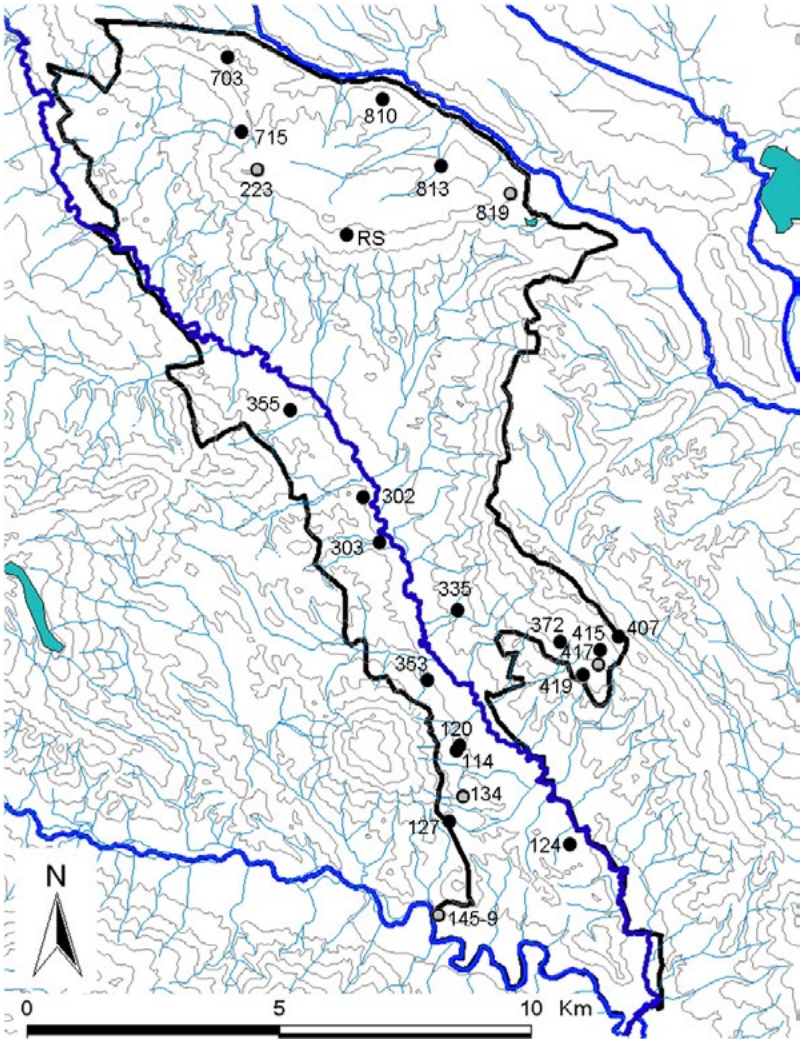
As the map shows, two of the large IA hill-top sites, Sites 401/409 and 627, had disappeared, and the largest of them all, Site 223 (San Felice) had been reduced to insignificance, as had Site 407 (Serra Meschina). Most of the small rural sites of the LIA had gone. In the S half of the Survey Area, some small sites continued on both sides of the river, and there was only one new foundation (Site 353). The sites in this area are unevenly spaced, perhaps reflecting existing patterns of landholding. By contrast, in the N half of the survey area, the sites are more evenly spaced, and two are new foundations (Sites 703, 715) whereas four continue from the previous period (Sites 213x, 810, 813 and 819). The distribution of small sites in this area suggests that each may have been the centre of a unit of *ager publicus* rented out to a grazier, like those envisaged by Carter in the Chora of Metaponto.[230] That is all the more likely since the total area of the upland around San Felice amounts to ca. 1800 hectares which would equate to ca. 257 hectares for each of the 7 sites if it was distributed equally between them – roughly equivalent to the maximum allocation of 1,000 *iugera* for a grazier with two sons. The relatively poor quality of the associated material would suggest that the buildings were occupied by herdsmen, probably slaves of the graziers.

The drastic reduction in the number and size of inhabited sites must imply a steep decline in the rural population.

a. The decline of San Felice

The phenomenon of the decline of the major sites is particularly clear at San Felice. In a preliminary study of the black-gloss pottery from the site we argued that the latest pieces span the transition from the 4th to the 3rd century BC, and suggested that occupation of the site came to an end around the time of the Roman sack of Botromagno/ Silvium in 306 BC.[231] The recent publications of the black-gloss pottery from the so-called Fattoria Fabrizio farmhouse in the Metapontine Chora by Elisa Lanza Catti, and from the sanctuary at Pantanello in the Chora by Keith Swift, provide more comparanda which strengthen this argument. They note that one of the latest forms found at the Fattoria Fabrizio is a large bowl with incurving rim that was introduced into the black-gloss repertoire ca. 300 BC, whereas other forms characteristic of the 3rd century BC, including cups with vertical ring handles and dishes with pronounced projecting rims, which are found at Pantanello between ca. 300 and 275 BC, are lacking at Ponte Fabrizio. They therefore date the end of the farmhouse there to ca. 300 BC. [232] None of these later forms was found in our survey of San Felice where the occupation is likely to have finished at the same time or slightly before. Nor are there any of the ribbed forms of Gnathian pottery typical of the 3rd century BC, although they are found on various sites in Central Apulia and Eastern Lucania which were still occupied in that period.[233] There is, however, a small amount of

[228] Unpublished typescript. For a summary of his survey in this area, see Vinson 1985.
[229] Marchi 2010.
[230] Carter in *Chora Metaponto III*, II, 899-900.
[231] Small & Small 2010. esp. 253-254.
[232] Swift and Lanza Catti 2014, 7-8.
[233] E.g. at Civita di Tricarico (*cit.* – De Cazanove, 373-391, figs 289-292); Pomarico Vecchio (*cit.* – Preacco Ancona, 127-137, tav. 49-50); Monte Sannace (Scarfí 1962, 38, fig. 20; 120 fig. 105; Rossi 1989, 159-161, esp.



Map VIII-5. Early Hellenistic sites in our Survey Area. Doubtful instances are indicated by hollow dots. RS = Recupa di Scardinale (Site 213x)

later Hellenistic and Roman material scattered across the hill-top which is discussed in the analysis of Site 223 in the List of Sites. It is too thin to represent settled habitation, and some or all of it is likely to be derived from Site 229 on the shoulder of the hill which, like the settlement on the plateau, was abandoned around the end of the 4th century. It was reoccupied in the late 2nd century and then re-developed in the Late Republican period as a villa. Some of the Hellenistic material is likely to come from ploughed-out graves associated with that settlement. The evidence of the field survey is partially substantiated by the recent excavations in the settlement on San Felice which confirm that the main phase of occupation in the excavated area came to an end around the end of the 4th century BC.[234] There is therefore good reason to think that the end of the occupation at San Felice was a consequence of the Roman invasion of 306 BC.

b. Vagnari: probable abandonment of the site

The only other site which was studied with an equal degree of intensity was Vagnari. The surface survey suggested that there was an interval between the small black-gloss settlement of the 4th century BC, and the grey-gloss settlement of the second half of the 2nd century and beginning of the 1st. None of the black-gloss pieces found on the survey need date to later than the end of the 4th century, with the possible exception of two ring bases,[235] only loosely datable to the 3rd or 2nd century BC, which perhaps go with the grey-gloss settlement. Moreover, none of the shapes noted above as most typical of occupation in the 3rd and 2nd centuries were found. It is probable, therefore, that this settlement too was abandoned at the end of the 4th century and reoccupied after an interval of about 150 years around the middle of the 2nd. The gap in occupation has been largely confirmed by the results of the recent excavations directed by Maureen Carroll which show that there is a void in the pottery sequence in the 3rd century BC.[236]

ii. Our Survey Area in the late 2nd and early 1st centuries BC

Sites of the period in our Survey Area

The number of occupied sites which can be reliably dated to this period rose slightly to 19 (see Map VIII-5). They are attested by fragments of grey-gloss pottery, late types of black-gloss, various types of amphorae (especially Lamboglia 2s, datable broadly to the 2nd–1st century BC), late forms of *unguentaria*, and some cookpots. The largest was Site 813 which had a dense scatter spread over 4300m^2. It yielded a large quantity of Late Hellenistic material including 26 catalogued pieces of grey-gloss and 86 other fragments of the

tav 282); Gravina – Botromagno (Jentel in *Gravina II*, 52-59, figs 24-25, pls. X-XII).

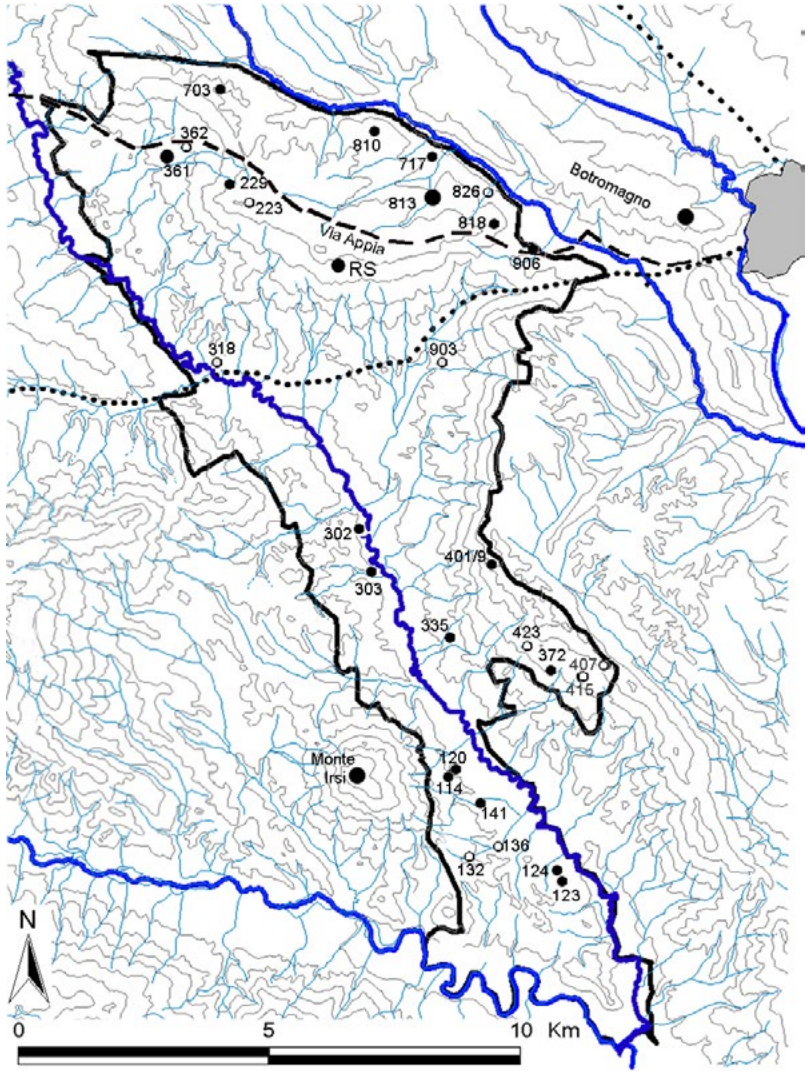
[234] *PSF*, 33-34.

[235] *ibid*, 379, fig. 1, P1499 and P2344.

[236] Carroll, forthcoming. Two 3rd century coins were, however, found in the excavation, one a badly worn Neapolitan bronze found in the fill of a pit of the last half of the 2nd century (see below), the other a silver *victoriatus* minted in Rome ca. 211–208 BC in almost mint condition, found in topsoil.

ware and must have reached its zenith at this time. It was evidently the main site in our Survey Area, occupied in the last half of the 2nd and first half of the 1st centuries BC. The size and topography of the site suggest that it was a substantial farmhouse, perhaps an early villa, with at least one subsidiary residential building and other out-buildings. There was a considerable quantity of *dolium* on the site, some within, some outside the tile fall from the main building. It is likely, therefore, that there was a *dolium* yard there, enclosed, but open to the sky, and that the occupants of the building were engaged in producing wine on a commercial scale. If the farm had originated as a tenancy on *ager publicus* (above sub-section 5.ii), it must have been privatized by the late 2nd century.

The remaining sites were all smaller. The smallest of them all, Site 903, is likely to have been a grave or graves, made with *tegulae*. The others were probably all farmhouses, roofed with *imbrices* and equipped with *dolia* for storage or wine-making. *Dolium* fragments were recorded on most of them, associated with grey-gloss: only on Sites 123, 372 and 810 were none found. These were perhaps not permanently occupied.



Map VIII-6. Late Hellenistic Sites in our Survey Area. Doubtful instances are indicated by hollow dots. RS = Recupa di Scardinale (Site 213x)

Most of these farmhouses are likely to have been simple unpretentious structures like the one at the Recupa di Scardinale (Site 213x), part of which was investigated by the Superintendency in advance of the construction of a wind turbine. The excavation revealed part of a covered area, which had been roofed with imbrex tiles and paved with large tile fragments set horizontally mixed with limestone slabs of irregular size and shape. The uneven character of the walking surface suggests that this was a functional rather than a domestic space, but the finds included a lot of table wares: 33 black-gloss and 169 grey-gloss sherds as well as the three scraps of relief-decorated vessels mentioned above. There were also various plain and cooking ware sherds, three lamps, two loomweights, a pestle and other non-ceramic objects, but nothing indicative of any elegance other than a fragment of a mould-made glass drinking cup. Five worn bronze coins were recovered, three of them legible, including an *as* of 209 BC and an *as* and a *triens* of 169-158 BC.

Ten other sites can be dated only tentatively to this period, or produced so little material that they may indicate frequentation rather than occupation of the area. Some such as Sites 132 and 136 may have been small field huts.

A comparison of the maps VIII-5 and VIII-6 shows the extent of change in the settlement pattern between the Early and Late Hellenistic periods. Five of the sites occupied in the Early Hellenistic period did not last into the mid-2nd century (Sites 127, 353, 355, 419, 715) – not including doubtful cases. Ten show apparent continuity (Sites 114, 120, 124, 302, 303, 335, 372, 703, 810, 813). Eight were either new foundations or re-foundations (Sites 123, 141, 229, 361, 401-9, 717, 818, 906). But the bald numbers do not indicate the full extent of the change since the sites which appear to have been continuously occupied may have been refounded as new types of habitation in the 2nd century, as was the case on Botromagno. There, a village of peasant houses

was organized adjacent to a productive villa, over the remains of the LIA and Early Hellenistic settlement.

The two surviving hill settlements founded in the LIA (Sites 223, 407) finally petered out. The largest of them, San Felice, is registered as only doubtfully occupied. It yielded a little Late Hellenistic material, but even this may derive from the adjacent Site 229.

The new settlement pattern reflects the vast economic changes of the Hellenistic period that followed the end of the Hannibalic war. They have been discussed above. The construction of the Via Appia opened up the area to new commercial enterprises and made it easier for landowners to sell the produce of their villas to more distant markets. This accounts for the string of new settlements close to the line of the road in the N part of the Survey Area. The void in settlement in the central part of the Survey Area is likely to be the result of the development of large sheep-ranching estates exploiting the possibilities of long-distance transhumance and linked to the drove road leading into the Lucanian mountains. The series of small sites on the right bank of the Basentello below Monte Irsi suggests that the river was being used for exporting agricultural produce, including grain and other commodities produced in the villa on the hill-top.

b. Vagnari: resumption of occupation

The surface collection on Vagnari showed that the settlement of the grey-gloss period occupied an area only a little smaller than the previous settlement, ca. 1,000 –1,500m^2.[237] The earliest stratified context found in the recent excavations directed by Maureen Carroll belongs to this period: a deep cylindrical pit filled with a wide variety of material, including fusiform unguentaria, lamps, loom weights, iron implements, and animal bones, and a badly worn Neapolitan bronze coin of the 3rd century BC.[238] The nature of the site at this time is uncertain. It was perhaps a villa, but may equally well have been a road station, given its proximity to the Via Appia.

9. The 1st century BC down to the beginning of the Principate

i. Romanization

Already in the course of the 2nd century BC many individuals from the Italic communities had become thoroughly Romanized and had immersed themselves in the Latin culture of the capital. The outstanding example is Ennius, who was born in the Messapian city of Rudiae near Lecce in 239 BC, acquired Roman citizenship in 184 BC, and became the most creative of early Latin poets. Many other Italians served with the Roman armies in the East, or became *negotiatore*s, exploiting the commercial opportunities opened up by Roman conquests. By the end of the century some Italic communities had begun to reorganize themselves along the lines of Roman colonies. Bantia, in particular, created an *auguraculum* where priests could take the auspices in Roman fashion,[239] and developed municipal statutes analogous to those of the nearby Latin colony of Venusia. They were published in Oscan, as was appropriate for a community which had not yet acquired Roman citizenship, but were written in the Latin script.[240]

ii. The Social War

Such attitudes led many Italic communities to demand full Roman citizen rights which would give them protection against the abuse of power by Roman magistrates and enable them to participate fully in the Roman system of law and government. The refusal of the senate to meet their demands led to the ferocious Social War which broke out in 91 BC and lasted in some places until 87 BC. The allied communities had different motives. Not all wanted citizenship; some, particularly in Samnium and Lucania, wanted to reassert their independence. The combined Lucanian forces fought together for the last time under a single general and minted coins in the name of the whole *ethnos*. The Peucetians too must have joined the confederacy against Rome, as the sequel shows.[241] To regain control the Roman state had to legislate to grant citizenship to those allied communities which had not joined the revolt, or which had quickly surrendered (by the *lex Iulia de civitate*). Not all the eligible communities, however, wanted to accept the grant, which would have led inevitably to the extinction of their traditional way of life. Another law, carried probably in 88 BC, extended the grant to all Italians except for the Samnites and Lucanians, who continued fighting.[242] Even they, however, eventually acquired citizenship at an unknown date. It was not until the time of Augustus that all the loose ends were tied up.

The meagre sources do not give us specific information on how these measures affected the settlements in the Fossa Bradanica. Those on the Lucanian side of the old ethnic divide will not have gained citizenship quickly if they had continued fighting to the end; but the Peucetian communities are likely to have been enfranchized by the legislation of 89 BC, since we are told that the *Poidikloi* (that is, the Peucetians)

[237] C. Small in *Vagnari*, 61-62.
[238] Carroll, forthcoming.
[239] Torelli 1966.
[240] For the *Tabula Bantina* see Crawford *et al.* 2011, 1437, with further refs. The Oscan text can be dated to 100-91 BC,
[241] Grelle & Silvestrini 2013, 223-224.
[242] Bispham 2007, 182-183.

surrendered to the Roman general Cosconius within two days when he attacked them in that year.[243] It is significant that this is the last mention in our sources of the Peucetians as an ethnic unit. Venusia and Canusium probably held out longer,[244] and may have acquired full Roman citizenship at a later stage.

iii. Municipalization

The vast numbers of new citizens enrolled during and after the Social War had to be incorporated into the institutions of the Roman state. They were assigned to one or other of the 35 Roman tribes, which, theoretically at least, allowed them to vote in the Roman tribal assembly. The traditional political structures of the Italic communities were abolished, and the more successful of those which had survived the Social War were granted municipal status. This was a slow process, initiated by another law passed probably in 86 or 85 BC, which laid down general principles and established a model for use in individual cases. It was followed over time by a series of more specific laws which reorganized individual communities as *municipia*, subject to Roman law. [245] Each city, it seems, had to negotiate with the Senate and People of Rome for its own law (*lex data*), which defined its own institutions, and although there was a general pattern, the details might vary to take account of local circumstances. The *municipia* were in effect microcosms of the Roman state, with their magistrates (generally but not always *quattuorviri*), local senate (*curia*) and register of citizens. They also functioned as bases for the Roman census. Pliny records many of them in his analysis of the regions of Italy in Book III of his *Natural History*, but his method of compilation is unsystematic; the identification of some of the communities he lists is unknown, and the status of others is in doubt, especially if there is no inscriptional evidence to support it.

Underlying the concept of municipalization was a willingness to reward those communities which were most fully Romanized, especially ones which were controlled by local nobles who had links with the Roman senate. There was no blueprint for the efficient organization of local government. As a result, regions like Apulia, where the population had already developed more-or-less autonomous civic institutions before the Social War, gained relatively large numbers of *municipia*, whereas others like Samnium and Lucania, where tribal allegiances were stronger and civic institutions correspondingly weaker, had remarkably few.[246]

Map VIII-1 shows the location of *municipia* within the geographical area we have been considering. The Daunian settlements at Ordona (*Herdoniae*), Ascoli Satriano (*Ausculum*) and Canosa (*Canusium*) certainly obtained municipal status, as did the Latin colony of Venusia. In central Apulia only six *municipia* can be identified with reasonable certainty from the combination of literary and epigraphic sources, namely *Rubi* (Ruvo), *Butuntum* (Bitonto), *Barium* (Bari), *Caelia* (Ceglie del Campo), *Genusia* (Ginosa?) and perhaps *Azetium* (near Rutigliano). All are in the Adriatic coastal fringe except Ginosa which must have been close to the Ionian coast, though its exact location is disputed.[247] Many indigenous centres in the interior which had flourished before the Roman conquest, but which had declined in the 3rd and 2nd centuries BC (such as Altamura and Monte Sannace), failed to qualify as *municipia*.

Few of the traditional Lucanian settlements attained the status of *municipium*.[248] The only ones that can be identified with certainty in the mountainous interior of the region (within the area of the map) are *Bantia* (Banzi), *Aceruntia* (Acerenza), *Potentia* (Potenza), and (further W, in the valley of the Tanagro river), *Atina* (Atena Lucana) and *Tegianum* (Teggiano). The map shows an immense void stretching from the Murge to the high Apennines S and E of Potenza and including the whole of the Fossa Bradanica from the mouth of the Bradano to the headwaters of the Basentello.

The collapse of the traditional pattern of Samnite and Lucanian hill settlements brought with it the extinction of many of the distinctive aspects of their Oscan culture – so much so that Strabo, writing two or three generations after the Social War, could assert (VI.1.2) that the Lucanians, Brettians and Samnites had been so worsted (κεκακωμένοι) that it was difficult to distinguish which settlements belonged to which of these peoples.

The Greek cities were in principle easily absorbed into the system, but Metapontum had declined to such an extent that it was not municipalized. Tarentum, however, was reorganized as a *municipium* under the terms of a law, part of which survives inscribed on a bronze tablet. Its situation was unusual in that, as we have seen, it consisted at the beginning of the 1st century BC of two communities which co-existed side by side: the Greek city of *Taras*, and the Roman colony of *Neptunia*. The law created a single *municipium* of *Tarentum* in which the two former communities were merged.[249] Its date is uncertain. Gianluca Mastrocinque

[243] Appian *Bel.Civ.* I.52.
[244] Grelle 1993, 52; Grelle & Silvestrini 2013, 230-231.
[245] Costabile 1984; Bispham 2007, chapter 4; Grelle & Silvestrini 2013, 65-75.
[246] Bispham 2007, 406-407.
[247] For the identification of Ginosa with Montescaglioso where an inscription in a mosaic recording the reconstruction of a building was found, see Masseria & Torelli 1999; contra: Fioriello 2017, 179.
[248] For the municipia in the whole of Lucania: A. Russi 1999, 527-531.
[249] Mastrocinque 2010, esp. 29-30.

argues for the Augustan period, but it is more easily associated with Pompey who had interests in the city and probably settled some of the veterans from his Eastern campaigns there during his consulship in 59 BC (see below).[250]

The municipal system of government required the use of Latin for official business and the adoption of Roman cults. The Italic languages were soon lost and even Greek began to disappear from large parts of Magna Graecia, although it lingered on in Naples and Reggio, and more narrowly in Taranto among the cultured élite.[251]

iv. A praefectura *of the Silvini?*

Our Survey Area fell effectively outside the municipal system, at any rate as it can be seen functioning in the period of Roman Empire to which most of the inscriptional evidence belongs. The *Silvini* are, however recorded in Pliny's list (*NH* III.105) among the inland inhabitants of *Regio II*. Since Pliny (*NH* III.5.46) informs us that he drew the names of these communities from a list compiled by Augustus, when he divided the whole of Italy into eleven regions, we must assume that he had some basis for enrolling the *Silvini* (and other problematic instances such as the *Mateolani*) other than as inhabitants of a *municipium*. Francesco Grelle has suggested that Silvium is likely to have formed a *praefectura* administered by a prefect appointed by the urban praetor,[252] whose main role was to supervise justice in areas remote from a tribunal.

In that case, the population of our Survey Area who lived on the left bank of the Basentello would have been enrolled in a *praefectura* of Silvium. How those on the right bank were registered is even less clear. The nearest *municipium* in Lucania to our Survey Area was Bantia, 30km NW of Monte Irsi as the crow flies. The small settlements in the vicinity of Monte Irsi found in our Survey Area were perhaps allocated to its territory – unless this area too was administered as a *praefectura*.

There is no information on how the administration of the *praefectura* would have worked in detail. The *praefectus* and his staff no doubt saw to the administration of Roman law within the *praefectura*, but the grant of Roman citizenship also involved routine matters of daily life such as the adoption of Roman systems of weights and measures which must haves been coordinated in some way. We get a hint of this in the fact that the local artisans in our Survey Area abandoned the standard measurements for *tegulae,* which had been used at Metaponto before Romanization, in favour of smaller tiles made to Roman measures (see Cat. 32). But there was no norm laid down by the Roman state. The size and proportions of tiles were local or sub-regional matters typically decided by municipalities, not by the aediles at Rome, and the measurements used for tiles at Vagnari differed from those used, for example, in Pompeii and Ostia. There is not enough comparative evidence to identify the extent of the area in which they applied, but it appears to have extended at least as far as San Giovanni di Ruoti. We may conjecture that the standard module was established initially in the triumviral colony of Venusia, where the *tegulae* were of similar dimensions, and was subsequently adopted by neighbouring *municipia* and applied to the *praefectura* of Silvium.

v. The end of Silvium

The beginning of the end of Silvium can be dated fairly precisely. In a corner of the agricultural part of the villa on Site CA, mentioned above, between the perimeter wall and a drainage channel, there was a pear-shaped pit, F202, 1.5m deep, which had perhaps been dug as a silo. It had been filled at a single moment with organic material and numerous fragments of pottery and other objects derived from the daily life of the inhabitants of the building.[253] The stratigraphy of the upper part of the pit had been damaged by a recent intrusion, but the surrounding area was filled with stones and tile fragments from the collapse of the building which must originally have covered the pit. The most recent material found in the pit should therefore give a *terminus post quem* for the destruction of the building. The grey-gloss, *unguentaria* and other types of pottery studied by J.W. Hayes[254] comprise mostly types which can only be dated broadly in the late second or early 1st century BC, but there are also twelve fragments of thin-walled ware (*ibid*. nos. 73-84) and five of 'Pompeian red ware' cooking pans (*ibid*. nos. 85–89) which demonstrate the arrival of new Etrusco-Romano-Campanian types in an area where the material culture was still predominantly Hellenistic. They suggest a date after the onset of full Romanization that followed the Social War of 91–88 BC. A group of seventeen coins found scattered through the pit offers more precision. They have been studied by Giuseppe Guzzetta,[255] who has shown that they can all be dated to the 2nd or beginning of the 1st century BC, the latest being a Roman *denarius* of the moneyer L. Iulius Bursio, minted at Rome in 85 BC. Since this coin shows some signs of wear, it is difficult to suppose that it was deposited in the pit before 80/70 BC. A worn bronze *quadrans*, tentatively dated ca. 86 BC (*ibid*, no. 5), must also have been in circulation for some time before being deposited in the pit. The pit must therefore have been closed and the site abandoned after ca. 80 BC, and

[250] For Pompey's interests in Tarentum, see Lippolis 2004, 262; Silvestrini 2013; Grelle *et al.* 2017, 28.
[251] Poccetti 2005.
[252] Grelle 2002.
[253] Small, Roe *et al.* 1994; Small 2020.
[254] Small, Roe *et al.* 1994, 187-246, 'The pottery'.
[255] *Ibid*, 241-243, 'Le monete'.

therefore after the episode, referred to above, of Sulla's encounter with the slave of Pontius at Silvium in 83 BC.

vi. Slingshots on Botromagno and the war of Spartacus

Some light is thrown on the end of this phase of occupation by a group of 225 slingshots found by a metal detectorist on Botromagno which Giuseppe Schinco and I have studied in a recent article.[256] Their archaeological context is not recorded, but on typological grounds some of them can be dated in the first two thirds of the 1st century BC, though others have a rather longer span. Since the archaeological evidence indicates that the settlement came to an end ca. 80–70 BC, the slingshots strongly suggest that the site was besieged by the army of rebel slaves led by Spartacus or his associate Crixus in the war of 73–70 BC. Botromagno/ Silvium would then have been one of the numerous *vici* destroyed by Spartacus' army in one or other of its various marches across South Italy. In the article, I have collected other instances of destruction in this period which can plausibly be connected with this war. Several are in the Fossa Bradanica including Metapontum which is one of the places listed by Florus (II.8) as devastated by the rebels with terrible slaughter, along with Nola, Nuceria and Thurii and unspecified villas and villages (*vici*).[257] But the most decisive evidence (other than on Botromagno) is likely to come from Monte Irsi, where, as we have seen, the cattle stall was abandoned early in the 1st century BC, after which there was a short period of disuse before occupation resumed on Site A. In the publication of the excavations, we suggested that the settlement might have been deserted in the Social War of 90–89 BC;[258] but the comparison with the sequence of archaeological events on Botromagno suggests that the slave war of 73–71 BC is a more likely context. Antonio Florido, who discovered the slingshots on Botromagno, reports having found numerous others on Monte Irsi which he consigned to the Museum at Matera.

The destruction of Botromagno/ Silvium was not the end of the site. Occupation resumed, probably after a short interval, on a much smaller scale in the central part of the site, and the toponym Silvium continued in use, transferred to the settlement at Santo Staso below the scarp of the hill on its S side which grew up beside the Via Appia.

vii. Amphorae and brick stamps as evidence for the rise of great estates

The numerous political upheavals of the late Republic provided many opportunities for the ambitious and unscrupulous to enrich themselves, often by acquiring landed estates confiscated from political enemies or bought at low prices in a glutted market. This trafficking in property reached a new height in the Sullan proscriptions when many of the dictator's supporters were rewarded with the estates of the proscribed Marians. The sources tell us mostly about Sulla's detested freedmen, the agents of the proscriptions, like Tarula, whose name appears on twelve amphorae of Brindisine type from Apani, and on two Lamboglia-2s from Egnazia.[259] He must have acquired large oil-producing estates in the vicinity of the two cities. We are less well informed about the acquisitions made by Sulla's senatorial supporters, but the names of at least nine are known who made great profits, and many more can be surmised.[260]

A number of tile stamps suggest that some members of the senatorial aristocracy amassed large landholdings in Apulia around this time. Since they rarely give the full *tria nomina,* the identification of the names is often uncertain. They include, for example, tiles from a luxurious early villa at Mola di Bari stamped MCAECILIVS[261] and CLICINIUS who evidently belonged to the landowning class in Apulia, and who may or may not have had some connection with the Roman senatorial families of the Caecilii Metelli and Licinii Crassi. A group of tiles stamped AVF found in the tile factory of the late 2nd and early 1st century BC at Sant'Angelo Vecchio near Metaponto, can be associated with some degree of probability with Publius Aufidius Pontianus of Amiternae who is said by Varro (*Res Rusticae* 2.9.6) to have had a flock of sheep which he got his shepherds to drive to the *saltus* of Metapontum and the market (or shore) at Heraclea.[262] The name Scipio which appears on the stamped tile No.2226 from Site 114 in our Survey Area (if we have read it correctly) suggests that some member of the Scipio family acquired property in or near our Survey Area in the course of the 1st century BC.[263]

viii. Pompey as an estate owner in our Survey Area

Another group of tile stamps indicates that Pompey (Gnaeus Pompeius Magnus) owned a large estate in our Survey Area. It is the subject of a forthcoming article in which I argue that a tile stamp found on site 704 (No.2227), and another from the same die found on the villa Site 229[264] taken together give the whole text of the stamp: MPMAG.P. This text can be associated with another tile stamp from the villa, found

[256] Schinco & Small, 2020.
[257] *Nec villarum atque vicorum vastione contenti, Nolam atque Nuceriam, Thurios atque Metapontum terribili strage populantur.*
[258] *Monte Irsi*, 101.
[259] Desy 1989, nos. 654-656, 751, 796; Grelle & Silvestrini 2017, 18.
[260] Shatzman 1975, 40.
[261] Casavola 2002, 84.
[262] Rescigno, Perugino & Vollaro 2016, 477-478.
[263] Small in *Beyond Vagnari*, 75.
[264] Both tile stamps are published in *Beyond Vagnari,* 74 (P1376 and P1783).

by the team directed by Hans vanderLeest and Myles McCallum, which can be completed as CN(aei) MAG(ni) . P(roconsulis)[265] and shows that someone whose name begins with the letter M was associated with Pompey in the ownership of the tile production. That person is most likely to be his wife, Mucia, in which case the text can be reconstructed as M(uciae) P(ompeii) MAG(ni) . P(roconsulis) <uxoris> – i.e (the tile) of Mucia, the wife of Pompeius Magnus, Proconsul. Mucia Tertia was Pompey's third wife, the daughter of the Pontifex Maximus, Quintus Mucius Scaevola, whom he married in 80 or 79 BC and divorced in 61 BC. The substitution of her name for that of her husband is best accounted for by the fact that she had become his agent during one or other of his long proconsulships abroad, either in Spain (77–71 BC) or in the East on his campaign against the pirates (67 BC) or in the Mithradatic War (66–62 BC). Her role in managing his estates might be compared with that of Cicero's wife Terentia who looked after her husband's affairs during his exile in Thessalonica in 58–57 BC, and again when he was proconsul in Cilicia in 51–50 BC, and yet again after his flight with the Pompeians to Greece in 49–48 BC.[266]

These tile stamps show that Pompey owned an estate with tile works in the Basentello valley somewhere in the vicinity of the two sites in our Survey Area where the stamped tiles were found (Sites 229 and 704). The centre of the property is most likely to have been the villa on Site 229 from which the third stamp found by vanderLeest and McCallum also comes.

It would throw some light on the history of our Survey Area if we knew the circumstances in which Pompey obtained an estate situated in the heart of it. There is no certain answer, but two possibilities which fit the historical context can be suggested and assessed.[267] One is that he acquired this territory in the Sullan proscriptions in which he is known to have made a fortune,[268] but there is no specific evidence to show that he acquired land in this area at that time. The second possibility, that he acquired the property in the aftermath of the war with Spartacus, also lacks direct proof, but can be fitted into a more plausible scenario.

ix. Pompey and the war of Spartacus

On his way back from Spain in 71 BC Pompey was instructed by the senate – at Crassus' request, according to Plutarch (*Crassus* 11) – to join Crassus in the war against Spartacus. The source used by Plutarch implies that Pompey arrived with his army after Crassus had already defeated Spartacus, but in time to dispose of 5000 fugitives from the battle, giving the impression that Pompey's compaign against the slaves in Italy was a mere mopping-up operation. The sources are inconsistent on where the final battle of the war took place, some seeming to place it in Lucania, and others in Apulia.[269] None gives a precise location, but if Appian is right in saying that Spartacus had been aiming for Brundisium, but diverted from there on hearing of the arrival of Lucullus in the port with an army from the East, then Pompey probably approached the scene of the battle along the line of the Via Appia, and passed by Silvium which had been devastated by Spartacus' army. It may easily be supposed that he seized the opportunity to buy up the land in the territory of the deserted settlement at a bargain price. The acquisition of the estate would have involved the construction of new buildings for his local administrators and the creation of new workshops for manufacturing tiles of which a small proportion were stamped with inscriptions that referred to his status as proconsul at that time.

The villa on Site 229 with which the tiles stamped with Pompey's name were associated, was constructed, according to the excavators, at some time in the second half of the 1st century BC.[270] If the theory of Pompey's ownership of the property is correct, then a date at the beginning of that period would be needed, or preferably in the preceding two decades. We must await the final publication for a more precise evaluation of the evidence. The building is a rural villa of a very unpretentious kind. In Phase I its main feature was a small peristyle measuring ca. 5×7 m, bordered by a low stone socle on which were set 12 columns made of segmental tiles. In its centre there was a pool or other decorative water feature supplied from a spring located close to the villa on its SE side. On the W edge of the complex there was a small group of residential rooms with painted plaster on both walls and floors. No dining area (*triclinium*) or other formal reception room was located in the excavation. This was not therefore a villa where Pompey himself would have lived or even visited, though it was suitable, no doubt, for a favoured but low-ranking *vilicus* who could be entrusted with the administration of the estate.

The results of the excavations on Botromagno, and the analysis of the material from our field survey give some idea of the use that Pompey made of the estate. On Botromagno, part of the villa on Site CA was rebuilt some time around the middle of the 1st century and equipped with the small press for grapes or olives (above sub-

[265] Mentioned in McCallum and vanderLeest 2014, 126 but without illustration.
[266] Treggiari 2007, esp. 60, 86, 112.
[267] Pompey is known to have had interests in the territory of Tarentum where his family had inherited land once owned by the Poet Lucilius (see Shatzman 1975, 227 no. 60; Silvestrini 2013, but that is unlikely to be relevant since there is no evidence that Lucilius had owned land in the central part of the Fossa Bradanica.
[268] Shatzman 1975, 40.
[269] In Lucania: Orosius 5.24.6-7; Plutarch, *Crassus*, 11.5-7. In Apulia: Appian, *Bel. Civ*. 1.120; Eutropius, 7.7.2. Cf. A. Russi 1999, 534-535.
[270] McCallum and vanderLeest 2011, 2014.

section 2.ii). There is some evidence to suggest that the building on Site H was also patched up, perhaps at this time.[271] These are humble structures, suitable at best for a *vilicus* charged with managing this part of the estate. In our Survey Area, there is remarkably little evidence for thin-walled pottery, "Pompeian red" ware, and other materials that might be dated to the central decades of the 1st century BC. As we have seen, the majority of the grey-gloss sites in the area, datable to the late 2nd or early 1st century AD, were left abandoned. It would seem, therefore, that Pompey did nothing to restore the communities that had been devastated in the war with Spartacus. It may be supposed that he had decided to convert the whole of his landholding into pasture for transhumant sheep, leaving only a few small economic or administrative centres.

It is well known that Pompey had landed interests in Apulia. He owned a villa near Tarentum where Cicero visited him on his way to the East in 51 BC, [272] and perhaps other property which he had inherited through his mother from the poet Lucilius.[273]There is inscriptional evidence for a number of individuals with the *gentilicium Pompeius* in and around Tarentum.[274] Some are likely to be freedmen liberated by him and settled on his estates in the area – or their descendants. Others may have been *peregrini* enfranchized by him in the East. Some may have been settled by him after his command against the pirates in 67–66 BC, including the old Corycian man whom Vergil (*Georg.* 4.127) saw below the walls of Oebalia (Tarentum), who is thought (on the authority of Servius) to have been one of a number of pirates whom Pompey spared and resettled with others at Tarentum.[275] It is likely, therefore, that he had a large landholding in the immediate vicinity of the city.

There is no evidence to prove that Pompey's estates near Tarentum were given over to sheep ranching, but it is not unlikely, given the importance of the wool industry in the territory of the city. Moreover, his landholdings in the E Mediterranean included sheep ranches where his son Gnaeus raised 800 slaves and herdsmen from the family's estates in the run-up to the battle of Pharsalus.[276] If a tile stamp CN.MA found in the villa at San Gilio in the Upper Bradano valley can be expanded as Cn(aeus) Ma(gnus) and taken to refer Pompey, then he must also have had estates in the Lucanian mountains at the other end of the transhumance trail,[277] and would have been well placed to exploit the revenues to be got from large-scale pastoralism.

x. Inanissima pars Italiae

Late in February 49, Cicero wrote to Atticus from Cales agonizing over the possibilities, or rather lack of them, open to the *Res Publica* and to himself, in the face of Caesar's invasion. He might flee to Apulia, the emptiest part of Italy and the most remote from the onslaught of this war (*inanissima pars Italiae et ab impetu huius belli remotissima*), and escape from there by sea if matters became desperate.[278] Cicero's description of Apulia as the emptiest part of Italy has been taken to be exaggerated, and arguments have been advanced to show that in some parts of the region the population was holding up well, particularly in the Salentine peninsula where the numbers declined in some areas but increased in others as new economic opportunities arose.[279] But it is doubtful that Cicero had the Salentine peninsula (which he would probably have called Calabria) in mind, or even Daunia where villas and small farms began to spread across the countryside around the middle of the 1st century BC.[280] The part of Apulia with which he was most familiar was the area through which he had passed in 51 BC. Since on that occasion he left Venusia and visited Pompey in his villa at Tarentum, he in all probability followed the Via Appia which connected the two cities directly. He would then have seen for himself the depopulated expanse of Pompey's vast estates in the vicinity of the road.[281] Similarly his remark in the *De amicitia* (4.13), written in 44 BC, that Magna Graecia had now been destroyed (*Magnamque Graeciam, quae nunc quidem deleta est*) is likely to reflect his experience travelling from Thurii (*ad Att.* III.5, end) to the territory of Tarentum (*ad Att.* III.6, end) on his way to exile in Thessalonica, when he must have passed through the territories of the two former Italiote cities which Florus (2,8.5) tells us were devastated with terrible slaughter (*terribili strage*) by Spartacus.

xi. The acquisition of the estate by Octavian / Augustus

Site 229 also yielded a tile stamped by the imperial slave Gratus which can be taken as evidence that early in the Julio-Claudian period the villa had become an imperial property. Other evidence, discussed in Chap. IX, shows that the imperial estate occupied much if not all of the former territory of Silvium and that it was acquired during the life-time of Augustus himself. The most

[271] R. Whitehouse *et al.* 2000, 253, 258.
[272] Cicero, *ad Att.* V. 5. 6, 7.
[273] Shatzman 1975 no. 60.
[274] Silvestrini 2013; Grelle & Silvestrini 2017, 28-30. An amphora stamp POMPEI found on the surface at Porto Cesareo near Taranto may indicate that Pompey himself had a wine producing estate in this area and owned kilns supplying amphorae for it.
[275] Lippolis 2001, 160-161 and 2004, 277.; Servius *apud Georg*. 4. 127: *Pompeius enim victis piratis Cilicibus partim ibidem in Graecia, partim in Calabria agros dedit*. The settlement would have had to wait until 59 BC to be ratified in the consulship of Caesar and *Crassus*.
[276] Caesar. *Bel. Civ*. III.4.
[277] Di Giuseppe 2008b, 351 and fig. 57.
[278] Cic. *ad Att.* VIII.3.4 = Shackleton Bailey (1968) vol. IV no. 453.4.
[279] Yntema 2013, 245-246; De Mitri 2010, 29-37.
[280] Volpe 1990, 56-60.
[281] In April 58 BC, travelling from Thurii (*ad Att.* III.5, end) to the territory of Tarentum (*ad Att.* III.6, end) on his way to exile in Thessalonica, he must have passed through the largely depopulated terrain around Metapontum.

likely occasion for this to have happened is late in 44 BC when Mark Antony as consul auctioned off Pompey's confiscated estates. Cicero rails against this act of Antony's in the Second Philippic, which he composed in October and published in December 44.[282] Late in March of that year Octavian, then in Apollonia in Illyricum, heard of the assassination of Julius Caesar, and crossed the Adriatic, disembarking at a small harbour on the Salentine coast. From there he went on foot to Lupiae (Lecce), where he heard of his adoption and inheritance under Caesar's will, and on to Brindisi, where he must have arrived early in April. On 18th April he arrived in Naples.[283] We are not told what route he took, but he may well have followed the Via Appia which led to Campania by way of the destroyed Silvium, passing through Pompey's estate at Vagnari. If so, he will have seen the extent of the estate and its value as pasture-land for transhumant sheep, and he may have decided to buy it at a knock-down price, in Antony's auction.

xii. The veteran settlement at Venusia

It was perhaps Pompey's connection with this area that made Venusia a target for the plantation of a veteran colony by the triumvirs in 43 BC. According to Appian (*Bellum Civile* IV.1.3) it was one of 18 cities marked out for veteran settlement in that year. There was no intention here of reviving failing communities like Metapontum, but rather of planting the veterans on a flourishing city which offered them the amenities of civic life. Since the surface surveys have failed to identify new areas of the Venosan countryside subdivided at this time, the veterans must have been settled here without a new process of centuriation, by dispossessing the existing occupants – including Horace who returned home to Venusia after fighting for the Republic at Philippi in 42 BC, and found himself deprived of his paternal *lares* and farm.[284] His poem is evidence that veteran settlement continued for several years, or else was delayed until after the battle.

10. The environment in the Fossa Bradanica in the mid-1st century BC

The enormous changes in land-use which took place in the Fossa Bradanica in this period are reflected in several studies of the environment. At Monte Irsi, Graeme Barker's analysis of the faunal material shows that in the Late Hellenistic period on Site A (the Roman villa constructed around the middle of the 1st century BC), the proportion of pig bones increased significantly, from 22.9% in the previous phase (predominantly late 2nd century BC) to 36.2%, whereas the proportion of caprine bones declined (from 45.7% to 27.6%). There was a slight increase in cattle from 27.1% to 29.8%. The swing from sheep to pigs is a rather surprising result which suggests that the economy of the villa was more-or-less insulated from the traffic in transhumant sheep, and depended more on the exploitation of the oak forests in which the pigs could forage for acorns and other foods.[285] It fits the indications in the literary sources that the production of pork for export to the army, preserved either as sausages (*lucanica*) or bacon fat (*laridum*), had become an important part of the economy of Lucania.[286]

At the S end of the Fossa Bradanica pollen evidence from several sites indicates that the climate in the Hellenistic period was relatively hot and humid. Pastoralism continued to dominate in the economy, olive cultivation increased and cereal production diminished to some extent.[287] The analysis of pollen samples from Late Hellenistic contexts at Difesa San Biagio shows that the landscape of this area at the edge of the Metapontine Chora was characterized predominantly by open dry grassland, though there was xerophilous woodland at some distance from the site. Various species typical of pasture were recorded, and spores of coprophilous fungi confirm that the sheep and goats grazed in the area.[288] There was also some mixed cultivation, though not in the immediate vicinity of the site: there were small amounts of pollen of the *Avena/ Triticum* group, but no barley or rye. There was also evidence for peas, broad beans olives and walnuts.

The increasing importance of pastoralism in the plain is also reflected in the faunal analyses from Pantanello in the Metapontine Chora where the proportion of sheep and goats increased at the expense of cattle and equids, indicating that there was a decline in cultivation and increase in pastoralism between 150 and 50 BC.[289] Dogs of roughly collie-size were well represented in the deposit, presumably the remains of sheep dogs; but there was also a significant proportion of wild animal bones, especially red deer, which suggests that, in this area too, land which had once been cultivated had gone over to forest.

11. Hannibal's legacy

Several scholars have attempted to explain the collapse of the traditional pattern of settlement in terms of the political and military events briefly summarized above. Much of the debate has focussed on the central thesis of Toynbee's *Hannibal's Legacy* (1965), which saw the destruction of the traditional cultures as a consequence of the punitive measures taken by the Romans after the

[282] Cicero. *Phil.* II, 39, 65, 75, 98; for the date: *ad Att.* XV.13.1.
[283] Cicero, *ad Att.* XIV.11.2.
[284] Horace. *Epist.* 2.2.50-51.
[285] Barker 1977, 265-266.
[286] Magaldi 1948, 53-54; Giardina 1981, 96-97.
[287] Torri *et al.* 2012, 305-306; Florenzano 2015.
[288] Mercuri *et al.* 2010.
[289] Cabaniss 1983.

end of the Second Punic War. These, he argued, destroyed the economic base of the indigenous societies, and led to the creation of vast estates – *latifundia* – which brought about the permanent agricultural impoverishment of South Italy. The thesis is open to criticism on a number of counts. The deconstruction of the Italic settlements began well before the Second Punic War, not least in the area of our field survey; the reconstructed agricultural economy brought prosperity to larger landowners in some parts of South Italy, and the agrarian reforms of the 2nd and 1st centuries BC succeeded more than Toynbee realised in re-creating a class of peasant farmers in some of the areas best suited to agriculture. Nevertheless, it may fairly be said that there were very extensive parts of the hinterland of South Italy which remained severely depopulated after the abandonment (often destruction) of the indigenous settlements. Our Survey Area is an obvious example. The problem is therefore a regional, and even a sub-regional one.

In his overview of this period of settlement crisis, Douwe Yntema argued that the decline of the traditional settlements was not so much a result of Roman policies as of inevitable economic forces; but in our area we must question why the abandonment of so much valuable agricultural land went ahead, in spite of its proximity to the Via Appia. It can be argued that the attempt to revive the settlement at Silvium in the late 2nd century BC failed, not because of inevitable economic urgencies, but because Silvium was destroyed by siege in the war of Spartacus. The fact that it was not reconstructed again is likely to have been because the land was more valuable to powerful Roman latifondists like Pompey and Augustus as pasture for transhumant flocks than subdivided among small tenant farmers; but whether they were right in this assessment is doubtful, as the next chapter shows.

12. Conclusions

Roman imperialism impacted on the communities in the Fossa Bradanica shortly before the end of the 4th century BC. The sack of Botromagno/ Silvium by a Roman consular army in 306 BC left the Peucetian city impoverished. The inhabited area shrank and some sites in the territory of the city, including San Felice and many of the isolated farmhouses in our Survey Area, were abandoned at the time of the invasion or shortly afterwards.

The conquest gave a new direction to the economic, cultural and social changes of the Early Hellenistic period that had already begun to affect South Italy. Tarentum, which had been the main centre of cultural influence in the region at the beginning of the period lost that role when the city was defeated in the Pyrrhic war. The Roman victory opened the region to *negotiatores* who exploited the commercial opportunities that victory brought, and Romano-Campanian silver coins replaced the those of Tarentum and Metapontum as the principal means of exchange. Wealthy Roman sheep-dealers contracted with the state to pasture herds of cattle and sheep on public land expropriated from the defeated peoples. As a result there was a marked decline in rural settlement in the 3rd century BC. It has been detected in the field survey of the Metapontine Chora, and can be clearly seen in the area of the Older Surveys and in our Survey Area.

Roman influence in the Fossa Bradanica was transmitted through the Latin colony of Venusia founded in 291 BC on land captured from the Samnites. As the city grew in importance over the next 300 years, so Metapontum declined at the other end of the Fossa. There was therefore a 180° change in the economic and cultural axis of our Survey Area.

The Carthaginian defeat in the Hannibalic War accelerated the economic and social changes that were already in progress. The Italic communities which had supported Hannibal were punished and vast areas of their land were expropriated, adding to the public land of the Roman people in South Italy. Much more agricultural land was reduced to pasture, and a new stock-raising economy developed based on long-distance transhumance.

In the second half of the 2nd century BC the harmful effects of this policy on the economy and society of Roman Italy had become so serious that various attempts were made to change the system and to revive the rural population. The most important were the agrarian reforms initiated by Tiberius and Gaius Gracchus under which much of the public land which had been expropriated during the conquest period was centuriated and allocated in subsistence-size lots to be held outright by individual citizens (and perhaps by some Italian allies). Many of the areas chosen for centuriation were in Apulia, but they were confined to the Tavoliere, the coastal fringe of Central Apulia and the Salentine peninsula. The Fossa Bradanica was left untouched, probably because the main drove roads connecting the pastures on the Tavoliere with those on the plain of Metaponto, and linking both with mountain pastures in Lucania, passed through it, so that the public land in this area was needed as pasture for large numbers of sheep. It was designated as *saltus*. The only part of the Fossa Bradanica which continued to maintain a high level of rural population was the territory of Venusia and its dependency Bantia. Venusia had remained loyal to Rome in the Hannibalic War and had been reinforced with new colonists after the war was over.

There were, however, other attempts made to revive the rural economy of the central part of the Fossa

Bradanica in this period, but they were based on less egalitarian principles. A new village (Silvium) was built on Botromagno over the remains of the Peucetian city in the third quarter of the 2nd century BC. It consisted of an extensive area of simple houses centred on an early villa, and was peopled by settlers who had no connection with the previous inhabitants, although they shared the material culture of Magna Graecia. Some may have been allied veterans from Roman campaigns in the E Mediterranean. The lay-out of the village and the domestic refuse indicate a two-tier social structure in the settlement with a local grandee living in the villa, and his dependants inhabiting the surrounding houses.

Another important measure, which must have been intended at least in part to revive the economy of South Italy was the extension of the Via Appia from Venusia to Tarentum and on to Brundisium. It was probably built in connection with the foundation of the Gracchan colony of Neptunia which was installed inside the Greek city of Taras (Tarentum) in 122 BC. The road served the revived settlement of Silvium, and several smaller settlements inside our Survey Area, including Vagnari where a new farmhouse was built over the remains of a building of the LIA, and Site 813, the largest site of this period in the whole area, which was situated within 1 km of the road.

These new settlements were engaged in mixed agriculture, but their main economic activity was weaving. Most of the products of the vertical looms must have been transported along the Via Appia to Tarentum, which had revived after the foundation of the Gracchan colony, and was again the principal marketing centre for textiles. Some, however, may have been sent to Canusium, the most important Apulian city, which had stood out against Hannibal and was prospering as a result. It was already beginning to become an important centre of textile production, rivalling Tarentum. The weavers, working singly or in workshops, wove cloth on demand for entrepreneurs connected with these markets, using wool shorn from sheep before they left in May for the mountain pastures.

In the broader area of interest to us there are also signs of increasing prosperity based on the agricultural production of early villas, especially in the territory of Venusia and on the fringes of the Metapontine plain. On Monte Irsi, a long animal stall, able to hold at least eight oxen, was erected in this period. It must have been linked to a villa with a large amount of arable land. The produce of these villas was intended for distant markets. Goods were transported in various ways: by road in carts, by rougher tracks on baggage animals, and possibly by river below the confluence of the Bradano and Basentello. In return, amphorae of wine and oil were imported from the Adriatic and the Aegean. The denarius was the common currency used for valuable transactions, and circulated widely in the central part of the Fossa Bradanica and elsewhere.

These signs of new economic trends in the Fossa Bradanica, and more broadly in Magna Graecia, were interrupted early in the 1st century BC by the Social War in which the Peucetian communities were lightly involved, and the Lucanians much more so. In the long aftermath of the war the Italic peoples were granted Roman citizenship and over time the more prosperous of their settlements were incorporated as *municipia*. But in large areas of South Italy where the traditional settlements were failing in the changed economic conditions only a few *municipia* were created, and there were none in the Fossa Bradanica south of Bantia. The territories of the former Italic settlements which did not gain municipal status were either attached to adjacent *municipia* or administered as *praefecturae* by praefects appointed by the urban praetor. This was probably the case with the inhabitants of the territory of Silvium which included most of our Survey Area.

The adoption of Roman citizenship had dire consequences for the traditional Italic cultures. Official business had to be in Latin, and the indigenous Oscan and Messapic languages were quickly abandoned. Even Greek disappeared from most of the former Italiote cities by the end of the millennium. Traditional cults were Romanized or abandoned. Roman ceramic types – red-slipped and thin-walled wares and new forms of cooking pot replaced the black- and grey-gloss wares and casseroles of the Hellenistic period.

Several events in the third quarter of the 1st century BC made landholding precarious. The Sullan proscriptions, in which hundreds of Sulla's political enemies were eliminated, led to large estates changing hands at bargain prices. More serious was the slave war of Spartacus which caused widespread devastation in much of South Italy, especially in areas such as the Metapontine plain where large numbers of slaves were employed as herdsmen or in agriculture. The long-term effects of the war have generally been underestimated. New evidence from Botromagno shows that the recently revived settlement of Silvium was besieged and most of it was abandoned at this time. Occupation continued in only a small area in the centre of the village, not enough to warrant incorporation as a *municipium*.

The vacuum in the ownership and management of land caused by these events was filled by a new generation of rich landlords who bought up large estates or put together new ones out of smaller properties that had been abandoned in one or other of these upheavals. Some were local notables, but others were powerful individuals of the equestrian or senatorial order. One of the largest landowners was Pompey, the most powerful individual in the Republic in the 2nd quarter of the

century, who, we argue, acquired a vast property in the territory of the former Silvium after its destruction in the war of Spartacus, and added it to his portfolio of properties in Apulia and Lucania which could be used as pasture for sheep at either end of the transhumance trail. One of these estates occupied much of the N half of our Survey Area, and was centred on the small villa on San Felice which was probably built for his administrative staff. It is likely that the farm at Vagnari was included in this estate.

After Pompey's defeat and death in the civil war his property was put up for auction by Mark Antony. The estate that he had created in our Survey Area was probably acquired by Octavian at this time, together with others in the vicinity which had once formed part of the territory of Silvium. At all events they passed early in the Principate into the imperial patrimonium.

Chapter IX. The Roman imperial period

The period considered here runs from the beginning of the Augustan principate down to the beginning of the tetrarchy, established by Diocletian in 293 AD.

1. Pottery and other artifacts

The most significant ceramics for the purpose of dating the survey material of this period are the Roman fine wares, studied here by Philip Kenrick. The plain wares and cookpots generally provide useful supporting information which helps to characterize a site, and in a few cases where there are no fine wares, they help to date a site more broadly within this period.

i. Italian terra sigillata (ITS) (see Kenrick's introduction in Cat. 15 A)

The principal Roman fine ware found in the Survey Area of the period from the beginning of the principate to the end of the Julio-Claudian dynasty in 68 AD is Italian terra sigillata pottery which was first developed at Arezzo and Pisa in Tuscany, and subsequently copied in other production centres. Those identified in the catalogue include the Po valley, Campania, and Venosa. ITS was found on 14 sites in our Survey Area including Vagnari.

ii. Eastern Sigillata B (ESB)

This is Kenrick's TS5 fabric, from Tralles in Asia Minor. Production began there early in the 1st century AD, but the ware was not widely exported until the middle of the century. Two examples are known from the cemetery at Vagnari,[1] and there are a few pieces from the villa sites 229 and 372 in our Survey Area, datable to the end of the 1st or 2nd century AD. Sites 120, 124 and 906 also yielded a little. Fragments of a dish of the first half of the 2nd century AD were found in the excavations on Monte Irsi.[2]

iii. African red slip (ARS) (See Kenrick's Introduction Cat. 15 B)

The ware is the key indicator of contexts from the late 1st century AD through to the middle of the 6th century (No.1064). Most of the earlier pieces of interest here belong to the A and A/D wares, though there are also pieces of early ARS-C ware (Nos.1046, 1048) which fall within this period. There is a noticeable concentration of catalogued ARS-A fragments from Site 124. ARS-D wares are largely Late Roman and will be discussed in Chap. X.

iv. Regional red slip (RRS) and thin-walled wares

The term RRS is used by Kenrick (see Cat. 15 C) to designate red-slipped fabrics most of which are derived from or inspired by ITS and ARS wares, although they generally lack the hard glossy finish of their originals. They are likely to be regional products, though more comparanda are needed to pin them down. They present problems of dating, with some pieces imitating ITS of the 1st century AD, and others having comparanda in contexts of the 2nd century AD in the cemetery at Vagnari and in a sealed deposit of the late 2nd century at Oppido Lucano.[3]

Kenrick's category RRS7 includes thin-walled pieces generally with rouletted or barbotine decoration coated with a glossy slip which is generally grey or black rather than red. They replace the thin-walled plain wares of the Late Republican period mentioned in Chapter VIII. Fragments of slipped thin-walled ware were found on sites 120, 124, 145-9, 229, 303, 372, 906. Since most of them are small wall sherds, we have not been able to construct a local typology of the ware, but it is probable that like similar colour-slipped thin-walled pots elsewhere in Italy they date between the late 1st century BC and the mid-2nd century AD. The sites on which they were found were all flourishing in that period with the exception of Site 303 where the thin-walled fragment appears to be sporadic. In addition to the pieces listed here, 42 thin-walled sherds were found in the surface survey of Vagnari, mostly with a glossy black-slip.

v. Cooking wares

Cooking pots required specialist production techniques, so it is not surprising that some of the best pieces used in our Survey Area in this period were imported from distant production centres. Four fragments of African cooking wares from North Tunisia were found on Site 124 (including No.1065) and another (No.1066) from Site 704. Five others were identified in the excavations at Vagnari including P817 from burial F37 which had been repaired with lead clamps.[4] Several deep cooking vessels made in Epirus were buried as grave goods in the cemetery at Vagnari, but none were found elsewhere in the Survey Area.

[1] Kenrick 2014, 135.
[2] Deschenes in Monte Irsi, 193 no. 312.
[3] Fracchia & Hayes 2005.
[4] Kenrick in Small & Small 2007, 173 no. 1.

The majority of the cooking pots in the catalogue are likely to be regional products, though the production centre(s) cannot yet be located precisely. The small number of diagnostic pieces by comparison with those of the previous period reflects the drastic decline in the number of occupied sites. Some of the older forms must have continued in use, but there were also a few new ones including the open-mouthed cookpot (*caccabus*) with broad horizontal projecting rim and near-vertical sides (No.1372) from Site 905, or with T-rim to support a lid (No.1374) from Site 906. The shape was widespread in Rome and Campania and remained in use for a long time.

vi. Plain wares

Plain wares are also problematic as chronological tools because of the longevity of types, and the lack of good comparanda. Generally they are more useful for the evidence they can provide about the function of a site, including the methods of preparing and storing food.

vii. Amphorae

As in previous periods, the amphorae, studied by Giacomo Disantarosa in the Appendix, provide valuable information for the chronology of the sites, the importation and consumption of wine, oil and other commodities, and the commercial links of the area with other regions of Italy and more distant parts of the Mediterranean. Relatively few of the catalogued pieces fall within this period, reflecting once again the scarcity of sites on which they could be found.

***viii.* Dolia**

Dolia were also specialized products, likely to be imported considerable distances, but there is as yet insufficient evidence of production centres and regional types. The basic shapes were long-lasting, but in general there was a tendency for *dolia* to grow in size in the course of the Late Republic and Early Empire. Our *dolia* of Type 5, with thick rims rounded on top and projecting externally to a point probably belong to this period. The pieces from Site 145-9 are the largest collected on the survey.

ix. Lamps

Mould-made lamps of types characteristic of the 1st and 2nd centuries AD were found on six sites (Sites 114, 124, 145, 229, 372, 703).

x. Loomweights

Loomweights, used on a vertical loom, are more problematic. They remained in use in Cisalpine Gaul in the Early Imperial period, and a significant number were found in the villa on San Felice in contexts of the last half of the 1st – beginning of the 2nd century AD,[5] but generally in Southern Italy they started to disappear from sites after the beginning of the imperial period, when the vertical loom began to be replaced by the horizontal two-beam loom.[6] But it appears to have been a slow process, with the vertical loom remaining in use down to the Middle Ages for domestic weaving. It is not possible to distinguish loomweights of the imperial period in our area on typological grounds.

xi. Glass

Glass vessels became much more abundant after the invention of glass-blowing around the beginning of the imperial period, but not surprisingly, given the fragility of the material, ancient glass fragments with distinctive profiles were rare finds on the field survey. One fragment of a blown glass balsamary, No.2009, of the 1st century AD, was, however, found on the plateau of San Felice (Site 223), and two bowl fragments (Nos.2007-2008) on the villa Site 229. Fragments of mould-made bowls of this period were found on Sites 124, 229 and 372 (Nos.2004-2006). There are also two mould-made pieces, No.2005 of the early 1st century AD from Site 372, and No.2006 from Site 229. Other less distinctive fragments of Roman glass vessels were found on all three sites. No certain fragments of ancient window glass were found.

xii. Tiles

Since there was a tendency for *tegula* flanges to become narrower and taller as time went on, it is usually possible to assign a *tegula* profile with reasonable probability to the Imperial period, especially if the flat surface of the tile is marked with finger-impressed arcs. Much more useful, however, are the rare stamped tiles of the Early Empire, especially those of the imperial slave Gratus (Nos.228-230). The tile stamped by Caelidius from Site 372 (No.2227) perhaps gives us the name of the owner of the villa. Another by an individual whose name terminated in -enus (No.2226) was found on Site 124.

[5] McCallum & vanderLeest 2014, 130.

[6] The dating of the two-beam loom is controversial. J.P. Wilde (1987) puts it in the 3rd century AD, but it was perhaps earlier. It seems to be shown on Daunian stelae of the C6 BC (Roth 2007, 71-77) but if it was indeed invented then its use became general only much later. Warp-weighted looms were still the norm in the early Empire though Lipkin 2012, 54-5 attributes a fall in the number of loomweights from the Republic onwards to the introduction of the two-beam loom. The warp weighted loom, however, apparently survived into the 4th century AD for linen weaving, perhaps for sails, since it was well adapted to the production of large cloths. Gleba (2008, 124) quotes Servius (*Ad Aen.* 7.14) 'Our ancestors used to weave standing just as we see the linen weavers do today'. The technology lasted into the Middle Ages, if some roughly discoidal weights made from cut-down tiles found in the medieval settlements at Apigliano (Leo Imperiale & Sancio 2015, 30-31) and Siponto (Busto 2011, 168 nos. 11, 12) are correctly interpreted as loomweights.

2. Regional factors

i. The Augustan regions

A prevailing theme that emerges from the evidence is regional diversity. After the extension of citizenship to all Italians, the old ethnic units had rapidly dissolved, their cults had been abandoned or transformed by assimilation to Roman ones, and their languages were lost. Nevertheless the political unification of Italy did not result in a homogeneous culture and society throughout the peninsula.

The emperors and senate had no wish that it should do so. In fact, the division of Italy by Augustus into 11 regions seems to have been intended to perpetuate regional diversity within a unified Italy. We are, however, badly informed about the date and purpose of this reorganization and the principles on which it was carried out. On a minimalist view, it was an *operazione inventariale*, a bureaucratic exercise devised to facilitate the recording of the status of the 400 or so communities (*coloniae*, *municipia* and *praefecturae*) which had acquired Roman citizenship after the Social war.[7] The piecemeal extension of citizenship to the Italian allies in the 60 years between the end of the war and the beginning of the principate, the equally unsystematic creation of *municipia*, and the consequent downgrading of other communities as *pagi* or *vici*, had created a need for systematic recording which could be best done on a regional basis.[8] But once the regional concept had been established, it could be used to improve the administration of the peninsula. One of the few certain facts about it is that it provided a structure for filing census records, so that when the elder Pliny (almost our only source on the subject) wanted to sample the returns from the census carried out by Vespasian and Titus in 73-74 AD for information on the oldest individuals, he did so by consulting the records for *Regio VIII*, i.e. Cispadane Gaul, the central district between the Apennines and the Po.[9] The new regions also came to be used as a basis for collecting the inheritance tax of 5% imposed by Augustus in 6 AD, though whether this was part of the original conception is uncertain.[10]

In compiling the lists Augustus paid most attention to the regional ethnic traditions of the pre-conquest population. This suited his project of uniting the whole of Italy with its different ethnic traditions in loyalty to the *princeps*.[11] But he also took into account other considerations which might be at variance with them. In putting the Samnite Hirpini in Regio II together with the Apulians (erstwhile Daunians and Peucetians) and Calabrians (Messapians) he was ignoring an ethnic distinction that was deep set in the historical tradition, even if the former subdivisions of the Apulian/ Iapygian *ethnos* had become obsolete by his time. He most probably did so because the Via Appia linked all three former ethnic areas.

It is likely to have been this principle that led him to put Venusia firmly in *Regio II*, so resolving the problem that Horace had posed of the cultural identity of the inhabitants of the city – and of himself in virtue of his birthplace: ambiguously Lucanian or Apulian since the colonist/ farmer of Venusia cultivates land on the border of both regions.[12]

SE of Venusia the border between the Augustan regions II (*Hirpini, Calabria, Apulia, Sallentini* according to Pliny) and III (*ager lucanus bruttiusque*) can be inferred from the locations of the communities named in Pliny's list for the interior of Lucania and Apulia. The inhabitants of Bantia (*Bantini*) are placed in Lucania, whereas the *Silvini* of Botromagno/ *Silvium* (an anachronism in Pliny's time, as we have said in Chap. VIII) were placed in Apulia, as were the *Genusini* of Genusia. The *Forentani*, listed in Apulia, might be supposed to have been located at Forenza in the upper reaches of the Bradano river system, considerably to the W of the Basentello, but it is more likely that they inhabited the settlement of Daunian origin near Lavello, north of Venosa where the Fossa Bradanica opens out into the Tavoliere.[13] If the *Mateolani* lived at or near Matera (which is far from certain) they would have belonged to Apulia, as the list implies. The coastal cities do not appear in Pliny's lists since he drew on a different source (a *periplous* ascribed to Varro) for his information on them, but he records that the border of Regio III (the *Bruttii* and *Lucani*) was set beyond Metaponto from the point of view of someone following the coastline in a NE direction.[14] It is likely, therefore, to have corresponded to the mouth of the Bradano river.

The border between the Augustan regions II and III must therefore have been drawn to the E of the territory of Bantia and to the W of the territory of *Silvium*.[15] It is

[7] Laffi 2007, 113.

[8] For the continuation of pre-Roman territorial divisions and settlements as *pagi* and *vici* inside the Roman municipal system, see Capogrossi Colognesi 2002, esp. 97-145.

[9] Pliny *NH* VII.162-164.

[10] Thomsen 1947, 149-150, 178-183, 192. Eck (1999, 138) argues that the procuratorial regions set up by the time of Antoninus Pius as a basis for collecting the tax corresponded only in part to the Augustan regions.

[11] Cf. Poccetti 2016.

[12] Horace, *Sat*. II.1.34-35: *lucanus an apulus anceps – nam venusinus arat finem sub utrumque colonus.*

[13] Torelli 1969; Bottini & Tagliente 1986. If this is correct, the name of the city (Forentum) must have been transferred to Forenza in modern Basilicata in the Middle Ages.

[14] Pliny, *NH* III. 96: *oppidum Metapontum, quo tertia Italiae regio finitur.*

[15] Porphyrion, however, in his Commentary on Horace, *Odes* 3.4.15 *saltusque bantinos* says 'Bantia oppidum est in Apulia,' which might suggest that Bantia had been transferred from Lucania to Apulia by the time he was writing (early 3rd century AD). But he was probably

likely, in that case, to have followed the course of the Bradano-Basentello river, and to have run through the middle of our Survey Area. This boundary has remained more-or-less unchanged up to the present day. It is difficult to know what difference it made in terms of the logistics of the imperial administration (though this would become important in the later empire after the reforms of Diocletian), but it must have had an effect on the cultural self-identity of the inhabitants of the two sides of the river.

ii. The development of regional organization in the 2nd and 3rd centuries

The Augustan regions formed the building blocks for larger composite regions created by the emperors over the next three centuries for other purposes. One of these was for the administration of the program of *alimenta* instituted by Trajan, under which landlords took out loans from the imperial treasury which they repaid to *municipia* at a fixed level of interest to provide funds for raising orphan children. The system must have operated in Apulia, because several inscriptions ranging in date from the time of Marcus Aurelius to 238 AD record a procurator for the *alimenta* in Apulia, Calabria, Lucania and Bruttii;[16] and it may have been widely taken up in the region if the response resembled that in Veleia or Ligures Baebiani;[17] but it is impossible to point to any specific instance.

Another was for the system of regional justices, *iuridici,* referred to below, who oversaw the administration of at least some parts of civil law in groups of regions from the time of Marcus Aurelius to the late 3rd century AD.

3. Cities in the first three centuries AD

The administration of Italy in the early empire was only rationalized up to a certain point. In Apulia and Lucania, the *municipia* and *coloniae*, which were the primary means of territorial administration, were all established in the Late Republic, and, as we have seen, were extremely unevenly distributed (see Map IX-1). In Apulia the economic centre of gravity shifted definitively towards the Adriatic seaboard and the lower valley of the Ofanto. The most important city here was Canusium situated on a natural terrace at the north end of the Murge, close to the Ofanto river. The *municipium* gained enormously in importance when it was re-founded as a colony under Antoninus Pius around the middle of the 2nd century AD.[18] The emperor's agent for the foundation was the wealthy Greek sophist and senator Herodes Atticus. The city centre was re-organized and the territory was centuriated and resettled. The existing aqueduct was rebuilt and extended with funds provided by Herodes Atticus himself. The roll of the local senate (*curia*), which survives for the year 223 AD inscribed on a bronze tablet, shows a community apparently in full vigour, with 39 patrons (senators and *equites*) and a long list of the local élite who filled the magistracies and attended the meetings of the decurions.[19] By this time the city had become a major centre of the textile industry, supplanting Tarentum in importance.[20]

Some of the cities on the coastal fringe of Central Apulia also showed signs of vigour in this period, especially Bari which became increasingly important as a port city through which trade could be conducted with the Eastern Mediterranean, eclipsing Caelia which had been the largest of all the Peucetian cities in the pre-Roman period.[21]

It might be expected that the rise of Bari, Egnazia and Brindisi would have drawn some commercial traffic away from Taranto, and it used to be thought that Tarentum in the early principate had declined so much that it had become a relatively unimportant holiday resort. That view was founded largely on a famous Ode of Horace in which the poet alludes to the city as a pleasant place where a weary patron might go to relax after judgment had been give in long-drawn out lawsuit involving a client.[22] But a recent study of the archaeological evidence by G. Mastrocinque, much of it culled from records of excavations carried out when the Borgo Nuovo was being developed at the end of the 19th and beginning of the 20th century, paints a very different picture. The city was extensively reconstructed early in the principate, with a new focus on the harbour area on the Mar Piccolo at the E end of the former Greek *polis*. When the veterans who were settled at Tarentum in 60 AD complained about the emptiness of the place (*infrequentia loci*) and began to slip back to the provinces where they had served, they were probably referring not to the city itself but to its territory, and to the difficulty of establishing small-holdings in an area which was largely given over to large sheep ranches owned by powerful senatorial families.[23] Tarentum continued to grow in the 2nd century when it was supplied with an aqueduct and embellished with new public baths, the *Thermae Pentascinenses*.[24]

referring to its cultural environment rather than its place in the Augustan *regio II*.

[16] *CIL* XLV 2922, *CIL* II 1085, *CIL* III.1456; Thomsen 1947, 183-184.

[17] Veleia: Criniti 1991; Ligures Baebiani: Veyne 1957, 1958; Champlin 1981.

[18] Grelle 1993, 121-143.

[19] *ERC* I, 45-68, no. 35, with further refs.

[20] For the literary sources on woollen garments of Canosa, see Acri 1982-1983; Grelle & Silvestrini 2001.

[21] For Canosa: Grelle 1993; Cassano (ed.) 1992, 599-800. For the Peucetian cities: Fioriello 2017; for Bari in particular: L. Todisco 2017.

[22] Hor. *Odes* III.5.53-56 (The Regulus Ode).

[23] Tacitus, *Annals* XIV.27.1; Mastrocinque 2010, 38.

[24] Lippolis 1997, 135-182.

Venusia, about 40km from the centre of our Survey Area, was easily reached from it, across the watershed of the Basentello/ Fiumara Matinella, but readily accessible along the Via Appia. As we have seen, it was re-founded as a colony for veterans by the Triumvirs in 43 BC. Little is known of the lay-out of the forum area and public buildings that must have surrounded it, though inscriptions record the paving of the forum by the magistrates. Streets too were paved, and an aqueduct was built which served fountains and at least two public bath complexes. An amphitheatre was built early in the Empire, and perhaps a theatre.[25] All this building work provided opportunities for enrichment for the new local élite, and tile stamps show that several of the local families invested in tileworks, producing building materials for new constructions both in the city and in the countryside.[26] Among them were the Minatii, father and daughter. Lucius Minatius stamped a tile found in the city,[27] and another from Vinson's site V247 near the Masseria Lioy, 5km to the NE;[28] his daughter (or perhaps sister) Minatia made tiles used in the amphitheatre and public baths, and in other villas in the territory of the city.[29] Another local noble, C. Salvius Capito, produced tiles found by Vinson's team at his site V337 between the Masseria De Martinis and the Masseria Trabocchetti, 6.75km SSE of Venosa.[30] Capito was related to various members of the local ruling class. He owned a gladiatorial *familia* in the city, and had numerous slaves. He was probably the ancestor of another individual of the same name who reached the suffect consulship in Rome in 148 AD.[31]

Bantia, only ca. 30km from the centre of our Survey Area, was the nearest *municipium*, but it was less easily accessible than Venosa since it lay in a parallel river valley (of *la Fiumarella*) to the Basentello, so that a journey to the small town involved crossing the intervening foothills. It did not have the exalted status of *colonia* that Venusia enjoyed, and it had fewer amenities. Even before the Social War, it had been, as we have seen, in the forefront of Romanization of the area, but in the new regional structure introduced by Augustus the two towns were separated, with Venusia being allocated to Apulia and Bantia to Lucania and Bruttii. Bantia too had some facilities to offer to the public, though more modest than those of Venusia. Excavations have revealed part of a bath complex built around the beginning of the 1st century AD at the expense of a local grandee called Romanius Sacerdos, according to an inscription on a mosaic floor.[32]

The remaining *municipia* in Lucania were too distant to have functioned as economic or social centres for the inhabitants of our Survey Area. The great void that we have noted in the distribution map of *municipia* (Map IX-1) shows that the whole of the Central and Southern part of the Fossa Bradanica, and the hills and valleys of Eastern Lucania remained essentially ruralized, with a scattered population living in villas, *vici* and smaller farms and hamlets. Since the epigraphic habit of inscribing texts on stone was, broadly speaking, an aspect of urban life, there are few inscriptions (other than stamps on terra sigillata pots and *instrumentum domesticum* – especially tiles and *dolia*) to record the local population. Simelon noted the lack of inscriptions from the S part of Lucania (S of a line drawn from Velia to the mouth of the Bradano) and argued that this area had fallen into the hands of proprietors who exploited vast estates for agriculture and especially for pasture with slave labour, and that the rural population there was too poor to afford inscriptions whereas the great proprietors had no interest in local life.[33] He says less about the vacuum of inscriptions in the E part of the region, though an analysis of the archaeological evidence there might lead to the same conclusion.

Curatores

In the course of the 2nd century AD, the Apulian and Lucanian *municipia*, like those in other regions of Italy, began to get into financial difficulties due, probably, to a decline in the curial class, and a growing reluctance among those who remained in it to perform the traditional *munera* which involved subsidizing the construction or repair of buildings, and making special distributions of largesse on public occasions out of their own funds. Trajan began appointing *curatores rei publicae* of the senatorial or equestrian order who would control the public finances of *municipia* alongside the local magistrates.[34] Many are known from inscriptions which show that the office lasted down to at least the time of Severus Alexander (222–235 AD) and probably into the middle of the 3rd century. They were drawn mainly from individuals who had some strong family connection with the region. Eck lists 16 known *curatores* from *Lucania et Bruttii*, (14 equites and 2 unknown); and 18 from *Apulia et Calabria* (11 senators, 6 *equites* and 1 unknown).[35] Within the area of our Map IX-1 there were *curatores rei publicae* at Aceruntia, Bantia and Potentia

[25] Marchi & Salvatore 1997; Chelotti 2003.
[26] Chelotti 2003, 29-30; Sabbatini 1991.
[27] Sabbatini 1991, 167. Found in the area of the SS. Trinità.
[28] Sidebotham 1980, 240. The site lies outside the area considered in detail in this publication.
[29] Sabbatini 1991, 167; Chelotti 2003, 30; Marchi 2010, 213, site 919.
[30] Sidebotham 1980, 241. The site lies outside the area considered in detail in this publication.
[31] Torelli 1996, 295; Chelotti 2003, 29.
[32] Sodo 2008, 37; Torelli 2008, 46-47.
[33] Simelon 1993.
[34] Eck 1999, 195-229. *Curatores* in Lucania are discussed by A. Russi (1995, 67-73).
[35] Eck 1999, tables on pp. 206 and 237-239. But he counts M. Tullius Cicero, *curator* at *Aceruntia* under both *Regiones* II and III, and he places Bantia in Regio II (Apulia). Both were probably in Lucania.

in Lucania, and at Canusium, Herdoniae, Luceria and Venusia in Apulia. There were also *curatores kalendarii* appointed to keep the city registers. They are attested by inscriptions from Potentia and Barium.[36]

4. The landowning classes

i. The greatest landowners

Inscriptions, supplemented by scattered literary references, tell us much about the upper echelons of the landowning classes and their relations to the *municipia*. We have seen how in the Late Republic Pompey amassed a vast landholding in Apulia and Lucania which ended in the hands of Octavian/ Augustus. This was probably an exceptionally large property or group of properties, but other members of senatorial and equestrian families also owned large estates in various parts of Apulia and Lucania which were suitable for transhumant sheep. They have been extensively studied.[37]

a. Domitia Lepida

Prominent among them was Domitia Lepida, aunt of Nero, who owned vast estates which she may have inherited either from her mother Antonia (older daughter of Mark Anthony)[38] or from her father Lucius Domitius Ahenobarbus. She was condemned to death in 54 AD in the intrigues at the end of Claudius' reign for having tried to kill the emperor's wife Agrippina by sorcery, and for disturbing the peace of Italy by not keeping her slave gangs in (ancient) Calabria in order.[39] It has been suggested that the vast extent of her estates was a cause of the *infrequentia loci* at Taranto which led Nero to settle veterans there.[40] It is easy to suppose that her slaves were shepherds and that her estates in the Salentine peninsula were sheep ranches. She may also have had other sheep ranches near Tolve in the interior of Basilicata, if a spindle whorl inscribed L. DOMITI CNIDI, found in the excavation of the villa at San Pietro belonged to one of her freedmen.[41] Since the villa lies close to the drove road that connects the plains of the Gulf of Taranto with the Lucanian Apennines by way of Gravina, Domitia Lepida may have been involved in transhumant stock-raising, in which case her flocks will have passed through our Survey Area. It has also been supposed that her estates were confiscated after her condemnation and passed into the imperial *patrimonium*, but this is unlikely since she had a surviving son (Faustus Sulla), and she was not convicted of treason.[42]

b. Calvia Crispinilla

An aristocratic landowner of the next generation who had interests in sheep-ranching in Apulia was Calvia Crispinilla, mistress of Nero, who accompanied him on his trip to Greece in 66 AD. She owned estates in Istria where she produced wine, amphorae and bricks,[43] and also in the vicinity of Taranto where inscriptions record two of her slave herdsmen.[44] Another of her freedmen Calvius Admetus found at Bari suggests that she may also have owned estates in the territory of that city. When she died childless in the reign of Domitian, her property probably passed to the *patrimonium*.

c. Bruttii Praesentes

The Bruttii Praesentes were a Lucanian family, probably originally from Volceii, which reached senatorial rank in the late 1st century AD. They owned numerous properties in both Lucania and Apulia, including luxurious villas at Baricelle in the Agri valley and at Albero in Piano in the territory of Venosa. Two members of the family, C. Bruttius Praesens and L. Bruttius Crispinus are recorded as patrons in the album of decurions of 223 AD at Canosa.[45] The family reached its greatest height when Bruttia Crispina married the emperor Commodus. But in ca. 187 AD he accused her of adultery. She was exiled and subsequently put to death, whereupon her estates may have passed to the *patrimonium*.[46]

ii. Local aristocrats

The Roman aristocrats just mentioned probably all had luxurious villas in Apulia, but they played little or no part in the affairs of their local *municipia* other than looking after their interests at court. In each city the routine administration was in the hands of local noble families who kept a grip on the magistracies, and who were expected to support their cities with public benefactions

[36] Potenza: C. Stremproniuss C. f. Pom(ptina) Bassus, curator rei p(ublicae) kalendari Potentinor(um): *CIL* X.226; Russi 1995, 69-70 n. 24; Bari: L. Licinius Iustus, *eques, patronus* and *curator kalendarii*: *AE* 1988, 361; Chelotti 1991, 35-36 no. 3; Mastrocique 2017, 90.

[37] Apart from those mentioned in the text, the Junii Silani had estates in and around Bari (Silvestrini 1989, 181-183; Chelotti 2010, 424.; Fioriello 2917, 53;p Mastrocinque 2017, 21-22); the Calvisii Sabini owned an extensive *saltus* near Montemilone between Venosa and the Ofanto river (Silvestrini in *ERC* I, 24-26 no. 20; Volpe 1990, 157 no. 34). The equestrian Vedius Pollio owned property in the upper Bradano valley as well as at Pausilypon and Benevento (Gualtieri 2000, 2003, 188-189). For other landowning families in Lucania, see Small 1999, 559-560; Gualtieri 2001, 99-101. For Central Apulia: Mangiatordi 2011, 47-50.

[38] For indications that both Mark Anthony and Octavia had possessions in the territory of Brindisi which may have passed by inheritance to Domitia Lepida, see Chelotti 2014, 299-300.

[39] Tacitus, *Ann*als XII.64.

[40] Lippolis 1997, 150.

[41] Di Giuseppe 1996 and 2012, 486-490.

[42] Weaver 2005, 247.

[43] Tassaux 2001

[44] Gasperini 1971, 178-179; Chelotti 2010, 424-425.

[45] *CIL* IX.338, *ERC* I, 45-68 no. 35.

[46] Volpe 1998, 328-331; Gualtieri 2003, 196; Marchi 2004, 240; Russo, Gargano & Di Giuseppe 2007. For Bruttia Crispina: Dio (Xiph) LXXII.4.6; SHA, *Commodus* 5.9.

which generally earned them honorific monuments inscribed with the details of their donations. In their funerary inscriptions they often recorded their tenure of the municipal magistracies. The epigraphic record is uneven, but in cities such as Canosa and Venosa where a good number of these inscriptions are preserved, it is sometimes possible to reconstruct the intermittent histories of some of the local élite families over several generations.[47] Such families probably owned at least one villa in the territory of their city, and a number owned tile-works, like the Salvii Capitones and Minatii of Venosa mentioned above.

The Caelidius whose name appears on a tile stamp from our villa Site 372 (No.2227 in our catalogue) is likely to have been of this local land-owning class, as are the individuals recorded on a solitary inscription from the territory of modern Gravina. It is a funerary stele of the late 2nd or 3rd century AD dedicated to Savonia Nevia, daughter of Numerius Savonius by her husband Antonius Fortunatus.[48] It was found, out of its original context, at the Masseria Macchitella 2km S of Gravina on a slope above the Pentecchia river (Site MM on Map IX-5). It is likely to have come from a Roman villa somewhere in the vicinity, perhaps from Chapman's site C12 (see the OS List of Sites VI.2.*2*).

In many parts of Italy ambitious members of the local aristocracies reached the senate and in due course they or their descendants went on to hold the consulship. But in South Italy this progress was unusual. The Salvii Capitones reached the suffect consulship, and the Bruttii Praesentes the consulship, but generally the local élites did not distinguish themselves at Rome. The further they lived from Rome, the less likely it was that they would reach the senate. That is a clear indication of the remoteness of Central-South Italy from the centre of power.[49]

5. Settlement in the countryside: villas, farms and villages

i. Huts and cottages

Rural settlement of the peasant population in Roman Italy was no doubt as diverse as it was in recent times before mechanized agriculture did away with the traditional modes of rural life – the *civiltà contadina*. The simple cottage, made of mud brick and roofed with thatch described by Frayn in her book on subsistence farming in Roman Italy was a literary *topos*, given visual expression in picturesque landscapes of the 3rd Pompeian style;[50] but it was also a real phenomenon which can be identified on the ground where there are small sites with concentrations of domestic pottery but no roof tiles. Few sites of this period in our survey had no tile but Sites 430, 606, 710 and 718 had very little. Conversely there are small sites with concentrations of roof tiles but little domestic pottery which cannot have been regularly inhabited but may have been field huts where agricultural workers could shelter from the rain or sun and keep their mule or donkey, as *contadini* used to do all over Italy. Our Sites 135 and 710 can be explained along these lines. There must also have been washing-places (*lavationes*) for men or animals, road-side buildings of various kinds (*tabernae*, *hospitia* etc). The porticoed building of the next period excavated at Vagnari might fall into the latter category, but we did not identify any other in our Survey Area.

A constant feature of the Roman rural landscape was the cemetery. Each village (*vicus*) is likely to have had its own burial ground, as was the case at Vagnari where more than 150 graves have now been excavated. Occasionally it is possible to identify other burial places in the field survey by some unusual aspect of the surface collection, as at Site 714 where the proportion of *tegula* to *imbrex* fragments is abnormally high and there is little or no domestic pottery. The tiles are likely to be the remains of ploughed-up *alla cappuccina* burials (see below), comparable to those found at Vagnari and in innumerable other Roman cemeteries. On Site 223 (San Felice), a couple of segmental tiles were found on the top of the plateau. Since these were component parts of columns, they indicate that there was a building with columns here in the Roman period. But there was no Roman domestic pottery associated with them, so it can hardly have been a domestic structure. The segmental tiles may have come from a tomb, erected above ground with an architectural façade, perhaps built for the owner of the villa on the shoulder of the hill in which columns made up of segmental tiles were also used.

ii. Farmhouses

Larger rural buildings which might more aptly be labelled "farmhouses" had been a feature of settlement in the countryside since at least the 4th century BC, as we have seen. Such buildings, inhabited by the farmer and his family with perhaps a few slaves and equipped with some spaces for storage and agricultural processing, continued to be a feature of the countryside throughout the Roman period. The *casae* recorded in the alimentary tables from Veleia and Ligures Baebiani as assets on the estates (*fundi*) pledged by their owners to the *municipia* which took part in the scheme may

[47] Canosa: *ERC, passim*; Venosa: Chelotti 2003. In general: Silvestrini 2005.

[48] Silvestrini 2002, 145-149.

[49] Camodeca (1982, 108-110) collects instances of senatorial families of local origin from Regio II. Almost all come from the N part of the region – Beneventum, Aeclanum, Luceria, Canusium, and Venusia. Similarly, there are no *equites* of local origin known from Central/South Apulia and (Roman) Calabria, except at Brundisium. See also Mangiatordi 2011, 51.

[50] Frayn 1979, 115-129.

be included in this category:[51] they are likely to have been small farm buildings inhabited by tenant farmers (*coloni*) of the estates. An unusual bilingual Greek and Latin inscription found near Spinazzola allows us to identify the inhabitant of one such property. It records the dedication of a tomb by Haline, freedwoman of P. Secundinus to her husband Kleon, a doctor, and probably a freedman of C. Marcius. The dead man has everything with him: his land (ἀγρός), his house/ *casa* (οἰκία), his vegetable garden (κῆπος) and his tomb (τάφος).[52] It is tempting to suppose that Kleon was both a doctor and a tenant small-holder living on the great estate of La Santissima (see below), close to where the inscription is said to have been found on the fringes of Vinson's survey area. He was probably living around the turn of the 1st century BC/AD.

Few small farmhouses of the Early or Middle Imperial period have been excavated in South Italy. The most useful for our purposes, as indicating the type of building that might have existed in our Survey Area, is the so-called Late Roman farmhouse at San Biagio near Metaponto which was occupied from the middle of the 2nd to the middle of the 4th century AD.[53] It was a simple rectangular structure measuring 13×18m with a veranda or portico of about 64m^2. The roof was made of *tegulae* and *imbrices*. The interior was subdivided into ten rooms of varying size, most of which had floors of beaten earth. According to a recent hypothetical reconstruction of the structure, a door in the NE wall led to a vestibule which led in turn to a small paved "atrium" in the centre of the house, presumably open to the sky. It gave access to domestic and storage rooms arranged around it. There was a small bath suite with a hypocaust and floor of white *tesserae* in the E corner of the building, flanked by two more service rooms. The water was supplied from two cisterns. The identification of the function of some of the spaces is difficult, and it seems probable that they could be adapted for more than one purpose, though storage was evidently important. Two *dolia* set in the floors in two of the rooms had cracked and been repaired to contain dry goods. They could each have held more than 500 kg of grain. Another *dolium* set in the floor of the veranda contained ash which Erminia Lapadula, who edited the volume, suggests was used in laundering. The pottery (especially ARS and amphorae) and a cluster of coins help to characterize the lifestyle of the occupants of the building as modest people aiming at self-sufficiency while producing a small marketable surplus.

Another, more enigmatic, structure is the farm building at Santa Teresa in the Chora of Metaponto. After the simple Republican phase mentioned in Chap. VIII.6.iii, it was enlarged in the 1st century AD when a courtyard was added to the cattle shed, with what appears to have been a veranda roofed with thatch supported on two rows of uprights, one of stone columns, the other of wooden posts. No domestic buildings were found in the excavated area, so the whole structure has been interpreted as a series of linked sheep-folds and cattle stalls which continued in use into the 2nd century AD.[54] It gives some idea of how the animals raised in the Chora of Metaponto may have been managed at a time when much of the plain seems to have been given over to stockraising and transhumant pastoralism.

iii. Villas in the first three centuries AD

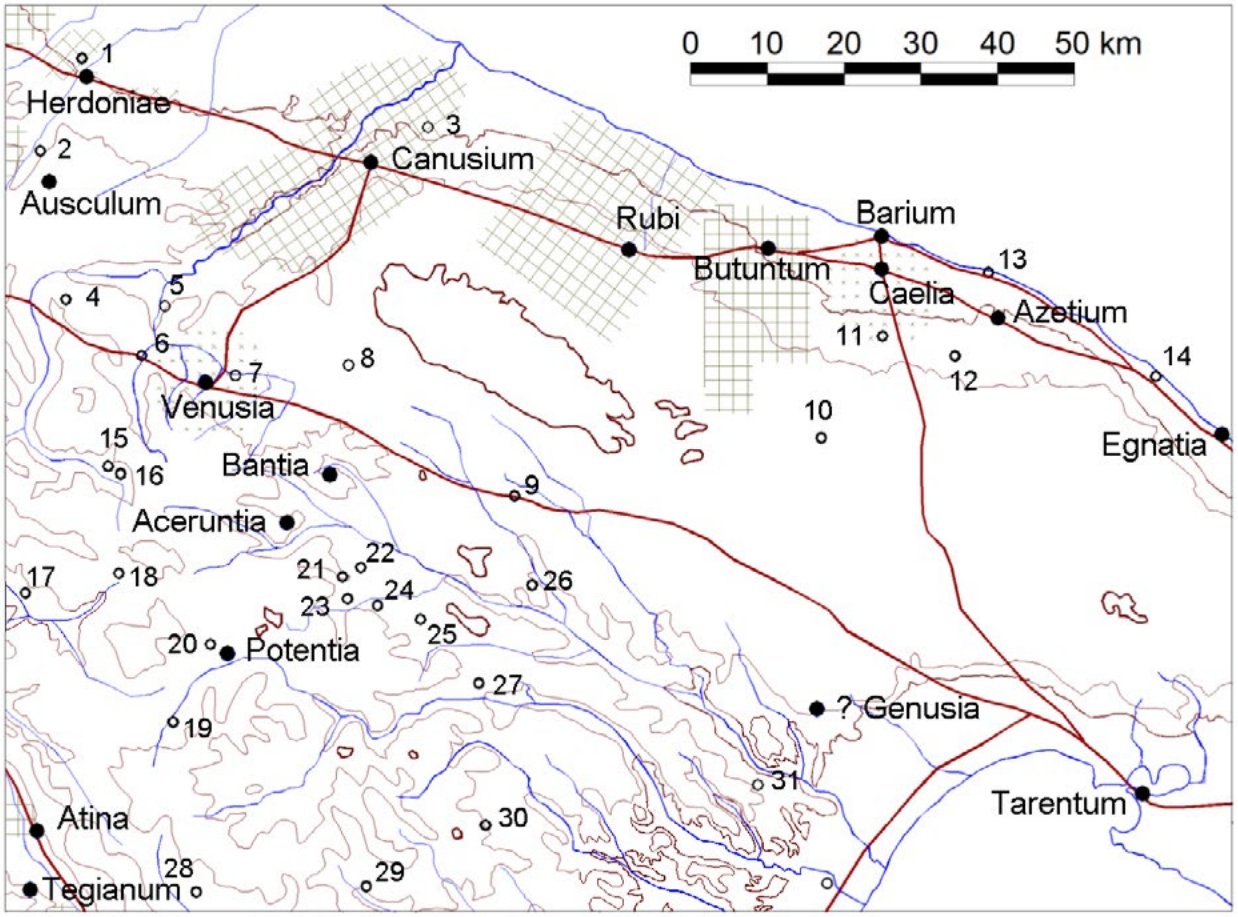
a. Excavated villas

As we have seen, some of the earliest villas in Italy to show signs of luxury were built in South Italy at the end of the 2nd century BC; but none of these survived the crises of the first third of the 1st century BC, and there is good reason to suppose that such buildings were targeted by the slave armies of Spartacus and Crixus. There were some modest attempts to rebuild damaged villas in the middle of the 1st century BC (as on Botromagno and Monte Irsi), but in most areas, villa building began again when peaceful conditions were restored at the beginning of the principate. Many of the villas founded then prospered and were enlarged in the course of the 2nd century AD.

Map IX-1 shows those villas in the area of interest to us which have been partially or completely excavated, together with a few which have not yet been excavated, but which are known from visible stretches of masonry. Some were founded in the Late Republic, but most show a first phase of construction in the Early Empire, followed by a second grander phase of building in the 2nd century AD, often involving the construction of a more elaborate bath complex.

There is a particularly interesting cluster of villas in the upper Bradano valley which have been wholly or partly excavated – at San Pietro di Tolve (no. 24 on the map), San Gilio (no. 21), and especially at the Masseria Ciccotti (no. 22).[55] All three were founded in the Late Republic as typical peristyle villas standing on platforms created by terracing, and all three were redeveloped in the Early or Middle Empire with more monumental architectural features. Brick-stamps suggest that in the late 1st century BC the villas at San Gilio and the

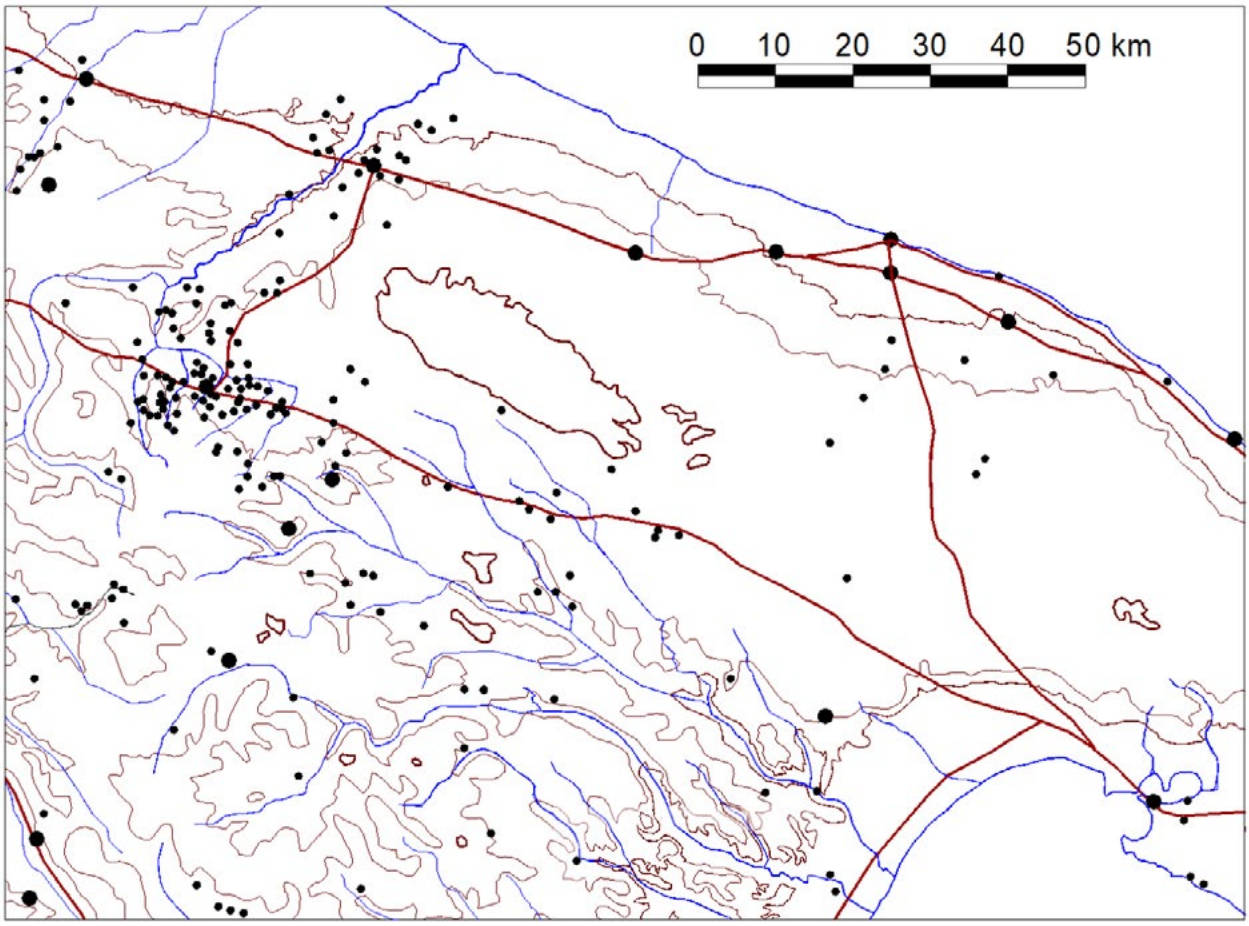
[51] Veleia: *CIL* XI.1147 (five refs); Ligures Baebiani: *CIL* IX.1455 (six refs).
[52] Ferrandini Troisi 2015, 24-25. no. 8.
[53] *Chora Metaponto IV.* The building was excavated by the team from the Institute of Classical Archaeology of the University of Texas at Austin
[54] Lissi Caronna 2000.
[55] San Pietro: Di Giuseppe 2008a; San Gilio: Di Giuseppe 2008b; Masseria Ciccotti: Gualtieri 2008, 2014, 2018, 164-168.



Map IX-1. *Municipia* (solid dots) and excavated villas (hollow dots) of the Roman Imperial period in the Fossa Bradanica and adjacent regions: 1. Faragola: Volpe & Turchiano 2009; 2. Posta Crusta: De Boe 1975, Leone 2000; 3. S. Maria: Goffredo 2011, 155, 219 BAR5; 4. Tesoro: Klein-Andreau 1980, 345; 5. Casa del Diavolo: Marchi 2004, 139, Volpe 1990, 150-153 no. 271; 6. Albero in Piano: Salvatore 1984, 33, Volpe 1990, 144-145 no. 248; 7. Bagnara: Marchi 2004, 139; 8. La Santissima: Marchi *et al.* 2006; 9. San Felice: McCallum & vanderLeest 2011, 2014; 10. Cassano delle Murge: Labellarte 1989, Mangiatordi 2011, 259-260; 11. Adelfia: Riccardi 1999, 38-44; Mangiatordi 2011, 250-254 no. 94; 12. Rutigliano Purgatorio: Mangiatordi 2011, 273-275 no. 116; 13. Mola di Bari: Ciancio (ed) 2002, 13-98; Mangiatordi 2011, 268-271 no. 112; 14. Monopoli, Siri: Mangiatordi 2011, 303-305 no. 153; 15. Atella, loc. Serra: Volpe 1990, 146 no. 251; 16. Magnone: Simpson 1982, 1983; 17. Prato: Di Giuseppe 2008c; 18. S. Giovanni di Ruoti: Small & Buck 1994; 19. Le Tegole: Di Cicco 1926; 20. Malvarcaro: Capano 1987; 21. S. Gilio: Di Giuseppe 2008b; 22. Ciccotti: Gualtieri 2008; 23. Moltone: Tocco *et al.* 1982; 24. S. Pietro: Di Giuseppe 2008a; 25. Calle: Small 1999, 585; 26. Monte Irsi: Small (ed.) 1977a; 27. Malcanale: Di Cicco 1903; 28. Barricelle: Russo *et al.* 2007; 29. Tempa di Fabio: Lapadula 2019; 30. Monte di Mella: Lacava 1884; 31: S. Vito: Giardino 2012, 7-8.

Masseria Ciccotti were both owned by Vedius Pollio, equestrian follower and supporter of Augustus, who was famous for his wealth, cruelty and luxurious life-style. The villa at the Masseria Ciccotti, the most completely excavated, was reconstructed between the end of the 2nd century and the middle of the 3rd with various impressive architectural features, including an elegant dining suite entered through an ante-chamber with a polychrome mosaic floor showing in the centre Aion, the god of cyclical time, holding the zodiac in his right hand, and in the corners busts of the Four Seasons. It gave access to a large rectangular space with a *triclinium* and water feature beyond it. The building exemplifies a type of luxurious villa architecture which originated in imperial villas and was picked up and adapted by the senatorial aristocracy for use in their country residences; and it is the earliest instance so far known in South Italy. The excavators have suggested that the redeveloped villa was the property of a descendant of the senatorial family of the Junii Nigri who held important offices of state under Trajan and Hadrian.The villa at the Masseria Ciccotti is unusual in reaching its time of greatest glory in the first half of the 3rd century AD. The neighbouring villa at San Gilio was destroyed around the middle of the 2nd century, apparently by fire, after which the site appears to have been used for productive purposes, including perhaps washing wool or fulling.[56] The villa at San Giovanni di Ruoti (no. 21) was a simpler structure in its first phase (1st and 2nd centuries AD). It was abandoned ca. 220

[56] Di Giuseppe 2008b, 311.



Map IX-2. All villas (small dots) and *municipia/ coloniae* (large dots) of the Roman Imperial period in the Fossa Bradanica and adjacent regions. The names of the *municipia* are given on Map IX-1. Sources: Fracchia 2014; Goffredo 2011; Goffredo & Ficco 2009; Mangiatordi 2011; Marchi 2010; Marchi and Sabbatini 1996; Osanna 1992; Sabbatini 2001; Small 1999; Volpe 1990; other studies of individual sites.

AD, but the buildings were maintained in some sort of order until they were brought back into use and partially reconstructed in the middle of the 4th century (Phase 2).[57] On the Adriatic coast of Central Apulia, the luxurious villa at Paduano near Mola di Bari (no. 13) was abandoned earlier, around 80 AD.[58] These excavated examples show that there was no sudden crisis in the villa economy; rather a gradual attrition which indicates that the decline in villa numbers revealed by field surveys (see below) was the result of long term economic trends.

b. Villas in field surveys

Villas (or probable villas) located by field surveys are shown on Map IX-2; but any inferences made from it must be treated with caution, since it is subject to biases in recording, and to varying definitions of what constitutes a villa. Since it is impossible to find a common denominator that suits all cases we have simply accepted the classification used by the scholars in their published reports.[59]

Particularly dense concentrations are likely to reflect the work of dedicated research groups in specific areas – as in the territory of Venosa, in the Ofanto valley, in the valley of the Carapelle river near Ordona and Ascoli Satriano, in the upper Bradano valley near Oppido Lucano, and in the valley of the Fiumara di Avigliano near San Giovanni di Ruoti.[60] But equally, the relative scarcity

[57] *SGR* I, 60 (J. Freed), 74 (A.M. Small & R.J. Buck).
[58] Ciancio 2002, 23.

[59] T.W. Potter (1979) held that in Southern Etruria "The remains of villas stand out not only because of their much larger size [than farmhouses] – the average scatter of debris is c. 3500 square metres – but also for the much greater luxury of the building components". But the figure is arbitrary and can be disputed, not least since what constituted a villa in one region might be quite different from what it was in another. See the remarks of R. Goffredo (2011, 69 and fn. 35 with further refs.) concerning villas in the Ofanto valley. He takes surface scatters of more than 2500m2 to represent villas if they contained traces of complex architecture and rich decoration.
[60] Territory of Venosa: Marchi & Sabbatini 1996; Marchi 2010 etc. Ofanto valley: Goffredo 2011. Carapelle valley: Goffredo 2009. Upper Bradano valley: Fracchia & Gualtieri 1998–1999; Fracchia 2008; Fiumara di Avigliano: Roberto 1984; Roberto *et al.* 1985; Roberto & Small, 1994.

of villas in other areas which have been intensively surveyed, such as our own Survey Area, and the Chora of Metaponto, is likely to be especially significant. In the territory of Taranto, which has been surveyed less intensively, the absence of any villas within the frame of our map may also have some significance. In all cases where the survey has been intensive, the relative density or scarcity of villas must reflect the kind of agriculture practised in those regions. In the Fossa Bradanica, the particularly dense concentration in the area around Venosa is likely to reflect the intensive cultivation of small to medium size estates whereas the thinner distribution in the Fossa Bradanica between Botromagno and the headwaters of the Basentello must reflect a more extensive form of land use, as must the thin distribution around Metaponto and Taranto which is likely to indicate that vast areas of the coastal plain had been given over to pastoralism. Other factors must also have affected this distribution pattern including the proximity of roads for transporting agricultural produce, and the incidence of malaria (discussed in the Introduction to this book).

The great majority of the sites shown on Map IX-2 were occupied at least in part in the first three centuries of the Empire, but not all were inhabited at the same time. Generally, smaller villas tended to disappear in the course of the first three centuries AD, while those that survived generally became larger – an indication, evidently, of the concentration of landholding in the hands of an increasingly narrow landed class. The process has been clearly noted in the territory around Venosa,[61] in the upper Bradano valley,[62] and the lower Ofanto valley.[63] But it was not universal. In the Carapelle valley between Ascoli Satriano and Ordona there was only a small reduction in the number of smaller sites, presumably farms, and the number of villas occupied continued practically unchanged.[64]

iv. Vici

Some of the larger sites identified in the field surveys are likely to have been villages consisting of clusters of houses extending over a larger area than a villa. They are generally called *vici* by modern scholars although they may have had a variety of economic and social functions. Some may have been inhabited by freedmen or free-born individuals of low status employed as labourers on nearby villas, or by tradesmen of various kinds who provided occasional services for villa owners, like the doctors (*medici*), fullers (*fullones*) and smiths (*fabri*) mentioned by Varro at the end of the previous period.[65] *Vici* appear frequently in literary sources, sometimes as items of property bought and sold by rich individuals who may have owned the villas to which they were attached. They varied considerably in status.[66] Some were corporate institutions with their own magistrates (*magistri vici*) able to hear minor legal cases; some were sites where markets might be held; others might have no civic institutions. Large *vici* in remote places are likely to have been quasi-municipal administrative centres (sub-section 11). It is generally impossible to determine such matters from archaeological evidence alone.

Vici *in field surveys*

A small village may have occupied roughly the same area on the ground as a large villa, and the two types of settlement may only be distinguishable in field surveys by the quality of the surface finds. If they include architectural elements, mosaic *tesserae*, or other indications of architectural elegance or luxurious living it is reasonable to assume that the settlement was a villa, but if the finds consist of roof tiles, domestic pottery, and remains of industrial activities such as slag from metal-working or wasters from pottery or tile production, with no evidence for architectural refinement, then the site is more likely to have been a *vicus.* Such settlements have been classed as *vici* in many surveys, but within the area of our General Map, they appear to have been a particularly important feature in the settlement pattern in the upper Bradano valley, where they perhaps represent the continuation of a type of settlement that went back to the pre-Roman period. Several have been identified, loosely associated with one or other of the villas in the area – as for example the large settlement at Petrara, which Helena Fracchia and Maurizio Gualtieri have argued was a *vicus* connected with the nearby villa at the Masseria Ciccotti.[67]

Vici were less common in the plains and plateaus of Apulia. It seems reasonable to suppose, however, that the more important settlements along the line of the Via Appia between Venusia and Tarentum were fully-fledged *vici,* including the large settlement at Monte Serico, the village at Santo Staso below Botromagno, and most obviously the complex of buildings and cemetery at Vagnari which was the main centre of habitation in the vast imperial estate. Some of these may have functioned as *mansions* or *mutationes* for the imperial post, but that is uncertain since our information on these road stations relates to the next period (see Chap. X). Some may have been market and administrative centres (see below).

[61] Marchi 2005, 175-176; 2008, 42-54; 2010, 41-42.
[62] Fracchia & Gualtieri 1998–1999, 329-334; Fracchia 2008; Fracchia & Mattioli 2010, 183.
[63] Goffredo 2011, 154-163.
[64] Goffredo 2009, 46-48.
[65] Varro, *Res Rust.* I.16.
[66] E. Todisco 2011, esp. 57-95.
[67] Fracchia & Gualtieri 1998–1999, 321-323; Fracchia & Mattioli 2010; 175; Fracchia 2014, 195-198.

Apart from Vagnari, there is only one settlement in our own Survey Area, large enough to qualify as a *vicus* in this period on the evidence of the surface scatter, namely Site 145-9, discussed below.

6. The supposed crisis of the 3rd century AD

A great deal has been written on this topic, but much of it is of only marginal relevance to our area of study. In the 20 years after the end of the First World War most scholars held that in the 3rd century AD the Roman Empire was in drastic decline caused by a series of interconnected catastrophes. Plague, increased threat from barbarian tribes, military failure etc led to a break-down in the social order, disrupted commerce, and caused the state to resort to arbitrary requisitions to meet its needs. The population declined; there were not enough *coloni* to till the soil, and agricultural land went out of production. Michael Rostovtzeff in his *Social and Economic History of the Roman Empire*, published in 1926 (chapter XI) described the chaos of the "Period of military anarchy" at some length and concluded that it was "Small wonder if in such circumstances the salient social and economic feature of the period was depopulation. Plagues, invasions, civil and foreign wars decimated the peoples." And "As a result of these conditions, the general productivity of the Empire constantly decreased. Larger and larger tracts of land ran to waste. Irrigation and drainage works were neglected, and this led not only to a constant reduction in the amount of land under cultivation, but perhaps also to the spread of malaria...". Friedrich Oertel in vol. XII of the *Cambridge Ancient History*, published in 1939 (chapter XI), traced these problems back to the 2nd century AD when "Whole regions began to go out of cultivation, not only in Italy and Greece, but also in Spain under Marcus Aurelius. Wars, especially with the Marcomanni and Parthians, military conscription (as in Spain), and the great plague brought by troops from the East in 165, accentuated the loss of land to cultivation". Events followed their inexorable course, and the chaotic conditions of the 3rd century ensued.

These views imply as much about the concerns of Europeans in the first part of the 20th century as they do about the conditions of the Roman Empire in the 3rd, and they have been questioned at various points. In particular, the idea that the problem of land desertion became especially grave in the 3rd century has been challenged by various scholars from a more modern perspective. C.R. Whittaker, for instance, emphasized the weakness of the evidence, pointing out that the sources are atrocious and there is a constant temptation to generalize from inadequate data.[68] The literary evidence is mostly anecdotal and propagandistic, and therefore unreliable. The long-term effects of the plague that broke out in the time of Marcus Aurelius are impossible to assess.

The archaeological evidence should provide a useful corrective, but is also controversial. In her study *Agricultural Production in the Roman Economy, AD 200-400*, published in 1991 and updated in 2005, Tamara Lewit collected and analyzed a wide range of evidence for the economy of the empire in the 3rd and 4th centuries, and reached the conclusion that there was no agricultural crisis or even widespread agricultural decline in the Roman empire in the 3rd and 4th centuries AD, and that the political chaos of the period had little effect on either agriculture or trade.[69] Her view can be criticized as over-optimistic,[70] as relying too much on the evidence of excavated villas, and as taking insufficient account of regional factors; but her conclusions are broadly shared by Jesper Madsen in an article which focusses on excavated villas of the 3rd century in South Italy.[71] By contrast, R.P. Duncan-Jones combined data of coinage debasement and usage, pottery production and circulation, and imperial legislative activity with the archaeological evidence for site occupancy, and reached a more nuanced view of the state of the economy in the 3rd century.[72] Conditions, he argued, did worsen but more in some parts of the Empire than in others, and there were significant differences between a prosperous southern zone (especially Africa) and a less vigorous northern zone.

The need to take account of regional differences in any discussion of the economy of the Roman Empire is made very clear by Helen Patterson's new study of the field survey and other evidence for settlement patterns in the Tiber valley between the mid-3rd and mid-6th century AD. In this area of crucial importance for the provisioning of the City of Rome, there was a general thinning out of settlement which began early in the 3rd century (already in the 2nd century in some parts of the valley) and, after a temporary reverse in the first part of the 4th century, accelerated in the later 5th and 6th centuries.[73] The decline affected all types of settlement, but principally villas, and it is matched by shrinkage in the occupied areas of the towns, and by what we know of the demographic trend in the City of Rome. The totality of the evidence implies that population decline was a real phenomenon that affected Rome and its hinterland from at least the beginning of the 3rd century AD. Other surveys show that a broadly similar

[68] Whittaker 1976, 337.

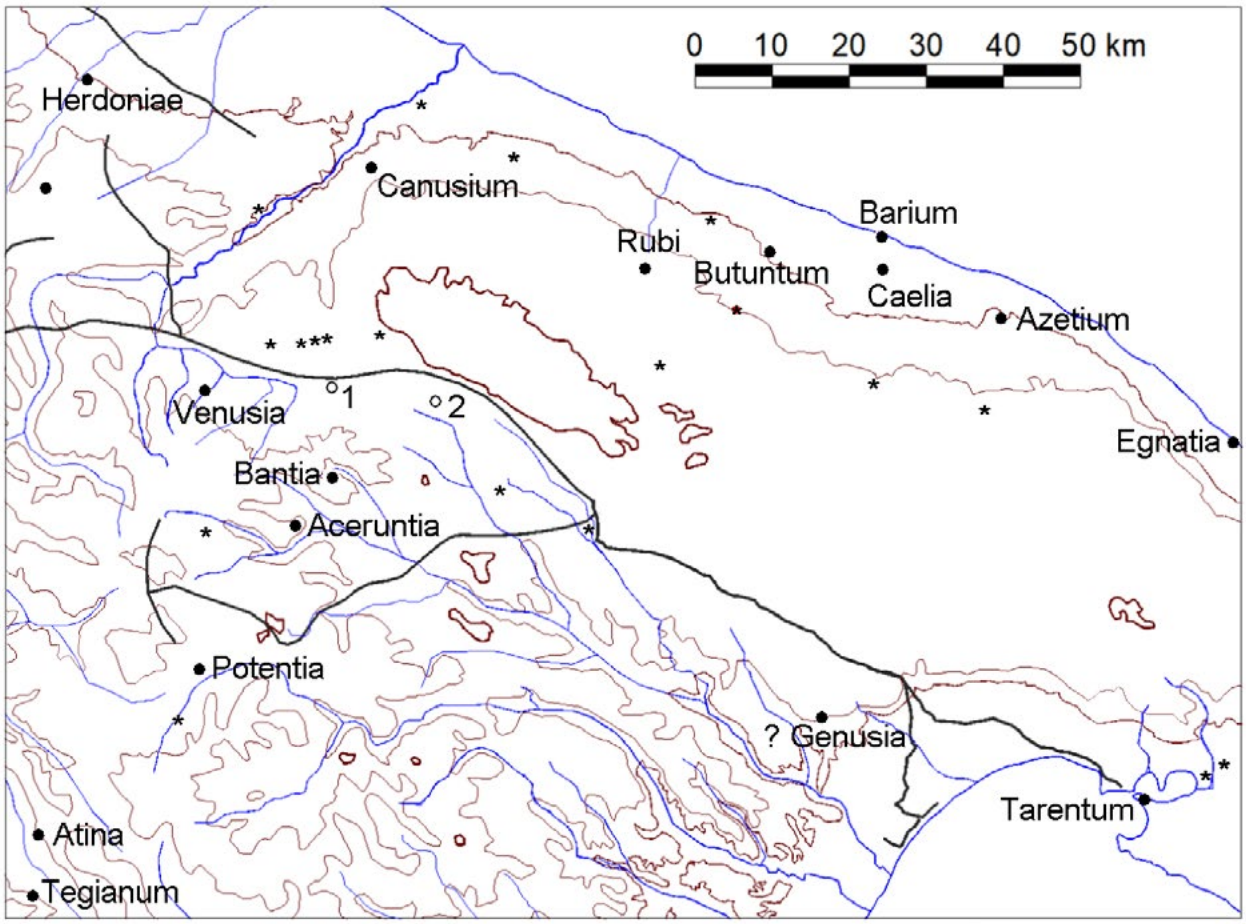
[69] Lewit 1991; reprinted with a new introductory chapter in Lewit 2005.

[70] Lo Cascio 1993.

[71] Madsen 2003 (with rather cavalier treatment of contradictory evidence).

[72] Duncan-Jones 2004.

[73] H. Patterson 2020, 213-222, 250.



Map IX-3. Inscriptions in the Fossa Bradanica and adjacent regions. Those of imperial slaves and freedmen are shown by asterisks. Other inscriptions referred to in the text are shown by hollow circles: 1 = location of funerary inscription of Amme; 2 = location of funerary inscription of Amoena. M*unicipia*/ colonies shown by black dots. The black lines show the traditional drove roads in use until the mid-20th century. For the location and other details of the inscriptions see Chelotti & Small in *Beyond Vagnari,* 260-264 and fig.1.

decline occurred in other parts of Central Italy,[74] and on the Tyrrhenian side of Lucania.[75]

On the other hand, the survey evidence from Fossa Bradanica, (discussed below) produces a rather different and more complex picture. In the micro-region of our own Survey Area, the analysis of little sites leads to a conclusion which by and large supports Lewit's contention, but from a rather different standpoint, while the evidence of the Older Surveys is more ambiguous.

7. Imperial estates

Another significant aspect of the settlement pattern in the area of interest to us is the vast extent of imperial estates unevenly distributed across the region. They are attested indirectly by inscriptions – the epitaphs or votive memorials of the imperial slaves and freedmen who worked on the estates, or (in the case of our Survey Area) the name stamped by the emperor's slave on some of the tiles produced on the imperial property. There is a general presumption that the individuals of the funerary inscriptions were buried near to the places where they worked, but if an inscription has been moved from its original location, as is often the case, the place of burial may be in doubt. Nevertheless, the distribution Map IX-3 shows that the inscriptions tend to cluster in a limited number of areas, which are likely to indicate the presence of imperial properties somewhere in the vicinity. The most significant groupings are in the territory of Tarentum, E of the Mar Piccolo; in the Fossa Bradanica in the vicinity of our Survey Area, and on the low terrace to the W of the Murge in the area of Montemilone to the NE of Venosa. There are also thinner scatters on the lower E slopes of Murge,[76] and in the lower Ofanto valley, and there are a

[74] E.g. in Northern Campania: Arthur 1991, esp. 89, 102-103; in the Pontine plain: Attema, Burgers & van Leusen 2010, 167; in the Biferno valley, though less drastically: J. Lloyd in Barker 1995, 250-251.

[75] In the Mingardo valley near Roccagloriosa: Gualtieri & Fracchia 2001, 177-178.

[76] For imperial properties on the Murge in Central Apulia, see

couple of isolated instances in the Lucanian Apennines. Since these are all areas which were connected in one way or another with sheep ranching or with the textile industry, or were situated close to the transhumance trails, there can be little doubt that the economic basis of the imperial estates in this region was sheep-ranching;[77] and this is confirmed by a few inscriptions which record imperial slaves or freedmen who were employed in some activity connected with shepherding or wool-working, such as the funerary inscription of an imperial *luparius* called Fortunatus found near Villa Rogadeo on the high Murge mid-way between Bitonto and Gravina. His job must have been to protect the sheep from wolves. Another is of Zosimene, a *lanipendia* who must have weighed and distributed wool at an imperial textile workshop near Cannae.[78]

The emperor is likely, therefore, to have owned extensive pastures (*saltus*) for transhumant sheep in the coastal plain around Taranto which were linked by drove roads with others in the Fossa Bradanica (in our Survey Area), on the high Murge, and in the Lucanian mountains. He no doubt derived substantial revenues from the products of his own flocks of sheep (primarily wool) that grazed in these areas, and he may also have rented out pastures to other individuals engaged in sheep-ranching, or to the contractors whom they employed to manage their flocks. In the empty spaces of the Fossa Bradanica, the sheep could pass along the transhumance trails without the risk of conflicts with local authorities such as occurred in Samnium where the praetorian prefects of 169–172 AD had to intervene to prevent the people of Saepinum and Bovianum from impeding the passage of the emperor's flocks though their cities (sub-section 8.ii).[79]

The resident workforce on the imperial estates consisted of the emperor's slaves. In large properties centred on luxurious villas which might be visited by the emperor himself, they could often be accommodated within the functional part (the *pars rustica*) of the villa complex, as, for instance, in a row of cells in the so-called Villa of Claudius Eutychus at Boscotrecase,[80] or in a separate block of barracks like that put up in the 3rd century AD in the wine-producing estate at Villa Magna in Lazio.[81] In other cases, where the agricultural production was less intensive, the slaves and freedmen might live in *vici* on the imperial property, as they must have done at Vagnari. They would include the slaves involved in the pastoral economy who were free to move around, form their own families and record the deaths of their family members on gravestones like those indicated in Map IX-3. The inscriptions show that they were sometimes liberated, and so could venture on a career in the imperial service like their counterparts raised in the imperial household.

The *vici* on the emperor's estates might themselves become a source of revenue for the imperial treasury, especially after Claudius had petitioned the consuls for permission to hold *nundinae* on his estates.[82] These periodic markets provided valuable revenues for the fiscus in the form of market dues,[83] while at the same time they performed a useful economic and social function by providing a market where local artisans and farmers could sell their produce, and travelling salesmen could offer more exotic goods like the amphorae of oil and wine imported from distant parts of the Mediterranean that reached our Survey Area. The concession of the right to hold *nundinae* might be contested if it diverted trade and revenues from neighbouring municipalities,[84] but that was hardly an issue in the central part of the Fossa Bradanica where there were no *municipia* within a convenient distance.

The administration of the imperial estates

The emperor's vast landholdings were accumulated gradually. The estate around Vagnari is likely to have been one of the earliest in Apulia to be acquired by the *princeps*. That probably happened early in the reign of Octavian/ Augustus (see below). Many others followed in the course of the first two centuries AD, some by confiscation, others by bequest.[85] As their number increased, so did the complexity of the administration. One response to the problem was to create small farms on good arable land within the imperial properties which could be rented out to tenants, so maintaining revenue for the fiscus while removing the imperial administration from direct involvement in the management of some of the most productive land.[86] There are indications, which we discuss below, that this began to happen in a tentative way on the imperial estate at Vagnari in the late 1st or early 2nd century AD.

Around the middle of the 2nd century AD, perhaps during the reign of Marcus Aurelius, the emperor began to appoint procurators, equestrians or senior freedmen

Mangiatordi 2011, 51-54; Chelotti 2010, 423-427.

[77] Small , Volterra & Hancock 2003.

[78] Chelotti & Small 2014, nos. 8 (*lanipendia*), 22 (*luparius*).

[79] *CIL* IX.2438; Millar 1977, 187-188; Lo Cascio 2000, 151-162. Corbier (1983; 1991; 2007) argues unconvincingly that the rescript concerned the passage of the flocks of *privati* as well as of the emperor.

[80] Della Corte 1922; Rossiter 1978, 40-42, fig, 12A and p. 68 no. 6.

[81] Andrews & Privitera. "The Barracks, Area D" in Fentress *et al.* 2016, 123-138.

[82] Suetonius, *Claudius* 12: *Ius nundinarum in privata praedia a consulibus petit.*

[83] These consisted primarily of charges for the rental of public space for market stalls, as at Pompeii: Andreau 1974, esp. 46, 56, 60, 68; Olivito 2013, 183. For the importance of *nundinae* in local economies, see MacMullen 1970.

[84] As in the application to the senate that was opposed by the *municipium* of Vicentia (Vicenza) reported by the younger Pliny (*Ep.* V.4).

[85] See esp. Maiuro 2012.

[86] See Purcell 2014, 272-273.

with long experience in the imperial household, to administer all the emperor's properties within the two major subdivisions of the Augustan *Regio II*. They are attested by inscriptions which give an approximate *terminus ante quem* for the creation of the post: a *procurator saltuum Apulorum* (*CIL* IX.784)[87] and *a procurator regionis Calabricae* (*CIL* X.1795) around the end of the 2nd century AD.[88] An equestrian *procurator Lucaniae* (*CIL* XIV.161) attested in the second half of the 2nd century AD must have been appointed to administer the imperial estates in *Regio III*.[89] With the decentralisation of the *patrimonium* that this implies, the procurator responsible for the administration of the imperial estate at Vagnari would have had no responsibilities for the emperor's Lucanian properties on the right bank of the Basentello, and the arrangements made for the emperor's flocks of sheep being driven along the transhumance trail into the Apennines may have become more complex.

The need to adapt the administration to cope with the increasing size of the emperor's holdings led to a more radical change in the 190s AD under Septimius Severus when the vast possessions confiscated from the adherents of Pescennius Niger and Clodius Albinus were absorbed into the public treasury (*aerarium*). The emperor created a new office, the *procuratio rerum privatarum*,[90] to administer the funds. It is not clear from the sources whether the landed estates were auctioned off or remained in public ownership, but it seems likely that many of the properties remained with the new *procuratio* and formed the basis of the *res privata* of the Later Empire. The existing holdings of the *patrimonium* probably continued to be administered separately since there is evidence that archives of the two offices had not been integrated by the time of Constantine.[91] Whether or not that was the case, the revenues derived from the *procuratio* became an essential element in the routine finances of the empire, going far beyond the needs of the imperial household.

The presence of imperial administrators helped to guarantee the security of the region.[92] Transhumant herdsmen were distrusted as liable to disturb the peace, and the emperor's control over much of the pastureland allowed them to be kept more directly under the supervision of the imperial officials.

[87] Pflaum 1950, 75.
[88] Pflaum 1960–1961, 552-553 no. 207, M. Bassaeus Axius; Grelle 1993, 45-46 fn 28.
[89] Pflaum 1960–1961, 553-554, no. 208. Q. Calpurnius Modestus.
[90] SHA, *Severus* 12.1-5.
[91] Maiuro 2007.
[92] Cf. Purcell 2014, 271 on the stability of imperial property being one way in which the imperial system guaranteed and propagated order, security and continuity.

8. Roads

i. The public roads in the first three centuries AD

At the end of the Republican period there were two routes that a traveller might take through Apulia on the way from Rome or Campania to Brundisium which had established itself as the main port of embarkation for the East. One was the Via Appia which, as we have seen, passed through Venusia to the headwaters of the Basentello, and crossed our Survey Area in the vicinity of Vagnari, before heading over the Murge to Tarentum and Brundisium;[93] the other was the Via Minucia which took a more northerly course across the Apennines, reached the fringes of the Tavoliere at Aecae (near modern Troia), continued through Herdoniae and Canusium, and followed the Adriatic coastal fringe through Butuntum (Bitonto), Caelia (Ceglie del Campo) and Egnatia (Egnazia) to Brundisium. The latter was the route that Horace (*Sat*. I.5) took from Rome to Brindisi in the entourage of Maecenas who travelled there in 38 BC to negotiate with Mark Antony. In Horace's time the two routes must have seemed equally viable, for in *Epistles* I.18.20 written ca. 21 BC he cites the question of whether the Minucia or the Appia is the better road to Brundisium as an example of a dispute over trifles. By the beginning of the 2nd century AD, however, the question seems to have been decided in favour of the Adriatic route. It was at any rate the line of the Via Minucia which Trajan chose to reconstruct at massive expense to improve communications between Rome and Brindisi at the time of his eastern campaigns.[94] The work was marked with a series of milestones recording the distance from Beneventum and the fact that the road was constructed at the emperor's expense. The programme was celebrated in 112 AD with an issue of coins which showed the road personified as a female figure holding a wheel in her lap, identified as *Via Traiana*. Within a century, sections of the road, including the bridge over the Ofanto near Canosa, had to be restored by Septimius Severus. The construction of the road led to the redevelopment of the cities through which it passed (clearly visible in the excavated areas or Ordona and Egnazia) and added to the prosperity of the Adriatic coastal fringe.

By contrast there is no evidence to show that any work was done on the Via Appia until the time of Hadrian who restored nearly 16 miles of the section of the road between Beneventum and Aeclanum, mainly at his own expense, but with contributions from local landowners.[95] The milestones he set up along it record that it had fallen into disuse long before (*longa vetustate amissam*). But the milestones finish at Aeclanum,

[93] See now Small 2019.
[94] Ashby & Gardner 1916; Quilici 1989; Silvestrini 1983 and 1999.
[95] *CIL* IX 6073, 6074, 6075; *AE* 1930, 122; Eck 1999, 36-37, 77.

and there is no evidence for any repairs to the road anywhere in the section between Aeclanum and Tarentum. Regular maintenance of the public roads was the duty of the *curatores viarum* set up by Augustus and reorganized by Vespasian, who appointed specific *curatores* for each of the major roads. Thirteen *curatores viae Appiae* are recorded between 54 AD (an exceptionally early case) and the 3rd century AD,[96] but it is unclear whether their remit extended for the full length of the road as far as Tarentum. If it did, they exercised it in a modest way that did not involve the participation of the emperor in road repairs. It is conceivable that they required the municipal magistrates to maintain the Via Appia in the territory of Venusia, but with no *municipia* situated on the road S of that city the maintenance of it between Venusia and Tarentum would have been problematic, falling, probably, on minor officials of the *vici* through which it passed, or on the landlords of the properties flanking it. But if they were not legally obliged to contribute towards the costs (as the text of the Hadrianic milestones on the stretch between Beneventum and Aeclanum seems to imply), then they may have been reluctant to do so, particularly since in this area of very large estates, the costs related to the frontage on the road would have been correspondingly large. It seems likely that the state of the Via Appia in our Survey Area declined in the course of the first three centuries AD.

Numerous other roads traversed the area of interest to us in this period, but the details are often uncertain.[97] The road along the Ionian Gulf that linked the former Italiote cities shown on the Peutinger Table must go back in some form to the Greek colonial period.[98] Another, recorded in the Antonine Itinerary (119.2) from *Varis* (Bari) to *Tarentum,* probably also goes back to the Early Empire, if not to the Late Republic. Giuseppe Lugli noted in 1962 that a series of roads oriented almost exactly N–S linked the Adriatic coast with the interior, traversing hills, rivers and valleys without losing direction. He believed them to be of ancient origin, either Greek or Roman, and expressed the hope (not yet fulfilled) that systematic exploration would be carried out to see if archaeological remains would resolve the question of their date.[99] One of these (his no. III) linked Barletta with Gravina, another (no. IV) linked Trani with Gravina. At Gravina they would have connected to our Survey Area either by way of the Via Appia or by the drove road across the pass of Sferacavallo. Whatever the case, it is clear from the Survey finds that there was easy communication across the Murge with the Ionian coast. The Peutinger Table illustrates yet another road which linked *Silutum* (= *Silvium*) with *Gnatie* (Egnazia) on the Ionian coast, but the surface of the map shows traces of damage in this area (probably already in the version from which it was copied) and this evidence may be unreliable.

The public roads were intended for wheeled traffic, but in the Apennine mountains it was more practical to ride horses or mules and to transport goods on rough tracks by baggage animals, principally mules or donkeys. The muleteers were organized in a *collegium*. An inscription from Potenza (*CIL* X.143) records a funerary dedication made by the *collegium* of muleteers (*muliones*) and donkey-drivers (*asinarii*) to one of its members, Mettius Potitus, who died at the age of 18. There were presumably similar *collegia* in other cities where the terrain required the use of this form of transport.

ii. Drove roads

There can be no doubt that the main drove road which passed through the Fossa Bradanica below the scarp of the Murge continued in use throughout this period and into the Middle Ages. Some evidence of this can be seen in the funerary inscription of a woman called Amme dedicated by a *magister* called Susus who was probably master of the flocks, and another individual whose name has been lost, who was a herdsman (*gregarius*).[100] The names Amme and Susus, better attested in Asia Minor than in Italy, suggest that the group was of servile origin, and the original location of the epitaph at Vinson's site V161A, near the Roman settlement at Pilone d'Errico (Marchi's site 951), close to the line of the traditional drove road (no. 1 on Map IX-3), may indicate that Susus, as *magister*, was involved in the management of transhumant flocks. The inscription can be dated between ca. 50 and 20 BC.[101] Another, rather later, inscription found at the Masseria Trimaglio (no. 2 on the map) ca. 13km further to the E is dedicated to Amoena, the slave of Ulpius Hister by her mother Ursula, her brother Amoenus and her fellow slave and perhaps consort Pyladius.[102] The name of her master suggests that he was a freedman, or more probably the descendant of a freedman, of Trajan who may have looked after the emperor's interests in this area. They would be likely to include the management of pasture for transhumant sheep. There is less evidence for activity along the drove road that led from Gravina/ *Silvium* across our Survey Area and on to the Lucanian mountains near Tolve, but the spindle-whorl of L. Domitius Cnidus found in the villa at San Pietro di Tolve, suggests that there was a wool industry there connected with the transhumance trail, referred to above (sub-section 4.i.a).

[96] Full list in Eck 1999, 81-82.
[97] On the roads of Central Apulia, see Mangiatordi 2011, 55-82.
[98] Lugli 1962, 30.
[99] Lugli 1962, 35-36.
[100] *Amme hic sita. / [S]usus magister / [---] gregarius / -----:* Chelotti 1983, 19-21, no. 1, with revised interpretation by Andriani (2013, 12). For the findspot of the inscription: Small 2016.
[101] Silvestrini 2016,
[102] Chelotti 2003, 167-168 no. 61.

The drove roads would have needed little maintenance work, except perhaps at the river crossings, on which we have no information; but they were potentially dangerous since they were frequented by shepherds who, as we have seen, were normally slaves, and needed to be armed. Runaway slaves might take refuge in the shifting communities of shepherds and their families, and brigandage was an endemic problem. There were also recurring conflicts between the shepherds and the farmers who owned adjacent lands onto which the sheep might stray.[103] The system of control exercised by quaestors who held the *provincia* of the *calles* lasted at least into the time of Tiberius as we know from Tacitus (*Ann*. IV.27.1-2) who records a rebellion of slaves in the region of Brindisi and the surrounding towns. It was led by Titus Curtisius, a former soldier of the praetorian guard who had gathered together a ferocious army of slaves from farm fields and distant pastures, and it was suppressed by the quaestor Curtius Lupus who held the *provincia callium*, with the help of the crews from three naval ships which happened to call in at Brindisi at that time. The episode is a good indication of the inadequacy of the resources normally available to the local authorities for maintaining order in the Italian countryside. There is no later evidence of the *provincia callium,* which is likely to have been absorbed by the emperor, perhaps in the time of Claudius. A glimpse of how security was maintained thereafter is provided by the Saepinum inscription of the reign of Marcus Aurelius, referred to above. The disorders provoked by quarrels between the local graziers of Saepinum and Bovianum and the hired shepherds (*conductores*) who were accompanying the emperor's flocks on the drove roads which passed through those communities were dealt with in the first instance by the local magistrates, who took the side of their own townsmen. Some of the emperor's flocks had been lost in the fracas, so the *conductores* complained to a functionary of the imperial treasury, who reported the affair to the imperial treasurer (*libertus a rationibus*) who in turn requested the praetorian prefects to sort the problem out – which they did with a reprimand to the city magistrates, ordering them to refrain from interfering with the imperial *conductores*, and threatening them with punitive measures if they did not desist. The issue was thought to be sufficiently important to warrant inscribing the letter of the prefects on stone. At Saepinum it was exhibited in a conspicuous place at one of the city's gates. Ultimately the maintenance of security in the Italian countryside depended on the praetorian prefects, who could send a detachment of the praetorian guard to enforce order if necessary. It is easy to suppose that they were most likely to take action if the emperor's own property was involved, as it was at Vagnari and in the adjacent area.

[103] Gabba & Pasquinucci 1979, 53 (Gabba); 106-107, 140-142 (Pasquinucci).

In the 3rd century, when conditions were most disturbed, the emperor made occasional appointments of *praepositi*, with military forces at their disposal, to keep order in specified parts of Italy. They included the equestrian Marcus Antonianus Vitellianus, *praepositus tractus Apuliae, Calabriae, Lucaniae, Bruttiorum*. He was a native of Canusium, and he was honoured by his native city with (probably) a statue and an inscription recording his dedication to preserving the peace of the region.[104]

9. Stock-raising and agriculture

There are few published faunal and palaeobotanical studies from sites of this period in South Italy, but those that there are show a continuing evolution in agricultural practices. It is likely that there were further improvements in stock-raising. Bökönyi studied a small sample of animal bones from the villa at the Masseria Ciccotti, and found unusually large specimens of hens, cattle, goats and horses. There were also indications that there were smaller and larger breeds of some species, presumably raised for different purposes or habitats.[105] Caprines remained the most abundant species at that site (accounting for 42% of all domestic animals), but pigs were next (32%), and cattle third at 21%. There was therefore a significant emphasis on pork production which bears comparison with the sample of the previous period from Monte Irsi (Chap. VIII.10). Bökönyi also analysed the faunal remains from the farm of the mid-2nd – 4th century AD at San Biagio in the Chora of Metaponto, and reported that caprines were by far the most numerous animals raised there in this period, but that there was an increase in the proportion of pig when compared with earlier contexts in the Chora, whereas cattle, which had once predominated in the area, fell into a low 3rd place.[106] These results all suggest that there was a general increase in pork production in Lucania in this period. The evidence is particularly clear at San Giovanni di Ruoti where pigs predominated in Period I (the beginning of the 1st century – early 3rd century AD), as they continued to do even more emphatically in the subsequent periods of the villa.[107] It is likely, in view of the later history of Lucania, that at least some of the pork distributed to the population of Rome under Aurelian in the early 270s AD was levied from the region.[108] The forests of Lucania were particularly well suited for pork production since pigs could be allowed to forage for acorns and other forest fruits (and on beech mast at altitudes over ca. 800m). Evidently the increase in pig-raising and decline in cattle-raising are indicative

[104] *CIL* IX. 334; *ERC* I, 36-37 no. 27 (Morizio); Grelle 1993, 45-50.
[105] Bökönyi in Gualtieri 1994, 87-89; *idem* 2001.
[106] In *Chora Metaponto IV*, 191.
[107] MacKinnon 2002, 26, Table 1.1 gives NISP and MNI frequencies of all species by period.
[108] SHA, *Aurelianus* XXXV.2. *Aurelianus et porcinam carnem populo Romano distribuit, quae hodieque dividitur.*

of far-reaching changes in the landscape, as arable land went out of production and reverted to forest. At Vagnari (see below) the analysis of animal bones from contexts of this period shows that pig production was growing in importance also in our Survey Area, where there must have been similar, though probably less drastic, changes in the landscape.

Hens still formed a relatively small percentage of the livestock (around 3% in the villa at the Masseria Ciccotti), but they had become much more widespread. Chicken bones occur in all the faunal assemblages of this period, at San Biagio, the Masseria Ciccotti, San Giovanni di Ruoti (Period I),[109] and Vagnari (sub-section 14.ii.c).

Until very recently there were few palaeobotanical analyses to draw on, especially of carbonized seeds. That gap will be filled to a large extent by the study of the carbonized seed remains from the most recent excavations at Vagnari by Matthew Stirn and Rebecca Sgouros, discussed below (sub-section 14.ii.d), which shows that a broad variety of crops was stored or processed on the site, and was presumably cultivated in the vicinity.[110] Lorenzo Costantini's analysis of the organic remains from contexts of Period I (the first two centuries AD) in the villa at San Giovanni di Ruoti shows that an even wider range of crops was cultivated at that site deep in the Lucanian mountains. They include hulled and naked wheats: *Triticum dicoccum* (emmer), *T. monococcum* (einkorn – a small amount), *T. spelta* (spelt), *T durum* and *T aestivum*. There was also barley (*Hordeum vulgare*) and rye (*Secale cereale*). Oats (*Avena sativa*) were perhaps grown as a forage crop.[111] There were edible legumes including *Lens culinaris* (lentil) and *Vicia faba* L. (broad beans). *Vicia ervilia* (vetch) and *Medicago sativa* (alfalfa) were grown as fodder crops. There were also grapevines (*Vitis vinifera*) and various weeds. The list suggests both that the owner of the villa rotated his crops, and that he sowed a wide variety of cereals to ensure against the failure of any one of them. These principles had been understood since the LIA if not before, but wide range of crops cultivated at San Giovanni suggests that variety was particularly important at this site which is situated at an elevation of 670m above sea level, close to the Apennine watershed. It may have seemed less necessary in the warmer and dryer climate of our Survey Area.

It is widely supposed that barley went out of favour as a cereal crop for human consumption in the Roman period when bread wheats were in demand. The idea is supported by various literary sources, particularly the elder Pliny and Columella, who give the impression that it was grown primarily as a fodder crop for beasts of burden although it might also be mixed with wheat to provide excellent nourishment for slaves.[112] But D. Lentjes has shown that the archaeobotanical crop remains from SE Italy show no shift from a barley- to a wheat-dominated spectrum in the course of the 1st millennium BC.[113] Her study stops in the Late Hellenistic period, but other evidence suggests that the same can be said of the Roman Imperial period, at least in this part of the peninsula. The evidence from San Giovanni shows that barley and hulled wheats continued to be cultivated alongside free-threshing wheats (*durum* and *aestivum*), at least in conditions where weather-resistant crops were needed. Barley, moreover, is attested in pollen analyses from Ascoli Satriano, alongside cereals of the *Avena/ Triticum* group, and probably also panic (*Panicum miliaceum*).[114] It is likely that Columella's opinion of barley reflects the prejudice of an élite class of landowners based in Spain (where he came from) or Latium where he subsequently lived, rather than the diet of the general population of Italy.

Pollen was badly preserved in soil samples taken for analysis from Botromagno and Vagnari, but analyses from the Roman villa of Giarnera Grande at Ascoli Satriano, combined with others from Roman contexts at Ordona,[115] show that pasture had become the main form of land-use in the Tavoliere. At both sites there was some cereal cultivation, and some trees grew in the vicinity, but most of the evidence pointed to pasture with wild grasses and herbaceous vegetation, confirming the importance of the plain as winter-grazing for transhumant flocks.

10. Commerce

As in all periods, pottery provides the best indicator of trading patterns in the valley, if only because it is durable and in principle quantifiable. No pottery kiln of the period has yet been identified in the Survey Area, and since there was no large centre of population in the vicinity, it is probable that most, if not all, the pots used in the area were made outside it and brought in by travelling vendors. It is impossible in the present state of knowledge to be certain where most of the plain and cooking wares were produced, although Venosa, where there were certainly kilns in use in this period, is an obvious possibility. The cookpots that reached our Survey Area from N Africa and Epirus (mentioned above) are a reminder that the production of high-quality cookware was a skilled business, and that good-quality cookpots were traded over considerable distances.

[109] A. Eastham, "The avian remains" in *SGR III*, 171-188 at p. 172.
[110] In Carroll ed., forthcoming. We are grateful to Maureen Carroll for allowing us to draw on the draft of the text ahead of publication.
[111] Costantini 1983.
[112] Spurr 1986, 14-15; Braun 1995, 32-34. Columella II.9.14, 16; VI.3.3; Pliny, *NH* XVIII.74.
[113] Lentjes 2016, 122 and Table 5.1 on pp. 160-165.
[114] Accorsi *et al.* 1995, 105.
[115] Heim 1995.

The fine wares reveal a complex pattern of trade. Kenrick's analysis of the Italian terra-sigillata (ITS) pieces (Cat. 15-A) shows that they reached the Survey Area from potteries located in various parts of Italy. Some are likely to have been produced in Venosa, and others in Campania, but a considerable number were imported from the Po Valley, and the majority, generally including the best pieces, came from Arezzo, or perhaps Pisa. The diversity of these wares points to the fact that Vagnari and the surrounding area were easily accessible from the main centres of production in North and Central Italy, both on the Tyrrhenian and the Adriatic side of the peninsula. These ITS wares finished before the end of the 1st century AD, but alongside them and continuing after them there were other regional red-slipped wares (RRS in Kenrick's terminology, Cat. 15-C). Their production centres have yet to be identified.

From the late 1st century AD onwards the finer table wares were supplied from overseas. Some Eastern sigillata B2 pieces reached the Survey Area in the late 1st or 2nd century from Tralles in Asia Minor, imported, presumably, through one or other of the Adriatic ports. But the great majority came from the province of Africa Proconsularis. Kenrick's analysis shows that the pieces in the ARS-A ware from North Tunisia which is most typical of this period, were found on eight sites in the Survey Area, but were concentrated especially in the villa site 124. The ARS-A/D and ARS-C wares from Central Tunisia reached eight sites in the 3rd century, with a minor concentration on Site 229 (the villa on San Felice). How these African wares reached the Survey Area is not certain, but the most obvious route would be by sea to the Sicilian coast, then by cabotage stages along the Ionian coast to Tarentum, and from there by the Via Appia to Vagnari; but the alternative route from Sicily along the Tyrrhenian coast to Campania and thence along the Appia by way of Aeclanum cannot be ruled out. Both routes may have been used.

The transport amphorae found in the field survey provide much more information on the complexity of these trade patterns. The evidence is discussed in detail by Disantarosa who has set each amphora type within a broad picture of production and distribution (Cat. 19 and Appendix) At the beginning of this period, and for the whole of the 1st century AD, Italian amphorae continued to circulate in the area. At first the commonest type was the Dressel 2-4 wine amphora, made in the N Adriatic area of Italy. They are well attested at Vagnari and at eight other sites in the Survey Area, and they are reported by McCallum and his colleagues at two sites on the right bank of the Basentello. some 3km W of Vagnari.[116] Production of them ceased around the end of the 1st century AD at a time when the Italian commercial wine producers generally were losing their markets to others based in Gaul, Spain and Africa. At least one amphora reached the Survey Area from Gallia Narbonensis (a Gallica 11 type wine amphora probably produced in the 1st AD, No.1656), and rather more from Spain, including a flat-bottomed Dressel 28 wine amphora from Baetica (No.1658) which arrived some time between the beginning of the 1st and the middle of the 2nd century AD, probably containing wine. Two other Spanish amphorae, a Beltrán IIB and an Almagro 51 A-B from Lusitania reached Vagnari in the Early to Middle and Middle to Late Empire respectively.[117] They were probably used for fish products. McCallum and his colleagues report a Spanish Amphora sherd (probably from Cadiz, San Antonio kiln) on Site mhB38 below Monte Serico,118 and three others (a Haltern 70, a Dressel 7-11 and a Dressel 20) on mhB64. This site was exceptionally rich in amphora fragments, mostly too fragmented to be identifiable.

Throughout the period a steady trickle of amphorae reached the Survey Area from North Africa. Some, like the Ostia XXIII (No.1661) were used to transport oil from the region around Thabraca in North Tunisia around the end of the 1st and beginning of the 2nd century AD. The Schöne-Mau XXXV amphora found on Site 906 (No.1660) brought wine from South Tunisia and Tripolitania between the beginning of the 1st and middle of the 2nd century AD. The Tripolitana II amphorae found on Site 813 (No.1662) may have contained salted fish. A sherd of Ostia LXI reported by E. Iannetti on Vinson's site V42 also dates to this period.[119]

In the 3rd century these early African amphorae gave way to new types of the Africana II series from Tunisia. They include a fragment of the II C variant probably used for fish sauces, found on Site 114 on the right bank of the Basentello to the E of Monte Irsi (No.1674, end 3rd–4th century AD). Another, of the II D variant from Vagnari (*cit.,* 5.12), might have been used either for fish sauce or for olive oil. McCallum and his colleagues record a sherd of Africana II from mhB42.[120]

A few amphorae reached the Survey Area from the Greek world, continuing the pattern of trade established in the Hellenistic era. They include an early Romano-Cretan amphora attested by a toe fragment at San Felice (No.1774). It is likely to have contained wine from one of the many Cretan vineyards. The Dressel 24-Knossos 15 amphora of which a fragment was found on Site 145-9 (No.1776) probably came from Asia Minor in the same period. Its contents are uncertain. An unusual piece (No.1775) found on San Felice resembles the so-called Kingsholm 117 type which was probably made in

[116] McCallum *et al.* 2013, 52, 57, sites mhB56 and mhB64.

[117] *Vagnari* 392, 3.2 and 3.3.
[118] McCallum *et al.* 2013, 42-3
[119] Iannetti 2012, no. 23 and tav. V.
[120] McCallum *et al.* 2013, 44.

Palestine between the mid-1st and early 3rd century AD and perhaps contained wine.

In short, the ceramic evidence shows that in spite of its remoteness from any major centre of habitation, the Survey Area was far from being isolated from the commercial traffic that sustained the Roman empire. The Area was easily accessible from all three coasts and the inhabitants were able to acquire goods from various parts of the Empire.

11. The administration of the Fossa Bradanica in the Early and Middle Empire.

It is normally supposed that the process of municipalization of Italy was completed by the time of Augustus, and that thereafter the whole of Italy was organized municipally so that every Roman citizen in the peninsula living outside the urban boundary of Rome was also the citizen of a *municipium* or *colonia* and was subject to the local magistrates, who were responsible for the routine administration of the territory and the provision of justice at the local level. If that was the case, then the vast area in the centre of the Fossa Bradanica must have been allocated to some distant *municipium* (or *municipia*), and great practical difficulties would have arisen in the administration of it by the municipal magistrates. There is no direct evidence for any alternative system of administration of the area under the Roman Empire. The *praefecti* appointed in the Republican period by the urban prefect to administer justice in remote areas probably ceased to function at the beginning of the principate. The vacuum may have been filled in part when Marcus Aurelius created a number of regional law officers, *iuridici*, able to adjudicate in matters of civil law beyond the 100th milestone from Rome, but we have little information on how they operated. Their scope was increased progressively over the next 100 years, but their mandate can never have included the routine matters of local administration.[121]

The administrative void left by the municipalization of Central-South Italy is likely to have been filled by *vici*. This problematic subject has been greatly clarified by recent studies.[122] After the municipalization of Italy, some rural villages were formally constituted as *vici*, supervised by their own elected magistrates, whose titles and functions may have varied from one place to another. Most, perhaps all, had *magistri vici*, responsible at a minimum for the administration of local religious cults; others had *aediles* responsible for public structures of the community including the roads; and *quaestores*, responsible presumably for the community's finances. As we have seen, some *vici* were allowed to hold markets (*nundinae*) and may have functioned as bases for registration during a census. They would probably have been subordinate to the nearest *municipium*. But there was also a class of *vici* defined by Festus (502, 508 L) as having *respublica* where justice was administered (*ius dicitur*). They must have been able to act independently of the nearest municipal authorities and been responsible directly to the praetorian prefects. If some of the *vici* situated along the line of the Via Appia between Venusia and Tarentum had *respublica*, they would have at least partly filled the administrative vacuum in the area.

12. Field surveys in the Fossa Bradanica

Three published surveys in the Bradano-Basentello-Fiumara di Venosa corridor provide comparative material and help to define the economic context of our Survey Area.

i. The Ager Venusinus

In the synthesis of her field survey results of the Roman imperial period from the NW and SE sectors of the *Ager Venusinus*, Maria Luisa Marchi demonstrates that the number of settlements rose perceptibly in the Triumviral and Early Imperial period,[123] presumably as a consequence of the settlement of veterans in the triumviral period. The new farmhouses were bigger than those of the earlier land-division schemes and occupied larger lots of land. Many of them were re-foundations of sites that had been occupied previously, and, as we have seen, it is probable that existing small landholders who had supported the Pompeian faction were dispossessed, like Horace, in favour of new settlers. The lots allocated by the commissioners of the triumvirs varied in size. In the densest areas, especially near the city,[124] the standard allocation given to an ordinary veteran was in the order of 50 iugera (ca. 8 ha), but elsewhere there were larger lots, especially towards the limits of the city's territory, where centurions and *equites* might expect to get double or triple assignments.

The typical farmhouses on these lots were small, isolated buildings covering an area of 200 – 400m^2. They lasted throughout this period, especially in the vicinity of the city; but there were also farms of medium dimensions and some large villas covering an area of ca. 1000 – 2000m^2. A pattern began to emerge already in the Early Empire of nucleated complexes in which huts, animal stalls and service buildings of various kinds clustered around villas. Beginning in the Trajanic period there was a tendency for small and medium size villas to be abandoned and their land to be absorbed into much larger estates run from a small number of more luxurious

[121] Thomsen 1947, 153-163; Eck 1999, 257-275.
[122] Tarpin 2002; E. Todisco 2011.
[123] Marchi 2010, 40-42, 263-274.
[124] Marchi & Sabbatini 1996, 113-119.

villas, which continued into Late Antiquity. The decline in the number of rural settlements was particularly pronounced in the 3rd century AD, by which time about 42% of the settlements of the Early Imperial period had been abandoned. Marchi comments that this changing distribution pattern reflects what has been observed in other parts of Italy, including Apulia more generally.

The pattern of settlement in the *Ager Venusinus* differs noticeably from that in our Survey Area, discussed below. It reflects the distinctive local history of Venusia, re-founded as a veteran settlement by the triumvirs. The expansion in the number of settlements was particularly marked in the marginal area near the watershed of the Basentello, around the villa and *vicus* of La Santissima and in the adjacent territory of Banzi.

ii. The survey around Monte Serico

The field survey directed by McCallum and Hyatt in the area around Monteserico produced twelve sites with ITS (in addition to Vinson's Site V14), according to their preliminary report.[125] This is proportionately considerably more than in our area and shows an upward trend in the numbers of inhabited sites in this part of the Basentello valley by comparison with the previous period from which they report 7 sites (Chap. VIII.6.ii). Six of these Early Imperial sites also yielded ARS-A and may have continued into the Middle Empire when eleven sites were inhabited. Since ten sites produced ARS-C ware (of which four also yielded ARS-A) it seems that there is no good evidence for any significant alteration in site numbers in this area during the Early and Middle Imperial period, even if there was some change in site location. The sites were apparently mostly small, but they include the site mhB52, which the McCallum and his colleagues interpret as a substantial farm which lasted throughout the Roman period into Late Antiquity.

iii. Survey in the Chora of Metaponto

The pattern of site occupancy and land use in the Metapontine Chora was very different from that at the northern end of the Bradano-Basentello corridor. In the Chora the decline in site numbers that had begun ca. 300 BC and lasted throughout the Hellenistic period still continued. Only 11 sites found in the University of Texas field survey could be dated to the Early Imperial Period (50 BC –50 AD), compared with 13 in ca. 50 BC.[126] In the full imperial period, defined as 50–300 AD, the number of sites identified by the survey rose to 20. Most of them yielded such a small number of fragments, that it is difficult to identify the type of settlement that they represent. Eight, however, produced enough pottery to suggest that they were small rural dwellings of some kind, and one (site 230) which produced numerous sherds of ARS pottery and locally-made amphorae was perhaps a villa. There was also the farmhouse at San Biagio referred to above.[127] The associated material shows that its inhabitants were of modest socio-economic standing. Elsewhere in the Chora there were some signs of continuity from the previous period. The farmhouse at Petrulla on the right bank of the Basento continued into the 2nd century AD,[128] and the rural complex at Santa Teresa lasted into the early decades of the 3rd century.[129] There was also a possible villa of the imperial period at San Vito on the right bank of the Bradano, two rooms of which were excavated ahead of drainage works. It has not yet been fully published.[130]

The countryside on the Metapontine Chora was not therefore completely abandoned, and indeed pollen evidence from Roman contexts at Pantanello shows that cereals, grapevines and olives were still being cultivated in the vicinity;[131] but broad-leaved woods were expanding, and the reduced number of sites is likely to imply that land once cultivated had been abandoned. The fate of the countryside here resembles that of our own Survey Area where the creation of large estates given over (as we argue below) to pasture for transhumant sheep led to a drastic reduction in the number of small rural settlements.

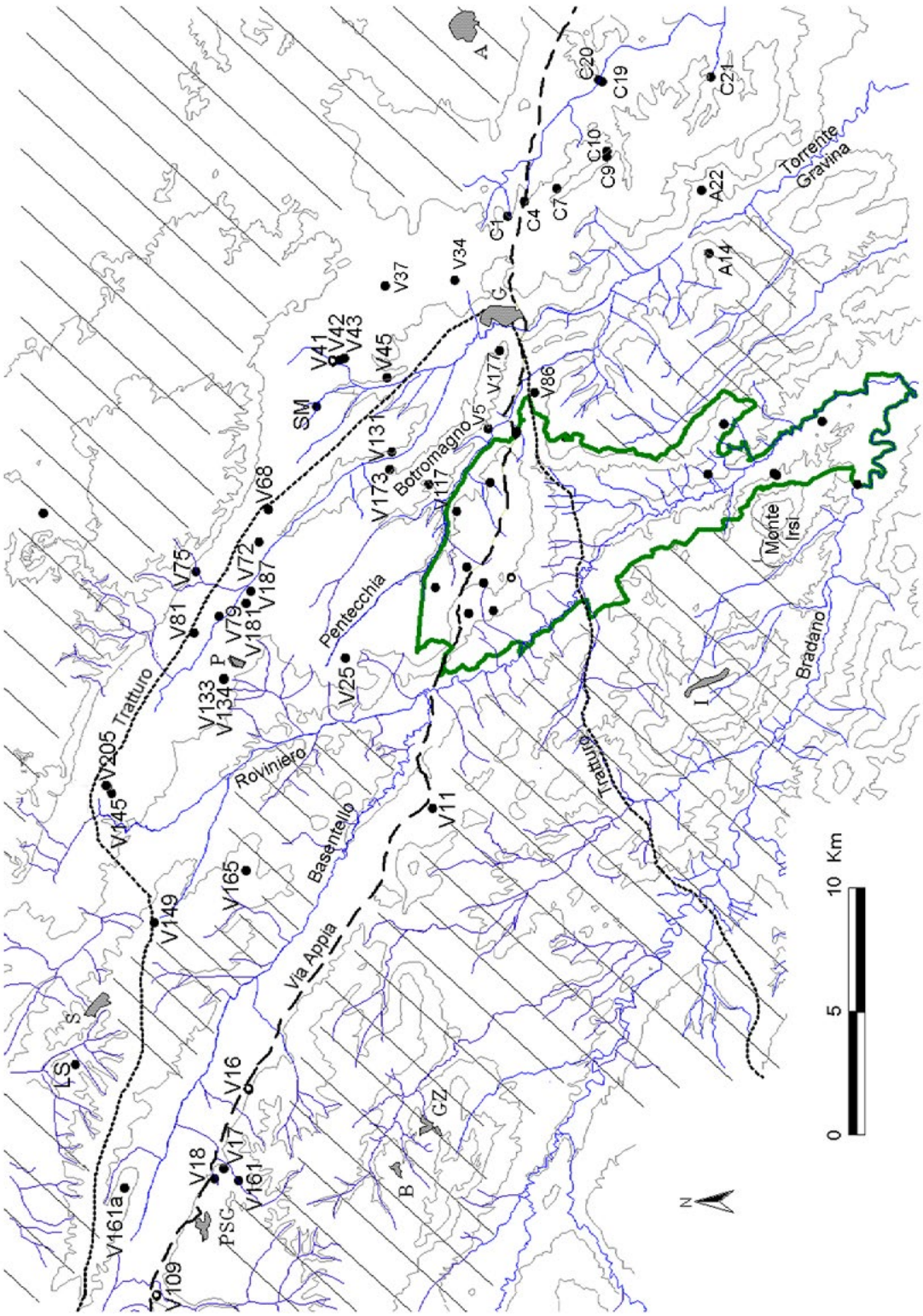
Carter has argued that the decline of settlement in the Chora was aggravated by the spread of malaria as increasing siltation in the lower reaches of the rivers led to a rise in the water-table and to the spread of marshy conditions favourable to the anopheles mosquito. Since the malaria parasite has been identified in one of the skeletons from the necropolis of the Middle Imperial period at Vagnari (see below), it is possible that malaria contributed to the decline of settlement in our area too; but it can hardly have been a decisive factor since habitation levels rose again in the Late Empire. The question is discussed more fully in the Introduction to this book.

iv. The Older Surveys

a. Sites of the Early Empire

The records show that 42 reasonably certain and 2 doubtful sites datable to the Early Imperial period were found on the Older Surveys. They are attested mainly by sherds of ITS, supported occasionally by fragments of amphorae or glass. The number, given in the OS Table of Site Occupancy VI.2.*C*, is likely to be understated since

[125] McCallum *et al.* 2013; cf. McCallum & Hyatt 2014.
[126] Lapadula in *Chora Metaponto III*, 1137-1145.
[127] *Chora Metaponto IV*.
[128] Giardino 2012, 7.
[129] Lissi Caronna 2000 (Mass. Durante); Giardino 2012, 7.
[130] Nava 2003, 667.
[131] Florenzano & Mercuri 2018, 441.



Map IX-4. Sites of the Early Imperial period on the Older Surveys and in our Survey Area. Sites on the Older Surveys are numbered. For Site numbers in our Survey Area see Map IX-6 below. SM = San Mauro; LS = La Santissima.

a few sites which could be recorded only as "Roman" or "possibly Roman" (A11, V23, V108, V153 and V217) are not included in the Table. It is unlikely that there was a bias in the evidence resulting from a shortage of supply of ITS since there were workshops at Venosa producing a local version of the ware.[132] The 42 sites represent a negligible decrease from the 43 of the previous (Late Hellenistic) period. On a superficial reading that might suggest that there was a general continuity of occupation from the one period to the other, but in fact only 18 of the sites (or 20 if the more doubtful instances are counted) had been occupied in the previous period. The majority of the sites were founded in new locations or on old ones which had been abandoned for some time. The extent of the change is an indication of the scale of the crisis of the Late Republic (and especially of the first two thirds of the 1st century BC) which has been discussed above (Chap. VIII.9.ii-vi).

But although many of the sites were founded in new locations, the general pattern does not differ markedly from that of the Late Hellenistic/ Roman Republican period (Map VIII-4) except to the W of (modern) Spinazzola where the much denser pattern picked up by Marchi's survey must result from the resettlement of the territory of Venusia following the foundation of the veteran colony in the triumviral period. The new sites identified by Vinson in this area (V161, V161a) would have formed part of that programme; and his Site V17, occupied in the previous period, may have been incorporated in it. The territory of Venusia was re-allocated as medium-size farms. But to the E of Spinazzola the minor changes in the pattern of settlement do not imply a general change in land-use – rather a wish or a need on the part of the landowners to move to a new site because it was easier to build a new farm or villa than to renovate an old one which might have been destroyed or abandoned in the Late Republic (as on Botromagno). Since there were now no settlements of any importance in the area after the abandonment of Botromagno/ Silvium, there were no local markets to be supplied, and the great landowners must have aimed to make a profit on commodities that could be easily conserved and transported to distant markets, in other words on grain, wine, olive oil, cheese, preserved meats, wool and perhaps forest products such as charcoal and timber. The fact that the sites of this period are well spread out in good agricultural land, and that a significant number of them are situated on or close to the drove-route below the Murge suggests that there were both large arable farms and sheep-ranches in the area. Some landlords may have owned both, as they did in the 19th century.

The best appointed of these sites must have been villas. In his unpublished discussion of his survey finds, Vinson lists his criteria for defining a site as a villa. They include "some evidence of greater than average wealth (e.g. mosaic, large cut blocks, hypocaust tiles, etc.) although I have included a few whose sheer size or longevity seem to indicate a strong economic base". Some of the villas in his list were situated in the territory of Venusia or along the line of the Via Herculia, but 11 of all periods from Hellenistic to Late Roman lie inside the area with which we are concerned here: V5, V14, V16, V18, V42, V43, V53, V74, V88, V137, V165. Of these, only V18 just E of modern Palazzo San Gervasio, V165 on the plateau between the Basentello and Roviniero rivers (the only one which had any evident pretensions to luxury), V5 in the Pentecchia valley, V42 and V43 near the lost lake of the Pantano can be reliably dated to the Early Imperial period. That is an extraordinarily small number for such a large area. Aldridge found only three sites of the Roman imperial period in the valley of the Torrente Gravina, and in no case does he suggest that it was a villa. There were more Roman sites on the fringes of the Murge to the E of Gravina explored by Chapman who identified three of them as possible villas (Sites C4, C7 and C9). Generally, however, it seems that this was not a sub-region where rich landowners withdrew to luxurious residences in the countryside.

The broad river valleys between the E edge of the territory of Venusia and the fringe of the Murge near Botromagno/Silvium appear to have been thinly occupied in this period. The pattern of settlement is broadly similar to that in our Survey Area where most of the terrain must have been absorbed into two of three very large estates, managed from relatively unpretentious villas, one of which, on San Felice, was the property of the emperor. The comparison suggests that much of the land in the Older Surveys had also been acquired by large absentee landowners who rarely visited their estates and had no need of luxurious accommodation. The relatively modest villas would have been occupied by their administrators, and the work force may have lived in *vici* comparable to the one at Vagnari. We have seen that a similar pattern appears to have prevailed on the W bank of the Basentello in the vicinity of Monte Serico.

The sizes of the Old Survey sites and the numbers of sherds found on them were not regularly recorded, though Site V173 had 20 grey-gloss sherds and only 3 ITS fragments and so was probably shrinking. It did not outlast the 2nd century AD. Site C10, on the other hand, had 2 grey-gloss and 6 ITS sherds and so may have been expanding. These are rare hints which suggest that the state of affairs was fluid, and that settlements might succeed or fail, depending no doubt on a variety of factors, one of which would be the practices of estate management followed by their owners.

[132] No kilns producing the ware at Venosa have yet been found, but a workshop in or near the city must have produced pots stamped by P. Crepereius and his dependent Nothus: Torelli 1988; OCK 2000, 35.

b. Sites of the Middle Empire

The main dating tool for this period in the records of the Older Surveys is African Red Slip, especially A and A/D wares datable before ca. 300 AD. But at the time when the surveys were carried out the chronology of ARS wares and their forms was little known. In some cases, where it has been possible to retrieve the sherds in the deposits of the Superintendency, wares have been identified and Hayes' form numbers assigned by John Hayes himself. Others have subsequently been studied by Eufemia Iannetti. Their identifications allow some of the sites to be assigned to this period. ARS Form 50 sherds in C ware which are relatively common and which straddle the divide between Middle and Later Empire have been assigned to the later period unless there are good indications to the contrary. Where it has not been possible to identify the sherds, the sites have been recorded as doubtful under both the Middle and Late Imperial periods. Some may be Late Antique, but we have assumed that this is unlikely unless the more abundant LRPW pottery was found with them. Some sites have been assigned to this period on the evidence of amphorae, but not much can be said of other classes of pottery for which there are no illustrations. Given these difficulties, it is likely that the total number of 40 sites assigned with reasonable certainty to this period is understated. It shows a slight decline from the figure of 42 in the Early Imperial period, but this is balanced to some extent by the number of doubtful cases which increases from 4 to 13.

Of the 40 sites, rather more than half (21) continued from the previous period, the remaining 19 being new foundations, or re-foundations. There was therefore a considerable amount of settlement displacement. A comparison between maps IX-4 and IX-5 shows where the main differences lie. Vinson found fewer sites in the territory of Venusia (as we understand it) at the W end of the map, and this is confirmed by Marchi who also found that the dense pattern of settlement of the triumviral colony became thinner in the mid-Imperial period.[133] This area, therefore, shows the same tendency for small estates to be subsumed into larger ones that has been detected in many parts of Italy. The outstanding example, shown on Map IX-5 is centred on the villa at La Santissima near the Basentello watershed, which has already been mentioned. It lay beyond the limit of Vinson's survey, but has been explored by Marchi and partially excavated by the University of Foggia.[134] To the E of the complex of sites at La Santissima there are fewer settlements along the drove route than there had been in the Early Empire, perhaps a sign that transhumance in this part of Apulia was already in decline (as we shall see was also the case in our own Survey Area). There are, however, a few more sites along the line of the Via Appia, reflecting the growing importance of Venusia as an economic centre. They include V14 on the N Slope of Monte Serico where Vinson identified a Roman villa occupying an area of ca. 1200m^2, and another larger site, V16, which he also identified as a villa, but which might better be classified as a *vicus*. It was a large site with a thick distribution of tile extending over ca 2500m^2, and was perhaps a road station, conceivably the *statio* on the Via Appia, 15 Roman miles from Venusia which has fallen out of the Antonine Itinerary. This problem is discussed in the next chapter.

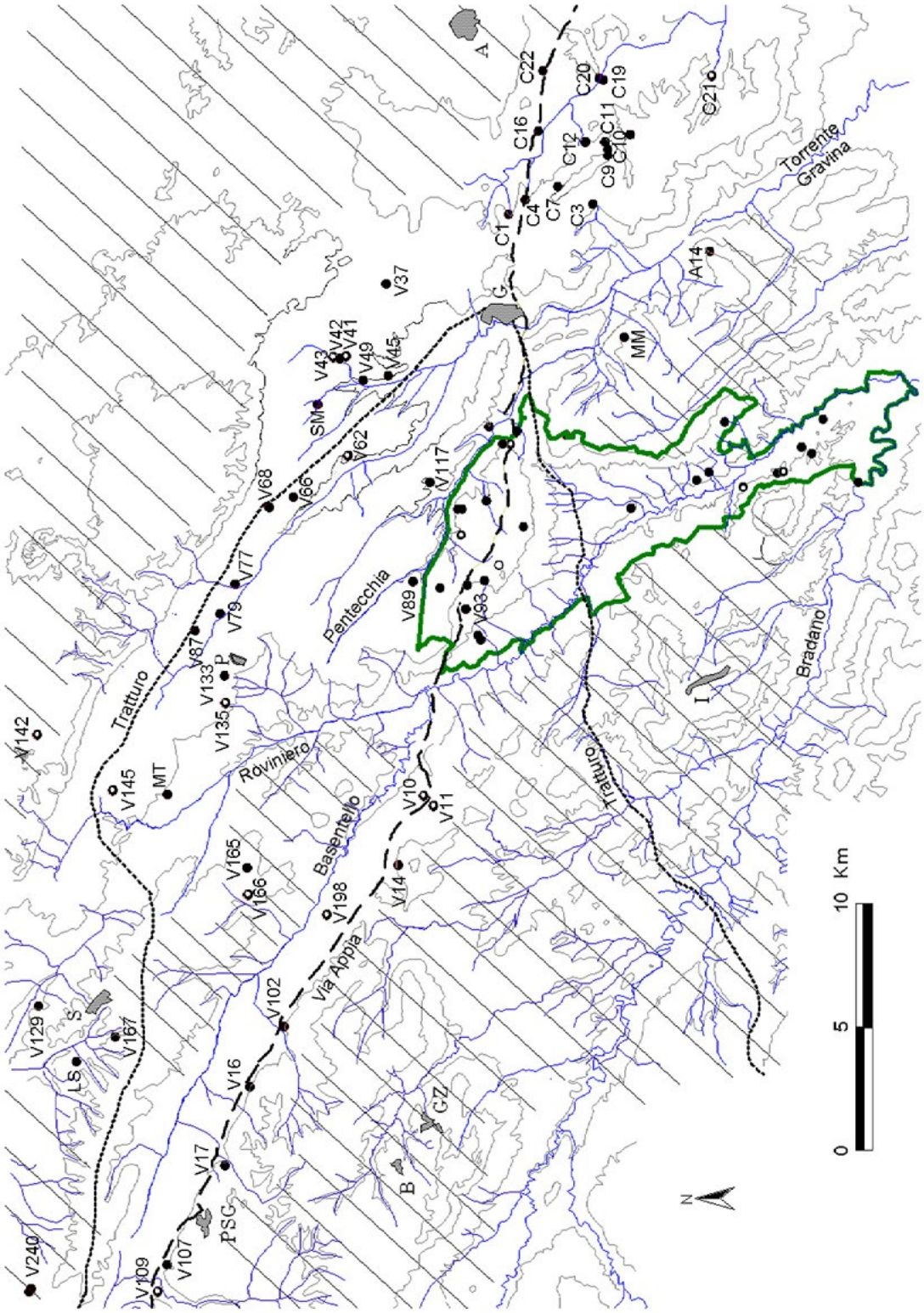
The main area, however, where settlement was intensified is on the lower terraces of the Murge in the terrain to the S of the Via Appia explored by Chapman. It can be compared with N half of our own Survey Area, where, as we shall see, the imperial estate was progressively split up into smaller units probably rented out to *coloni*. It seems possible that there was a single powerful landowner in this area who followed the same policy.

13. Excavated sites in the vicinity of our Survey Area

i. Botromagno

A growing body of evidence from excavations in and around our Survey Area is throwing light on the social and economic conditions in the central part of the Fossa Bradanica in the Early and Middle Empire. On Botromagno, the small successor settlement to the villa on Site CA was completely demolished in the Augustan period, and the stone socles of the S front of the building were grubbed out for reuse in a new structure which overlapped the remains of the earlier villa in its SW corner.[135] The excavation revealed only part of the new building, including the remains of four rooms, the largest of which contained an impluvium with a floor of large tile *tesserae* covered with plaster. Slight traces of a structure of this period found on Site CZ, ca. 70m further to the W suggest that there was a subsidiary building in this area.[136] A tile fragment stamped CAESARAVG (*Caesar Augustus* or *Caesaris Augusti*) found by Antonio Florido somewhere on Botromagno is likely to come from one of these buildings.[137] It must date from after the grant of the name of Augustus to the new *princeps* in 27 BC. More excavation is needed, however, if the size and function of this complex are to be understood. The associated fragments of ITS found on Site CA date it firmly in the Augustan period,[138] after which the hilltop

[133] Marchi 2010, 40-42.
[134] Marchi 2005, 188-199; 2010, 232-238; 2014, 189-190.
[135] Small *et al.* 1994, 255-256.
[136] *Gravina II*, 39-40, layer 1a, assemblages 60, 62.
[137] Small, Volterra & Hancock 2003, 183 no. 4, and 178 fig. 4; *Vagnari*, 21-22, fig. 9.
[138] To the material published in *Gravina II* can be added an ITS base, stamped ANNI SEX (Sextus Annius Afer of Arezzo) published by



Map IX-5. Sites of the Mid-Imperial period on the Older Surveys and in our Survey Area. Sites on the Older Surveys are numbered. For Site numbers in our Survey Area see Map IX-7 below. MM = Masseria Macchitella (where the funerary inscription of Savonia was found); MT = Masseria Trimaglio (where the funerary inscription of the imperial slave Amoena was found); SM = San Mauro; LS = La Santissima.

was abandoned. Settlement continued, however, at the site of Santo Staso below the hill on its S side which appears to have been redeveloped as a *vicus* on the Via Appia, preserving the name of the lost settlement of *Silvium* into the time of the Late Roman Itineraries.

ii. Monte Irsi

At Monte Irsi, on the western fringe of our Survey Area, the excavation carried out in the early 1970s revealed a similar development: a new structure built in the Augustan period on a site which had been occupied previously in the late 2nd and early 1st century BC.[139] An existing terrace wall was heightened to create the platform on which the villa was built, and walls were laid out on an orthogonal plan extending over an area of at least 1000m^2. There were also some outlying structures 75m to the S, only partly exposed. The remains of the main complex were badly preserved, but a column drum of limestone with stucco fluting shows that the building had some architectural pretensions. One room had a concrete floor which had been badly damaged by deep ploughing. The stone socles of its walls had been robbed out, probably at the time of the construction of the medieval village which occupied the summit of the hill 300m to the W, and in the loose soil left by the robbing there were the remains of the small hoard of Late Republican and Augustan *denarii* mentioned in Chap. VIII.2.i.b. Other coins and fragments of *terra sigillata* pottery show that this phase of occupation lasted into the reign of Tiberius, after which there was probably a gap in occupation until the Hadrianic period. The evidence for this latest phase consists mainly of sherds and two coins found in superficial layers. It was probably of limited extent and ended in the course of the 3rd century AD.

Another wing of the same villa building was excavated by the Superintendency in 1981. The brief report and photograph published afterwards shows that it consisted of a single file of at least seven rooms, one of which contained a cistern and another a tank (water trough?). They appear to have been completely open to the SW and were therefore functional spaces. The two with provision for water are likely to have been stalls for oxen, like those in the Late Hellenistic building situated ca. 140m to the S (Chap. VIII.6.v). The others may have been used for storage or agricultural processing. The range has been dated by fragments of Italian terra sigillata and thin-walled wares (not published) to the 1st century AD.[140]

14. Our Survey Area in the 1st – 3rd centuries AD

i. Sites known from the Survey

Fifteen sites, including Vagnari, can be said with certainty to have been occupied in the Survey Area in the Early Imperial period, and two others more doubtfully (see Maps IX-5 and the Table of Site Occupancy II.2.*4*). This represents a decrease from the 19 certain and 9 more doubtful sites of the Late Hellenistic period, and marks the lowest level of site occupancy since the Middle Iron Age, when, however, the sites were much larger. There can be no doubt that the population level in our Survey Area reached a low point in this period. Vagnari was the only site large enough to be considered a *vicus*. Elsewhere there were two or three sites large enough to have been villas, and a scatter of smaller ones which must have been the habitations of the rural population, animal stalls, field huts, etc. In the Middle Empire the number of occupied sites increased to 21, plus another 6 less reliably dated. The increased number probably indicates that a new policy of estate management which involved splitting large estates into smaller tenancies was being applied both on the imperial estate (sub-section 14.iv.c) and on the private properties in the S half of our Survey Area.

As the map shows, there was a large void in settlement in the centre of our Survey Area where the drove road crossed the valley. The pattern differed significantly to the N and S of it, and to the E and W of the Basentello river.

a. Sites South of the drove road and West of the Basentello (in Lucania)

The principal site in this area was Site 145-9 situated at the base of Monte Irsi, on its S side, close to the Bradano river, at the extreme SW edge of our Survey Area. There had been a small settlement here in the LIA which may have continued into the Early Hellenistic period, and there was then probably a gap before the site was reorganized in the Early Empire. It is difficult to analyse, partly because it was in use over a long period, partly because it was dispersed into 4 or 5 concentrations over about 3 hectares. There were enough fine wares and cookpots to suggest that people lived here, and fragments of millstones found in the different parts of the site suggest that there were several different households each milling its own grain; but there are no evident signs of luxury. There is, however, evidence of industrial production: kiln waste and tile wasters show that there was a tile factory, and pieces of slag must derive from a smithy. Numerous *dolium* fragments, including the largest rims found in the whole of the survey (Cat. Nos.1887, 1888, 1906, 1907, 1909), show that there was either a winery here or a warehouse with ample storage facilities for foodstuffs. The site

Sidebotham (1980, 243) listed here under Site V177.

[139] E.M. Wightman in *Monte Irsi*, 57-91.

[140] Lattanzi 1982, 280.

also yielded an unusually large number of fragments of transport amphorae. Since it is situated beside the Bradano river which was probably navigable except in the summer months, it seems probable that the site was a commercial centre where goods could be loaded onto boats or barges going down the river, and others coming up the river could be unloaded to be distributed to other places in the interior. This topic is discussed further in the General Introduction.

Site 124 was also of some importance. It was a fairly substantial building, presumably a small villa, covering about 400m^2 near the S end of our Survey Area. A fragment of a tegula stamp -]ENI may give us the last part of the owner's name. It was occupied from the Late Republic down to the 3rd century AD. To the N of it, Sites 114 and 120 should be taken together since they are less than 200m apart. Site 114 extended over ca. 900m^2. It was founded in the Early Hellenistic period, but must have been rebuilt in the Late Republic or perhaps the Early Empire. A stamped tile No.2224 which can be read (with some difficulty) SC͡IP̣I[- suggests that it may have been owned by a member of the Scipio family;[141] but they can hardly have resided here since the surface finds give only limited indications of luxury, and some kiln remains show that it had some industrial functions. Site 120 reached its fullest extent in the late 1st century BC and the early 1st century AD when it was probably a sizeable farmhouse. It is doubtful that it continued into the Middle Empire, and neither site outlasted the 3rd century.

Two other sites were founded or refounded in the Middle Empire. Site 139 had been a small settlement in the LIA It was abandoned at the end of that period, but was reoccupied in the 3rd century AD. Much of the material found on the site must belong to this later phase of occupation which lasted into the 6th or 7th century, including plaster fragments, a piece of yellow Numidian marble, fragments of ARS and LPRW. A surprising collection of five hand-mills suggests that there may have been a small bakery in the building. There was also some kiln or oven material. The site must have been a dwelling of some pretensions, perhaps a small villa. Site 135 had a kiln and was perhaps developed in connection with it. A fragment of ARS found on the LIA Site 353 further to the N was probably sporadic.

b. Sites South of the drove road and East of the Basentello (in Apulia)

This vast area had been densely inhabited in the LIA, but in the Early Empire only two sites remained, and this part of the valley seems to have become a single large estate comparable to Vagnari, and like it probably given over to sheep ranching. Its administrative centre is likely to have been Site 372, where a farmhouse of the LIA and Hellenistic period appears to have been replaced by a Roman villa in the Late Republic or Early Imperial period. It yielded some hints of luxury, including a fragment probably of a marble volute krater (Cat. No.2005). A piece of tile stamped ?]CA͡ELID[? may give the name of its owner: Caelidius, a variant from of Calidius. He was perhaps a member of the lesser Roman aristocracy.[142] Occupation here reached its peak in the 1st/2nd century AD and declined thereafter, though it continued into the Late Antique period. Site 335 consisted of two or three buildings, perhaps a farmhouse with two adjacent smaller dwellings. It did not outlast the 3rd century.

The most significant new development in this area was the re-foundation of Site 347-9 on a flat terrace some 500m W of the Basentello and only just above its floodplain. The site had been abandoned at the end of the LIA but was re-established late in the late 2nd or early 3rd century. It was probably a point at which the Basentello river could be crossed, either by a ford or a bridge, but the large number of transport amphorae found on the site suggests that, like Site 145-9 on the Bradano, it may have been a small commercial centre located on the river which was perhaps navigable when the water level was high.

c. Sites North of the drove road and East of the Basentello (in Apulia)

The development of the area to the N of the drove road must be considered in connection with the imperial estate centred on Vagnari.

ii. Vagnari

The excavation at Vagnari was begun in 2000 with the aim of uncovering stratified evidence which would help in interpreting the survey data. It was the largest site of the Roman Imperial and Late Antique period found in our Survey Area.

a. The settlement

The results of the first phase of excavations carried out between 2000 and 2006 have been fully published in *Vagnari*, and will only be summarized here, though we have drawn also on the preliminary reports of the new phase of excavations in the settlement begun in 2012 under the direction of Maureen Carroll, and on the drafts of some of the chapters of the forthcoming final publication which Professor Carroll has kindly shown to us as they became available.[143]

[141] Small in *Beyond Vagnari*, 74-77.

[142] Small in *Beyond Vagnari*, 74-75.

[143] Carroll 2014 and 2016; Carroll & Prowse 2014, 2015, 2016; Carroll ed., forthcoming.

Early in the principate (in Phase 2) a new complex of buildings measuring approximately 41×52m was erected over the remains of the farmhouse of the previous grey-gloss phase and extending S from this nucleus toward the edge of the ravine. The plan was modified, and the buildings partially reconstructed at various times, but the SW–NE orientation of the walls was preserved in all subsequent phases. Some drains belong to this period, one of which may have carried waste-water from a latrine. Nineteen pits found below the floor in three of the rooms probably contained large storage jars for foodstuffs. In the 2nd century AD, a winery was created in the NW part of the complex with at least 10 *dolia* sunk into the floor to hold the must. In phase 4, corresponding to the late 2nd – early 3rd century AD, a portico was added to the N front; and in phase 5, the early 3rd century AD, a porch was added to this portico. The winery by this time had gone out of use. Between ca. 225 and 250 AD this part of the building was destroyed by fire, and the buildings were dismantled. Occupation must, however, have continued elsewhere because a large cistern in the SW part of the complex which had probably been built in the second half of the 2nd century AD was only filled in with miscellaneous rubble late in the 4th century.[144]

Meanwhile the village had expanded across a shallow ravine into the southern half of the site where the surface collection shows traces of occupation in the 2nd and 3rd centuries AD, close to the area which would become the nucleus of the settlement in the next period. No buildings of the Mid-Imperial period have yet been excavated in that area, but some indications in the magnetometer survey suggest that they extended to the SW of the later excavated structures.[145]

The original excavations revealed traces of a smithy near the centre of the complex in the N part of the site, and the more recent excavations have produced more evidence for metal-working in iron and lead. No domestic rooms have yet been uncovered, though it is clear from the fragments of cookpots and plain and fine wares that people were living in the complex. Either there were domestic quarters in the part of the site not yet excavated; or, more probably, the artisans lived on an upper floor above their workshops.

Four tile kilns were in operation during the lifetime of these buildings. The discovery of a tile stamped by Gratus, slave of Caesar in topsoil above one of the kilns showed that the kiln, and no doubt the whole village and the estate in which it was situated, belonged to the emperor.[146] Gratus was active in the Julio-Claudian period, most probably in the reign of Tiberius (14–34 AD),[147] and the tile gives a *terminus ante quem* for the acquisition of the estate by the emperor. We suggest that it is likely to have been acquired by Octavian in the auction of Pompey's confiscated estates. The redevelopment of the settlement at Vagnari can best be explained by the assumption that Octavian/ Augustus brought in a new labour force of slaves or tenants to staff the estate.

b. The cemetery and the human osteology

The cemetery associated with the *vicus* was identified in 2002, in the S part of the site, on the other side of the ravine that divides the site in two.[148] The excavation is ongoing, carried out by a team from McMaster University directed by Tracy Prowse, to whom I am grateful for the latest updates. By the end of the 2019 season 150 burials had been excavated, containing the remains of 165 individuals. They mostly range in date from the late 1st to the early 3rd century AD, but there are a few later depositions, of the 4th century AD. The great majority were inhumations, in shallow pits, generally covered with tiles either arranged like simple ridge-tents (*alla cappuccina*) or laid flat and provided with funnels for libations. Four were cremations, and these had some of the richest goods such as bronze vessels.

The skeletal remains indicate a balanced community of males and females, old and young. Mother and child were sometimes buried together, and mitochondrial DNA analyses suggest that some other burials may have been organized in kinship groups.[149] The osteological analyses show that the inhabitants of Vagnari were used to hard manual labour, but nevertheless lived at a reasonable level of subsistence. Some, however, show signs of nutritional deficiencies and recurrent infectious disease. Mitochondrial DNA of the malaria parasite, *Plasmodium falciparum*, was found in one individual.[150]

Bioarchaeological analyses are throwing light on the origins of the population. The oxygen and strontium isotope data from the skeletal remains point to the environment in which the individuals were raised, and a recent analysis of $\delta^{18}O$ and $^{87}Sr/^{86}$ values of the teeth of 43 individuals indicates that over half (58%) may have been born and raised at the site, and a further 34% may have originated from S. Italy. Approximately 7% were

[144] Dalton 2014.
[145] For the surface scatter, see C. Small in *Vagnari,* 63-64; for the magnetometer survey, K. Strutt in *Vagnari*, 73-77, esp. fig. 3.2, features 8, 13.
[146] Small *et al.* 2003.
[147] Small *et al.* 2003, 179-185; Chelotti 2007, 170; Manacorda 2007, 271-272. The imperial estate at Vagnari is one of the earliest attested archaeologically.
[148] The burials excavated in 2002 have been fully published in Small and Small (eds) 2007; Brent & Prowse 2014. For more recent interim reports, see Carroll & Prowse 2014, 2015, 2016; Prowse & Carroll 2017, 2018; Prowse 2020; and for more technical studies, Prowse 2011; Prowse *et al.* 2010, 2014; Marciniak *et al.* 2016; Emery *et al.* 2018a, 2018b.
[149] Emery *et al.* 2018a, 206.
[150] Marciniak *et al.* 2016.

probably born outside S. Italy, either in North Italy or further afield in Europe or North Africa.[151]

Analysis of the Mitochondrial DNA contained in the molars of 30 individuals, shows that all belong to haplogroups typical of West Eurasian populations, except for two (an adult male from burial F34 and an adult female from F37) which belong to haplogroup D4b1c, commonly found in East Eurasian populations. Since mitochondrial DNA relates to the female genetic line, a female ancestor of these two individuals must have migrated (or been brought) to South Italy from Asia. That migration must have taken place before the birth of the individual of F34 because the oxygen isotope analysis shows that he was raised in South Italy, very possibly at Vagnari.[152]

Whatever its origins – slave or free – in the 2nd century AD the population of Vagnari formed a stable rural community. The consistency of the grave goods shows that the inhabitants shared a common material culture and set of funerary practices and beliefs. An unusually high proportion of the burials contained artifacts, mostly of a fairly simple kind. They reveal some gender disparity in that adult males had on average more grave goods than adult females.[153] Some children, particularly girls, were provided with more costly items, which must be signs of affection, as well as ritual provisions for the marriage that never took place in life. Bent nails, deliberately broken pots, coins, burning lamps and other ritually significant objects show that the people of Vagnari saw life and death as subject to supernatural forces which could be counteracted by magical charms and apotropaic devices; but there is as yet no evidence for formal religious cult of any kind in the burials – or indeed in the settlement.

There must have been other, earlier, burials at Vagnari, but they have not yet been located. There are, however, two small fragments of marble funerary inscriptions which were found in the fill of a cistern, one of them datable to the early 1st century AD, the other to the late 2nd or 3rd.[154] They show that there were some burials of higher status (indicated by the use of marble) in this period, probably located closer to the *vicus*.

Although the cemetery is closely connected to the *vicus* and must have been intended for the burial of the dead of its community, it seems possible that it also served the more scattered community in the immediately surrounding area. We have argued, however, that a small amount of Early Imperial material on Site 223 may be from burials connected with Site 229, and there are traces of burials on Site 722, 4km away, datable by two fragments of ARS-A to before 300 AD.

c. The faunal remains

The analysis of the faunal remains of this period from Vagnari by Michael Mackinnon shows a balanced stock-raising economy with sheep/ goats accounting for 40.7% of the major domesticants, cattle 20.4 %, and pig 38.9%.[155] When these figures are adjusted for meat yields, cattle are by far the most important, accounting for 57% of the total, followed by pig (27%) and sheep / goat (16%). Some of the cattle were slaughtered young, as veal, but the primary use of bovines was as draft animals. The evidence for their size is rather meagre but seems to suggest that there were at least two breeds: a smaller one, probably used for the plough, and a larger one which is likely to have been used for hauling heavy carts.

The sheep, where they could be differentiated, outnumbered the goats. No juveniles were found in the contexts of this period but there were equal numbers (by the minimum number of individuals) of sub-adults and adults. The fact that there were no juveniles suggests that there was no selection of unwanted male lambs, which would in turn suggest that the sheep were raised primarily for their wool. Since they appear to have been slaughtered at approximately one-year intervals they were probably culled from transhumant flocks. The animals would have overwintered in pastures at Vagnari, and those deemed unsuitable for sending on the transhumance trail in May would have been slaughtered for local consumption.

No juvenile pigs were recorded from contexts of this period. Generally they were slaughtered when they had reached full body weight, half of them at less than 2 years, and most of the remainder before 3 years. The pigs would probably have been allowed to forage in the oak forests near the site which are suggested by the wood carbon analyses.

Apart from the major domesticated species, one equid, one dog and 2 domestic fowl bones are attested in the sample of this period. There were also the remains of several wild animals, including six bones of red deer, one of roe deer and one of hare. The deer bones are further evidence of the existence of woodlands not far from the site.

d. Cultivated plants

The analysis of the carbonized seed remains from the most recent excavations at Vagnari by Matthew Stirn and Rebecca Sgouros reveals that a wide range of crops

[151] Emery *et al.* 2018b. Cf. Prowse *et al.* 2010.
[152] Emery *et al.* 2018a. Cf. Prowse *et al.* 2010. There is no oxygen isotope analysis published for F37.
[153] Brent & Prowse 2014.
[154] Small in *Vagnari,* 429-430.
[155] Mackinnon 2011.

was grown, presumably in fields near the site.[156] They include the principal hulled wheats – einkorn, emmer and spelt – and free threshing wheat (*Triticum aestivum* or *durum*). Barley is well attested, but not oats. Legumes included grass pea (*Lathyrus sativa*) and bitter vetch (*Vicia ervilia*), but not broad beans, lentils or chickpeas. Numerous olive pits were recovered as well as stones of sloe, apricot, and cherry.

There was also a wide range of field weeds, many of them spring-flowering species which suggest that the normal practice was to sow in the autumn and harvest in early summer, as it still is at Vagnari today. There was a tendency over time to grow more bread wheat and less hulled wheat, but even in the latest contexts (of Period 6, the 2nd and 3rd quarters of the 3rd century AD) some spelt and emmer were grown, as was barley. Stirn and Sgouros argue that the broad variety of species cultivated shows that the form of agriculture practised at Vagnari in all periods was well managed to mitigate fluctuating environmental conditions.

Some elements of the analysis are surprising and require a reassessment of how crops were selected, stored and used. The absence of the three most important legumes in the Roman diet – broad beans, lentils and chickpeas (four if garden peas, *Pisellum sativum*, are included) might suggest that the farmers at Vagnari did not rotate cereals with legumes; but it is perhaps more probable that the areas where these kitchen ingredients were stored were not located in the excavation. That would also explain the absence of millet in the record. Grape pips are also lacking, although it is clear from the existence of the dolium yard that grapes must have been pressed somewhere in the vicinity, as Maureen Carroll has suggested. The iron cutting tool P824 found in the burial F34 of the first half of the 3rd century AD could have been used for pruning vines.[157]

e. The carbonized wood remains

Other analyses were carried out on samples of carbonized wood remains by Girolamo Fiorentino and Milena Primavera.[158] The fuel used in one of the tile kilns was firewood, mainly ash and oak. In samples from occupation layers of this period, oak (*Quercus* sp.) and beech (*Fagus* sp.) predominate. They were perhaps used in the construction of the buildings. Other species found included hop-hornbeam and purging buckthorn (*Rhamnus cathartica*). Alan Dand's analysis of the forms of the charcoal shows that these two species are attested especially by fragments of round-wood, which suggests that these scrubby species were coppiced and the cut wood burned for charcoal.[159] Smaller quantities of elm (*Ulmus* sp.), maple (*Acer* sp) and aspen (*Populus tremens*) were also found in these contexts.

The beech timber must have been imported to the site from some distance away since beech in South Italy is acclimatized above the 800m contour. But all the other species are still represented today in the *Bosco Comunale* of Gravina, and they would therefore have been fully adapted to the area surrounding Vagnari. Since it is unlikely that the large amounts of firewood required would have been carted for long distances to the kilns, there is good reason to suppose that the vast uncultivated area to the S and E of Vagnari revealed by the field survey (see below) was given over to forest as well as rough grazing. It would seem, however, that the forest was carefully managed to provide both charcoal for the smithies and braziers of the settlement and firewood for use in the kilns.

f. A problem of interpretation: olive cultivation and the production and use of olive oil

Some of the surprising features in the analysis of the carbonized seed remains from Vagnari have been mentioned above. Another is the recurrence of large numbers of crushed olive pits in most phases of the settlement. They are so numerous that Stirn and Sgouros suggest that olive oil must have been produced in sufficient quantity for export. Yet no olive wood was found in the carbonized wood remains from the first phase of the excavations.[160] Olive trees need to be pruned yearly if they are to be kept productive, and the prunings should be valuable as kindling wood. Mature olive wood has a high calorific value and would have been wanted for burning in the stoke-holes of the tile-kilns and in the furnace of the presumed bath-house. It would be possible to reconcile the conflict in evidence by the rather awkward assumption that the olive groves were situated so far from the site that it was not worth bringing the pruned wood back to Vagnari for burning, but that the raw fruit was sufficiently valuable to be brought there for processing. If the oil produced in the *vicus* was intended primarily for export, that might explain the distribution pattern of oil lamps in our Survey Area (Cat. 21). Since mould-made lamps of the imperial period were found on only a third of the sites, generally the largest and apparently richest, it is likely that oil was too expensive to be burnt in lamps in the small farmhouses that sprang up on the imperial estate in the course of the 2nd and 3rd centuries AD.

g. Coinage in the economy

There is a marked contrast between the distribution of coins in the settlement and in the burial ground.

[156] In Carroll ed., forthcoming.
[157] Small & Small 2007, 163 and fig. 15.
[158] in *Vagnari*, 329-342.
[159] in *Vagnari*, 340-342.
[160] Fiorentino, Primavera *et al.* 2011, 329-342.

In the settlement, only two coins of the Early or Middle Empire were found in the excavations of 2000–2007, namely a *dupondius* of Domitian of 86 AD, and a *sestertius* of Antoninus Pius of 157–158 AD.[161] The rarity of coins of this period on the site must mean that coins were not routinely used for commercial transactions in the *vicus.* This implies a very different level of economy from that of the villa on Monte Irsi, only 12km to the S where many more coins both silver (*denarii*) and base metal were found, including the small hoard of denarii mentioned above.[162] Michael Crawford is no doubt right in asserting that the use of coined money as a means of exchange was largely limited to the cities of the Empire,[163] but it would seem that in and around our Survey Area, coinage in this period might be used for transactions carried out in a wealthy villa rather than in a *vicus* such as Vagnari, where routine transactions must have been done by barter or notes of exchange. This supports the theory developed by Neville Morley that the commercial transactions of villa owners were generally insulated from the local market places.[164]

In the cemetery, however, single coins generally of low value and sometimes badly worn were frequently deposited in burials, according to the ancient custom of "Charon's fee".[165] It would seem, therefore, that bronze coins were generally set aside and kept for use in the funerary ritual.

h. Summary of the economy

Since there was no city (*municipium* or *colonia*) anywhere in the vicinity, Vagnari must have served as the economic centre for the surrounding area with a market for local produce and manufactured goods. Its tileries must have provided for the needs of neighbouring communities as well as Vagnari. We can trace the pattern of distribution only in the case of tiles stamped by Gratus before the middle of the 1st century AD: with one exception, probably made in the kiln at San Gerolamo, they have all been found within a radius of 2km from the site. The smithies at Vagnari presumably also served the needs of the surrounding settlements.

These, however, must have been only minor elements in the economy of the imperial estate. Agriculture is likely to have been of greater importance, going beyond the needs of the subsistence of the population of the *vicus* in some commodities. The winery probably produced a marketable surplus, and grain production is likely to have become increasingly significant in the course of the 2nd and 3rd centuries when the estate began to be split up into smaller units better suited to arable cultivation.

Forest products – charcoal, firewood and construction timber – may also have been exported.

But the main element in the economy, and the *raison d'être* of the estate, at least in its initial phases must have been the exploitation of rough pasture for transhumant sheep. There can be no decisive proof of this assertion, but the situation of the estate close to the E-W drove road, the fact that much of it consisted of uncultivated land, and the analysis of the age of slaughter of the sheep are all factors that strongly support it. The pastures around Vagnari would have provided winter grazing for the emperor's sheep, and they could also have been rented out to private *pecuarii.*

The main product of transhumant sheep was wool, and we might expect, therefore, that Vagnari would also have been a centre for the textile industry, especially since the Survey Area seems to have been deeply involved in weaving in the previous period. But the excavation has produced no good evidence for textile production. This may be accounted for in several ways. It is possible that the horizontal two-beam loom, which dispensed with loomweights, was used on the estate as it was in some other parts of Italy in this period. But the wool would still have needed to be washed, carded and spun, and no traces of wool-washing facilities, carding combs or spinning whorls have yet been found at Vagnari. An alternative explanation, which I have argued elsewhere, is that the production of wool on the imperial estates was a specialized industry, and that wool shorn at Vagnari was transported to another centre to be weighed out, washed, carded, spun and woven, perhaps at Venosa where there is evidence for large scale wool working, or on another imperial estate in its vicinity.[166]

It is possible that some of the wool produced on the imperial estate was processed in the villa on San Felice, where there is good evidence (discussed below) for wool production. It points to the production of textiles on a small scale using a vertical warp-weighted loom, adequate for local needs but not for supplying an external market. It is possible, therefore, that some of the wool produced on the estate was kept back for local use and woven in the villa while most of it was sent away for processing.

[161] R. Abdy in *Vagnari*, 408, tables 1 and 2. There is also a probable (ancient) forgery of a denarius of 138-161 AD: *ibid*, table 2, P663.
[162] E.M. Wightman in *Monte Irsi,* 210-216.
[163] Crawford 1970, 45.
[164] Morley 2000.
[165] The coins from the 2002 excavation in the cemetery identified by R. Abdy are published in Small & Small (eds) 2007, 146, 149 Table 6. Those found in all the burials excavated down to 2012 are listed in Brent & Prowse 2014, 102-103.
[166] Small 2014a, 53-64. For the specialized organization of the textile industry in South Italy, see Di Giuseppe 2012, 279-96.

iii. The villa on San Felice (Site 229)

The villa on the shoulder of the plateau of San Felice was also redeveloped in this period.[167] The discovery of a tile stamped by Gratus, slave of Caesar on the site, indicates that the property had been acquired by the emperor early in the Julio-Claudian period, and we have suggested at the end of Chap. VIII that this may have happened early in the career of Octavian. The excavators of the villa have argued that several modifications which constitute Phase II of its construction were carried out after it had passed into the imperial *patrimonium*. The residential quarters were reduced in size, and the productive part of the villa was expanded. The wall surrounding the peristyle was raised, and the central water feature was converted into a basin, possibly for washing wool. Seeds of soapwort (*Saponaria officinalis*) found in contexts of this phase add strength to this hypothesis since the leaves and roots of the plant can be boiled in water to produce a cleansing liquid that can be used in textile making. Various utensils, including parts of distaffs, a carding ring, spindles and spindle whorls found in a midden of this phase show that wool was spun in the villa, and the discovery of 34 loomweights indicates that textiles were woven there on an old-fashioned vertical loom.[168] This phase of activity came to an end early in the 2nd century AD. In the succeeding Phase III, the wool-washing tank in the peristyle was abandoned, the area was subdivided into smaller spaces by a series of dry-stone walls, and various other modifications were made. This phase did not last long. The building was abandoned around the middle of the 2nd century, possibly after an earthquake. There was then a post-occupational phase which lasted into the early 3rd century AD when two pottery kilns were built in the remains of the structures. A limekiln may also date to this phase. It was presumably used for burning materials robbed from the ruined structure.

At the time when *Vagnari* was published, in 2011, we argued that the villa was likely to have been inhabited by the imperial functionary who administered the whole estate, including the *vicus*; but the more recent analysis of the results of the excavation in the villa by McCallum and vanderLeest casts doubt on that interpretation.[169] The humble character of the complex seems inappropriate for a high-ranking imperial administrator. No ceremonial rooms have been located, but there are various indications that part of the building was used for textile production. McCallum and vanderLeest suggest two scenarios: either the villa was occupied by a lower-level imperial administrator, perhaps an *actor*, as part of a strategy of direct management of the estate, or the property was managed indirectly through leasehold arrangements; but the latter scenario seems improbable in this period. The evidence from elsewhere in our Survey Area, discussed below, suggests that it is likely to have been occupied by a local imperial administrator/ manager, and to have been abandoned after the emperor had begun to subdivide the estate into leasehold tenancies in the late 1st or early 2nd century AD.

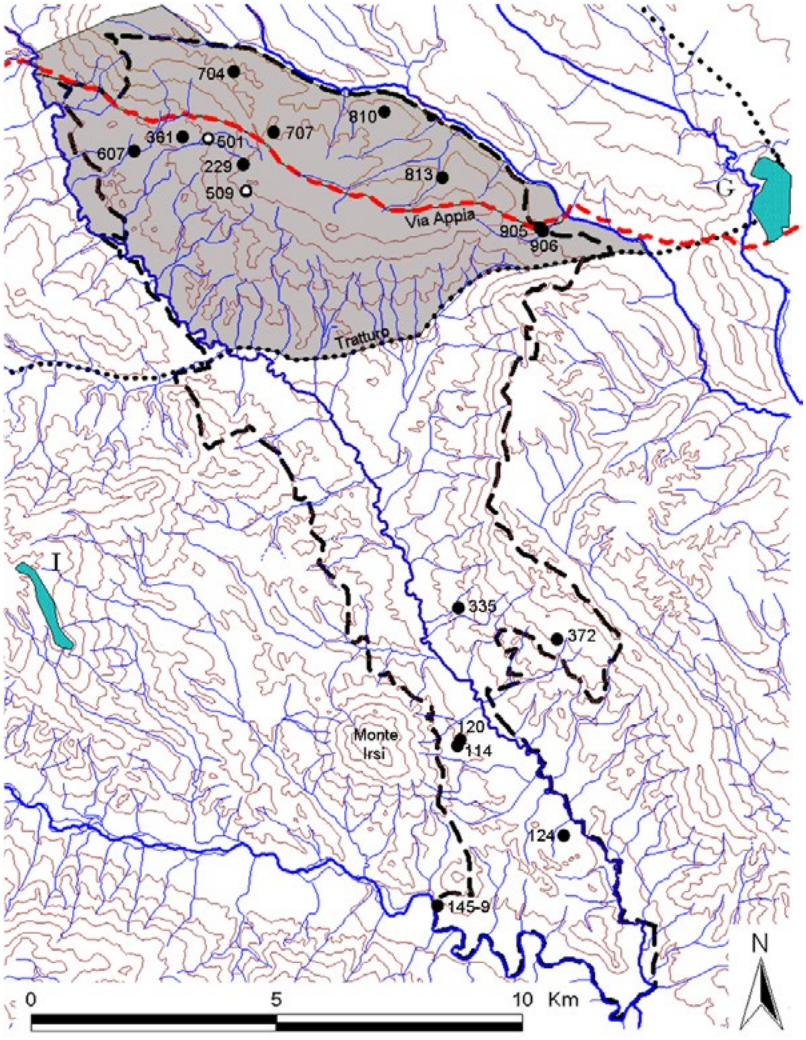
iv. The imperial estate centred on Vagnari

a. The estate in the Early Empire

We have argued elsewhere that the evidence from the field survey helps to define the extent of the imperial estate.[170] We originally assumed that the boundaries of the property were likely to have been conspicuous geographical features, and that the estate was roughly triangular, bounded on the SW by the Basentello river, on the N by the line of the Via Appia as we envisage it, and on the SE by the drove road which separated it from the nearest property in this direction which was centred on the villa at Site 372. The estate so defined would have measured ca. 30.50km^2. But that was probably an under-estimate because one of the tiles stamped by Gratus was found on Site 707 which lies to the N of the Via Appia.[171] Moreover one of the stamped tiles associated with Pompey was found on Site 704 which is also situated to the N of the Via Appia, and if Pompey's landholding passed into the hands of Octavian/ Augustus as we have argued (Chap. VIII.9.viii), then it too suggests that the boundary of the estate passed further to the N. It is more likely, therefore, to have followed the course of the *torrente* Pentecchia di Chimienti to near its source, and then to have traversed the Serra Lamacolma to where the Via Appia crossed the Basentello near the modern dam (Map IX-6).

The total area amounts to approximately 48.00km^2. Analysis of the surface scatter suggests that within this area, a zone of at least 500ha in the vicinity of Vagnari was cultivated, presumably to meet the subsistence needs of the inhabitants. The rest of this vast area was probably uncultivated. It was presumably given over to forest and/or rough grazing. Within the estate, as we have imagined it, there were only two inhabited sites of any importance at the beginning of the imperial period: the *vicus* at Vagnari, and the villa on San Felice, though there were a few small sites in the northern sector. Site 707 where one of the tiles stamped by Gratus was found was small with few fine wares and was probably a farmhouse. Site 704 further to the N was the find-spot of the tile stamped for Pompey, but the other material from the site is later (of the Middle Empire), so it is possible that the tile was re-used from Site 703 some

[167] McCallum & vanderLeest 2011; 2014.
[168] McCallum & vanderLeest 2014, 130.
[169] McCallum & vanderLeest 2014, esp. 132-133.
[170] C. Small & A. Small 2005.
[171] Small, Volterra and Hancock 2003, 181 no. 3 and fig. 3.



Map IX-6. Sites of the Early Empire in our Survey Area. The hypothetical area of the imperial estate is shown in grey.

200m away. This had been occupied in the Hellenistic period, but declined in the Early Empire and vanished altogether in the 2nd century AD. It is not unlikely that the settlement shifted at that time to Site 704, as we argue in the List of Sites.

Site 813, the largest site in the whole Survey Area in the preceding period, was still in existence, but it had dwindled greatly and did not outlast the 1st century AD. The much smaller Site 810 also dwindled though it survived into the late Antique period. Sites 905 and 906 on the other hand flourished in the early Empire, though even if, as we have suggested, they formed parts of single complex, it was not very large. It would have been near a reliable spring on the road near the E edge of what we believe to have been the imperial estate, and it no doubt owed its survival to its location.

Beyond the boundaries of the estate, but probably not contiguous with it, there were at least two other imperial properties of unknown size: one centred on Botromagno, indicated by the tile of Caesar Augustus (mentioned above), and one in which the kiln site of San Gerolamo was situated, 11km SE of Vagnari, where another tile of Gratus, slave of Caesar, was found.[172]

b. The development of the estate in the 2nd and 3rd centuries AD

The distribution map of sites datable between the late 1st and 3rd centuries AD by fragments of ARS pottery (Map IX-6), shows that in the 2nd century AD, if not before, the imperial estate at Vagnari began to be split up into smaller units. Site 607 which had been occupied in the Late Iron Age was re-founded in the 2nd century. Site 704 which had no ITS, yielded ARS of the 1st to 2nd centuries AD. We have suggested that it was formed as a result of a move from Site 703 just across the stream. Further E, Sites 715, 719, 606, 722, 710 and 820 emerged during the 2nd or 3rd century. They were all small and the last 3 are likely to have been at least partly roofed in thatch or turf, since relatively little tile was found on them. That may also be true of Site 606 but it is more likely to have been an additional (non-residential) building for the farm on Site 607. By contrast, Sites 715 and 719 had nearly 40kg of tile each and must have been more solid structures. The former was presumably a farmhouse, the function of the latter is uncertain since it was too disturbed to give much indication of what was originally on it. Site 722 was a burial site – we found scattered human bones belonging to two adults – but a burial implies some habitation and there are indications that there may have been a domestic building here too, though it is unlikely to have been roofed with tile.

The new sites were established on good arable land and they are likely to have been run as small farms. Most of them had a *dolium* for storage but since none of them had a *dolium* yard (to judge by the scarcity of *dolium* fragments in the surface scatter) it is unlikely that they were cultivating vines or olives at a commercial level. Probably they were growing cereals and no doubt other staple crops. They point, therefore, to a significant change in the management of the imperial estate around the end of the first or beginning of the 2nd century AD

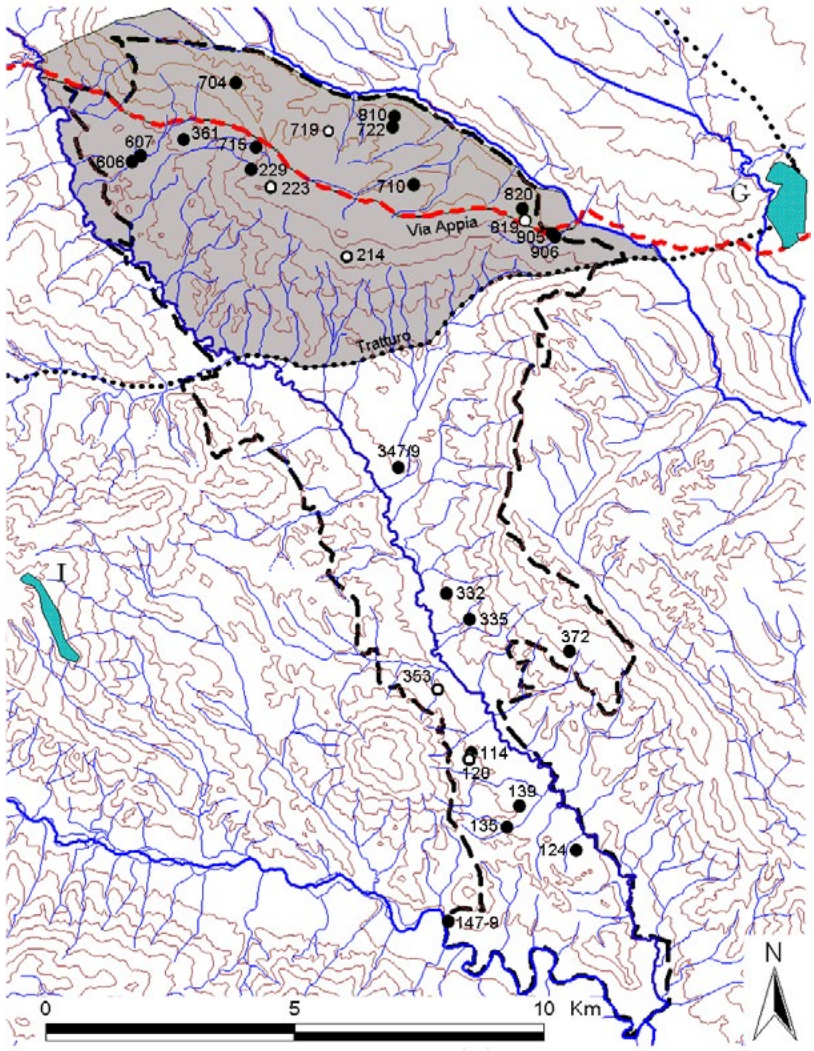
[172] Small, Volterra and Hancock 2003. 181 no. 2 and fig. 2.

which saw some land previously used for forest or rough grazing cleared for agriculture, leaving the less fertile areas still available for forestry or rough grazing.

The new sites were often ephemeral – of those listed above Sites 715 and 722 did not last into the late Empire, but they were replaced by others. The subdivision of the estate was an ongoing phenomenon and often the new developments were very poor but they must have had an impact on the economic viability of the villa on San Felice, which was abandoned around the middle of the 2nd century AD (see above).

c. The agronomics of the imperial estate

The background to this development is likely to be the growing concern of the emperors with the problems of ensuring a reliable supply of grain, not just for the city of Rome which was provided with the *annona* from Sicily, Africa and Egypt, but for the municipalities in Italy and the cities of the provinces. Even in Apulia where the climate and geography were well suited to grain production there are some signs that the supply of grain available locally was inadequate. At Bari, at some time in the middle or last half of the 2nd century AD, an *augustalis*, L. Gellius Primigenius, gave the city 10,000 sesterces to augment the funds available for the local grain distribution (*annona frumentaria*). For this he was awarded a bronze statue by the decurions of the city.[173] It was probably the need to ensure that there was sufficient arable land to supply the population of the cities that led Domitian to promulgate his edict of 92 AD ordering the destruction of vineyards in the provinces and forbidding new plantations in Italy.[174] The growth of the population of the City of Rome in the earlier part of the Empire seems to have led to an increase in the cost of grain, making arable cultivation more profitable.[175] To produce grain at Vagnari it was necessary to subdivide the estate into lots of suitable size for cultivation.



Map IX-7. Sites of the Middle Empire in Our Survey Area. The hypothetical area of the imperial estate is shown in grey.

The policy of subdividing part of an estate into smaller units rented out to tenants rather than farming the land directly with a slave workforce living in barracks attached to a villa and controlled by *vilici* was not new, but it became increasingly favoured in the course of the first two centuries AD as the most efficient means of managing a large estate.[176] It is the form of economic management which the younger Pliny applied on his Tuscan estate, except for the demesne immediately surrounding his villa which was farmed by slaves managed directly by a *vilicus*. His letters throw much light on the conditions of his *coloni*. They at first held their farms on traditional short leases, perhaps of four or five years, but they were barely able to make ends meet, and in 107 AD he contemplated changing to a new system of share-cropping which was coming into favour at that time, by which *coloni* contracted to pay a percentage of their produce to their landlord.[177] Under

[173] Silvestrini 2008; Fioriello 2017, 55; Mastrocinque 2017, 92.
[174] Suetonius, *Domitian* 7.2. Statius, *Silvae* 4.3.11-12: *Cereri ... reddidit iugera.*
[175] As argued by De Neeve (1984, 127-129).
[176] De Neeve 1984, passim.
[177] See Pliny, *Ep.* IX. 37.3, with the discussion by Sherwin White, 1966,

it the landlords and tenants shared the risks, and the tenant had some protection against the failure of his crops in bad seasons. On the other hand, the tenant had little incentive to improve his farm since to do so would benefit his landlord even if the latter had not contributed to the improvement. The landlord would also be more likely to monitor his investment more closely, intervening in the tenant's management of the farm and keeping an eye on the quantity of the harvest, as Pliny intended to do when he appointed some of his own slaves as *operis exactores, custodes fructibus* to oversee the work and check the produce. Such intrusions into the free management of their hired farms must have reduced the social standing of the *coloni*.

It might be argued that the evidence for the imperial estate ceases in the Julio-Claudian period when the tile stamps of Gratus came to an end, and that the emperor may have sold the estate to others; but that seems unlikely, firstly on the general ground that the emperor rarely alienated property once it had been formally incorporated in the *patrimonium*,[178] and secondly that the pattern of settlement inside the presumed bounds of the estate remains anomalous. If the estate had been sold to a private individual or individuals, one would expect to find at least one large villa which would have been the residence of the landowner when he visited the property and the administrative centre of the estate; but the villa at San Felice ceased to be inhabited around the middle of the 2nd century, and after that period there was no other villa in the vicinity. It is more probable, therefore, that the estate was subdivided by imperial administrators, who saw this as a means of simplifying the burden of administration while at the same time ensuring that there would be a reliable source of revenue from the *coloni* in the form of rent from the new *fundi* – perhaps more reliable than would have been the case with other forms of management, even if it meant accepting a reduced revenue in return for the stability.[179]

A similar system had already been introduced on imperial estates in Africa Proconsularis, perhaps as early as the later years of Nero.[180] There *coloni* were in short supply, so the imperial procurators resorted to renting out the land to middle-men (*conductores*) who parcelled it out in smaller units to *coloni,* who were given perpetual rights to their land, and who paid their rents in kind as a proportion of their crops. The practice is attested on several inscriptions from the Bagradas valley, including one of 116–117 AD from Henchir-Mettich, which specifies the rights and duties of the *coloni* in detail. It seems likely that the emperor copied the system developed there and applied it, no doubt with some modifications, to some, if not all, of his Italian properties, including Vagnari. It was a version of this system that Pliny adopted on his Tuscan estates, though he appears to have been unusual as a private landlord in doing so.[181]

The *coloni* who rented the new farms created on the imperial estate were people of modest means (to judge by the surface finds), but they would nevertheless have had a relatively privileged position in comparison with *coloni* on private estates which were subject to frequent changes of ownership.[182] Some were probably of local origin, but others (a minority) were brought in from elsewhere in Italy or from abroad, as the osteological analysis is demonstrating (see above). They probably varied in social and legal status. Some are likely to have been free tenant farmers (*ingenui* or *liberti*), but others may have been *servi quasi coloni:* individuals who were theoretically and legally slaves, but who were treated as equivalent to *coloni* with similar obligations.[183] They appear on the scene already in the 1st century BC, and are cited in various entries in the *Digest* which show that private landowners, like the emperor, might prefer to lease out farms to slaves in the absence of suitable free-born tenants rather than manage them directly with slaves supervised by a *vilicus*.

Not all the rural habitations need have been occupied by *coloni* or even by slaves. There was also a class of free landless labourers, *inquilini*, who rented their habitations.[184] Some were artisans, but others were casual labourers, hiring themselves out for work when they could get it. They must have been among the poorest of the rural population and may have inhabited some of the smallest sites apparently roofed with thatch that were found on our field survey, as for example Site 820 where the main scatter was in a nucleus of only 300m^2.

d. Sub-regional economic factors relating to the estate

As we have seen, the prevailing trend in South Italy was for small sites to disappear during the course of the first three centuries AD, the converse of what happened in our Survey Area. It is likely, therefore, that the unusual development in our area was the result of economic factors impacting at a sub-regional level. The subdivision of the imperial estate must be the result of a rational policy and may be connected with the fact that vast areas of grazing in the lower Ofanto valley and the Tavoliere came into the imperial *patrimonium* during this period. Prominent among these was the estate of the Calvisii Sabini between Venosa and the

520-521.
178 Maiuro 2012, eso. 88-108.
179 Cf. Kehoe 2007, 54-55.
180 Kehoe 1988; 1997, 223.
181 Pliny, *Ep.* IX.37.
182 Pelham 1911, 275-299.
183 Kehoe 1997, 166-173; Rosafio 2002, 52.
184 Rosafio 2005.

Ofanto river which was probably acquired by the imperial *patrimonium* when C. Calvisius Sabinus, consul in 26 AD, committed suicide under Caligula in 39 AD to avoid prosecution for *maiestas*.[185] The subsequent development of the estate inside the *patrimonium* is likely to have led to the expansion of the textile industry at Canosa.[186] In the Flavian period the emperor acquired other properties in the vicinity of Aecae, which he continued to add to in the course of the 2nd and 3rd centuries AD, creating the nucleus of the huge *Saltus Carminianensis* of the Later Empire.[187] They were centred on the *Praetorium Laverianum* near Luceria,[188] which was connected by transhumance trails with summer pastures in the Abruzzi. Giuliano Volpe has suggested that the Praetorium was a property of the family of the Laberii who were related by marriage to the Bruttii Praesentes, and that their property may have been confiscated and absorbed into the imperial estate after the death of Bruttia Crispina, wife of Commodus who had her killed in 191–192 AD.

It is possible that after acquiring these properties in North Apulia the emperor found himself oversupplied with pasture for sheep raising and reverted to more productive uses of the better land in the area of San Felice and Vagnari. Another contributary factor may have been the development of an important textile industry in Cisalpine Gaul, where the imperial estates were re-organized by Claudius.[189] It is surely significant that Columella, writing in the time of Nero, reports that the Calabrian, Apulian and Milesian sheep used to be considered of exceptional quality, and the Tarentine ones the best of all, but that in his own time Gaulish sheep were considered more valuable, especially those from Altinum and those kept in sheep folds around Parma and Modena.[190] The elder Pliny (*NH* 8. 190) was more equivocal (but also more obscure) in seeming to hold that Apulian sheep were best for wool that was short in the fleece, Cisalpine ones for long white fleeces and Canosan ones for yellow fleeces. It would seem that the Apulian wool industry continued to prosper but became more specialized to meet the competition from Cisalpine Gaul. In these circumstances, the emperor may have expanded his production in Cisalpine Gaul and reduced that in the remoter parts of Apulia.15. Conclusions

Augustus imposed some order on the haphazard arrangements for municipal government that had been made in the period following the end of the Social War by grouping the *municipia* and *coloniae* in eleven regions that corresponded more or less to the territories of the main ethnic units of Italy before the Roman conquest. The border between *Regio II* (Apulia and Calabria i.e. the Salentine peninsula) and *Regio III* (Lucania and Bruttii) followed the Bradano-Basentello river from its mouth on the Ionian Gulf to its source near Palazzo San Gervasio. Venusia was put in Apulia. The part of our Survey Area to the E of the Basentello fell in Apulia, the W part in Lucania. The territory of the former *polis* of Metaponto being W of the Bradano, ended in Lucania. The practical purpose of the regional arrangements is not fully understood, but its cultural significance was important since it perpetuated and conditioned the way people thought of their historical identity; and it created a structure for regional administration which would be adapted from time to time to suit the requirements of government policies. By and large it has remained unchanged to the present day.

The unsystematic development of the municipal system in the Late Republic left an administrative vacuum in a large part of Central South Italy which was partially filled by the development of *vici* attached to major roads. The emperors favoured the development of *vici* on their own estates since, as commercial centres, they could be an important source of revenue. At the beginning of the principate Octavian/ Augustus acquired several estates in the central part of the Fossa Bradanica, including the particularly large one which occupied the northern half of our Survey Area. It was administered at first from the villa on San Felice, but its economic centre was the *vicus* at Vagnari situated close to the Via Appia, where the labour force of the estate lived and was buried. The village was built under Augustus to an orthogonal plan on the site of a late Hellenistic farmhouse and rebuilt around the end of the 1st or beginning of the 2nd century AD under a later emperor, probably Trajan. Part of the population was brought in from outside Italy, probably as slaves. Workshops in the *vicus* supplied the needs of a wider area.

The land in the immediate vicinity of the *vicus* was farmed, and some of it was given over to vineyards from which wine was produced for sale in more distant markets, but most of the estate consisted of forest which provided the fuel needed for the industries in the *vicus,* and rough grazing for transhumant flocks of sheep. The revenues from the pastures are likely to have been the main economic base of the estate during the Early Imperial period. With much land taken out of agricultural production the settlement pattern on the estate was extremely thin. In the S half of the survey area, on the E bank of the Basentello, settlement was equally sparse consisting of a single villa and a small riverside settlement. The land here was privately owned in the Early Empire (as we know from tile stamps) and was probably also used for pasture. Only on the W bank

[185] Dio LIX.18; Grelle 1981, 223; Silvestrini in *ERC* I, 24-26, no. 20.
[186] For the wool industry in Canosa, see Grelle & Silvestrini 2001.
[187] Volpe 1998, 332-333; Romano & Volpe 2005; Chelotti 2007, 174-175.
[188] Recorded as *Pretorium Lauerianum* on the Peutinger Table, between Aecae and Arpi.
[189] Maiuro 2012, 223-227.
[190] Columella VII.2.3. For wool production and the textile industry in Cisalpine Gaul, see various studies in Busana (ed.) 2012.

of the river in the vicinity of Monte Irsi were there smaller agricultural units.

The sparse population was not, however, isolated. In spite of its remoteness from any municipality, the Survey Area was easily accessible from both the Adriatic and the Ionian coasts and the inhabitants were able to acquire goods from various parts of the Empire.

During the course of the 1st century AD other properties suitable for sheep-ranching in N Apulia and Cisalpine Gaul came into the *patrimonium*, and the emperor had less need of the estates in the Fossa Bradanica for sheep ranching. Moreover, the soils on the imperial estate were well suited to agriculture, so towards the end of the century the imperial authorities began to create small landholdings within it which could be leased out for cultivation to *coloni* or to *servi quasi coloni*, following a principle of land management that had already been established on imperial estates in N Africa. By this means the emperor simplified the administration of his properties and gained a more secure, although probably lower, revenue. By the end of the 2nd century 5 or 6 new small-holdings had been created on the estate around Vagnari. Most of the farmhouses were small, and some were probably thatched, so the inhabitants may have been living at a subsistence level once they had paid their rent in cash or kind.

There were other changes in the management of the imperial estate in the 2nd century. The villa on San Felice which had probably been the local centre for the administration of the estate in the Early Empire was abandoned around the middle of the century when the management of all the emperor's estates in Apulia was transferred to a new office of a *procurator saltuum Apulorum* at Luceria.

The other large, privately owned, estates within our Survey Area show a broadly similar development, with an increase in the number of small settlements datable to the Middle Imperial period. It is probable, therefore, that their owners copied the management practices introduced on the imperial estate. Since there are no signs of any luxurious villas anywhere in the Survey Area, it is likely that the properties were owned by absentee landlords.

Further to the N and E in the area of the Older Surveys the pattern of settlement was rather different. In the Early Empire There were strings of sites of various kinds situated at irregular intervals along the two main routes through the Fossa, and perhaps in the area between them that was less thoroughly surveyed. Many of them continued into the 2nd and 3rd centuries, and beyond, and although some disappeared, there were also new foundations, so that the total number at the end of this period was only a little less than it had been at the beginning. The occupants of farms located on good agricultural land close to the drove-route below the Murge are likely to have been engaged in both cereal cultivation and sheep-ranching. Except at the SE edge of the survey area there were few villas, and none that could be compared with the luxurious examples seen, for example, at Paduano on the Adriatic coast in the 1st century AD, or at the Masseria Ciccotti in the Upper Bradano valley in the 3rd.

In the territory of Venusia the settlement history was very different. There the plantation of veterans in the triumviral period had resulted in a marked increase in the number of small and medium-sized sites, but, as in many other parts of Italy, there was a continual process of merger and consolidation in which smaller farmhouses and villas were abandoned and their land was absorbed into larger estates centred on more luxurious villas. By the end of the 3rd century nearly half of the settlements of the Early Imperial period had been abandoned. At the same time new forms of settlement emerged with clusters of houses grouped around the largest villas, as for instance at La Santissima near the N end of the area of the Older Surveys.

By contrast, at the other end of the Fossa Bradanica, in the Metapontine plain, settlement density reached its lowest level in the Early Empire with 11 sites occupied, rising to 20 in the Middle Empire, in a survey area of approximately 47km^2;[191] so in the Early Empire there was on average 1 site in every 4.2km^2, and in the Middle Empire, 1 site in every 2.35 km^2. These figures can be compared with those for our own Survey Area where there were 15 sites occupied in an area of ca. 100km2 in the Early Empire, and 21 in the Middle Empire, giving averages of 1 site in every 6.7km2 in the Early Empire and 1 in every 4.7km2 in the Middle Empire. The figures are not directly comparable since the physical geography and soils of the two areas are quite different, but it is probable that in both cases extensive sheep-ranching led to a drastic reduction in the rural population, just as they have done at other times and in other countries. The increase in numbers in the Middle Empire suggests that around Metaponto, as in our Survey Area, there was a new policy of creating small-holdings inside areas of pasture to encourage cultivation.

These survey results show that it is rather pointless to make broad generalizations about the state of agriculture and of the rural population in Italy under the Roman Empire, given the degree to which the pattern of settlement and land use varied from one subregion to another. Even within the Fossa Bradanica there were contradictory trends: changing patterns

[191] The area has been calculated from the information in *Chora Metaponto III.1*, Introduction pp. xxi-xxii, and from the map in vol. 3, 1141 fig. 32-2.

of supply and demand, fluctuations in the nature and supply of labour, and varying systems of administration. In our Survey Area the existence of the imperial estate and the management policies associated with it resulted in a form of exploitation somewhat different from that of the areas surrounding it and one which began to change radically during this period. The availability of transport and good communications also predictably influenced the economic policies of those who controlled the area.

Chapter X. The Late Roman Empire

The period begins in 284 AD with the accession of Diocletian, whose reforms created the Late Roman system of provincial government in Italy and subjected the population of the peninsula to payment of taxes in kind; and it finishes with the end of the imperial system of government in the western half of the Empire symbolized by the deposition of Romulus Augustulus in 476 AD.

1. Pottery and other artifacts

Only a few types of artifact have been used in this study to date site occupancy in this period. They are as follows.

i. African red slip (ARS)

ARS continued to be the preferred tableware throughout this period, imported from what is now Central Tunisia (C ware) and Northern Tunisia (D ware). The pieces are catalogued by Philip Kenrick (Cat. 15). The commonest shape in our Survey Area (and elsewhere) is the low dish with oblique wall of Form 50, which John Hayes subdivided into an earlier type with steep wall (from 50A) and a later type with more flaring wall (Form 50B). Form 50A overlaps with the previous period, but pieces assignable to Form 50B fall within the 4th century, as do the bowls of Forms 52 and 53, both found in our Survey Area. Later forms include the bowls Forms 67 and 68 which extend from the mid-4th to the mid-5th century and so fall within the time-frame of this chapter, and the dish Form 61, and small bowl Form 73 of the 5th century which extend a little beyond it. The bowl Form 93B lasts into the 6th century and so overlaps more in date with the next period. The piece No.1057 with impressed palm-frond motif is Late Imperial.

ii. Amphorae

Disantarosa's study of the transport amphorae from Vagnari and the Survey Area shows that many of these containers were imported into the Basentello valley from North Africa in this period. The series begins with Tripolitanian III oil amphorae datable between the mid-3rd and late 4th centuries AD, and with Africana IIC and II D cylindrical amphorae. Around 400 AD they give place to carrot-shaped *spatheia* of type 1 (with several variants). The end of the type 1 series corresponds broadly with the lower limit of the period being considered here.

iii. Other wares

The cooking pots and plain wares can hardly be used as indicators of this period since the same types generally continue well into the time-frame of the next chapter. The regional red-slipped ware decorated with lines and spirals incised after firing which is attested at San Giovanni di Ruoti and Ordona in contexts of the early 5th century, was not found in our field survey, although examples are known from Vagnari.[1] It is a precursor of the Late Roman Painted ware ("ceramica di Calle") typical of the next period. No glass vessels, lamps or coins datable to the period being considered here were found.

2. The Historical background

i. South Italy in the Later Roman Empire

A period of relatively stable conditions in the 4th century AD under the administrative régime imposed by Diocletian and Constantine was followed by a more disturbed period after the death of Theodosius I (395 AD) when the emperors or their agents strove ineffectively to control the barbarian tribes which they were forced to accommodate inside the boundaries of the empire. South Italy, however, was far removed from the turbulent events in the frontier provinces and was only directly affected by them on the few occasions when barbarian tribes penetrated far down the Italian peninsula. They included a band of Sarmatians who were settled in the province of *Lucania et Bruttii* under the control of a *praefectus Sarmatarum gentilium per Brittios et Lucaniam* recorded in the *Notitia Dignitatum*.[2] They were probably installed there by Constantine who is known to have settled Sarmatians in several parts of the Empire including Italy in 334 AD; but the settlement has not been located.[3] Alaric's invasion at the head of his army of Visigoths in 410 AD was more destructive. After sacking Rome, he headed for Campania and then Bruttii by way of Lucania which he devastated.[4] He failed to cross to Sicily and died at Consentia (Cosenza) in 411 AD, leaving his brother-in-law Athaulf to retreat with the Gothic army to the North. The damage caused by the Goths in Italy was so great that in 413 AD the emperors Honorius and Theodosius II had to reduce the taxes levied on most of the suburbicarian provinces, including *Apulia et Calabria* and *Lucania et Brittii* (Bruttii) for five years.[5]

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[1] *SGR* I, 83 no. 103; *Ordona* X, 434 fig. 392; *Beyond Vagnari*, 92.
[2] *Notitia dignitatum in partibus occidentis.* XLII.47-50.
[3] Anonymus Valesianus I. 32, Eusebius. *Vita Constantini.* 4.6; *LRE*, 85; R.J. Buck in *SGR I*, 32.
[4] Jordanes, *Getica*, 156.
[5] *C.Th.* XI.28.7.

Of greater long-term importance for the economic history of South Italy, and especially of Apulia, was the Vandal conquest of Africa Proconsularis which resulted in the fall of Carthage in 439 AD, and the loss of the African *annona* – the tax in grain on which the city of Rome depended. For a while there was a worry that the Vandals under Genseric might invade Sicily and Bruttii from their North African bases at a time when the enfeebled western regime of Valentinian III was preoccupied with defending the provinces against the Visigoths. They did in fact capture Lilybaeum and began to besiege Palermo, but withdrew when the great fleet arrived from Constantinople. But in the meantime, the defence of Sicily and Bruttii was organized by Cassiodorus, a senator who owned vast estates in Bruttii. According to his great-grandson of the same name, the author of the *Variae*, he freed Bruttii and Sicily from the Vandal invasion by raising a force of armed men to defend those provinces.[6] Since his great-grandson says nothing about his holding any official position at the time, it is likely that he raised the force of armed men on his own initiative, as Tullianus was to do a hundred years later (Chap. XI.3.i). The episode is significant since it shows how real power in South Italy was passing from the increasingly ineffective imperial government at Ravenna into the hands of great landlords like the Cassiodori and Nicomachi.[7]

The historical sources tell us practically nothing about events in South Italy in the last thirty years of the Western Empire when the succession of feeble emperors and their *magistri militum* were struggling to defend what was left of the empire against the Huns, Goths and other barbarian invaders. The army now consisted entirely of Germanic units, some settled inside the empire and others who were called in from outside to fight for the Romans against other barbarians, but who might demand more for their services than the empire could or would offer. The house of cards collapsed when the barbarian federates under the command of the Scirian officer Odoacer demanded to be settled on land inside Italy. When the demand was refused they deposed the boy-emperor Romulus and proclaimed Odoacer as king.

ii. The provincialization of Italy

Under the new system set up by Diocletian the empire was divided into four tetrarchies, each consisting of a number of dioceses into which the numerous provinces of the end of the 3rd century were grouped. There were 12 dioceses in all. Italy lost much of its privileged status but was nevertheless treated as a single diocese governed by a vicar (*vicarius*) of the Praetorian Prefect. It was subjected to direct taxation for the first time. For routine administration, the diocese of Italy was divided into a number of provinces which conformed broadly to the former Augustan regions. The provinces of *Apulia et Calabria* and *Lucania et Bruttii* were each controlled by a *corrector* who was responsible for civil government in his province, especially for administering justice (taking over the role of the former *iuridici*) and for ensuring that the new taxes were duly collected. He might be of either equestrian or senatorial rank, but early in the 5th century the position of *corrector* of *Apulia et Calabria* was upgraded, and the governor appointed was an ex-consul (*consularis*).[8] In several places the provincial boundaries differed from those of the Augustan *Regio II*: the one most relevant to our area is Metaponto which was located in Apulia, according to an entry in the second recension of the *Liber Coloniarum*. It is likely to have been transferred from Lucania to Apulia in the Diocletianic reform.[9]

3. Taxation

In the last half of the 3rd century the state had resorted to more or less haphazard requisitions to meet its needs in goods or services. Under Diocletian the state's demands were rationalized and the imposts were organized according to an established formula. Since the coinage system was in disarray, Diocletian required the taxes to be raised in kind or in services. The tax liability of the population of the empire was calculated partly on the productive capacity of the land (measured in *iuga,* the *iugum* being a theoretical unit devised for this purpose), and partly on the head count (*capita*) of the adult rural population. The taxable units were established by a census, and the amount of tax to be paid per *iugum* or per *caput* was set in five-yearly cycles of indictions.[10] The data were added to the land registers kept by the municipalities, and the governing body of each city (the decurions) was made responsible for collecting and recording the taxes.[11] These were normally levied on the landowners (*possessores*), but in some cases were paid by their tenant farmers (*coloni*). The level of tax was set to meet the predicted expenses of the government in each indiction. These included first and foremost the maintenance of the army on the frontiers, but also the provisioning of Rome, the financing of public construction works, and all the costs of the new civil administration which now included

[6] Cassiodorus, *Variae* I.4.13: *avus Cassiodorus inlustratus honore praecinctus, qui eius generi non poterat abnegari, a VVandalorum incursione Bruttios Siciliamque armorum defensione liberavit,* (from a letter of Theodoric to the senate conferring the patriciate on the father of Cassiodorus of the *Variae*: *avus* is therefore his great-grandfather.

[7] The Cassiodori: Sirago 1983; the Nicomachi: Sirago 1993, 325-328.

[8] Cassius Ruferius: *ERC* I, no. 26; Grelle 1993, 168-169.

[9] *Lib. col.* II: Campbell 2000, 202.24; Grelle 1999, 119. Venusia, however, remained in Apulia: *Lib. col. II*: Campbell 2000, 202.12.

[10] An indiction was a requisition. Diocletian introduced regular budgeted levies initially based on a tax cycle of 5 years. This was later changed, probably under Constantine, to one of 15 years, the first year of the first cycle being fixed at 312 AD. The word *indictio* came to be applied to the cycle as well as to the levy: *LRE,* 61; Cheyney 1961, 2.

[11] Vera 1999, 1007-1010.

great numbers of staff needed to make the system work. If the taxes raised were not adequate, the state had recourse to further levies.

Constantine modified the system by dividing the diocese of Italy into two vicariates: *Italia annonaria* consisting of the regions north of the Apennines, and *Italia suburbicaria* made up of the regions of Central and South Italy together with the islands of Sicily, Corsica and Sardinia. The taxes raised in *Italia annonaria* went to meet the expenses of the army and the court; those from *Italia suburbicaria* went primarily to the provisioning of Rome. The vicar of Annonaria resided in Milan, and the vicar of Suburbicaria was based in Rome.

Since the two regions of immediate interest to us, *Apulia et Calabria* and *Lucania et Bruttii* fell into *Italia suburbicaria*, the taxes raised in them were designated for supplying the population of Rome, and the agricultural production of both regions was revamped to meet the demands of the tax-gatherers. The assessment of both regions reflected their geographical conditions.

i. Pork levy in Lucania

The main product levied in *Lucania et Bruttii* under Diocletian's reform was swine, for which it had a higher valuation than any other province.[12] The administration of the levy was entrusted to the guild of *suarii* whose agents collected the requisite number of live pigs from the *possessores*, and drove them on the hoof to Rome, where they were slaughtered and their meat was distributed to those on the official register of recipients in the *Forum Suarium*. Since the tax obligation was calculated in pounds of meat, the animals were weighed at the point of collection. They inevitably lost weight on the road to Rome, so various adjustments were made to the system by subsequent emperors to make good the deficiency. But not all landowners produced pigs, and not all land was suited for pig-raising, so Constantine allowed the *possessores* the option (under the procedure of *adaeratio*) of paying the tax in coin at a tariff corresponding to the price of pork on the local market, and the *suarii* then used the money to buy pigs from other landlords. In the early 5th century some at least of the meat was provided in preserved form (*laridum*), but this was probably a short-lived expedient. *Adaeratio* was made obligatory early in the 5th century, and all *possessores* were then required to pay the tax in gold *solidi*.

The pork levy had profound consequences for the economy of the province. Once the infrastructure had been created to raise, collect and move the pigs, it became profitable to produce more animals which could be sold to the *suarii*. Large estates were therefore created in mountainous and wooded country which were given over largely to pig production. The most obvious example is the villa at San Giovanni di Ruoti (sub-section 14.i) where swine were by far the most important element in the livestock raised on the estate,

Without excavation it cannot be proved that pig production was increased in the Lucanian part of our Survey Area in this period, but it seems probable that it was, since much of the agricultural land is likely to have been left uncultivated after the villa on Monte Irsi was abandoned in the 2nd century AD. It would have reverted to the kind of oak forest that still covers the slopes on the north side of the hill.

ii. Grain levy in Apulia

In Apulia the main products levied in tax were probably grain and wool, the two commodities for which the region was particularly famous. The need for Apulian grain[13] must have increased when Constantine transferred the Egyptian tithe from Rome to Constantinople. But the grain levied from Apulia did not at first go to feed the population of Rome, which could still depend on the *annona* from Sicily and Africa. It is more likely to have been exported up the Adriatic to the Army in North Italy,[14] and only used to supplement the Roman supply in times of shortage. It became, however, an essential component in the grain supply of the city after the Vandals conquered Africa Proconsularis and cut off the shipment of grain from North Africa. The journey for ships sailing from Apulia to Portus was longer and so more expensive than it had been from Africa, but it was relatively secure as long as the Romans controlled the seas; and if necessary grain could be loaded on pack animals and carried across the mountains in sacks.[15] The importance of Apulian grain is shown vividly in a letter written by Sidonius Apollinaris in 468 AD when he was City Prefect in which he expresses his relief at the news that 20 grain ships coming from Brindisi had reached the Tiber mouth.[16]

Like the levy on pigs in Lucania, the levy of grain had a marked effect on the rural economy of Apulia in that it stimulated production in the areas best suited to cereal cultivation.

iii. Taxation in the countryside

Some idea of how the tax system operated in the countryside can be got from the so-called Trinitapoli

[12] For the pork levy, see esp. Chastagnol 1953; Barnish 1987.

[13] For grain from Apulia: Small 1994; Volpe 1996, 257-270.

[14] Vera 2008, 2014, 192.

[15] As happened in 497 AD when Symmachus sent grain from his estates in Apulia to help avert the threat of famine in Rome, as he records in. *Ep*. VI.12, For pack animals used to transport Apulian products: Manacorda 1994.

[16] *Ep*. I.10.

Table which gives the text of a constitution of Valentinian I laying down new regulations on the collection and recording of taxes to be enforced by the Praetorian Prefect.[17] The key figures at the local level were the *praepositi pagorum* who had to make monthly reports on the taxes collected in the public granaries in rural areas (*pagi*) in the territories of the cities (*civitates*). The accountant of the city (*tabularius civitatis*) then collated these reports and forwarded them to the office of the provincial governor; and the governor himself had the duty of touring the roads and rural areas of the province (*per pagos et vias*) to meet the local *possessores* at a stipulated place and make sure that their declarations corresponded with the quotas registered in their names in the city archives.

The heading of the law inscribed on the marble slab is missing, but an aside in the text addressed to Probus makes it clear that it was addressed to the Praetorian Prefect Sextus Claudius Petronius Probus who was prefect of Italy, Illyricum, Africa and the Gauls under Valentinian I. The law replicated in the Trinitapoli Table was therefore intended to apply to the whole of the prefecture, if not to the whole empire. It clearly presupposes that the territories of *civitates* were normally subdivided for taxation purposes into smaller administrative districts called *pagi*. In Lucania and other parts of Italy where the local forms of government still retained traces of their roots in the pre-conquest Oscan culture, there were still *pagi* which formed rural subdivisions of municipal territories, and which could be used as bases for the collection of taxes in kind. They are attested in Lucania in an inscribed land-register from Volceii dated to 323 AD which reflects the organization of the *civitas* for taxation purposes in the time of Constantine. It is incomplete but must have recorded 70 or more estates owned by an individual with the *gentilicium* Turcius in at least 7 *pagi* of the municipality.[18] But *pagi* are less easily traced in *Apulia et Calabria* where there is very little evidence for them at any time. Here the local unit of administration is more likely to have been the *vicus,* or even the large villa, and this is envisaged by another enactment of Valentinian I (or a redacted version of the same enactment) given in greatly abbreviated form in the *Codex Theodosianus* (I.16.11), which is also addressed to the Praetorian Prefect Probus. It requires the provincial governors to visit all villas and *vici* repeatedly.[19] *Vici* are a conspicuous feature of the archaeology of the period in South Italy, and it is a reasonable assumption that some of the *vici* on the road system, including Vagnari, were designated places where the provincial governor would meet the *possessores* of the surrounding area, as the law required.[20]

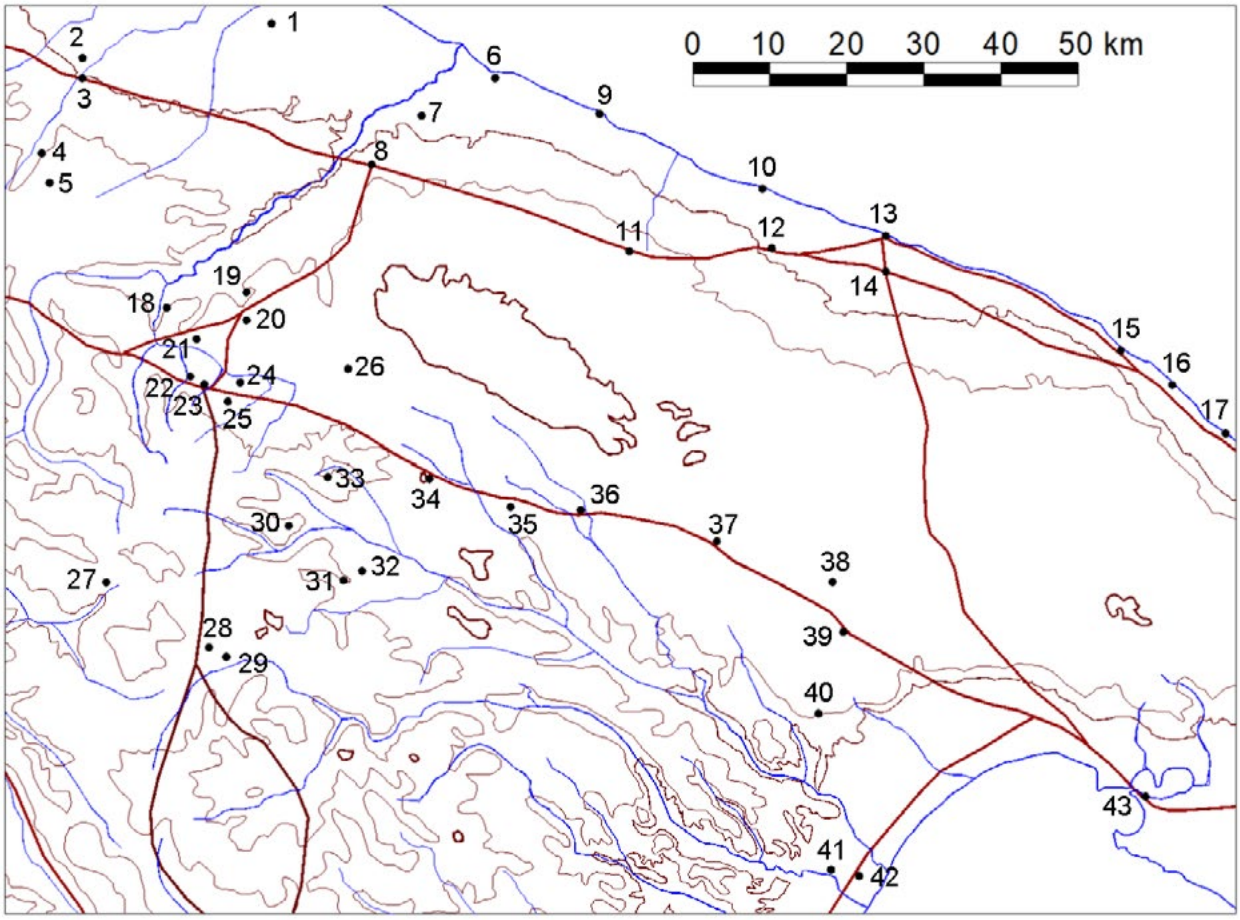
4. Roads

For the system to work, the *pagi* had to be connected to the *civitates* where the records were kept by good roads. Our Survey Area was remote, but it was linked by the Via Appia with Venusia, the nearest centre of importance, and it seems likely therefore that the *pagi,* where the taxes were collected in this part of the Fossa Bradanica, were now considered territorial subdivisions of Venusia, and that the *vici* which served them were situated on the road. They probably included the large Late Roman settlements at Santo Staso, Vagnari and Vinson's site V16 (described by him as comparable in size and importance to Vagnari). The largest of the buildings excavated at Vagnari (sub-section 16.i) may have served as the official centre where the bureaucratic procedures envisaged by the law of Valentinian I could have been carried out.

The transport and marketing of the grain and other agricultural produce required the restoration and further development of the infrastructure of roads and ports by which the commodities were shipped to Rome, or to wherever else they were required.[21] The *cursus publicus*, initially set up by Agrippa in the time of Augustus to speed up official communications throughout the empire, required strings of road stations organized at intervals along the roads. They included *mansiones* where travellers could find food and lodging, which were usually in cities, but were sometimes at smaller settlements (probably *vici*). Between the *mansiones* there were *mutationes*, changing stations where there were horses or mules at hand for use by official couriers and others with special authorization from the Emperor.

Diocletian adapted and extended the system to meet the needs of the new economy. The details are obscure, but he probably required the *mansiones* to be equipped with storehouses where the produce levied in payment of the taxes could be recorded and stored, and where draft animals and carts could be obtained for transporting heavy commodities.[22] Two documents reveal the vast extent of the road system at this time: the *Antonine Itinerary*, and the *Tabula Peutingeriana*, both of which appear to have been compiled (in their original versions) in the period of the tetrarchy.[23] Both record the system of public roads in South Italy, and there is a broad

[17] Giardina & Grelle 1983; Volpe 1996, 147-148; Grelle 1999.
[18] *CIL* X.407. Turcius can probably be identified with L. Turcius Apronianus who was city prefect in 339 AD: Champlin 1980.
[19] *Provinciis praesidentes per omnium villas sensim atque usitatim vicosque cunctos discurrant* ... The passage is discussed by Giardina and Grelle (1983, 287).
[20] Cf. Volpe 1994; 1996, esp. 147-196. For *vici* as settlements within *pagi* and the relations between them, see Todisco 2011, 52, 130-132.
[21] Grelle 1999.
[22] The relevant sources in the law codes are collected by R.J. Buck (1983, 46-51).
[23] For the date of the *Antonine Itinerary*: Calzolari 1996, 380-382. For the *Tabula Peutingeriana*: Talbert 2010, 136, 153.



Map X-1. Places in the Fossa Bradanica and adjacent regions mentioned in the text.
Bp = bishopric; civ = *civitas*; fm = farm; st = *statio* (*mansio* or *mutatio*); vic = *vicus*; vil = villa. 1. *Salapia* (civ, bp); 2. Posta Crusta (fm); 3. *Herdoniae*/ Ordona (civ); 4. Faragola (vil); 5. *Ausculum*/ Ascoli Satriano (civ). 6. *Bardulos*/ Barletta (vic). 7. *Cannae* (vic); 8. *Canusium*/ Canosa (civ). 9. *Turenum*/ Trani (vic, bp). 10. *Natiolum*? (st); 11. *Rubi*/ Ruvo (civ?); 12. *Butuntum*/ Bitonto (civ?); 13. *Barium*/ Bari (civ); 14. *Caelia*/ Ceglie (civ?); 15. Turris Caesaris/ Polignano (vic); 16. *Dertum*/ Monopoli (vic); 17. *Egnatia*/ Egnazia (civ, ch); 18. Casa del Diavolo (vil/ vic); 19. La Correggia (vil/ vic); 20. La Forestella (vil/ vic); 21. La Foragine (vil/ vic); 22. Toppo di Costanza (vil/ vic); 23. *Venusia*/ Venosa (civ); 24. Bagnara (vil/ vic); 25. La Rimessa (vil/ vic); 26. La Santissima (vil/ vic); 26. *Bantia*/ Banzi (civ); 27. San Giovanni di Ruoti (vil); 28. Malvaccaro (vil); 30. *Potentia*/ Potenza (civ); 31. San Gilio (vil); 32. Mass. Ciccotti (vil); 33. *Aceruntia*/ Acerenza (civ); 34. Monte Serico (vil or vic); 35. Vagnari (vic); 36. Santo Staso (vic); 37. *Blera* (Mass. Castello) (st); 38. Mass. Bonifacio (vil); 39. *Sub Lupatia*/ *Sublubatia* (Mass. Caione) (st); 40. *Genusia*/ Ginosa (civ); 41. San Biagio (fm); 42. *Metapontum*/ Metaponto (vic, ch); 43. *Tarentum*/ Taranto (civ).

correspondence between them, although some elements are missing in the *Table*, and the two documents differ in the location and names of some of the road stations, and in some of the distances given. Both show the Via Appia dividing at Beneventum with one branch (the Via Traiana) heading E by way of Aequum Tuticum. In the *Antonine Itinerary* it continued to Canosa, Bari, Brindisi and Otranto, but in the *Tabula Peutingeriana* the central section through Canosa is missing, probably as a result of a copyist's error at some point in the transmission. The second branch (the continuation of the Via Appia) led in both documents to Aquilonia, Venusia, Silvium (*Silutum* in the *Tabula*) and Sublubatia. In the *Itinerary* it continued on to Taranto, but this section, too, is missing in the *Tabula Peutingeriana*. A third road, the Via Herculia, is recorded primarily in the *Itinerary*, though some elements of it are depicted on the *Tabula*. It was created under the tetrarchs by putting together existing tracks to serve the Lucanian hinterland. It left the Via Traiana at Aequum Tuticum and linked Venusia on the Via Appia with Potentia, Grumentum and Heraclea on the Ionian coast. Several milestones with the names of the tetrarchs record its construction. Two of 311 AD state that Maxentius restored it and give the name to the road.

The *Tabula Peutingeriana* also shows several cross-roads, not recorded in the *Itinerary*. Two of these are of interest for the broader context of our Survey Area – a road which linked Sublubatia on the Via Appia S of Silvium with Egnazia (*Gnatie* in the *Tabula*) on the Adriatic coast by way of Ad Veneris; and the coastal road from Taranto by way of Heraclea and Caulonia to

Rhegium (Reggio Calabria) with various intermediate stations. It is noteworthy that it does not indicate Metaponto, placing instead *Turiostu* at the mouth of a river which might be either the Bradano or the Basento. The significance of this change is discussed in the next chapter. Two milestones with dedicatory inscriptions to the emperor Julian found in the settlement may refer to the construction or reconstruction of another road leading into the interior.[24]

Diocletian's reforms proved inadequate, however, and Constantine revised the system, dividing the *cursus publicus* into two more specialized departments, the *cursus velox* for rapid communications of official messages, and the *cursus clavularius* which carried official personages and transported heavy commodities including the goods levied in payment of the tax.[25] Some idea of the complexity of the system of road stations set up in these reforms can be got from the *Itinerarium Burdigalense,* which records numerous *mansiones* and *mutationes* along the route taken by an anonymous pilgrim from Bordeaux who visited the Holy Land in 333/ 334 AD, and gives the distances between them.[26] His outward journey by way of Milan, Pannonia and Constantinople does not concern us here; but on his return journey, after re-visiting Constantinople, he crossed the Adriatic from Aulon (Valona) in Epirus to Otranto, and from there travelled along the Via Traiana to Benevento, Capua and Rome. In the Central Apulian section of his route between Egnazia and Canosa, he lists 8 road stations including 4 *civitates*, and 4 *mutationes*, set on average 12.5 Roman miles apart – two more than in the *Antonine Itinerary*, reducing the average distance interval by a quarter. In Campania and Latium the distances between *mutationes* were smaller, ca. 8 miles, approximating to the distance that oxen might be expected to haul a heavily loaded cart in a day.[27] The Dutch excavation of a changing-station at Valesio (*mutatio Valentia*) mid-way between Lecce and Brindisi throws an interesting light on the facilities that might be found at these new changing points.[28] It was founded in the time of Constantine and contained a bath suite occupying an area of 500m^2. The other buildings have not yet been excavated.

The *Antonine Itinerary* and the *Tabula Peutingeriana* record *mansiones* along the roads where travellers could get food and accommodation. They were usually cities (*civitates*) but might be *vici* or simple road stations set up to fill a gap. Their frequency depended on the road and the communities that it served. On the Central Apulian section of the Via Traiana between Egnazia and Canosa the compiler of the *Antonine Itinerary* lists 5 undifferentiated road stations between 11 and 23 Roman miles apart, with an average distance between them of 16.6 miles; on the Via Appia between Venosa and Taranto he lists 5 ranging from 13 to 20 miles apart, with an average distance of 16 miles, but the average is worthless since as we know, a road station must have dropped out of the list in the long section between Venusia and Silvium. The actual distance between the two points is ca. 56km or 38 Roman miles. That corresponds fairly well with the 35 miles shown in the Peutinger Table (an unusually long stretch), but makes nonsense of the 20 miles recorded in the *Itinerary*.[29]

It is likely, then, that a road station situated ca. 15 Roman miles from one end or the other of this stretch of the road has fallen out of the *Itinerary*. The most probable candidate is Vinson's site V16 situated ca. 14.8 miles from Venusia, though his site V14 (Monte Serico), situated 15 miles from Silvium/ Santo Staso is also possible. Vinson rejected the latter solution on the grounds that "the Roman site there was only about 30-40m square and its limits are quite clearly defined",[30] but a site of that size might have been large enough to contain a *mutatio.* It appears to correspond to site A020 in the preliminary survey carried out by McCallum and his team which they had been unable to explore because the grain had not yet been harvested.[31]

But a comparison with the road stations listed in the *Itinerarium Burdigalense*, and those in the *Antonine Itinerary* shows that the latter does not normally include changing stations.[32] It is quite possible, therefore, that there was a mansio at Site V16, and *mutationes* at Monte Serico after 10.8km (7.2 Roman miles) and then Vagnari after 11.8km (8 miles) before reaching the *mansio* of Silvium at Santo Staso after 10.5km (7.1 miles). Such a series of road stations would have made the bulk transport of agricultural produce much easier.

Further S, between Silvium and Tarentum, the Antonine Itinerary lists three intermediate stations, at Blera (13 miles), Sub Lupatia (14 miles), and Canales (13 miles), 20 miles from Tarentum. Luciano Piepoli identifies Blera with a site at the Masseria Castello in the territory of Altamura and Sub Lupatia (*Sublubatia* in the Peutinger Table) with one at the Masseria Caione in the territory of Laterza; but the location of Canales has not yet been determined.[33]

As in the previous period, it is doubtful that this stretch of the Via Appia between Venusia and Tarentum

[24] Giardino 1982, 155-160, tavv. 46-48; 1999, 185; 2012, 15-16, fig. 1.18 a and b.
[25] Lemcke 2016, 39-44.
[26] Cuntz 1929, 86-102; Gelsomino 1966.
[27] Coskun 2002.
[28] Boersma & Yntema 1987.
[29] I have discussed this section in detail in Small 2019. The toponym *Silvium* is given as *Silutum* in the *Table*.
[30] Vinson 1972, 86.
[31] McCallum *et al.* 2013, 7.
[32] Calzolari 1996, 386.
[33] Piepoli 2014; 2016.

received funding from the imperial treasury since there are no milestones from it to record its restoration by any emperor.

5. Ports

Most of the surplus grain produced in Apulia was transported to the Adriatic ports. The grain ships mentioned in Sidonius Apollinaris' letter (referred to above) had reached the Tiber mouth from Brindisi, still the most important port on the Adriatic coast of Apulia with the largest and safest harbour; but Siponto, in the Gulf created by the Gargano peninsula, was also important in this period for exporting grain from the Tavoliere.[34] There were numerous other harbours on the coast of Central Apulia which might have been used as smaller trading stations. Seven are marked on the *Tabula Peutingeriana:* Bardulos (Barletta), Turenum (Trani), Natiolum (?Giovinazzo), Barium (Bari), Turris Cesaris (?Polignano a Mare), Dertum (?Monopoli) and Gnatie (Egnazia).[35] Of these, Bari[36] became the main port between Brindisi and Ancona, eclipsing Egnazia. There were other smaller harbours strung out along the shore. Barletta and Trani were probably now substantial *vici*.[37] All were well placed not only for exporting grain and other commodities to Rome, but also as ports of call for ships following the Adriatic coast to Ravenna, or for more distant traffic to Constantinople and the Eastern Mediterranean.

Surplus grain from our Survey Area may have been loaded on baggage animals or on carts and hauled to one or other of the harbours on the Adriatic; but it is also possible that it was transported down the Bradano-Basentello valley either by road or on barges and shipped through Metaponto where excavation has shown that a new wharf was built on the shore in the second half of the 4th century with warehouses for storing grain and amphorae.[38] We have already seen that there are reasons for thinking that the river may have been navigable in the Roman period (Chap. IX.14.i.a,b).

6. Cities

As we have seen, the state depended on the city authorities not only for their traditional roles in administering justice, regulating local markets, repairing roads etc, but also for maintaining the land registers in which the ownership of local estates was recorded. Their responsibilities were greatly increased in the Late Empire when the city authorities were required to record the taxes raised on the estates within their territory and make good any shortfalls that might arise. The burden became so great that members of the local aristocracies became reluctant to accept nomination to the local senate (*curia*) and to undertake the civic duties (*munera*) for which its members (now generally known as *curiales*) were traditionally responsible. The state responded by making membership of the *curia* hereditary, but that did not prevent impoverished members of the class from falling into debt and losing their estates and their civic status.

The decline of the curial class led inevitably to the decline of the municipalities, as public buildings ceased to be maintained and rich private houses were abandoned.[39] This was a widespread phenomenon, but it varied considerably from one city to another depending on local circumstances such as the fertility of the land, the situation of the city in the network of roads, and its accessibility for maritime trade. In the Late Empire most of the inland *municipia* of South Italy decayed, including Rubi (Ruvo), Butuntum (Bitonto), Caelia (Ceglie), and Genusia (Ginosa) (see Map X-1) in the area that was once Peucetia, and Ausculum in Daunia.[40] Butuntum is a clear example: it is recorded as a mere changing post on the Via Traiana (*mutatio Butuntones*) in the *Itinerarium Burdigalense.* The problem was aggravated by a series of earthquakes which affected this part of Italy in the latter half of the 4th and first half of the 5th centuries AD. Earthquake damage has been detected in cracks in the substructures of the amphitheatre at Venosa, and in other parts of the city, leading to a rise in the ground level where damaged buildings were flattened, and the realignment of some ancient streets.[41] At Taranto large parts of the city were abandoned around the middle of the 4th century, and ground levels were raised, possibly after an earthquake.[42] At Ordona some of the public buildings, including the basilica and the *palaestra* lost their original function in the late 3rd or early 4th century and were adapted to form workshops and storage areas. But in the late 4th or early 5th century there was a greater catastrophe, probably caused by an earthquake which destroyed much of the city. The bath suite was restored but what was left of the other public buildings was abandoned, and the city shrank to become a settlement of huts.[43] Earthquake damage at Vagnari probably accounts for the move from the north to the S part of the site in the late 4th century AD.

[34] Volpe 1996, 81-82.
[35] Cf. Volpe 1999b.
[36] Disantarosa 2018.
[37] Volpe 1996, 150-156. But the evidence for Barletta is meagre: Goffredo & Volpe 2015.
[38] Giardino 1991, 852; 1999, 185; 2012, 14.
[39] For South Italian cities in the Late Empire, see esp. Grelle 1999; for Apulian cities in the Late Roman to Early Medieval period, there is a good summary in Giuliani 2013. For problems of interpretation of the evidence, see Arthur 1999.
[40] For Ausculum, see Goffredo & Fico 2009, 49-52.
[41] Salvatore 1989; Marchi & Salvatore 1997, 136.
[42] Mastrocinque 2010, 5, 56.
[43] Mertens 1995, 339-345; Giuliani 2013, 331, 333.

The coastal cities were also affected. At Egnazia the public buildings of the city lost their original function in the second half of the 4th century and were adapted over time to form small single-cell habitations and workshops. After the beginning of the 5th century the *praefurnium* of the bath building was adapted for metal working, and other spaces were used for lime kilns to burn marble stripped from the structures of the previous period.[44] The status of Bari is more doubtful. Recent excavations in the area of the great church of San Nicola did not reveal contexts of this period, but numerous amphorae of North African origin, datable to the 4th and 5th centuries, which were found redeposited in later filling layers show that it remained an important port for the trans-shipment of these wares. It is likely that some of the amphorae unloaded here were sent on to other destinations in Central Apulia, including our Survey Area. But the dearth of inscriptions of this period casts doubt on the importance of Bari as a community. The only one datable with some probability to the 4th century AD, now lost, recorded a dedication to an unidentified emperor by Flavianus, probably *corrector Apuliae et Calabriae*. But its provenance is uncertain since it was found reused in the pavement outside the basilica of San Nicola, and it is probable that the medieval builders used *spolia* from Canosa in the church's construction.[45]

The cities that survived best into the Later Empire within the area of Map.X-1 were Venosa, Canosa and Taranto, all of which are recorded in the *Notitia Dignitatum* as centres of the imperial administration in the earlier part of the 4th century. At the first two there were imperial *gynaecea* where female textile workers wove and finished garments for court officials, and perhaps for the army.[46] Both cities were favoured by Constantine. A fragmentary inscription found at Venosa shows that he funded the construction or restoration of a building in the city, probably a bath complex. Most of the details are lost, but the emperor's titulature allows it to be dated between 25 July 317 and 24 July 318 AD.[47] Another fragmentary inscription, recorded at Cannae in the 16th century and now lost, suggests that he also funded a public building at Canosa.[48] That city has produced several inscriptions asserting its devotion to the imperial house, most of them sponsored by the provincial governor. The series begins with one from a lost group of statues representing Constantine as Augustus and his sons as Caesars, erected by the senatorial *corrector*, Volusius Venustus, to adorn a portico. The inscription states that Venustus was motivated by love of his *patria*, implying that he had some close family connection with the city.[49] Other inscriptions honour Constantine (again) and Julian. One of the latest in the series records the dedication of a gilded bronze equestrian statue of Flavius Theodosius, father of the emperor Theodosius I (379–395 AD), set up by the Apulians and Calabrians. The task of seeing that the monument was erected was entrusted to the provincial governor Flavius Sexio. It probably implies that the provincial *concilium* attended by the magistrates of the various cities in the province met at Canosa, which had become the seat of the governor and his retinue.[50] The last of the series records the erection of a statue in honour of the provincial *corrector*, Cassius Ruferius, of consular rank, by the governing body (*ordo*) of the *civitas* of Canosa in recognition of his merits and of his *dispositio* by which he renewed the city in every quarter. The inscription has been dated not earlier than the 2nd decade of the 5th century,[51] and it shows some significant changes in the administration of the province and its associated terminology. The city, which had been a *colonia* in the Middle Empire is now described as a *civitas*. The change in term is significant because the word *civitas* in Late Antiquity had come to denote the Christian city.[52] The provincial governor Ruferius now had consular status. He appears to have intervened in the local government of the city in a way that would have been inconceivable in the previous century, laying down a plan for its reconstruction. We may presume that it was in conformity with Christian principles of town-planning. It seems that by now only the provincial governor had the power to get things done effectively in the cities of the province, and his resources were so limited that he had to concentrate them on the renovation of Canosa.

Tarentum is recorded in the *Notitia Dignitatum* as the site of imperial dye works (*baphia*) which must have produced the purple garments, dyed with the mucous secretion of murex shellfish, for which the city was famous. It is the only city S of the Venosa – Canosa line to have profited from official patronage in the Late Empire. An inscription records the restoration of the main public bath complex, the *Thermae Pentascinenses,* by the *corrector*, Furius Claudius Togius Quintilius, some time in the second half of the 4th century.[53] The aqueduct which supplied the baths, the *Aqua Nymphalis*, was also restored at this time, making good some of the damage caused by the earthquake.[54] The city benefited from its role as a port on the Ionian coast,[55] and it is the only one in the province where remains of luxurious

[44] Fioriello 2012, 16-17, 21; Cassano 2017, 215-218.
[45] *CIL* IX.282; *PLRE* I, 343 *Flavianus* 4; Felle 2010, 470.
[46] Wild 1976.
[47] Silvestrini 1992-1993; Chelotti 2003, 123-125 no. 7.
[48] *CIL* IX.317; *ERC* I, no. 15; reinterpreted by Silvestrini (1992-1993, 127-128) as a donation by (not to) Constantine.
[49] Grelle 1991, 67-68, 1993, 161; *ERC* I, no. 16.
[50] Grelle 1991, 71, 1993, 167-168; Volpe 1996, 95-97; *ERC* I, no. 25.
[51] Grelle 1991, 72-73; Christol & Magioncalda 1996, 27; V. Morizio in *ERC* I, no. 26.
[52] De Mitri 2010, 14; Cantino Wataghin *et al*. 1996.
[53] *AE* 1896, 112; 1897, 5 n. 19; Lippolis 1997, 181-182; Volpe *et al*. 2007, 221.
[54] Mastrocinque 2010, 56.
[55] For Late Roman Taranto, see Cagiano de Azevedo 1979.

private buildings with mosaic floors of the Late Roman period have been found.

In Lucania, the main *civitas* relevant to our Survey Area, Bantia, shows few signs of activity in the Later Empire. Potentia too seems to have fallen into decline, in spite of its position on the Via Herculia. More surprisingly, Aceruntia (Acerenza) located on a hill top in one of the remotest parts of the province may have gained in importance in the 4th century, if we may judge from an inscription recording the dedication of a statue to the emperor Julian by the decurions of the city.[56]

As the urban fabric of the cities decayed, burials began to intrude into some of the vacant spaces, violating the ancient law of the XII Tables which forbade the burial or cremation of the dead inside a city. This widespread phenomenon is best attested (within the area of Map X-1) at Venusia,[57] but at Herdoniae too, burials infiltrated inside the city gates.[58] At Tarentum burials began to be made in the fringes of the forum area around the end of the 4th or beginning of the 5th century indicating that the forum had lost its function as the principal civic space.[59]

Throughout this period there was a slow process of selection in which only a few cities survived as important commercial or administrative centres, and even these were drastically reorganized. Those most relevant to our Survey Area are Venosa, Taranto, Bari and Canosa. Our Area was connected by the Via Appia directly to both Venosa and Taranto and less directly by other roads to Canosa and Bari.

i. Jews in the cities

An interesting index of the commercial vitality of some of these cities is the fact that they attracted communities of Jews. A series of imperial enactments preserved in the Theodosian Code (XV.8) shows that the later Roman emperors attempted to balance restrictions and privileges in order to regulate the Jewish communities of the Diaspora. On the whole the tendency was lenient: Jewish groups flourished in various Italian cities, and owned land in their territories. In Apulia and Lucania they are attested in this period by funerary inscriptions in Hebrew, Greek and Latin, some of them bilingual, found at Otranto, Oria, Taranto, Venosa, and possibly Potenza.[60] Since a rescript of Constantius II published in 339 AD prohibited them from consorting with women employed in imperial *gynaecea,* it is likely that many of them were involved in the wool trade, and perhaps in contracts for leasing pasture.[61] The constitution is couched in general terms, but it must have been particularly relevant in Venosa where there were both a *gynaeceum* and a flourishing community of Jews. They were no doubt also engaged in a variety of other commercial activities including wine production. A fragment of local pottery stamped before firing with the symbol of the menorah, found at Venosa, suggests that Jewish potters there were making the pots to contain the wine, probably for members of their own community.[62] Although the Venosan Jewish community was trilingual, Greek predominates in the inscriptions, reflecting the fact that Jews in the city were actively involved in trade with the Eastern Mediterranean. Although they buried their dead in Jewish catacombs and maintained their traditional practices, the leading members of the community participated fully in the life of the city, and at least two of them were recognized as city patrons.[63] Jews must have been prominent members of other cities as well: a constitution of Valentinian I which required Jews in *Apulia et Calabria* to fulfil their services (*munera*) to their cities suggests that they were on the governing bodies of several cities in the province.[64]

There was certainly a strong Jewish community in Taranto, attested by funerary inscriptions ranging in date from the 4th to the 10th century. There too the inscriptions are in Greek, Latin and Hebrew, but the earliest, of the 4th/5th centuries are in Greek reflecting the Eastern contacts of the community.[65] The Jewish colonies at Taranto and Venosa were the most important in Italy S of Naples in this period and must have been in frequent contact with each other. Jewish merchants from Venosa bound for North Africa or the Greek East are likely to have followed the Via Appia to Taranto, passing through our Survey Area, where it is surely not too fanciful to suppose that they may have stopped to negotiate the purchase and transport of grain and other commodities, while others travelling from Taranto to Rome by way of Venosa will also have passed through our Survey Area.

ii. Christians and pagans

The earliest Christian communities were established in coastal cities and *vici* along the major routes of communication. In the 4th century, bishops are attested in literary sources (primarily the *Liber Pontificalis* and the *Acta* of Church councils) at Aecae (near modern

[56] *CIL* IX.417.
[57] Marchi & Salvatore 1997, 133-144.
[58] Mertens 1995, 349.
[59] Mastrocinque 2010, 53.
[60] Colafemmina 1980; Volpe 1996, 112-114; Campione 2000, 77-78. Venosa: Chelotti 2003, 35-36, 39-41, 302 -314, nos. 282-309. Potenza (an inscribed menorah): Colafemmina 1983. It is surprising, given the importance of Canosa that there is no evidence for a Jewish community at that city. Conceivably they preferred not to live directly under the eye of the provincial governor.
[61] *C.Th.* XVI.8.6; Vera 2002, 253-254; 2014, 290.
[62] Di Giuseppe & Capelli 2005, 398.
[63] Chelotti 2003, nos. 282, 284, 286,
[64] *C.Th.* XII.1.158; Vera 2002, 253-254.
[65] Colafemmina 1977; 1980, 198-202.

Troia), Canosa, and Salapia in *Apulia et Calabria*, and perhaps at Brindisi.[66] The archaeological and epigraphic evidence adds considerably to this picture. It is particularly strong in the case of Canosa, the provincial capital, which must have been in the forefront of the Christianization of the region.[67] Remains of church buildings datable before the end of the 4th century have been found there,[68] and also at Egnazia[69] and Metaponto.[70] The first church at Siponto has been dated to the end of the 4th or beginning of the 5th century.[71] There is as yet no archaeological or epigraphic evidence for a church at Taranto in this period, but there must have been a Christian community there in the late 4th century since Paulinus of Nola refers to bands of Christians who came from Tarentum to celebrate the festival of the martyr St Felix in his burial place at Nola.[72] Others came from unspecified communities in the Ofanto valley, the Salentine peninsula (Calabria), the Tanagro valley in Lucania, and from various parts of Campania and Latium. His list shows that Christianity had spread more widely in South Italy that the few known named dioceses datable to this time would suggest. By the middle of the 5th century a denser network of bishoprics had been set up covering the whole region (discussed in the next chapter).

In Lucania (within the area of Map X-1) there is no reliable literary or archaeological evidence for bishoprics in this period, and it is likely that paganism held on more firmly in the more mountainous parts of the region, and especially in those areas where powerful senatorial families who had not yet embraced Christianity held large estates. There is an indication of this in a glass drinking cup in the British Museum, decorated in gold leaf with the image of Hercules in the centre of the tondo flanked on either side by a larger male and female figure.[73] An inscription in the border around the tondo *Orfitus et Constantia in nomine Herculis,* combined with another *acerentino felices bibatis* in smaller letters flanking the heads of the couple, gives their names, and places them under the protection (name) of the Acerentine Hercules; and it urges them to drink (or live) happily. It has been convincingly argued that the Orfitus of the inscription can be identified with Memmius Vitrasius Orfitus, prefect of Rome between 354 and 359 AD, and that the cup celebrates his marriage to a woman of the imperial family. The findspot and circumstances of discovery of the cup are unknown, but since the couple are associated with the cult of Hercules at Acerenza it is likely that Orfitus held property in this part of Lucania. He was a known pagan and the combination of the evidence of this cup and the dedication to Julian suggests that Acerenza was a centre of pagan resistance to the spread of Christianity in Lucania in the mid-4th century AD. It was far from the regional seats of government at Salerno and Reggio.

The bishoprics at Aecae and Canosa were both situated on the Via Traiana, and the Christian communities there were well placed to welcome pilgrims who followed the land route to Brindisi or Otranto on the way to the sacred sites in the Holy Land. As we have seen, the pilgrim from Bordeaux returned from his journey to Jerusalem by this route. But the pilgrims who travelled from Taranto to the shrine of St Felix at Nola are more likely to have followed the Via Appia by way of Silvium and Venusia and so would have passed through our Survey Area on their way to Campania, perhaps using Vagnari as a *mutatio* on their way. Other pilgrims from the vicinity of Taranto also travelled along the road *en route* to the shrines of the Christian martyrs in Rome.

It would not be surprising, therefore, to find traces of Christians at Vagnari and in the surrounding area in the 4th century. There is, however, no certain evidence to show that Christianity reached the site in this period. One piece which might have a Christian reference is a fragment of a tile used to cover a burial at Vagnari (F220) excavated in 2008, which was marked before firing, not with the usual impressed arcs, but with a finger-drawn loop resembling a fish, with fins and eye indicated by impressed dots (Fig. X-1).

The tile was laid with the image facing downwards into the grave. Since the fish (ΙΧΘΥΣ) was a well-known Christian acrostic,[74] it is possible that the tile was placed there as a talisman to protect the grave. But in all other respects this was a traditional pagan burial. The deceased, an elderly man, was laid out with traditional grave goods, including several pieces of plain pottery, an iron blade, and an iron and a bronze ring. There was also a bent iron nail intended, perhaps, to pin the shade of the deceased ritually in the grave. The pottery is not precisely datable, but it is probable that the grave like most others in the cemetery, dates to the 2nd or early 3rd century AD; and since the cryptogram is known to have been in use in Christian circles in the late 2nd century, it is not impossible that knowledge of it as a potent symbol had reached Vagnari by the time of the burial. But the evidence is far from certain, and the resemblance of the motif to a fish is perhaps haphazard.

[66] Otranto 1991, 41-42; Nuzzo 2011, lxviii-lx.
[67] Campione & Nuzzo 1999, 17, 27-31.
[68] Giuliani *et al.* 2013, 1140-1146.
[69] Lattanzi 1972; Moreno Cassano 1975; Cassano 2017, 215.
[70] Giardino 1978, 427; 2012, 15; Lattanzi 1983, 14-15.
[71] Fabbri 1999; Nuzzo 2011, 50-51.
[72] *Carmina* XIV.55-64. The pilgrims include those who cultivate the fertile fields watered by the Galaesus which issues in the *Mar Piccolo* of Taranto: *Quique colunt rigui felicia culta Galesi*. Cf. *Carmina* XX.312-320; Gasperini 1980, 579-580.
[73] Cameron 1996; Gualtieri 2008a, 217-220; 2010, 193-196.
[74] ΙΧΘΥΣ: Ἰησοῦς Χριστὸς Θεοῦ Υἱὸς Σωτήρ: Jesus Christ Son of God Saviour. The use of the fish as a symbol of Christ is attested at least from the time of Tertullian (*De baptismo*, ca. 198-200 AD): Cross, 1958, s.v. *fish*.



Photo X-1. Vagnari. Tegula fragment from burial F220 with finger-impressed mark.

There is not much other evidence to suggest that Christianity had penetrated our Survey Area in this period. No Late Antique lamps of any kind were found in our field survey, but at least twelve emerged in the excavation of the Late Roman/ Late Antique buildings at Vagnari, only one of which was decorated with a Christian motif.[75] By contrast North African lamps and regional imitations embellished with crosses and other Christian motifs are well attested in Apulian and Lucanian cities in the 5th and 6th centuries.[76] Others have been found in the Late Antique villa of San Gilio near Oppido Lucano in sufficient numbers to suggest that there were Christians present at the site.[77] Their relative absence in the *vicus* at Vagnari may suggest that the inhabitants of the *vicus* were resistant to the new faith even though they were living on an estate which was probably still part of the imperial *patrimonium*. Some Late African lamps were also found on the Older Surveys at V18, V28, V43, V68, but none had Christian symbols, except perhaps for a piece from Site V68 which is not fully described in the inventory.

Around the end of the 4th century Christianity was still a predominantly urban religion – so much so that Orosius, writing his *History Against the Pagans* early in the 5th century could describe the main targets of his work as "aliens to the City of God called *pagani* because they come from the crossroads and *pagi* or rural places".[78] We have already seen how at Vagnari in the previous period there is no evidence of "traditional" Greco-Roman cult, although there are plenty of indications of apotropaic magical practices in the funerary customs of the community. It seems likely that the rural population of the area, steeped in these more "primitive" traditions, was initially resistant to the advance of Christianity – unlike the inhabitants of the Peucetian and Daunian cities where the cults of the Greco-Roman gods, artificially introduced in the phase of Romanization, had no firm basis, and where religious ceremonial had been largely diverted to the worship of the emperor.

7. Social structures

i. The landowning classes – possessores

At the apex of society was the senatorial aristocracy, some of whom had vast landholdings scattered over the provinces of the Empire. Since all senators were required to own property in Italy, many of them had accumulations of landholdings in various Italian *civitates*, but they still had to pay their taxes through the *civitas* in which their estates were registered. They (and other rich individuals) frequently grouped together disparate *fundi* within the same *civitas* into conglomerates of properties (*massae fundorum*) which could be administered by a single *praepositus*.[79] Some of them had extensive landholdings in the Lucanian mountains like the Turcius who owned numerous estates in the territory of Volceii, and who can probably be identified with L. Turcius Apronianus the city prefect in 339 AD, or Memmius Vitrasius Orfitus, city prefect between 354 and 359 AD who held estates in the vicinity of Acerenza. We have come cross them both already.

On the whole, the larger landowners benefitted disproportionately from the reforms imposed by Diocletian and Constantine which gave them greater control over their *coloni*, and these powers were strengthened still further in 371 AD when Valentinian I made the landlords responsible for collecting the taxes owed by their *coloni*.[80] But many of the smaller landlords got into difficulties, especially those who belonged to the governing class of the *civitates*, who had to make good any deficit in the quota of imposts levied on their communities. They might be obliged to sell their land to their richer counterparts and continue to farm it as contracting tenants.

Other small property owners might supplement what they could earn from their landholdings by renting land from the *res privata* (the division of the imperial treasury dealing with the personal properties of the Emperor and his family). This is the situation envisaged by a constitution of Constantius II and Constans II dated 342 AD which dealt with the problem of numerous

[75] *Vagnari*, 158, tab. 5.12 and fig. 5.29, P1222, a local or regional imitation of an African type, with part of a cross on the discus.
[76] E.g. at Ordona: Delplace in *Ordona IV*, 78-82. Canosa: Volpe & D'Angela 1992; Carletti *et al.* 2012, 100-105. Venosa: Salvatore 1991.
[77] Di Giuseppe 2008b, 340-341 fig. 46.
[78] *Prologus* 9: *qui alieni a ciuitate Dei ex locorum agrestium conpitis et pagis pagani uocantur.*
[79] On *massae fundorum*, see esp. Vera 1999; De Francesco 2004.
[80] *C.Th.* XI.1.14.

individuals who owned more than 25 *iugera* (6.3ha) in their own right, but also rented lands from the *res privata*.[81] The preamble to the constitution says that many of them claim the right to decline nomination to the *curia* of their local city by virtue of their status as *coloni* of the *res privata*. The constitution allowed their claim but ruled that those who owned less than 25 *iugera* and cultivated only small tenancies on the imperial estate might still be liable for the services (*munera*) imposed on them by the *curia* of their *civitas*.[82] There were therefore classes of landowners with small or medium-sized properties who were also tenants of the imperial estate.[83]

ii. Coloni

Farmers who were both landowners and tenants were evidently a special class. The great majority of the rural population were *coloni* who had no land of their own but rented their farms from landowners under some form of contract. In the earlier empire, tenant farmers had been free to leave their farms when their contracts expired. Their leases could be of any length, though there was a growing tendency for landlords to prefer the stability of long terms. After Diocletian's tax reforms, long leases became the norm. Many private landlords adopted the policy which had been put in effect on imperial estates (sub-section 9) of leasing land to *coloni* on emphyteutic contracts which gave the renter the right to live on the land and cultivate it in perpetuity in return for a fixed rent,[84] This was normally a proportion of the crop, but other forms of rental contract existed which stipulated payment in gold, or in kind, or in a mixture of the two.[85] The *coloni* were required to be registered on the farms which they were cultivating at the time of the initial census. This effectively tied them to the land that they were on. A series of laws put them increasingly under the power of their landlords. In 332 Constantine allowed landlords to chain *coloni* whom they suspected of intending to leave,[86] and in 365 Valentinian I forbade *coloni* to alienate their land without the consent of their landlords.[87] In spite of these measures, there was a perpetual shortage of suitable *coloni*, and many landlords resorted to assigning small holdings to slaves (*servi quasi coloni*) as some had already done in the previous period. They were not free and did not pay taxes (though their landlords were assessed on the number of them on their estates), but on the ground their farms might look no different from those of the theoretically free colonate.

There was a paradox in this Late Roman system of land tenure as the concentration of landownership in the hands of an increasingly narrow class of wealthy owners led to the fragmentation of agricultural production, which was increasingly based on small farms run by peasant families whose primary need was to provide for their own subsistence.[88]

8. Settlement patterns

i. Villas

A new type of luxurious rural villa emerged in this period, reflecting the ambitions and propensities of the richest landowners, and the changed economic circumstances of the time. Many of the villas which had once been the centres of the component estates of *massae fundorum* were no longer needed, and were abandoned in this period, but the best might be selected as the residence of the landlord, now frequently known as the *dominus*, if he were to visit. Since most of the farming was now done by tenant *coloni*, who lived either in *vici* or in their own small farmsteads, the *dominus* no longer needed to house large numbers of agricultural slaves within the villa complex, or to provide large storage and processing facilities. What he wanted in a villa was a series of architectural spaces which would provide luxurious accommodation for himself and his family when he was resident. It had, moreover, to provide a suitable theatrical setting where he could display his wealth and culture to others of his own class, and where he could overawe his *coloni*, deal with their problems and settle their disputes. There would therefore be dining spaces now normally laid out as *stibadia* in which the diners reclined on couches set radially in a half-circle around a circular dining table, according to a fashion which had come into vogue gradually in the course of the 2nd and 3rd centuries and was the norm for fashionable dining parties in the Late Empire;[89] and there would be a bath suite with a sequence of cold and heated rooms, with walls revetted in marble.

There are good examples of Late Roman villas in both Apulia and Lucania which were renovated or newly built in the 4th/5th century to display some or all of these features.[90] In Lucania, the villa at the Masseria Ciccotti, which had already been splendidly embellished in the previous period, was adapted early in the 4th century to meet the new standards by the addition of a large apsidal hall.[91] At Malvaccaro near Potenza in Lucania, a villa of the 3rd/4th century was remodelled between the middle of the 4th and the 5th century with a splendid dining area (*coenatio*), adorned with polychrome mosaic

[81] *C.Th.* XII.1.33.
[82] Rosafio 2002, 148-149.
[83] As noted by Corbier 2005, 434.
[84] Jones 1964, 417-419; Purcell 2014, 271-275; Vera 2014.
[85] Vera 1986.
[86] *C.Th.* V.17.1.
[87] *C.Th.* V.19.1; *LRE*, 796.
[88] Vera 2005, 7.
[89] Dunbabin 1991, 130-131.
[90] For villa buildings of this period in South Italy, see Sfameni 2006, 191-213; Gualtieri 2018, 169-171; Castrorao Barba 2020, 107-251.
[91] Gualtieri 2008b, 284-287.

floors displaying geometric motifs arranged around a central panel of the Three Graces.[92] It provided a magnificent forecourt for an apse with a *stibadium*. The villa at San Gilio in the upper Bradano valley was rebuilt, probably after a period of abandonment, in the second half of the 4th century AD with mosaic floors in several of the domestic rooms, and a new bath suite.[93] One of the most notable rural residences of this period is a villa at Faragola near Ascoli Satriano in Apulia. The excavated part includes a wing with a luxurious bath suite, and another at right angles to it consisting of a suite of rooms which terminated in a fine *coenatio* for dining *al fresco*. Between the end of the 4th century and beginning of the 5th century, the floor of this space was paved with a polychrome mosaic.[94] At San Giovanni di Ruoti, the simple villa of the first two centuries AD (Period 1) was renovated and partly rebuilt in the middle of the 4th century (Period 2), and then totally reconstructed ca. 400 AD (Period 3A) with a bath suite, row of stables, and domestic rooms culminating in a large apsidal hall (*praetorium*).[95]

Small private landowners also existed, as the constitution of Constantius and Constans, mentioned above, implies. A rural building excavated at Posta Crusta near Ordona provides an example of a small villa or large farm which may have been inhabited by one such small-scale landowner. There had been a villa here in the Early Empire which had been abandoned in the 3rd century AD. Part of it was rebuilt at the beginning of the 4th century with ranges of simple domestic rooms on the S and E sides and a *pars rustica* with an installation for processing olive oil on the N. Later in the 4th century the function of the farm changed. The olive press was abandoned, and the building was used for processing and milling grain. Its simple beaten-earth floors and lack of any signs of luxury suggested to the excavators that it may have become a dependency of a much grander domain.[96]

ii. Vici

Village-type settlements were a common feature of the settlement pattern in rural Italy, especially in the Apennine mountains where there were still vestiges of the settlement pattern of the Oscan-speaking peoples. We have seen (Chap. IX.5.4 and 11) that some, perhaps many, settlements which did not attain the status of *municipia* in the period of Romanization were formally constituted as *vici*, with varying levels of responsibility. Many of them were market and production centres situated on roads where goods could be exchanged or purchased, and in the Late Empire some were places where taxes in kind were collected (sub-section 3.iii).

Other village-type settlements in the Late Empire are likely to have been inhabited by *coloni* and *servi quasi coloni*, and situated on the estate of the *dominus* from whom they rented their farms, at a discrete distance from the elegant villa where he resided.[97] Few have been excavated, but many have been recognized from surface evidence in various parts of Italy, usually as sites of 4000m^2 or more which have yielded evidence of occupation but no trace of elegant features such as mosaic *tesserae* or fragments of marble revetment that might indicate a villa. There are no universally accepted criteria, but sites which broadly match this description have generally been labelled "vici" by archaeologists. It is a convenient term, although it is of course impossible to know from surface evidence whether such settlements were formally constituted as *vici* in the imperial registers. Within the area of Map X-1, they were a feature of the landscape around San Giovanni di Ruoti,[98] in the upper Bradano valley,[99] in the lower Ofanto valley,[100] and on the lower slopes of the Murge in Central Apulia.[101] In the territory of *Venusia* M.-L. Marchi has identified eight such villages: at Bagnara, Toppo di Costanza, La Rimessa, La Forestella, La Foragine, La Correggia, Casa del Diavolo and La Santissima.[102] The last of these is situated close to Spinazzola near the watershed of the Basentello on the fringe of Vinson's survey area (Map X-2).

The scholars who carried out the Older Surveys did not record any sites as *vici* since the importance of village sites in the landscape of Roman Italy was not well understood at the time they did their fieldwork, and it is only possible now to classify a site as a *vicus* of this period on the basis of their fieldnotes if it was occupied only in the Late Roman period (so that the extent of the settlement is not confused by earlier or later occupation), and the area of surface scatter is appropriate, and the finds meet the criteria just mentioned. In the whole list of sites on the Older Surveys, there is only one site that fulfils these requirements, namely Site V88 situated 200m N of the Torrente Pentecchia close to the N edge of our Survey Area. It is said to have measured "ca. 75m across" which might amount to 4400m^2, and it yielded ARS of this period as well as fragments of plain ware, cookpots, amphorae and querns as roof tiles. All that suggests that the site was a *vicus*, though a fragment

[92] Donnici 2017, 7-11, figs 9-24.
[93] Di Giuseppe 2008b, 323-333.
[94] Volpe & Turchiano 2009.
[95] *SGR* I.
[96] De Boe 1975, 530; Mertens in *Ordona* V, 20-22; Leone 2000, 387-390.
[97] Vera 2005.
[98] Roberto & Small 1994.
[99] Fracchia 2008, 301-303; 2014; Fracchia & Mattioli 2010, arguing that in this area there was a traditional symbiosis between villa and *vicus*-type settlement.
[100] Goffredo 2011, 170.
[101] Mangiatordi 2008-2009, 565-566; Nuzzo 2010, 478-479.
[102] Marchi 2010, 273 etc. Cf. Sabbatini 2001, 64, and 21 no. 25 (La Correggia), 27-28 nos. 61, 62, 64, 67, 68 (La Forestella). For La Rimessa: Marchi & Sabbatini 1996, 97-98 nos. 434-439.

of "decorative granite" might be more appropriate to a villa. In addition the hypothetical *mansio* at Site V16 and the possible *mutatio* at Monte Serico (V14) might also be considered *vici*. But the evidence is too uncertain to allow a general conclusion to be drawn about the frequency of *vici* in the area.

In our own Survey Area, the excavated site at Vagnari provides a paradigm for a Late Roman *vicus*, even though there is no literary or epigraphic evidence to confirm its status. It was located, of course, close to the Via Appia; it was reorganized in this period on a new site; its most conspicuous feature was a large public building; and it had workshops producing iron and tiles to serve a wider area. It is described more fully below. It is the only settlement of this period in our Survey Area which might be reasonably described as a *vicus*. But that is hardly surprising, since there were no villas in the area which could have spawned village-type settlements where the dependent population who worked on them might have lived.

iii. Casae

There were also smaller isolated dwellings, *casae*, in the open countryside, inhabited, presumably, by peasants still lower in the social scale. Such buildings had existed at least since the 4th century BC, but field-survey evidence suggests that they became much more numerous in some parts of Italy in the Late Empire, especially in the grain-growing area of North Apulia.[103] Our survey has revealed numerous small sites of this period in the Basentello valley where there were probably isolated *casae*, as well as minor clusters of houses, too small to have merited the title of *vicus*. The pattern is a complex one and has to be understood in terms of the variety of conditions of social status and land tenure that existed in Italy in this period.[104]

9. Imperial estates

The imperial estates in Apulia (including the Salentine peninsula) were now administered by the *procurator rei privatae per Apuliam et Calabriam sive saltus Carminianensis*, who replaced the *procurator saltuum Apulorum* of the previous period. The new formulation emphasises the fact that he was responsible for the emperor's properties in the Salentine peninsula (Calabria) as well as in the central and northern parts of the region, and it singles out the Saltus Carminianensis, as specially requiring his attention. We have referred to it in the previous chapter. It has been argued persuasively by several scholars that it was a vast area of grazing located at the north end of the Tavoliere, below the Gargano and between the territories of Aecae and Ordona, and that its administrative centre was the *Praetorium Laverianum,* depicted on the *Tabula Peutingeriana*, linked by road to Aecae in one direction and Arpi in the other.[105] Its name suggests that the estate of which it was the centre originated in the early or middle empire as a property of the Laberii who are attested by inscriptions found in this area. The *Praetorium* has been identified with the magnificent late Roman villa excavated by a team directed by Giuliano Volpe at San Giusto in the Celone valley, ca. 12km SE of Lucera.[106]

Some details of this interpretation may be disputed,[107] but there can be no doubt that the creation of this procuratorial office implies that the *res privata* was still deeply involved in sheep-ranching in Apulia, and we may suppose that the wool produced by the emperor's flocks was used in the imperial *gynaecea* set up in Venosa and Canosa.[108] The *res privata* probably also continued to own sheep ranches in the vicinity of Taranto which produced wool for the imperial dye-works *(baphia)* in the city (sub-section 6).

Apart from the brief entries in the *Notitia Dignitatum*, we have little evidence for imperial properties in Apulia et Calabria, other than a few toponyms in the Itineraries and in the *Tabula Peutingeriana* which appear to imply that they were located on imperial estates. The most obvious example is Turris Cesaris indicated in the *Tabula* on the Adriatic coastal road between Bari and Egnazia. In Lucania there is practically no literary or epigraphic evidence at all for imperial properties in this period.

[103] Romano & Volpe 2005, 249 (the Celone valley); Goffredo 2011, 170 (the lower Ofanto valley).

[104] Vera 1992-1993, 292-293, 2005, 2012.

[105] . For the *Saltus Carminianensis*: Chelotti 1994; Volpe 1996, 181-187; 1998, 328-331; 2007–2008; Grelle 1999, 138-139; Vera 2002. For the *Praetorium Laverianum*, see also Romano & Volpe 2005, 242-244. For San Lorenzo in Carmignano, see also Favia *et al.* 2006. Field survey carried out here in 2005 revealed significant quantities of Roman and especially late antique pottery (plain and cooking wares, red painted, and ARS).

[106] Volpe ed., 1998.

[107] The hypothesis is attractive, but the argument is complex. It assumes that (a) *Carmeianus* of the *ager Carmeianus* recorded in the second recension of the *Liber Coloniarum* somewhere in the vicinity of the Gargano (261.3: Campbell 2000, 202), (b) *Carmeianensis*, the name attached to the diocese of the bishop Probus recorded in the Acts of the Roman synods of 501 and 502 AD (*MGH AA* XII, 437, 453) and (c) *Carmignano,* the name of a farmstead built on the site of a medieval village 4km S of Foggia, are all derived from the same toponym as the *Saltus Carminianensis* and that they allow the Saltus to be located securely in this part of the Tavoliere. This may well be the case, but a lingering doubt remains, especially since *sive* in the *Notitia Dignitatum* is normally used conjunctively, to add one instance to another, as e.g. *Praepositus branbaricariorum siue argentariorum Arelatensium* (Officer in charge of the armourers and silversmiths at Arles); *Praefectus classis fluminis Rhodani, Viennae siue Arelati* (Prefect of the fleet on the river Rhone at Vienne and Arles). That might suggest that the *Saltus Carminianses* were an additional responsibility of the procurator, not included in Apulia et Calabria.

[108] Grelle 1991, 76-77 (Canosa).

None of this need imply that the emperor's holdings in South Italy had diminished (indeed the opposite is more probable since the *res privata* continued to accumulate properties throughout this period). It reflects the fact that there was a change in the epigraphic habit, arising from the change in the social structures of the period. There are fewer funerary inscriptions in general, and far fewer recording imperial slaves and freedmen.

Coloni on imperial estates

As we have seen, *coloni* on the imperial estates in the time of Constantius II could claim exemption by the *ius colonatus* from civic obligations (*munera*) imposed by the *civitas* in which the estate was located.[109] The exemption went back to Severan times, but it was reinforced by several constitutions of Constantine which prohibited *originales coloni* on imperial estates from being nominated to serve on the *curia* of a *civitas* or from undertaking any of the civic *munera*. This legislation must have been thought very favourable to imperial *coloni*, because *curiales* began to acquire tenancies on imperial estates in addition to their own landholdings so that they could claim exemption from muncipal *munera*. This was the background to the constitution of Constantius and Constans, referred to above, which excluded those who owned more than 25 *iugera* in addition to their tenancies on the imperial estate from doing so.[110]

The term *originales coloni* implies that some *coloni* were born and raised on the imperial estates where they were registered, and it must have applied to most *coloni* who held their lands under inherited long-term leases. The emperor in particular favoured long leases since they greatly simplified the administration of the enormous landholdings on the imperial estate, and numerous properties of the *res privata* were *de facto* privatised by being leased out under emphyteutic contracts which gave the renter the right to live on the land and cultivate it in perpetuity in return for a fixed rent.[111] By the end of the 4th century, the greater part of the holdings of the *res privata* had been subdivided and distributed in this way. The rents were initially paid in kind, but Constantine allowed them to be paid in gold or silver, and by the end of the 4th century they were regularly paid in gold.

Renters who held emphyteutic leases from the *res privata* might be of relatively low social status, like those individuals who owned less than 25 *iugera* in their own name envisaged by the constitution of Constantius and Constans. But it is probable that most emphyteutic lease-holders were rich individuals who added their rented properties to their existing landholdings, which they might administer as a *massa fundorum*.[112] They could be relied on to pay both the rental charge and the tax assessed on their privately owned estate.

These considerations have a direct bearing on the interpretation of the results of our field survey in the Basentello valley. The *coloni* who inhabited the small properties on the imperial estate (sub-section 9) may have rented their farms directly from the *res privata*, or they may have been the tenants of a much larger landowner (or landowners) who lived elsewhere and had contracted to rent the entire estate from the emperor. In either case, they must have been expected to produce a surplus to meet the requirements of the contract, as well as providing for their own livelihood.

10. Abandoned and unprofitable land

As we have seen in previous chapters, land desertion was an age-old phenomenon in South Italy where vast areas of cultivated land went out of production from time to time as a result of climatic change, or the economic effects of conquest, or other unknown or obscure factors, before being re-colonized when conditions became more favourable. We have already referred (in Chap. IX.6) to the ongoing debate about the fall in the number of occupied sites in much of Roman Italy (and in many parts of the Roman Empire) which began in the 3rd century AD, and its implications for demographic decline, and we noted that the extent of the problem has to be assessed at a regional level, and that it affected the Tiber valley, the *suburbium* of Rome and much of Central Italy more severely than it did Apulia and Eastern Lucania.

There is more and better evidence for land-desertion, or at least the under-use of land in the Late Empire. In addition to the literary sources which are difficult to evaluate, there are numerous constitutions preserved in the *Codex Theodosianus* and *Codex Justinianus* which show emperors of the 4th and 5th centuries attempting to address the problem – either by compelling landowners to cultivate unproductive land for which they were responsible, or by offering inducements to others willing to take over deserted or uncultivated fields. Cumulatively they give the impression that there was a constant problem of land desertion in the Late Empire. Various causes have been adduced for this state of affairs. Over-taxation made marginal land unprofitable;[113] over-cultivation by *coloni* led to soil exhaustion, and there was a serious decline in the rural population. Recently, however, there has been a tendency to separate out the fiscal problems of the

[109] For *coloni* on imperial estates, see Pelham 1911, Rosafio 2002, 138-157.
[110] *C.Th.* XII.1.33.
[111] Jones 1964, 417-419; Purcell 2014, 271-275; Vera 2014.
[112] Vera 2014.
[113] Jones 1974, 84-89.

Late Empire from the economics of its agriculture, and to see the imperial enactments in a different perspective. Some of them applied to specific regions of the Empire and were intended to address short-term problems, if, for instance, the cultivators were unable to pay their taxes after a series of bad harvests or if their land had been devastated by barbarian invasions. They may have no relevance to the Empire as a whole. In general, however, the laws reflect the need of the imperial government to maximise the taxes levied on the productive capacity of agricultural land, so as to meet the worsening military expenditures, and they do not necessarily indicate a real decline in agricultural production.[114]

As so often, the relevance of such arguments to the agrarian problems of the Empire needs to be analysed on a regional basis, and we are concerned here only with South Italy. *A priori* it is likely that the problem of land desertion was more serious in Italy than in other parts of the empire since Italy had not been subject to direct taxation before Diocletian. The imposition of the tax on land measured by its productive capacity must have made much marginal land unprofitable. But it is also highly likely that the tax base in Italy was eroded by a decline in the rural population. We have seen that in large parts of Italy, including the Tiber valley, the number of settlements occupied fell in the 3rd century AD, rose again slightly in the first half of the 4th century, and then fell steeply in the 5th and 6th.[115] There can be no simple correlation between the fall in the number of occupied sites found on field surveys and the size of the agricultural work force, because, as we have seen, the growth of *massae fundorum* in the Late Empire led to new ways of cultivating the land with *coloni* or *servi quasi coloni* living in relatively few *vici* or in small farms or huts which are not easily identified on the ground;[116] but in some areas the scale of the decline in site numbers and the voids which are left are so great that there can be no doubt that there was a serious decline in the rural population.

Many of the imperial enactments must have had a direct relevance to Central Italy. In South Italy the scale of the problem had been smaller in the 3rd century, and it continued to be so in the 4th and 5th (see below), but the imperial legislation applied here too, and it is possible to see its effects on the settlement pattern in the Fossa Bradanica, including our Survey Area. Two aspects of it are particularly relevant to this study. One is that there were various types of land which the emperors wanted returned to cultivation. Some fields (*agri*) are described as deserted; others as useless or unprofitable (*inutiles*), or barren or sterile (*steriles*). There is also a reference to places where the soil was simply less fertile (*loca quibus minor est soli fecunditas*).[117] The different terms suggest that the Fiscus was as much concerned with land that was underused and might be improved and made productive again as it was with land that had been deserted.[118] Many of the measures targeted imperial estates specifically,[119] and so would be relevant to much of the land in the N half of our Survey Area which had been used for centuries as forest or rough pasture, but was potentially fertile. The second is that the enactments rarely say anything about the history of these unprofitable *agri*. One constitution of AD 377 conferred rights of ownership on anyone who took over a *fundus* of the *patrimonium* which had been abandoned by its emphyteutic tenants or *coloni*,[120] but generally the circumstances in which the land was abandoned or left to decay are not mentioned and it is conceivable that some of the land within the purview of the Fiscus had been uncultivated for a long time. If so, a would-be *possessor* could acquire a *fundus* in the plain land of Metaponto (for example) which had been largely uncultivated since the Hellenistic period and bring it back under cultivation with the incentive of the remission of taxes for the period allowed by the law.

The figures of site occupancy in our Survey Area, discussed below (sub-section 18), throw some light on these matters. The number of sites certainly occupied fell slightly, from 21 to 17, but in the N part of the area where the imperial estate was located the number was practically unchanged. But the significant factor is that only 3 sites continued from the previous period. There were 7 lost and 7 gained. Whether or not the recovery can be credited to the imperial legislation is uncertain since in all periods there had been some degree of site loss and replacement, but it can at least be said that there was no serious problem of deserted land in this part of the Fossa Bradanica.

11. Some comparative survey results from our broader study area.

This is not the place to attempt to analyse more than a small number of survey results from micro-regions of Apulia and Lucania which provide interesting comparisons with those from our own Survey Area and offer some help in interpreting the significance of the regional factors. Close comparisons are usually impossible because of differences in the ways in which the data are analysed and presented, but even broad ones may help to delineate different trends.

[114] Grey 2007.
[115] H. Patterson 2020, 213-222, 250.
[116] Cf. Vera 1999.
[117] *CTh.* V.14.34, AD 394.
[118] Cf. Grey 2007.
[119] Relevant excerpts are collected in *LRE*, 1334-1335, endnote 101.
[120] *CJ* XI.62.5 AD 377: *si qui a prioribus colonis vel emphyteuticariis destitutum patrimonialem fundum .... susceperint, perpetuo eundem atque inconcusso iure possideant*.

In the survey area of ca. 100km^2 around the villa site of San Giovanni di Ruoti, situated just to the W side of the Apennine watershed, the decline in the number of occupied sites that had occurred in the later part of the 2nd and throughout the 3rd century AD was halted in the 4th century.[121] Only two sites that had been occupied in the 3rd century continued into the 4th. Three others, probably villages, were abandoned. On the other hand, two villages and two probable villas that had been abandoned in the 3rd century were reoccupied, and a new village and a small farm were founded. The total number of occupied sites therefore remained unchanged, but there was a distinct change in settlement locations, with decline in some areas compensated for by resettlement in others that had been out of cultivation for some time. We have suggested that this shift in location can be connected with the development of pork production, brought about by the levy on swine imposed by Aurelian and reinforced by Diocletian. The pigs would have been raised on uncultivated land which had probably reverted to oak forest. The argument is strongly supported by the great preponderance of pig bones found in the middens of the villa of San Giovanni di Ruoti. The new settlement pattern of the 4th century appears to have been organized around three villas, including that at San Giovanni, with the workforce living in the villages which lay within easy walking distance of the villas. This pattern of rural settlement continued well into the next period.

In the upper Bradano valley a rather similar picture has emerged from the field survey carried out by a Canadian team directed by Helena Fracchia and Maurizio Gualtieri in the vicinity of the villa at the Masseria Ciccotti. Many small sites which had been occupied in the Early and Middle Empire disappeared, but a few larger agglomerations, considered to be *vici*, continued to develop, suggesting that the population was redistributed rather than declined.[122] As in the area of San Giovanni di Ruoti, a few villas continued to be occupied. It is likely, therefore, that here too in the Late Roman Empire most of the agricultural workforce lived in villages closely connected with the villas.

In the territory of *Venusia,* too, the level of population seems to have remained more or less constant. There was no marked break with the settlement pattern of the Early and Middle Empire, rather a slow evolution to a more open pattern with fewer but larger villas and more *vici*.[123] There was not, however, the proliferation of small sites seen in the Ofanto valley and in our Survey Area. Several of the grandest villas were extended or partly reconstructed, including La Bagnara north-east of the city, and the Casa del Diavolo near Lavello, and (nearer to our Survey Area) the vast villa of la Santissima near Spinazzola.[124] All three seem to have developed into the centres of villages in the Late Antique period, though the process has not been traced in detail. The most successful sites were located along the lines of the main roads and acted as poles of attraction for minor settlements in the vicinity.

In the lower Ofanto valley, the picture is different again.[125] The settlement pattern of the Late Roman/ Late Antique period shows a marked increase on that of the 2nd and 3rd centuries. Most of the increase is in the number of medium- to small-size sites which have been interpreted as productive units, small farms or *casae colonicae*, within *massae fundorum*, each centred, presumably on one of the larger villas. Many of the sites interpreted as villas in the previous period continued in occupation. They were especially frequent in the vicinity of Canosa and were presumably the residences of the local nobility of the city which, as we have seen, continued to flourish throughout this period. There were also six *vici* in the area, attested by literary sources, including the itineraries, and the *Tabula Peutingeriana*.

By contrast, occupation of the coastal plain of the Ionian Gulf at Metaponto remained at the same low level as in the Early Empire, with a scatter of twenty small or medium size settlements, all probably farmhouses, in addition to the continuing *vicus*-type settlement in the area of the *Castrum* in the centre of the former city.[126] Only three of the twenty farmhouses continued from the previous period, so 85% of them were new foundations, although most of them were built on sites which had been occupied much earlier. They may have been founded where their inhabitants could cultivate deserted land under the terms of the imperial enactments on the subject.

The main inference to be drawn from the results of these various surveys is that the level of the rural population seems to have remained more or less constant, but the characteristic forms of settlement varied from one sub-region to another for various reasons, some historical, others geographical and economic. In some areas, a class of medium-scale landowners survived, still living in villas and depending on a workforce most of whom lived in dependent villages. In the Lucanian mountains the villa and *vicus* settlement pattern fitted, in some areas, into a largely wooded environment which was exploited for pig raising, but in the Upper Bradano valley it could be adapted easily for cereal cultivation. It

[121] Roberto & Small in *SGR* I, 21-22.
[122] Fracchia 2005, 2008, 301-303, 2014; Fracchia & Mattioli 2010.
[123] Marchi 2010, 42-43.
[124] La Bagnara: Marchi 2005, 183-184; the Casa del Diavolo: Volpe 1990, 150-153; La Santissima: Marchi 2014, 189. Other examples of villas which expanded in this period have been inferred from survey results in the territory of Terlizzi: Campese *et al*. 2018, 225-230.
[125] Goffredo & Volpe 2005a; 2005b.
[126] Lapadula 2011, 1137-1145.

may be that the rural population in these mountainous areas preferred to live in *vici* rather than in isolated *casae* because they would be better protected from marauding brigands, as we suggest below (sub-section 15). In other areas where there had been a history of peasant landholding going back to land reforms of the Late Republic (as at Venosa) or the Middle Empire (Canosa), small farms continued to function, perhaps absorbed into larger estates, which themselves may have been incorporated into *massae fundorum*. In these areas the numbers of occupied villas diminished as estates were amalgamated. On the Ionian coast where the main form of agriculture was now stock-raising, the settlement pattern was thin, consisting mainly of small farmsteads, intended, perhaps, to bring more land back under cultivation.

The pattern of settlement in our own Survey Area (described in sub-section 18) fits none of these categories exactly. The villas in the S half of it have disappeared from the landscape. There are still some *vici* (including Vagnari), but the main factor is the continuation of small isolated settlements, presumably farms. The distinct character of this region suggests that the N part of it at least remained at least nominally in the hands of the emperor who had subdivided the estate into smaller holdings held by *coloni* or *servi quasi coloni* on long-term or emphyteutic leases. The system was to continue well into the next period.

12. Monetary circulation

In the Early and Middle Empire, as we have seen, coins were hardly used in the countryside as a means of exchange, and certainly not at Vagnari. Under Constantine, however, an enormous number of small bronze *nummi* was minted – so many that it must have been possible for the first time to pay for even modest transactions in coin, even in rural regions. At Vagnari fourteen *nummi* of the 4th century were found in the first phase of the excavations, mostly associated with the large porticoed Building B in the S part of the site.[127]

In the second half of the 4th century, however, the circulation of bronze *nummi* began to fall off again, and around the beginning of the 5th century the supply of new bronze *nummi* started to dry up. In Ordona the usage of coins diminished gradually in the second half of the 4th century and stopped altogether in the second half of the 5th.[128] Some new coins still reached the cities and larger *vici* on the coast, but by the end of this period they are rarely found on rural sites.[129] At San Giovanni di Ruoti a few heavily corroded coins may go down into the 5th century, but the latest datable pieces are of 388–402 AD.[130] At Vagnari the 4th century *nummi* continued to circulate until they were practically worn out, but no new coins reached the site (on present evidence) after the end of the 4th century AD.

The *solidus* was introduced by Constantine to provide a stable basis for the whole coinage system, but it was used as an instrument of taxation rather than as a normal means of exchange. Most of the *solidi* that circulated in South Italy must have reached the area as pay for government officials. They were then stored as accumulated wealth, or returned to Rome in payment of rents and in fulfilment of *adaeratio*. They are rare finds in archaeological excavations, and none have been found at Vagnari.

13. Commerce

The pottery as usual provides the best indication of the extent to which the Survey Area was involved in the commercial network of the Roman world. As in previous periods the main sources of information are the fine table wares and amphorae. African red-slipped pottery workshops continued to supply the best table wares that circulated in the Survey Area in this period, including some of the later ARS-C forms from Central Tunisia, and most of the ARS-D forms from Northern Tunisia (see Kenrick's analysis in Cat.15). The Phocaean red-slipped ware which reached coastal settlements in Apulia, including Metapontum, penetrated inland irregularly,[131] and was not found in our Survey Area. Regional red-slipped wares were also in use as cheaper alternatives, but their production centres and areas of distribution are not yet well understood.

The amphorae are discussed in detail by Giacomo Disantarosa in the Appendix. Only a few now reached the Survey Area from Italian producers. A Keay LII wine amphora, produced in Bruttii, was found on Site 372. Since they were made in the second half of the 4th or the 5th century, it may date to this period or early in the next. McCallum and his colleagues report a flat-bottomed amphora resembling a Keay LII, but in local clay on their site mhB50 below Monte Serico.[132] The demand for amphorae from the Greek East was also minimal. Again, the chronology is not precise since several types continue into the next period, but a *Late Roman Amphora 3* produced in Asia Minor in the 4th or 5th century for exporting wine or oil was found at Vagnari (*cit.*, 8.4).

[127] R. Abdy in *Vagnari,* 408, tables 1 and 2.
[128] Mertens (ed) 1995, 327-336.
[129] Barnish 1987, 169. One of the latest rural contexts is a tomb excavated in the contrada Ciurcitano in the territory of Terlizzi which yielded a cluster of 38 coins ranging in date from the mid-3rd to the beginning of the 5th century AD: Depalo 2002, 110.
[130] R. Reece in *SGR* II, 83-87.
[131] Leone & Turchiano 2002, 869-870.
[132] McCallum *et al.* 2013, 48.

These pieces, however, are exceptional, because the great majority of amphorae reaching the Survey Area in this period came from North Africa. They include, at the beginning of the time range, Dressel 30 – Keay IA wine amphorae from Mauretania which were found at Vagnari and at two other sites in and around the Survey Area. Cylindrical Tripolitana III oil amphorae were found on nine sites, though, strangely, not at Vagnari. During the course of the 4th and well into the 5th century other cylindrical containers of medium size reached four sites. Another African import of the beginning of this period is an Africana III B-C amphora, the toe of which was found on Site 213. The type was used to transport various kinds of foodstuffs. Other products from this part of Africa are the *spatheia,* the immediately recognizable small carrot-shaped amphorae, which contained a variety of products, but principally wine. Early examples (of Type 1) appeared at Vagnari and at 6 sites in the Survey Area in the first half of the 5th century. They appeared also on the Older Surveys on Sites C16 and V37. Evidently there was a large demand for African imports throughout this period in and around the Survey Area.

The ceramic evidence therefore shows that throughout this period North Africa was the main source of supply of oil, wine, fish sauce and other exotic foodstuffs as well as of table wares. The flow of this trade continued uninterrupted by the Vandal invasion of the North African provinces in the early 5th century. The Vandals cut off the grain supply to the *annona* when they redistributed the cereal-producing lands of what is now Tunisia to their followers, but they allowed trade in other commodities to continue unaffected. The later history of Saracen raids on Apulia shows how easy it was for ships from North Africa to reach Taranto and the Adriatic coast.

14. Agriculture and stock-raising

The literary evidence for agriculture and animal husbandry in South Italy in this period is rather meagre. Two entries under the heading 'meat' in Diocletian's *Edict on Maximum Prices* refer to *Lucanicae* and to *Lucanicae bubulae* – the Lucanian sausages of pork and beef for which the region was famous,[133] and there is an entry for *laridum optimum*, the preserved pig meat which Lucania exported in abundance. According to the *Expositio totius mundi* (a somewhat random survey of the commerce of the ancient world originally written in Greek in the mid-4th century AD and preserved in a 6th century Latin redaction) Lucania was able to export *lardum* (= *laridum*) in quantity because its mountains provided forage for a variety of animals.[134] These references confirm that the production of preserved meats was an important part of the rural economy of the province. Rather surprisingly, the *Expositio* says nothing about the agricultural production of Apulia, though it describes Calabria (i.e. the Salentine peninsula) as producing cereals and abounding in all good things. Several other sources mentioned above refer to the Apulian grain needed to support the population of Rome and the army in the North. The archaeological evidence, however, points to a more complex pattern of land use.

i. Stock-raising

Faunal analyses carried out at several sites show that in much of South Italy there was a change in stock-raising practices between the Early and Middle Empire on the one hand and the Late Empire on the other, but the nature of the change varied from one area to another,[135] even though the distances between them in some cases was not great. A critical factor is the relative importance attached to sheep, cattle, pigs and wild species which is likely to reflect the balance between rough grazing, arable and woodland. Equines are a largely unknown element since they were not eaten, and their bones do not end up in rubbish deposits on the sites.

In Lucania the best evidence comes from the villa at San Giovanni di Ruoti where the abundant faunal remains have been studied in detail by Michael MacKinnon.[136] The building was reoccupied around the middle of the 4th century (Period 2), and was almost completely reconstructed ca. 400 at the beginning of Period 3A which lasted until ca. 460 AD when it was partly rebuilt and extended (Period 3). The faunal evidence relevant here comes from Periods 2 and 3A. Throughout this time, the stock-raising economy was dominated by pigs. They were by far the most numerous animals raised on the site and in its environs in all periods, and they became increasingly abundant with the passage of time. In Period 2 pigs account for about two-thirds of the total meat yield, rising to three-quarters in Period 3. The animals were killed at all stages in their development, and the lack of any clear culling régime suggests that they were allowed to forage freely in the forests and selected for slaughter rather haphazardly. Nevertheless, adult females are less common in the bone count than adult males, so we may surmise that a proportion of the females was selected out to be driven to Rome in fulfilment of the pork levy. An excess of some butchered elements suggests that some cuts of meat were processed at the site and were exported

[133] *Edictum de pretiis* IV.15 *Lucanicarum* (16 denarii per pound); IV.16 *Lucanicarum bubularum* (10 denarii per pound); IV.7 *Laridi optimi* (16 denarii per pound): Graser 1940, 324-325.

[134] *Expositio totius mundi* (ed Müller 1861), para. 53: *Lucania regio optima et ipsa omnibus abundans, (et) lardum multum foras emittit, propterea quod est in montibus eius esca animalium varia.*

[135] The evidence is summarized in Buglione 2013.

[136] MacKinnon 2002.

outside it, perhaps as sausages or *laridum*. Sheep and goats (but primarily sheep) were the second most common species but lagged far behind pigs. Although there are some ambiguities in the data, the sex and age profiles suggest that they were raised for a combination of purposes, with meat, milk and wool being of roughly equal importance. They are likely to have been kept near the site for much of the year, although they would have had to be moved to lower ground in the winter months when the pastures were covered with snow, but it is unlikely that this involved long-distance transhumance. Cattle were relatively unimportant at San Giovanni and their frequency declined slightly throughout all three periods. If we can take cattle as a proxy for arable land, then the quantity of arable decreased progressively, giving place, presumably, to woodland, well suited for raising pigs. The fact that the frequency of wild species also declined suggests that that the woodland where the pigs foraged was regularly patrolled, discouraging other animal species.

Other Lucanian sites show a rather different picture. A preliminary analysis of a small sample of 451 identifiable animal bones from the Roman villa at the Masseria Ciccotti shows a clear predominance of sheep/ goats (41% on a count of identified specimens), 31% pigs, 20% cattle, 2.5% equids, and 2.5% poultry, the remainder being made up of wild animals.[137] The sample is not subdivided between the Middle and Late Empire, but it gives the impression that pork production was never as important in this sub-region as it was at Ruoti, and that there was considerably more involvement in arable combined with sheep raising. The low rounded hills in this part of the Bradano river valley below Oppido Lucano are well suited for cereal cultivation, and Maurizio Gualtieri has suggested that there was a shift in production from sheep-raising to arable in this area between the 4th and 6th centuries AD.[138] In the Metapontine plain the analysis of animal bones from the later Roman farmhouse at San Biagio (275-350 AD) shows an even greater predominance of sheep/ goats (62%), a smaller but still significant proportion of pigs (ca. 26%), and a much smaller proportion of cattle (ca. 5%).[139] It would seem that the economy here was still linked to winter pasture for sheep and goats, with some pork production, but little cultivation. There was also a considerable number of hen bones which confirms that poultry was playing an increasingly important part in the peasant economy.[140]

In Apulia there are two sites within the area of Map X-1 where faunal analyses have been published from contexts of this period, namely Ordona and Egnazia.[141] At Ordona there was a slight increase in the proportion of sheep and cattle, and a corresponding decrease in that of pigs according to a count of animal bones collected in contexts of the 4th and 5th centuries AD, though a smaller assemblage from a cistern fill shows a much higher proportion of sheep/ goats.[142] Wild species were relatively unimportant. The overall pattern suggests that the economy of the area depended increasingly on a mix of sheep-raising and arable cultivation. A significant proportion of the sheep were slaughtered either at a very young or at a very old age, which is compatible with a transhumance regime in which the sheep were raised for wool and milk products, and young males were culled from the flock before it set off in May for pastures in the mountains. Pigs were still kept but were of lesser importance. The pollen evidence suggests that there was an increase in weeds that grow on fallow land, which reinforces the idea that more of the land was under plough and that rotation of crops was practised involving periods of fallow.

At Egnazia, too, there was a higher proportion of sheep and goats than of pigs, but at Faragola,[143] nearer to the W margin of the Tavoliere, the opposite is the case, and since the proportion of bovines is relatively small, it is likely that more of the land in the vicinity of the site was uncultivated and had reverted to woodland suitable for pig raising. The mortality pattern of the sheep and goats shows that a high proportion of those consumed at the site were only a few months old, which again suggests that they were young males culled from the flock before it set out on the transhumance trail.

In short, the picture highlights two rather different tendencies, which can be related to the differing needs of the state. On the one hand the new tax regime required some drastic changes in the agricultural and stock-raising practices to meet the demands of the levies in commodities, especially pork and grain; and on the other hand the *res privata* continued to require wool produced by transhumant sheep grazing on the imperial *saltus.* At Vagnari the former tendency appears to have prevailed.

ii. Cultivation

There are only a few palaeobotanical studies to draw on which might help us to track developments in vegetation and arable cultivation in this period in the area covered by Map X-1. At San Giovanni di Ruoti, the analyses of carbonized seeds carried out by Lorenzo Costantini and Stephen Monckton show some interesting differences between the species represented in the much larger samples of this period (Periods 2 and 3) and those

[137] Bökönyi 2001.
[138] Gualtieri 2003, 262.
[139] Carter 1994, histogram fig. 10 on p. 186.
[140] Bökönyi 2010, 28.
[141] Ordona: Leguilloux 2000,481; Buglione 2013, 246-247; Egnazia: Cassano *et al* 2007, 28; Buglione 2013, 248.
[142] Simone 2000.
[143] Buglione 2013, 249.

of the Early and Middle Empire (Period 1).[144] The range of wheats being cultivated was narrowed down to emmer (*Triticum dicoccum*) and summer wheat (*Triticum aestivum*). The latter seems to have been most important, which suggests that the preference for easily milled bread wheats was now more firmly established. Oats (*Avena sativa*) are still present, probably grown as a fodder crop for horses or oxen. Rye (*Secale cereale*) has gone. There is still a broad range of legumes including peas (*Pisum sp.),* broad beans (*Vicia faba*) and lentils (*Lens culinaris*) for human consumption. Alfalfa (*Medicago sativa*) was grown as a leguminous fodder crop, apparently replacing bitter vetch (*Vicia ervilia*). It is particularly well suited for sowing in a scheme of crop rotation. The reduction in number of species of cereals may indicate that agriculture had become more specialized, leading to the abandonment of some less satisfactory species grown in the previous period. The analyses of wood carbon show that oak was the principal timber used in the building construction, and that a variety of tree species was exploited for firewood. They presumably indicate the climax vegetation in the area around the site. Oak and beech predominate, both particularly well suited for providing pannage for pigs.

Pollen was not preserved in the analysed soil samples from San Giovanni, but pollen analyses from two other widely separated sites within the area of Map X-1 help to fill in the picture.[145] At Ordona the pollen analysis by J. Heim shows that there was a marked change in the vegetation surrounding the site after the end of the 3rd century AD.[146] Whereas the pollen record for the earlier imperial period had suggested that the landscape was conditioned by both pasture and cereal cultivation, the data for the Late Roman and Early Medieval period (4th–8th centuries AD) point to the degradation of the countryside, with arable land being slowly abandoned (only 0.9% cereal pollen) and the whole area becoming gradually uncultivated. That is a surprising result since it might have been expected that more land would have been brought under cultivation to meet the demands of the Late Roman taxation system, and it is at variance with the results of the faunal analysis which suggests mixed stock-raising in the vicinity of the site; but the period covered by the pollen analysis extends into the Early Middle Ages when Ordona was in drastic decline, and it may be this phase that is reflected in the pollen record.

At Altojanni in the middle Bradano valley, between the Bradano and its tributary, the Bilioso, on the Lucanian side of the border with Apulia, pollen from soil samples taken during the excavation of a Late Roman rural building show that the area surrounding the site consisted mainly of open pasture, though cereals (wheat, barley and rye) were all cultivated at some distance from the farmhouse, as were peas and broad beans. A variety of tree species is attested – principally deciduous oak, but also hazel, ash, elm and beech – indicating that there was mixed woodland in the vicinity. The analysis by A.M. Mercuri, A. Florenzano and their colleagues is part of a comparative study which includes also pollen from a Hellenistic context at Difesa San Biagio and from the medieval village at Altojanni.[147] They note that the Roman samples show a surprising absence of some of the most typical Mediterranean heat- and dry-tolerant species such as olive, evergreen oak, myrtle and *pistacia*, which are present in the earlier and later contexts, and suggest that the climate may have been colder and wetter in the (Late) Roman period. The argument must be treated with caution, however, because moderate amounts of evergreen oak and smaller ones of *pistacia* were found in the wood carbon record at Vagnari in contexts of both the Early and Late Empire.[148]

In short, the palaeoenvironmental evidence throws some light on the impact that the Diocletianic reforms and the subsequent expansion of cereal cultivation had on the rural economy of South Italy, but more work needs to be done to answer some important questions. One of the most interesting is the effect that the need to produce more grain in Apulia had on the stock-raising economy which had been the mainstay of the imperial estates. We have already seen that the raising of transhumant sheep appears to have been transferred wholly or partly from the imperial estates in the Fossa Bradanica to those in North Apulia when these were acquired by the *patrimonium* in the previous period. But the evidence for both stock-raising and wool-working in North Apulia dries up early in the 5th century, at much the same time as the need to import more grain from Apulia to supply the Roman population became more urgent. Several scholars have inferred from this that there was a switch in emphasis from sheep raising to cereal cultivation in North Apulia in the course of the 5th century AD which led to the collapse of the imperial textile manufactories (*gynaecea*) at Canosa and Venosa, and to a reduction in wool production more generally.[149] It is a hypothesis that needs to be tested by more analyses of palaeobotanical material from well-dated sites. Such a policy change, however, can have had little impact on our Survey Area where the change from large-scale pastoralism to cereal cultivation had already taken place.

[144] Steele *et al.* 1979, 458 ; Costantini 1983; Monckton 2002.
[145] I take no account here of the pollen analyses from the Roman villa at Giarnera Grande near Ascoli Satriano since they show no chronological differentiation between the 1st century BC and 7th century AD: Accorsi *et al.* 1995, 107-113.
[146] Heim 1995.
[147] Mercuri *et al.* 2010.
[148] Fiorentino, Primavera, Dand & Monckton in *Vagnari*, 329-343.
[149] Grelle 1991, 76-78; Volpe 1996, 284-285; Chelotti 2003, 34-35.

15. Brigandage

Brigandage continued to be a problem, especially in the countryside. The Sarmatian units in *Bruttii et Lucania* and in *Apulia et Calabria* may have been stationed in these regions to keep order, as may other barbarian troops. A funerary inscription of Flavius Ianuarius, a soldier in a unit of Cimbrians, found at Lucera, suggests that there may have been a unit of these Germanic troops established there in the 4th century AD. At Lucera they would have been well placed to maintain order among the shepherds who used the trails that linked the Tavoliere with mountains of the Abruzzi.[150] Brigands were most dangerous when mounted, and a series of constitutions recorded in the *Codex Theodosianus* regulated who could or could not own and use horses, beginning with one of Valentinian and Valens, promulgated in 364 AD, which restricted the use of horses in the provinces of Picenum, Flaminia, Apulia et Calabria, Bruttii et Lucania and Samnium to senators, government officials, veterans and decurions.[151] That restriction, however, created problems for the swineherds *(suarii)* who needed horses to round up the pigs that were driven to Rome, so in the following year the emperors issued another constitution, addressed to the Praetorian Prefect, which indicated that the exemption also applied to all those *in Italia suburbicaria* who by virtue of their geographical location or social status (*locus aut dignitas*) were free from suspicion of using horses for repeated thefts (*adsiduae rapinae*) – with the proviso that they did so at their own peril if any crime were committed in these regions. Now, however, (the *Constitution* continues) since the emperors have observed that *suarii* who are occupied with their own business have no need of this proviso, the praetorian prefect must see that the right to ride horses has been given to them, and so they should not be bound by any fear of the previous sanction as long as they are operating in places which have not become notorious for cattle-rustling and other crimes.[152] Brigandage was therefore a localized problem, particularly connected with transhumance. Fear of brigands may be one reason why in mountainous areas settlement in the late empire was increasingly concentrated in *vici* where the village population would have been better able to defend itself from this kind of attack. The great villa owners, on the other hand, probably had the manpower needed to protect their properties. But the fact that small isolated farms continued to be inhabited in some parts, including our Survey Area, needs another explanation. It may be that their inhabitants were too poor to be worthwhile targets for brigands; but it is also possible that there was an *ethos* of collusion between brigands and the rural peasant population, as there has been in many other times and places.

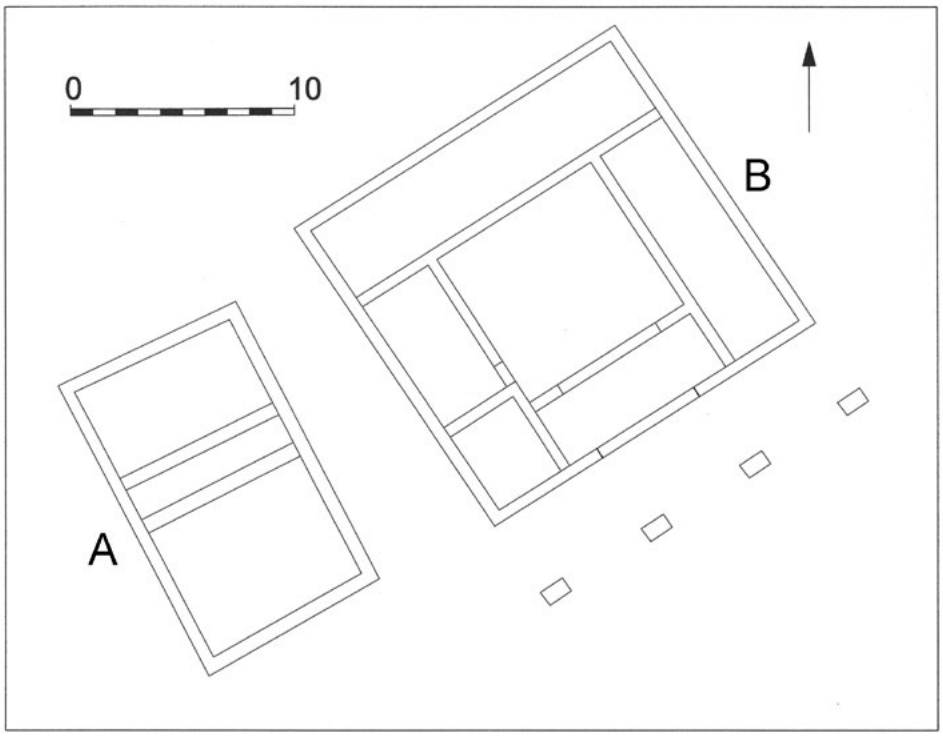
16. Vagnari

i. The settlement

In this period the *vicus* at Vagnari was completely reconstructed. The new excavations directed by Maureen Carroll have shown that at least the NW sector of the complex of the Early and Middle Imperial period was abandoned by the middle of the 3rd century AD.[153] The cistern in the SW part of the complex was not filled in, however, until late in the 4th century AD when a rectangular building in cruder masonry, probably a stall for animals, was built the remains of it.[154] By this time the main nucleus of the settlement had been transferred to the SE part of the site across the central ravine where the surface survey material indicates that some buildings were founded in the mid-imperial period (Chap. IX.14.ii.a). Fragments of ARS and African amphorae show that they continued in use throughout the 4th and 5th centuries.[155] The main nucleus of the Late Roman settlement was at the NE limit of this part of the site where excavation has uncovered remains of two large buildings erected around the beginning of the 5th century AD.

These new buildings included a smithy (Building A) and a large public-looking building with a series of rooms grouped around a covered inner courtyard, approached through an entrance portico with three arches supported on columns (Building B). It was built a little later than the smithy, but the two buildings continued in use until late in the 5th century when they were both destroyed, perhaps in another earthquake. A scatter of material in the adjacent area to the W suggests that there were other buildings of this period, not yet excavated. This complex of structures throws light on the character of a *vicus* in the Late Empire. The important central location of the smithy indicates that this was one of the most important elements of a *vicus*, where tools could be acquired or mended. The function of the large public building is less clear. A scatter of small bronze *nummi* found inside it suggests that it was a market-place where goods of low value produced in the surrounding small farms could be purchased, but it could equally well have served as the administrative centre of a *mansio* where taxes in kind might be collected and transferred onwards. A donkey killed when the building was destroyed in the late 5th or early 6th century may have been a pack animal used to transport the produce.[156] It belongs to the next period

[150] *AE* 1969-1970, 46, no. 159; Vera 2008, 330, fn 61.
[151] On brigandage, see Volpe 1996, 276-280; Russi 1988.
[152] *C.Th.* IX.30.3.
[153] Carroll, forthcoming.
[154] A. Dalton in *Beyond Vagnari*, 89-98.
[155] C. Small in *Vagnari*, 64-65, fig. 2.18.
[156] *Vagnari*, 224 (Favia *et al.*); 315-316 (MacKinnon).



Plan. X-1. Vagnari. Schematic plan of buildings A (smithy) and B (porticoed public building).

of this analysis, but there had been little change in the use of the building in the meantime. Remains of at least two other donkeys and a probable mule were also found in Late Antique contexts.

The latest of the Vagnari tile kilns also date to this period: a linked pair, Kilns 5 and 6, both in use in the last half of the 4th century, though they may have been constructed rather earlier.[157] Kiln 5 was unusually large, measuring externally 4.34×5.80m. Both kilns must have produced tiles for the farms being built in this period in the surrounding countryside, as well as for the new buildings needed for the remodelled *vicus* at Vagnari itself.

ii. The cemetery

The main sequence of burials in the excavated part of the cemetery comes to an end some time around the middle of the 3rd century AD, but at least two were added in the 4th century (F42 and F95), both *alla cappuccina*, and both datable by coins of Constantine. The coins were bronze *nummi*, with little purchasing power.

F105 contained the skeleton of an adult female and a variety of grave goods including a *nummus* of 327 AD, in good condition. It suggests that the burial was made in the middle decades of the 4th century. F42 was the burial of an adult male, interred with two simple pots and various metal objects including a *nummus* minted between 330–335 AD. It was much worn, and so must have been in circulation for a considerable time before the burial was made, perhaps towards the end of the 4th century.[158]

iii. Stock-raising

The analysis of the faunal remains from contexts of Period 4 at Vagnari (mid-4th–5th century AD) by Michael MacKinnon shows some significant changes from the previous period.[159] The graphs indicating the frequency of the main domesticated species reveal a decrease in the proportion of cattle (falling from approximately 20% to 10%) matched by a corresponding increase in the proportion of sheep/ goats (from about 40% to 55%), whether counted by the number of identified pieces or the minimum number of individuals they may represent. The proportion of pigs remained more or less unchanged at around 40%. As MacKinnon points out, however, these figures give a misleading impression of the value of the three species as food resources since they take no account of meat yields. When that adjustment is made, it can be seen that cattle contributed about 42% of the meat consumed on the site, sheep/ goats 24% and pigs 34%. The cattle, however, were not raised primarily for meat since most of them were killed at adult age. They were presumably used principally for traction, as in previous periods. In the sheep/ goat category there is a higher percentage of head elements and lower percentage of primary

[157] *Vagnari*, 232, 263-267 (A. Small).

[158] F42 is fully published in Small & Small (eds) 2007, 190-191. F95 and F220 have not yet been fully published, but F95 is referred to in Prowse *et al.* 2010, and Brent & Prowse 2014.

[159] MacKinnon in *Vagnari*, 305-328.

cuts than in the previous period, suggesting that there was a change in the pattern of consumption with the better quality cuts of meat being consumed elsewhere, perhaps sold away from the site. Equids are better represented than before (with a minimum number of 2 donkeys and one probable mule). There was an increase in the proportion of domestic fowl (from 1% to 2%). Wild species are unimportant, accounting for less than 1% of the total bone count.

These figures show that mixed agriculture was still the norm in the area around Vagnari, though with some changes in emphasis. The increase in sheep/ goats and the decrease in wild species suggest that forest land may have degenerated into *macchia* and rough grazing suitable for caprines, as the evidence of the carbonized wood remains (sub-sections 16.iii,iv) also suggests. There was still, however, enough deciduous woodland to provide forage for the pigs, and enough good grazing to support the cattle needed for ploughing and transporting heavy goods. The change unfolding was therefore gradual.

iv. The forest environment

The analysis of carbonized plant remains by G. Fiorentino and M. Primavera shows that there was a progressive change in the landscape around Vagnari from the mixed deciduous woodland of the Early Empire (noted in the previous chapter), to more xerophilous species such as *Quercus ilex* (evergreen oak), *Rhamnus sp* (buckthorn) and *Pistacia*. Ultimately, in the Late Imperial period, elements of Mediterranean *macchia* began to form a significant part of the landscape.[160] This was the culmination of a progressive degradation of the woodland which can best be explained not so much by climatic factors as by the changing patterns of land-use. Fiorentino and Primavera suggest that this may have been caused either by increased grazing by sheep and goats, or by an increase in agricultural activities in the area. The evidence of the field survey suggests that both factors may be relevant, but at different times. In the Early Empire the whole of the imperial estate, apart from an area of cultivated land immediately surrounding the *vicus* of Vagnari, is likely to have consisted partly of woodland used to provide the fuel needed in the industries located in the *vicus* (primarily tile manufacture and smithing), and partly as rough pasture for transhumant flocks of sheep; but the subdivision of the imperial estate which began around the end of the 1st century AD and continued throughout the Late Imperial period involved the creation of small farms which must have encroached on the areas of woodland, and led to increased exploitation of the remaining forest.

Moreover the forest management practices probably contributed to this development. We have seen (Chap. IX.13.i.d) that small shrubbier species were deliberately encouraged, and were coppiced to provide a continuous supply of branches of suitable dimensions for charcoal burning, whereas much larger pieces of uncarbonized firewood, especially of oak, were needed to fuel the tile kilns, and no doubt to burn in the furnaces that heated the bath suite which is known to have existed but has not yet been excavated. These could not be provided by short-term forest management, and it seems probable that throughout the occupation of the site there was a progressive reduction of larger species, combined with the proliferation of smaller shrubbier types, which contributed to the decline of the climax woodland.

The long-term effects of the degradation of the forest, combined with erosion of the hillsides by increased cultivation, can be seen in the geomorphological analysis by Andrew Bicket which shows that after a period in which sediment gradually accumulated in the ravine, there was a new phase of erosion of these sediments which lasted about 500 years.[161] A *terminus post quem* for the phase of the erosion in the central ravine at Vagnari is dated by optically stimulated luminescence to 108 AD ± 105, and the *tpq* for the next phase of sedimentation is dated by OSL to 774 AD ± 65. The phase of erosion therefore coincides well with the increased exploitation of the land for agriculture in the Middle and Late Empire. Ian Campbell's study of the geomorphology of the surrounding area indicates that this was a broad phenomenon affecting a much wider area in the Bradano-Basentello valley.[162]

17. The Older Surveys

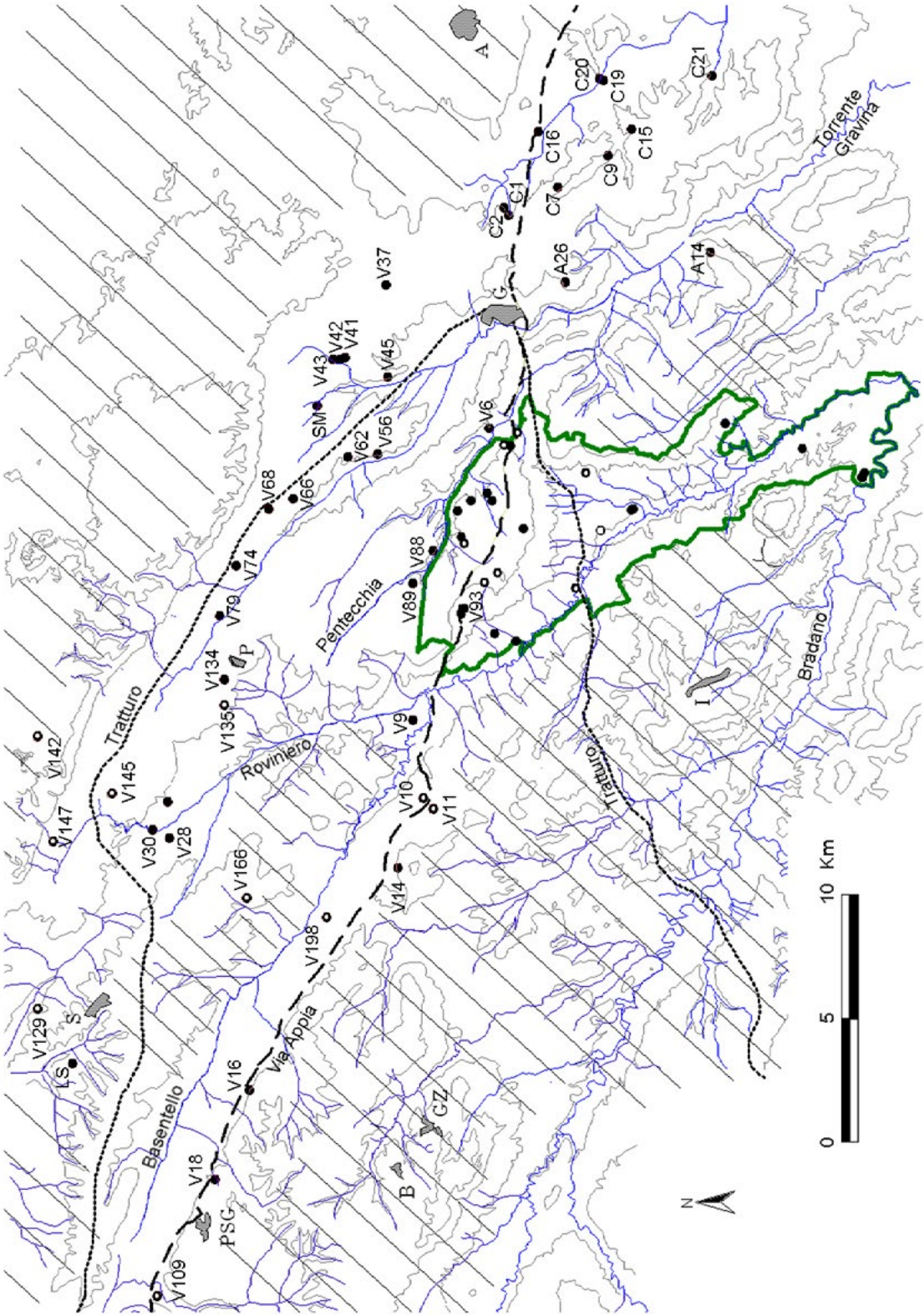
On the Older Surveys 35 sites including San Mauro can be dated reasonably reliably to this period, and another 12 more doubtfully because the fragments of ARS found on them have not been classified. That is a slight decrease (from 38 reliable and 15 doubtful) of the Mid-Imperial period. Since continuity of occupation can be demonstrated in less than half the cases (18), it would seem that the process of settlement reconfiguration which we have seen in all previous periods continued through this one. The area of greatest change was on the lower slopes of the Murge to the S of the Via Appia where the number of occupied sites on Chapman's survey was greatly reduced (from 13 plus one doubtful to 9), reversing the trend of the previous period. This mirrors the decline in settlement numbers found by McCallum and Hyatt in the vicinity of Monte Serico[163] and by Marchi in the territory of Venosa, where

[160] Fiorentino, Primavera, Dand & Monckton in *Vagnari*, 329-343.

[161] A. Bicket, 'Geoarchaeological investigation of the Vagnari landscape', in *Vagnari,* 44-51.

[162] I. Campbell, 'Geomorphology of the Vagnari site and area,' in *Vagnari,* 37-44.

[163] McCallum *et al.* 2013, 79.



Map X-2. Sites of the Late Roman period on the Older Surveys and in our Survey Area.
Sites on the Older Surveys numbered. For Site numbers in our Survey Area see Map X-3 below. The *vicus* of La Santissima (Marchi 2010, Sites 1027-1054) in an area of about 100ha. is indicated by LS on the map. SM = San Mauro.

the tendency already seen in the previous period continued, with smaller properties being absorbed into much larger ones. But on the lower slopes of the Murge and in the area around Monte Serico there were none of the luxurious villas seen in the vicinity of Venosa – which might suggest that much of the land in these areas was owned by distant landlords who rarely visited their estates.

Elsewhere there is not much change in the overall pattern. Some settlements were spaced out at intervals of between 1 and 2km along the route of the drove road where it followed the course of the Torrente di Gravina, and there was a small group of spaced settlements close to where it curved northwards to avoid the gullies of the Roviniero. This area, in the vicinity of Poggiorsini, includes some of the best grain-producing terrain in the Fossa Bradanica, and it seems probable that the new settlements here were farms intended to produce the grain required to pay the taxes in kind which must have been levied on Apulia under the reforms of Diocletian.[164] Cereal cultivation was not incompatible with sheep-raising, and the two forms of land use might be combined with profit if the sheep were managed so that they grazed in the stubble after harvest. The landholders (whether *possessores* or *coloni*) would have been able to exploit the drove road for moving sheep to and from the Murge or more distant winter pastures.

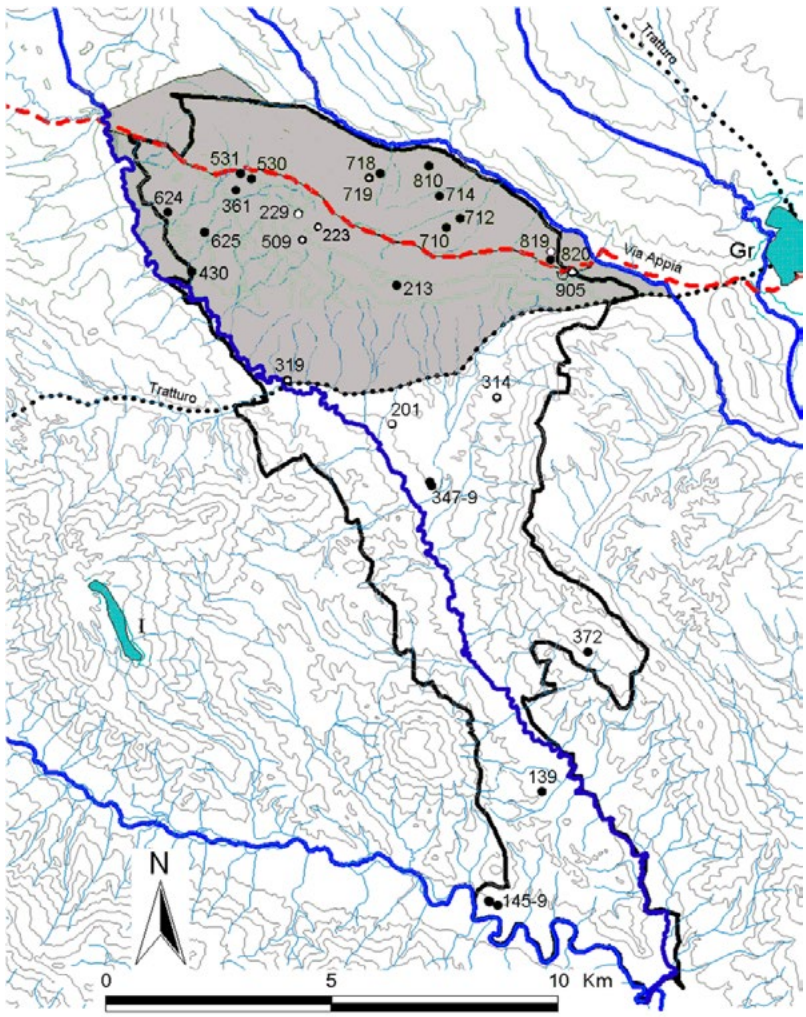
We have already seen that the principal sites along the Via Appia are likely to have been road stations of some importance after the reforms of Diocletian and Constantine, and that there was a probable *mansio* at V16, and possible *mutationes* at Monte Serico (V14) and Vagnari.

18. Our Survey Area

In our Survey Area the number of settlements indicated by ARS datable to the 4th and 5th centuries declined from 21 to 17, though the number of doubtful instances rose slightly from 6 to 8. Some of the uncertainties arise because there is no precise cut-off in the chronology of ARS types at either end of the range, and untyped fragments of ARS-D ware may have been produced in the next period; moreover, it is possible that some of the smallest and poorest sites may not have been recognized as belonging to this period if their inhabitants did not use ARS vessels. The evidence of Late Roman amphorae, mainly imports from North Africa, has also been considered, although this is sometimes problematic for reasons discussed above (Overview II.1.v). In cases where sites with Late Antique but not Late Roman material yielded amphorae datable broadly to the 5th century, we have assumed that the amphorae are also Late Antique, although the possibility that the sites were occupied in the Late Roman period cannot be ruled out. The number of occupied sites may therefore have been underestimated. But even allowing for some element of doubt, it is clear that there were significant changes in the status and location of sites in this period.

i. Sites South of the drove road and West of the Basentello (in Lucania)

On the Lucanian side of our Survey Area, only two sites remained occupied. Site 145-9 continued to prosper as a river port and market centre on the Bradano; but the villa on Site 124 effectively disappeared, though it



Map X-3. Sites of the Late Roman period in our Survey Area.

[164] For grain production in this area in the Roman period, see Small 1994.

was revived again later. Its place is likely to have been taken by the small villa on Site 139, which, as we have seen (Chap. IX.14.i.a), had been founded in the 3rd century AD. The disappearance of other sites which had been occupied in the 2nd century (including the villa on Monte Irsi) must imply that much of the land in this area had gone out of agricultural production. We have suggested above that this can be seen as a consequence of the need to increase pork production in Lucania.

ii. Sites S of the drove road and E of the Basentello (in Apulia)

Here too the settlement pattern remained very thin. The villa at Site 372 continued, though apparently at a lower economic level. By contrast, Site 347-9 close to the Basentello appears to have expanded with rather more datable ARS sherds than in the previous period. There is a small amount of evidence to show frequentation of Sites 201 and 314 in this period, but hardly enough to suggest that they were permanently occupied. With so few settlements, it is likely that most of the area was given over to forest or used for rough pasture.

iii. Sites N of the drove road and E of the Basentello (in Apulia)

On the imperial estate the *vicus* at Vagnari (Site 361) continued and was redeveloped. Several other sites also continued (Sites 710, 810, 820), but 7 others occupied in the previous period disappeared (Sites 606, 607, 704, 715, 813, 822 and 906). Of these Site 607 had been little more than a field hut. The villa on San Felice (Site 229) had been abandoned by the mid-3rd century AD, and the site was now only casually frequented. But 7 new sites emerged (Sites 213, 430, 624, 625, 712, 714, 818) so that the total number of occupied sites remained the same. Of these Site 213 at Recupa di Scardinale must have been a farmhouse with subsidiary buildings and a community large enough to warrant a donkey- or slave-mill. Site 625 was also a substantial site extending over 2000m^2, but in various concentrations, and must also have been a farm complex. Site 430 was a thin scatter over a large area (ca. 15,000m^2), but its nucleus was probably not much more than a hut. The others were all much smaller, the buildings (*casae*) of a scattered rural population.

As in the previous period, there is nothing to indicate that any of these small farms aimed to produce a marketable surplus of either olive oil or wine. On the contrary, the fact that no fragments of oil lamps were found on them suggests that the *coloni* or *servi quasi coloni* who occupied them were not producing any olive oil, and it is unlikely that they were making wine in large quantities since they yielded only small amounts of *dolia* (the *dolium* fragments on site 430 weighed 0.5 kg; those from Site 625, 2.0 kg).[165] Almost no amphorae of this period were found on them. More probably the inhabitants were living close to subsistence level but were expected to produce a surplus of grain to meet the demands of their rental contracts.

We have assumed that these small holdings were rented from the *res privata*, and still formed part, at least in theory, of the imperial estate. There is no way of proving this, but the alternative, that they were cultivated by the tenants of a private landlord is difficult to maintain given the absence of any sign of a villa anywhere in the vicinity which might have functioned as the administrative centre of a private estate, whether or not it formed part of a *massa fundorum*.

iv. Imported amphorae in the context of the Late Roman settlement pattern

Giacomo Disantarosa's analysis of the amphorae in Cat.19 and the Appendix) shows that many of these containers were imported into the Survey Area in this period, mainly from North Africa. At first sight it is difficult to reconcile this with the account of the settlement types just given. If there were no luxurious villas in the area and most of the settlements were small farms of humble status, why were so many amphorae containing oil, wine, fish sauce etc imported into the area? The answer must lie in their distribution. They were found on relatively few sites: an Africana III amphora on Site 213, cylindrical containers of medium size on Sites 124, 145-9 (2 examples), 223 and 337, and *spatheia* of type 1 on Sites 145-9, 211, 213, 223, 810 (2 examples) and 819. Of the sites with two or more examples, Sites 213 and 810 were among the largest settlements of this period – either substantial farmhouses or small hamlets – where the inhabitants might be able to afford whole amphorae of wine or oil. The status of Site 223 in this period is uncertain; but the most significant is Site 145-9 which as we have already seen (Chap. IX.14.i.a) was a commercial centre on the Bradano river where transport amphorae could be unloaded. They could have been redistributed to other settlements between the Bradano and Basentello, including unknown sites beyond the limits of our survey. Its counterpart on the E side of the Basentello was Vagnari where 4 Africana III and 12 *spatheion* 1 amphorae were found in the surface survey and in the first phase of the excavations.[166] Since the excavations have not yet uncovered any domestic buildings of this period on the site, we cannot know if some of the inhabitants may have been rich enough to be able to buy the amphorae for their own uses, but it seems probable that the *vicus* was a commercial centre

[165] There were richer sites elsewhere in the central part of the Fossa Bradanica, e.g. Sites C4, V25 and V43 of the Older Surveys, all of which produced Late Roman lamps.

[166] Disantarosa in *Vagnari*, Appendix 5, 387-406.

like Site 145-9 from which transport amphorae could be redistributed over a wider area. It is also very likely that in both places there were *tabernae* where the contents of the amphorae could be decanted and sold in smaller vessels for local consumption.

19. Conclusions

Under the administrative reforms of Diocletian Italy was effectively provincialized. The old Augustan regions were reorganized as equivalents of provinces with defined borders, and subjected to taxes in kind, which were used for provisioning the City of Rome and the army. In Lucania, the tax was levied on swine, in Apulia, wholly or partly on grain. Since the border between Apulia and Lucania was set at the Bradano-Basentello river, the W part of our Survey Area fell within Lucania and the larger E part in Apulia. The need to fulfil the tax requirements led to changes in land use which took different forms on the two sides of the river.

In order to transport the taxes efficiently, the road system was reorganized throughout the Empire and under Diocletian and Constantine existing road stations were repaired and new ones instituted which acted both as stopping points for the imperial post and as centres where taxes could be collected and sent onward by road. The Via Appia between Venusia and Tarentum formed part of this system. There must have been at least one road station between Venusia and Silvium in the area of the Older Surveys not recorded in the Itineraries, and it seems likely that the *vicus* at Vagnari also served as a road station and collection point. There is, however, no literary evidence to prove this.

The Via Appia connected our Survey Area to Rome, but it also led to the ports at Taranto and Brindisi and beyond them to North Africa and the Eastern Mediterranean. Other minor roads led across the Murge to smaller ports on the Adriatic coast, and there were still connections by road or by river with the Ionian Gulf at Metaponto where a new wharf was built with storage facilities for exporting grain and importing amphorae. Whatever the routes used, the finds show that our Survey Area was fully integrated into the Mediterranean trading network. African red-slip pottery still arrived from Central and Northern Tunisia, and amphorae of oil wine and fish sauce continued to be imported from Tripolitania and elsewhere in North Africa. The Vandal conquest of the region cut off Rome from the supply of grain levied by the tax on the North African provinces, but it had little or no effect on the trade in other commodities.

Alongside the pottery, there must have been an extensive trade in perishable goods such as grain and textiles which have left few traces in the archaeological record. Many of the *negotiatores* involved in this trade are likely to have been Jews who established communities at Taranto and Venosa on the Via Appia, and must have travelled from the one place to the other along the road by way of our Survey Area.

Because of these links with North Africa and the Eastern Mediterranean Apulia was less affected by the decline of Rome as a consumer city than the rest of Italy, and the region developed rather differently from the Centre and North of the peninsula. Some towns declined, just as they did in the rest of Italy, especially those which did not become episcopal sees or centres of the imperial administration; but some *vici* grew in importance and became alternative administrative and ecclesiastical centres, as well as habitations for the rural population. In N and Central Italy luxurious villas were generally abandoned or transformed into nucleated settlements, but in Apulia and Lucania some grand villas remained as centres of conglomerated estates and were still inhabited by their aristocratic owners. In some parts of Apulia small and medium sized farms were recreated, even as they were disappearing from the landscape in Central Italy. The characteristic forms of settlement varied from one sub-region to another, but the overall level of population seems to have remained more or less constant.

There were, however, significant changes in land-use. Much of the terrain in the Fossa Bradanica which had been given over to pasture for transhumant sheep was adapted to other purposes which would bring in revenue to the Fiscus. In Lucania, some upland pastures were allowed to revert to forest where the pigs needed for the levy could forage; and in some parts of Apulia large estates were slit up into smaller farms for arable cultivation, continuing a movement which had already begun in the previous period and making use of forms of tenancy which gave long leases and security of tenure to cultivators.

Some of these developments were put into effect first on the imperial properties. This can be seen in the N part of our Survey Area where the subdivision of the imperial estate into much smaller farms had begun in the previous period. The majority of the new farms created then failed before the beginning of this period, but they were replaced by others so that the total number of inhabited sites was only a little lower. In this context, therefore, the imperial policies directed at bringing deserted land back into production were at least partially successful. The poor quality of the material found on the surface suggests that the inhabitants were living at subsistence level, though they must have been expected to make a surplus with which to pay their rents and taxes in kind. Generally, however, the settlement pattern remained thin in the Survey Area. The few villas of the previous period had disappeared, but the *vicus* at Vagnari gained in

importance as the social and economic centre of these dispersed settlements, and its role was enhanced around the beginning of the 5th century when the nucleus of the settlement was transferred to the S part of the site and a new public building was erected which appears to have doubled as a market hall and a centre of the local administration.

Chapter XI. Late Antiquity and the Early Middle Ages to the mid- 7th century

The beginning of this period is marked conventionally by the end of the Roman empire in the West in 476 AD; the end of it we have set even more arbitrarily in 663 AD when the Byzantine Emperor Constans II, *en route* from Rome to Sicily, made a destructive though ultimately unsuccessful attack on the Lombard territory in South Italy, which incited the Lombards to attack the Byzantines two years later and make themselves masters (for the time being) of almost all of the peninsula.[1] We have chosen to prolong the discussion past the traditional end of Late Antiquity, which is normally set at the arrival in 568 AD of Lombard tribes from Pannonia, into the Early Middle Ages I since a terminal date around the middle of the 7th century suits the archaeology of the period better, at least in relation to our survey material. This is primarily because LRPW pottery, the most abundant form of evidence for settlement in the post-Roman period, continued well into the 7th century, and it is normally impossible to distinguish types current before the Lombard invasion from those produced after it.

1. Pottery and other artifacts

i. African red slip

The ware was still being imported into our Survey Area at the beginning of the period, but in reduced quantities. There is, however, a piece of Hayes 61C datable to the middle or second half of the 5th century (no 1055 from Site 810); and fragments of Hayes 93 B (No.1062), Hayes 99 (No.1063) and Hayes 104A2 (No.1064) show that site 347-9 continued well into the 6th century.

ii. Late Roman Painted Ware2

LRPW is the key chronological indicator of this period. Early forms of the ware first appeared shortly before 400 AD, but the fully developed style characterized especially by deep bowls with elaborate rims and flanges, decorated with combed wavy lines and broad splashes of reddish-brown slip, only began to be produced after ca. 460 AD. As has been said, the ware continued to be made with little perceptible development well into the 7th century AD. Its adoption suggests a change in social habits, discussed below (sub-section 5.ii, 6.ii).

iii. Plain wares

The potters who made LRPW also produced unpainted pieces in the same fabric, in similar shapes and with comparable combed wavy-line decoration (as Nos.1220, 1239, 1240, 1249, 1276, 1278). They were evidently a low-cost version of the ware, serving the same functions, and with the same date-range.

iv. Cookpots

The standard cooking vessel remained the simple deep globular pot with wide mouth and out-turned rim which might or might not have a seating for a lid. The type began earlier and continued later, so it is of only limited use as a chronological marker for this period, although the examples with undercut rims (Nos.1354-1356) or short vertical rims (as No.1359) are likely to belong here. There are also a few jugs or flagons made in this ware which imitate shapes in LPRW (as No.1376) or have other comparanda of this period (as No.1377).

v. Amphorae

As Disantarosa's study shows, African amphorae continued to be imported into the Survey Area throughout this period and Eastern types arrived in greater numbers. They provide valuable evidence for the chronology of the sites and their economy.

vi. Glass

Although cups and shallow bowls continued to be made in LRPW, the preferred material for drinking vessels for those who could afford it was glass (as Nos.2011-2015). The typical vessel of this period was the stemmed goblet. The type begins earlier and continues later, with little typological differentiation, but comparisons with other sites such as San Giovanni di Ruoti confirm that it was especially popular in this period. Fragments of these goblets have been found on Sites 134, 223 and 349 (Nos.2011-2015), and at Vagnari.[3]

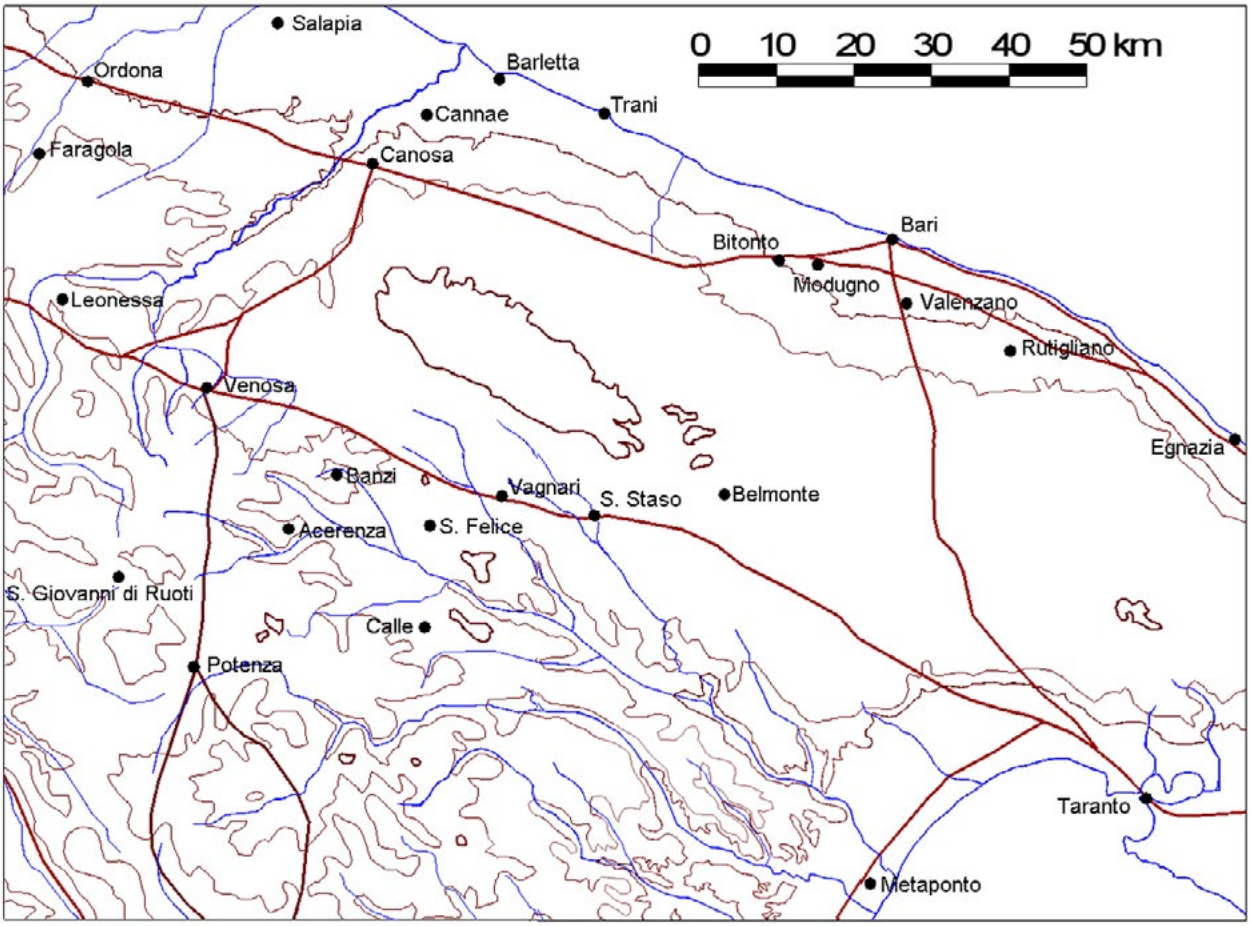
vii. Combed tiles

These are discussed below (sub-sections 5.vi and Cat. 32.I and II.G). They are likely to overlap with the later phases or LRPW, and can be dated broadly in the late 6th or 7th century AD.

[1] A similar view is taken by Donatella Nuzzo (2010, 481).

[2] There is no generally accepted term for this ware. It is frequently called "Calle Ware" but this term has been rejected on the grounds that it was not made only at Calle. We used LRPW in the publications on Vagnari and it seems best to keep it, although we are aware that the pottery long outlasted the Roman Empire in the West.

[3] *Vagnari*, 161, fig. 5.31, P1147; 165, fig. 5.41, P1155; 184-185, fig. 5.66, P1633.



Map XI-1. Places in the Fossa Bradanica and adjacent regions mentioned in the text.

2. The historical background before Justinian

The Roman Empire in the West ended in 476 AD with the expulsion of the Emperor by the Skire, Odoacer, and the subsequent establishment of the Ostrogothic kingdom under Theoderic (493-526); but in South Italy very little change, either political or social, resulted immediately from the change of régime. Indeed Italy in the reign of Theoderic was probably more stable than under the last Roman Emperors. In-fighting among the Goths began to de-stabilize the régime thereafter and in 536 the Emperor Justinian, as part of a campaign to recover lands lost by previous Emperors in Africa and Western Europe, sent his general Belisarius to attack the Goths in Italy.

i. Barbarian settlement and other population movements

Both Odoacer and Theoderic settled large numbers of their followers on Italian land made available to them at the expense of the indigenous Roman population. That much is clear from the sources, though the means by which they did so have been much debated. The primary source, Procopius, asserts that Odoacer achieved it by confiscating a third of the land from its Roman owners, and reallocating it to his Germanic warriors, and that when Theoderic had defeated and killed Odoacer, he redistributed the land to his Goths.[4] Other primary sources are generally consistent with this interpretation,[5] including Cassiodorus and Ennodius, who tell us that Theoderic appointed a Roman, Liberius, as praetorian prefect with instructions to oversee a new settlement between Romans and Goths. None of these sources says clearly that this involved the acquisition and re-allocation of more land, although this must have been necessary (on this interpretation) since Theoderic's army is likely to have far outnumbered that of Odoacer.

The standard view, based on these sources, is that the Goths settled on the land allocated to them and raised their families, still living under their own Gothic laws. But this interpretation of the settlement was challenged in 1980 by Walter Goffart who argued that Procopius is an unreliable source who was writing a considerable time after the settlement and mis-represented it; and that the thirds (*tertiae*) distributed to the Germanic settlers were not portions of land, but shares in the

[4] Procopius, *Wars* I.1.2-8, 28.
[5] Cassiodorus, *Variae* I.14.18; II.16.17; VII.3. Ennodius, *Epistolae* IX.23.

tax revenues derived from the land.[6] The settlement was therefore achieved without upsetting the existing landholdings, which explains why it was carried out without major disruption and is generally favourably reported by the sources. Ennodius and Cassiodorus, both admittedly intent on flattering Liberius, asserted that the settlement was made in such a way that "the Romans have hardly felt it".[7]

But Goffart's rather high-handed rejection of the principal source (Procopius) weakens his argument, and the traditional view that a reallocation of land in some form was involved still prevails,[8] though there is much uncertainty about how it was carried out. If all that was involved was the allocation of a third of the land held in *massae fundorum* to new Gothic owners, leaving the *coloni* who worked the land still in place to support the Gothic warriors with their rents, then no disruption on the ground would have taken place, although there would have been a number of much impoverished Roman landowners.

Whatever the case, there is good reason to suppose that the settlement had little impact on South Italy. The Gothic army was stationed primarily in the North of the peninsula where the danger of invasion was greatest, and archaeological and toponymic evidence confirms that the main areas of settlement were in the North, in the foothills of the Alps and around Ravenna, Milan and Pavia, extending South to Picenum and the northern part of Samnium.[9] It was for this reason that the Byzantine attack on South Italy at first met little opposition. According to Procopius, the Calabrians (in the Salentine peninsula) and Apulians submitted readily to Belisarius in 536 AD because there were no Goths present in their land to oppose it.[10]

That is, however, surprising in view of the archaeological evidence for our Survey Area and for some other parts of Apulia (sub-section 7.iv) which shows that there was a significant increase in settlement density in this period which it would otherwise have been tempting to attribute to the settlement of Odoacer's *foederati* or of Theoderic's Goths. They were not, however, the only peoples settled in Italy around this time. When Odoacer evacuated Noricum in 488 AD he settled the population in various regions of Italy, including, no doubt, Campania where the body of Saint Severinus who had died in Noricum 6 years previously, was buried. Eugippius in his *Life of Saint Severinus* tells us that when the towns on the far side of the Danube were abandoned all the provincials made the same journey through different regions of Italy and obtained various places to settle.[11] The words translated here "obtained" (*sortiti sunt*), if taken literally, would imply that they were awarded their new lands by lot. Since the saint's remains were eventually deposited in Naples it is likely that many of them were settled in Campania, but it is conceivable that others were settled in Apulia and Lucania.

It is also possible that some of the invading Byzantine army, which was racially extremely mixed,[12] may have settled in Italy. The soldiers were forbidden to work the land, but they were not forbidden to own or rent it.

It is clearly impossible on present evidence to link the increase of settlement in the Survey Area with certainty to any specific episode of land settlement, like those just mentioned. But the increase in population in and around the area fits the broader picture (already apparent in the previous period) of demographic decline on the Tyrrhenian side of Italy matched by greater stability and in some places increase of population on the Adriatic side, mirroring the decline of Rome and the rise of Ravenna as centres of government.

ii. Administration

The suppression of the last of the Roman Emperors in the West had little direct effect on the administration except that the barbarian kings replaced the emperors as the ultimate source of authority in the state. Under Theoderic, on whose reign we are best informed, the great offices of state, the *res privata* and the *sacrae largitiones* continued to function more or less as before, except that a new high-ranking official, the *comes patrimonii* was appointed to administer the imperial estates that were still managed directly, rather than rented out on emphyteutic leases.[13] These latter remained with the *res privata* which continued to derive revenues in rent from the *de facto* landowners who occupied them. In most other respects the provincial organization of Italy and the system of taxation remained essentially as it had done under the emperors.

The provisioning of Rome and the army

All taxes were now paid in gold *solidi*, which the authorities used to buy the commodities needed to supply the army in North Italy, the court and the city of Rome. The population of the *Urbs* had diminished so much that Cassiodorus in 535 AD could write of the great size of the city supplied by the *annona* as a distant

[6] Goffart 1980.
[7] *MGH AA* VII, 307, CDXLVII– Ennodius, *Epistolae* IX.23: *...vix scientibus Romanis.* See also Cassiodorus, *Variae* XVI.25.
[8] For a close critique of Goffart, see Barnish 1986.
[9] Bierbrauer 1975; Barnish 1986, 185-186.
[10] *Wars* V.15.3.
[11] *Vita Sancti Severini*, 44: *... cunctis nobiscum provincialibus idem iter agentibus, qui oppidis super ripam Danuvii derelictis per diversas Italiae regiones varias suae peregrinationis sortiti sunt sedes. Sancti itaque corpusculum ad castellum nomine Montem Feletrem.... apportatum est.*
[12] Cosentino 2008, 116-117.
[13] Vera 2014, 290.

memory.[14] Nevertheless the urban population still needed to be fed with supplies of grain and pork bought with part of the taxes raised in Apulia and Lucania. The pigs were still driven to Rome on the hoof, and the grain needed was shipped by way of the Adriatic ports, as it had been under the later emperors.[15]

That letter of Cassiodorus was addressed to Vitalianus, *cancellarius* of *Lucania et Bruttii*, and in it, Cassiodorus as Praetorian Prefect authorized a reduction in the tax levied on the province from 1200 *solidi* to 1000. That is sometimes interpreted as an indication that he was allowing for a reduction in the ability of the provincials to pay, but given that, shortly before, in a letter written on behalf of Athalaric to Severus *vir spectabilis* (his role is not explained), he had been extolling the prosperity of Bruttii,[16] it is more likely to reflect the fact that less pork was now required from the province to feed the urban population. Nevertheless, the distribution of pork continued throughout the period of the Gothic kingdom, and the requirements of the state for both pork and grain still largely determined the forms of agriculture practised in the southern provinces.

iii. Socio-economic change

a. The cities

The cities continued to decline. Cassiodorus in his letter to Severus gave orders to prevent the landowners and town councillors from abandoning the cities in favour of country life. It was hardly a new complaint and it referred in this instance only to Bruttii, but it points to a serious problem. In theory municipal government remained in the hands of the *curiales*, but their role in the administration of their communities was practically limited to underwriting the taxes collected from them, a heavy burden which they tried continually to evade.[17] Local magistrates presumably continued to exist, but they were no longer recorded in inscriptions, and had probably lost most of their executive functions. Real power was increasingly exercised by bishops who, like other ecclesiastical authorities, were exempt from municipal *munera*. Their social status rose as that of the *curiales* declined. They gradually took over many of the functions once exercised by the city magistrates, and as the church benefitted continually from donations of property, so the authority and economic power of the bishops increased.[18]

The list of *civitates* which were also episcopal sees amounts to a register of the cities which were still economically functional. By the beginning of the 6th century AD they included (within the area of Map XI-1) Potenza and Acerenza in Lucania,[19] and Ordona, Canosa, Venosa, Bari, Egnazia and Brindisi in Apulia.[20] The bishops of the most important *civitates* were powerful figures on the secular as well as the ecclesiastical stage. The outstanding example is Sabinus, Bishop of Canosa between 514 and 566 AD,[21] who was entrusted by the Gothic king Theodatus with a mission to Justinian at Constantinople in the hope of averting the imminent Gothic war.

Canosa remained the pre-eminent *civitas* in Apulia. It had already been remodelled to some extent early in the 5th century by the provincial governor, Cassius Ruferius (Chap. X.6), but Sabinus added to its magnificence as a Christian *civitas* which was the capital of the region as well as his diocesan seat. He built or rebuilt complexes of churches at opposite ends of the city: a baptistery of Saint John, attached to the existing church of Santa Maria to the N, and the episcopal complex of San Pietro and the church of San Leucio to the S. There are substantial archaeological remains of all three.[22] Between them, in the centre of the city there was a great basilica, part of which has recently been detected beneath the baroque overlay of the present day-cathedral.[23]

The same pattern of urban development, centred on new church buildings, can be seen in other dioceses. This was a time of relative stability and peace before the Byzantine reconquest, and evidently the resources could be found to finance new ecclesiastical enterprises. In Venosa an episcopal complex was built inside the walls at the NE end of the city beside the Via Appia at some time in the later 5th century, possibly under Bishop Stephanus.[24] With the decay and abandonment of the old civic structures, it became the principal feature of the topography of the Late Antique city. At Bari, a Bishop Andreas constructed a cathedral with a magnificent mosaic floor, revealed by excavations under the Romanesque cathedral. An inscription in the *tesserae* gives his name and asserts

[14] *Variae* XI.39.
[15] For the complexities of the system involved, including the organization of granaries, see Vera 2008.
[16] *Variae* VIII, 31.
[17] See e.g. *Variae* II.24.
[18] Volpe 2007.
[19] Campione 2000, 41-60 (Potenza), 81-84 (Acerenza). The primary source is two letters of Pope Gelasius of 494 and 495 AD: *Italia Pontificia* IX, 484, 486. Justus Bishop of Acerenza was summoned by Pope Symmachus to a council in 499 AD (*MGH AA* 12, 400) and Stephanus, Bishop of Venosa, subscribed to the *Acta* of that called by Theoderic in 501. Justus and Stephanus had previously appeared (though without indication of their sees) along with Herculentius, bishop of Potenza, in a letter of Pope Gelasius I concerning two slaves ordained without the knowledge of their owner by Sabinus, bishop of Marcellianum and Consilinum in the Tanagro valley: Jaffé-Wattenbach 1885, vol. I, 87.
[20] Nuzzo 2011, lix-lx with refs. She does not mention Brindisi which had a bishop in 496 (Jaffé/ Wattenbach 89, no.676). She points out that there is no evidence for a bishopric at Taranto before the time of Gregory I (*MGH Ep*. I, III, 44 addressed to Andrew Bishop of Tarentum).
[21] Otranto 1992, 829-831.
[22] San Pietro: Volpe *et al.* 2005, 2007; San Giovanni: Corrente *et al.* 2005, 2007, Giuliani *et al.* 2013; San Leucio: Cassano 1992b.
[23] Volpe 2014, 1053.
[24] Salvatore in *Museo Venosa*, 61, 278.

that it was paid for in part by a certain Timotheus. Its date is disputed, but it most probably belongs to the 6th century and shows close links with the Byzantine East.[25] At Egnazia, the episcopal basilica was rebuilt in the late 5th century, probably under Bishop Rufentius who attended the Roman synods of the church in 501 and 502 AD.[26] Another of the churches in the city was rebuilt at some time in the 6th century and embellished with a mosaic floor.[27] At Potenza there are remains of an *exedra* with mosaic floor below the present cathedral, but the excavation was not carried out stratigraphically, and it is unclear how exactly the structure should be dated (perhaps to the 5th/6th century AD) or whether it formed part of an earlier cathedral which would have been the seat of the bishop of this period.[28] There are also fragments of some walls and another mosaic floor below the medieval church of San Michele which have been thought to be the remains of a church mentioned in a letter of Gelasius to Herculentius bishop of Potenza. It was situated in a *fundus Sextilianus* near the city and was dedicated to Saints Michael and Mark (sub-section 4.iii.f).[29] Less can be said of church building in the other dioceses in the area of the map although some structures and burials recently excavated below the cathedral at Taranto have been tentatively interpreted as belonging to a church of the 6th or 7th century.[30] The location of the cathedral at Acerenza is still unknown, and although it had a bishop at the end of the 5th century, the principal importance of the *civitas* was as a defensible stronghold. It was a scene of fierce fighting in the Greco-Gothic wars and the only place in Lucania which Procopius in his history of the wars mentions by name.

Another *civitas* still of some importance in this period was Salapia, which had had a bishop in the Late Imperial period. It seems to have lost its status as an episcopal seat (sub-section 4.ii), but the lagoon at the edge of the city remained an important source of salt, and the ongoing project of geophysical exploration, field survey and excavation on the site is showing that occupation continued well into the Middle Ages. There are the remains of an élite *domus* which was destroyed by fire in the late 5th or early 6th century and rebuilt with wooden posts to support thatched roofs.[31]

By contrast, most of the former cities of Central Apulia seem to have declined into insignificance. Neither Cassiodorus nor Procopius refers to any *civitas* in this part of the Region.[32] The status of Bari is ambiguous. As we have seen, it probably had a bishop, and a new church. Dealers in wine and oil continued to import amphorae from North Africa and the Eastern Mediterranean down to the 7th century,[33] but its port was not used by the Byzantines as a base for the invasion of Italy or for supplying the army in its aftermath. The city's importance as a centre of Byzantine power in South Italy belongs to a later period.

b. The disintegration of the old city centres

Although the churches acted as enclaves of urban renewal, in other respects the city structures continued to disintegrate during this period as public buildings were abandoned and small one- or two-cell houses were erected in the spaces they had occupied.[34] The pagan temples, abandoned when Theodosius I suppressed pagan practices after taking over the rule of the western part of the empire in 492 AD, were generally left in ruins, or were adapted for Christian use. Some were demolished and replaced with Christian churches – as was the case with the temple of Jupiter Taurus at Canosa which gave place to the church of St. Leucius. In the cities which had become episcopal sees in the late 5th or early 6th centuries AD the churches provided new focal points for social and economic interaction as well as for Christian religious ceremonial which formed an increasingly important part of civic life, replacing the festivities of the pagan calendar. But other smaller cities, *municipia* in the administrative system of the Roman empire, which did not acquire bishops continued to dwindle away, becoming little more than *vici*. They have not been well studied, but some examples can be pointed out. Banzi (Bantia) shrank in size throughout the period, and burials intruded into the former urban area.[35] At Metaponto, the palaeochristian basilica was abandoned at some time in the 5th century, and the excavated part of the settlement in this area was burned down around the end of the century. It was partially rebuilt, and occupation continued at a less intense level until the middle of the 6th century when the whole settlement was abandoned.[36]

Nevertheless, in spite of these symptoms of decay, the more successful cities continued to be important economic centres serving larger territories than before, and in some cases linked into distant trade routes. They were either ports, like Taranto and Bari (though the importance of Bari in this period may be overestimated), or situated on major roads, like Venosa and Canosa. There was still an urban class of artisans and merchants, distinct from the rural population. In Taranto, Bari and Venosa, they included the Jewish

[25] Bertelli 1984, Felle 2010, 470 (6th century); Otranto 1991, 179-183 (8th century).
[26] *MGH AA* XII, 434 no. 35, 452, no.15.
[27] Cassano 2017, 215-216.
[28] Campione 2000, 58-59; Favia 2005, 257-261, figs 1-5; Donnici 2017, 3-6, figs 2-6.
[29] Donnici 2017, 6, figs 7-8; Jaffé/ Wattenbach 1885, 89 no.680.
[30] Salamino 2016.
[31] De Venuto *et al.* 2015, 2017.]
[32] Nuzzo 2010, 480-481.
[33] Disantarosa 2015a, 2015b.
[34] Giuliani 2013.
[35] Sodo 2008, 53.
[36] Giardino 1991, esp. 850, 857; Giardino *et al.* 2000, 353-357.

communities (already discussed in Chap. X.6.i), which continued to flourish in the first part of this period (sub-sections 2.iii.*g,* 4.iii).

c. Burials

As we have seen, the traditional prohibition on burying the dead inside the *pomerium* of a city, was tacitly abandoned in the course of the 4th and 5th centuries, and burials began to intrude into the urban centres, especially into areas which had once been occupied, but which had been deserted as a result of natural disaster or population shrinkage (Chap. X.6). The process was widespread, but unorganized, and it did not supersede burial in communal cemeteries on the outskirts of the cities. These were frequently in catacombs excavated in areas where the bedrock was suitable, as at Canosa and Venosa.[37] In the 6th century, when the church had consolidated its control over the cities, the ecclesiastical authorities encouraged burial inside churches or immediately adjacent to them where the dead could be interred in holy ground dedicated to a martyr. So at Canosa burials were made inside the churches of San Pietro[38] and San Leucio, and in front of the baptistery of San Giovanni.[39] At Venosa a burial ground was developed in the 6th century adjacent to the new palaeochristian episcopal complex at the NE end of the town, in the area later called after the Norman abbey of the Trinity.[40]

d. Villas

Down to the time of the Greco-Gothic War, the aristocratic classes continued to invest in *massae fundorum*, and the villas which were the centres of these vast estates became (as a general rule) increasingly luxurious. The outstanding example is the villa at Faragola where the *dominus* of the late 5th century replaced the mosaic floor of the *cenatio* of the previous phase with a much grander pavement of *opus sectile*; and at the focal point opposite the main doorway, he constructed an elegant *stibadium* in place of the traditional *triclinium*. The front wall of the semi-circular structure was paved with marble slabs which formed the edges of a pool which was filled with water supplied through pipes incorporated in the masonry. This was both an attractive feature and a useful amenity since the guests would be able to rinse their hands in the pool after eating. [41]

But the building most indicative of a change in the concept of what an élite building of the period should be is the villa at San Giovanni di Ruoti, deep in the Lucanian mountains, a little to the W of the watershed. Some of the buildings of ca. 400 AD collapsed ca. 460 AD, probably in an earthquake, whereupon the landowner restored the main S range of the complex except for the apsidal hall/ *praetorium* which he abandoned. In its place he built a new larger *praetorium*, linked to the restored S range by other buildings, so creating a tightly organized complex with ranges of rooms separated by corridors and light wells. Most of the rooms on the ground floor were used as animal pens or for storage. Domestic living accommodation was on the upper floor. The bath suite continued in use and was extended and embellished with mosaic floors. The only elegant space on the ground floor was a long and relatively narrow room, below the antechambers to the praetorium, which was floored with mosaic. It is likely to have been a dining room, but one in which the guests ate seated on benches beside a long table,[42] very different from the *cenatio* with *stibadium* of Faragola.

In these Late Antique villas, the dominant feature was the *praetorium*, a large hall with an apse at one end to focus attention on the *dominus*.[43] The Late Roman agronomist Palladius (I.8), writing at the end of this period (probably between 460 and 480 AD) describes just this type of building. It should be appropriate, he says, for the quality of the land and the wealth of the *dominus*. The *praetorium* itself should be on somewhat higher and dryer ground than the rest of the building to avoid damage to the foundations and so that it may enjoy a good view; and its long side which forms the front of the building should face S to get the full benefit of the sun. There should also be functional buildings in a different area where the blacksmiths, carpenters and coopers lived who served the needs of the estate (I.6.2).

The villa at San Giovanni di Ruoti, with its compact plan, long and narrow dining room, and domestic rooms on an upper floor, belongs to a different socio-cultural world from the villa at Faragola in its contemporary manifestation.[44] This contrast between them mirrors the social dichotomy of the time with Romans living under Roman law and Goths under their own traditional laws. It is encapsulated in the story told by Pope Gregory I (the Great) of a lunch offered by Sabinus bishop of Canosa for the Gothic king Totila at which Sabinus reclined and Totila sat at his right hand.[45] It is likely,

[37] Canosa: Lavermicocca 1969; Simone Campese 1992; Carletti *et al.* 2012. Venosa: Colafemmina 1970; Salvatore 1984, 91; Campione 2000, 75.
[38] Volpe 2014, 1057.
[39] Campese Simone 1996, 400-401.
[40] Salvatore (ed) 1984, 71-76, esp. 75; Salvatore in Marchi & Salvatore 1997, 133-138.
[41] Volpe 2005, 229; Volpe & Turchiano 2009; Sfameni 2006, 210-214.
[42] This is argued more fully in Small 2008, 457.
[43] For the *praetorium* as the centre of a *massa fundorum*, see Vera 1995, 350-352; 1999, 1018-1019.
[44] For the architectural context of the villa, see Small 1983; Sfameni 2005; 2006, 215-219.
[45] Gregory I. *Dialogues,* III, 5 cited in *Acta Sanctorum* Feb. II p. 318. Because Totila was sitting he was able to test Sabinus' *prophetiae spiritum* in discerning that it was Totila and not the slave boy who was offering him the wine (the point of Gregory's anecdote). But Totila

however, that it was Sabinus rather than Totila who was out of step with the prevailing dining customs of the time, and that the bishop was upholding the traditions of a rapidly vanishing era. The large and heavy bowls in LRPW such as our Nos.1118-1139 must have been used for serving food to a large number of people, far more than could be accommodated at a *stibadium*.

This was not, however, a uniform development, and Central Apulia lay outside it. No luxurious villas of this period have yet been found in this part of the region, even in the relatively fertile coastal strip,[46] and there were certainly none in our Survey Area. There were probably several reasons for this. The lack of perennial rivers on the eastward slope of the Murge made it impossible to equip a villa with the kind of lavish bath suite supplied with water from an aqueduct that was an essential component of elegant living. Moreover, the existence of large royal (formerly imperial) estates on the Murge and in parts of the Fossa Bradanica may have inhibited the creation of luxurious villas in these areas. Even when the estates were subdivided and leased out on emphyteutic terms (sub-section 2.ii) the richest leaseholders may have preferred to build on land which they owned outright.

e. The rural population

The land was farmed, as in the previous period, by peasants of varying status. There were probably some independent farmers who owned their own land, but the great majority are likely to have been *coloni* or slaves living in *casae* or in *vici*. Slavery was still widespread in the countryside, as we can infer from a reference by Procopius to the slaves who were enrolled by Totila in the Gothic army.[47] But in practice the difference in status was decreasing in importance, and Cassiodorus normally refers to the rural population with the single term *rustici.*[48] Legally however, the distinction between free and unfree remained. Several passages in Cassiodorus indicate the power that the great landowners had over their dependants in the countryside.[49]

f. Christianity in the countryside

During this period the popes and bishops took steps to establish the Christian faith more firmly in the countryside.[50] Rural bishoprics were set up in some areas, breaking the link between the historical territories of the cities and the episcopal sees. In Apulia bishops were established in the *vicus* of Trani (*Turenum*) on the Adriatic coast and at Carmeianum in the *saltus Carminianensis*. The ecclesiastical complex excavated at San Giusto can probably be identified as the seat of Probus *episcopus Carmeianensis* who attended the Roman synods of 493-494 and 501-502 and is recorded in their *Acta*.[51] Sabinus, bishop of Canosa must have ordered the construction of churches in the *vici* of Barletta and Cannae where bricks stamped with his monogram have been found used in the masonry of churches built in this period.[52] These initiatives suggest that a parochial structure was being developed in the diocese of Canosa.

Private individuals were also important patrons (as in the building of the church at Bari), and they were encouraged to build churches on their estates, provided that all rights in them were transferred to the authority of the bishop of the diocese. When a certain Trigetius wished to build a basilica in honour of Saints Michael and Mark on his estate, the Fundus Sextilianus in the diocese of Potenza, the matter was referred to Pope Gelasius. He wrote to Herculentius, bishop of the diocese, instructing him to inform Trigetius that he must have no rights over the new church other than that of taking part in its processions.[53] It may have been benefactions of this kind that led to the construction of other rural churches in Apulia and Lucania,[54] such as one in the contrada Leonessa near Melfi which was built over the remains of the wine-press of a Roman villa.[55] The press was abandoned in the 3rd century, but the fate of the domestic part of the villa is uncertain since it was not excavated. Whatever the case, the association of the church with the villa suggests that the church may have been founded by the owner of the estate, even if he no longer lived in the building.

There were also several churches founded in this period in the countryside of Central Apulia which are likely to have fallen within the diocese of Bari.[56] They include a church at Bitonto,[57] which, as we have seen (Chap. X.6), had been reduced to the status of a *mutatio* on the Via Traiana. Others have been identified (though less studied) at Modugno-Misciano, Valenzano-Ognissanti and Rutigliano-Purgatorio.[58] These were small buildings with simple nave and apse. They were all located in

would have given the game away in refusing to recline *(discumbere noluit)* if this had not been his normal practice.

[46] Mangiatordi 2008-2009, 563-564.

[47] Procopius, *Wars* VII.16.25.

[48] See Arcuri 2009, 84-86.

[49] Arcuri 2009, 87-88, with further refs.

[50] Volpe, Favia & Giuliani 1999; Volpe 2007.

[51] *MGH AA* XII, 437, 453. Volpe 1998, 332-338; 1999, 95; Volpe, Favia & Giuliani 1999, 276-285. See also Ch. X above.

[52] Barletta: Favia & Giuliani 2015, esp. 49-53; Cannae: Bertelli 2004, 79-84.

[53] Campione 2000, 49-50. Jaffé-Wattenbach 1885, 89 no.680. For the tendency of great landowners to construct churches as religious centres of their *massae fundorum*, and endow them with clergy, see Vera 1999, 1020.

[54] G. Volpe (2005, 235-239) lists numerous rural churches in the S Italian regions datable between the 5th and 10th/11th centuries. For a list of rural churches in Apulia, see Nuzzo 2011, lxi-lxii.

[55] Favia 1999, 320-326. For the villa, Klein Andreau 1980, 345-352.

[56] Depalo 2010.

[57] Volpe, Favia & Giuliani 1999, 295-298.

[58] Volpe, Favia & Giuliani 1999, 295-298 Mangiatordi 2008/2009, 558-559, 590-593; Nuzzo 2010, 479-480.

the Adriatic coastal strip and were easily accessible by the Via Traiana. Another church of this period, which may also have fallen within the diocese of Bari, was built at Belmonte on the Murge in the territory of (modern) Altamura not far from the Via Appia.[59] It was a rather grander building with nave, side aisles, apse and baptistery. The graveyard around it seems to have served a large and scattered rural population.

Closer to our Survey Area, there may have been a church at Santo Staso below Botromagno, where an excavation carried out in 1971 uncovered the remains of a small building and numerous fragments of terracotta plaques (*formelle*) with Christian symbols in relief, datable stylistically probably to the 6th century.[60] (See List of Sites, F2). It is not clear to what diocese it would have been attached: Venosa, Bari and Taranto are all possibilities, especially Venosa which was easily accessible along the Via Appia. Good connections by major roads were evidently an important factor taken into consideration in founding rural churches.

g. Jews

The Jewish communities settled in Apulian and Lucanian cities continued to prosper under Theoderic who followed the same the policy of tolerance towards them as was shown by most of the later Roman emperors.[61] In addition to the communities mentioned in Chap. X.6.i, a small Jewish group settled in Bari in this period where they could interact with others on the opposite side of the Adriatic.[62] An inscription of 521 AD in the Jewish catacomb at Venosa gives a glimpse of these connections: it records a woman, Augusta, whose father came from Saranda in Albania and grandfather from Lecce.[63] It is likely that Jewish dealers and merchants were involved in the grain trade in this period.[64] At any rate the Jews in Naples controlled such large reserves of grain that when Belisarius besieged the city in 535 AD, the Jews in the city undertook to provision it. They feared that they would be treated worse under Justinian than under the Gothic kings, and they fought hard to defend the city as the Byzantines broke in.[65]

h. Agriculture

Cassiodorus, the main source for this period in South Italy, is concerned to create a favourable impression of the prosperity of the region under the Gothic régime.[66] He praises especially the livestock and crops of his native Bruttii, but he alludes also to the pigs of Lucania which were still needed to feed the city of Rome, and to the grain produced in Apulia and (Salentine) Calabria.[67] But although he seems to imply that the traditional rural economy functioned as it had done in the Late Empire, the archaeological evidence suggests that the nature of agricultural production was already changing, reflecting the shifting demographic patterns and the altered needs of the government. The best evidence comes from the detailed analyses of large numbers of animal bones at San Giovanni di Ruoti and Ordona. At San Giovanni the predominance of pigs in the livestock already seen in the previous period (which corresponds to SGR Period 3A) increased still further in Period 3B (ca. 460–650 AD). The concentration on pig production reflects the fact that large numbers of pigs were still being bought by the government with the *solidi* raised in taxes in Lucania to supply the Roman population; but it is also likely to mean that even more cultivated land had been abandoned in at least this part of Lucania and turned over to forest in which the pigs could forage. The evidence from Ordona indicates more drastic change in land use. The dominant species in the faunal record from deposits which built up in this period in the abandoned bath building of the city was cattle, mostly slaughtered at adult age, and likely to have been used as draft animals.[68] It is probable therefore, that more land in the vicinity of the city was being used for arable cultivation to meet the government's requirements for grain. An increase in the proportion of cattle has also been noted at San Giusto, Faragola and Otranto,[69] although not at Egnazia where sheep continued to predominate.[70] There was therefore considerable local variation, as is to be expected, but in general it is likely that much grazing land was converted to arable cultivation. Long-distance transhumance between the Tavoliere and the Apennines still continued in the Gothic period, but probably on a diminishing scale, and there is little indication of it in the literary sources.[71]

The government's policy of promoting grain production must have been successful if the Anonymus Valesianus can be believed. He claims that in the time of Theoderic 60 *modii* of wheat could be bought for a *solidus*. At that rate wheat was exceptionally cheap.[72]

[59] Ciminale, Favia & Giuliani 1994.
[60] Sardone 1984; Lattanzi 1984; Bertelli 2001; and, most fully, Di Zanni 1999. They are close in style to those found in the recent excavations in the church of San Pietro at Canosa built by the bishop Sabinus in the 2nd quarter of the 6th century (Volpe 2014, fig. 20).
[61] Cf. Cassiodorus, *Variae* II.27 authorizing the Jews of Genoa to strengthen and re-roof their synagogue, with certain provisos.
[62] Colafemmina 1988.
[63] Colafemmina 1980, 206.
[64] Ruggini 1995, 311-312.
[65] Procopius, *Wars* V.8.41; V.10.25-26.
[66] Lecce 1956.
[67] *Variae* XI.39.3 (pigs); I.35, II.26 (grain).
[68] Buglione *et al.* 2008, esp. 248-250, 266-271; Buglione 2013, 246. The authors see this development as one aspect of the increasing ruralization of the settlement.
[69] Buglione 2016, 320, graph fig. 4. Otranto: Cartledge *et al.* 1992, 333-334.
[70] Egnazia: Buglione 2013, 248; Buglione *et al.* 2012.
[71] Volpe 1996, 284-287.
[72] Anonymus Valesianus. 12. *Sexaginta modios tritici in solidum ipsius tempore emerunt, et vinum triginta amphoras in solidum*. Jones (*LRE* I, 446) gives some comparative figures. The nearest is the rate of 40 *modii* to the *solidus* fixed by Valentinian III for military supplies in Numidia

3. From the Greco-Gothic war to the invasion of Constans II

i. The Greco-Gothic war

The war started in 536 when the Eastern Emperor Justinian launched an invasion to recover Italy. The South, poorly garrisoned by the Goths, put up little initial resistance to the Byzantine general Belisarius,[73] and then suffered the depredations of the Gothic army sent to defend it. Cassiodorus promised to value the supplies which had been seized at above the usual rate and offset the cost against the taxes due from Lucania and Bruttii.[74] Later, however, Lucania and Apulia became the scene of fierce fighting when in 546 the Byzantine general John won a battle at Brindisi and tried to subdue the whole area. He was assisted by a powerful landowner from Canosa, Tullianus, who persuaded John to stop inflicting damage on the local people and collected an army composed partly of rural peasants (*ἄγροικοι*) to support him.[75] He used them to "set a guard upon the pass (a very narrow one) which gives access to the district with the purpose of preventing the enemy from entering to devastate the land of Lucania".[76] Since Totila, who had by this time become ruler of the Goths, had a number of prisoners of senatorial rank, he retaliated by getting them to send their dependents home again with a promise that the Goths too would leave them to attend to their farms. How these "vertical alliances" with the farmers worked out in practice we cannot know but the initiative on both sides is interesting. It did not, naturally, end all fighting. Totila went on to seize Acerenza which he garrisoned with 400 men.[77] They proved sufficient to hold it when John tried to take it back.[78] The episode is of some interest in showing the importance of the hill-top fortress-but also as an indication of the size of the garrison which Procopius seems to have thought was quite large. Generally, the armies involved in the Gothic wars do not seem to have been big. There has been much argument about the degree of disruption brought about by the wars.[79] They obviously caused much destruction, but it is difficult to believe that they led to major changes in settlement since the numbers involved were few.

Justinian was ultimately successful in re-conquering Italy which from 550 onwards was restored to some order under his deputy, Narses. A settlement embodied in the so-called Pragmatic Sanction of 554 was agreed by the surviving Goths in the *provincia Italiae*, who thereafter disappear from the admittedly not very copious records. After Justinians's death in 567, however, as pressures on the eastern and northern borders of the Empire revived, the precarious Byzantine hold on the Italian peninsula was again threatened.

ii. The Lombard invasion

In 568 AD, Lombard tribes from Pannonia under their king, Alboin, broke through the frontier and conquered the Alpine regions and the Po valley.[80] Two of his followers, Zotto and Faroald, carried on further S and in due course set up the duchies of Benevento and Spoleto, while Alboin's successor, Clef, continued his conquests in the North. Clef was assassinated in 573 AD, after which the Lombard nobles refused to elect another king, and the leadership of the nation was divided among 30 *duces*, each of whom aimed to carve out a territory for himself. During this chaotic period Benevento, under its next duke, Arichis I, became the main base of Lombard power in South Italy. In 584 AD the Lombards in the North finally elected Clef's son Authari as king and returned to a form of monarchic government, based on Pavia. The duchy of Benevento, however, became increasingly independent.

The Byzantines continued to oppose the Lombard invasions by the limited means at their disposal. Since they controlled the sea, they were able to hold most of the Italian coastline. The Lombards did not at this stage attempt to drive the Byzantines out of Bari and its hinterland, including probably our Survey Area, and the initial border between the Byzantines and Lombards (until the renewed phase of Lombard conquest in the 660s) is likely to have been the Basentello. S of Bari, Brindisi and the Salentine peninsula also remained in Byzantine hands as did Bruttii and Sicily.

A peace between the Byzantines and the Lombards was agreed in 605 AD and brought some respite to the now hopelessly divided peninsula, which lasted uneasily until about 663 AD, though at some time in the interval the Lombards became masters of Bari. But for the Byzantine Empire as a whole the 7th century was disastrous, particularly from 636 AD onwards as the rising power of the Ummayad Caliphate deprived it of its East African provinces, including Egypt, and of much of the Near East, while Slav and Avar invasions from the North devastated most of Mainland Greece and caused some disruption in North Italy where the Lombard duke of Cividale was killed by them in 610 AD.[81] South Italy was naturally less affected by the Slav and Avar

and Mauretania.

[73] By convention the post-Justinianic Roman Empire with the imperial capital at Constantinople is referred to as Byzantine and for clarity we have, in common with many others, used it also of Justinian's own reign.

[74] *Variae* XII.5.

[75] Procopius, *Wars* VII.18.20, 22.1.

[76] Procopius, *Wars* VII.22.2, Loeb translation.

[77] Procopius, *Wars* VII.23.18.

[78] Procopius, *Wars* VII.26.1

[79] On the Gothic wars in Lucania see Favia 2011, 434-438.

[80] For the Lombard invasions and subsequent consolidation of Lombard rule, see esp. Christie 1995.

[81] Christie 2006, 261-262 citing Paul the Deacon, *Historia Langobardorum* IV.37.

incursions, but one raid reached the Adriatic coast of Apulia in about 640 AD: in the course of it the duke of Benevento was killed at Siponto.

By the end of the 7th century, the areas dominated by the Lombards and Byzantines had shifted considerably. In 663 AD the Emperor Constans II arrived in South Italy with the intention of removing his capital from Constantinople to Sicily, which he thought would be less immediately threatened by the rising Arab power. He landed at Taranto and advanced, presumably along the Via Appia, in the direction of Benevento, but deflected from the road to besiege Acerenza, now an important stronghold of the Lombards, as it had been of the Goths in the time of the Greco-Gothic War. Like John, he failed to take it.[82] He then attacked Benevento before going by way of Naples to Rome which he famously stripped of as much as he could grab, including the lead from the church roofs,[83] and then proceeded to Sicily. Two years later the Lombard duke of Benevento attacked the Byzantines and extended his duchy to include Taranto and the coastal lands along the Gulf until only Salento and the S of Brutii remained in Byzantine hands. It was at this time that the term *Calabria*, used of Salento, came to be applied also to Byzantine Bruttii as the Byzantine administration of the two areas was merged. Later, when the Byzantines recovered much of South Italy, an administrative unit (*theme*) was established in the W, which retained the name Calabria, while an eastern one which included Salento was referred to as *Langobardia*.

iii. The Lombard settlement

The main victims of the Lombard invasion were the landowning class. According to Paul the Deacon,[84] many of the Roman nobles were killed in the chaotic period that followed the assassination of Cleph, before the Lombards elected Authari as king in 584. There was then a new settlement made which determined the relations between the conquered and the conquerors, at least in North Italy. The system adopted involved the application of some version of the traditional scheme of *tertiae* (thirds). The interpretation of the relevant texts in Paul the Deacon is controversial, but on a straight reading of them the surviving nobles were divided among the Lombard hosts (*hospites*) after the death of Cleph, and were made tributary so that they had to pay one third of their produce to them.[85] After the succession of Authari, these arrangements were superseded. The Lombard *duces* gave half of their substance (*omnem substantiarum suarum medietatem)* to support the king while the people who had been burdened were divided among the Lombard *hospites*.[86] Paul does not say how they were burdened or by whom but presumably by the Roman *nobiles* and anyone else who could dominate them in the immediately preceding period of chaos. He thought that Authari's reign was a time of great contentment. Certainly, obligations to the Lombard *hospites* may have been balanced by the fact that the rural population no longer paid taxes in kind to the state since the apparatus of Roman government had been effectively dismantled by the conquerors.[87] Whatever the details of the arrangement, there can be little doubt that it initiated a change in life-style for peasants living under the Lombard régime. Walter Pohl has argued that living conditions became rather better for much of the population, especially the peasants, as "taxation ceased and the relative shortage of manpower eased the pressure on rural labour".[88] The labour force might be nominally free or slave. A distinction between unfree and free continued to exist in Lombard law but with decreasing practical importance.[89]

It seems likely that similar provisions were enforced in South Italy as the Lombard conquest advanced, but Paul the Deacon, the principal source for the Lombard invasion, was better informed on the North of Italy than the South, and has left us no information on this.

iv. The Byzantine administration

Throughout the parts of Italy still held by the Byzantines, the Byzantine administrative machinery continued to function. The whole area was under the Emperor, and theoretically run from Constantinople. Taxes were imposed through the great offices of state, (the *res privata*, the *sacrae largitiones* and the *praefectura praetoriana*) but the names, powers and authority of the Byzantine officers changed frequently. The praetorian prefect, last mentioned in 578 AD, was replaced by the *sacellarius* who had charge of the treasury, while the logothete *tou genikou* (λογοθέτης τοῦ γενικοῦ) whose title implies a responsibility for general affairs, dealt chiefly with imposts. The administration became increasingly complex. By the 11th century there were 11 officials in charge of taxation.[90] The taxes were probably not always efficiently collected in Italy.

[82] *MGH SRL*, 147 *Historia Langobardorum* V.7: *Agerentia sane propter munitissimam loci positionem capere minime potuit.*
[83] Christie 1995, 96-97.
[84] *MGH SRL*, XC, *Historia Langobardorum* II.32. *His diebus multi nobilium Romanorum ob cupiditatem interfecti sunt.*
[85] *MGH SRL*, XC, *Historia Langobardorum* II.32. *Reliqui vero per hospites divisi, ut terciam partem suarum frugum persolverent, tributarii efficiuntur.*
[86] *MGH SRL*, CI, *Historia Langobardorum* III.16. *Populi tamen adgravati per Langobardos hospites partiuntur.*
[87] Wickham doubts the arrangement but points out that, whether it existed or not, it did not last, arguing that the Lombard state was dependent for nearly all its resources on the direct exploitation of land. He concludes that "the seventh- and eighth-century Lombards are thus the first clear example of a fully post-tax state in the west": Wickham 1981, 66; 2005, 116 with further bibliography.
[88] Pohl 2002, 23.
[89] Wickham 2005, 560-564 claims that the free-unfree divide was important, but he is dealing with, for Italy, mostly the Lombard kingdom, not the duchy of Benevento.
[90] For an overview of the tax régime see Cosentino 2008, 155-160.

Military administration was entrusted to a series of supreme commanders, who became known by the title exarch and were nearly always sent out from Constantinople. Below them were the *magistri militum* and, slightly lower in rank but often replacing the *magistri militum*, the *duces (δοῦκες).* There was also a civil administration largely dependent on judges and often on the bishops. Justinian's *Pragmatic Sanction* of 554 had allowed bishops to join grand proprietors (*primates*) in electing *iudices provinciarum* and to assign the *coemptiones* (i.e. abandoned lands) so as to ensure that the State received the taxes due on them. As time went on, however, the high-ranking military commanders were often called upon for civil tasks and the administration became more and more militarized.[91] The *duces* were often Greek, but since the Byzantine government relied heavily on barbarian troops, they sometimes were not. It has been argued that the first Lombard dukes of Benevento and Spoleto, Arichis I and Faroald, were originally in the pay of the Byzantines against the Lombard kingdom in the North and then helped themselves to their duchies, retaining the title of duke.[92]

The Byzantines continued to tax their Italian territories, as they did throughout the Empire. Wickham argues that the result was a greater coherence in the Byzantine Empire, even at its weakest in the late 7th and 8th centuries, than in the Lombard dominated territories.[93]

v. The papal properties

The papacy continued to own *massae fundorum* in Apulia and Calabria (i.e. the Salentine peninsula), at least in those parts which the Lombard conquest had not yet reached. They were administered by *defensores*, laymen charged with the management of the ecclesiastical properties, who were active in Apulia at least from the time of Pelagius I (AD 559).[94] The papal holdings seem to have been extensive. Gregory I, referred to properties belonging to St Peter at Otranto which he claimed were being oppressed by the Byzantine tribune delegated by the exarch of Ravenna to that city,[95] while another letter suggests that Sergius, *defensor* at Sipontum was responsible for all the papal estates in Apulia and Calabria.[96] He had various responsibilities some of them administrative, such as the control and correct management of the *massa callipolitana* in Salento. Gregory's letters show that the workforce (*rustici)* on the papal estates was a traditional mix of *coloni* and slaves (the latter usually referred to by the group term *familia*).[97]

4. Socio-economic developments

i. The landowning class

Although, as we have seen, the Lombard conquest caused the downfall of many Roman noble families which had survived the Gothic wars, there were nevertheless some wealthy Romans, though probably not many, who adapted and prospered as landowners under the Lombards, but they were no longer senators. Justinian had suppressed most of the senatorial offices, and the old senatorial class had practically vanished in the West. The last reference to a meeting of the Roman senate was in 603, when it ratified the accession of the Emperor Nicephorus Phocas. The élite who took their place in both Lombard and Byzantine territories were mostly army officers or ex-officers who had bought or been rewarded with land.[98]

The greatest landowners in the Lombard territories of the South were of course the dukes of Benevento. Below this powerful élite were their loyal followers to whom they made grants of land and from whom they expected military service. When they were not fighting, they tended to live near their overlord and constituted a predominantly absentee urban aristocracy. Among these more powerful individuals were the gastalds, the local representatives of ducal power, but little is known of them before the mid-7th century. They will be further discussed later.

ii. The church

The church lost much of its importance. Many bishoprics vanished. In Lucania there were bishops at Potenza, Venosa, Acerenza and Grumento in the time of Pope Pelagius (556-61) but by the mid-7th century it cannot be shown that any remained active.[99] In Apulia several bishoprics which had flourished in the previous period seem to have disappeared, including Trani, *Carmeianum* and Bari, which Gregory I never mentions. Only four southern bishops occur in his letters: at Siponto,[100] Taranto,[101] Otranto,[102] and Gallipoli. This last had a bishop in 593 who was asked to intervene in the case of the bishop of Taranto,[103] but was without one in 595 when Gregory wrote to give the bishop of

[91] Cosentino 2008, 139.
[92] Brown 1984, 71.
[93] Wickham 2005, esp. 127-129.
[94] Letters of Pelagius I to the *defensor* Dulcius and to Lucius *defensor Apuliae provinciae* (Volpe 2014, note 58: Pelag. *Ep*. 29 (Feb 559), 64 (March-April 559)).
[95] *MGH Ep*. II, IX.205.
[96] *MGH Ep*. II, IX.169 (AD 599).
[97] E.g. *MGH Ep*. I, I.42. For the mix of free and slave labour on the papal estates in Sicily, see Vera 2006, esp. 449-450.
[98] Gasparri 2002.
[99] Duchesne 1903, 83-116.
[100] *MGH Ep.* I, I.51, 71. See Volpe *et al*. 1999, 261.
[101] *MGH Ep.* I, III. 44. The bishop was accused of having a concubine in 593 and ordered, if so, to resign. He was later replaced, and the next bishop received a letter in 603: *MGH Ep.* II, 13.24
[102] *MGH Ep*. I, VI.21.
[103] *MGH Ep.* I, III. 45

Otranto authority over Brindisi, Lecce and Gallipoli.[104] All three sees are referred to as *parrochiae,* pending the appointment of new bishops of their own. The Bishop of Gallipoli was duly replaced,[105] but there is no further word of Brindisi and Lecce. A letter written by Gregory to Felix, Bishop of Siponto in 591 AD is specially revealing.[106] In it he instructs Felix to deal with problems that had arisen in Canosa where there were almost no clergy to provide penitence or baptism. Felix is required to ordain two parish priests (*duos parrochiales presbyteros*) of suitable character to perform these duties. The letter is significant in several ways. It reveals the collapse of Canosa which half a century earlier had been the seat of provincial government and, under its Bishop Sabinus, one of the most important episcopal sees in Italy; it implies that Salapia, much nearer to Canosa, had also lost its bishop; and it shows that Gregory was promoting a system of parishes as a means of solving the church's problems. Of these bishoprics, Siponto and Taranto lasted until 649 when their bishops attended the Lateran Council.[107] Shortly afterwards the bishopric of Siponto ceased to exist after the destruction of the town by the Slavs in 663, when it was taken into the Archdiocese of Benevento. There are no further reliable records of the see of Taranto until 978 when it was made an Archbishopric. Brindisi continued to claim a bishopric, the seat of which was transferred to Oria after Brindisi was destroyed in the 9th century (see Chap. XII.3.i).

In the initial phases of the invasion, the Lombards destroyed churches and monasteries, as the passages in Gregory I and Paul the Deacon, cited above, state. That does not mean that they were determinedly hostile to Christianity. Some may have been pagan when they first arrived, and others Arian: we know that this was the case further N, mainly from Gregory I's letters. But this does not seem to have amounted to systematic persecution and the Lombards were gradually converted. By about 660 AD, the Lombards of Benevento had accepted papal Christianity under the guidance of Duke Romuald I, though doubtless on their own terms; and they probably adhered to the Latin church as much to avoid Byzantine interference as from any definite conviction. The choice was serious. The Eastern and Western Churches had not yet definitively split but there were frequent temporary schisms between them. One of the worst was in 659 AD when Constans II had the Pope arrested and carried off to Constantinople for trial. Authority over the Church in Byzantine-held lands became increasingly concentrated in the hands of the Emperor and his administration. Elsewhere the Popes claimed primacy in the Church, but they were not always able to enforce it, especially at a distance from Rome – indeed they took less and less interest in South Italy.

iii. Jews

After the Byzantine reconquest the Jewish communities were subjected to various restrictions placed on Jews by Justinian, and turned increasingly to maritime trade, including the trade in slaves.[108] They lived more freely under the Lombard rulers, and were able to establish a good working relationship with Pope Gregory I and his successors who needed the help of Jewish grain merchants to supply Rome.[109] It was in this period, before the Byzantine reconquest in the later 9th century, that the Jewish communities in Apulia and Lucania were most flourishing.

5. Settlement in Apulia and Lucania

i. Demographic decline?

Most of the archaeological evidence for settlement in the Fossa Bradanica comes from burials. There is remarkably little evidence, either archaeological or literary, for towns, or even *vici* which have been a conspicuous feature of all previous distribution maps for periods since the beginning of the Iron Age. The scarcity of literary evidence for towns, and the difficulty of identifying habitations of this period in archaeological excavations carried out in urban centres has given the impression that the population of South Italy had fallen so drastically that it could no longer support towns, and that the countryside was largely abandoned.[110] Since neither Gregory the Great nor Paul the Deacon mentions any cities in Central Apulia,[111] it may be supposed that this sub-region in particular had effectively been de-urbanized.

Various causes have been suggested for the decline. Some have seen it as a consequence of the havoc wreaked in Italy first by the Greco-Gothic war and then by the Lombard invasions. Both Gregory I and Paul the Deacon allude to the despoliation and destruction of cities, churches and monasteries and the abandonment of cultivated fields,[112] and although such episodes are not described in any detail, there is no need to doubt that they sometimes occurred. Moreover, it may be

[104] See note 121.
[105] *MGH Ep.* II, IX.206, 207.
[106] *MGH Ep*. II. I.51
[107] Mansi 1762, X, column 866.
[108] Colafemmina 1980, 224.
[109] For a Jewish shipowner whose chirograph detailing his pledges for a loan had been withheld by a previous *defensor* (the official in charge of church property in Sicily) when the loan had been repaid, but who appealed successfully to Gregory I, see Gregory's letter to the *defensor* Fantinus. *MGH Ep.* II. IX.40.
[110] Christie 1995, 92-3; Martin 1999, esp. 197.
[111] Nuzzo 2011, p. lvi.
[112] Gregory I, *Dialogues* III.38; Paul the Deacon, *Historia Langobardorum* II.32, referring to the chaos in the period of the 30 dukes. See also Christie 1995, 91-92.

supposed that the fighting which broke out in the aftermath of the invasion between rival Lombard lords and which continued between Lombards and Byzantines into the first half of the 7th century allowed little respite for recuperation.

Others have argued that the war and subsequent invasion had only a minor impact on the population, and that a more important factor was the devasting plague which according to Procopius, broke out in Egypt and spread across the Byzantine empire in 541–542, carrying off vast numbers of people.[113] We have referred to it in the General Introduction. The plague was still virulent in North Italy in the 560s,[114] but its effects are impossible to quantify, and its long term significance in the demographic decline has been denied.[115] Famine too is likely to have been a factor, according to the traditional analysis. There are repeated reports of famine, both during the Gothic war,[116] and at the time of the Lombard invasion.[117]

Climate change has been adduced as another contributory factor to the fall in population. It is widely supposed that there was a period of cooling between ca. 400 and 850 AD, with its climax in the early 7th century;[118] and it has been argued that within this period there was a "little ice-age" which lasted from 536–660 AD, when a down-turn in the climate caused by a series of catastrophic volcanic eruptions brought a constant risk of famine and precipitated disease and population movements.[119] But the effects of this in South Italy are not obvious, and such evidence as there is suggests that there was no significant change in wild-life habitat. In particular, Anne Eastham's analysis of the bird bones from the Late Antique/ Early Medieval contexts at San Giovanni di Ruoti (sub-section 5.i) shows that "relatively warm dry conditions and a plentiful supply of food attracted many insect-eating birds to the site" and that "the ecological situation has changed little in fundamentals over time".[120]

This is not to deny that the population declined to some extent in Italy in this period, as it appears to have done all over Europe, though, according to Chris Wickham, with different timetables.[121] But, as will be seen, the archaeological evidence accumulated during the last forty years shows that the apocalyptic vision of the South Italian countryside as largely abandoned has been greatly exaggerated. The apparent lack of evidence can to some extent be accounted for by a drastic change in the way people lived in both towns and countryside.

ii. Cities

The disappearance of bishoprics is one symptom of a general decline in urban centres, continuing the trajectory set in the previous period. In Apulia at the end of the 6th century, the only towns mentioned in the written sources are Siponto, Canosa, Taranto, Brindisi and Otranto, and of these Brindisi and Canosa had, as we have seen, already lost their bishops in the time of Gregory I, which suggests they were in serious decline. Siponto was destroyed by the Slavs in 663. The lack of evidence for other former urban centres does not necessarily imply that they were extinct, though they may have dwindled into insignificance. In a few cases recent archaeological excavations have shown that there was continuity of occupation in part of the earlier city, but that the early Medieval structures are less easily recognized than their more solid predecessors, being generally huts made of perishable materials such as wood, straw and clay, sometimes resting on stone socles. The builders frequently made use of the half-ruined walls of preceding buildings to support their roofs. At Salapia, for example, an ongoing research project has revealed that the settlement shrank in the Early Medieval I period to a limited area on the so-called Monte di Salpi, where there was a group of thatched huts.[122] Nevertheless it was still an economic centre of some importance. Its inhabitants were probably engaged in salt production, and they continued to import amphorae from North Africa and the Greek East down to the middle of the 7th century. At Egnazia the acropolis was fortified to hold a Byzantine garrison, and a new settlement of huts with thatched roofs and walls of clay resting on stone socles grew up around it. New buildings were added early in the 7th century when the post-Roman settlement in the South part of the former city was abandoned, probably because the area had become marshy.[123] At Ordona makeshift huts were built inside the remains of the Roman bath suite.[124]

Excavations in more limited areas in other cities also show continuity of occupation at a reduced level. At Barletta, and probably at Bitonto, the churches remained in use in this period.[125] At Canosa, burials of

[113] "On ne peut ..qu'insister sur la faible influence qu'ont directement exercée les guerres sur l'evolution d'habitat du Ve au Xe siècle": Martin & Noyé 1988, 225-236. Cf. Martin 1999, 198, emphasising the plague, described by Procopius in *Wars* II, 22-24.

[114] Paul the Deacon, *Historia Langobardorum* II.26: *pestilentia, quae sub Narsete facta est, plurimos in Liguria et Venetiis extinxerat.*

[115] Wickham 2005, 48; Mordechai & Eisenberg, 2019.

[116] Procopius, *Wars* VI.20. 12-23.

[117] *MGH SRL* LXXXVII, *Historia Langobardorum* II.26. *fames nimia ingruens universam Italiam devastabat.*

[118] Cf. Christie 2006, 503.

[119] Büntgen *et al.* 2016.

[120] *SGR* III, 171-188, esp. 179-180.

[121] Wickham 2005, 549. He suggests that the timetables relate to periods of political crisis – hence the worst period for the Central Mediterranean was the 6th century – and may be at least partly attributable to a rise in peasant power.

[122] De Venuto *et al.* 2015, 2017.

[123] Cassano 2017, 217-218.

[124] Leone *et al.* 2009, 170.

[125] Barletta: Volpe *et al.* 1999, 265-272. Some structures to the S of the

the Early Medieval I period, easily identified by their ornamental fibulae, continued to be made in the area of the church of San Giovanni;[126] but the church of San Pietro was abandoned, and makeshift huts were set up inside the remains of it. In the former episcopal palace on its South side one of the rooms was adapted as a smithy and another as a store house.[127] At Bari no domestic buildings of the period are reported, but a burial enclosure was added to the palaeochristian church at some time between the end of the 6th and middle of the 7th centuries.[128] An extraordinary inscription dated with some probability to the 7th/8th century records the burial in the same tomb of two women named Dumnana, one the mother, the other the daughter, of Muscatus (or Muscatius), It calls on those who read the epitaph to pray for them, and asserts that there will be a fine of 201 *solidi* for anyone who violates the tomb.[129] The epitaph implies that there was some authority, ecclesiastical or civic, in the city able at least in theory to impose a fine, and it raises questions about the origins of the women named Dumnana. The name is otherwise unknown in Apulia, and G. Otranto has suggested that it must be derived from the Dumnonii who inhabited the western part of what is now Cornwall during the Roman Imperial period and established a post-Roman kingdom there which lasted into the 8th century AD. If this is right, then the older Dumnana or a close ancestor, may have been a British slave, like the Angles whom tradition has it that Gregory I saw being sold in the forum at Rome.[130] Alternatively (as Otranto suggests) she may have been a pilgrim bound for the East who reached Bari and stayed there. That Bari still had links with the East in this period is shown by Disantarosa's studies of the amphorae found in the historic centre of the city and in the small harbours along the coast. Wine amphorae continued to reach Bari well into the 7th century, especially the LRA-1B type from the Eastern Mediterranean.[131] They reflect Bari's importance as a Byzantine port on the Adriatic.

At Venosa excavation has revealed layers of abandonment and infill datable to the 7th century, but there are also signs of continuity of occupation continuing into the Early Medieval period, including traces of shack-like structures at the NE end of the city,[132] not far from the site of the palaeochristian cathedral. Although there is no evidence of a bishop in the Early Medieval period, there must still have been an active Christian community there because a new church with nave and two aisles subdivided by piers was built over the remains of the cathedral in the late 6th century. A *terminus post quem* for its construction is given by a coin of Tiberius I Constantine (AD 578–582) found in the preparation layer under a mosaic floor.[133] Burials continued to be made in this area well into the 7th century, some of them datable by fibulae and items of jewellery of Lombard type.[134] Even at Metaponto where the settlement had dwindled away in the previous period, a group of three burials with grave goods of this time shows that there were still some people living on the site.[135]

In Lucania, the town which survived best into this period was Acerenza. Paul the Deacon lists it together with Lucera, Siponto, Canosa, Brindisi, Taranto and Otranto as being in Apulia,[136] which conforms to his view that Lucania was restricted to the western seaboard (the only places he mentions in Lucania are on the route from Campania to Reggio: Paestum, Cassianum [= Consilinum?] and Laino on the border with Bruttii). He was confused in his provinces: Acerenza had been part of Lucania since the time of Augustus' regional organization of Italy, and it was still so at the time of the Greco-Gothic wars when Procopius described it as being in Lucania, though close to the border with Calabria (i.e. Apulia et Calabria).[137] This isolated fortress-city was seized early by the Lombards and Arichis I established one of his earliest gastalds there. Subsequently it repelled an attack by Constans II in his campaign against Benevento, as we have seen.[138]

Acerenza was evidently a prized possession. It is a good example of a hill-top town that acquired growing importance in this period because of its defensibility and its strategic location. In Central Italy, the move away from low-lying cities to more defensible hill-top sites was already in progress in the time of Gregory I.[139] Hill-tops became the preferred location for settlement for both the Lombards and the Byzantines. There are not many examples of hill-top cities in the South, however, until the next period, though hill-top villages became popular, as we shall see.

The Byzantine Empire made some attempt to keep the cities going as administrative centres, as did the

church were destroyed by fire in the late 6th century, but the main building continued in use. Bitonto: Volpe *et al.* 1999, 297-298.

126 Campese Simone 2003, 89-90.

127 Giuliani 2010, 145-146, 156-157.

128 Ciminale 2009, 144-150.

129 *CIL* IX.306; G. Otranto in Andreassi & Radina 1988, 510-511; Nuzzo 2011, 98-100, no. 46.

130 Bede, *Ecclesiastical History of the English People*, II.1.

131 Disantarosa 2015, 79.

132 Marchi & Salvatore 1997, 84-85.

133 Campione 2000, 72.

134 E.g. *Museo Venosa*, 287, t.11a, t11b, t12.

135 Giardino 1991, 850.

136 *Catalogus provinciarum Italiae* in *MGH SRL* 188-9. *Quinta decima provinciarum est Apulia, consociata sibi Calabria. Intra quam est regio Salentina. Haec ab occidente vel africo habet Samnium et Lucaniam, a solis vero ortu Adriatico pelago finitur. Haec habet urbes satis opulentas, Luceriam, Sepontum, Canusium, Agerentiam, Brundisium et Tarentum et in sinistro Italiae cornu, quod quinquaginta milibus extenditur, aptam mercimoniis Ydrontum.*

137 *Wars* VII.23.18.

138 Paul the Deacon *Historia Langobardorum* V, 7.

139 Christie 2006, 370, from the letters of Gregory I who reports the evacuation of low-lying cities in favour of hill-top places such as Orvieto.

Church. Gregory I urged the Italian bishops to register donations, even very modest ones, in the city archives. Thus he agreed that Benedictus, bishop of Tindari in Sicily, could consecrate an oratory in the *massa Furiana* provided, among other things, that it was supplied by a permissible donation (*legitima donatio*) which must be registered in the municipal archives (*gestis municipalibus allegata*).[140] But the relationship of the cities to the countryside became increasingly distant. It has been pointed out that, by the time the Normans arrived, unlike those of the North, few cities in the South had a *contado,* that is a rural territory directly under the control of the city.[141]

iii. The countryside

Settlement in the countryside also underwent a profound change which mirrors that in the former cities. Many sites were abandoned altogether; others continued at a low level of occupation. Most of the remaining villas lost their function as lordly residences, and the spaces that they occupied were reused for other purposes. At Faragola the Late Antique villa fell into decay in the 2nd half of the 6th century; some of the rooms were abandoned altogether, but others were adapted as workshops or makeshift domestic spaces which expanded into the surrounding area.[142] A comparable phenomenon was observed at San Giusto where huts and burials intruded in the late 6th and 7th centuries into the remains of the episcopal complex of the previous period.[143] At San Gilio two burials and a series of walking surfaces overlying the remains of the Late Antique villa show that the site continued to be frequented down to the 7th or 8th century AD.[144] The only villa which continued to be inhabited more or less in its previous form is the *praetorium* complex at San Giovanni di Ruoti. With its dining room designed for eating at a long table and its domestic rooms on an upper floor, it was better suited to the emerging Italo-Lombard society than the Late Roman luxurious villas of the Late Empire. But even here some rooms of the complex were allowed to decay while others were modified to suit a shrinking population in the latest phase of occupation.[145]

iv. Rural churches

As far as is known, no new church buildings were constructed in the countryside in this period. Whether or not existing churches continued in use for liturgical purposes is difficult to demonstrate, but burials continued to be made in and around the church buildings at Melfi Leonessa, Rutigliano and Belmonte and the church of Santa Palagina (or Pelagina) at Metaponto.[146]

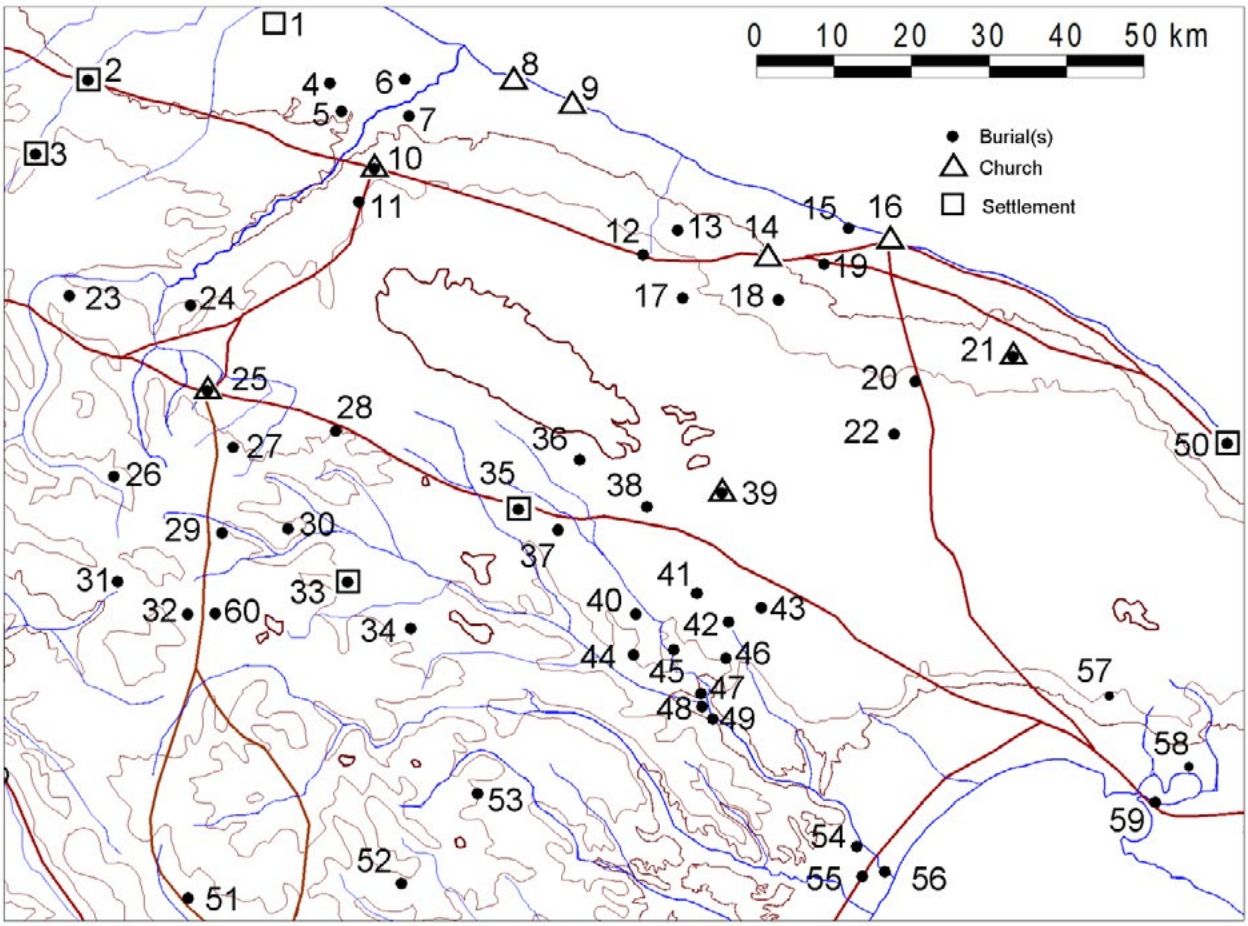
v. Early Lombard burials

The hut settlements that grew up inside the remains of Roman villas are indicative of the simple character of Lombard settlement in this period. In most of these cases (but not at San Giovanni di Ruoti) there were burials loosely associated with the huts, and this provides good reason to suppose that there must also have been hut settlements associated with some, if not all, of the Lombard burials that have been identified in various parts of South Italy. There are many such burials, but they are either isolated instances, or found in small clusters, which indicate that the settlements where the deceased had lived were very small. Anna Campese Simone has suggested that various groups of burials found in caves and rock-cut tombs in the Gargano peninsula must represent different families of *contadini.* A single group would normally number no more than 30-35 individuals, and frequently fewer.[147] The pattern of Early Lombard burials elsewhere in Apulia and Lucania supports this interpretation.

As Map XI-2 shows, these burial grounds are more thickly concentrated in some sub-regions than in others. The densest concentration is in the Materano, but there are also significant numbers in the lower Ofanto valley, in the vicinity of Venosa, and on the lower eastern slopes of the Murge between Bari and Ruvo. By contrast, the southern end of the Tavoliere, the Murge, and the mountains of Central-South Lucania are much less well represented. It is unclear at this stage of the study whether this uneven pattern of distribution represents real differences in the distribution of sites, or whether it is merely a reflection of the dedication and local interests of the researchers who recorded them. The numerous burial sites in the Materano, for instance, were almost all excavated by the local notable and antiquary Domenico Ridola in the late 19th century.

Within these broader groupings there are tighter clusters of sites in limited areas which suggest that local populations must have combined to form larger loosely organized communities. One example is the lower Ofanto valley where there were at least four small burial grounds centred on the Massseria Basso near Cannae (marked as a single site on the map);[148] and there was another group centred on Finocchiaro in the vicinity of Lavello where there was perhaps a Lombard

[140] *MGH Ep.* II. IX.180; Vera 1999, 1008-1009.
[141] Martin 2009, 774.
[142] Volpe 2005, 230-231; Volpe & Turchiano 2009, 152-155 (Turchiano).
[143] Volpe (ed.)1998, 298-303; Volpe 2005, 231-233.
[144] Di Giuseppe 2008b, 330-334.
[145] *SGR* I, 100-101; Small 2005; Small & Tarlano 2016, 131-134.
[146] Lattanzi 1983, 12; Favia 1999, 330-331; Papparella 2010, 393.
[147] Campese Simone 2003, 404-405.
[148] Originally excavated by Gervasio (1938) who mis-interpreted the burials as those of the dead of the battle of Cannae. Re-evaluated by D'Angela (1992); Summarized by Campese Simone (2003, 110-111). See also Goffredo 2011, 190.



Map XI-2. Early Medieval I sites in the Fossa Bradanica and adjacent regions known from literary sources and/or archaeological evidence. 1. Salapia; 2. Ordona; 3. Faragola; 4. Chiavicella Grande; 5. Bellavista; 6. Mass. Basso; 7. Casalonga; 8. Barletta; 9. Trani; 10. Canosa; 11. Matarese; 12. Ruvo; 13. Terlizzi; 14. Bitonto; 15. Palese; 16. Bari; 17. Specchione; 18. Palo del Colle; 19. Modugno; 20. Casamassima; 21. Rutigliano; 22. Salentino; 23. Leonessa; 24. Lavello; 25. Venosa; 26. Magnone di Atella; 27. Mass. Boico; 28. Cervarezza; 29. Sant'Irene; 30. Acerenza; 31. San Giovanni di Ruoti; 32. Stompagno; 33. San Gilio; 34. Calle di Tricarico; 35. Vagnari; 36. Casa San Paolo; 37. Zingariello; 38. Montedoro; 39. Belmonte; 40. Picciano Portocella?; 41. Venusio; 42. Matera; 43. Torre Spagnola; 44. Timmari; 45. San Martino; 46. Contrada Reni; 47. Ovile Dragone; 48. Ponte San Giuliano; 49. Santa Lucia; 50. Egnazia; 51. Marsico Nuovo; 52. Montagnola; 53. San Mauro Forte; 54. San Salvatore di Serramarina; 55. Metaponto; 56. Turiostu; 57. Mass. Triglie; 58. Mass. San Pietro; 59. Taranto; 60. Barrata.

garrison.[149] There were probably other clusters of burial grounds at some of the sites in the vicinity of Matera (see below), although locating them on the basis of the late 19th century records is problematic.

Many of the burials of this period contained no grave goods, and in the absence of other information they can only be dated to this period if other burials in the same group contained diagnostic objects. The wealthier (or the more powerful) were buried with dress-fastenings, earrings and other items of personal adornment typical of this period. There is a noteworthy group of penannular fibulae with animal *protomai* inscribed with the legend *Lupu(s) biba(s)*, which were widely distributed in Apulia and Basilicata in the 6th and 7th centuries.[150] Examples have been found in various parts of South Italy, including (most directly relevant to our Survey Area), at Zingariello in the territory of Gravina and at Sant'Irene near Forenza (Map XI-2. 29). It has been suggested that they refer to the cult of Saint Lupus, martyr of Capua, but it is difficult to see how a saint could be invoked either to live or to drink.[151] More likely it is a name which circulated widely at that time, derived, perhaps from that of the saint.[152] There is,

[149] Ciriello *et al*. 2015; De Siena 2015, p. xxix; Marchetta 2015, 140.

[150] Salvatore 1979 gives a full list to that date. See also for examples from Basilicata: Russo *et al*. 2009, 97-102 (Marsico Nuovo); *Museo Venosa* 288, t.15 from Forenza, contrada Irene; Papparella 2010, 395. Add now Cinquantaquattro & Lapadula (eds.) 2018, 39 from Montagnola near Guardia Perticara. For examples from Apulia: D'Angela 1991; Nuzzo 2011, 126-129, nos. 54-58.

[151] D'Angela 1994.

[152] It is found also on an inscription in the Museo Civico *of Lucera: D(is) M(anibus) / (cross) hic requiescit. Lupu /* in *somno pacis*, datable, probably, to the last half of the 5th or first half of the 6th century: Carletti 1979, 95-96; Campese Simone 2003, 142.

however, another possibility, that all the fibulae with this inscription were worn by the followers of a single powerful Lombard who had taken this name. There was also a distinctive class of fibulae with bows in the form of birds or prancing horses.

Other Early Lombard burials can be identified by ceramic grave goods, principally small jugs or amphorae with round bodies, tall narrow necks, offset rims and one or two handles. They are usually coated or partly coated with a reddish or greyish slip. They mostly date to the second half of the 6th and first half of the 7th centuries although in some remote areas they continue down to the 9th century.[153] They can be regarded as a late sub-set of LRPW, and like other pots of that class, they may be either plain or painted, wholly or in part, with a matt red slip. They must have had some special use in the funerary ritual, perhaps to hold oil or holy water.[154] Jugs of this kind are found in burials of this period in various parts of South Italy, including North and Central Apulia,[155] but they were particularly common in the Materano.[156] Ridola found about 60 examples in his excavations of graves in various sites around Matera. Their original contexts have been lost, but a recent study shows that there are several distinctive shapes, perhaps produced in different local workshops.[157] The amount of the material by find spot varies considerably. The largest group comes from the lost site of Picciano – Porticella where there must have been a community of some size. There was perhaps another at Ovile Dragone from which a number of other pieces come; but finds spots with fewer pieces are likely to be the burial grounds of much smaller settlements. Francesco D'Andria has suggested that the small cemeteries may have been connected with early cave settlements, but there is no convincing proof as yet that the *civiltà rupestre* in the ravines at the edge of the Murge developed before the 8th century AD.

Lombard-type burials in the vicinity of the Older Surveys

A few burials excavated at one time or another in the vicinity of the Older Surveys published here have produced bronze fibulae and other items of personal adornment. In several cases their find spots can be correlated with sites identified in the field surveys which show that they most probably came from settlements which had a longer history.

(i) The most directly relevant is an inscribed penannular fibula in the Museum of the Fondazione Santomasi of Gravina, said to have been found at "Zingarello".[158] The location can be identified with a small site at the Masseria Zingariello, on the edge of our Survey Area which was explored both by Vinson in the early 1970s (his site V87a) and by our own survey team in 2004 (Site 907). Vinson noted one abraded fragment of red slipped ware, six of wheel-made coarse ware, and some *imbrex* fragments in a field of plough-soil and wheat stubble. "Red polished" or "red-slipped" were terms given the by field-workers of the British School at Rome at that time to red-slipped wares which lacked the high gloss of terra sigillata and which correspond, generally, to African and Phocaean red-slipped pottery. In our own survey we collected 31 sherds and a little tile in a field of thin stubble. Much of the pottery was recent, derived presumably from the masseria, but there was also one sherd of Late Roman Painted Ware and two of cooking pot. The evidence is consistent with the idea that there was a small Late Antique site here that lasted into the Early Medieval I period.

(ii) The site of Montedoro, a low hill 5km E of Gravina, (see Maps XI-3, XI-5), now cut off on one side by the Strada Statale 96 and on the other by the railway, lies outside the area covered by the early surveys, but is known from excavations carried out in the early 1990s. They produced evidence of a small Early Medieval I cemetery. Most of the burials were disturbed, but they could be dated to the 6th/7th century by a bronze ring and five armlets in silver and bronze with incised decoration which were recovered from the spoil.[159]

(iii) At Casa San Paolo (V44) (see Maps XI-3,XI-5), Vinson's excavations in 1971-1972 revealed a number of "Byzantine" graves cut into the Neolithic levels which were the main target of the excavation.[160] The burials have not yet been published, but they appear to be connected with the nearby site V42 where he collected a wide range of Roman and Late Antique pottery including Phocaean red slip, late ARS and at least 2 frags of LRPW subsequently identified by Iannetti, and fragments of Late Roman amphorae (see OS List of Sites, VI.2.A). About 500m to the N, Site V43 had similar material including 9 fragments of LRPW, 4 of them classified as late by

[153] See esp. examples from Viggiano in the Agri valley: Russo & Giuerrini 2009, figs. 6 and 7, with numerous comparanda and indications of chronology in note 24 on p. 85.
[154] Hardly for the ritual of the ceremonial meal (*refrigerium*) as A. Mangiatordi (2007-2008, 566) and I. Marchetta (2017, 137, 139) suggest, since drinking vessels and dishes do not normally form part of the grave furnishings.
[155] In N Apulia at Piano di Carpino: D'Angela 1988, tav. XLIII; San Giusto: Volpe (ed) 1998, 264-265, figs. 311, 320,5; Ordona: Mertens 1995, 352 fi. 355. In Central Apulia: at Belmonte: Iorio 1977, 85, fig. 13; in the territory of Rutigliano: Salvatore 1981.
[156] D'Andria 1978, Salvatore 1983.
[157] Marchetta 2015.
[158] D'Angela 1994.
[159] Mangiatordi 2011, 231 (Scheda n. 70).
[160] Vinson 1975, 52; Favia 2011, 449, fig.10a.

Iannetti. These three sites appear to constitute a small dispersed hamlet.

(iv). The site of Cervarezza, 2km SE of Palazzo San Gervasio and about 1km from the Via Appia falls within or very close to the area surveyed by Vinson. Excavations here in 1975 revealed substantial remains of a Roman building which lasted into the period of Late Roman Painted Ware, suggesting that it came to an end some time after ca. 460 AD. Several burials were dug into the remains of this building, one of which yielded a bronze penannular fibula of Early Lombard type, and another a silver penannular earring terminating at one end in a snake's head, of similar date.[161] At a higher level of the site there were the remains of the Late Medieval *casale Cervaricio*, recorded in documents as a possession of the Abbey of Banzi. The site is not precisely located in the publication, but it probably lay a little outside the area covered by Vinson's survey. It is likely, however, to correspond to Marchi's site 863 "nei pressi della strada ... di Cervarezza" (see Maps XI-3, XI-5) where she records an area of 2,400 m^2, densely covered with stones, bricks, tiles and combed *imbrices*. The latest diagnostic pottery includes ARS-D1 of Hayes' Form 76 (425-475 AD), 2 mortarium rims of 'vernice rossa diluita' (? = LPRW) dated 2nd half of the 5th – beginning of the 6th century AD, and 2 *spatheion* rims of the 5th/6th century. If the association of the sites is correct, then this must be another case of an Early Lombard settlement and burial ground, represented by the combed tiles and by the bronze and silver objects found in the excavation, which superseded an imposing Late Roman/ Late Antique building, presumably a villa.

(v). A bronze penannular fibula with incised zig-zag decoration and animal *protomai* published in the catalogue of the Museum of Venosa is said to have been found at "Maschito, loc. Boico".[162] If, as seems likely, "Boico" is an error for Bochicchio, a *masseria* 2.5km SE of Maschito, then the site may correspond to one encountered by Vinson on his Via Herculia survey (his site no. 401) where he found a wide range of material (Map. XI-2.27). Among the latest pieces were fragments of ARS of Hayes Form 61B of the first half of the 5th century, and of Phocaean red slip, forms 3B and 3C, of the second half of the 5th century, and 13 sherds of LRPW datable between the middle of the 5th century and the middle of the 7th. Here too the fibula, which presumably comes from a grave, is likely to indicate that there was continuity of settlement on the site into the 7th century.

(vi). Another penannular fibula with animal *protomai* in Venosa Museum is inscribed with a small cross, and the formula *Lupu biba*, referred to above.[163] It was found in the contrada Irene at Forenza (Map XI.2-29), which in all probability corresponds to Vinson's site V392, situated on or close to the Via Herculia, where he found Neolithic material, and a range of Hellenistic and Roman pottery, including much African red slip. The latest datable pieces include Phocaean red slip sherds of forms 3B and 3C, and at least one fragment of broad-line pottery of the 7th or 8th century AD. It seems likely, therefore that yet again the Early Lombard site, represented by the fibula and the broad-line pottery, superseded a large site of the Late Antique period.

In nearly all these cases the metal objects of the Early Medieval I period suggest that sites which were occupied in Late Antiquity continued well into the time of Lombard settlement. They suggest that other sites which have been thought to have come to an end by the late 6th century in fact continued later – and might be shown to have done so if we had better stratified sequences on which to base the chronology of local pottery types.

vi. Combed tiles

For these tiles see Cat. 32-G. They have been well studied in Sicily where they appear in contexts of the 5th/6th century but are most common in the 7th century. A detailed study is still needed of their chronology and distribution in South Italy. They appear, however, to have been particularly popular in the central and northern parts of the Fossa Bradanica. Combed tiles of this type are recorded by M.L. Marchi on some 41 sites in the territory of Venusia, more than half of them in the vicinity of La Santissima near Spinazzola where the dispersed settlement of the Late Roman period continued into the 7th century.[164] McCallum and Hyatt report 7 sites with combed tiles in the general area of Monte Serico,[165] and combed tiles were found in some numbers by our team in the excavation of Vagnari, on various sites in our Survey Area (below, sub-section 7.iv.a), and at Santo Staso (below 7.iv.d and F2 at the end of the List of Sites). At Vagnari, they were found in the latest stratified context, associated with the remains of an apsidal hut.[166] The context there makes it clear that they overlap with LRPW. More evidence is needed to tie down the chronology in this area, but we assume, tentatively, that they date to the late 6th or 7th century AD, and that they represent a phase of settlement of the

[161] Salvatore 1980, 8-9 figs 2, 4.
[162] *Museo Venosa,* 287, t.13.
[163] *Museo Venosa,* 288, t.15. Papparella 2010, 395.
[164] Marchi 2010, 234 no. 1944, with note 161. A small fragment of an inscription prefaced by a Greek cross perhaps derives from a Christian burial and raises the question of whether there was a Christian church in the *vicus.*
[165] McCallum *et al.* 2013.
[166] *Vagnari*, 205-214, figs 5.1, 5.115.

Early Medieval I period. The implications of this for our Survey Area are discussed below.

vii. Some conclusions on rural settlement

In short, the evidence of the burials and combed tiles of the Early Medieval I period in the Fossa Bradanica contradicts both the theory that the interior of central Apulia had been largely abandoned for settlement,[167] and the idea that the transition from villa- to village-type settlement which took place in Tuscany in the Early Middle Ages provides a model which can be applied to the whole of Italy.[168] In Apulia and Calabria the transition took a different form, with a scatter of small settlements occasionally clustering to form larger communities.

It might be supposed that these small sites in the interior of South Italy were engaged only in subsistence farming,[169] but even this idea may be questioned. Amphorae continued to reach our Survey Area from Africa and the Eastern Aegean down to the middle of the 7th century, and the items of jewellery show that there was a trade in luxury items. The bronze fibulae are likely to have been made in Italy (perhaps in Campania) by artisans working in the Roman tradition, but the elaborately decorated gold earrings found in burials must have been acquired (even in some remote sites of the Lombard duchy) from the Byzantine East.[170] How the inhabitants, Romans or Lombards, paid for them is unclear, unless they were the profits of war or Byzantine subsidies.

6. Economic and social change, late 5th – late 7th century AD

i. Roads

The main elements of the Late Roman road network with stations at frequent intervals lasted down to the end of the Gothic period, but probably began to fall into disrepair under the Lombards when the system of taxation which it served was abandoned, and the rural population which had provided the manpower to repair the roads declined. But the decay of the system is likely to have been gradual, and some parts of it must have remained in use for a long time. The evidence is meagre, however, and much depends on the assumptions to be made about the date of the latest revisions to the *Tabula Peutingeriana*. A comparison between the places represented as road stations in the sections of the *Tabula* which cover Apulia, and those recorded as *mansiones* in the *Bordeaux Itinerary* (see Chap. X.4) shows that none of the stations identified by the number of the nearest milestone in the *Itinerary* appears in any recognizable form on the Peutinger Table. In their place there is a smaller number of locations identified by place-names, some of which are well-known *civitates* (such as *Barium*/ Bari), and others are probably *vici* (such as *Turenum*/ Trani). In a few cases the measurements of distance correspond sufficiently well to suggest that a *vicus* may have developed out of a road-station, so that, for example, *Rudas* located on the *Tabula* 12 miles from *Rubos* (Rubi/ Ruvo) may correspond to the *mutatio ad Quintodecimo* located 11 miles from *civitas Rubos* according to the *Itinerary*,[171] but most of these cases are at best only probabilities.

Although it is possible that the compiler of the *Tabula Peutingeriana* simply omitted intermediate road stations to simplify his map, the disparity between the *Tabula* and the *Itinerary* leaves little doubt that the *Tabula* depicts the road system at a later stage, perhaps even a stage when the postal system was no longer functioning and the intermediate road stations on which it depended had been abandoned. Instead, it records settlements along the roads where ordinary travellers might hope to find accommodation. That would suggest that the map on which the surviving 13th century copy was based was itself a revision of an earlier version of the map made after the end of the Late Roman system of taxation.[172]

It has recently been argued by S. Del Lungo that the revisions made to the Apulian/ Lucanian section of the *Tabula Peutingeriana* in the Lombard period were extensive and account for changes both in place names and line-drawing which reflect the conditions of the time. One of the most significant name changes for this study is the substitution of Turiostu for Metaponto. The Classical city was abandoned, as we have seen, around the middle of the 6th century, and in its place a small settlement grew up at the mouth of the Bradano river which later developed into the Medieval fortified site of Torre di Mare. It has been suggested that the name Turiostu is a corruption of *Turris Ostii* – the tower at the mouth (of the Bradano river) – and refers to the initial development of this site.[173] That seems probable, but it is less certain that the gaps in the road system apparent in the South Italian section of the *Tabula Peutingeriana* really indicate that the road had fallen out of use in those areas, as Del Lungo claims. The alternative, that the line drawings by which the roads are represented,

[167] Martin 1999, 197-200.
[168] Francovich & Hodges 2003.
[169] Cf. Francovich & Hodges 2003, 60.
[170] Rizzi 2010.
[171] Grelle 1991, 81; Volpe 1999b; Nuzzo 2010, 476.
[172] For revisions to the *Tabula Peutingeriana,* see Talbert 2010, 124-125, 134. He argues that there is a striking correspondence between names in some areas and those listed in *Ravenna Cosmography* of ca. 700 AD; and infers that Peutinger-type maps were in use by 700 AD at the latest.
[173] Giardino 1982, 1999, 2012, 15; De Siena 2001 (all with earlier dating).

are missing in these areas because of a copyist's negligence, or because the map had become corrupted seems altogether more likely.[174] One of the most notable gaps is the section of the Via Appia between *Silutum* (= Silvium) and *Tarento* (Tarentum), where the line of the road S of *Sublubatia* (Sublupatia) is completely missing, but it seems unlikely that the road link between Taranto and Venosa which were among the few cities still functioning at this time would have been lost. The lacuna is more likely to result from damage to this part of the map. The section of the road between "Silutum" and "Venusie" is clearly shown, as is a road which linked *Sublubatia* with *Gnathie* (Egnazia), and so connected our Survey Area with the sea.

The analysis of the results of the Older Surveys for this period (sub-section 7.ii) throws some light, albeit a rather fitful one, on this problem. It shows a small decline in the number of settlements occupied which is most marked along the line of the Via Appia. Site V16, which we have argued was probably a *mansio* on the road, yielded no evidence for occupation in this period, and Site V14, which was perhaps a *mutatio*, is attested only by fragments of ARS (Hayes' forms 88, 99 and 103). No LRPW was collected on either site. It would be unwise to put too much weight on this negative evidence since LRPW was not well recognized at the time the survey was carried out and may not have been recorded, but Vinson's normal practice was to collect potentially diagnostic material, and fragments subsequently identified as LRPW were collected by him on other sites (Sites V5, V10, V25, V26, V28, V30, V32, V37, V42, V43, V56, V68, V72, V74, V77, V81). Since LRPW is by far the most abundant ware used in the Fossa Bradanica in the Late Antique period, its omission from the record of V16 gives good reason to suppose that the hypothetical *mansio* there had been abandoned before the period began. It is less easy to explain the absence of the ware on Site V14 below Monte Serico since ARS forms of the 6th century were found on the site. It is the only site in the area of the Older Surveys where these late ARS forms were found,[175] and would repay further investigation.

But even if the official road stations were abandoned, the road is likely to have continued in use. This can be inferred from Map XI-2 of sites of the Early Medieval I period which shows that most settlements were situated on or near the old Roman *viae publicae* – the Via Appia, the Via Traiana and the Via Herculia or along the coastal road of the Ionian Gulf. It is likely, therefore, that these roads were still in use,[176] though perhaps not for wheeled traffic. The main exceptions are the cluster of sites in the Materano, but these lie on or close to the route down the lower part of the Bradano valley which had been in use from remotest antiquity, even if it was never made a *via publica* by the Romans. The group of sites in the Lower Ofanto valley and along the coast near the mouth of the river would also have made use of Roman roads.[177] Similarly, the fact that there were still functioning communities situated along the line of the Via Traiana between Egnazia and Ordona, is likely to imply that the Apulian section of the road was still usable.[178]

ii. Commerce and the circulation of goods

Long-distance transportation of goods was still an essential aspect of the economy of Apulia and Lucania at the beginning of this period. Grain from the interior of Apulia destined for the city of Rome and the Gothic army in the North had to be transported to the coastal ports and shipped to Rome or Ravenna, and the Lucanian pigs required for the pork dole in Rome still had to be driven 350km or so along the roads to the city.

The picture produced by the ceramic evidence is more complex. ARS-D ware continued to reach the Survey Area at the beginning of this period, but in diminishing quantity, and it ceased altogether around the middle of the 6th century: the latest piece is a fragment of a dish of Hayes' Form 104. A similar absence of the latest (late 6th and 7th century) forms of ARS pottery has been noticed throughout South Italy, where importation of the ware ceased altogether by the middle of the 6th century.[179]

The vacuum left by the end of imported African fine ware was more than filled by the LRPW (Cat. 16) which was produced in abundance at a number of regional centres in Apulia and Lucania, including Calle near Tricarico in the middle reaches of the Basento valley. It was widely distributed, especially in inland sites, reaching as far as Otranto in the Salentine peninsula, Monasterace Marina in (modern) Calabria, and the Posto villa in Campania.[180] As our Map XI-3 shows, its main concentration was in North-Eastern Lucania and the Fossa Bradanica.[181]

[174] Talbert 2010, 124.

[175] A fragment of Form 99 (No.1063) was found on Site 147-9 of our own survey, but no examples of Forms 88 or 103. None of these forms was found in the excavations of 2000-2010 at Vagnari.

[176] As noted by A. Campese Simone (2003, 474).

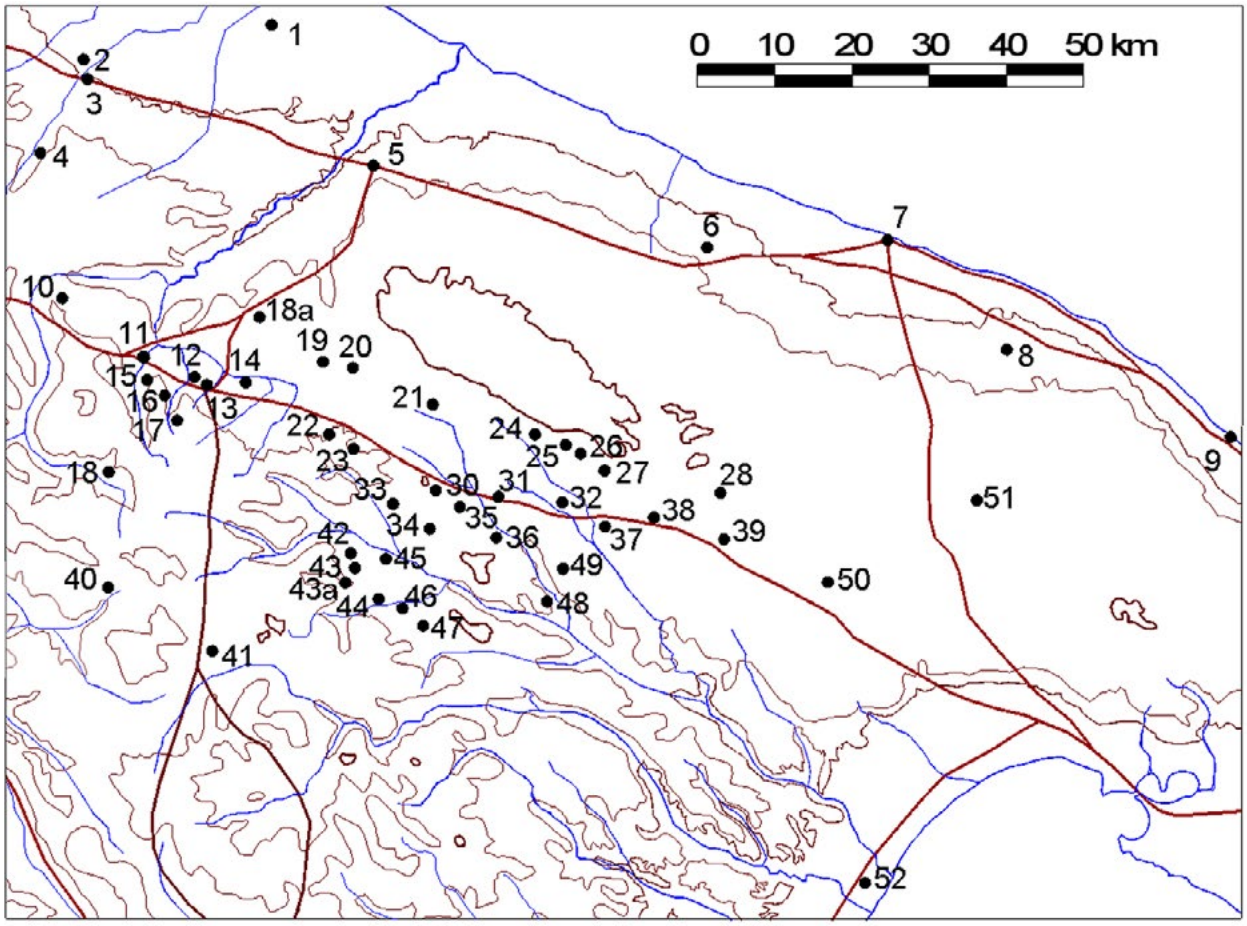
[177] For the Roman road system in this area, see Goffredo 2011, 75-84.

[178] As noted by Campese Simone (2003, 376-377, 475).

[179] Leone & Turchiano 2002.

[180] Di Giuseppe & Capelli 2005.

[181] The density of distribution of the ware in the Fossa Bradanica is even greater than the map suggests since not all the sites on which it has been found are represented on it: the constraints of the scale have meant that in several areas where there have been intensive field surveys, as in the territories of Venosa and Banzi and in our Survey Area, it has only been possible to map the larger sites. A more complete picture for these areas can be seen in Maps XI-4 and XI-5 which show all the sites which have produced the ware in the survey areas published in this work.



Map XI-3. The distribution of Late Roman Painted Ware in the Fossa Bradanica and adjacent areas. 1. Salapia; 2. Posta Crusta; 3. Ordona; 4. Faragola; 5. Canosa; 6. Casal Tamburi; 7. Bari; 8. Rutigliano; 9. Egnazia; 10. Leonessa; 11. Albero in Piano; 12. Toppo di Costanza; 13. Venosa; 14. Bagnara; 15. Piani Calderai; 16. Serra Badesssa; 17. La Manorella; 18. Atella; 18a. La Forestella; 19. Mass. Spinamara Soprana; 20. La Santissima; 21. Site V28; 22. Fosso Marascione; 23. Cervarezza; 24. Site V68 Villa Filippi; 25. San Mauro; 26. Casa S. Paolo; 27. Site V43; 28. Belmonte; 29. Monteverde; 30. Monte Serico; 31. Vagnari; 32. Santo Staso; 33. McCallum *et al.* 2013, sites A42, B42; 34. *ibid*, A36, A37; 35. *ibid*, B52, B54; 36. *ibid*, C28, C29; 37. *ibid*, A26; 38. *ibid*, C16; 39. Mass. Castello; 40. S. Giovanni di Ruoti; 41. Malvacaro; 42. La Marmora; 43. Mass. Ciccotti; 43a. S.Gilio; 44. S. Pietro; 45. Trigneto; 46. Piforni; 47. Calle; 48. our Survey Site 134; 49. our Survey Site 408; 50. Mass. Bonifacio; 51. Monte Sannace; 52. Metaponto.

Sources: Campese *et al.* 2015, 6, 29; Cassano, Lagnara & Volpe 1985, 5; Ciminale 2010, 7; Di Giuseppe & Capelli 2005, 2, 3, 8. 9, 11, 13, 18, 23, 28, 40, 41, 43a, 43, 44, 46, 47, 52; Favia 1999, 10; Fracchia 2005, 42, 45, Gliozzo *et al.* 2019, 1; Marchi 2005, 14; Marchi 2010, 12, 16, 17, 20, 15, 19; Piepoli 2015, 39; Pirraglia *et al.* 2016, 22; Sabbatini 2001, 18a; Scarfì 1962, fig. 105 (misidentified); Volpe & Turchiano 2013, 4; Zullo, E. (personal information no. 50). All other sites: this book. Because of the constraints of the scale, only the largest sites with LRPW recorded on the field surveys published here are shown on this map. For the others, see Maps XI-4 and XI-5.

On the coastal fringes the ware appears (on present evidence) to have been much less used. The main centre of production of the pieces found in our Survey Area has not yet been identified, but it is unlikely to have been far away, given that it is so abundant there. Since some of the earlier shapes in LRPW, principally dishes with thickened rims, imitate forms in African and Phocaean red slip pottery, it is easy to see the LRPW as a cheaper substitute for these imported wares. But that explanation is hardly adequate since most of the vessels are in shapes that have no relation to African or Aegean types. The most typical LRPW shapes are large deep basins with prominent rims, deep spouted bowls, jugs and table amphorae which have no counterparts in ARS and which suggest that the population had abandoned the dining practices of the Late Roman period in favour of forms of communal eating and drinking that involved larger numbers of people who probably sat at long tables rather than reclined to dine. The point is discussed more fully in the introduction to LRPW (Cat.16. I). The large round platters in ARS, typical of the previous period, which were ideally suited for dinner parties with a limited number of guests accommodated at a *stibadium*, were no longer relevant to the society of the Gothic period.

It cannot at any rate be supposed that supply of ARS pots to South Italy was interrupted by some political or military event such as the Byzantine reconquest of the North African provinces from the Vandals, because amphorae containing wine, oil, fish sauce and other commodities continued to reach our Survey Area from North Africa throughout this period, as Disantarosa's analysis shows (Cat. 19). They include *spatheia* of late types found on Sites 145/9, 212, and especially 810. These miniature amphorae must have been used for transporting valuable commodities, including perhaps wine for liturgical use. An amphora toe of type Keay LXII Q from the area of Nabeul datable in the last third of the 5th or first half of the 6th century, and a rim fragment of a Keay LXII D of the first half of the 6th century from the region of Sahel in Byzacena were found at Vagnari,[182] and wall-sherds of other large cylindrical amphorae or the late 6th or early 7th century from northern Tunisia were recorded on seven sites in the Survey Area, with a particular concentration on Site 145/9. The latest typable piece is a rim sherd of a Keay LXI D amphora (No.1709) datable to the end of the 6th and first half of the 7th century, also from the Sahel region.

Amphorae also arrived from the Greek East. Instances were at first rare, as they had been in the previous period, but a rim fragment of an Adamscheck RC 22 wine amphora found at Vagnari datable to the 5th or beginning of the 6th century may have arrived at the beginning of this period.[183] The production centre of these amphorae, which were first identified at Corinth, has not yet been located. Not surprisingly, imports from the Eastern half of the Mediterranean increased greatly after the Byzantine conquest of Italy in the Greco-Gothic War of 536-554 AD, as the series of LR (Late Roman) amphora types imported into the Survey Area shows. The LR1 amphorae produced around the S fringes of the present-day Turkish coast between the 5th and 7th centuries were widely exported, and have been found on numerous Apulian sites. Fragments were recorded at Vagnari,[184] on four sites in our Survey Area (Cat. 14.7.j) and on site C16 (OS List – VI.2.A). The LR2 amphorae produced at various centres in and around the Aegean extending into the Black Sea, also circulated widely in the Mediterranean in the 5th and 6th centuries, transporting wine and occasionally other products. Fragments were found on four sites in the Survey Area, and at Vagnari.[185] The variant B subtype, datable to the second half of the 6th century is attested at Site 345-9. To these may be added the LR4 amphorae which contained the well-known wine of Gaza. They are attested in our Survey Area by two wall sherds found at Vagnari[186] and one at San Felice, and by a fragment of the B2 variant of the second half of the 6th or 7th century also found at San Felice (Cat.19.7.m and n).

The number of amphorae imported from North Africa and from the Greek East was large, but as in the previous period they were unevenly distributed, being found on only 15 out of 48 inhabited sites (31%). These, however, were, as might be expected, the larger sites of the period. The relatively high number from San Felice (8) indicates that the revived site was one of the most flourishing in the area. E. Iannetti has noted a similar picture of the ready availability of imported amphorae in the Late Antique period on Vinson's sites in the river valleys which transect the area to the NW of Gravina: the Roviniero, the *torrente* La Gravina, and the Canale San Francesco, all tributaries of the Basentello/ Bradano.[187]

With the decline of the cities there were fewer centralized markets where merchants could sell their imported wares, and where local produce could be exchanged. Middlemen must have travelled greater distances to places where they could sell on their goods. Some of these activities are likely to have taken place in the larger *vici*, such as ours at Vagnari where the large porticoed building probably functioned at least in part as a market centre (Building B: see sub-section 7.iii) where seasonal markets, *nundinae*, could have been held. But there must also have been annual fairs in traditional locations, like the one at the rural site of Marcellianum in the Tanagro valley in western Lucania, vividly described by Cassiodorus.[188] It was situated on or close to the road from Capua to Reggio Calabria and was attended by people from the surrounding provinces, including Campania, Bruttii, Calabria (i.e. Salento) and Apulia, as well as Lucania itself. Vendors displayed their wares there in improvised market-stalls. Some parents even sold their children into slavery. Clothes, animals, everything could be bought and sold.

As we have seen in the previous section the countryside became virtually demonetized in the course of the 5th century AD. By the beginning of the Gothic period, the only coins still circulating at Vagnari were badly worn *nummi* of the 4th century. But coins continued in use in at least some of the cities and coastal ports.[189] They include Ordona where the supply of new coins fell off gradually after the middle of the 4th century and ceased altogether by the end of the 5th.[190] A few coins of the 5th and early 6th centuries have been found at Metaponto and Egnazia.[191] The few sites of the period in South Italy

[182] Disantarosa in *Vagnari*, 396, secs. 4.5 and 4.6.
[183] Disantarosa, in *Vagnari*, 399, sec. 5.6.
[184] Disantarosa, in *Vagnari*, 397-398, sec. 5.2.
[185] Disantarosa, in *Vagnari*, 398, sec. 5.3.
[186] Disantarosa, in *Vagnari*, 399, sec. 5.5.
[187] Iannetti 2012, 92-93, 146-147, 157.
[188] *Variae* 8.33. The passage has been much discussed. See e.g. Gabba 1975, 159-162; Volpe 1996, 336-339. For periodic markets in general, see Lo Cascio (ed.) 2000.
[189] Arthur 1999, 176-176.
[190] Mertens 1995, 334.
[191] Arthur 2004, 108

where bronze coins of the late 5th and 6th centuries have been found in quantity are religious centres – including San Vincenzo al Volturno where a number of *nummi* of the Gothic and Justinianic periods have been found associated with the Crypt Church,[192] and the episcopal complex at San Giusto near Lucera where a small room attached to the N side of the early church contained a cache of more than 1000 coins of low value ranging in date from the last third of the 3rd century to the first third of the 6th. It has been suggested that these religious sites were centres of periodic markets in which *nummi* were still used for small purposes,[193] but it is perhaps more probable that the coins were used for almsgiving. Ordinary daily transactions must have been carried out by other means, by barter or by promissory notes. It might be thought that the lack of a functional coinage would have had a dampening effect on commerce, but a decline in trade does not become evident until late in this period.

The commercial networks which allowed long-distance goods to be traded in the interior of South Italy were torn apart in the last half of the 7th century. Amphorae ceased to be exported from Northern Tunisia after the Arab conquest of North Africa, which reached Byzacena in 678 AD and Zeugitana in 698 AD. At about the same time the Lombards were wresting control of much of South Italy from the Byzantines. The importation of overseas amphorae into our Survey Area ended at this time, as it did generally in South Italy, and other more perishable exotic goods presumably also ceased to be imported.

iii. The environmental evidence; stock-raising and cultivation

The small amount of palaeo-environmental evidence for this period is disconcertingly varied, reflecting great differences in local practice as the farmers adjusted in different ways to the loss of traditional markets and the decline in urban consumers.

At Faragola, pollen evidence shows that the forest expanded as the settlement shrank, and the indigenous oak forest was enriched by other deciduous trees.[194] There was consequently an increase in wild animals, especially red deer and hare.[195] One would expect the preponderance of pig in the faunal remains to have increased accordingly, but the reverse is the case. Whereas pigs had accounted for 76% of the three major domesticants in the fauna sample of the 5th century, they fall to 32% in the 7th century. The major increase is in sheep/goat which rise from 20% to 63%. Cattle increase almost insignificantly from 4% to 5%.[196] There was therefore a drastic change in stock-raising practices implying a return to a more traditional peasant economy. Wheat and barley were both cultivated and were stored in separate granaries on the site, but whereas the wheat was relatively pure, the barley was contaminated with vetch and weeds, suggesting that it was used as animal fodder.[197] There is nothing here to suggest that the agricultural economy was under stress.

At Ordona, the picture is very different. The pollen record for the Late Antique and Early Medieval periods shows little evidence of forest. Relatively high percentages of chenopods and *brassicaceae* indicate that fields were being cultivated and vegetables grown in the immediate vicinity of the city, although there was a decline in cereal production.[198] Faunal analyses show that bovines replaced caprines as the main animal species raised,[199] but their average size diminished, suggesting that less attention was being paid to improving standards by selective breeding. Since a high proportion of the animals were female and some were aged more than 24-36 months, it is likely that they were raised for milk as well as used as traction animals. Sheep and goats seem to have been raised in the surrounding area for wool and meat and milk production. A high percentage of the pigs (63%) were slaughtered at less than one year, suggesting that it was difficult to maintain the animals over the winter months. The relative scarcity of hock and ham bones in the settlement inside the remains of the bath building implies that these meaty parts were removed for curing elsewhere and were perhaps exported from the site. Equines and poultry were of little importance.

At San Giovanni di Ruoti the picture is even more markedly different. There the latest midden, Midden 6, which yielded radio carbon dates in the 7th century,[200] contained the highest frequency of pig bones (87%) and the lowest of cattle bones (1%) of all the middens and other contexts from the site.[201] But the most remarkable feature of the midden is the high proportion of bird bones, analysed by Anne Eastham, which account for 42% of the total number of identified faunal specimens.[202] Of these, the great majority (1032 bones) are of domestic fowl, far higher than in any other context of any period at the site. There is also a significant number of wild bird bones (475 specimens from 24 species). The majority of these are of sparrows

[192] Hodges & Rovelli 1998.
[193] Arthur 1999, 176. San Vincenzo: Hodges 1998; San Giusto: Volpe 2001, 332, 336-337; Siciliano 1998.
[194] Caracuta *et al.* 2012; Volpe & Turchiano 2012, 477-478; Buglione 2009, 208; 2013, 252.
[195] Volpe & Turchiano 2012, 482.
[196] Buglione *et al.* 2016, histograms on p. 320.
[197] Caracuta & Fiorentino 2009a, 2009b.
[198] Heim 1995.
[199] A. Buglione in Leone *et al.* 2009.
[200] Small 2005.
[201] Information from Michael Mackinnon. An article on Midden 6 is in preparation.
[202] *SGR* III, 171-188.

(337 specimens), but there are also 23 other wild species represented, a greater variety than in any other period. Since raising domestic hens is a typical aspect of the peasant economy, as, perhaps, is the capture of wild birds for eating, one might suppose that the analysis shows that the site had become a settlement of more-or less self-sufficient peasants, but this is contradicted by the fact that oyster shells found in Midden 6 show that exotic foods continued to be imported down to the end of the site. San Giovanni di Ruoti was still involved, therefore, in a network of trade that connected the site with the coast, probably on the Tyrrhenian side of Italy, and the inhabitants were probably still exporting pork either as live animals or in the form of preserved meat (*laridum*), perhaps to Campania, if not to Rome. The most obvious explanation of the contradiction is that there were two classes of people inhabiting the site, an élite who continued to import the oysters, and a peasant class which raised the chickens. The mainstay of both was no doubt pork.

7. Settlement patterns

i. Comparative survey results

The intensification of agriculture in Apulia and adjacent parts of Lucania in the Late Antique period was accompanied by an increase in settlement in the open countryside in some areas, especially those parts of the region which were best suited to cereal cultivation. The process had already begun in the previous period, as we have seen, and it continued down to the time of the Gothic War, but it was uneven as the following brief summaries show. In none of them is the increase in sites as marked as it is in our Survey Area.

In the lower Ofanto valley in the vicinity of Cannae and Canosa, in the Celone valley near Aecae (Troia), and in the territory of (modern) Terlizzi on the lower Adriatic slopes of the Murge to the W of Bari there was a significant increase in the number of small rural settlements in the Late Antique period.[203] Many of them are likely to have been small farms, but there were also larger settlements, probably *vici*. Even more relevant to the interpretation of our survey data is the area of the vast imperial estate around Montemilone between Venosa and the Ofanto river which has yielded several funerary inscriptions of imperial slaves and freedmen of the Middle Imperial period. Like our imperial estate at Vagnari it was subdivided, and in the Late Antique period the number of settlements doubled.[204]

Closer to the city of Venosa a rather different picture emerges. Most of the nucleated sites inhabited in the 4th century continued into the 5th, but many disappeared in the first decades of the 6th.[205] McCallum and Hyatt also report a reduction in the number of sites occupied in the Late Antique period in their survey in the vicinity of Monte Serico;[206] but the reduction in number (from 25 to 15) need not imply demographic decline since they also point out that the settlements which continue demonstrate an increase both in dimensions and in the density of artifacts.

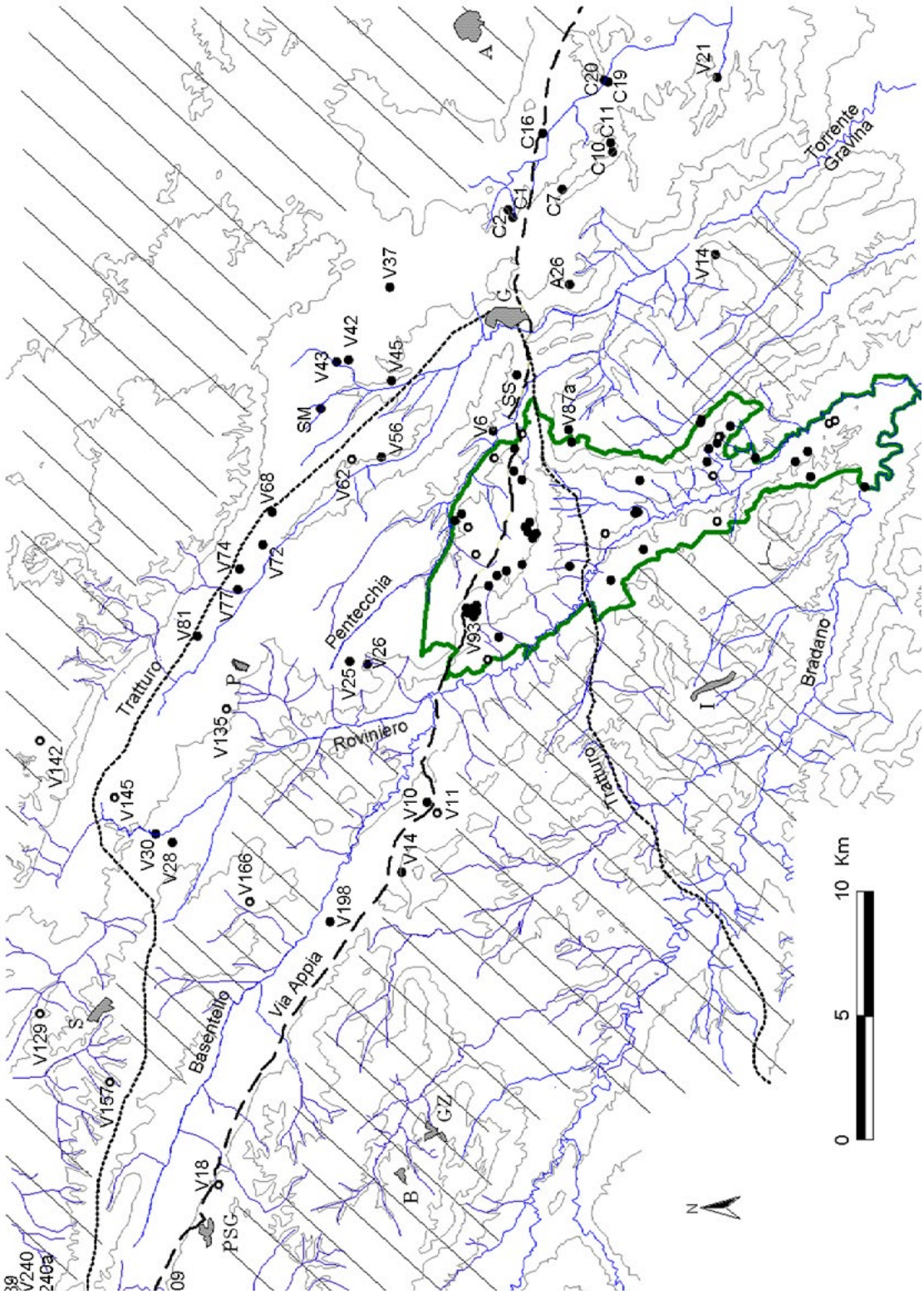
To the S and W within easy travel distance of our Survey Area, the story is different again. In the Chora of Metaponto the pattern of rural settlement in the coastal plain mirrored that of the former city, falling off drastically around the end of the 5th century, so that only two sites lasted down to the middle of the 6th.[207] The causes are debated, but it is probable that malaria was more pervasive as the continuing alluviation of the river valleys created more swampy conditions in the coastal plains, ideal for the Anopheles mosquitoes that carried the parasite (See the General Introduction to this book). Further inland in the Upper Bradano Valley, the phase of expansion of settlement that we have seen in the previous period faltered, and the relative scarcity of LRPW in the area probably indicates that the rural population was in decline.[208] But further to the W, across the Apennine watershed, in the vicinity of the late villa of San Giovanni di Ruoti there was more continuity, and even, perhaps, some expansion of settlement.[209] This was to be linked, however, with increased production of pork, as we have seen, rather than with the development of cereal cultivation.

Further to the SE, on the coastal plain between Egnazia and Brindisi, there seems to have been no increase in rural sites in spite of the importance of Brindisi as a port for shipping grain in the previous period. It is possible that Otranto had already taken over from Brindisi as the principal port on the Adriatic coast of the Salentine peninsula, and the high proportion of cattle in contexts of the period mentioned above may indicate that arable cultivation had increased in the vicinity of the city. By contrast, pastoralism had become more important at Egnazia where sheep predominated. It has been suggested that the underlying cause there too may have been environmental degradation,[210] but the problem needs more investigation.

ii. The Older Surveys

The data from the Older Surveys need to be interpreted with some caution. At the time when they were carried

[203] Ofanto valley: Goffredo 2011, esp. 170; Celone valley: Romano & Volpe 2005, 247-249; Terlizzi: Campese *et al.* 2018.
[204] Sabbatini 2001, 76.
[205] Marchi & Sabbatini1996, 122-123. Cf. Marchi 2010, 43.
[206] McCallum & Hyatt 2014, 177-178.
[207] Lapadula 2011a, 1145
[208] Fracchia 2008, 301-303.
[209] C. Roberto in *SGR I*, 22.
[210] De Mitri 2010, 41-42.



Map XI-4. Late Antique sites on the Older Surveys and in our Survey Area. Sites on the Older Surveys are numbered. For Site numbers in our Survey Area see Map XI-5 below. SM = San Mauro; SS = Santo Staso.

out the study of ARS was still in its infancy, and LRPW was not recognized as a distinctive Late Antique/ Early Medieval ware. In fact, it was sometimes recorded as wheel-made painted pottery. The pieces from the Older Surveys which had been kept for further identification were subsequently classified by Alastair Small and John Hayes, and were studied later by Eufemia Iannetti,[211] but it is probable that some of the evidence which might have shown site occupancy in this period has been lost.

None the less, 36 sites could be dated reasonably reliably to this period, and 11 others more doubtfully (Map XI-4). The numbers are little different from those of the previous period (34 reliable and 12 doubtful). They are unevenly distributed. In the area E and S of Gravina, 11 sites recorded by Chapman and Aldridge could be dated to this period either by fragments of LRPW (9 sites) or by sherds of the latest African or Phocaean red slip (Sites A14 and C19). This is a slight increase on the previous period when 10 sites in this area had been occupied, dated primarily by ARS pottery. In the area NW of Gravina, 20 of the sites identified by Vinson (21 including San Mauro) can be dated to this period by LRPW, or (in the case of Site V14) by a fragment of Phocaean red slip. There was a large degree of continuity: in the whole area of the Older Surveys nearly two thirds of the sites (22) had been occupied in the previous period. There is no evidence for demographic decline in this area, but neither is there any indication of an increase in the number of sites on the scale seen in our own Survey Area (sub-section 7.iv).

Most of the new sites of this period were located on good agricultural land below the Murge not far from abandoned older ones. The main areas of occupation were still in the plain below the Murge to the N of Gravina, and on the lower terraces of the Murge to the E of the modern town. There are, however, two areas where the pattern of settlement was noticeably thinner. One is in the loop of the drove road near Poggiorsini, the other along the line of the Via Appia to the W of our own Survey Area, and W of the point where the road must have crossed the Basentello. Several of the sites in this area disappeared before the beginning of the Late Antique period, including sites V9, V16 and V18. We have already discussed the significance of the apparent abandonment of Site V16 which is the most probable location of the intermediate *mansio* between Venusia and Silvium. The loss of the site supports the idea that the postal stations on the road were no longer being maintained, and the road itself was probably less frequented.

iii. Vagnari

As in other periods, Vagnari provides a key for interpreting the data from the field survey. Since no evidence was found for a tile kiln in this period, it is likely that the long history of tile production on the site had come to an end. The two excavated buildings of the previous period in the S part of the site (Buildings A and B) were badly damaged at some time in the later 5th century, perhaps in an earthquake (Chap. X.16). In the aftermath (Period 4C), both buildings were partially repaired, but in Building A the rear room was converted into an open space, and in Building B, the inner part was subdivided and used as a stall for donkeys and pigs while the rest of the structure was abandoned. At some time in the 6th century AD both buildings were abandoned altogether, and an apsidal hut was erected over the remains of the earlier structures in Building B. It had been largely ploughed out, but part of the socle was still in place, consisting of small cobble stones loosely bonded in clay on which the superstructure of wood or wattle and daub was constructed.[212] The walking surface inside the hut contained rubble from the destruction of the previous building, and a fragment of a combed tile which suggests a date for the hut in the late 6th or 7th century. The ghost of another slightly larger hut with rounded end shows up immediately to the E of it in the resistivity survey carried out by John Hunt,[213] and it is possible that there were others located outside the area which he investigated.

It was perhaps one of the inhabitants of this settlement, an adult male, who was buried in a simple pit grave excavated inside the remains of the buildings of the Mid-Imperial period in the N part of the site.[214] There were no grave goods associated directly with it, but radiocarbon analysis of a sample taken from a femur yielded a calibrated date between 420 and 610 AD, with a probability of 95.4%. It may belong, therefore, to either this or the previous phase. A short distance from it were found a glass paste bead and a cabochon finished sapphire which are most likely to be remains of an item of fine jewellery – an earring or a necklace – displaced from another burial not found in the excavation. Such an item would fit Early Lombard funerary practice as described above.

The faunal sample for this period at Vagnari (Period 5) is small, with only 102 identified and 329 unidentified pieces, as compared with 780 and 1464 for the previous period.[215] The graphs indicating the frequency of the main domesticated species show that the proportion of cattle remained fairly stable. There is a slight decrease in the count by NISP matched by a slight increase in that by MNI. The most surprising factor is that the proportion of sheep/ goats decreased markedly (to about 40%), whereas that of pigs increased to about 50%. Equids are represented by a single bone, domestic

[211] Iannetti 2011-2012.

[212] *Vagnari*, 33-34, 205-214.
[213] *Vagnari*, 81-82, feature r10.
[214] *Vagnari*, 287-289.
[215] MacKinnon in *Vagnari*, 305-328.

fowl by two. It is unwise to put much weight on this evidence, given the small size of the sample, but the increase in the proportion of pig is likely to be significant since it echoes that seen at San Giovanni di Ruoti in this period. It is perhaps to be explained in part by a dietary preference for pork, encouraged by the Gothic and Lombard invaders.

iv. Our Survey Area

a. Site occupancy in the Late Antique period

There are 36 sites in our Survey Area which can be assigned with strong probability to the Late Antique period, and 15 others more doubtfully. Most are dated by fragments of LRPW. Of these, 27 sites produced catalogued pieces of the ware while others yielded wall sherds or other fragments unsuitable for publication. The classification is supported in some cases by typed pieces of ARS-D ware, late amphorae imported from Africa or the Greek East, and occasionally by fragments of cookpots, plain wares or tiles with profiles or decorative motifs typical of the period. In view of the extraordinary increase in the number of occupied sites that these data imply, the evidence that supports the classification is set out in detail in Table XI-1. Three of the reliably dated sites (Sites 304, 337 and 513) produced large amounts of tile but very little pottery. They are likely to have been sheds or other buildings not regularly inhabited. Three other sites (Sites 509, 712 and 906) produced fragments of Late Antique amphorae without other evidence for

Site no.	LRPW catalogued pieces	Total frags of LRPW	ARS	Amphorae late types (cat. Nos.)	Other	Rating
114		1		LR1	Ckpot No.1328	?
123		1				?
124	1102	1				?
134	1096 + 1 sim., 1106, 1108, 1117, 1118, 1125, 1129, 1135, 1145, 1152+ 2 sim., 1156, 1162, 1163, 1168, 1188, 1191	458	cf. 1064			x
139		12	ARS-D			x
145-9		3	ARS-D	1691 1710-1713		x
201		1				?
204	1173	3		1784		x
207	1174	2				x
211		1				x
212		2		1692		x
213	1105, 1116, 1144, 1153, 1170, 1176	48	ARS –D	1714		x
214		4				x
222	1159, 1160, 1175	4				x
223	1128, 1167	58		1780-1782 1785 1791-1794		x
229	1101, 1182	14				x
235	1103, 1158, 1184	17				x
304					Tiles Nos.2237-2239	x
306	1109, 1131, 1132, 1157	6				x
324	1098, 1140	7				x
335	1107	1				?
337	1149	1				x
342	1119, 1176	12				x
347-9	1111, 1120, 1121, 1142, 1146, 1147, 1151, 1155, 1192, 1193	42	1062, 1063? 1064	1778, 1783 1786-1788		x
356	1139	10				x
361	*	*	*	*		x
362		2				?
365		1				?

Site no.	LRPW catalogued pieces	Total frags of LRPW	ARS	Amphorae late types (cat. Nos.)	Other	Rating
370	1127, 1141	17		1789-190		x
372		21	ARS-D	1715	Tile	x
374		4				x
408	1104, 1109, 1110, 1112-1115, 1124, 1130, 1133, 1134, 1136-1138, 1143, 1150, 1161, 1164, 1169, 1171, 1172, 1180, 1181+ 1 sim., 1183, 1185, 1186, 1189, 1190	262				x
410		1				x
423	1148	1				?
424	1123, 1165	5				x
501					Tile	?
513		1				x
514		4				x
516	1129a	3				x
517	1154	3				x
624		1				?
625		4				x
707		1				?
719		1				?
809	1177	2				x
810		1	1055 + sim	1693-1696 1717		x
820	1179	3	ARS-D			x
821					Plain Nos.1239, 1299	?
823	1097, 1122, 1126, 1166, 1187	33				x
826		1				?
905	1100	1		1718		?
Total sites	27	38	9	12	5	x:36 ?:15

Table XI-1. Sites with Late Antique sherds in our Survey Area. Rating codes for sites are given in the right column: x = reliably dated; ? = doubtful.

occupation in this period. They are not included in the Table since experience has shown that amphorae may "wander" more than other vessels and may not be good evidence for habitation on a site at the time the amphora was made (see the discussion in the Overview of the Survey, II.I.5)

The tally of 36 occupied sites and 15 more doubtful instances is more than double that of the previous (Late Imperial) period when 17 reliable and 8 more doubtful sites were counted. There is a possible bias involved in the comparison since it is likely that LRPW was more easily acquired in this area in Late Antiquity than imported ARS ware had been in the previous period; but even if the figure for site occupancy in the Late Roman period has been underestimated, it can hardly be doubted that there was a remarkable increase in the number of sites occupied in the Survey Area in Late Antiquity.

b. Settlement types in the Late Antique period

Although, as we have seen, some of the buildings were roofed with tiles, it is likely that most of them had roofs of turf or, more probably, thatch. This is suggested by the low tile count on new sites of this period. Site 370, for example, yielded 60 sherds, including 17 of LRPW, but only 0.5 kg of tile; Site 823 had 258 sherds including 33 of LRPW and 4.5 kg of tile; Site 207, 44 sherds including 2 of LRPW and 1.7 kg of tile; Site 374, 30 sherds including 2 of LRPW and 1.5 kg of tile; Site 410, 44 sherds including 1 of LRPW and 4 kg of tile; Site 408, 1097 sherds including 262 of LRPW and 8 kg tile; and Site 514, 35 sherds including 4 of LRPW and 5 kg of tile. On many sites, however, no tile count for the Late Antique/ Early Medieval period can be given since there was settlement on them at other times, often in the LIA or Hellenistic period, and it is impossible to isolate the Late Antique tile fragments.

Only one site new in this period could be described as even moderately big, namely Site 134 just below Monte Irsi which produced 1504 sherds and 139 kg of tile found in two main 2 concentrations of 1000m^2 and 5700m^2 in a general scatter extending over 4 hectares. It probably consisted of three or four buildings, two of which were residential. Some kiln debris shows that there was a workshop producing pottery or tiles (no wasters were found to determine which), and there was perhaps a chapel at the high point of the settlement where a burial was located in the survey. Some of the buildings must have been roofed with *tegulae* and *imbrices*, but perhaps not all, since the total tile weight, though larger than on other sites of this time, was low by comparison with sites of similar size in earlier periods. It is likely, therefore, that some were thatched.

By contrast, Site 408 on the opposite ridge above the Basentello produced a large amount of pottery (noted above) but it had a main area of concentration of only 450m^2 with some extended scatter down the slope. It must have been intensively occupied over a long period and was presumably a farmhouse since there is no evidence of industrial or commercial activity. It must have been thatched (or roofed with turves) as we have seen. Around it there were several other sites. The nearest was Site 410, where there was another smithy attested by slag remains and dolium fragments. Down the hill from these two sites, along the spring line, was a rather strung-out group of four small sites. Sites 337 and 342, one on each side of the abundant Fontana Fico appear to have been very small dwelling huts. Site 424, ca. 600m to the SE, was a slightly larger settlement of the same date.

Further N, Site 213 just below the plateau of San Felice continued from the previous period. It must have been primarily a farming settlement, but it emerged as the centre of a group of very small huts (Sites 204, 207, 211, 214, 222). There were millstone remains on the site including a large fragment of a slave- or donkey-mill perhaps intended for the use of the whole group. Site 222 which yielded a considerable quantity of *dolium* fragments may have been a storage yard for the complex. Imported small limestone blocks found on three of the sites – limestone is not available in the immediate area – must have been used in constructing the socles or thresholds of buildings. They were perhaps cannibalized from disused structures.

Some very small discrete sites on the periphery of the settlement at Vagnari (Sites 513, 514, 516. 517) suggest that here again there was a small very modest Late Antique/ Early Medieval I group. They all had some LRPW (1 to 4 pieces). Fragments of millstone and *dolium* found on all of them point to their agricultural function.

There was some revival of settlement on the plateau of San Felice (Site 223) indicated by 58 sherds of LRPW. Their distribution points to a loosely organized settlement consisting of a series of small buildings, not all of them inhabited, spread over the central part of the plateau. At the former Roman villa (Site 229) 14 sherds of LRPW found in the surface survey show that this shoulder of the plateau of San Felice was also occupied in this period.

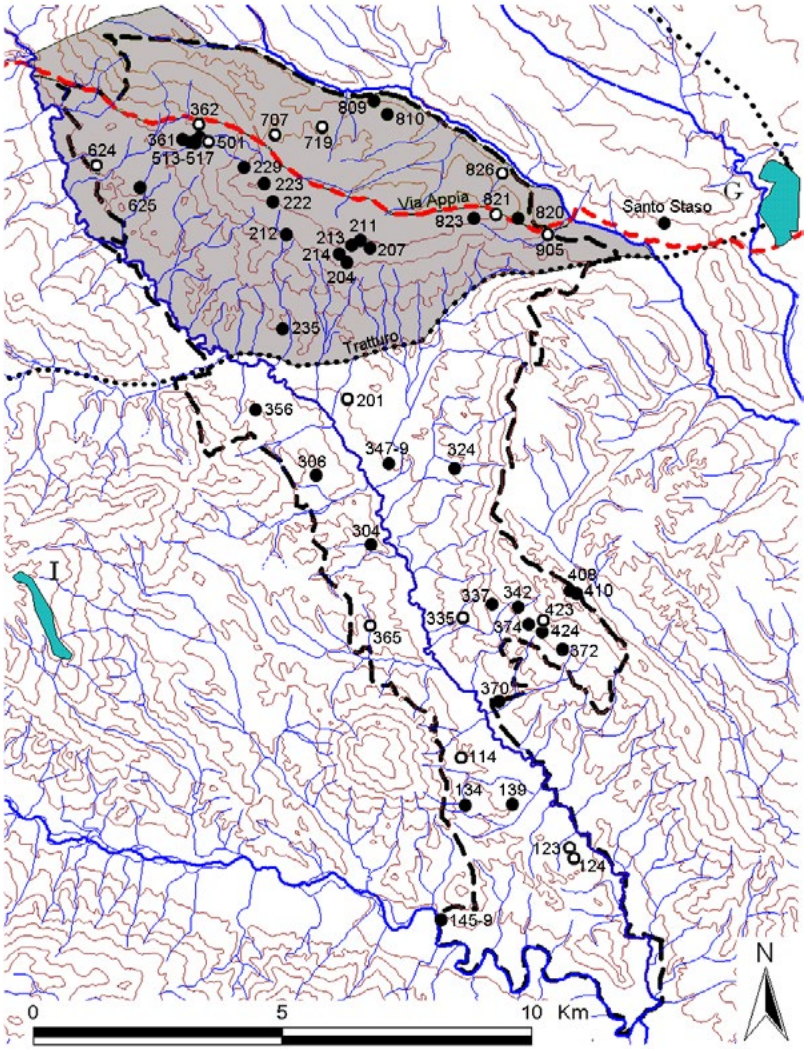
Further to the NE Site 809 had rather more tile than most sites of this period, but very little pottery. Some *dolium* fragments show that the site was used for storage, but it was perhaps not residential. To the E of this there was another cluster of small sites (Sites 820, 823 and perhaps 821), hardly enough to constitute a village, but close enough to suggest a loosely organized community situated on the ridge running W from Santa Teresa. The principal site of the group, Site 823, was much disturbed and the scatter was fairly thin and very fragmented, but it nevertheless produced a large quantity of pottery, mostly plain and cooking-pot wall sherds with enough LRPW to enable us to date it to the Late Antique/ Early Medieval I period. It was plainly residential but must have consisted of thatched buildings, since very little tile was found on the site.

Overall, the picture that emerges of the Late Antique sites is that they were numerous, small and, even the best of them, very poor, consisting of one or more huts, usually arranged in loose clusters. There were also what must be termed industrial sites where flour was milled, iron forged and grain or wine stored, but they were all on a small scale. The centrally organized arrangements of the Early to Mid-Roman Empire, already breaking down by the Late Empire, had given way to a large number of small holdings. This picture derived from our survey evidence matches that which has been inferred for the Materano (see above), and it may be compared to that seen in parts of the Salentine peninsula where a new settlement pattern of thinly scattered huts or small farms began to emerge in the 7th century.[216]

c. *Settlement in our Survey Area in the Early Middle Ages, late 6th to early 8th centuries*

Many of the sites attested by LRPW must have continued into the period after the Lombard invasion. It is impossible to tell from the typology of the ware since the main shapes continued practically unaltered down to the middle of the 7th century and perhaps beyond, but Site 134 which produced a fragment of Early Medieval broad line ware (No.2089) as well as LRPW must have continued into this period, as probably did Site 145-9 which produced a few fragments of late *spatheion* amphorae of the late C6–early C7AD (Nos.1709-1713). But the best evidence for settlement in the Early Medieval I period is provided by the combed tiles discussed in sub-

[216] Arthur *et al.* 2018.



Map XI-5. Late Antique sites in our Survey Area.
Sporadic finds are not mapped.

section 5.vi above, and in Cat. 32.I and II.G. They occurred at Vagnari in contexts connected with the destruction of the Late Antique building and the subsequent hut settlement,[217] and they are likely therefore to overlap with the later phases of LRPW, and to be datable broadly in the late 6th or 7th century AD. Fragments of them were found associated with LRPW on 16 sites in the Survey Area, namely Sites 213, 214, 223, 235, 304, 306, 337, 342, 347-9, 361 (Vagnari), 365, 370, 423, 424, 514 and 719. All these must have continued into the Early Medieval I period, and it is possible that some of them were founded then. Four others, Sites 309, 803, 817 and 910, on which combed tiles were found without LRPW, may have been established after LRPW had ceased to circulate. The evidence is summarized in the Table of Site Occupancy (II.2.4) and the distribution of the sites in shown in Map XI-6.

The numerical data raise difficult questions about the character of these settlements. Combed tiles were not abundant on any of these sites. The largest weight recorded for them is 18kg from Site 223. Those on Site 213 weighed 17.5kg; on Site 910, 15kg; and on Site 424, 13kg. But on six sites the count was between 2 and 6.5 kg, and on eleven less than 500g. Even assuming that only a small proportion of the tiles in use at the time has survived, it is inconceivable that the combed tiles were regularly used to roof entire buildings. We have suggested in the Catalogue of Tiles (Cat. 32) that small rural buildings of this period were either thatched or roofed with miscellaneous tiles salvaged from derelict buildings supplemented by new combed tiles originally intended for use in more important structures such as churches.

On three sites where there are no indications of occupation in other periods it is possible to associate the combed tiles with other artifacts found on the surface. The evidence is summarized in Table XI-2. Full details can be found in the List of Sites.

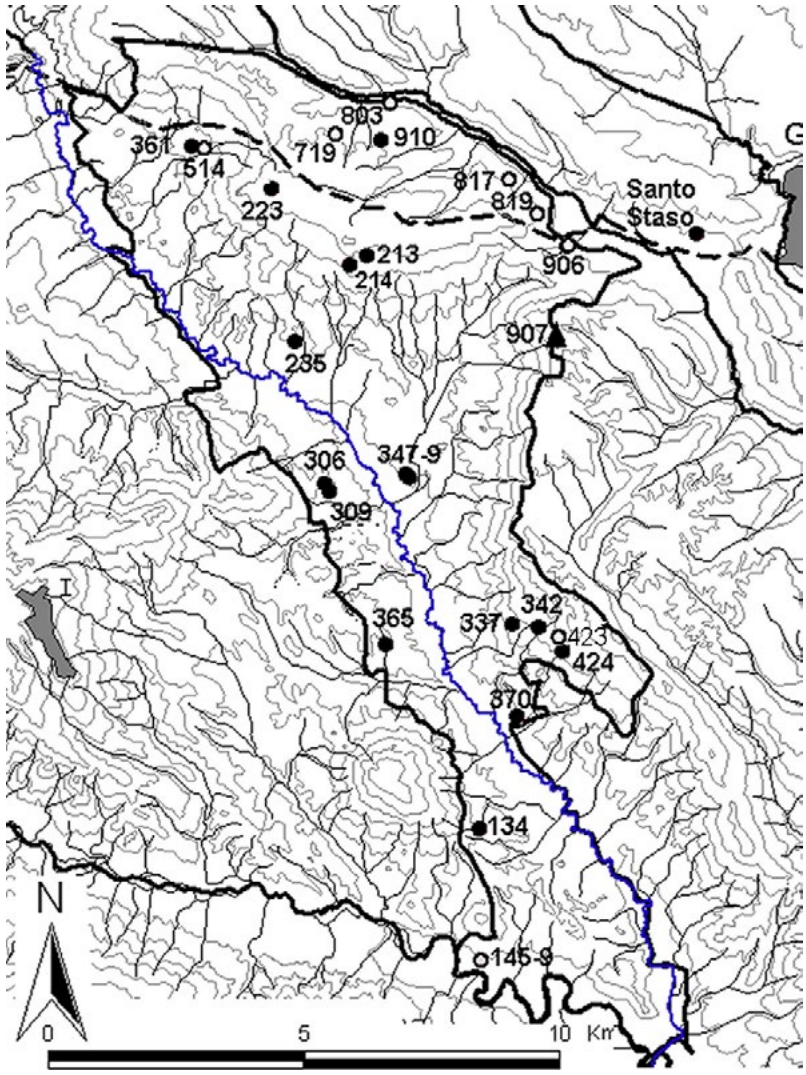
They form an ill-assorted group. Site 309 was situated on the W side of Bradano. Since no certain *imbrex* tile fragments were found on it, it is unlikely that the *tegulae* were used in a roof, and since the fragment No.2088a was found with slag adhering to it, it is possible that all the *tegulae* were used to line a smithing pit, and that the *tegula* waster No.2084 was overfired during the iron-working process. Alternatively, there was a kiln on the site making *tegulae*. The very small number of potsherds implies that this was not a domestic site. It was presumably an outdoor workshop, staffed, perhaps by a worker or workers who lived in the small habitation on Site 306 nearby. The two sites are very isolated and presumably produced iron for customers coming from a wide area on the right bank of the Basentello.

Site	Potsherds	All tile (kg)	Combed tile (kg)
309	6	40 (incl. teg. 33)	2.5
803	39	25 (incl. teg. 0.1, imbr. 15)	0.3
910	11	38.5 (incl. teg. 12.5, imbrex 8)	15

Table XI-2. Sites with combed tile fragments and no LRPW, showing numbers of potsherds and weights of tile fragments.

[217] *Vagnari*, 178-179, 207.

The other two sites were on the E side of the Basentello. Site 803 had a negligible amount of *tegula* and relatively high proportion of *imbrex* fragments and is likely, therefore, to have been a small building roofed only with *imbrex* tiles. The sherd count is contaminated by a few recent pieces, but there are enough ancient ones to suggest that the site was inhabited, at least for a short period. Site 910 yielded nearly 40kg of tile with a more normal proportion of *tegulae* and *imbrices* – enough to suggest a small building roofed with both types of tile, and perhaps also with the combed pieces which included Nos.2264, 2266, 2267 and 2268; but it cannot have been a domestic building because the sherd count of 11 is too low and in any case includes pieces of other periods which must be regarded as sporadic. The only one that need be contemporary with the building is the fragment of cookpot No.1354. This cannot, therefore, have been a domestic site. It might be the remains of a tomb.



Map XI-6 Early Medieval I sites in our Survey Area. Site 907, findspot of a Lombard fibula, is shown by a triangle.

Two other sites must be mentioned in this account of Early Medieval settlement in the Survey Area. One is Site 907 which yielded only one sherd of LRPW, 2 fragments of cookpot, 25 of plain ware and no tile. It must have been a small hut, but with a grave associated with it since it was probably also the find-spot of a penannular ring fibula, typically associated with Early Medieval I period burials (above 4.ii).

The other is Site 223, San Felice, which yielded both a modest number of LRPW sherds, and some combed tile fragments; but they are differently located as Plan List-21 in the Site description shows (List of Sites – IV. 2). Whereas the LRPW had been distributed in several parts of the plateau, the combed tiles are more concentrated towards the western end, where the village of the Central Middle Ages would be located. This suggests that the first tentative moves towards *incastellamento* in its widest sense, i.e. the concentration of settlement in smaller more defensible sites, may have begun in this area as early as the 7th century AD (Chap. XII.5.iv). Since the whole of this part of the site was covered with *dolium* fragments, bits of millstone and slag, most of which must come from the Peucetian settlement, the economic activities of this later settlement elude us.

d. Santo Staso

Just outside the Survey Area, Santo Staso offers a slightly different picture. It has not yet been fully studied but it yielded pottery which extended over a long period from the Late Peucetian to the Late Antique, expanding somewhat in the Late Empire. The surveyors reported 71 fragments of ARS about half of which were in ARS-D ware, 26 fragments of LRPW, and some 60kg of combed tiles. Since it is highly likely that there was a church there, it is tempting to connect this unusual quantity of combed tile with it. At any rate it is evidence that the settlement survived into the 7th century.

e. The end of the period in our Survey Area

If, as we have argued, the use of combed tiles started later and lasted later than LRPW, then settlement probably continued in our Survey Area, in huts or small isolated farms, beyond the middle of the 7th century. But unless the combed tiles lasted later than we have

supposed, we have very little evidence to show that it continued beyond the end of the century. The only possible exceptions are Site 134 which produced the fragment of "broad line" pottery (No.2089) already mentioned, which is approximately datable between the 7th and 9th century AD, and Site 223 which produced a few sherds of painted wares (Nos.2090-2094) broadly datable between the 8th and 11th centuries, as well as a fragment of a glass stemmed goblet (No.2014) of possibly similar date. These pieces suggest that the occupation of the Site 223 may have continued in a small way down to the Central Middle Ages when it expanded to form a village (*casale*) at the W end of the plateau.

Most sites, however, disappeared well before the end of the 7th century. It might be argued that this is a problem of our inability to recognize artifacts of the period, but the geomorphological studies carried out at Vagnari by Ian Campbell and Andrew Bicket suggest otherwise. Their analyses of the sequences of fluvial erosion and infill in the Central Ravine which separates the two halves of the site show that during the lifetime of the Roman/ Late Antique/ Early Medieval settlement there was a phase of erosion during which the stream cut down into the geological silts.[218] This must have been caused by heavy run-off in a landscape which had been denuded by agriculture. After the abandonment of the site there was a new phase in which silt was deposited in the ravine by the stream now moving slowly in a landscape in which run-off was probably impeded by forest. The turning point could be dated by OSL (*optically stimulated luminescence*) analysis of the silts at the base of the layer which marks the beginning of the new phase at AD 774+/- 65 AD.[219] Clearly the change did not happen instantaneously. Some time had to pass in which the land which had been used for agriculture returned to forest; but the rapid growth of tree species in fields abandoned recently in Basilicata shows that this process need not have taken more than ca. 50 years. The study therefore suggests that the land continued to be used for agriculture during the Early Medieval period, and that its reversion to an uncultivated state took place in the 8th century AD.

8. Conclusions

The model of the transition from villa- to village-type settlement worked out for Tuscany in the Early Middle Ages has only limited relevance to the Fossa Bradanica and adjacent areas where there was marked sub-regional variation in the pattern of settlement. There was no single line of development in this region, but in large parts of it, including our Survey Area, the Late Antique countryside was characterized by scatters of small settlements which occasionally clustered to form larger communities. Some are attested only by burials. Generally, there was a return to subsistence farming, but there was still enough surplus to support some long-distance trade, and amphorae continued to be imported from Africa and the Eastern Aegean down to the middle of the 7th century. Items of jewellery still circulated, including pieces made in the Byzantine East. These links with the E Mediterranean increased after the Byzantine invasion.

In much of our broad study area the decline in settlement density was less pronounced than in North and Central Italy, and in some parts of the region there is no evidence for it at all. In our own Survey Area is an extreme contrary case: in the Late Antique period the number of occupied sites practically doubled, as what was left of the imperial (now regal) estate was still further subdivided and allocated to new settlers. Their origins are still obscure, but they may have been refugees from barbarian invasions attracted by the security of the region which, until the Byzantine invasion of South Italy was relatively remote from the main centres of conflict.

After the Greco-Gothic wars, the lack of any single effective central authority increased the fissiparous tendency among the diverse geographical units which made up South Italy. This was aggravated by the Lombard invasion of the late 6th century which led to seemingly endless conflict between Lombards and Byzantines and shifting patterns of political control. The road system ceased to be maintained, and solid buildings increasingly disappeared from the cities and countryside. They were replaced by more short-lived structures of wood or mud-brick, roofed with thatch. Nevertheless, there was not the vacuum of settlement that has sometimes been supposed. In the Fossa Bradanica new areas were colonized in the Materano, and parts of Venosa continued to be inhabited. It is not possible to identify material of this period in the records of the Older Surveys, but in our own Survey Area the pattern of scattered rural settlement in huts or small farms continued at a reduced level down to end of the 7th century. After that it is difficult to find any signs of human habitation except on Site 223 (San Felice), where a few pieces of Early Medieval painted wares and glass suggest that occupation may have continued in a small way down to the Central Middle Ages when it expanded to form a village (*casale*) at the W end of the plateau.

[218] *Vagnari*, 37-51.
[219] A. Bicket, D.C.W. Sanderson & L. Whitelaw in *Vagnari*, 44-51.

Chapter XII. The Middle Ages. Late 7th – 15th century

The period considered here falls into three more or less distinct phases: (1) The period of Lombard supremacy in South Italy, beginning with the Lombard victory over the army of Constans II in 663 AD, and ending with the Byzantine reconquest of most of the southern provinces in the 870s.[1] (2) The period of Byzantine rule which became increasingly unstable and ended finally with the Norman capture of Bari in 1071 AD. (3) The period of Norman, Hohenstauffen and Angevin rule to the 14th century.

1. Early Medieval artifacts mid-7th – 11th century

The evidence for this phase is meagre, and consists of three classes of pottery

i. Broad line (Nos.2089-2091)

Three fragments of closed shapes decorated with stripes or looped lines in red or reddish-brown matt paint can be assigned to this class which can be seen as a derivative of the regional LRPW. It was current in the Apulian coastal fringe between the 8th and 10th century, though some would have it begin as early as the 6th century.[2]

ii. Narrow line (Nos.2092-2093)

This is a related ware, decorated with thinner stripes flanked by scattered dots. It is probably later than broad-line, appearing in the 9th century and lasting well into the Central Middle Ages.

iii. Cooking pots

A few fragments of globular pots with narrow necks and offset rims in sandy cooking pot fabrics may belong to this period.

2. Central and Later Medieval artifacts 12th – mid-14th century

The evidence becomes much more abundant after the beginning of the 12th century, particularly on San Felice. The various wares are discussed by Vincenzo Valenzano in the Cat. 31.

i. Lead-glazed wares

These include:

a. Green glazed: Bowls entirely coated with a thick green glaze were commonly used as table ware in the 12th and 13th centuries.

b. Scratched ware (ceramica graffita). The term includes several types of pottery in which the decoration is scratched into a slip below the glaze. The technique is Byzantine in origin, and the pieces are datable between the 12th and 13th centuries.

c. "RMR" ware: The term refers to glazed wares decorated in brown, green and/or red (*ramina manganese e rosso)* in use in the second half of the 13th century.

ii. Tin-glazed ware: protomaiolica

This ware, with green and brown or monochrome brown decoration on a white background, was in use from the middle of the 13th to the middle of the 14th century.

iii. Plain wares

Plain pots of more-or-less purified clay were widely used in the 12th and 13th centuries, especially bowls and tall jugs and water amphorae with broad strap handles reinforced by several longitudinal ribs.

iv. Cookpots

Locally produced pots in a fine sandy fabric were in use from the 12th to the beginning of the 14th century.

v. Chaffy ware (ceramica da fuoco vacuolata)

A single piece of coarse ware (No.2161), hand-made in a fabric that includes a large amount of vegetable filler, must be a local version of a pottery type in use in Bari in the 10th or 11th century, before the Norman conquest.

vi. Lamps

Fragments of plain unglazed Late Medieval lamps with flat bases, squat bodies and prominent almond-shaped rims typical of the 13th and early 14th centuries were found on San Felice (Nos.1938-1940).

vii. Coins

A gold *taris* of William I, minted in 1154 AD, and a bronze coin of William II (1166–1189) were found on the site of the medieval village on San Felice (Nos.2022, 2023).

[1] As in the previous chapter we use the term Lombard to refer to the invaders from the North. Paul the Deacon and Erchempert use the term Langobardi; the 3rd continuator of Paul has Lombardi; a contemporary poem Langibardi. The Carolingian documents tend to favour Langobardi and the Byzantine theme was Langobardia. Longobardi is conventionally used by modern Italian writers and many from other traditions. This has the advantage of separating the 6th century invaders from the modern inhabitants of the North Italian Region of Italy. But given the general confusion we have preferred to retain the most commonly known name.

[2] Cf. M. Foscolo in Campese *et al.* 2015, 335-336.

viii. Tiles (coppi vacuolati)

The tiles used in the medieval village on San Felice were made by mixing straw or chaff into the clay, and are easily recognized by the impressions left on the surface after firing (see Cat. 32.H).

3. The historical evidence: late 7th–9th century

The abortive campaign of Constans II was followed by the very effective attacks by Duke Romuald I of Benevento (662–667) on Taranto and Brindisi and later by further raids under Gisulf I (686–703) which extended Lombard hold over Apulia, Lucania and much of Calabria. The Byzantines were not, for the time being, strong enough to recoup their losses. The course of events in the late 7th century is extremely badly recorded but it is clear that assimilation between the Lombards and the peoples already in the south was considerable.[3]

i. Shifting power: Lombards, Byzantines and Franks

In the 8th century, events in the North began to impact more fully on the South. The Lombard king, Liutprand, having made several successful attacks on the lands of the exarchate of Ravenna, went on to integrate the southern duchies into his kingdom. Benevento was too far for him to dispense with a subordinate, however, so Liutprand made his nephew duke, and the next four dukes were similarly approved by the kings, though the dukes were no puppets and were not always submissive. In the North, however, the kingdom became powerful enough to defeat and take over the Byzantine exarchate of Ravenna in 751, although for various reasons, not least among them pressure from the Franks, the Lombard kings handed the conquered Byzantine lands over to the pope in 755. In 771–773, however, renewed Lombard aggression against the papacy brought the Franks south again, and this time, led by the future Emperor Charlemagne, they took over the whole Lombard kingdom. This brought Charlemagne's developing Empire as far south as Rome, where he had an uneasy but on the whole practicable partnership with the Popes; but for the time being Benevento remained independent under its very competent duke, Arichis II, who had, in 753, proclaimed his independence and aspiration to power by taking to himself the title of Prince. Charlemagne did later continue south to take over Benevento as well as the kingdom, but although he was able to capture the son of Arichis II, Grimoald III, he later accepted Grimoald's allegiance and restored him to the duchy, which became progressively more independent of Charlemagne. Grimoald's successor was forced to pay tribute to the Franks but on the whole the Carolingian foray into Italy had little impact on the South, although there were some developments influenced by Frankish practice.

Chief among these was the adoption of the silver *denarius* in the Beneventan coinage. The coinage had been retained by the dukes since the establishment of the duchy, but the only coins minted were gold *solidi* and gold *tremisses* (one third of the *solidus*), used mostly for gifts, increasingly debased and increasingly carelessly made. The new *denarii* were valued at 48 *denarii* to the *solidus,* though they fairly rapidly declined in value. Charlemagne tried to insist that they should replace the gold coinage, but Grimoald, when he freed himself from Charlemagne's authority, reinstated the gold coins (*solidi* and *tremisses*), without, however, ceasing to mint the silver *denarii*. The willingness of the Beneventan princes to use silver in imitation of Charlemagne's new silver currency was doubtless encouraged by a shortage of gold and/or by a need for somewhat lower value coins. The gold coinage lasted until 851 but was then stopped. The mint of Benevento continued, however, to mint silver *denarii,* being closed only in 899 when Benevento was conquered by the Lombard Prince of Capua, and the two Lombard principalities were joined. The Beneventan *denarii* were still in use, however, along with silver coins from the North, gold and bronze Byzantine coins and gold Arab *tari*[4] in the 10th century, though the Arab and Greek coins came to predominate by the 11th. By then there was also a need for a more practical coinage. The minting of billon coins such as the *follares* increased exponentially.[5]

In Salerno the first duke, Sicenulf, minted both silver *denarii* and electrum *solidi* After his death in 849 only the *denarii* were minted. In the 10th century, however, some gold and copper coins were produced in Salerno and also in Capua-Benevento.[6] While the production of coins in the Lombard duchies/ principalities remained small, the use of money was clearly expanding.

The rule of Arichis II brought about other developments. One was the issue of the so-called law code of Arichis. It was based on the earliest written Lombard law, the Edict of Rothari, which had been issued in 643, containing, according to King Rothari, an amendment of earlier laws which, he desired, should be brought together in one volume "so that everyone may lead a secure life in accordance with law and justice".[7] Much of it concerned the sums payable by the perpetrators of a crime or misdemeanour (*compositiones*), usually to the victim, sometimes to the ruler. It was doubtless inspired by the Late Roman and Byzantine codices, but the concept of

[3] Martin 1993, 165-167.

[4] Arslan 2017, 415.

[5] G. Colucci 1988, 581-585.

[6] Arslan 1990, 415.

[7] *Edictus Langobardorum* in *MHG Leges IV,* 1, *In unum previdimus volumine conplectendum quatinus liceat unumquemque salva lege et iustitia quiete vivere...* See preamble in Drew 1973, 39.

law was very different. Several other law codes were issued later, notably under King Liutprand, and were intended to apply to the whole kingdom. The laws of Arichis II, on the other hand were few in number and were intended to supplement rather than to supersede the code of Liutprand but they are important in that that they provide evidence, admittedly scanty, for society in the mid-8th century. and notably for the relative status of various members of it. Interestingly none of the Law codes makes much distinction between the great and the relatively lowly (Liutprand specified a maximum *compositio* of 300 *solidi* (presumably for landowners) and a minimum of 150, and this was maintained in the chapters added by Arichis II. He had retainers called *gasindi* who were worth 200 *solidi* because of their nearness to the ruler but were not very highly esteemed.[8] The laws of Arichis are unusual in that they explicitly applied to all the duke's subjects including the clergy. These were divided into two groups, those close to the duke (ranked among the *gasindi* for whom the *compositio* was 200 *solidi* or more – up to 300 at the will of the Prince) and lesser clergy valued at 150 *solidi,* like "laymen who fight in arms with the armies" (*sicut de laicis qui exercitalibus militant armis)*.[9] The law code of Arichis II defends, fairly militantly, gifts to the Church, but the distinction, common elsewhere, between clergy and laymen was not made.

Invasions continued into the 9th century when the main political development was the arrival of Arab raiders in both Sicily and South Italy. In 838 they took Brindisi, reducing it, according to the Chronicle of Salerno, to a "parvissimum oppidum".[10] It was presumably then that the episcopal see was transferred to Oria, though the bishops still called themselves bishops of Brindisi.[11] In 840 they took Taranto and in 842 arrived at Venosa and Acerenza, though they probably did not establish any long-term domination there. Venosa as well as Acerenza must, however, have been of some importance to lure Saracen raiders so far inland even for a temporary gain. An attack on Bari in about 841 by the Saracens is recorded by Muslim chroniclers,[12] but it had limited success. Erchempert reports a later attempt after the Lombards tried to call the Saracens in as mercenaries and gave them the opportunity to seize the town.[13] The Saracens were ultimately successful and from about 847 established an emirate which lasted until 871. By 868 they had taken Matera. Neither the Lombards nor the Byzantines put up an adequate resistance. The Lombards had become involved in an internal feud which ended in the division of the duchy of Benevento in 849 into two, Benevento and Salerno.[14] The Lombard disunity doubtless helped the Arabs.

ii. Cities

As the cities in our part of Lombard Italy were effectively non-existent or invisible, it is impossible to say much about them. There is some evidence for Acerenza and Conza. According to the Chronicle of Salerno Charlemagne wanted Grimoald to destroy Acerenza as part of the price for his re-instatement as ruler of Benevento, and Grimoald did so but reconstructed it nearby on a great hill.[15] This is nonsense, but the story does emphasize the importance of Acerenza in 9th century eyes. It was recorded as a *civitas* in a bequest of about 803. Conza is recorded as the seat of a *gastald* in 774.[16] It was a relatively new development. It is mentioned by the continuator of Procopius, Agathias, as a well defended hilltop site where the Goths scored a late success against Narses in 554, but Agathias does not imply that it was large or very important.[17] It had presumably grown in importance by the end of the 8th century. The Chronicle of Salerno records that the destruction of the walls of Conza was another requirement of Charlemagne when he restored Grimoald. This was also carried out "so that the city should seem to be entirely destroyed", but since Conza was in fact very safe without a wall (*tutissimus sine muro)* the destruction was, so the Chronicle implies, not very serious.[18]

Of other towns in the general area of Apulia and Lucania there is little sign. Venosa, Taranto and Bari at least continued to exist although there is little evidence for them, either archaeological or written, until the 9th century when such evidence as there is consists initially mostly of chronicle accounts of attacks on them by Saracens (see above). Taranto perhaps retained a bishopric: one apparently attended the Roman council of 743 under Pope Zacharias,[19] although it is unlikely that the bishopric counted for much when, later, the city was under Saracen government. A Bishop John, however, was promoted, through Lombard influence, to be Archbishop in 978 so the See must have had some importance by then.[20] Bari was in Lombard hands in about 803 (the 15th year of King Grimoald) when one

[8] Wickham 1981, 135. Others besides the duke also had *gasindi.*
[9] *Edictus Langobardorum* in *MHG Leges IV, Capitula domni Aregis Principis*, 4, p.208; Martin 1993, 236-237.
[10] Martin & Noyé 1988, 230-231.
[11] Ughelli 1717, tom. 9, col. 29.XI. The see was transferred back to Brindisi under Urban II: *ibid*. col. 30.XVII.
[12] Salierno 2000, 30.
[13] *Historia Langobardorum Beneventanorum,* 16 in *MGH SRL,* 240; Salierno 2000, 30.
[14] *MGH Leges* IV, 221-225.
[15] *Chronicon Salernitanum*, 24 p.28 (for Charlemagne's instructions, 27 p.29). "He then came to Acerenza and destroyed it to the foundations and razed it to the ground, but he built it in another place even better than it was before...". (*Deinde Aggerenciam venit eamque funditus diruit et ad solum usque prostravit; sed ea plus melius quam ipsa vetustissima fuit, in locum alium edificavit...*).
[16] Acocella 1937, 46-49.
[17] Agathias Scholasticus 1975, II, 13, 45.
[18] *Chronicon Salernitanum*, 27, p. 29.
[19] Ughelli IX, 116.
[20] Ughelli IX, 116.

John, son of Pando(?), an inhabitant of Bari within the boundaries of Canosa (*Ioannes filius quondam bone memorie Pandonis qui nunc sum habitator intus civitate Vari Canosinis finibus*) enacted a document there bequeathing his very considerable property consisting of houses in Canosa, Acerenza, Taranto and Oria, along with *casalia,* vineyards, fields, meadows, woods, and trees outside them, to the abbeys of Saint Benedict (presumably Montecassino) and San Vincenzo (al Volturno).[21] So Bari by then was apparently of secondary importance, assigned to a gastaldate of Canosa rather than one of its own. As we have seen, it passed some 45 years later into Saracen hands and its fortunes began to revive.

Venosa was among the towns initially taken by the Lombards but it seems to have declined, as Acerenza became the main seat of authority. A group of 5 communal graves dating from the 8th/9th century presumably indicates a serious epidemic in an already decaying town.[22] As mentioned above, it was captured by the Saracens in 842 and re-appears in the written records with that event, but although the Saracens did not retain it, its recovery was slow.

Since in both Taranto and Bari the Saracens established Emirates, both must have been reasonably large at the time of their capture. Taranto became a major pied-à-terre for Saracen raids. The Emirate there lasted some 40 years. That of Bari took longer to establish and lasted less long (sub-section 3.i).

Matera and Gravina were probably developing in the early 9th century. Matera is first mentioned by name as being liberated by fire from Arab occupiers by Louis II in 868 so it was clearly of some size by then. Its importance is indicated by a find of some 320 Byzantine coins of the 9th–11th centuries in the area of the Cathedral. There was also some broad line ware (*ceramica a bande rosse*) probably of the same period.[23] Neither it nor Gravina, however, is mentioned by Paul the Deacon in his list of the provinces of Italy with their towns (see Chap. XI.5.i). Archaeological evidence, however, implies that Matera was already developing before Paul wrote. Important for this dating are the large cemeteries in the city. Over 300 graves have been found. One group of 141 in the Piazza San Francesco had virtually no grave goods. It has been cautiously dated to the 8th century.[24] A group of burials on the crest of the terrace at Santa Lucia alle Malve in Matera can be dated in the 8th century. It contained 120 tombs, of which many if not all were of children aged 14 or under, but they too contained almost no grave goods and the few that there were (mostly jewellery) could not be closely dated.[25] A radiocarbon date was however, obtained from one skeleton giving a date range of 610–770 AD (with 95.4% confidence). Racciopi suggested that Matera was the seat of a Lombard gastaldate in the 7th century but this is very speculative, based largely on the assumption that the gastaldates mentioned in the documents, primarily in the act of division of 849 between the duchy of Benevento and the newly established duchy of Salerno (see below) cannot be complete.[26] In summary it seems likely that Matera was founded in the late 6th or 7th century, became well-established in the 8th· and important (despite the raids on it) in the 9th. But far more work is needed on this.

Matera is now famous as a cave city but there is little documentary evidence that the city extended to the ravines beside it until the 11th century. The burials at Santa Lucia alle Malve do however imply some development of the rupestrian settlement there in the 8th century, since Santa Lucia is a rock-cut church, and the fact that the burials are loosely associated with it suggests that the move from settlement in the open countryside to rock-cut caves in the ravines on the edge of the Murge had already begun. But references to cave populations become reasonably common in the documentary evidence only later.

For Gravina there is even less evidence. The first written records for it are from the 10th century and there is no archaeological evidence until the 11th. By the time of the first written document, however, (of a bishopric – see below) it must have been of some size, so some development in the 8th century is not impossible.

Other evidence for urban areas – to call them cities is perhaps to exaggerate their importance – comes from incidental references to Lombard *gastalds*. Besides Conza, *gastalds* for Canosa are recorded in the 8th century, [27] but not until the 9th is there any full record of gastaldates (sub-section 5.iii).

Further afield, Benevento was naturally important, as was Salerno to which Arichis II transferred his capital in 774. He built palaces in both cities of which traces survive. He fortified Salerno, and in Benevento the ducal Church of Santa Sofia was begun under him though it was not yet a Cathedral or even particularly important as a monastic church.[28] Neither city, however, was very large.

iii. Rural settlement

Settlement in the late 7th and 8th centuries in the countryside is equally elusive. The period saw the end

[21] *Chronicon Vulturnense,*259-261. See Corsi & Fonseca 1989, esp. 270-273.
[22] Sogliani 2017, 308.
[23] Salvatore 1986 in *Matera, Piazza S. Francesco* 1986, 3-135.
[24] Salvatore 1986 in *Matera, Piazza S. Francesco* 115-116.
[25] Bruno 2001, 144-148.
[26] Racioppi 1902, II, 8.
[27] Martin 1993, 221.
[28] Massa 2016, 25-50 esp. p.27. Until 923, the convent attached to it was of nuns and of only moderate significance.

of villas as a settlement type in both Lombard and Byzantine South Italy although the change was not a sudden one, and indeed the beginnings of it can be traced back to the Middle Empire as discussed above (Chap. IX, 6). The main settlement of the period became the village, often built of wood and often on a hilltop.[29] The evidence for isolated farms or *casae* is even scarcer. On the whole they seem to have disappeared with the end of LRPW, that is at some time in the 7th century. This is partly a problem of recognition – 8th and 9th century wares are very localized and not abundant. In the area around Terlizzi, one of the few in Central Apulia where a systematic effort has been made to find settlement from between the end of the 7th and the mid-9th century, five rural places apparently ceased to function, but excavation on two others suggested some continuation of frequentation.[30]

The social and legal status of the peasantry is hard to characterize and obviously varied. The servile population seems to have been initially greater in South Italy, where the unfree peasants probably constituted a majority of the population, than it was further N, but the evidence is very slight.[31] It suggests, however, that there was a growing tendency for them to become free by the 10th century.[32] Evidence for the structure of rural exploitation is similarly slight. There were some large landowners, notably the Abbey of Montecassino and later those of San Vincenzo al Volturno and Santa Sofia at Benevento. Montecassino and Santa Sofia had estates in our area, but they were much fragmented. Landlords were not greatly involved at the local level except as rent collectors. Bipartite estates, *curtes* (on which landlords demanded labour services on their own lands as well as rent from peasant landholders), became quite widespread in North Italy but the evidence for them in the southern duchies is extremely scanty.[33] There were larger units consisting of many holdings referred to in monastic charters. A *gualdum,* according to J-M. Martin, was a large uncultivated area conceded by the duke with the intention that the recipient should bring it into cultivation; and the *gaio*, also large but where uncultivated land was interspersed with cultivated areas including pasture and vineyards, is also not uncommon in the monastic charters. It often contained a church and was rarely or never conceded in its entirety to a monastery.[34] The records of these, however, survive only in the monastic charters of the three major abbeys just mentioned where gifts from the Lombard dukes or princes were recorded. They tend to be in Northern Apulia and so not very relevant to our area. The existence of a *gaio* near Matera, part of which was given to Santa Sofia di Benevento, is, however worth noting.[35]

As for production, there is very little evidence. From the 9th century a few records of rents in kind suggest that it was mixed and for local use, with little in the way of cash crops. What was grown was also limited. Wheat (*grano* or *triticum*) is mentioned along with barley, and various pulses appear in the records for Calabria. There is no mention of legumes in the documents for Apulia until the 12th century when beans and chickpeas appear. Oil is not mentioned until the 10th century in Naples and the 11th in Apulia and Calabria.[36] Wine was produced. Indeed, rent contracts from the theme of Langobardia under the Byzantines specify payment to landowners in wine and grain, and it has been pointed out that these payments were in fact higher than the equivalents in the Byzantine territories of the North Italy[37] – either the landlords of South Italy were more rapacious or, perhaps more likely, the production was more copious. This does not of course mean that other commodities did not exist, but we need more excavation analysis for this period to shed further light on production. The Byzantines had a silk industry in Calabria which involved growing mulberries. It is unlikely to have come far North.

4. Settlement in the late 7th – late 9th century: the archaeological evidence

i. Problems of evidence

The problem of identifying visible archaeological remains which had already been apparent for the Early Medieval I period becomes still greater for the late 7th–9th centuries AD. In fact, so little is known of the archaeology of the Fossa Bradanica and adjacent areas in this period that it is easy to suppose that the entire area was largely depopulated. In the publications of the field survey by the University of Texas in the Chora of Metaponto no material at all, datable to this period, is recorded. There is a similar dearth of evidence for settlement in the territory of Venosa, though there Marchi suggests that the problem may lie partly in our inadequate knowledge of the materials of the time.[38] At Ordona the residual settlement inside the remains of the Roman bath suite seems to have dwindled between the 8th and 9th century to being little more than an occasional shelter for shepherds.[39] The archaeological evidence for settlement in the lower Ofanto valley is equally tenuous, although a series of documents recording donations of properties in the vicinity of

[29] Wickham 2005, 484-487. Wickham deals primarily with Siena and Tuscany but his observations are relevant to our area as well.
[30] Campese *et al.* 2015, 331-336.
[31] Wickham 1981, 152.
[32] Wickham 1981, 159.
[33] Wickham 2002, 130.
[34] Martin 1993, 194-199.
[35] Martin 1993, 219.
[36] Cosentino 2008. 196.
[37] Cosentino 2008, 124 citing Fiumagalli.
[38] Marchi 2010, 43.
[39] Favia 2018, 53-54.

Canosa and Cannae by Lombard aristocrats to the great Benedictine abbeys proves that the area cannot have been entirely depopulated. The problem must therefore lie in the unrecognizability, or rather the poor datability, of the archaeological material. At Faragola, the quasi-village settlement inside the remains of the Late Antique villa continued to be occupied with various modifications, but gradually declined and was abandoned altogether around the end of the 8th or beginning of the 9th century.[40] Here too, however, the archaeological evidence has to be re-envisaged in the light of documentary sources of the mid-8th century AD which record a donation of lands on the fringes of Ascoli Satriano by Arichis II to the monastery of Santa Sofia: they included four churches, arable land, vineyards and pasture for large cattle. At Terlizzi on the East side of the Murge the ongoing study focussed on the Early Middle Ages is showing how surface survey and documentary evidence, combined with information recovered from emergency excavations, can be used to show how a new pattern of settlement evolved in this period, attested mainly by churches (including rock-cut churches) and burials.[41] As a key to identifying settlements of the period the team has established a typology of the local plain and coarse wares using data from excavations in the vicinity of Terlizzi and Bisceglie. The pottery typology they have established there is useful for interpreting our own survey data.

On various sites there are burials without grave goods which can be dated only tentatively within the Early Lombard period, but this picture is likely to change with the increasing use of radiocarbon dating, which has already shown that the group of burials at Santa Lucia alle Malve in Matera can be dated in the 8th century.[42]

ii. Our Survey Area

In our Survey Area as elsewhere, most Late Antique and Early Medieval I sites disappeared. Neither Santo Staso nor Vagnari outlasted the crisis of the 7th to 8th centuries, nor, a little further away, did the church and settlement at Belmonte near Altamura.[43] Already during the 6th century the Late Antique building at Vagnari was abandoned and within it a small earth and clay hut was built on a rough stone foundation. There are indications of other huts of the same period but none of them lasted long.[44] On Site 134 one piece of later "broad-line ware" (No 2089) on the edge of the site may suggest that it lasted into the 8th century before dwindling to nothing. On San Felice four more pieces of the same ware suggest that frequentation continued into the 7th or early 8th century, but it probably did not come to a complete end since there was occupation in the same place later; but there is a gap of from 200 to 400 years in the evidence (see below). Otherwise there were no survivals into the Central Middle Ages, though if the combed tiles lasted into a later period than the LRPW, as they almost certainly did, some sites are likely to have continued to the end of the 7th century or even into the 8th; and such a date is supported by some late African amphorae. The late sites include Site 910, which had a number of combed tiles and one probably 7th century piece of cooking pot but nothing else; also Site 810 which had four *spatheia* 3 of the late 7th century but no other equally late material, and Site 145-9 with five amphorae which could have lasted as late as the 7th century including one *spatheion* 2. Twelve other sites which had combed tiles (Sites 213, 223, 304, 306, 309, 337, 342, 347-9, 361 (Vagnari), 370, 423, 424, 719, 910 and Site F2 (Santo Staso)) may also have lasted well into the century, as did Site 347-9 which had a Late Roman 1 amphora (6th to 7th century). Other late amphora fragments were found on Sites 372, 712, 905 and 906, but only as single examples unsupported by other late material and are probably better regarded as sporadic. Except for San Felice, however, no site on the survey has the chaffy tiles (*tegole vacuolate*) of the Central Middle Ages.

iii. General remarks on the settlement pattern

There is. then, little to indicate human activity in the late 7th and 8th centuries in rural areas: the peasantry had few elegancies and once even the locally made LRPW had been abandoned there was little to indicate the presence of the inhabitants. Indeed Wickham suggests that pottery in this period generally became so rare that even the availability of a small amount of *ceramica a bande rosse* may show a slightly higher standard of living than in many places outside Italy.[45]

In summary these two centuries were marked by a massive desertion of the countryside, with a few new settlements founded on hilltop sites and some growth of the towns. In our Survey Area the rather small Late Antique settlements, whether new as at Santo Staso, or continuing from Roman times as at Vagnari, vanished. Presumably some of the population made its way to developing urban centres, such as Gravina and Matera but there must have been a huge general decline in the population.[46]

5. The historical evidence: later 9th – 11th centuries

The archaeological evidence for this period in South Italy remains scanty but from the 9th century onwards there

[40] M. Turchiano in Volpe & Turchiano 2009, 154-155.
[41] Campese *et al.* 2015, 2017, 2018.
[42] Papparella 2010, 394 (without citation).
[43] Ciminale *et al.* 1994, 339-440.
[44] Favia & Giuliani in *Vagnari*, 224-226.
[45] Wickham 2005, 736-738 in the context of a discussion of exchange networks.
[46] Dalena 1990, 5-20.

ca. 550	End of Gothic wars
570	Lombard invasion Lombards initially take Venosa but not Bari, the boundary being roughly the Basentello
667	Lombard expansion begins They come to hold all of South Italy except Bruttii/ Calabria and the Salento by 700
C9	Byzantines recover much of South Italy including Gravina. Numerous Arab raids on sites including Venosa
849	Principality of Benevento divided into Salerno and Benevento. Capua, at first allotted to Salerno, gradually wins independence
860	The Frankish (Carolingian) Emperor, Louis II, first comes to South Italy
899	Principality of Capua defeats and unites with Benevento
C10	More Arab raids. Gravina destroyed by them in 977
1049	Battle of the Ofanto. Normans take most of Apulia and Basilicata
1130	Norman Kingdom established
1196-66	Hohenstauffen domination. Frederick II rules 1198–1250
1266	Angevin kingdom in Naples
1443	Aragonese in Naples (Alfonso of Aragon claims kingship in South Italy from 1435)
1504	The Spanish viceroyalty established

Table XII-1. Timeline of major political events in Medieval South Italy.

is an increasing, if haphazard, volume of documentary sources. For the 9th century the main narrative accounts are the later sections of Paul the Deacon's *History of the Lombards*[47] and a history of the duchy of Benevento from 756 to 889 written by Erchempert, a monk of Monte Cassino,[48] who presumably died in 889 when the chronicle abruptly stops. Monastic cartularies provide some information, but they deal very little with our area.[49] For the 10th century there is a growing volume of both chronicle and record evidence.

i. Historical summary

A brief timeline may be helpful (Table XII-1).

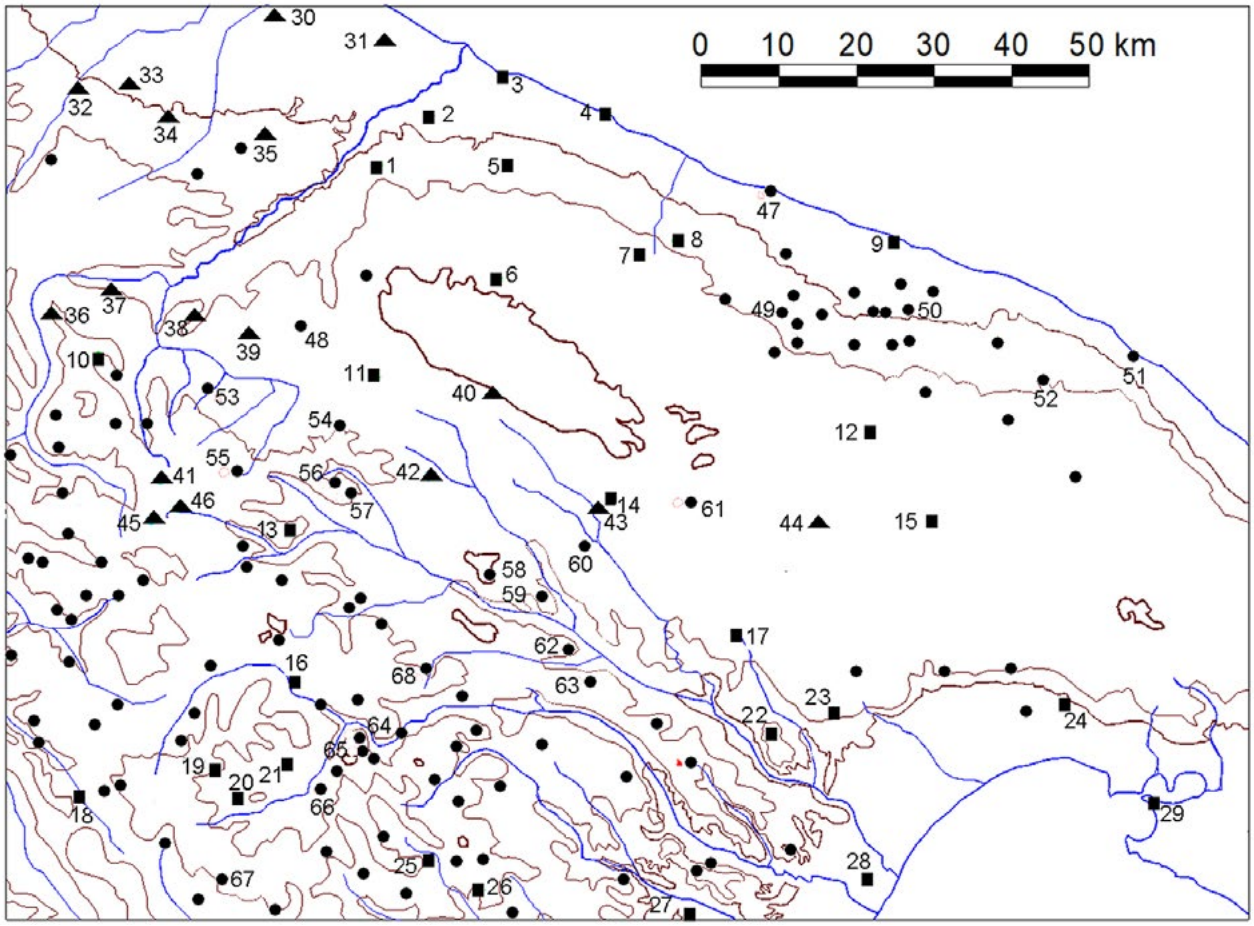
South Italy continued, throughout the 9th and 10th centuries to be the target of Saracen invasions. A rare alliance of almost all the authorities in Italy under the leadership of Pope John X led to the defeat of the Saracens in 915 at the Battle of the Garigliano and in effect freed Rome and the North from their worst menace, but it did not stop continuing Arab raids in the South; and there were other incursions from the North, notably by the Hungarians (*Hungari)* who arrived in 920 in Italy and by 947 had made their way as far as Otranto.[50]

In the middle of the 9th century, the Lombards became involved in an internal feud which ended in the division of the duchy of Benevento into two, Benevento and Salerno in 849.[51] The Lombard disunity doubtless helped the Arabs. The latter, however, were not greatly interested in holding inland towns and had lost them again by 870 when the Frankish Emperor, Louis II, a grandson of Charlemagne, drove them out of first Matera, by burning it,[52] and then Bari in 871, only to lose both places to the Lombards who in turn lost them, and most of Northern Apulia and Lucania, to the Byzantines.[53] Given this chaotic violence, it would not be surprising if some settlements, including San Felice in our area, ceased to function.

ii. The Byzantine recovery

The Byzantine reconquest of much of South Italy began under Basil I (867–886). He drove the Saracens out of the Adriatic, and re-established Byzantine power in Dalmatia. In 873 he recovered Otranto from the Saracens and in 876 he was able to exclude the Lombards from Bari and establish Byzantine government there: the city then became a major centre of Byzantine rule. By 899 the Byzantines had recovered much of South Italy. The 10th century, however, saw further fighting between the Byzantines and the Lombards as the latter strove with varying success to recover what they had had.

[47] *Historia Langobardorum, MGH SRL* 12-187.
[48] Erchemperti *Historia Langobardorum Beneventanorum*, *MGH SRL*, 231-264.
[49] Principally those of Santa Sophia, Benevento, Montecassino and San Vincenzo al Volturno. See Martin 1993, 161-164.
[50] Lupus Protospatarius *MGH SS V*, 53. He reports a battle between them and the Greeks and Lombards in Matera in 947.
[51] *MGH Leges* IV, 221-225.
[52] Erchempert 33, 247.
[53] The main source is the *Chronica Monasterii Casinensis* 606, *MGH SS* XXXIV. See Wickham 1981, 62-63. Gay 1904, II, chap. III gives a full account of the military and political ramifications of this period.



Map XII-1. The map shows the approximate boundary between the duchies of Benevento and Salerno at the time of the division between them (849). Larger dots indicate gastaldates, smaller ones other places mentioned in text, triangles cities which were not gastaldates.

The splitting up of the Lombard territories in the 9th century which began with the division between Salerno and Benevento must have contributed to the Byzantine success. It was followed by a further split in 862 between Capua and Salerno. Then in 899 Capua defeated Benevento. Consequently, the main Lombard political units of the next century were Capua-Benevento (not always as united as the term suggests) and Salerno. The division between Salerno and Benevento ran fairly close to our Survey Area, (see Map XII-1) but there is little evidence of settlement in it which might have been affected by the political changes.

In the 10th century the Lombards remained in Benevento, Salerno and Capua, while the Byzantines had control of the Adriatic littoral and also of Taranto and the coast of the Ionian sea. But between these areas was a region which included Gravina, Venosa and Acerenza in which there was continued dissension, not helped by the Arabs who, from time to time indulged in further aggression in the South. At some stage before 968 Gravina and Acerenza passed into Byzantine keeping. The Byzantines were by this time trying to establish not just a military but a more definitely Greek presence, most obviously when, in 968, Polyeuctes, Patriarch of Constantinople, raised the see of Otranto to an archbishopric with four suffragan bishops of Acerenza, Tursi, Tricarico and Gravina, all with the Greek rite and language.[54] It has been doubted that this initiative was ever carried through: the Byzantine type church of San Pietro at Otranto, datable with some certainty to the mid-10th century is likely to have been built as the Metropolitan Cathedral created by this edict,[55] but there is little sign of Cathedrals to go with it in the other four places (though Greek cathedrals were rarely large). There is no reason to doubt, however, that the four proposed bishoprics had become reasonably important urban centres or that the Greeks were trying to link them to the Eastern Church. The initiative aroused some reaction from the Popes who, in Benevento, Capua, and Salerno,

[54] Liutprand, *Relatio* chap. 62, 934.
[55] Castelfranchi 2004, 84.

the centres of the Lombard principalities, raised the bishops to the status of Metropolitan in 966–969.[56]

It was perhaps this Byzantinizing policy that led to widespread opposition to the Byzantines in South Italy, in which Gravina was heavily involved. To deal with it, the Byzantines sent reinforcements when they could, notably in the reign of Nicephorus Phocas (963–969), but opposition to the Byzantines continued. There were rebellions in Bari in 987 and 990, in Oria in 997 and in Gravina in 1000.[57] Meanwhile Arab raids also continued, often encouraged by the Byzantines, notably against rebels. Taranto was destroyed in 928, though it was reconstructed some 30 years later on the orders of Nicephorus Phocas.[58] Gravina suffered incursions in 968,[59] 976,[60] and perhaps 984.[61] It was rescued by the Lombards but retaken by the Greeks in 999.[62] In Matera there were perhaps raids in 937 and 977,[63] and a particularly ferocious one in 994 or 996.[64] Irsina/ Montepeloso, the nearest hilltop town to our area and seemingly a new development, was said to have been destroyed in 988 and again in 1004,[65] but the evidence for it before 1011 is tenuous (sub-section 5.iv). Meanwhile the German Emperors Otto I and Otto II also laid claim to South Italy and the former inflicted serious damage there in 968–970.[66] These confused conflicts in what is now central Apulia probably explain why the cultural impact of the Byzantines was considerably less there than along the coast.[67] The Byzantines did make some impact, however. Gravina was technically under their control for a century and a half, during which the so-called old town began to take shape above the ravine. Almost nothing is known of its urban development before the Norman conquest but in the ravine the period saw the arrival of the first inhabitants other than hermits and perhaps monks. The earliest of the cave churches, the Madonna della Stella, has been dated on the evidence of its lay-out to the 10th century.[68] The main expansion came later but the style of the decoration of later cave churches which served the people of the ravine is distinctly Byzantinizing.

iii. Administration

In Byzantine lands a new form of administration emerged, first in the East and then, by the 9th century, throughout the Empire – that of the themes (θήματα), territorial circumscriptions each under a *strategos* or general responsible for both military and civil matters.[69] When the Byzantines recovered the area north of the Salentine peninsula in the East and of Cosenza in the West, they established two themes, Sicilia/ Calabria in the west and Langobardia in roughly the area of Northern Apulia. The *strategos* of Langobardia was appointed in 894 with his seat in Bari which became increasingly important as a Byzantine capital. Matera became a major administrative centre, run directly from Constantinople.[70] In the 11th century they may have added a theme of Lucania,[71] but its existence is indicated by a single reference in 1042 and it certainly did not last long.[72] Under Nicephorus Phocas (963–969) a hierarchy of themes was made more explicit when in 975 Bari was made the centre of Byzantine administration in the whole of South Italy and the *strategos* of Langobardia was given the title *Katepano* of Italy.[73] The lower levels of administration also became more complex: the *strategoi* of this period had under them *tourmarchs* to deal with local government. A *tourmarch* was primarily an officer commanding a *tourma* containing some 4000–5000 men but was assigned to a specific geographical area. One advantage of this introduction was to facilitate changes in administration between Lombards and Byzantines: the *tourmarchs* took over naturally from the Lombard *gastalds*.[74]

It is often said that the tax system under the Lombards was more or less defunct.[75] This is an exaggeration since dues on commerce, demands for labour and other exactions appear occasionally in the records, but there was no land tax to finance the army or the administration. Instead, the Lombards tended to reward service with land. Such payments to the government as there were must have been mostly in kind – large scale minting seems to have dried up outside Sicily and Constantinople in the course of the 9th century.

[56] Ramseyer 2006, 127.
[57] Tramontana 1970, 40.
[58] Martin & Noyé. 1988, 233.
[59] Romuald of Salerno, *Annales, MGH SS* XIX, 400.
[60] Papagna 1989c, 35-48 from Lupus Protospatarius *MGH SS* V, 55.
[61] Salierno 2000, 87.
[62] Lucatuorto 1967, 103. Lupus *MGH SS* V, 56. Pertz published Lupus' *Chronicon* under the overall title *Annales Barenses* and put it in parallel with an anonymous *Annales Barenses* using the different material in each up to the year 1043 when the *Annales* stopped. The work attributed to Lupus carried on until 1102.
[63] Salierno 2000, 57– but he gives no reference.
[64] Romuald of Salerno, *Annales*, *MGH SS* XIX, 401 and Lupus Protospatarius *MGH SS* V, 56 "Anno 994 obsessa est Matera a Sarracenis tribus mensibus, & quarto capta ab eis". The *Annales Barenses* (*MGH SS* V, 53) put the event in 996.
[65] Salierno 2000, 60.
[66] Gay 1904, IV, 310, 315. On Otto II's invasion when he reached at least Matera and Taranto: *ibid*. 333-334.
[67] On the generally minimal impact of re-Byzantinization in the 10th century see Martin 2018, 83.
[68] Navedoro 2006, 42.
[69] On the themes see Brown 1984, 47-48. The institution of the themes has been controversial but most historians now think that they evolved slowly. Brown provides a comprehensive overview of the administration to 800.
[70] Gay 1904, III. 178.
[71] Guillou 1965, 119-149.
[72] Cosentino 2008, 144.
[73] The Katepano (Greek: κατεπάνω, lit. " at the top") had theoretical authority over all Byzantine lands in South Italy but was more active in Apulia and the Byzantine areas of Campania than in Calabria. The term Capitanata, used later, is a corruption of Katepanata.
[74] Martin 2009, 757.
[75] Wickham 1981, 41; Pohl 2002, 25; Wickham 2005, 115-117.

In Byzantine areas taxation continued, although there too increasingly the army and the administrators were recruited from the land (from holdings designated *strateiai*) which reduced the need for taxes. Those raised were again mostly in kind but as early as the late 8th century there was some return to monetary taxation which became more marked from the 10th century.[76] This was accompanied by the growth of an increasingly complex financial administration under as many as 11 officials by the 11th century and a more widespread use of money.

The Lombard administration was, as we have seen, carried out under the princes by *gastalds*, each with his own area of competence, appointed by the duke or prince. They were probably not initially hereditary although there are signs that they became so later. They could become very powerful. An extreme example is Capua where the *gastald* successfully declared himself an independent prince. Gastalds are often found acting with bishops, whose secular power was increasing greatly at least from the 9th century. In the document of 849 recording the separation of the duchy of Salerno from that of Benevento the division is said to have run rather oddly through the gastaldate of Acerenza, with Acerenza itself in the territory of Salerno along with much of present-day Basilicata, including the gastaldate of Conza and one at Taranto. These are the only certain gastaldates in Central Apulia and Eastern Lucania. Presumably after the division between Benevento and Salerno, the duke of Benevento's share must have been put under one of his *gastalds* but there is nothing to indicate which – there is no evidence for one at Venosa while Trani[77] and Bari,[78] at both of which *gastalds* are recorded, are surprisingly far away from the inland places.[79] *Gastalds* were based in cities and the absence of any in the large tract of land inland from the Gulf of Taranto is further evidence of the depopulation of this area in Lombard times.

iv. Settlement

The literary, and to a lesser extent the archaeological evidence shows that this was a period of slow recovery after the depression of the 7th and 8th centuries.

During the course of the 10th century there are signs of a tentative economic and demographic revival which is affirmed much more clearly in the 11th century and continued until the last quarter of the 13th. There were, no doubt, a number of causes for this, some probably unknowable, and some likely but not yet adequately defined. This last category includes climate change. As we have seen (Chap. XI.5.i), it is widely accepted that throughout the Northern Hemisphere there was a cold spell around the middle of the 1st millennium AD, which lasted for several centuries, and which is thought to have had serious consequences for the environment, and so for land use and settlement patterns. There are, however, methodological problems concerning the evaluation and reconciliation of the diverse data used as proxy evidence for climate change, and as a recent review of the scholarly literature on the subject shows,[80] there is little agreement as to how long the cold spell continued, or to what extent it varied in humidity or aridity and by time and place. According to some it lasted from the beginning of the 5th to at least the middle of the 8th century, and according to others, from the beginning of the 6th to the middle of the 9th century.[81]

The evidence relevant to South Italy is not wholly consistent. The avian remains from San Giovanni di Ruoti (Chap. XI.6.iii) suggest that there was no significant change in wild-life habitat in the Lucanian mountains before the end of the site in the 7th century, which would imply an even later date for the beginning of the cold phase. This would be compatible with the geomorphological evidence from Vagnari, mentioned in Chapter XI, which shows a turning point in the erosion history of the site in the 8th century. It does not fit well, however, with a geomorphological study of three stratigraphic sequences on the North side of the Basento river near Pomarico carried out by a team led by F. Boenzi which show that a phase of sedimentary deposition began ca. 465 AD and ended ca. 950 AD, to be followed by a new phase of erosion and in-cutting into the sediments that continued until the mid-15th century.[82] These disparities raise the question of how far erosion processes are caused by climatic factors and how far by human activity (or lack of it) in the landscape. The two of course may be linked, and it may not be possible to disentangle them.

Provisionally we may say that a cold spell, lasting from the middle of the 7th century to the middle of the 10th century, shorter than usually supposed, would suit the settlement history of our Survey Area well. It would have been followed by a return to warmer and wetter conditions which would have been more favourable to

[76] Cosentino 2008, 155-160.
[77] Martin 1993, 222 citing a charter published by Prologgo (1877).
[78] Martin 1993, 228.
[79] Martin (1993, 227-229) gives a list for Apulia: Brindisi, Bari, Canosa, Lucera, Siponto, Ascoli, Bovino, Sant'Agata, Avellino, Telese, Alife, Isernia, Bojano, Larino, Biferno, Campobasso. Those in the duchy of Salerno are given by Taviani-Carozzi (1991, 277): Taranto, Latinianus (perhaps Stigliano), Cassano, Cosenza, Laino, Salerno, Conza, Montella, Rota, Sarno, Cimitile, Capua, Teano, Sora, Furcule (perhaps San Felice a Cancello).
[80] Helama *et al.* 2017.
[81] Buntgen *et al.* (2016) identify a "Late Antique Little Ice Age" which they date between 536 and 660 AD on the evidence of tree-ring data from the Altai mountains. Pescatore & Senatore (2003, 217 fig. 6) date the ensuing hot spell ca. 900-1200 AD.
[82] Boenzi *et al.* 2008.

agriculture in South Italy, and so would have led to a recovery of human settlement.

The end of the warmer and wetter phase is equally problematic. The wetter conditions in most of Europe reached a climax at the beginning of the 14th century when a prolonged period of increased rainfall and a general fall in temperature brought about widespread famine. The evidence for Northern Europe is, however, considerably clearer than for South Italy. That the population in the South declined in the 14th century seems evident (sub-section 8.i) but how far that decline was the result of climatic factors rather than other developments (most obviously the Black Death from 1347 onwards) is still a matter of surmise and debate.

A second factor in the revival of settlement in this phase (the 10th and early 11th centuries) is the Byzantine reconquest, although its benefits were uneven. There is sufficient evidence, documentary and archaeological, to show that Bari flourished soon after the Byzantines took over. From the mid-10th century, the documents collected in the *Codice Diplomatico Barese* give an increasingly coherent impression of the Byzantine city with its numerous houses, palaces, towers, courtyards, workshops, roads, gates, churches, monasteries, castle and cathedral.[83] Perhaps the most notable sign of prosperity in the city was the great *palatium* of the Katepano identified under the church of San Nicola and datable to the 10th century. There is also evidence of a growing commerce in the city.

In much of the territory in Apulia, Lucania and Calabria reconquered from the Lombards by the Byzantines, the churches owed allegiance to the papacy, and the reconquest involved compromises between the Katepano and the papacy which culminated in the elevation of the bishopric of Bari to the status of archbishopric by Pope John XIX, and the installation of Byzantius as the first archbishop of the see. He continued, however, to owe allegiance, at least in theory, to the Byzantine Emperor. In 1034 AD he began to build a new cathedral to be dedicated to St Mary on the site of its palaeochristian predecessor. Byzantine rule lasted until 1071 AD when the city fell to the Normans who swept away the residence of the Katepano and his administrative headquarters in the Byzantine *praetorium* and built the church of San Nicola in its place to house the relics of the saint which had been brought to the city in 1087 AD.

Excavations carried out at various times in the last 50 years in different parts of the precinct of San Nicola have revealed structures and stratified layers of the Byzantine period. Some of the pottery from these contexts has recently been published by S. Airò,[84] and the typology she has established defines the ceramic types in use in Bari and the surrounding area between the end of the 9th and the end of the 11th century. The dating of the stratigraphic sequence is assured by the presence of Byzantine coins. Other excavations in the area of the cathedral have yielded a pottery sequence of the 9th to the 1st half of the 11th centuries associated with a small Byzantine church, with similar series of plain wares (jugs and table amphorae) cooking pots (*olle*) and painted wares (jugs and amphorae).[85] Since bowls and other open shapes are rare in both sequences, it is probable that these were made in wood before the introduction of lead-glazed wares in the 12th century. This is largely confirmed by a marriage contract of 1028 AD cited by Airò, in which the future husband pledges to give a *morgincap* (in Lombard law, the gifts given by a husband to his new wife on the morning after their wedding) consisting partly of wooden and glass vessels.[86] The formulaic nature of the phrase suggests that this was standard practice at the time. Bowls are a relatively simple shape to make on a lathe.

This ceramic evidence gives surprisingly little indication of the economic up-turn indicated by the literary sources. The same wares and shapes that were current in the 8th and 9th centuries continue with only slight changes into the 10th and 11th. Imported transport amphorae are rare. The only exotic pieces found in these contexts are a few sherds of Arab glazed ware imported from Sicily or the Maghreb which were found in the excavations in the precinct of San Nicola,[87] and two with a heavy vitreous glaze found in the excavation of the small church adjacent to the cathedral.[88]

On the face of it, the ceramic evidence might suggest that Bari was stagnating economically in this period, in spite of what the documentary evidence might suggest; but this impression is contradicted by the numismatic finds. Numerous coins, mostly bronze *folles*, were found in the recent excavations, and they are matched by others found elsewhere in Apulia, notably in Taranto and Egnazia, amounting to a total of 1077 coins datable between 876 and 1071 AD.[89] They show that the Byzantines re-established a monetary economy throughout Apulia soon after they had recovered the city. Some idea of how these coins circulated in the vicinity of our Survey Area can be got from the catalogue of the numismatic collection in the Fondazione Santomasi at Gravina which consists mostly of coins collected by Pasquale Calderoni Martini in the

[83] *CDB* I (Nitto de Rossi & F. Nitti (eds.) 1897) and *CDB* IV (F. Nitti (ed.) 1900). Cf. Lavermicocca 1988.

[84] S. Airò in Nuzzo *et al.* 2012, 90-106; Airò 2015.

[85] Ciminale 2004.

[86] Airò 2015b, 252-254, with reference to Nitto De Rossi & Nitti 1897, 24.

[87] Airò 2015a, 159.

[88] Ciminale 2004, 310-311.

[89] Sarcinelli 2015. For Byzantine *folles* of the period from Egnazia, see Cassano 2017, 218.

late 19th and early 20th century.[90] Nothing is known of the original context of the individual pieces, but they are all likely to have been acquired from *contadini* who cultivated fields in the vicinity of the modern town. The Late Antique series ends with a coin of Justin I, datable between 518 and 527 AD. There is then a lacuna of just over 300 years before a new Byzantine series of 32 coins begins with a gold *nomisma* of the Emperor Theophilus (829–842 AD). It is the only gold coin in the series, and it is an outlier. The next is a silver *miliaresion* of Basil I of 877–886 AD. Apart from another *miliaresion* of Leo VI datable between 886 and 912 AD, all the remaining coins are bronze *folles*. The series ends with 10 anonymous Class A pieces of 969–1025 AD, and three *folles* only loosely datable to the 11th century. There are therefore a few coins which might have been used for paying taxes, but the majority are likely to have been used for daily transactions of moderate size. This impression is confirmed by the contents of a hoard, found near Irsina in 1954.[91] It comprises 63 *folles* ranging in date from Theophilus (829–842) to the early years of Constantine VII (the latest are dated 919). It therefore spans the same period as the coins in the collection of Calderoni Martini and is further evidence that the Byzantine re-introduction of their coinage in this area was possibly as early as the second quarter of the 9th century and was successful under Basil I and Leo. The Irsina coins like those in Gravina are of low value, although in this case the hoard had been dispersed (even the coins which currently constitute it had to be recovered by the police from the workmen who found it) so the more valuable coins, if any, are likely to have been lost. Still, it is more evidence of the use of money for small scale transactions. That is true also of the collection of Byzantine *folles* in Matera (sub-section 3.ii). They were broadly speaking of the same period as those in Gravina and Irsina though there was a greater preponderance of those minted by Constantine VII. Given the dearth of potsherd evidence for settlement in the open countryside in our Survey Area (see below), it is likely that the populations who used the coins were living in Gravina and in the territory of Montepeloso respectively, and working fields not far from the settlements. In the case of the Irsina hoard, however, the coins may indicate a border κάστρον. Κάστρα were fortified settlements in strategic regions,[92] in this case along the border between Byzantine and Lombard territory. In the 9th century this one would perhaps more probably have been located on Monte Irsi than at Irsina.

By the late 10th century other settlements in the Katepanate were also seeing renewed building activity which continued throughout the 11th century. This was centred initially on churches, and involved both the reconstruction of palaeochristian basilicas, and the construction of new ones. The evidence has recently been assembled by Pasquale Favia who has shown that churches were built or rebuilt in the late 10th or 11th century in Central Apulia at Barletta, Bitonto, Andria and Bisceglie.[93] These were typically oblong basilicas with nave and two side aisles, each ending in an apse. There were similar churches built at Ordona in North Apulia (which now began to revive after having been effectively abandoned), and at Satriano and Potenza in Basilicata. In all these places the construction of the church seems to have acted as an incentive for the redevelopment of the settlements surrounding them.

There is very little evidence for either rural settlement or the exploitation of the countryside in these centuries. The population seems to have remained concentrated in defensible, reasonably large groups, in cave cities including Matera and Gravina, or in hilltop towns such as Irsina/ Montepeloso which was possibly another new development of the post-Roman period. It existed by the beginning of the 11th century with the name of Montepeloso which it retained until 1895, when the *comune*, keen to assert links with a somewhat hypothetical Roman past, changed it to Irsina. The Arabs sacked it in 1011[94] so it was presumably of some importance by then. The record of a slightly earlier Saracen attack on it in 988 is unreliable: it was accepted by Ianora and, more recently, by Salierno,[95] but it occurs in the "Chronicon Cavense", published by F.M. Pratilli in 1753 in his *Historia Principum Langobardorum,* which was exposed as predominantly a forgery.[96]

The fortified hilltop settlements which gradually emerged throughout Italy south of Rome are associated with the process often termed *incastellamento*. The populace was concentrated in small areas, usually walled, and controlled by the lord of the settlement. Ecclesiastical lords (high ranking clergy or abbeys) were among those in the forefront of this process. The essentials of *incastellamento* were firstly a defensive potential and secondly a tightly knit social group over which private individuals or collectives could exercise control. This "privatisation", as Wickham calls it, in concentrated settlements became widespread throughout Lombard South Italy in the 10th and into the 11th centuries.[97] He suggests that in the cases in which whole populations were moved into newly built *castelli* the motivation may have been to collect scattered populations in areas largely deserted and use a new fortified settlement as a basis for new clearances.

[90] Libero Mangieri 1996.
[91] Siciliano 1981, 293-304. The hoard was found "nel demanio di Irsina di fronte al Monte Irso (regione Basentello), nella 'zona Pilosa' della contrada'Difese Comunali'.
[92] Matin & Noyé 1988, 236.
[93] Favia 2018, 63-102.
[94] *Annales Barenses, MGH SS* V, 53.
[95] Ianora 1901, 1-2; Salierno 2000, 59-60)
[96] Pertz & Köpke 1847.
[97] Wickham 1981, 164-167.

Genzano is a well documented though fairly late example of *incastellamento.* The count of Andria in 1061 admitted that his predecessors had usurped it and another (now unidentified) fief and moved the inhabitants to the "hill of San Vito in the possession of the Abbey of Banzi so that they might live together more securely and with better defence (*defensius*)" for which the said predecessors had been repeatedly excommunicated. The count agreed to give tithes and services for these places.[98]

Incastellamento was less prevalent in areas controlled by the Byzantines, perhaps because the desire for fortification was more marked among the Lombards than among the Byzantines, who certainly had fortified "καστέλλια" but tended to leave the smaller villages (χωριά) unfortified,[99] but also because there was a much stronger assumption among the Byzantines of the need to exercise the public power of the State. In the 11th century, however, many χωριά were given defences and became κάστρα, in effect small urban centres. They do not always appear in the documents but there was a καστέλλιον at Tolve and a κάστρον at Tricarico mentioned in a document issued by the Katepano Tarchaniotes in 1001.[100] It is possible that the castle at Spinazzola also dates to the 9th/10th century: there is no record of one before the mid-11th century, but a quantity of Byzantine material was found on the slopes below the Norman castle, including 2 coins of Basil I (867–886) and a lead *bulla* of Leo VI (886–912).[101] The *bulla* suggests that the settlement was already of some importance in the late 9th century.

When they recovered control of them, the Byzantines also built citadels in both Bari and Taranto. It is possible that the redevelopment of the area of Metaponto also occurred at this time and under Byzantine rule. Archaeological evidence of a settlement at Turris Maris (Torre di Mare) about 2.5km from the present coast at Metaponto and 2km south-west of the ancient Greek city indicates that there was habitation there in the mid- to late 11th century.[102] The site is perhaps to be equated with *Turiostu* of the Peutinger Table (see Chap. XI.6.1). Otherwise, the earliest documentary record of it is of the 12th century AD by which time it consisted of a castle and surrounding settlement. Originally referred to as a *castrum, civitas or castellum Sanctae Trinitatis*, it had changed its name by the end of the 12th century to *Castrum Turris Maris* and appears by that name in a list of castles compiled in 1232 under Frederick II.[103]

[98] Pannelli 1722/1995, 35.
[99] Martin, J.-M. 1984, 89-104.
[100] Holzmann 1961, 1-28.
[101] Canosa 2009, 125.
[102] Bertelli 2002b, 86-87.
[103] Fonseca 2002, 41-43.

Various terms are used for villages in Lombard more Latinized areas. The *Chronicon Vulturnensis* refers to two *vici* near Lucera in the mid-9th century, and one near Barletta appears in a cartulary of Trani.[104] In the cartularies of the monasteries of Santa Sofia, San Vincenzo and Monte Cassino they tend to be called *casalia. Casalia* were small, and often formed round a church from which they took their name. The archaeological evidence for them is still hard to find for any time before the 11th century.

v. The Church. Eigenkirchen *and monasteries*

The churches of the *casalia* were private churches – *Eigenkirchen* – which appeared all over Europe from the 8th or 9th century until the late 11th, financed by local lords, staffed by their protégés and endowed with land over which the lords kept some residual control. They were often later given to abbeys and those for which we have evidence usually appear in the monastic charters. The Lombard dukes made gifts of such churches – and indeed of other lands – to Montecassino, rather later to San Vincenzo and, from its foundation in the late 8th century, to Santa Sofia in Benevento. These gifts could be quite widely scattered. Some churches in Gravina, for example, are later recorded as under Montecassino. Not all of these churches, however, were Latin. To some extent they can be identified by their dedications. Most obviously, churches dedicated to San Benedetto were Latin, those dedicated to San Nicola Greek, though later, as the Greek rite slowly died out, the Greek churches became Latinized.[105]

A number of monasteries appeared in South Italy in the 9th and 11th centuries, usually independent foundations which were often dominated, like the private churches, by their founder. Like the private churches they too were sometimes given to the great abbeys. Banzi, founded at the end of the 8th century, is a case in point for it was confirmed early to Montecassino. Urban monasteries were often to a greater or lesser degree controlled by their cities but were rarely of great importance. San Benedetto, at Bari, however, headed a group of eight monasteries and churches, one of them as far away as Taranto. Most of these foundations were Latin but others were Greek, like San Nicola de Morbano near Venosa, founded in the 10th century. There were two Greek monasteries in Taranto.

There were palaces *(palatia)* for the Lombard dukes in Benevento, Salerno and Capua and another for the *katepano* at Bari, but apart from these, if there had been any grandiose buildings in this period they would presumably have been churches or monasteries, Of these, however, there is little sign in our area. There

[104] Martin 1993, 181 and cf. 28.
[105] For a brief summary on the monasteries see Martin 1993, 659-667.

were perhaps Greek monks in the cave cities of Gravina and Matera, but the cave churches were hardly grand, nor indeed were most other churches of the time. Such monumental ecclesiastical buildings as there were tended to be Latin and none was very near our area. Further north at the beginning of the 9th century the great monastery of San Vincenzo al Volturno was consecrated to replace a previous fairly modest abbey on a slightly different site, but the abbot responsible for it was a brother-in-law of the Emperor Louis the Pious,[106] and it was, anyway, in an area very different in character from ours. A little closer, the pilgrim sanctuary of San Michele on the Gargano fell into Lombard hands in ca. 650 AD when the Lombard Duke Grimoald of Benevento defeated a Byzantine army somewhere in the vicinity. Paul the Deacon represents Grimoald as coming to prevent the sanctuary from being plundered by the Greeks,[107] but the battle is more likely to have been fought over control of the cave of the Archangel which had already become an important place of pilgrimage. After the victory, the Lombards appropriated the Archangel Michael as their protector, and over the next hundred years Lombard dukes and their wives rebuilt the sanctuary with new staircases approached through a long portico to improve the flow of pilgrims, showing considerable ingenuity in the creation of a building adapted to an extremely unpropitious site.[108] The cult spread rapidly, and it has been estimated that more than 200 sanctuaries of the Archangel were created in Lombard South Italy, usually in caves or on mountain tops. Several of them were in Central Apulia, including Gravina where the largest of the rock-cut churches was dedicated to him. Its foundation date is uncertain, but it is likely to have been constructed under Lombard auspices.[109]

The nearest abbey of any importance in our area was Banzi. first recorded in 797 when the Lombard duke of Benevento, Grimoald III, gave it to Montecassino.[110] It was no longer linked to Monte Cassino by 1068, when it had probably come under the jurisdiction of the Archbishop of Acerenza who was certainly one of the parties to a settlement over its lands (see footnote 121). But there is no reason to believe that Banzi was outstanding as a building, at least until the 11th century. The 8th century church of Santa Sofia at Benevento was more elaborate – if remarkably Byzantinizing – for a Lombard church, but as the main church of the Lombard duchy, it was unique. Cathedrals came even later. Bishop David of Benevento (782–796) consecrated the Cathedral there. It was enlarged in 830. Elsewhere there must have been cathedrals in the sense of main churches of a bishopric. In addition to the earlier church found under the 11th century cathedral of Bari (Chap. XI.2.iii.a) there is evidence for one below the even later Cathedral of Matera, but there is no documentary evidence for either. Since Gravina had a bishopric before the Normans it also must have had a main church, perhaps the cave church of San Michele, but the first cathedral building recorded was that of the second Norman Lord of Gravina, Umfredo, in 1098.[111]

6. The 11th and 12th centuries: the Norman influx

In the first part of the century the political situation did not change greatly. Gravina itself perhaps enjoyed a little more tranquillity under the Byzantines but there were more Arab raids on Montepeloso, much in-fighting among the Lombards and a tendency to rebellion against the Byzantines. This general resistance famously was the key to bringing in the Norman adventurers from the North who gradually made themselves masters of the whole of South Italy. They took Venosa and then Matera in 1042 in campaigns which obviously involved much fighting in our Survey Area, notably a major battle between the Byzantine forces from Montepeloso and the Normans based in Monte Serico.[112] Gravina fell to the Normans in 1069,[113] two years before the Byzantines were finally driven out of Bari and lost their hold on Italy. There was still much resistance to the Normans all over the South involving rival Normans, Lombards, and, until 1071, the Byzantines, while both the papacy and the Empire also became involved. The turmoil lasted into the next century, when the conquest of Sicily from the Arabs and the subsequent establishment of the Norman kingdom brought a measure of stability to the South, although it certainly did not end all resistance.

The conquerors brought with them a new organization, that of lords and vassals. At first government must have been chaotic. Many Norman adventurers made themselves lords in different areas but then quarrelled over who should be overlord(s). The most successful of them, Robert Guiscard, made himself duke of Apulia and obtained recognition from the Pope as such. He could thus claim, though rarely without opposition, that all the lords of the area were subordinate to him,

[106] Hodges 1997, esp. 77-78.

[107] Paulus Diaconus, *HL* IV.46: "Aput Beneventum vero mortuo Raduald duce, qui ducatum quinque rexerat annis, Grimuald, eius germanus, dux effectus est gubernavitque ducatum Samnitium annis quinque et viginti. Hic de captiva puella, sed tamen nobili, cuius nomen Ita fuit, Romualdum filium et duas filias genuit. Qui dum esset vir bellicosissimus et ubique insignis, venientibus eo tempore Grecis, ut oraculum sancti archangeli in monte Gargano situm depraedarent, Grimuald super eos cum exercitu veniens, ultima eos caede prostravit".

[108] Otranto & Carletti 1995, 79-85.

[109] Nardone (1922, 12-15) dates it to the 9th century, Dell'Aquila & Messina (1998, 168) to the late 11th.

[110] *Chronica Montis Casinensis* I Auctore Leone *MGH SS* VII, 594. Banzi is complicated: it was listed as a fief under Roger II (Jamison 1972, 87), and in a list of castles under Frederick II, but was not taxed until 1307 (though this was perhaps because the Benedictine Abbey was exempt: it was suppressed in 1300 and transferred to the Augustinians).

[111] Lucatuorto 1967, 103.

[112] *Annales Barenses, MGH SS V,* p. 55 "...Graecorum exercitus descenderunt ex Monte Piloso et Normanni ex castello Siricol: inter duas montes inierunt conflictum maximum."

[113] Nardone 1922, 31.

but chains of command remained very fluid. The whole of South Italy was divided among counts, often holding counties which were remarkably fragmented,[114] and below them, barons, each with his own territory or territories, his own soldiers and his own peasants. A few of the lords were Lombards who had survived the conquest; others had taken over from Lombard lords, and others were new, given lands by their superiors, or successful land grabbers themselves.[115]

The Normans regarded castles as the natural headquarters of their lordships. They were mostly on the edge of the existing habitations of their dependents who resented the new fortifications to the extent of destroying them. Bari was a case in point. Built in 1075 shortly after the conquest, it was destroyed in 1079. Its replacement, recorded in 1079, was knocked down later and a decision to rebuild it in 1137 provoked first an unsuccessful revolt, and then another rising in which it was demolished before yet another rebuilding.[116] Bari is an extreme example, but it shows the dislike of seigneurial power. The castles had a defensive function, but they were apparently seen primarily as instruments of oppression. Initially they were often built of earth and wood and only later replaced by the stone castles of the Central Middle Ages. The earliest stone structures were towers as at Torre Belmonte in the area of Aldridge's survey and at Altojanni, Torre di Satriano and Montecorvino further afield. Montecorvino is documented from 1044 and was probably a Byzantine stronghold. The tower was perhaps built at the end of the 11th century though it could be later.[117] The tower at Torre di Satriano is said to have been built in the early 12th century but on an earlier fortified site.[118] Belmonte and Altojanni were new Norman settlements and did not predate the towers there. They are more fully discussed below.

Violent and chaotic as the Norman conquest was, it was socially not very disruptive. The Norman invaders were almost exclusively male so that intermarriage between Normans and the Lombards, Byzantines and others who were already there took place rapidly. In Northern Apulia urban activities – commerce, banking and administration – remained largely in Lombard hands and law became a somewhat haphazard mixture of Roman and Lombard regulations.[119] More generally, the records show signs of more prosperity in much of South Italy. The population here, as throughout Europe, was growing (see below), and there is evidence of habitation in the countryside. New settlements appeared and old ones revived. Most of the cities destroyed by Arabs, Lombards or Byzantines recovered after a short period. Others on hill tops were new foundations on old sites – Lavello, Giovinazzo/ Monopoli, Conversano – while others again like Gravina and Montepeloso can be regarded as effectively new. We also hear of many new *casalia* and *choria* (χωριά) for the first time in the 11th century. It is not always easy to identify what was revival and what was new. In our area San Felice is an interesting case. We know from archaeology, but not from documentary evidence, that it existed in the 6th to 7th century AD and again in the 10th to 11th century, and we have argued that there was some frequentation or thin occupation in the 8th/9th, but continuity of settlement is by no means certain. What is clear is that by the 11th century it grew.[120]

The best evidence for San Felice is archaeological with a little documentary back-up, but for the general area near Gravina we have few data. One indication is a document of 1063 confirming to the abbey of Banzi certain holdings (*tenimenta*) including *casalia* which had been abusively occupied by a group of Norman nobles.[121] The number listed is not large but the references to the *casalia* are clear evidence of some occupation of the countryside. Among them were both San Felice (a church with its *casale*) and another in the territory of Gravina which is recorded in a document of 1080 as having been given by the then Norman lord of Gravina, Umfrido, to the church of Sant'Angelo del Frassineto (about 4km W of Gravina near the Fontana Sant'Angelo), although it has left little sign on the ground. Although some *casalia* had fortifications as, for example, Corleto, north of the Tavoliere, a *casale* of the Abbey of La Trinità of Venosa, which was well fortified on its more accessible side,[122] most *casalia* in Apulia were protected only by a ditch, though the choice of site generally shows some interest in defence. At San Felice rigid search failed to provide much evidence of serious wall construction even on the plateau. Hunt thought that there might be traces of a wall in his resistivity survey, but they are very slight, and the location is not entirely convincing (see discussion under Site 223 in the Site Catalogue). San Felice would not have been alone in relying for defence on natural features.[123]

Not all the churches in the Banzi documents had attached settlements but they are nevertheless evidence of further activity in the countryside. The

[114] Martin 1994, 119.
[115] For a general assessment of the Norman impact see Martin 1994, 133-159.
[116] *Ibid*., 156.
[117] Giuliani & Favia 2007.
[118] D. Whitehouse 1970. If D'Ulizia and Sogliani (2008) are right in arguing that the tower resembles Norman keeps of the 12th century, it was probably rather later.
[119] Martin 2018, 85.
[120] San Felice is fully discussed in the comments on Site 223.
[121] Transcribed in full in 1755 by Domenico Panelli (1755/1995). For a full discussion see Site 223/ San Felice, in the List of Sites.
[122] Favia *et al.* 2012.
[123] Martin & Noyé 1988, 231. They refer chiefly to new settlements of the 9th and 10th centuries, but the pattern of selecting a roughly defensible site but without fortifications is the same. See also Wickam 2005, 485-486.

names of some of them show that they must have preceded the Norman take-over. One dependency of the abbey of Banzi was Santa Maria del Catepano, and three churches dedicated to San Nicola, one of them in the territory of Gravina, are likely to have been eastern foundations, though by the time they came to the abbey of Banzi they may have been using the western rite.

i. The Normans in the vicinity of Gravina

Robert Guiscard took Gravina in 1069 and appointed a lord over it the next year. Although there were risings against Robert in the near vicinity, notably in 1078, spearheaded by the Lord of Conversano who also held various other places including Montepeloso, and by the Lord of Montescaglioso whose holdings included Tricarico, Gravina apparently remained loyal and profited accordingly. Its second Norman lord, Umfrido, was concerned to improve the status of his city. Notably he requested the Archbishop of Acerenza to appoint a bishop to the see of Gravina, "widowed of its spiritual leader" When this request was refused on the grounds that the church in Gravina was "so oppressed with burdens that a bishop would scarcely find supplies of a day there", Umfrido made a remarkably generous grant in 1092 to ensure that a bishopric would be viable.[124] Work was started to build a new Cathedral and a bishop, Guido, was appointed towards the end of the century.[125] The episode is instructive. Clearly the Church in Gravina in 1092 was not prospering. The bishopric made possible by Umfrido was not however, entirely new. It is possible that the proposed appointment of a bishop in Gravina never actually took place and there is no sign of any other, but the town is referred to as a "civitas", a word by this time usually reserved for episcopal centres, and Umfrido's use of the word widowed (*viduata*) does imply that there had been an earlier bishopric – in other words the Greek bishops were accepted as valid.

Umfrido's attitude was not unique. The endowment of the church was seen as a good route to power by the Normans. Across the Basentello the count of Conversano endowed the Abbey of Santa Maria Nuova just outside Montepeloso/ Irsina with extensive lands further south, and in 1123, when a new bishop was conceded by the Pope, the abbot took the office, thus uniting the Abbacy of Santa Maria and the bishopric. Ten years later, following a rebellion by the count, the abbey was made a priory of the Abbey of La Chaise Dieu in Auvergne, but the priors remained heads of the diocese until well into the 14th century. Recent excavation has uncovered the rather scanty remains of a large church but not much of the monastic complex has survived.[126]

The policy of consolidating smaller monasteries under the overall authority of larger ones was continued under the Normans. Banzi is an exception for it was permitted independence under Pope Gregory VII in the 11th century, but many smaller foundations were transferred to larger ones. The transfer of Santa Maria Nuova di Juso at Montepeloso to La Chaise-Dieu is a good example. The abbey of la Santa Trinità di Cava founded in 1020 had over 100 dependent abbeys throughout South Italy by 1150.[127] Many of these monasteries were in or replaced earlier institutions in cave settlements, particularly to the west of Taranto. Further east the Benedictine abbeys tended to take over the lands of the rupestrian monasteries and use the buildings as granges from which to farm them.[128] The phenomenon can be traced in Gravina where the abbey of La Cava had the monastery of Santa Maria Nova which replaced an abandoned Basilian cave church of Santa Maria not far away. The latter was not deconsecrated until 1714 so it presumably remained as a grange of the abbey. There was also a monastery belonging to the abbey of Cluny, known as the "Badia di Coluni". Its former name is not recorded, but it is unlikely to have been a totally new foundation.[129]

Robert Guiscard died in 1085 and after many more campaigns and changes of fortune, his nephew Roger II, already recognized as duke of Apulia became king of Sicily in 1130, crowned by the anti-Pope Anacletus.[130] There was widespread rebellion against him in Apulia and Basilicata for which Roger took savage vengeance. Venosa was razed to the ground and its inhabitants massacred. Then Montepeloso and Acerenza were seized and savagely punished. The lord of Gravina, Roberto, was among the rebels and Roger came briefly to Gravina, but the inhabitants showed no great loyalty to their lord and escaped Roger's cruellest excesses. Since however, the rebels were upheld (though somewhat ineffectively) by both Anacletus' rival, Pope Innocent II, and by the Emperor, Apulia remained only partially subdued until 1140.[131] At some time before 1144 Roger allotted Lord Roberto's lordship to a northerner, the Marquis Bonifacio and rather later it was raised to the status of "county".[132] In 1160 when Bonifacio's family died out, the county

[124] Lucatuorto 1967, 108-9, also transcription by F. Raguso as an appendix to Papagna 1989b, 66-68.
[125] Papagna 1989b, 60 and esp. fn.48.
[126] Sogliani 2010, 178-180; 2017, 301-302.
[127] Ramseyer 2006, 159.
[128] Dalena 1990, 102-105.
[129] Nardone 1922, 78-81.
[130] His kingship was recognized by Innocent II in 1139 when he took the somewhat curious title "King of Sicily and of the duchy of Apulia and of the Principate of Capua" (*Rex Siciliae et ducatus Apuliae et principatus Capuae*).
[131] Houben 2002, esp. 61-69.
[132] For a full account of the Norman lordships of Gravina, see Nardone 1941, 31-65.

was acquired by Gilberto di l'Aigle, when he became Grand Constable of Apulia, by which time 12 widely dispersed fiefs were included in it.

By this time the feudal relationships throughout southern Italy had become more hierarchical as Roger sought to regulate them. The best evidence for them is the so-called *Catalogue of Barons* (1150–1168), a Register of the extraordinary defence forces due for a major campaign from all counts and barons in provinces not directly under the crown. It records the count of Gravina, as owing normally for his demesne (his own holdings) in Gravina the service of 8 knights (double in emergencies), a relatively large number.[133] He owed 20 knights in all and a list is given of those who held sub-fiefs from him who also owed the service of knights and villeins to the army. The other fiefs were Spinazzola, Forenza, Polignano, Montemilone, Belmonte (near Gravina and not to be confused with the church and settlement of Belmonte di Altamura which was by this time extinct), Caivano, Sant'Angelo, Tito, Laurenzana, Campomezzano, Treforgia, and Marsico Vetere. The count held further demesne lands in the first three. These fiefs all had centres of habitation though some, like Belmonte, must have been very small. The Normans made no distinction between rural and urban populations. Each unit had a *comune* (Latin *universitas)* and was managed by the lord, or more likely his *baiulus* or agent. Few had any real autonomy.[134]

A brief attempt by the Byzantines to recover Southern Italy on the orders of the Emperor Manuel Comnenos (one of the emergencies for which the *Catalogue of Barons* was drawn up) was thwarted in 1156, though not before Byzantine troops had briefly entered Gravina.[135] But at the end of the 12th century a worse war erupted on the death of William II in 1189 when the Emperor Henry VI invaded South Italy to make good his claim to the Norman kingdom in the right of his wife Constance, daughter of Roger II and William's only surviving legitimate relative. He met bitter resistance from Tancred, an illegitimate grandson of Roger II, who was crowned king in 1190. Tancred gained the support of the Pope to whom he made considerable concessions at a Concordat made in Gravina in 1192, but Henry was ultimately successful in a brutal campaign of 1194. He died however in 1197 and the pope confirmed his new conquest to Constance and her infant son, Frederick II, while affirming his own rights as overlord of the kingdom and, when Constance died soon afterwards, as Frederick's guardian.

The events of the later Norman period demonstrate a marked rise in the importance of Gravina in the 12th century. Doubtfully able to support a bishop in the time of its first Norman lord, Umfrido, it had become the centre of an important county and, by 1192 the chosen venue for negotiations to which the papal envoys and all the supporters of Tancred were bidden. It was clearly prospering. One reason for this was its position at the crossing of major routes of communication which would certainly have been a reason for choosing it as a centre for diplomatic negotiations, but there is also good reason to suppose that the land round it, not apparently much exploited in the Lombard period, was becoming productive.

ii. Our Survey Area: 10th–12th century

The published pottery from the contexts at Bari, mentioned above (5,iv), provides potential comparanda for our survey material; but as in the case of the pottery of the 8th and 9th centuries, there are very few correspondences. None of the cookpot fragments in the catalogue is datable to the 10th/11th century except for the fragment of "chaffy" cookware No.2161, and the only other pieces likely to date to this period are the painted sherds Nos.2090-2094, all from San Felice. Even bearing in mind that wooden vessels would not have survived, and that the chances of finding fragments of glass ones (also mentioned in the Bari *morgincap*) are remote, the evidence for household wares suggests that the hilltop of San Felice can only have been occupied thinly and perhaps intermittently in this period.

It is, however, possible that the domestic wares do not tell the whole story, since some of the combed tiles mentioned in Chap. XI may also date to this period. Examples found in the excavations in the precinct of San Nicola at Bari seem likely to belong to the Byzantine occupation of the late 9th to late 11th centuries AD,[136] but the contexts in which they were found have not been precisely dated. Moreover, it is possible that some of the chaffy tiles (*tegole vacuolate* – Nos.2269-2274) found on San Felice should be taken into account. They are discussed in our Cat. 32.H. These succeeded combed tiles and became widespread from at least the 9th century, lasting into the 12th. On San Felice they, like the combed tiles, are markedly concentrated towards the western end of the plateau. The tile evidence, then, indicates that there may have been no hiatus in habitation on San Felice. The chaffy tiles are however much more abundant and much more densely distributed than the combed tiles. If the site continued, it certainly grew, and indeed must have grown sufficiently by the 11th century to merit its description as a *casale.*

[133] Jamison (ed.) 1972, 11-13, no.54. A list of the sub-fiefs is given by Nardone (1922, 57).
[134] Martin 1994, 127-128.
[135] Chalandon 1907, 212-229 esp. 216.
[136] Airò 2015a, 173.

7. The Hohenstauffen

i. Castles and comuni

The Normans introduced new administrative geographical units[137] which were regularized under Frederick II. The term Apulia was dropped except as it applied to a royal duchy held by the king. The old Roman province of Lucania was revived with slightly altered boundaries as the Justiciarate of Basilicata,[138] while next to it was that of the Capitanata, with which Gravina was joined. The boundary in our area lay roughly along the Basentello or a little E of it – it seems to have followed the ridge between the valley of the Torrente di Gravina and that of the Basentello (the Serra la Stella) as it does now, and further north it swung East to include Spinazzola (now some 5km north of the border) in Basilicata. Later the system was slightly changed. A Justiciarate of the Terra di Bari was created, and the boundary slightly altered so that Matera, initially in Basilicata, was transferred to Otranto. Within the Justiciarates, lords continued to hold land and derive rents from it, but the main fiscal units were the *comuni,* each with a mayor (*syndicus)* and a growing but still minor degree of self-government. We know which they were from a list of royal castles and *domus* and the *comuni* responsible for their upkeep, prepared for the Emperor in 1232.[139] Map XII-2 showing their location gives a remarkable snapshot of the settlements in Apulia and Basilicata at the time. Many of those assigned to support the upkeep of various castles were small. Most were *comuni,* but a few were described as *casalia* though they were obviously of a size to be assessed separately from the *comuni* near which they were located. Most *casalia*, however, were not assessed, among them San Felice, in our Survey Area, which never appears in official documents. Presumably such minor settlements were regarded as part of the territory of the nearest *comune,* probably in this case Gravina.

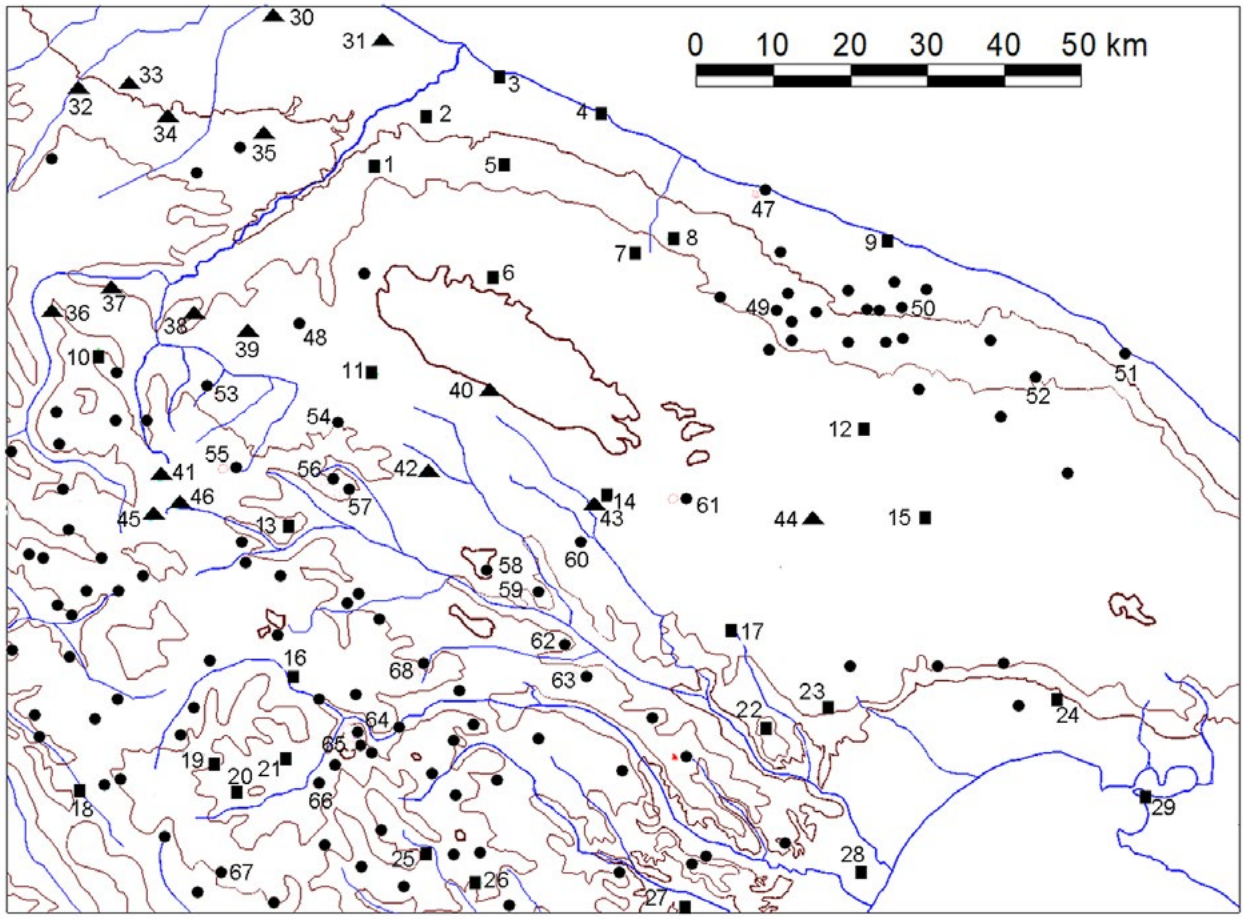
The greatest number of places contained in the Castles list is in Basilicata (180) By contrast, fewer settlements (47) were listed in the Terra di Bari but they tended to be bigger: the taxation lists from later in the century (see sub-section 8.i) show that many of them were taxed highly enough to make them classifiable as towns, not villages. The topography of Central Apulia is of course very different and not conducive to hilltop villages. *Incastellamento* in the sense of the process of concentrating settlement does not require a hill-top but it seems likely that the process was never so widespread in the Terra di Bari. Partly this must have been because much of the relatively sparsely settled area was on the dry plateau of the Murge, but there is good agricultural land on the lower slopes on the Adriatic side of the plateau. It is likely that, because *casalia* were not normally listed, settlement in the countryside is somewhat under-represented in the castles list. Most of the larger settlements of the Terra di Bari presumably had *casalia* of their own. San Felice is a case in point but there must have been others – we know of them for example at Terlizzi.[140]

Among the castles, those most relevant to our area were at Gravina and Garagnone in the Terra di Bari and at Spinazzola (*castrum*) and Monte Serico (*domus*) in Basilicata. *Comuni* required to contribute to their upkeep included Altamura in the Terra di Bari assigned to Gravina, Irsi and Belmonte assigned to Spinazzola, Montepeloso and Genzano assigned to Acerenza and, a little further away, Banzi and Cervarezza assigned to Boreano near Lavello.

The excavations carried out at Cervarezza in 1975 have already been mentioned (Chap. XI.5.ii). After the Lombard phase there is evidence for later occupation, since pottery sherds from a cistern some 1.5m deep were of 13th to 15th century date and reasonably abundant, but the excavation which was fairly limited did not produce anything of the intervening period. Documentary evidence, however, begins at the end of the 11th century in a document defining the confines of the territory of the abbey of Banzi which mentions a church of Santa Maria de Gervanicza in the original of 1063 or *Ceratitis* in the confirmation of 1104.[141] It is not there described as a *casale* but it had become so by the time of Frederick who regarded it as large enough to contribute to Boreano (he must have been fairly desperate for Boreano is not close) and it appears in the Angevin tax lists.[142]

Exceptionally, there were both a *castrum* and a *domus* at Gravina, the former presumably in the town above the ravine, though there is now little trace of it, the latter newly built as a fortified hunting lodge for the Emperor on a low hill overlooking the city.[143] It can never have been a serious fortification although it had some defences. In plan it was a long rectangle with a hall or courtyard in the centre and an elegant frieze decorating the main room. It still had a room for falcons in 1307.[144] In 1269 its staff consisted of one concierge (*contergius*). By contrast Acerenza had a castellan and 25 sergeants

[137] Pedio 1987, 179-180.
[138] The earliest reference to Basilicata is in a document of 1175 in which the royal Justiciar of the Terra Idronti (Land of Otranto) is also designated "Camerarius Basilicate" but the area is only normally so-called from the time of Frederick II. (D'Angella 1983, 98).
[139] *Statutum de reparatione castrorum* in Winkelmann 1880, 768-784. The difference between castles and *domus* is not explained. Both were fortified but the *domus* were apparently primarily hunting lodges.
[140] Campese *et al.* 2015.
[141] Panelli 1722, 31 (1063), 64 (1104).
[142] Salvatore 1980, 12; C. Small 1988, 53.
[143] Nardone 1941, 70.
[144] Willemsen 1979, 19-21.



Map XII-2. Castles, *domus* and the *comuni* assigned to their upkeep in the lists of Frederick II. Only *comuni* mentioned in the text have been numbered. ***Castles*** **(**squares**):** 1. Canosa; 2. Cannae; 3. Barletta; 4. Trani; 5. Andria; 6. Castel del Monte; 7. Ruvo; 8. Terlizzi; 9. Bari; 10. Melfi; 11. Spinazzola; 12. Acquaviva; 13. Acerenza; 14. Gravina; 15. Gioia del Colle; 16. Brindisi di Montagna; 17. Matera (Terra d'Otranto); 18. Brienza; 19. Abriola; 20. Calvello; 21. Anzi; 22. Montescaglioso; 23. Ginosa; 24. Massafra; 25. Gorgoglione; 26. Pietra di Acino; 27. Petrolla; 28. Metaponto (*Castrum Turris Maioris/ Maris*); 29. Taranto. ***Domus*** (triangles)**:** 30. Domus Salparum; 31. Domus Trinitatis; 32. Ordona; 33. Orta; 34. Stornara; 35. Cerignola (Cidiniola); 36. Cisterna; 37. San Nicola de Ofido; 38. Lavello; 39. Boreano; 40. Garagnone; 41. Agromonte; 42. Monte Serico; 43. Gravina; 44. Santeramo; 45. Lagopesole; 46. Monte Marcone. ***Comuni*** (round dots): 47. Giovinazzo; 48. Montemilone; 49. Arricarri; 50. Valenzano; 51. Polignano; 52. Conversano; 53. Venosa; 54. Cervarezza; 55. Forenza; 56. Banzi; 57. Genzano; 58. Montepeloso/ Irsina; 59. Irsi (Monte Irsi); 60. Belmonte; 62. Altojanni; 63. Grottole; 64. Treforgia; 65. Campomezzano; 66. Laurenzana; 67. Marsico Vetere.

(*servientes*).[145] Gravina under Frederick was, however, a major administrative centre. He set it up as the seat of a regional court for Apulia, Basilicata and the Capitanata in 1234, an indication of its continuing importance on a node of communication routes.[146]

Of the settlements listed above, only 2 were in the Justiciarate of the Terra di Bari. Altamura was established by Frederick II in a diploma of 1243.[147] There was already a small settlement there before Frederick's time, but he created the *comune*, carving it out of the territories of the surrounding ones. The other, the *domus* of Garagnone (Guaranonis), between Gravina and Spinazzola, was in the territory of Gravina on the scarp of the Murge. It is mentioned first in a gift of the *Castrum Guaranionis cum omnibus finibus et tenimentis suis* by the Emperor Henry VI to the Hospitallers at Barletta.[148] The castle of which the ruins are still visible was evidently not included in the gift. It appears in the list of castles for the Justiciarate of the Terra di Bari as the responsibility of Garagnone itself, and of Arricarri and Valenzano, both near Bari and so far away as to suggest that Frederick was having a problem in finding villages to support his *domus*.[149] It was later included in the taxation list of 1286 and in the subsequent Angevin

[145] del Giudice 1863, no.LXXX.
[146] Ryccardo (Richard) de Sancto Germano, *Chronica*, *MGH SS* XIX, 372. There were similar courts at Cosenza, Salerno and Sulmona.
[147] Gianuzzi (ed.) 1935, 4-7.
[148] Nardone 1922, 92 note 2. In full in Raguso & D'Agostino (eds.) 1995, 141-144.
[149] Winkelmann 1880, vol 1. 773. They were not the most extreme instances: Salandra, assigned to the upkeep of Acerenza was 93km from it.

tax lists as a *comune* of Basilicata despite being in the territory of Gravina. There is no obvious agglomerated settlement near it but since its upkeep was assigned in the castles list to Garagnone itself as well as the two other more distant villages there must have been some people living in the vicinity under Frederick and presumably on into the 13th century. Licinio argues that it was not an urban settlement but a grouping of dispersed farms which combined stock raising in *jazzi* with arable farming below the scarp of the Murge.[150]

Among the other places in or near our area in the Justiciarate of Basilicata Spinazzola was, as we have seen, a demesne fief of the count of Gravina in the *Catalogue of Barons*. It was mentioned earlier in the confirmation of the holdings of Banzi as a tenement with three churches,[151] but there is no reference to a town. It must, however, have been of some size by the 12th century since there is an inscription there on the remaining part of a hospital built by the Templars in the second half of the century recording its construction for the use of the sick and injured returning from the Holy Land. It was also of some political importance. It was one of the few places to put up an immediate resistance to Henry VI in 1194.[152]

Montepeloso was also of some importance. It was, as we have seen, documented as the target of an Arab assault as early as 1016 and, under its Norman lord, it was prominent in some of the Norman in-fighting of the 11th century.[153] It is mentioned as having a bishop (who was deposed for adultery) in 1069 though the record is not entirely reliable.[154] It certainly had one by 1123,[155] and later appears in the *Catalogue of Barons* principally as the location of various fiefs and sub-fiefs of the count of Tricarico.[156] It was listed as one of 14 contributories to the castle of Acerenza under Frederick II which does not imply that it was greatly prospering then (though the number of contributors to Acerenza also presumably reflects the importance of the castle there). By 1276, however, it was the fourth most highly taxed town in Basilicata (after Venosa, Potenza and Melfi).

Also among the 14 places responsible for the castle at Acerenza was Genzano which was, as we have seen, set up by the Count of Andria before 1061; by 1276 it was a *comune* taxed in its own right.

Three isolated castles are of some interest for the nature of settlement in this area. Irsi on Monte Irsi appears first in the mid-12th century in the *Catalogue of Barons* as a small fief held by the Abbey of Santa Maria of Montepeloso,[157] and later in the castles list as contributing to the castle at Spinazzola.[158] Belmonte (Site A1 in the Older Surveys List of Sites –VI.2.A) was noted in the *Catalogue of Barons* as a fief owing the service of 4 knights, a fairly large number (indeed of over 100 in Northern Apulia and Lucania only 13 owed more).[159] It lies only some 4km from Gravina but was put in the Justiciarate of Basilicata under Frederick who assigned it with Irsi to contribute to the upkeep of the royal castle at Spinazzola in the castles list. It was demonstrably new: apart from some lithic material, Aldridge found nothing pre-Norman there. There was a church at, or near it which was assigned in the late 11th century by the Archbishop of Acerenza to the monastery of San Lorenzo di Aversa.[160] A little further away was Altojanni on the right bank of the Bradano on the ridge between the Bilioso and the Bradano (Map XII-2, 62). The site lies at a crossroads connecting a road running from Montepeloso by way of Monte Irsi to Grottole with one to Matera. It appears in the *Catalogue of Barons* as a fief of 3 knights, and in the Castles list as contributing to the upkeep of Montescaglioso, and it was taxed in 1307 and 1320 though not in 1276. Recent archaeological work there has shown that in addition to a tower, still partly standing, there was a rectangular building probably the home of the *dominus,* and other structures including a small church, all of the late 12th century.[161]

To these isolated towers can perhaps be added Garagnone (see above) and Monte Serico. They were a little different in that they were royal *domus* at the time of the castles list. Monte Serico was also older. As we have seen, there were important Iron Age and Roman settlements on the hill. A church "in Monte Sollicole" (Monte Serico) was mentioned in a confirmation of the Banzi document in 1104. The original has a curious clause concerning a Count Amicus who agreed to indemnify the abbey of Banzi by making various grants including the right to have its own men and defenders inside and outside the city of Molfetta and in Monte Serico.[162] This must imply that there was already some sort of fortification there though none has as yet been found: the castle of which the upstanding remains are still visible was of a later date – late Norman or

[150] Licinio 1994, 156-157.
[151] Pannelli 1755/ 1995, 46.
[152] Chalandon 1907, II, 484.
[153] Summary and good references to the sources in Calia 1998, 39-53.
[154] Guillou 1961, 1-28, who argues convincingly that the record is genuine.
[155] Papagna 1989a, 83-84.
[156] Jamison 1972, Nos.119-121.
[157] Jamison 1972, 124. There is a possible earlier reference to it in a bull of 1123 of Calixtus II which refers to "villanos in Monte Piloso habitantes castrum Ursum": Calia 1998, 177 n.265.
[158] It was mentioned in a gift of Guiamar of Salerno to the Normans as a battle ground where the Normans helped to defeat the Byzantines but may not yet have had many (or any) inhabitants: Rossi 1907, 8.
[159] Jamison 1972, 65.
[160] Nardone 1922, 81-84.
[161] Osanna, Roubis & Sogliani 2007.
[162] Panelli 1722/ 2005, 36. "Concedimus etiam monasterio auctoritatem habendi proprios homines et defensatos intus et extra civitate Melficta et in Monte Solicola".

Hohenstauffen.[163] Aerial photography has revealed traces of a village in front of it which must have been of reasonable size under Frederick II since Monte Serico appears in the castles list as solely responsible for its own *domus*. It was, then, the most developed of the isolated castles in Basilicata fringing our area.[164]

On the Ionian coast the Castrum Turris Maris came to be of rather greater importance. In the Castles' list its upkeep was assigned to Turris Maris itself and four other small settlements. The port there, already functioning in the late 12th century, was developed by Frederick II and remained active under the early Angevins.[165] One of a number of saltworks along this coast was located here. It is recorded as owing 50 loads (*salme)* of salt to the crown in 1274, but is among the saltworks said to be under threat from pirates in the same year.[166]

ii. Population growth

The rise in the number of *comuni* is the main evidence for an increasing number of people. The population of Europe, already expanding by the 10th century, grew rapidly from the 10th through the 12th century. The reasons for this have been much discussed but are not yet clear. One factor must have been the continuing improvement in the climate with the onset of the so-called Medieval Warm Period after ca. 950 AD.[167] Conditions became warmer and wetter and therefore generally favourable to agriculture until the middle of the 13th century, when they began to turn colder again, though if anything, also wetter (sub-section 5.iv).

Another reason sometimes alleged for the population increase is an improvement in farming techniques which reduced the risk of famine. Famines there certainly were but they tended to be fairly localized.[168] The adoption of new farming practices is not easy to date and much of the evidence for farming comes from the 13th century, by which time the new practices were probably well established. Less wasteful crop rotation is a case in point. Certainly by the 9th century there is evidence of more generalized three-course crop rotation already sometimes practised by the Romans.[169] It has been calculated that on the royal *masserie* in Apulia in the late 13th century it was the practice to set aside a third of the available land for fallow, while of the rest, about two thirds were sown with spring wheat and the third with autumn barley.[170] This, practice was not always followed – we know of cases when it was not – but the principle of three-course rotation was probably widely recognized. The agronomist Pietro de' Crescenzi, writing in about 1300, remarked that land which needed to be fallowed every other year was not worth cultivating and thought that it was possible to reduce fallowing to once every three years or even more, provided that crops were rotated and green manuring practised.[171] That much green manuring was done is unlikely. Peasants may have grown more legumes than the royal *masserie*, but the Master of the Royal Masserie devoted only some 9.5% of his lands to beans (the only legumes he grew).[172] There is no record of planting fallow with legumes or vetch to restore nutrients, though Crescenzi recommended the practice.

It is probable that the land was ploughed more frequently, as it certainly was on monastic estates in the north,[173] but while knowledge of the technology for swing ploughs with mould boards, iron shares, coulters and wheels existed,[174] it was not necessarily employed since iron was expensive,[175] so the ploughing may not have been very effective. It could, however, be quicker. It is generally held that an improved horse collar was invented some time between the 6th and 9th centuries and its adoption meant that horses and mules could be more widely used as draft animals.[176] There was, however, considerable resistance to their use and it is likely that oxen remained the traction animals of choice in our area. Frederick II established a horse farm at Gravina which had become a large-scale operation by the Angevin period, but the records referring to *iumenta* (work horses) clearly mean baggage animals, while oxen were used for ploughing.[177] Nevertheless, for one reason or another, perhaps because of more frequent, rather than more efficient, ploughing, production seems to have improved. It is likely that a minimum return on wheat on the royal farms (*masserie*) was fourfold (Frederick expected tenfold) which is probably an improvement on earlier yields.[178] The ploughs must also have been sufficient to make clearing new land possible. Some at least of the new settlements must have been on newly cleared, or re-cleared land. Greater efficiency in agriculture must therefore be reckoned among the causes of the population expansion.

There was also perhaps less violence. That may be true at least of Southern Italy. The wars of the 10th century

163 Ciriello & Marchetta 2018, 427.
164 Marchetta *et al.* 2010-2011, 273-282.
165 Fonseca 2002, 42; Dalena 2002, 56.
166 Bertelli 2002c, 72.
167 Initially proposed by H.H. Lamb (1965).
168 Licinio 1989, 41, 44-45.
169 White 1970b, 281-289.
170 Licinio 1976, 101-103.
171 Olson 1944, 35-40.
172 Licinio 1976, 104.
173 Duby 1974, 192.
174 Chavarria & Lewitt 2004, 15-16.
175 Duby 1974, 11-30.
176 Langdon 1986, 8-20.
177 *Fond. Santomasi*, 1A1 no. 166. Instructions to retain 5 ox ploughs (*aratra boum*) and 5 oxen suitable for the ploughs. Many other references to ploughs and oxen e.g. 80, 724 ordering the *Magister Massariarum* to supply pigs, cows, useless for breeding, and oxen, useless for ploughing, for the royal kitchens.
178 Licinio 1976, 102-104. But see Cherubini 1981, 280 who estimates yields in Puglia at about 3.8:1 for wheat and 3.6:1 for barley.

between the Lombards and Byzantines and perhaps more seriously the civil wars among both peoples, followed by the Norman Conquest of the 11th century must have been appalling enough, but compared to the Lombard incursions of the 7th to 8th centuries and the Saracen incursions of the 9th and 10th centuries, they were probably less universally destructive. The Norman conquest did not really involve great numbers – it is argued that at the decisive Battle of Civitate in 1059 there were only some 300 of the victorious Normans.

Disease was also perhaps less of a problem: there are references to local epidemics but nothing on the scale of the great plagues of the 6th and 14th centuries and it is probable that the incidence of malaria was less in the 12th century than it had been earlier.[179]

iii. The Survey Areas

a. The Older Surveys

The *comuni* in the general area of our survey can be counted among the many new villages which emerged in this period, mostly situated on hill tops, particularly in Basilicata. Monte Serico, Torre Belmonte, and Garagnone all fall within the area of the Older Surveys, but what is known of the archaeology of these sites in this period adds little to the documentary record. The first two had considerable quantities of glazed ware of the 12th and 13th centuries. Garagnone, strangely, was not surveyed although Vinson passed very close to it. Only two sites for which no documentary evidence exists were recorded with medieval pottery on the Older Surveys, namely Site C5 where Chapman found some Medieval material including 9 ribbed handles and A9 where unspecified "Medieval wares" were reported.

b. Our Survey Area

On our own Survey three medieval sherds (2 strap handles and 1 fragment of glazed ware, Nos.2102, 2105, 2139) were found on Site 811. They hardly amount to evidence of habitation, but they clearly imply some frequentation of the Le Blè area in this period. Three medieval sherds were also found on Site 509 (2 strap handles and 1 fragment of glazed ware), but there they were associated with medieval chaffy tiles, so it is likely that there was a small and probably short-lived habitation there, presumably attached to the *casale* of San Felice. The site is located below the scarp only some 200m from the summit on which the medieval village of San Felice was founded, but the material was too concentrated to be considered slope-wash. One piece of medieval glazed ware and 18 of Medieval coarse ware, including Medieval strap handles, indicate frequentation on Site 145-9 situated beside the Bradano at the S end of our Survey Area. It is difficult to assess the function of the settlement at this time. If Idrîsî (see below 8, iii) is right that logs were floated down the Bradano, it could still have been a small river port, as it probably was in the Roman Imperial period (Chap. IX.14.i.*a*, and General Introduction).

For San Felice itself the evidence is much more abundant. Some 2200 medieval sherds were found on the site, including over 1000 medieval ribbed handles. The 64 catalogued pieces of plain and glazed wares (Nos.2096-2160) have been dated by P. Favia and V. Valenzano between the 12th and middle of the 14th centuries, and 3 plain lamps (Nos.1939, 1939a and 1040) to the 13th and beginning of the 14th centuries. The gold *taris* of William I, minted in 1154 AD, and a bronze coin of William II (1166–1189) (Nos.2022, 2023) confirm that the village was already functioning in the second half of the 12th century. There was also a large quantity of medieval "chaffy" roof tiles (*tegole vacuolate*) which define the area of the medieval settlement with remarkable precision.

A few sporadic sherds show frequentation of the S part of our Survey area on the right bank of the Basentello. There was a Medieval ribbed strap handle in a gully just north of the Bradano-Basentello confluence, a fragment of Medieval glazed ware on Site 120, and an Otranto type amphora (No.1499) on Site 124. They were probably brought from the castle site of Monte Irsi by peasants working in the fields; but a medieval chaffy tile found on Site 355 further to the N is more difficult to explain unless it came with other midden material to be scattered on the fields. A few other sherds show occasional use of the land on the E side of the river. They include a second Otranto type amphora (No.1498) found on Site 372. A strap handle on the villa Site 229 and a fragment of glazed ware on Site 361 (Vagnari) presumably came as agricultural scatter from San Felice.

The evidence from San Felice and the other sites near it, then, shows a reasonably substantial settlement on the plateau with two or three other very small sites fairly sparsely distributed round about.

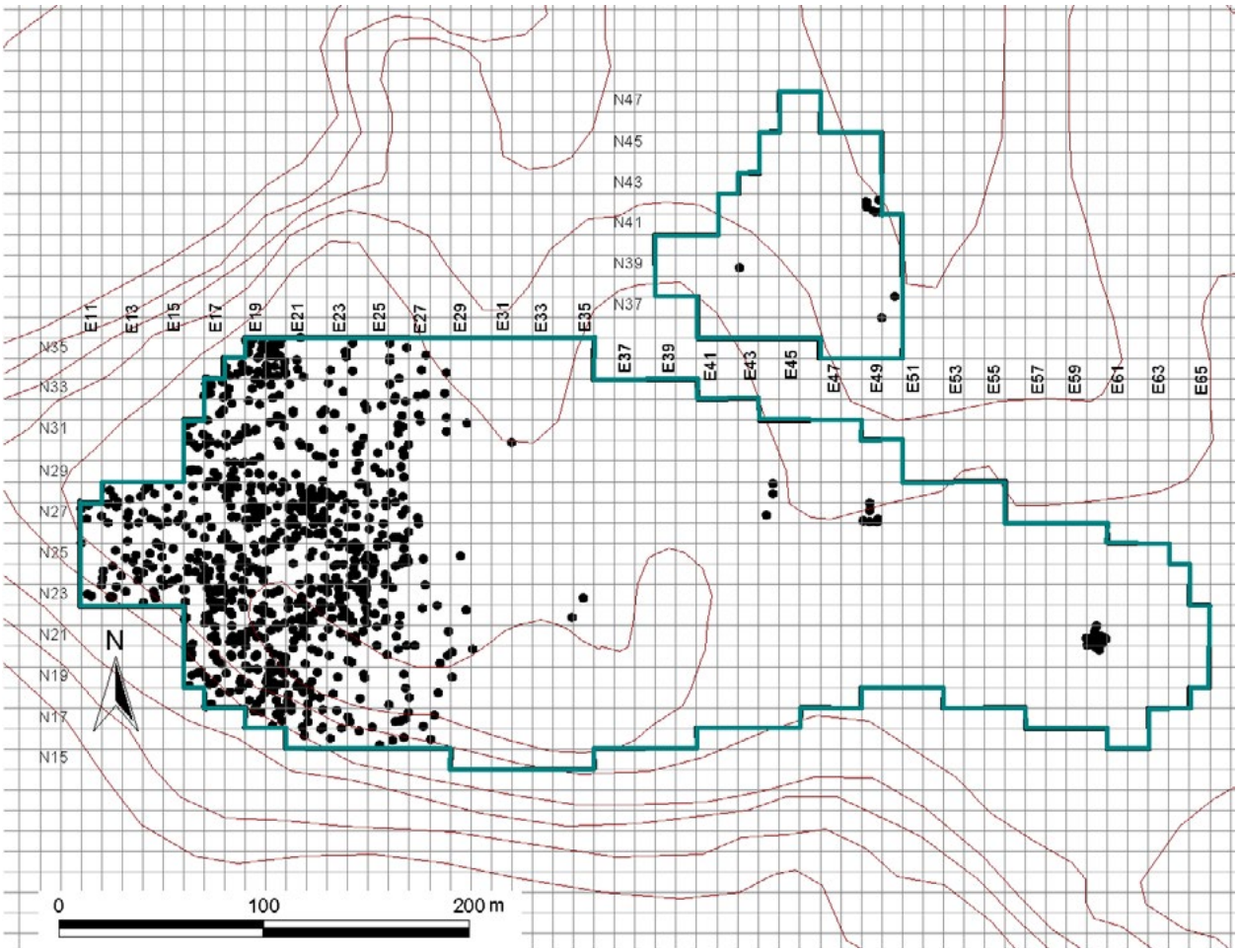
The documented small hilltop settlements in the vicinity were *comuni* and had castles or *domus*: only later were they qualified as *casalia.* It seems likely that by this stage San Felice had at least a chapel but there is little sign of it.

8. The Later Middle Ages

i. The Angevins. Population decline

Frederick II died in 1250 and the papacy, eager to ensure that Southern Italy and Sicily should be removed from

[179] Filangieri 1980, 208-209.



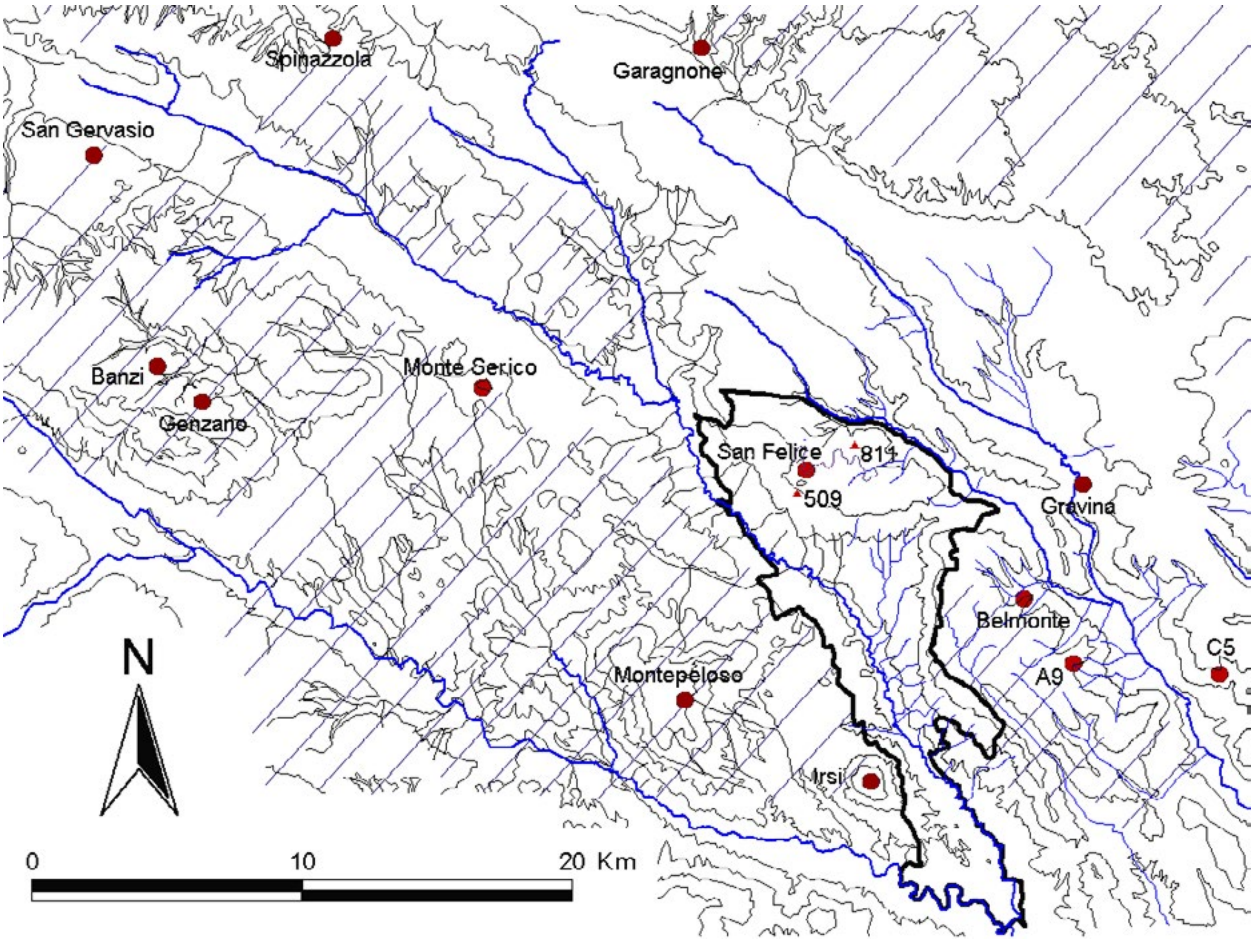
Plan XII-1. Distribution of *tegole vacuolate* on Site 223 San Felice.

the sphere of influence of the Holy Roman Empire in Germany and North Italy, somewhat reluctantly supported a bid by Charles of Anjou, younger brother of the king of France, to become king in the south. Charles seized the kingdom in 1266, defeated the last Hohenstauffen claimant in 1268 and established the Angevin dynasty with its capital at Naples, which was to last until 1442. It was challenged from the start, mainly by the royal family of Aragon which claimed legitimate succession to the Hohenstauffen, and from 1285 onwards, when the Aragonese seized the island of Sicily and separated it from the power of the Angevins, there was intermittent warfare, often very destructive, in South Italy, much exacerbated by internal struggles within the Angevin ruling house. Nevertheless, the early Angevins were able to build on the work of Frederick II and establish an efficient if oppressive government.

The Angevin government became progressively less powerful from the death of Charles I's grandson, Robert the Wise, in 1343. His granddaughter Giovanna I succeeded him but there were many challenges to her authority and consequent civil wars throughout her reign which lasted until 1382. These continued to erupt amid squabbles over the succession until in 1443 Alfonso of Aragon, after a somewhat long drawn-out campaign, entered Naples, bringing Southern Italy and Sicily together again under one rule.

One aspect of the Angevin government was a much fuller system of record keeping, including most notably the Chancery registers.[180] Among the innovations were taxation lists recording the taxes to be raised from the communities of South Italy (though not the basis on which they were assessed). Not all of them

[180] From the second half of the C13 to about 1330 these constitute a particularly rich archival source. As is well known, most of these were destroyed during the Second World War but not before many transcripts and allusions to them had been made which were used to reconstitute them as far as possible in a series edited by R. Filangieri, J. Mazzoleni and others. The project is on-going and so far provides much more information for the reigns of Charles I and Charles II of Anjou than for their successors, but it is an invaluable source. For *Gravina i*t can be supplemented by a series of transcripts of some 243 extracts commissioned by P. Calderoni-Martini and D. Nardone, preserved in the Fondazione Santomasi at Gravina. I have used both series. For brevity the published work edited by Filangieri *et al.* is referred to as *Reg. Ang*. with the published volume number. The unpublished transcripts are referred to as *Fond. Santomasi,* 1A1 with the document number. A brief catalogue of the latter by F. Raguso is in the fourth edition of Nardone 1941/ 1990, CXIII. There are some transcripts also from the Archives of the Royal Mint (*Fond. Santomasi*, *Zecca*) and others. [CMS]



Map XII-3. Sites of the 12th to 14th centuries on and near the areas of our Survey and the Older Surveys.

have survived the destruction of the archive in World War II, but a large number had been transcribed and published.[181] One outcome of the more efficient tax arrangements was to enable the new ruler to require money rather than labour, in other words to raise taxes for the upkeep and repair of the castes. They could still be specific, but they were more broadly based. Thus in 1280, Charles assessed 74 places for contributions to the repair of Melfi castle. The change was accompanied by a drastic reduction in the number of castles, particularly in Basilicata: Charles kept only 4 there but he relied heavily on his French nobles for further defences.

Most of the places in Frederick's Castles list reappear in the Angevin taxation lists but there is a slight drop: by the time of the earliest full tax list in 1276 there were about 15 fewer communities listed in Basilicata, most of the missing ones among the small settlements in the south, but the trend continued. From the late 13th century to the 15th century, the population fell. Already by the end of the 13th century Basilicata, was apparently so depopulated and so seriously impoverished that a special commission of enquiry was ordered to look into the problem in 1307.[182] Spinazzola was in such straits that its taxes to the king were remitted in that year.[183] The decline continued throughout the 14th century. Garagnone, Belmonte (Site A1), Irsi and Monte Serico (Site V13) were all still taxed as *comuni* under the Angevins in 1320 but were no longer listed in 1520. The *domus* of Monte Serico must have lasted into the 15th century for sherds of that date were found there, but it was destroyed by the end of the century.[184] Garagnone in the territory of Gravina was sacked by Charles of Anjou for rebelling against him. It recovered up to a point but is referred to thereafter only as a *casale*. Later there was an invasion from Hungary led by its king, Lewis the Great from 1345–1350. His arrival caused most of the remaining inhabitants of Garagnone to flee to Basilicata with all the goods in the *casale* belonging to the city of Gravina, including animals.[185] Some settlement presumably remained, for a tax record of 1348 gives an assessment of 11 *uncie*, 15

[181] Racioppi 1890, 565-582 (for 1276); Minieri-Riccio 1877, 177 (for 1320).

[182] Motta 1993, 108.
[183] Minieri-Riccio 1877, 177.
[184] Marchetta *et al.* 2010-2011, 276.
[185] Dominicus de Gravina, 91.

tari and 13 *grani* for it[186] but since this was roughly half what it was assessed in 1343 (23 *uncie* 25 *tari*, 1 *granus*) it must have been suffering. Thereafter it vanishes from the tax records. The document of 1482 which described Belmonte as ruined listed Garagnone also as among the holdings of Raimond and Francis Orsini and it appears in subsequent records as belonging to the *comune* of Gravina – and also as the focus of a conflict between Gravina and Altamura – but there is no indication that it was inhabited.[187]

Irsi probably also declined slowly, and largely in the 14th century. The wares associated with the castle there could not be closely dated but the material indicated that occupation "ended no later than ca. 1400 and quite possibly was over by 1350".[188] Belmonte presumably shared the same fate. Its administration was apparently transferred to Gravina by 1307 according to a lost document from the Angevin chancery,[189] but it remained in Basilicata for taxation purposes. In 1362 the bishop of Gravina referring to the church of San Donato there, along with three others on the outskirts of Gravina held by the Abbey of San Lorenzo at Aversa said that "these churches stood deserted, uncultivated, desolate, and lacking the divine worship and were reduced to stalls for animals and totally destroyed". He invoked a clause in an alleged earlier document whereby an earlier bishop had reserved the right to revoke the donation of them to San Lorenzo if the latter should leave them without provision for divine service. Using this clause as justification, he took over the churches, and ordered that they should be rebuilt, re-roofed and restored as places for divine service. He appropriated the revenues and produce from them for his own use, but claimed that in the last five years he had barely taken enough to cover expected income from one year "since successive wars pressed heavily on the said land of Gravina and in the whole realm especially in all of Apulia". The abbey successfully sued for the recovery of its churches, but it is unlikely that much was done for them. Clearly the countryside near Gravina was already in decline in the mid-14th century. Nardone suggests that the final demise of Belmonte was the result of an earthquake in 1456, but Aldridge reported nothing on the site to suggest that it lasted into the 15th century. The settlement had certainly gone by the late 15th century when a document of 1488 described it as the "ruined and uninhabited fief or castle of Belmonte sited within the territory of the said city of Gravina".[190] The ruined tower still visible on the site is said by Nardone to be the campanile of the church which was repaired and re-consecrated (as Santa Maria di Belmonte) and lasted until 1788 – though he admits that the remains consisting of a quadrangular fortified tower look more like those of a castle. Altojanni suffered in the same way: the excavators argue that it fell out of use as a military stronghold by the time of the Angevins when it was referred to as a *casale*. It was re-organized in the 14th century as an agricultural and pastoral centre but was destroyed after a fire at the end of the century and subsequently abandoned.[191] Meanwhile the taxes levied on the larger *comuni* (Gravina, Altamura) were greatly reduced.[192] Among the signs of a recession in them was the abandonment of the cave dwellings. There are still references in the documents to caves used for stalls, storage and sometimes for an olive press, but less to habitation.[193] though the rock-cut churches continued in use. The decline was greater in the rural areas where cave settlements were deserted but it also seems to have affected the cities.

The trends indicated round Gravina were matched elsewhere, often to an even greater degree. The number of taxable places in Calabria fell from 393 in 1273–1277 down to 245 in 1505 and in Basilicata from 148 to 97. On the Tavoliere about 24 out of 64 churches with habitation round them disappeared.[194] On the coast Turris Maris, transferred to the Terra d'Otranto was taxed, though not highly, under Charles I, but was unable to pay the tax of 1304. In the following years the tower remained as a lookout post against pirates, but the settlement died out.[195]

ii. Causes of the decline

The reasons for the decline were varied, and as usual there are many uncertainties as in most explanations of demographic rise and fall. A fundamental factor, however, must have been climatic deterioration. The Medieval Warm Period ended around the middle of the 13th century and was followed by the so-called Little Ice Age which lasted with various peaks and troughs into the 19th century. The first of the cold peaks is marked by the advance of the Alpine glaciers in ca. 1300–1320 AD. The same climatic conditions which in the Alps led to increased snowfall in the autumn and winter, and reduced melting in the spring and summer, are

[186] Tirelli 1956, 104.
[187] see Mondi medievali.net/Castelli Italiani/Puglia/Bari/Garagnone a cura di Tonio Brusa.
[188] D. Whitehouse in Cotton & Cherry 1971, 148. Calia (1998, 65-66) following Ianora (1901), reports the sack of Irsi during a quarrel between the Prior of Santa Maria of Montepeloso to which the church of Irsi belonged and the duke of Andria, Lord of Montepeloso, in 1370; but the documents in which it was recorded existed only in 18th century copies and have since disappeared. Recent archaeological work has confirmed the total destruction of Santa Maria Nuova in the late 14th century (Sogliani 2017, 301-302).
[189] Nardone 1935, in full p.18.
[190] Nardone 1935, in full p.20. Confirmation of the possession of the city of Gravina with the honour and title of duke and of various other places to Francis, heir of the previous duke, Raymond of Orsini.
[191] Osanna, Roubis & Sogliani 2007, 144.
[192] In 1306 Gravina paid 257 *uncie*, 15 *tari*: *Fond. Santomasi,* 1°1 137. Under Ladislas (1376/7-1414) the tax was 50 *uncie*: Tirelli 1956, 107.
[193] Dalena 1990, 21-38.
[194] Klapisch-Zuber 1973, 311-320.
[195] Fonseca 2002, 57.

also likely to have resulted in climatic instability in the Southern Mediterranean, with deluges of torrential rain at more-or-less any time of year. The effects can be seen in mountainous areas where the resulting geological erosion created a new phase of fluvial terraces in the river valleys.[196] In the Fossa Bradanica Boenzi's team has identified a phase of flood phenomena in the Bradano and Basento river systems which began ca. 1200/ 1250 AD and lasted until ca. 1550/ 1650 AD.[197] There is still much uncertainty about various aspects of this climatic change, including how mean seasonal temperatures in South Italy would have been affected, and would in turn have affected agricultural production, but it is likely that a prolonged period of heavy and unpredictable rainfall alone would have made agricultural output unpredictable, with consequent food shortages.

Conditions of variable rainfall would have been more suitable for stock-raising than for agriculture, and it can hardly be a coincidence that from the late 13th century onwards there are signs that land was being converted from arable to sheep rearing, contributing to depopulation, just as it had in the Hellenistic period. This certainly happened on Monte Serico which, in the 13th century, was producing grain and which, by the end of the 15th was one of the interim stations on the transhumance route from the mountains of Basilicata to the Tavoliere controlled by the *Dogana della mena delle pecore* (see below 8, iii, d). The change was doubtless a major factor in the disappearance of Monte Serico as a taxable *comune,* although plague and the Hungarians probably also played a part in its demise.

Another factor in the demographic decline is likely to have been the impact of war. Gravina accepted Charles of Anjou and remained loyal to him (as did Genzano) but most places in Basilicata did not,[198] and civil unrest led not only to fighting but often to deliberate destruction of rebel property as in the case of Garagnone. The discontent found a renewed focus when the so-called War of the Sicilian Vespers, which led to the Angevin loss of Sicily, broke out in 1285. Later there were other troubles, notably the Hungarian invasion under Louis the Great which brought Gravina under the control of the Hungarians for some five turbulent years (1345–1350).

Excessive taxation is also often cited as a reason for decline and certainly the Angevin chancery records imply high demands, although they do also show some attempt to lighten the burden of those worst hit as at Spinazzola and Garagnone (sub-section 8.i). The fiscal problems must, however, have been compounded by the commercial decline caused by the long drawn-out war over Sicily.

Disease was another major factor, above all the Black Death of 1348. The mortality caused by it is still a matter of debate, but it is likely that over the whole of Europe not less than one third of the population died of it. Its ravages were not, however, uniform. Most places were seriously affected but others escaped almost entirely. References to it in the Angevin kingdom are few but we know that the plague hit the kingdom in 1348,[199] and it is likely to have had an impact on our area. There were more localized outbreaks of it for the next 300 years. Malaria may also have increased: the disappearance of tax-paying settlements on the Gulf of Taranto is probably attributable to its ravages.

iii. The rural economy

Our knowledge of the economy of the Fossa Bradanica in the Middle Ages is heavily dependent on documentary sources but these are enough to give some idea of its nature. Probably the earliest reference is that of the Arab geographer Idrîsî who refers to Gravina in his Kitậb Rujậr (Book of Roger) as a "pretty town, popular, the territory of which is not extensive but fertile". but his information on distances is very inaccurate (he has 180 miles from Gravina to Venosa) so his facts are somewhat suspect. Montepeloso is also described as pretty and fertile, "covered with vines and trees"; and the Bradano is said to have fir trees on its bank which are cut and floated down river to the sea. [200] Later evidence mainly from the Angevin registers is more reliable and provides a fairly full picture of the rural economy of the area, particularly through the instructions given to the masters of the royal *masserie.*[201]

a. Cereals

The main cereal crops were wheat (*frumentum*) and barley. In 1268 the production of grain at Gravina was perhaps 15% of that of the whole Terra di Bari.[202] Of the two grains, wheat was more important – at Gravina about twice as much wheat was sown as barley.[203] This was not necessarily true of our whole area. In 1271 a number of

[196] Grove 2001.
[197] Boenzi *et al.* 2008, 305.
[198] *Reg. Ang.* 1, 313, no.8.

[199] A document of Giovanna I referring to the pestilence is partly reproduced in Filangieri 1980, 189. She says that it has reduced places to solitudes and made it more difficult to extract one ounce of money now than it was to collect ten before the plague.
[200] Bresc & Nef (eds.) 1999, 395, 396, 398.
[201] For a general study of these Licinio 1976, 73-111. There were royal *masserie* at San Nicola, Lavello, Gaudiano, San Gervasio, Canosa, Minervino, Monte Serico, Gravina and Altamura.
[202] Raguso & Agostino 1990, lxxvii, citing G. Coniglio, *Introduzione a Notizie storiche di Gravina di D Nardone,* ed. of 1979, viii-ix.
[203] In 1270 a schedule of what should be sown in the royal *masserie* of Basilicata and the Terra di Bari stipulated 48 *salme* of wheat, 20 of barley and 1 of beans at Gravina: *Reg. Ang.* III, 233, no.681. Later records of the Masseria of Gravina refer only to wheat and barley but in similar proportions.

witnesses to the price of wheat agreed that it was more plentiful in Gravina and Altamura than in other cities near Bari (sub-section 8.iii.*g)*. A record of 1269 shows wheat and barley in roughly equal quantities at San Gervasio and Monte Serico, though admittedly some of the barley was for forage.[204] The quality of the wheat was also higher in Gravina: in 1271 a *salma* of wheat was worth 12 *tari* (at 30 *tari* to the *uncia*)[205] whereas in 1281 (and there is little evidence of general price changes at the time) wheat from Montepeloso and Irsi sold at 4 *salme* per *uncia* (and that of Gaudiano, Spinazzola and Venosa for even less, but the king was not pleased at the low prices in the three last).[206] The records for the next centuries are less full than for the late 13th/ early 14th century, but a description of the area in 1507 after a final settlement of the Aragonese takeover refers to "muchos seminatorios y de herbaies".[207] Gravina remained important then for grain.

b. Equines and cattle

The pastures round Gravina were used for a variety of animals. Indeed Gravina became prominent for stock-raising and trading as early as the 13th century.

Most prominent in the records was the royal "razzia" or ranch set up by Frederick II, referred to above. There is no early record of horses for riding (usually *roncini*) in it, so Frederick presumably intended it for the lowlier *iumenta/ jumenta* or baggage animals. One document of 1279 refers to plentiful grass in the enclosure of Gravina, enough to feed the *iumenta*,[208] but orders the Master of the royal ranches to see that it is reserved for the court and not let out to animals belonging to private persons.[209] Later, from 1307 on there are more specific references to horses.[210] The registers show the ranch struggling in the early 14th century, though it still existed in the 1320s. It is not mentioned in the Spanish account of 1507.

Gravina was not the only place in our area to produce horses. There were royal ranches also at Spinazzola in 1271,[211] and Palazzo San Gervasio in 1281.[212]

Cows and oxen are recorded in the Angevin records for Gravina. The main cattle farmer was possibly the bishop who had 29 oxen and 10 cows seized from him in 1299 – a greater number of oxen than he would have wanted for his own ploughing needs. It suggests that he was breeding them for sale elsewhere.[213]

c. Forests

Other animals raised in the area were pigs and above all, sheep. Evidence for pigs at Gravina is mostly rather imprecise: we know that there were many on all the royal farms collectively but not what each farm contributed.[214] There were however, over 100 pigs at Gravina in 1308, for the Vicar of the crown was ordered to sell any in excess of that number.[215] Pigs imply forest and there are other references to forest and "selva" (uncultivated land). As we have seen, Frederick II was sufficiently attracted by that at Gravina to establish a hunting lodge with a royal "difesa" or reserve there,[216] and Charles I employed six foresters to guard it.[217] In 1281 he appointed a new guard of the forest with strict orders for its preservation including a prohibition on hunting red deer (*cervallos*), roe deer (*capriolos*) and fallow deer (*daynellos*) even outside the forest in April, May and June.[218] This was a formulaic document – similar documents were issued for Sicily and Irpinia – but that the two first were present round Gravina is indicated by the finds of the Superintendency dig on San Felice (see List of Sites for Site 223). Both species feature in the faunal analyses from Botromagno discussed in Chaps. VI and VII and in Michael MacKinnon's analysis of the fauna from Vagnari summarized in Chap. IX.14. ii.c. The fallow deer may also have been naturalized in the area since two bones of possible fallow deer were found in the late 2nd/ early 1st century BC settlement on Botromagno.[219] The venison was presumably sold locally – the king, in order to prevent competition, included, in his appointment of the guardian, the obligation to raise heavy fines from other vendors of deer meat or hides in Gravina.

[204] *Reg. Ang.*III, 233, no.681. *In massaria Sancti Gervasii ordei pro farragina salmas IX ordei sal XXXXI et frumenti sal LVI. Item in massaria Montis Silicule ordei pro farragina sal VIII, ordei sal XLII et frumenti sal L.* (In the massaria of San Gervasio barley for forage 9 salme, barley 41 salme and wheat 56 salme. Item, in the *masseria* of Monte Serico barley for forage 8 *salme*, barley 42 *salme* and wheat 50 *salme*").

[205] Raguso, D'Agostino & Galiani, 1997, 95 (document transcribed in full). A *salma* (load) was a variable measure but an average was perhaps 275 litres of husked unmilled grain. An unskilled labourer got around 6 *grani* (20 *grani* to the *tari* or 600 to the *uncia*) a day, a free mason 12-15 *grani*. 10000 large bricks supposedly cost 6 *tari*. C. Small 1989, 323-339.

[206] *Reg. Ang*. XXII, 141-2. no.179.

[207] *Libro facto de quello se è exeguito circha la restitutione facta per la capitulacione* (Arch Gen de Simancas) cited in Cortese 1930, 49.

[208] *Iumenta* are normally baggage animals. They need not be equine, but in the records of the royal ranches, work horses are usually implied. They could be used as draft animals or for transport.

[209] *Fond. Santomasi,* 1A1 no.18.

[210] Raguso *et al.* 1997, 107.

[211] *Reg. Ang.* III, no.134.

[212] *Syll. mem.* I, 197.

[213] *Fond. Santomasi*, 1A1 no.64.

[214] E.g. *Reg. Ang.* VII, 278, no.23. 1749 pigs on all the royal farms.

[215] *Fond. Santomasi,* 1A1, no.166.

[216] Nardone 1922, 70-75. Frederick was in *Gravina i*n 1227.

[217] *Reg. Ang.* VI, 62.

[218] *Fond. Santomasi,* 1A1, no.21.

[219] J. Watson in *Gravina I*, 94. Fallow deer are problematic since they are difficult to differentiate with certainty from small red deer. Bökönyi (1993, 282) refers to them at Roccagloriosa. They originated in Bulgaria but there must have been some somewhere in the Regno to inspire even a formulaic document.

Nevertheless, the reserve was probably better for hunting than for productive use. A record of 1310 mentions that the forest was worth 10 *uncie* a year to the lord of Gravina.[220] Since the rest of the revenues were assessed at around 190 *uncie* this does not suggest that the forest was very important. Moreover, when, in 1310, new ploughs and carts were needed for the royal farms at Gravina and San Gervasio, the wood for them came entirely from the latter.[221] That at Garagnone was perhaps more useful – it is described in the Spanish document of 1507 as having acorns to pasture pigs. There was forest at Belmonte: the inhabitants complained in 1301 that the men of Gravina were coming in to steal wood from it.[222]

d. Sheep

Records of sheep are surprisingly elusive. They had become important as early as the 12th century when the Norman kings tried to regulate the renting of pastures for transhumant flocks. Frederick II issued rather more comprehensive regulations in his great law code, the *Constitutions of Melfi* of 1231,[223] and by 1254 the *dogana* or customs duty on sheep for the whole Regno is said to have been 5200 *uncie*.[224] An inventory of the royal farms of the Terra di Bari in 1271 lists 10,399 sheep on them.[225] Certainly there were sheep at Gravina for there is a reference in a document of 1273 concerning a boundary dispute with Montepeloso to the "pond where the sheep are bathed before being sheared".[226] There were also sheep at Altamura which, by 1497, apparently had over 18,000 of them.[227]

The emergence of wool as the main export of South Italy had been more or less completed by 1447 when Alfonso the Magnanimous formally established the *Dogana della mena delle pecore* at Foggia on the Tavoliere. It raised a head tax on migrant sheep from both inside and outside of the Regno, maintained the *tratturi*, and supplied winter pasture to owners of transhumant flocks when they came down from the mountains. To this end its officials not only rented out land held by the crown but forced private landowners to rent their lands at a fixed (and reasonably moderate) sum to the Dogana, which then allocated the pastures to the shepherds.[228] Since not all the land was needed every year, some pastures were called in only occasionally by the Dogana and these included land in Gravina which was otherwise rented out for what its owner could get for local use.[229] It is not clear that sheep were of major importance in Gravina itself (they are mentioned in the description of 1507 but not very specifically), but the same document refers to much winter sheep pasture at Garagnone. Monte Serico became "usual extraordinary" pasture of the Dogana, i.e. an overflow acquired in the 15th century. Such pastures were often fairly high and were used for castrated and large animals which could withstand cold best. Monte Serico fed 140,424 sheep.

e. Olives and vines

Olives seem never to have been of great importance as a crop in this area. As we have seen, they were not widely cultivated in the Iron Age and Roman periods and they remained of little importance in the Middle Ages. They are not referred to in either the Angevin documents or in the Spanish description of Gravina, nor do they appear in an Angevin transcript of concessions of 1092 to the Bishop of Gravina which lists only wheat, barley, vines, money, quadrupeds and fruits of the garden (*ortus*).[230] Later, the holder of the fief of Aspro referred to one olive grove in his list of claims to holdings in the territory of Gravina in 1453,[231] but if olives were grown at all, the groves must have been on a small scale for the private use of the inhabitants of the *comune*.

Vines turn up a little oftener. Idrîsî, as we have seen attributes them to Montepeloso in the 12th century. The 1092 grant by the lord Umfrido to the Bishopric of Gravina mentions vines, and as early as 1210 the bishop of Gravina allowed his clergy to hold their vineyards free of the obligation to give him some of the must from those they held,[232] but vines in Gravina were clearly not flourishing under the Angevins. The documents concerning the royal *masserie* do not normally mention them. In 1275 Charles I forbade his Procurator of the Shores of Apulia to seize vineyards in Gravina and Altamura normally set aside for the use of the *massarius* but that does not imply that they were extensive.[233] In 1301 two vineyards attached to the domain were described as "very old and uncultivated"[234] and a deserted vineyard is also mentioned in an inventory of 1309. The Spanish account of 1507, however, records the vineyards as "fertilissimos". That this was not simply a stock remark is made clear by the omission of all mention of vines in the same account of Garagnone. Garagnone had vines earlier: a vineyard is mentioned in the gift by Henry VI to the Hospitallers in 1197,[235] and they featured in a boundary dispute between Gravina

[220] *Fond. Santomasi, Zecca* 8, no.680.
[221] *Fond. Santomasi,* 1A1, no.188.
[222] *Fond. Santomasi,* 1A1 no.107.
[223] *Constitutions* III, 55, published in Stürner (ed.) 1996, 424-426.
[224] For a brief overview and further bibliography, Marino 1988, 21-22.
[225] Spola 1972, 469-482.
[226] Cited Nardone 1922, 91.
[227] Mirizzi 1990, 51.
[228] Ryder 1976, 259-362. Alfonso's success was considerable – in 1445-6 there were 1019821 sheep on the Tavoliere.
[229] Amodio 1979, 55, 57.
[230] Ughelli 1717, 7, 115.
[231] *Fond. Santomasi, Regia Camera della Sommaria, Atti,* 1A1 11 Fasc. B 1463.
[232] Cordasco 1989, 103.
[233] *Reg. Ang.* 23, 25, no.119.
[234] *Fond. Santomasi, Zecca* 7.
[235] D'Agostino *et al.* 1995, 142.

and the Hospitallers in 1304,[236] but unsurprisingly they did not survive the abandonment of the settlement.

f. Fish: the Pantano

Fish were a somewhat unlikely and rarely satisfactory part of the Gravinese economy. Under the Normans a lake was created in the low-lying area of the Pantano below the Murge some 5km N of the town to hold fish.[237] By the late 13th century it was extremely unpopular, probably because it had become stagnant, malodorous and a perceived source of disease; partly, perhaps, because it was seen as a misuse of water. The men of Gravina in 1277 threw stones at the men of the Justiciar who went to divert water into it.[238] An enquiry was ordered but in 1277 the King decided that it should be stocked with 2000 eels and 2000 tench from the Capitanata. In 1301 Charles II gave Gravina in fief to a new vassal and had a valuation of it made. The Master procurator mentioned the "right of the *pantano*" (*ius pantani*) but said that it is not at present let, "nor is it thought that it can be let because, on account of the great dryness which it has suffered for the last 2 years, it is believed that there are no fish in it... but if it could be let it would be worth 4 *uncie*".[239] (A "pantano" should properly be a marsh or slough but in this case refers to the lake created by damming it). In 1306 the mayor of Gravina pleaded that it should be destroyed because it was causing disease, adding that no fish or anything else useful were nourished there. The people of Gravina had to wait until 1623 to get rid of it, however.

g. The fair of San Giorgio

Gravina was an important market centre. There is evidence of this from early in the Angevin period when in 1271 royal agents, commissioned to buy wheat to make sufficient ship's biscuit for 30 galleys at Bari, called merchants to Trani to inform them of the price of wheat. They were told that in Gravina and Altamura which had a greater supply than other neighbouring cities, the going price was 12 gold *tari*. The market hinted at here was regularized in 1294 when Charles II conceded that a general market in the place called San Giorgio where other markets of this sort used to be conducted, should be held each year to last for eight days, opening five days before the Feast of San Giorgio.[240] Alfonso I of Aragon renewed the licence in 1436.[241] The *Fiera de San Giorgio* remained a major centre, especially for horse trading, into the 20th century and is still a popular festival.

iv. The Survey Area

Medieval San Felice was of relatively short duration. The analysis of the pottery shows that it lasted into the 14th century and conceivably to the beginning of the 15th but no longer. Its disappearance is likely to have been either the result of clearance for sheep or of plague. These were general problems in Apulia but others at San Felice were perhaps merely local, arising from the new regime in the Abbey of Banzi, or from the extortion of the Angevin kings – in 1330 the lord of Gravina told the king that since they were being pressed by the royal officers to pay outstanding fiscal dues which, because of their poverty, they could not pay, the men of his lands of Gravina and Binetto were compelled to leave their property untilled.[242] Whatever the reason, San Felice was abandoned. Sites 811 and 509 are unlikely to have outlasted it and Site 145-9 probably also ended in or before the 15th century leaving our Survey Area to be exploited from Gravina.

In the 16th century *masserie* and *jazzi* (sheep farms) began to reappear in the countryside as the population in the Kingdom increased dramatically.[243] But that is beyond the scope of this study.

9. Conclusions

The archeological record of the early medieval period in South Italy is gradually improving but it is still thin. The pottery is less abundant and more difficult to identify than for earlier periods and the record on the ground is sparse, since dwellings continued to be roofed in thatch or turf or, increasingly, in cave settlements in ravines as at Gravina and Matera. Burials tend to be clustered on religious sites. Documentary evidence is also sparse. There are a few contemporary or at any rate relatively early accounts and several monastic cartularies from the great abbeys further N, but very little written material refers to South Italy except tangentially. There was seemingly a sharp decline in the rural population from the late 7th to the late 9th century: in the area of our Survey there was effectively no detectable settlement with the possible exception of Site 223 (San Felice).

[236] *Fond. Santomasi,* 1A1, no.109.

[237] Nardone (1922, 74-75) gives a full account. It had an area of 4km^2. It was said to be 1½ miles from the town (the 1507 document says 2 miles), where the winter waters were held back by a dam at the head of "the valley called 'La Gravina'": Amodio 1979, 37-38. The Torrente Gravina falls into a ravine about 7km N of Gravina and the lake would have run S from the dam in the area still called "Pantano", so it was in fact a little further than the reports suggest.

[238] *Fond. Santomasi,* 1A1, no.8.

[239] *Fond. Santomasi, Zecca* 7.

[240] *Fond. Santomasi,*1A1 no.48. Transcribed in full by Raguso (Raguso, D'Agostino & Galiani, 1997, 97-8).

[241] *Ibid,* 123 (in full in a transcript of a subsequent confirmation of 1494). Alfonso claimed to be king in Naples as well as Sicily from the death of Govanna II in 1435 and was widely accpted throughout Puglia and Calabria though he was unable to enter Naples until 1443.

[242] *Fond. Santomasi,* 1A1, no.234.

[243] It almost doubled between 1505 and 1545: Romano 1976, 10.

From the late 9th century onwards, there are signs of recovery. Larger centres revived and others were established. The most obvious development in our area was Gravina which by the mid-10th century was large enough to be designated as a bishopric and which grew under the Normans into a substantial commercial and administrative centre with a productive area of countryside round it. From it came both grain and animal stock including cattle, sheep and horses There was, however, very little settlement round it. On our Survey only one certain settlement was found, on the plateau of San Felice, and even it covered less than half the area of the previous IA settlement there. The material on it, however, shows that the inhabitants were living in roofed dwellings and using glazed pottery. That was not unusual, but it suggests that they enjoyed a standard of living somewhat above subsistence level. It is interesting, however, in that it is very badly documented in the written sources. It was presumably subsumed into Gravina under Frederick II and the Angevins for the purposes of levies and taxation.

A similar development was probably taking place elsewhere in Apulia. In the Terra di Bari a number of relatively large settlements had emerged, most of them documented earlier, though rather haphazardly, with some scattered smaller places. It may be conjectured that further archeological field work in rural areas will produce more instances of settlements like San Felice.

Basilicata was rather different with few towns of any size but a large number of villages. The Older Surveys included two examples at Monte Serico (Site V14) and Torre Belmonte (Site A1); and Monte Irsi, on the edge of our Survey area was another. It was rather larger, with scatter from it extending down the hill as far our Site 145-9. Land use in Basilicata was probably primarily for sheep as it certainly was later.

This expansion of population and settlement came to an end by the last decades of the 13th century. Some places disappeared thereafter, and others dwindled. At some time in the 14th century San Felice ceased to exist and for and appreciable period the whole area of our Survey was devoid of habitation. On the Older Surveys Torre Belmonte retained a church and Monte Serico is documented as a sheep station, but there is very little trace on them of settlement. Epidemics, notably the Black Death, and fighting perhaps partly explain the abandonment of the countryside but the main cause was probably clearance for sheep. The Aragonese rulers organized wool production on a large scale in the 15th century through the *Dogana della mena delle pecore* but the trend towards expanding it in Apulia and Basilicata was probably earlier. Agriculture continued, especially round Gravina, but the countryside was largely farmed from the larger towns and villages – a pattern which was to remain common until the development of larger *masserie* in the 16th/18th centuries and to a considerable degree thereafter. Well into the 20th century cultivators used mule carts to reach their land each day and it is likely that equine transport of some sort was used earlier to reach more distant locations: dwellings in the countryside were few and far between.

SECTION IV. LIST OF SITES

Preamble

- All Sites are identified by co-ordinates in UTM.
- Toponyms are also given where possible, and for what they are worth, but many denote ownership and may change very rapidly in this part of Italy, so their value is very dependent on the detail and date of the map used. For instance, the name of the Azienda Pilota Asciutta, one of our main landmarks, is recorded on the IGM map of 1956 and was still so called in 1998, but has now been forgotten: the people in the nearby farm did not even recognize the name in 2014.
- The term "field hut" does not imply a residential building and is used of small, possibly temporary shelters of any period. Similarly, the term "dwelling hut" is employed where there is evidence of domestic use but should not be taken on its own to imply buildings of any particular period.
- The presence of *pithoi* or *dolia* is taken to imply some sort of permanent use, since such large storage jars are unlikely to have been moved from one site to another, but it does not necessarily imply use at all seasons throughout the year.
- Similarly, if people on a site had fire-marked cooking pots, they were probably cooking and so living on the site, but not necessarily throughout the year. So-called cookpot fabric, however, does not invariably imply that the pot was used for cooking.
- Metres above sea level (masl) are given to the nearest 50m contour below. A plus sign indicates that they are significantly above this.
- Visibility refers to the ease of spotting sherds, and is on a scale of 1 (very poor) to 5 (excellent). Burnt stubble and fields ploughed and harrowed are normally rated 5. Areas with a visibility of less than 3 are rare in the Survey Area and were not normally investigated.
- The area given to a site refers to the main area of concentration of the material found on it, but some estimate of the further extent of the scatter is usually given. Obviously, all areas given are approximate.
- The density of sherds is the average number per square metre in the Area of concentration, the density of tile the average weight in grams per square metre.
- *Tegula* numbers (T1, T2 etc) are those assigned in the catalogue and on Figs. 53, 54 and 55; their dates, where given, are inferred from their shape.
- The term "Sherds found" refers to the quantities of sherds recorded in the initial count made in the field. All rims, handles and bases were kept but on most sites some wall sherds without diagnostic features were not further classified so that the count of sherds found is usually larger than the sum of the classified pieces. The number of classified sherds is given for each category and the numbers in the catalogue of the special pieces follow in parentheses. Exceptions are (1) the amphorae, all of which were given catalogue numbers and (2) the *dolia* and the tiles which were weighed rather than counted, although special pieces do have catalogue numbers. Most Roman fine wares were seen, classified and catalogued by Philip Kenrick but between 1996 and 2000 some pieces were recorded by John Hayes, without Special Piece numbers. His notes have been used in compiling this table.
- In the plans of gridded sites all grid squares are 10×10m unless otherwise stated. Within each square the location of symbols is random, determined by the GIS programme. Sherds are shown with one dot per sherd. Tiles and *dolium* fragments are, however, indicated by weight as indicated in the captions.

Abbreviations

The abbreviations used in this section of each Site entry appear below. For clarity and readability they are sometimes expanded in the Discussion sections.

ABT	African black-top
amph	amphora or amphorae
ARS	African red slip
ARS-Ck	African red slip cookpot
BA	Bronze Age
BG	black-gloss
ckpot	cookpot
dol	*dolium* or d*olia*
ES	Eastern sigillata
geom	geometric
geom.bichr	geometric bichrome.
geom.	mono geometric monochrome,
GG	grey-gloss
hm	hand-made (plain)
ITS	Italian terra sigillata
LRPW	Late Roman painted ware
Med	Medieval
Metap.skyp	Metapontine *skyphos*
Neo	Neolithic
R	Fred-figure
RRS	Regional red slipped
teg	*tegula* or *tegulae*
wm	wheel-made (plain)
WMP	wheel-made painted

Other abbreviations:

masl	metres above sea level;
MNI	minimum number of individuals
NISP	number of identified specimens
dec	decorated

Date codes

- Centuries are abbreviated with C followed by a numeral, e.g. C5 BC.

- Duration from one century to another is indicated by an en-dash, e.g. C5–C4 BC.
- A date in one or other of two or more centuries is indicated by a forward slash, e.g. C5/4 BC
- In the List of Sites, the date of a site is indicated by a series of codes which are intended to provide a quick reference to the appropriate chapter in the Diachronic Section. They are as follows:

BA	Bronze Age (Chap. IV)
E.Hel	Early Hellenistic (Chap. VIII)
EIA	Early Iron Age (Chap. V)
E.Imp	Early Imperial (Chap. IX)
E.Med	Early Medieval (Chap. XI)
Eneo	Eneolithic (Chap. III)
FBA	Final Bronze Age (Chap. V)
L.Ant	Late Antique (Chap. XI)
LBA	Late Bronze Age (Chap. IV)
L.Hel	Late Hellenistic (Chap. VIII)
LIA	Late Iron Age (Chap. VII)
L.Imp	Late Imperial (Chap. X)
MBA	Middle Bronze Age (Chap IV)
Med	Medieval (Chap. XII)
MIA	Middle Iron Age (Chap. VI)
M.Imp	Middle Imperial (Chap. IX)
Neo	Neolithic (Chap. II)
Pal	Palaeolithic (Chap. I)

Where the evidence for the occupation of a site is fairly clear date codes are shown in bold font. More problematic dates are given in regular font, so that e.g. on Site 114 "**E.Hel, L.Hel, E.Imp, Mid Imp,** L.Ant" implies that the site was occupied from the Early Hellenistic period through to the Middle Imperial period; that there was no evidence that it was inhabited in the Late Imperial period which is missing from the list; but that there was some rather doubtful evidence for its occupation in Late Antiquity. The subsequent discussion generally gives further grounds for the dating and nature of the site.

Some items in this List are classified by comparison with examples of the same type from other sites listed in the pottery catalogue. These are indicated by "cf.", e.g. under Site 114, "ARS-A 2 (cf. Nos.1035, 1036)". Items typed to a catalogued sherd from the same site are indicated by "+ ... sim." e.g. on Site 124 "ARS-A 12 (No.1036 +1 sim)" means that there is a second similar example of the type of No.1036 from the same site.

Tile weights are given in kilograms and are followed in parentheses by the weights of sub-classifications (*tegula*, *imbrex*, Laconian tile, combed tile etc) and any relevant Catalogue Nos. e.g. from Site 124 "**Tile:** 186kg much very fragmented (*teg* 37 [T49,85], *imbrex* 23.6 (Nos.2163, 2171), ridge tile 1.5)" indicates the total weight of tile – 186kg, the weight of *tegulae* – 37kg, with a reference in square brackets to the numbers of *tegula* profiles on Figs. 53-55, the weight of *imbrex* – 23.6kg with the Cat. Numbers of two published items, and the weight of ridge tile – 1.5kg.

The weight of unclassified tiles is always included in the total tile weight but not otherwise referred to (so the combined totals of the sub-categories rarely equal the total weight of tiles). In the above (rather extreme) example the weights of sub-categories add up to only 62.1kg with unclassified tile accounting for the balance of 123.9kg.

List

114. 613236/4508725, Basilicata, Masseria Lo Russo.
Fairly flat location, heavy silty soil, now a vineyard, S of the Masseria Lo Russo and some 20 metres above the Basentello river. Masl. 200 Visibility 4/5. Nearest water source: the river or a well. Area:900m^2 with scatter (mostly of sherds) extending to 15000m^2 esp. to S and W. Density sherds 0.06, tile 96.6.

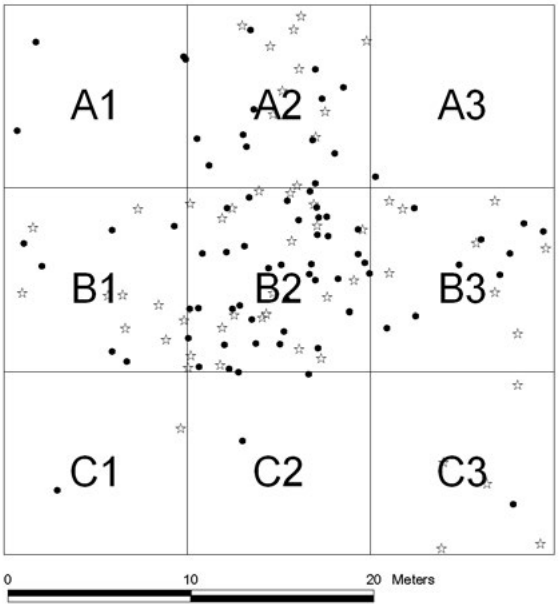
Sherds found: 295 incl **BG** 1 (No.896), **GG** 2 (No.952), **ITS** 3, **ARS** 5 incl **ARS-A** 2 (cf. Nos.1035, 1036), **LRPW** 1 (cf.No.1108), **RRS** 5, **lamp** 1 (No.1937), **plain** 250 (No.1234), **ckpot** 5 (No.1328), **loomweights** 5 (Nos.1958. 1971, 2001), **amph** 5 (Nos.1527, 1528, 1529, 1674, 1777). ***Dol*** 2.2kg. **Other finds** incl **plaster** 15g, **kiln material** 10g. **Tile**: 70kg (*teg* 50 [T54, 68; thumb print No.2206], *imbrex* 15); **stamped *teg*** (No.2224).

Date of Site: **E.Hel, L.Hel, E.Imp, M.Imp,** L.Ant.

Discussion. A grid 30×30m was laid out. The tile was largely concentrated in and immediately round the central square (B2) with the plaster, two loomweights and most of the sherds including the amphorae, though the ARS and *dolium* were in the wider scatter mostly to the W. The BG (datable to late C3/C2 BC) and GG suggest a beginning in the C3 or more probably C2 BC.



Photo List-1. Site 114 (under vines) and beyond it, Site 120 (under tomatoes) and the Masseria Lo Russo, looking S.



Plan List-1. Site 114. Distribution of tiles (each grey dot = 1kg) and sherds (each black dot = 1 sherd).

The ITS, ARS (C2/C3 AD) and most of the amphorae which were not precisely datable but can be generally assigned to the C1/C2 AD suggest that the site continued into the Early and Middle Empire, but two amphora sherds are later (No.1674 is late C3/C4, No.1777 C5–C7). One cookpot (No.1328) is also Late Antique. These later pieces are most probably scatter, perhaps from Site 134 just under 1km away. Site 114 was presumably a small residential building, C2 BC to mid-imperial. No *dolium* pieces were large enough to give shapes. Five loomweights and a lamp (C1–C2 AD) imply domestic use. Some kiln material indicates production on the site. The only waster found, presumably from it, was a loomweight (No.2001) but the kiln is likely to have been used for firing other objects as well. The tile No.2224 (which may or may not have been made in the kiln) is stamped with an inscription which we have argued can best be transcribed SCIPI[-In *Beyond Vagnari,*75 it is suggested that it refers to a member of the Scipio family active late in the C1 BC or early in the C1 AD. A second marked tile (No.2206) has a deliberate imprint of hobnails, probably a slave's mark.

The site is almost contiguous with Site 120, but Site 120 perhaps began and certainly finished earlier.

120. 613312/4508836, Basilicata, Masseria Lo Russo.

Fairly flat location, heavy silty soil, now a tomato field, S of the Masseria Lo Russo and some 20 metres above the Basentello river. Masl 200.Visibility 5. Nearest water source: the river or a well. Area:800m^2. Density sherds 0.57, tile 478.6.

Sherds found: 301 incl **geom mono** 1 (No.384), **BG** 7 (Nos.841, 907), **GG** 6 (No.923), **ES-B** 1, **ITS** 14 (Nos.1005, 1011, 1017-1019), **RRS/TW** 1 (No.1094), **plain** 197 (No.1254), **ckpot** 25 (No.1318), ***clibanus*** 1 (No.1380), **basin** 8, **amph** 5 (Nos.1530-1534). ***Dol*** 4.7kg. **Other finds** incl **lead sheeting**, **limestone blocks**. **Tile:** 228kg (*teg* 52 [T76], *imbrex* 63).

Date of Site: **LIA, E.Hel, L.Hel, E.Imp,** M.Imp.

Discussion. The dates of this site overlap with those of the closely adjacent Site 114, but it may have begun earlier, probably C6 BC (No.384) The BG indicates activity in the late C4–C3 (Nos.841, 907). One *clibanus* could be as late as 200 BC though it is unlikely that there was much activity on the site in the early C2 BC. But there was probably a settlement of some size here beginning in the late C2/C1 BC attested by the GG and ITS. It ended in the C1 AD – there is no ARS though the one cookpot sherd could be C3 AD. The site was gridded in squares 2m×2m but the grid was not quite finished. It shows a tile fall some 120 to 150m^2 to the W of the grid. The sherd scatter extended rather further E. The *dolia* were concentrated towards the middle of the site in an area of roughly 10×6m towards the edge of the tile fall. They were probably more numerous than the count suggests since the site was surveyed only in alternate squares and it seems likely that they were congregated in a yard. There may have been an expansion and ultimately a displacement from here to Site 114 in the C1/C2 AD. There were Italian amphorae in use on the site; they cannot be closely dated but they probably fall within the first two centuries AD. The evidence suggests a reasonably large domestic and productive building (2-3000m^2), presumably a villa, perhaps partially constructed in limestone blocks which must have been imported: there is no limestone in the vicinity. The tile profile is Late Roman and may be manuring scatter.

123. 615499/4506695, Basilicata, A small concentration of sherds and a little tile in a vegetable patch on a very slight slope above the Basentello with scatter extending into the vineyard behind. Masl 150+. Visibility 4. Nearest water source the river or a well. Area:5000m^2 with scatter extending about 150m. Density sherds 0.3, density of tile very thin.
Sherds found: 148 incl **BG** 10, **LRPW** 1, **plain** 120, **ckpot** 14. **Tile:** 7.5kg (*imbrex* 5.5, Floor tile 2).

Date of Site: **L.Hel,** L.Ant.

Discussion. Very little tile but a substantial number of sherds. Few were classifiable but the plain ware is likely to have been C2 BC and the BG late. Perhaps an outbuilding of Site 124 some 200m N. It was probably not roofed in tile or only partially so: 5kg is a fairly small quantity for a site of this size. The LRPW may be manuring scatter from Site 134 some 2.5km away but it is not unlikely that there was a very small Late Antique site here or at Site 120.

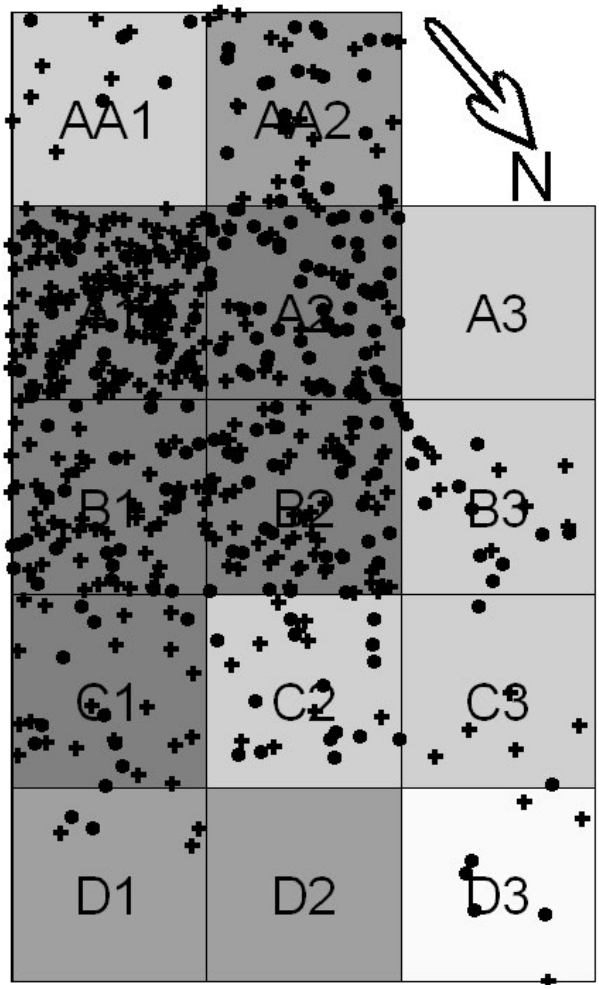
124. 615402/4506898, Basilicata, Visciglio. Ploughed field on a slope some 350m W of the Basentello on rather gravelly loam. Masl 150+. Visibility 5. Nearest water source the river or a well (a recent well is ca. 100m away). Area:1600m^2 with scatter extending over 2500m^2. Density sherds 0.52, tile 39.3.
Sherds found: 845 incl **WMP** 4 (Nos.609, 648), **BG** 15 (Nos.820, 850, 855), **GG** 12 (Nos.939,948), **ITS** 26 (Nos.1003, 1008, 1009, 1015, 1023 and cf. 992.), ES-B 1, **ARS** 62 incl ARS-A 12 (Nos.1029, 1030, 1031, 1036 +1 sim, 1040, 1041 + 1 sim, 1042 + 1 sim, and cf. 1033, 1037), ARS-CkA 2 (No.1065 and cf.1066), **LRPW** 1 (No.1102), **RRS** 19 (Nos.1069, 1073, 1083 TW, 1087, 1088 and cf. 1078), **plain** 533 incl 3 basin (Nos.1251, 1277), **ckpot** 75 (Nos.1320, 1362, 1363, 1395, 1398, 1399), ***clibanus*** 5 (Nos.1381 1388), **lamps** 6 (Nos.1930, 1931, 1934), **recent glazed** 40, **amph** 14 (Nos.1488, 1492, 1499, 1535-1538, 1665, 1679, 1721, 1805-1807, 1845). ***Dol*** 6.4kg (Nos.1869, 1897, 1900). **Other finds** incl **glass** 5 from C3/C2 BC or Roman vessels (No.2004) and 3 recent or modern, **millstone** 1 (hopper-rubber No.2036), **wall plaster, *opus signinum***. **Tile:** 186kg much very fragmented (*teg* 37 [T49,85], *imbrex* 23.6 (Nos.2163, 2172), ridge tile 1.5); **stamped *teg*** (No.2226).

Date of Site: **LIA**, **E.Hel, L.Hel**, **E.Imp, M.Imp,** L.Ant**,** recent.



Photo List-2. Sherding Site 124.

Discussion. The site was on the slope of the ridge between the Bradano and the Basentello on rather gravelly soil 50m above the floodplain of the Basentello. There is a stream and a perennial spring some 100m N of the main concentration. A grid of fourteen squares was laid out over the area of densest concentration but there was a considerable scatter beyond



Plan List-2. Distribution of *imbrices* (black dots) and *tegulae* (crosses) on Site 124. The background shows the density of unclassified tile over the grid. Each symbol = 1kg.

it, particularly to the W. The tile was not abundant, and it was extremely fragmented so that much of it could not be classified. The tile fall suggests, however, a modest building of at most 20×20m roofed with *tegulae* and *imbrices* in the SE part of the grid. A larger quantity of flat tile in A1 perhaps indicates a tile floor.

The earliest material on the site was a small group of WMP sherds in Squares B1 and C1 and a rather larger more dispersed group of BG. They date to the C5/C3 BC, probably the C4. There may well have been a hiatus in occupation in the C3 BC: none of the BG is datable to the late C3/ early C2. If so, however, the site was reoccupied after the mid-C2 BC as is shown by twelve GG pieces. A possible *unguentarium* rim probably belongs to this phase, as may the fragment of a hopper-rubber millstone of a type in use between the C4 and C1 BC.

The occupation continued into the C3 AD and most of the material on the site (ITS, ARS and RRS) dates to this Roman phase of occupation The ARS is nearly all A or A/D series, so before the C4 AD. There was also some thin-walled pottery of the C1 AD (something of a rarity on our survey), though it consisted only of wall sherds. There was one LRPW sherd from the edge of the site, probably manuring scatter from Site 134. The distribution of the fine wares and indeed of the pottery generally was not very revealing on this site.

The other material found with these fine wares was varied. There was a sizeable quantity of cookpot, mostly concentrated towards the S of the site, including two ARS cookpots and five *clibani*, an unusually large number for a fairly small site. There were six lamps, two (Nos.1930, 1931) datable to the C1 BC–C1 AD and another (No.1934) to the C1–C2 AD. The others were not P-numbered but were similarly dated by Hayes to C1–C2 AD. The plain ware rims which were analyzed were also compatible in date with the fine wares. Six fragments of glass were found, including a moulded bowl rim No.2004 (late C1 BC/ early C1 AD): Two others, both coloured, were identified by Hayes as Roman and a third, of clear glass, more precisely as of C1 AD.

There were 5kg of *dolium* but no obvious traces in the gridded area or outside it of a *dolium* yard. At least one *dolium* (No.1869) was early (Type 2 – probably pre-Roman). Two others (Nos.1897, 1900 – Type 3) were probably Roman imperial though the type had a long run, so they could have been earlier or later. It is worth noting, that the total weight included sherds from at least three different *dolia*.

An unusual number of amphora sherds was found, both within the grid and beyond it. There were six Italian amphorae two of which (Nos.1488 and 1492) date to the C1–C3 AD when the site was at its peak. Four others, less easily datable, were probably of the same period. These are likely to have been broken *in situ* since in all four cases there were several fragments apparently from the same pot. Two African amphorae, one of the late C3 to C4 from Tripoli (No.1665) and another of the C4/ C5 AD (No.1679) imply imports, probably of oil, somewhere in the area, (possibly Site 145-9 some 2.5km away) though they must date to a time after the domestic occupation of the site had finished. Not much can be said of two fragments of unclassified eastern amphorae other than that they illustrate the diversity of containers reaching this area. The Medieval piece (No.1499) must be scatter from another other site some distance away.

There was not much evidence of building other than the tile, but one chunk of *opus signinum* was found in the N of the site, and a few fragments of wall plaster were scattered across it. One of the tiles (No.2226) had part of an early imperial stamp with the termination of the name of the private owner of the tileworks, and probably of the estate, in the genitive case (ending *-eni*).

The material suggests then that this was a small site of the LIA, which was re-occupied after a hiatus in the early C2 and became, in the Late Republic/ Early Roman Empire, a reasonably substantial building, presumably a small villa, with inhabitants who had some pretensions to elegance in their lifestyle, of which the glass is perhaps the main indication, though the lamps also imply a higher standard of living than is common in our area. The cookpot and the lamps indicate domestic use.

There was a certain amount of recent material on the site, mostly C18/C19 glazed sherds and one C18 clay pipe. This probably came from a hut some 200m E shown on the 1865 map of which no trace now remains.

126. 613323/4507185, Basilicata.
Burnt wheat stubble field on top of a plateau, grey-brown friable soil. A seasonal stream close by but no other obvious water source. Masl. 200. Visibility 5. Area:320m^2 with wide scatter over 15000m^2. Density sherds 0.2, tile 6.25.

Sherds found: 66 incl **WMP** 6 (No.645), **BG** 4 (Nos.815, 817), **plain** 49 (No.1297), **ckpot** 4, **loomweight** 1 (No.1983), **amph** 1 (No.1666). ***Dol*** 1.2kg. **Other finds** incl **kiln waste** 6 pieces (No.2087). **Tile:** 2kg (*imbrex*/ Laconian 0.8 (No.2182)).

Date of Site: LIA.

Discussion. The BG is of the late C4/ early C3 BC and except for one amphora sherd (No.1666, mid-C3–C4 AD) which must be sporadic, the other material is compatible with this date. Markedly little tile, but the Laconian fragment suits the date of the rest of the material. The cookpot and loomweight suggest possible domestic use – perhaps a small hut with a kiln near it.

127. 613092/4507335, Basilicata.
Burnt wheat stubble field on gentle slope on ridge jutting out from Monte Irsi, grey-brown friable loam. Masl 250. Visibility 5. Area:600m^2 – small oval shaped concentration. Density sherds 0.073, tile 113.

Sherds found: 44 incl **BG** 2, **plain** 33 (No.1224), **ckpot** 1, **pot wasters** 2. ***Dol*** 0.5kg. **Other finds** incl a little **kiln waste**. **Tile:** 72kg (*imbrex*/ Laconian 35).

Date of Site: **E.Hel.**



Photo List-3. Sorting tile and sherding on Site 127.

Discussion. The clearest date is from one of the BG sherds, of the C3 BC, the date also of the datable plain sherd. The proportion of tile (probably all *imbrex* or Laconian) to sherds is high. Probably not a dwelling site but there is some evidence for a kiln here producing plain ware pottery.

132. 613665/4507173. Basilicata. Burnt wheat stubble field on moderate slope, silty clay. Recent hut at top of slope. Masl 200. Visibility 5. Area 45000m^2.
Sherds found: 18 incl **Late Hellenistic red slip** 1 (No.961), **plain** 5, **ckpot** 1, **recent** 7. **Tile:** 13.6kg (*teg* 0.4, *imbrex* 0.2).

Date of Site: L.Hel**, recent.**

Discussion. A small thin extensive scatter datable by the Late Hellenistic red slip sherd, much contaminated by scatter from the recent hut. Perhaps there was a C1 BC hut here.

134. 613323/4507771, Basilicata, Contrada Matinella.
Burnt wheat stubble field on a very gentle slope on a ridge extending E from Monte Irsi. Brown silty soil. Seasonal stream next the site but no other obvious water supply. Masl 200+. Visibility 5. Area:2 concentrations 1000m^2 and 5700m^2 gridded, with scatter extending over 40000m^2. Density sherds 1.3, tile 60.

Sherds found: 1504 incl **WMP** 1 (No.663), **Black on Buff** 1 (No.744), **BG** 2, **Hel relief dec** 1 (No.986), **ARS-D** 3 (cf. No.1064), **LRPW** 458 (Nos.1096 + 1 sim, 1106, 1108, 1117, 1118, 1125, 1129, 1135, 1145, 1150+ 2 sim, 1154, 1162, 1163, 1168, 1188, 1191), **plain** 1381 (Nos.1218, 1247) incl *mortarium* (No.1288), **ckpot** 153, (Nos.1317, 1343, 1356, 1376) incl basin 1, **loomweight** 1, **recent** 1, **amph** 7 (Nos.1493, 1503, 1504, 1539, 1540, 1808, 1846), **Early Med broad line** 1 (No.2089). ***Dol*** 1kg. **Other finds** incl **lithics** 17 (Nos.50. 51), **glass** 5 (No.2013), **kiln waste**, white **plaster**. **Tile:** 139kg (*teg* 23 [T21,89], *imbrex* 25).

Date of Site: LIA, E.Hel?, **L.Ant, E.Med.**

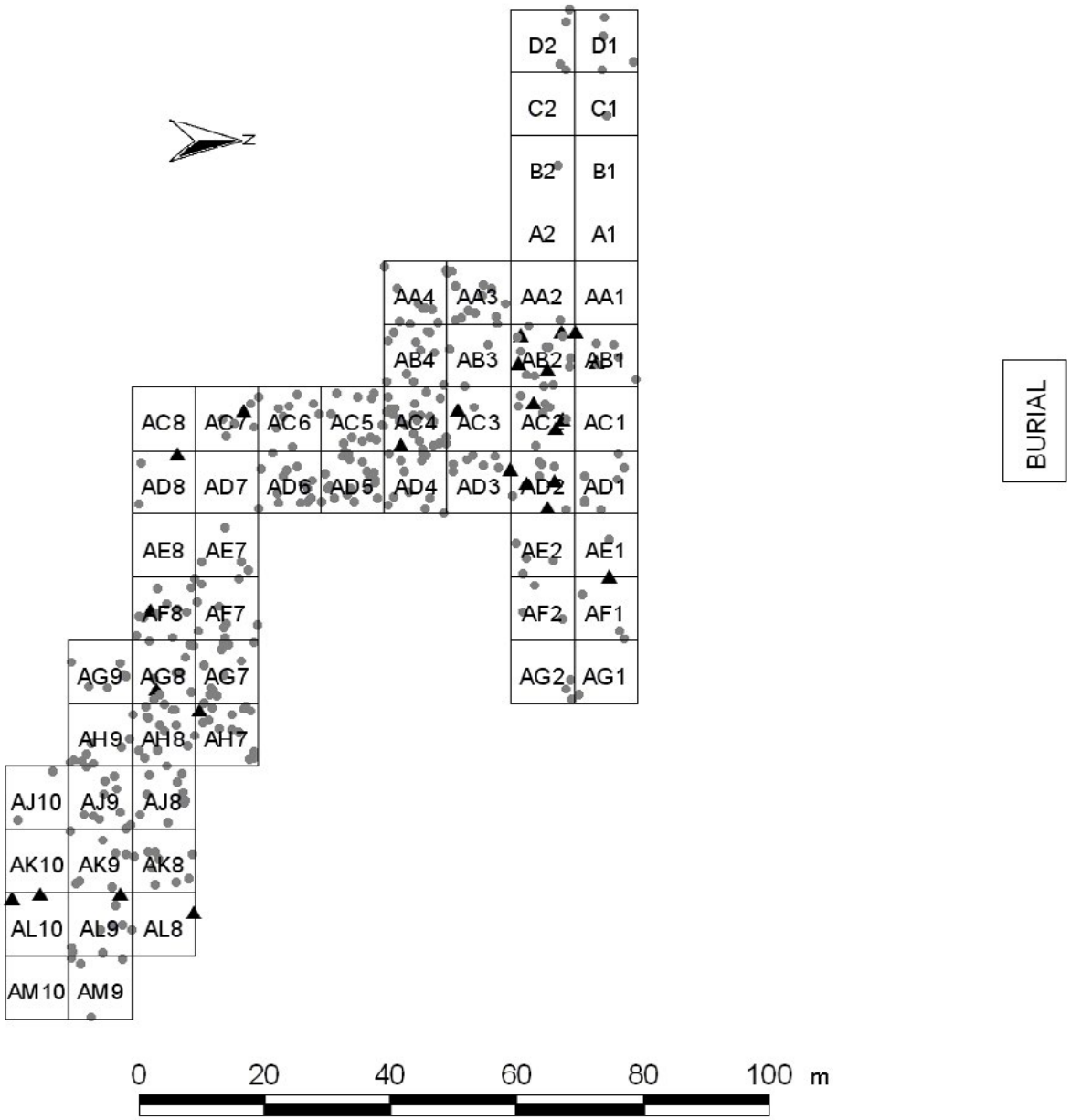


Photo List-4. Site 134. Monte Irsi in the background.

Discussion. This was the largest Late Antique site (apart from Vagnari) in the survey area. It consisted of a substantial concentration of sherds on a gently sloping promontory formed by two seasonal torrents just below the scarp of Monte Irsi and about 1.5km W of the Basentello. The area was too large to grid completely in the time available but a grid covering 5900m^2 was laid out over the densest area of concentration. The ungridded area to the centre was in a declivity where there were very few sherds or tile fragments.

There were only some 90kg in all within the grid, most of it so much abraded and fragmented as to be difficult to classify. The weights of classifiable *tegulae* and *imbrices* were roughly equal, suggesting that the buildings were roofed in Roman fashion with alternating *tegulae* and *imbrices*. There was an unexpectedly large quantity of *tegulae* in AB4, perhaps evidence for a tile floor there. Some *tegulae* had very late profiles e.g. T89 (Tiles Fig.3). The scatter suggests that there were three or four relatively modest buildings, one or two of which, to the E, had rough wall plaster. The sherds were distributed across the site, more or less in relation to the tile, though there was an odd accumulation to the W where there was very little tile, so perhaps from a thatched structure.

The earliest material on the site was LIA. A small number of low profile *tegulae* which are likely to be pre-Roman, (e.g. T21) together with three BG, one WMP (No.663), one black-on-buff (No.774) sherd, a fragment of Hellenistic relief ware from a large closed vessel (No.986) and probably a single loomweight are evidence of frequentation in the LIA or Hellenistic period, most likely the former, when the site of Monte Irsi on the hill above was still flourishing. One of the kilns may have belonged to this earlier period. This material, except for one BG sherd, all came from the general collection W of the grid, so the location of the earlier activity was slightly different from that of the main site.



Plan List-3. Site 134. Distribution of LRPW (each fragment = 1 grey dot) and kiln material (each black triangle = 100g).

The "fine ware" pottery in and round the grid was nearly all LRPW of which there was a considerable amount. This is datable to C5–C7 AD. Only three pieces of ARS were found, probably of the C6 AD. Clearly the site post-dated most ARS. It must have begun late in the C5 at the earliest. There was a large quantity of plain ware sherds (820) of which only 27 were identifiable rims, but these matched the date of the LRPW, as did the datable cookpot. The cookpot was largely found in the more easterly buildings. There was a little pottery, W of the westernmost tile fall, but it would seem likely that the W building was not for domestic use. There was no combed tile, common on many post-Roman sites. Since combed tile tends to go with the later phases of LRPW, its absence might suggest that this was a fairly short-lived site which came to an end sometime in the 6th century before combed tiles came into vogue. The fragment of a glass stemmed goblet No.2013 fits comfortably into the suggested time frame, though it could be later.

There was an unusual amount of tile kiln waste on the site. It was chiefly concentrated in four squares to the N, two to the SE, and, less markedly, two to the S. There were probably two kilns or perhaps three on the site.

A few amphora sherds were scattered across the site. Some of Italian production, including a flat based amphora (No.1493 – Early to Mid-imperial), must be sporadic, presumably from the Roman villa on Monte Irsi: there was no other Early Imperial material on the site.

A human burial was found some 80m N of the main site, very much disturbed and fragmented by the plough. It included one fairly large and six small fragments of cranium and a number of other bones similarly fragmented. There was a moderate quantity of possible building stone, and eight small fragments of flat tile or *tegula* in the same area, perhaps the remains of a tomb. More significantly, there was a fragment of a closed shape (jug or flask) in Early Medieval broad line ware (*a bande rosse*), No.2089, broadly datable between the C7 and C11 AD. It was loosely associated with the human remains on the surface. Its presence on a site otherwise characterized by LRPW needs some explanation. It might suggest that the

burial should be dated after the end of LRPW, perhaps in the later C7 AD, but that is unlikely given the absence of combed tiles on the site. More probably it was contemporary with a late phase of LRPW, and contained aromatic oil of holy water, imported from somewhere on the Apulian coastal fringe specifically for use in the funerary ritual. Such flasks, made in various wares, are frequently found in burials of the Lombard period (see the discussion in Chap. XI.5.v).



Photo List-5. Site 134. Investigating the burial.



Photo List-6. Site 134. Part of the burial scatter including the cranium.

An unusually large number of Lithics (17) was found on Site 134, mostly flakes – there was one core. This place was therefore frequented in the Neolithic period to which Nos.50 and 51 can be assigned: the rest are not really diagnostic. There was. however, no Neolithic pottery.

135. 614010/4507360, Basilicata, Contrada Matinella,
Burnt stubble field, silty clay soil, gentle slope. Top of the hill ploughed to bedrock. Seasonal stream to S. Masl 150+. Visibility 5. Area:1200m^2 (another small concentration of tile 100m^2 some 50m up the hill). Density of sherds 0.05, tile 5.4.

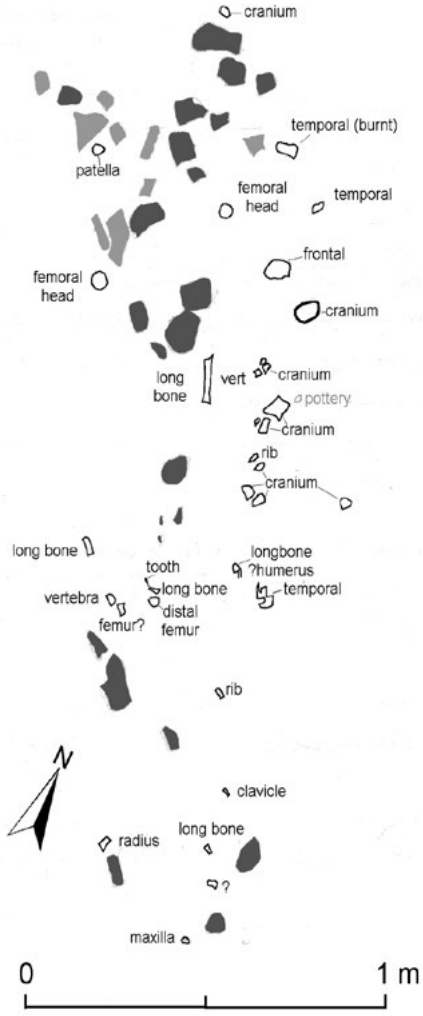
Sherds found: 64 incl **ARS** 4 (No.1033 + 1 sim), **plain** 54, **recent** 2. ***Dol*** 0.1kg. **Other finds** incl a little **kiln waste**. **Tile:** 6kg (*teg* 2 [T72]).

Date of Site: M.Imp.

Discussion. The ARS gives the date of the site and the other more loosely datable material is compatible with this. The absence of cookpot suggests that this was not a domestic site. It was probably a small field, perhaps thatched – there is not much tile – with kiln and storage area. It is surprisingly isolated but was probably connected with the nearest Roman site, Site 139, 500m away.



Photo List-7. Site 139. Investigating a stone pile.



Plan List-4. Site 134. The burial. Scale approximate. Stone shown in dark grey, *tegula* fragments in light grey

136. 614079/4507337, Basilicata, Contrada Matinella.
Burnt stubble field, silty clay soil. Top of a small hill. Seasonal stream to S. Masl 150+. Visibility 5. Area:900m^2 with wide scatter. Density sherds 0.04, tile 3.6.

Sherds found: 40 incl **BG** 7, ***unguentarium*** 1 (No.967), **plain** 25, **ckpot** 3. ***Dol*** 0.3kg. **Tile:** 3.6kg (*teg* 0.2, *imbrex* 0.7).

Date of Site LIA?, L.Hel.

Discussion. Two at least of the BG wall sherds are probably of the C4/C3 BC; the *unguentarium* is Late Hellenistic. There was

not much tile, so this was probably a small field hut, roofed in thatch or turf, of similar LIA date to other small sites in this area (see Chap. VII.8.ii). The *unguentarium* perhaps comes from a later burial.

137. 613871/4508018, Basilicata, Contrada Matinella.
Burnt stubble field, silty clay soil, moderate slope. Seasonal stream in small ravine at the bottom of the slope. 2 slightly separated concentrations. Small ruined field hut ca. 30m SE of the upper concentration, but no recent scatter on Site. Masl 200. Visibility 5. Area:1600m^2. Density sherds 0.03, tile 20.

Sherds found: 43 incl **BG** 3 (No.847), **plain** 35, **ckpot** 2, **amph** 1 (No.1541). ***Dol*** 0.4kg. **Tile:** 32kg (*imbrex*/ Laconian 15 (No.2178=Laconian)).

Date of Site: LIA.

Discussion. Date supplied by the BG. Some datable plain and some certain Laconian tiles are compatible. The amphora is Italic but not datable. Probably a small dwelling, roofed in tile.

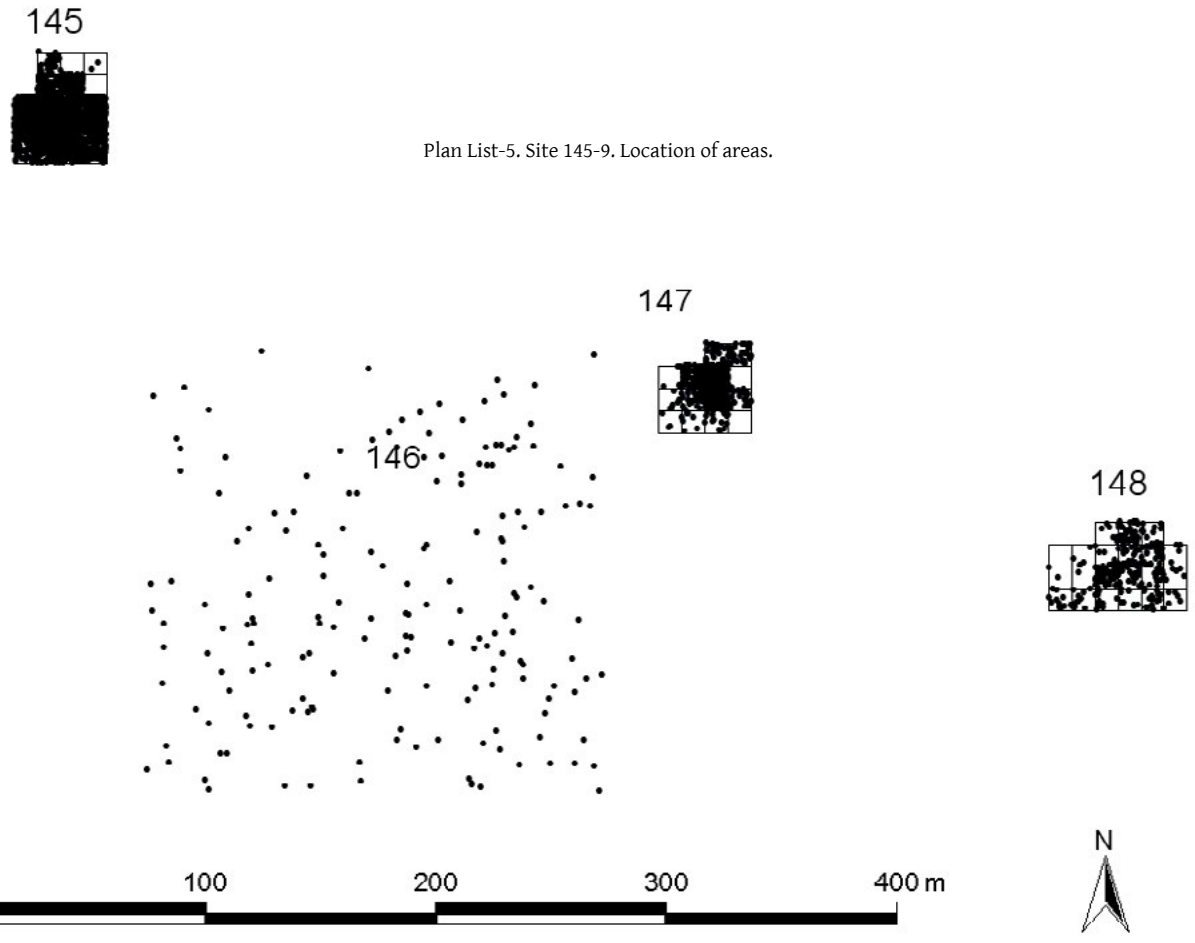
139. 614271/4507785, Basilicata, Contrada Matinella.
Stubble field, silty clay soil, flat area above a marked slope which drops to a seasonal stream. 2 stone piles and a short wall at top of slope contain larger débris from Site. Masl 150+. Visibility 4. Area:2700m^2 with scatter down slope. Density sherds 0.05, tile 35.7.

Sherds found: 148 incl **WMP** 2 (No.575), **BG** 3, **ARS** 17 incl ARS-A (No.1037), ARS-A/D (No.1047), ARS-C (Nos.1053, 1058 and cf. 1054), ARS-D 2, **RRS** 3 (No.1092), **TW** 2, **LRPW** 12, **plain** 85 (No.1258), **ckpot** 11, **amph** 1 (No.1847). **Other finds** incl some **kiln material** (110g), **plaster, marble revetment** (Numidian *giallo antico* No.2054), **ceramic weights** (Nos.1996, 1997), **millstone** 7 = 8.3kg (Nos.2040, 2041). **Tile:** 116.5kg (*teg* 30 [T34,86], *imbrex* 21.5, ridge tile, thick tile 15).

Date of Site: LIA, M.Imp, L.Imp, L.Ant.

Discussion. On the flat ground at the top of this Site but some 20m from the road were two piles of stone about 8m apart, one about 6m in diameter with a 2m section of wall across it, the other an oval ca. 9×5.5m. They were intensively investigated but it was not practical to grid them, and it was not clear to what extent they were made up of material cleared from the field. In the larger one were seven fragments of millstone, five of them *catilli* from rotary hand-mills: it seems that there may have been some specialized production of flour here, perhaps for a bakery. There were also fragments of plaster and one piece of marble revetment. The tile fall included some ridge tile, and both *tegula* and *imbrex* in equal enough quantities to suggest a standard roof of *tegulae* and *imbrices*. There was considerable additional tile fall for some distance down the slope of the hill (not weighed).

The earliest material on the site consists of a small number of very fragmentary BG and WMP sherds which cannot be dated precisely though one WMP (No.575) is probably C5 BC and one tile profile seems early. For the revived site the main dating evidence is ARS – C3 to C5 but predominantly C4 AD. The LRPW and some of the tile (notably No.85) must be C5 or later. There is no evidence that the site revived before the C3 AD and it probably did not outlast the C5. The amphora is not datable. The ceramic weights are not of any standard shape and



Plan List-5. Site 145-9. Location of areas.

No.1996 at least was probably not used on a loom: neither its date nor its function is clear. The building here was probably a fairly substantial Mid- to Late Roman farmhouse, prosperous enough for the owner to use some imported marble in it. The kiln cannot be dated but is likely to be of the same period.

140. 613321/4508231, Basilicata.
Burnt stubble field. Silty clay soil. On a perennial torrent some 900m from the Basentello. Masl 200. Visibility 5. Area:400m^2 with scatter over about 6000m^2. Density sherds 0.1, tile 2.2.

Sherds found: 64 incl **impasto** 4, **geom mono** 1 (No.383), **WMP** 1, BG 7, **plain** 48. ***Dol*** 1kg. **Other finds** incl **kiln waste** (100g), **quern** (micaceous schist). **Tile:** 12.8kg (*imbrex* 6.5).

Date of Site: EIA, LIA.

Discussion. The sherds imply a long period of frequentation but no very intensive use. There was no cookpot or other evidence of domestic use but the kiln waste, *dolium* and quern suggest a working area.

141. 613857/4508241, Basilicata, Contrada Matinella.
Burnt stubble field, silty clay soil, on the ridge above the floodplain of the Basentello. River some 500m W. Masl 150+. Visibility 5. Area:1500m^2 with scatter down towards the river. Density sherds 0.7, tile 1.

Sherds found: 112 incl **GG** 2 (No.954), **plain** 52, **ckpot** 1, **recent** 65. ***Dol*** 0.2kg. **Tile:** 1.5kg (*imbrex* 1).

Date of Site: L.Hel, recent.

Discussion. There was very little tile on the site and no identifiable *tegulae*. There was, however, a considerable quantity of pottery. Much of it was recent but it included some 23 ancient sherds and a fragment from a *dolium* wall. Two pieces of GG suggest a date in the C2 – mid-C1 BC. It seems most likely that this was a stone shelter (there is a considerable amount of stone in the vicinity). It can be linked most plausibly with the villa Site 114/120 just over 0.5km to the NNW. The overlay of more recent and modern pottery makes this site difficult to interpret, however. There was a farm to the S which may explain the recent pottery on the Site.

145-9. Coordinates given for each of the main areas, Basilicata, Masseria Bollettieri (La Vaccarecchia).
This was a group of five concentrations of tiles and sherds in an area of roughly 16ha. just above the steep bank down to the River Bradano which flows past it some 400-500m to the W. Stubble fields. Silty clay soil. Very gentle slope. Water source the river Bradano or wells (there is a good modern one 100m away and there was until recently a modern well about 350m NE with a structure connected with it, now bulldozed into the ravine). Masl 150. Visibility 4. The concentrations were originally given different Site numbers but there was enough overlap in material to make it desirable to consider them all together as one Site. The Site numbers originally allocated have, however, been retained to designate the different areas, and, since the distribution of the material is of interest, the finds on each area are listed separately in the catalogue with a summary for the site.

Area 145. 612850/4505470, Area:1800m^2 gridded but considerable scatter E and SE. Density sherds 0.19, tile: 120.

Sherds found: 343 incl **impasto** 3, **WMP** 1 (No.587), **BG** 4, **ITS** 11 (Nos.1007, 1016, 1024 all C1 AD), **ARS** 8 (all pre 300 AD) incl ARS-A 1 (cf. No.1041) ARS-CkA 1 (cf. No.1066), **RRS** 8 (No.1067), **LRPW** 5, **plain** 218 (No.1263) and incl 2 combed, **med** 1 strap-handle, **ckpot** 56 (No.1322, 1323, 1350, 1397), ***clibanus*** 2 (No.1387), **recent** 4, **lamp** 1 (No.1935), **loomweights** 3, basin 2, **amph** 9 (Nos.1523, 1542-1545, 1656, 1809, 1810, 1811). ***Dol*** 8kg (No.1888), **Other finds** incl l**ithics** 13, k**iln waste** 1.5kg, **plaster**. **Tile:** 226.5kg (*teg* 68.5 [T62,79], *imbrex* 29 [No.2167], thick tile 5 (thickness 6.5, 4.5, 4, 3, 1.5), ridge tile).

Area 146. 613100/4505360. A relatively thin scatter between Areas 145 and 147. Area:40000m^2 (4ha). Density sherds 0.0009, tile 0.44.

Sherds found: 36 incl **impasto** 3, **ARS** 5 incl ARS-C 3, ARS-D 1, **RRS** 1, **plain** 21, **ckpot** 1, **amph** 4 (Nos.1687, 1691, 1697, 1710). ***Dol*** 17kg. **Other finds** incl **millstone** 1.5kg, **iron slag** 0.2kg. **Tile:** 20.5kg (*teg* 3.5 [T75], *imbrex* 2, thick tile/ brick 3 (th. 5.4, 5, 4.7)).

Area 147. 613131/4505350. Area:900m^2 with considerable scatter all round. Density sherds 0.04, tile 71.

Sherds found: 115 incl ***unguentarium*** 1 (No.975), **ARS** 12 incl ARS-A/D 4 (Nos.1050 + 3 sim), ARS-D 7 (No.1056), **RRS** 1 (No.1091), **plain** 114 (Nos.1240, 1295+1 sim), **ckpot** 3 (Nos.1351, 1373, 1401), **med**. 5 incl strap-handle, waster 1 (large – ?tile), **loomweight** 1 (No.1952), **recent** 2, **amph** 11 (Nos.1546, 1547, 1667, 1680, 1698, 1709, 1711-1713, 1776, 1812). ***Dol*** 35.6kg (Nos.1887, 1906, 1907, 1909). **Other finds** incl **kiln material, plaster, millstone, building stone. Tile:** 119kg (*teg* 27.5 [T26], *imbrex* 17 (No.2171), drainage tile 300g, thick tile/ brick 11.8 (thickness 4, 4.5, 5.5, 6), tile waster (No.2083)).

Area 148. 613299/4505270. Area: 484 m^2 (gridded) with scatter all round. Density sherds 0.85, tile 5.6g.

Sherds found: 104 incl **RF** 1 (No.712), **BG** 4, **TW** 1, **ARS** 3, **RRS** 2, **plain** 56 incl hm plain 1 (No.1204), basin 1, **ckpot** 5, **amph** 6 (Nos.1668, 1681, 1699, 1722, 1813, 1848), **med**. 1 (No.2104), **recent** 7, **wasters** 5. ***Dol*** 1.1kg. **Other finds** incl **kiln material**, small piece of **copper or bronze** 1.5×1.5×2cm, small piece of **daub**, much **building stone**, **Tile**: 44.5kg (*teg* 3.5 [T81], Laconian 1 (No.2219), *imbrex* 18.5, thick tile/ brick 1kg); **stamped *teg*** (No.2220).

Area 149. 613313/4505111. A small concentration E of Area 148. It contained no pottery and has not been mapped.

Other finds kiln material 200g. **Tile:** 3.2kg (*teg*: 0.3, *imbrex* 0.4, thick tile 4.5kg (th 5.9cm)).

Summary totals for entire site: Sherds 598 incl **impasto** 3, **RF** 1, **WMP** 1, **BG** 8, ***unguentarium*** 1, **TW** 1, **ITS** 11, **ARS** 28, **RRS** 12, **LRPW** 5, **plain** 409, **ckpot** 65, ***clibanus*** 2, **lamp** 1, loomwt 4, basin 3, **amph** 30. ***Dol*** 44.1kg, **med** 1. **Other finds** incl **millstone, kiln, daub**. **Tile** (all 5 areas): 408.7kg (*teg* 103.3, *imbrex* 66.9, thick tile 20.3kg. tile wasters 6/7).

Date of entire Site: MIA?, **LIA,** E.Hel, **E.Imp, M.Imp, L.Imp**, **L.Ant.** E.Med.



Photo List-8. Site 145-9. Area 147.

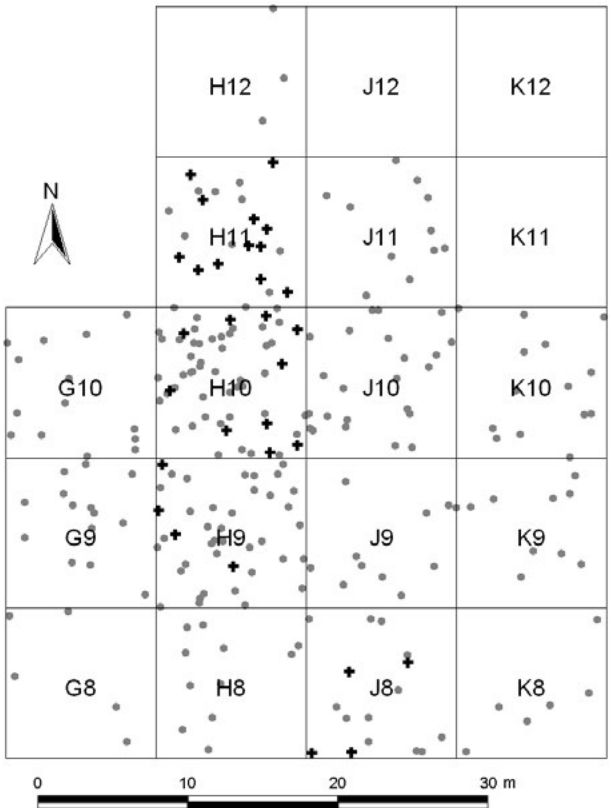


Photo List-9. Site 145-9. Area 148.

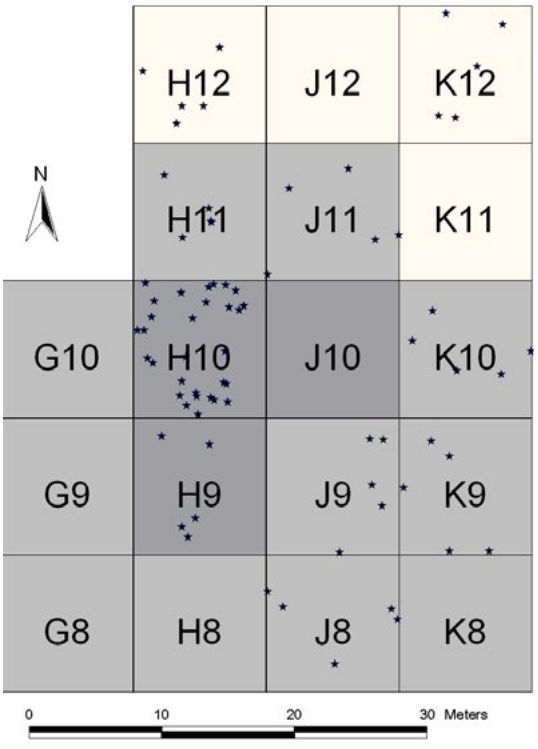
Discussion. The unclassified impasto sherds and one small hand-made basin, difficult to date (No.1204), suggest that the site may originate in the EIA or MIA. Otherwise the earliest material on the site included one sherd from an Apulian red-figure pot (No.712), probably from a volute krater. Since the normal use of such kraters in Peucetia was as grave goods, it may be presumed that there was at least one tomb in the vicinity. Other evidence for this period includes two BG salt-cellars, a further two sherds of BG and one of WMP from Area 148, all probably of the C4/C3 BC. There is only a small amount of Hellenistic material, including a red slipped sherd and perhaps the Laconian tile (No.2220) with impressed mark from Area 145. A C3 BC *unguentarium* on Area 147 (No.975) may come from another tomb. There are also one loomweight (No.1952) from Area 147 and 3, very much damaged, from Area 145. The first is almost certainly pre-Roman, the others, more nearly rectangular, may go with the Roman site. This pre-Roman material is very much dispersed. It may all come from tombs but there were more probably also small dwellings, at least on Area 145 where most of the material comes from and perhaps Area 147 indicated by the cookpot and a loomweight. Activity on the site resumed in the C1 AD. The most obvious evidence comes from the TW sherd on Area 148 and the ITS on Area 145, most of which is relatively late (C1 AD). The ARS from the same area was A ware and is likely to have been of the C1 and C2 AD, as are two cookpot sherds (Nos.1397 and 1350) although No.1350 is more loosely dated and may well be later. One Gaulish amphora (No.1656) was also C1 AD. One ARS rim, however, was more likely C3 as were some RRS including No.1067 and cookpot including No.1387. Three East Aegean amphora sherds (Nos.1809-1811) may also be of this date. There was a little Late Roman material on Area 145 including at least two late cookpots (Nos.1322 and 1323 – C5 AD) and five LRPW sherds together with some combed plain ware imply that this area continued to be frequented in some way into the Late Antique period. This must explain the remarkably large number of late amphora sherds found generally on the site (see below).

Area 145 had a substantial building, probably a bath suite, roofed with *imbrices* and *tegulae*. Some 5kg of fragments of thicker tiles (4 to 6cm) combined with a concentration of mortar in an area of up to 20m^2 indicate a hypocaust floor. A small quantity of burnt material was recorded as kiln waste but seems more likely to have come from the *praefurnium.*

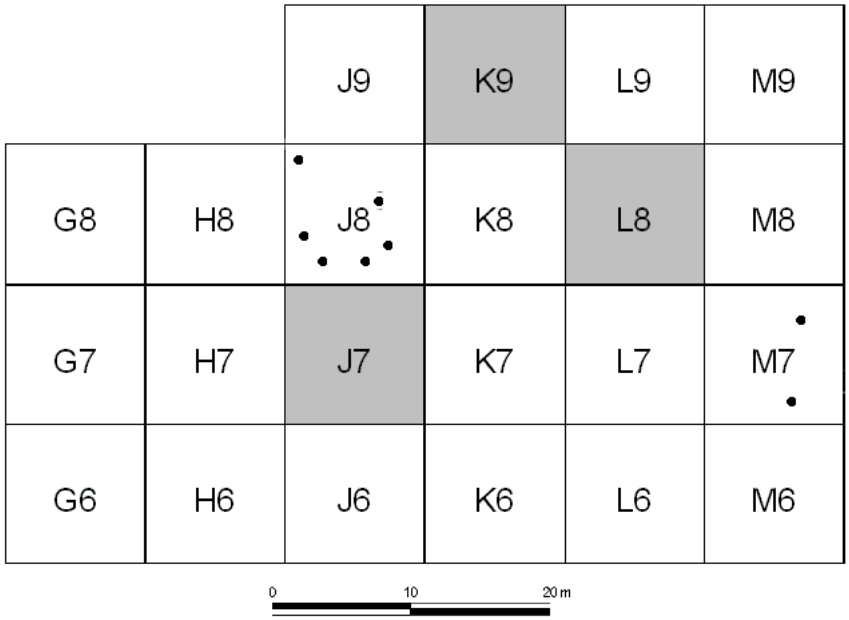
Just S of it, a concentration of 3kg of *dolium* sherds among the floor tiles, one at least (No.1888) with mortar adhering to it, implies that here was a *dolium* yard with *dolia* cemented into the floor. It was probably a covered area – the tile fall was heaviest where the *dolium* sherds were concentrated. Some of the tiles from here (squares H9, H10) also had traces of mortar adhering. Sherds from five Italian and three East Aegean amphorae were scattered through Area 145.



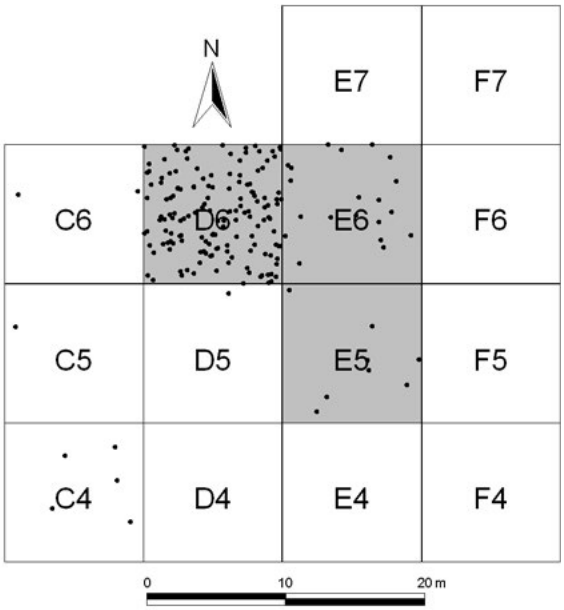
Plan List-6. Site 145-9. Area 145 showing the tile fall and kiln or furnace residue. Each grey dot = 1kg tile, each cross = 100g of furnace residue.



Plan List-7. Site 145-9. Area 145. Distribution of *dolium* sherds and tile. Each dot = 100g of *dolium*. Squares with over 15kg of tile are shown in dark grey, squares with 3–15kg in light grey.



Plan List-9. Site 145-9. Area 148. Distribution of *dolium* sherds. Each dot = 100g of *dolium*. Squares with over 15kg of tile are shown in dark grey, squares with 3–15kg in light grey.



Plan List-8. Site 145-9. Area 147 Distribution of *dolium* sherds and tile. Each dot = 100g of *dolium*. Squares with over 15kg tile shown in dark grey, squares with 3–15kg in light grey.

To the S of this there was a quantity of *imbrex*, implying another roofed building, perhaps of a slightly different date. The cookpot came from this general area so probably this southern building was residential. The fine wares were too few and too scattered to indicate very much.

The datable sherds from Area147 were Mid to Late Empire – ARS-C and -D ware (C3–C5 AD) and a Tripolitana III amphora, though a fragment of cookpot (No.1373) was probably C1. It seems that on this site as on others in this area there was a partial shift in occupation from Area 145 mainly to Area 147 in the C3.

In many respects the building on Area 147 was similar to that on Area 145. Both thick tiles and mortar were found on it but most of the thick tiles came from outside the gridded area, away from the main tile fall. They were perhaps scatter from the bath suite further N. The tile fall itself consisted of both *tegulae* and *imbrices* but many fewer *imbrices* in an area of some 20m^2. One profile (T26) is relatively early and emphasizes the multi-period nature of this site. In this context it perhaps shows the re-use of tiles from earlier buildings. We found a little plaster to the edge of the building and one probable segmental tile from a column just outside it. Given these and a certain quantity of cookpot (though less than on Area 145), and some fine ware, it can be assumed that a part of the building was residential. As on Area 145 the tile fall was next to a *dolium* yard. 15kg of *dolium* were concentrated in Square 6 with very little scatter outside it. The *dolia* were better conserved here: we found rims from at least 6 different vessels. The rims, mostly of type 6, are among the largest found in the survey (Nos.1887, 1906, 1907, 1909). The tile fall was not particularly heavy – 9.5kg in the square, with 34 in the adjacent square. Probably this yard was not roofed.

Again it can be argued that the dwelling ceased to be used at some time in the C4 AD, though evidence from the amphorae (see below) and a small number of plain ware sherds suggests that it continued to be frequented for other purposes at least as late as the C7. A medieval strap-handle and four possibly medieval plain ware sherds imply use of this area in the Middle Ages.

Area 148 was rather different. There was very little *tegula* here, and the fall of the tile suggests that there may have been at least two discrete buildings (in J2 and K9). *Imbrex* without *tegula* is more likely on a Hellenistic than on a Roman site. Moreover, some of the *imbrices* were recorded as shallow and were probably Laconian tiles. This suggests that at least one of the buildings was pre-Roman which would fit with the slight presence of BG and other Hellenistic material here. On the other hand, the ARS, some of the coarse ware, some of the small collection of *tegulae*, including T81, and many of the amphorae indicate activity in the Mid to Late Empire and beyond. There was a little *dolium* (1.5kg) within the grid but not in enough quantity to suggest a *dolium* yard here. Two medieval sherds of the C12–C14 AD, (Nos.2102, 2104) were found in addition to late amphorae. It is not clear that there was settlement on the site after the Late Empire, but it was certainly frequented.

There was extensive very thin scatter of archaeological material over the whole area. Between Areas 147 and 148 it was a little denser and was designated Area 146. The scatter here included five sherds of ARS-C and D ware, probably from Area 147, four late amphorae (C5 AD or later), a late *tegula* profile (T75), millstone, some thick tile and more interestingly some iron slag, indicating that there was a smithy here, though it was not presumably very large. There were also another 17kg of *dolium* on its E side towards Area 148.

The Roman tile was probably made on the site. There was enough kiln waste on Areas 147 and 148 (with more on 146 between them) to suggest a kiln. This must have been for tiles – there are several remarkably deformed wasters, mainly on Area 148, though No.2083 from Area 147 is the largest.

Unsurprisingly there was millstone on site though not in large quantities. It was restricted to Areas 146 and 147. The pieces were not well enough preserved to indicate the form of the mills. but they were probably only for domestic use.

Remarkable on this site generally were the numbers of amphora sherds found here, considerably greater than for any other site. There were at least 30 amphorae in all and some 62kg of *dolium*. The earliest of those which could be precisely dated was a Gaulish one from Narbonne (No.1656) of the C1 AD from Area 145 mentioned above. The rest were mostly African, scattered across areas 146, 147 and 148, including two Tripolitana III (Nos.1667, 1668), two of the C4–C5 AD (Nos.1680,1681), five *spatheia* of the C5/C6 (Nos.1687, 1691, 1697-9) and five of the late C6–early C7 AD (Nos.1709-1713). The Tripolitanian amphorae and *spatheia* are likely to have been used for oil, fish (*garum*), or olives though they could also contain wine (Disantarosa, Appendix note 348). But if they were being used for oil, as seems likely, the oil was for culinary purposes, not lighting. There was only one early imperial lamp identified anywhere on this site. There was a very slight indication of the medieval frequentation here: one amphora sherd (No.1523) could be from the C12 AD as could a fragment of green vitreous glazed ware (No.2104). and at least three pieces of combed plain ware may be medieval. They are likely however to be scatter from the medieval site on Monte Irsi.

There is little to suggest that this was a wealthy site, and indeed the scarcity of lamps implies that it was not. It is unlikely, therefore, to have been a villa. It was perhaps a *vicus* provided with storage facilities (*horrea*) where merchandise brought along the Bradano valley was reorganized to be distributed to the small farms of the hinterland and where local produce, presumably wine, was stored in *dolia* to be transported elsewhere, perhaps in re-used amphorae.

The scatter of Tripolitana 3 amphorae near the site indicates that amphorae continued to be imported into the Survey Area through this site into the Late Empire. It also suggests that, at least by the Late Empire, there was a fairly large amount to land attached to the site since the sherds were quite widely dispersed: other Tripolitana 3 sherds were found as sporadic occurrences on both Site 124 and Site 126. They are most likely to have come from Site 145-9, either as manuring scatter or perhaps re-used by those working in the fields as to carry water. This implies that the farmland of Site 145-9 stretched at least across the peninsula between the Bradano and Basentello rivers and probably southward to the confluence.

Thirteen lithics, all flakes and all probably Neolithic, found scattered across the site, suggest that the area was used a stopping point on the route that led to the Neoloithic settlements in the Materano. There was, however, no pottery: this was not a Neolithic settlement.

201. 610902/4515682, Puglia.
On a deep ploughed field, silty grey-brown loam. No obvious source of water but there is a modern well not far away so presumably spring water was available. Masl 200. Visibility 4. Area:2000m^2 (no marked conc).

Sherds found: 61 incl **impasto** 3, **ARS** 1 (cf. No.1050), **LRPW** 1, **plain** 55 (No.1220) incl basin 1, **amph** 1 (No.1444). **Tile:** 15kg (*teg* 0.5 [T33] *imbrex* 2.5).

Date of Site: L.Imp, L.Ant and sporadic.

Discussion. The impasto, one amphora sherd C4–early C2 BC (No.1444) and one early tile profile (T33) suggest frequentation before the Roman period. The impasto must be earlier than the amphora but is not datable. The rest of the material is more probably Late Roman – Late Antique, dated by the ARS (C3–C4 AD), the LRPW, and one plain ware sherd (No.1220) C4–C6 AD. The tile is enough to suggest at least a small shed here. It may be near a former crossing of the river: it is almost on the modern Gravina-Irsina road on the edge of the floodplain.

204. 610968/4518626, Puglia. Masseria Recupa di Scardinale, Stubble field, grey-brown silty soil, on a gentle slope W of the Masseria. An abundant spring 450m NE, near the present Masseria. was probably the main source of water but there was possibly also a well (a modern one is some 160m NE). Masl 400. Visibility 4/5. Area:900m^2 with wide scatter over 30,000m^2. Density sherds 0.03, tile 1.1.
Sherds found: 40 incl **LRPW** 3 (No.1173), red slip 1, **plain** 25, **recent** 3, **amph** 2 (Nos.1462, 1784), **loomweight** 1. ***Dol*** 1kg. **Tile:** 14.5kg (*teg* 4 [T40], *imbrex* 5).

Date of Site: L.Ant.

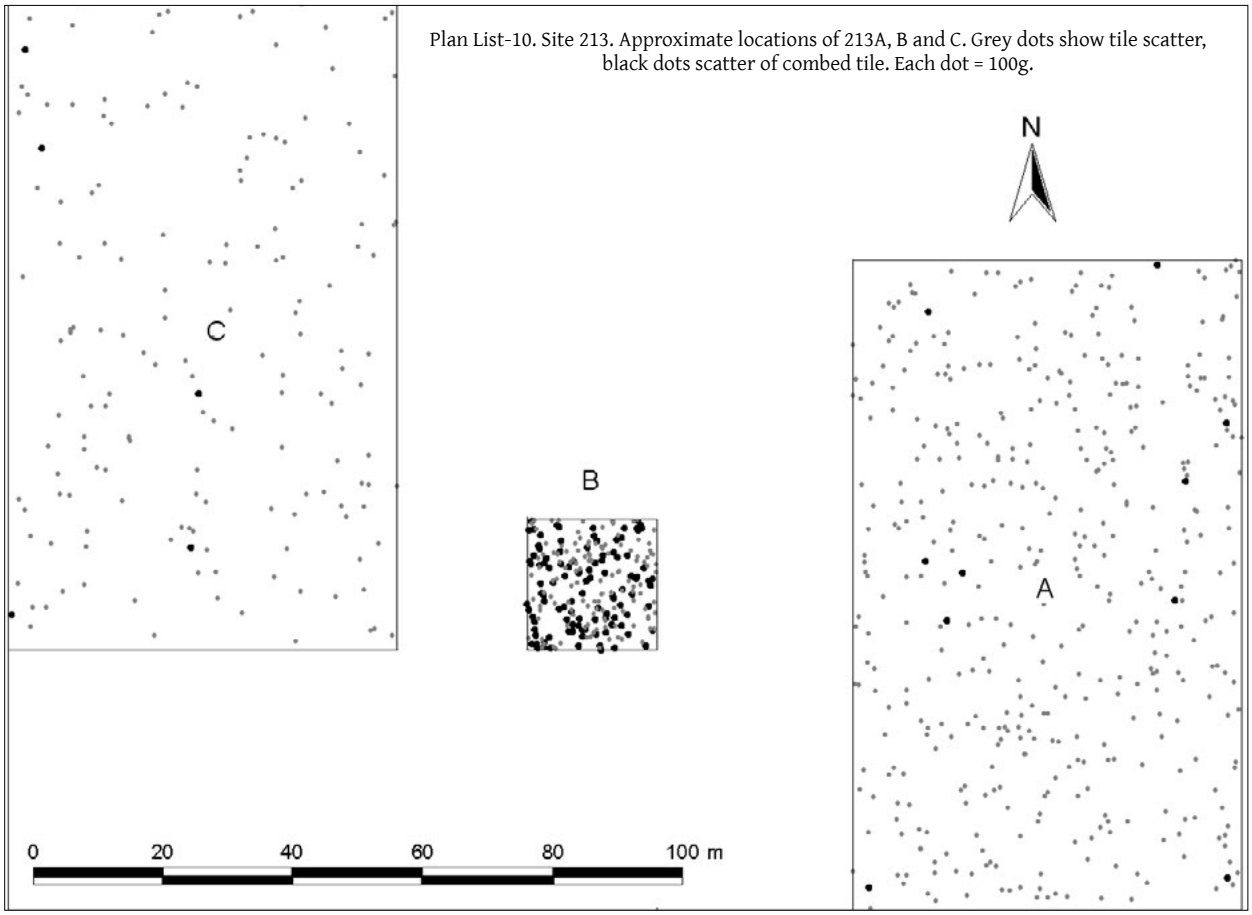
Discussion. Too much pottery to be sporadic. The Lamboglia 2 wine amphora sherd (No.1462), is of the C2/C1 BC, as may be the (unusual) conical loomweight and a tile profile (T40). These pieces are perhaps scatter from the edge of Site 213x some 250m E: there are no fine wares of this date. The LR 2 amphora (No.1784, C5–C6 AD) and the LRPW are Late Antique. In this later phase, this is one of several small Late Antique sites (204, 207, 211, 212, 214, 222) linked to Site 213, presumably all working areas yielding a small number of sherds and not much tile.

207. 611435/4518919, Puglia, Masseria Recupa di Scardinale.
Stubble field, sandy-clay silt, gentle slope. Spring of the Recupa on W side. Masl 400+. Visibility 4. Area:1800m^2 with wide but very thin scatter. Density sherds 0.2, tiles 0.9.

Sherds found: 44 incl **LRPW** 2 (No.1174), **plain** 49, **amph** 1 (No.1548), **recent** 1. **Other finds** incl **lithics** 8, **millstone** 2 ca. 150g, **limestone** slabs. **Tile:** 3.7kg (*teg* 0.25, *imbrex* 0.1, thick tile 2kg th. 3cm).

Date of Site: L.Ant.

Discussion. Too much pottery to be sporadic but little is datable. The limestone slabs are not local so must have been imported. The LRPW suggests that this is one of several small Late Antique sites (204, 207, 211, 212, 214, 222) presumably working areas linked to Site 213 with a small number of sherds and not much tile. The amphora is Italian and not dated. 8 chert flakes indicate some Upper Paleolithic or Early Neolithic frequentation.



Plan List-10. Site 213. Approximate locations of 213A, B and C. Grey dots show tile scatter, black dots scatter of combed tile. Each dot = 100g.

210. 611800/4518600, Puglia, Masseria Recupa di Scardinale. Fairly thick stubble field, sandy silt soil, moderate slope. Spring some 700m NW at the Recupa – the site must have been a little below the spring line. Masl 400. Visibility 3.5/4. Area:200m^2. Density sherds 0.01.

Sherds found: 44 incl **Neo impressed** 17 (Nos.79, 95, 158 -160, 162, 206), **Neo figulina** 3, **recent** 7. **Other finds** incl **lithics** 7 (No.75), **daub**, **shell**.

Date of Site: Neo.

Discussion. The dates assignable to the Neolithic pieces range from the late M7/ early M6 to the later M5, making it one of the earliest sites in the Area. Lithic 75 is probably. Mesolithic. There were other lithics including cores in this general area spreading along the steep side of the San Felice ridge.

211. 611086/4518902, Puglia, Masseria Recupa di Scardinale, Stubble field, sandy silt soil, gentle slope. Spring just to the E. Masl 400+. Visibility 4. Area:500m^2. Density sherds 0.05, tile 9.6.

Sherds found: 25 incl **LRPW** 2, **plain** 17, **ckpot** 1 (No.1315), **amph** 3 (Nos.1555, 1684, 1814). **Other finds** incl **limestone** slab. **Tile:** 4.8kg (*teg* 1 [T15,90], *imbrex* 0.8).

Date of Site: L.Ant.

Discussion. A small area of concentration at the spring above Site 213 with which it was probably connected. Datable by the LRPW, one late amphora, (a *spatheion*, C5 AD, No.1684) and one cookpot though this could be earlier. One *tegula* profile (T15) is perhaps L.Ant; a second (T90) is Late Roman. This is one of several small Late Antique sites (204, 207, 211, 212, 214, 222) presumably working areas linked to Site 213 with a small number of sherds and not much tile.

212. 609673/4518960, Puglia, Masseria Pescarella. Ploughed field, clay loam soil, gentle to moderate slope, at a spring just W of a ruinous Jazzo. Masl 400. Visibility 4/5. Area: ca. 900m^2. Thin scatter of ancient pottery and tile, much contaminated by material from the Jazzo.

Sherds found: 73 incl **LRPW** 2, **plain** 50, **ckpot** 6, **amph** 1 (No.1692). **Tile:** approx. 25kg (*teg* 0.5) plus much recent *imbrex*.

Date of Site: L.Ant. recent.

Discussion. A small concentration 1.3km W of Site 213, with which it may have been connected. This is one of several small Late Antique sites (204, 207, 211, 212, 214, 222), datable in this case by the LRPW and a *spatheion* 3 amphora sherd, presumably working areas linked to Site 213 with a small number of sherds and not much tile.

213. 610964/4518737, Puglia, Masseria Recupa di Scardinale. Stubble field, on very sandy, silty loam, on a gentle to moderate slope. Spring 200m E on same contour. Masl 400+. Visibility 4. Area:3 discrete concentrations of 6000m^2 (213a), 450m^2 (213b) and 1600m^2 (213c) with very thin scatter between and around them over ca. 15000m^2. Max density sherds 0.7, tile 16.

Sherds found: 303 (13A:118, 13B:28, 13C:109) incl **impasto** 5, **WMP** 2, **ARS** 20 incl ARS-D 5 (Nos.1057, 1061, cf. 1050× 2 and 1058), **RRS** 1, **LRPW** 46 (Nos.1105, 1116, 1151, 1156, 1170, 1176), **plain** 184 (No.1248) incl 6 combed (No.1276), **ckpot** 10, **amph** 14 (Nos.1549. 1561, 1562, 1677, 1678, 1686, 1700, 1714, 1724, 1725, 1726, 1729, 1730, 1815). ***Dol*** rim 0.47kg (No.1917). **Other finds** include **lithics** 5, **millstone** frag. 1, **limestone** facing 3.5kg. **Tile:** 121kg (*teg* 17 [T41,73], *imbrex* 15, combed *teg* 17.25 (No.2242, 2246), thick tile 2kg (th. varying from 2 to 6cm)).

Date of Site: L.Imp, L.Ant, E.Med.



Photo List-10. Site 213. View S towards Irsina. Sherding the Site.

Discussion. A medium sized site located near the Masseria Recupa di Scardinale close to an abundant spring, constituting a farmhouse or the centre of a small hamlet.

Nearly all the datable sherds, including some plain, coarse and cookpot wares were Late Antique or Early Medieval. The earliest ARS sherds could be C3 AD, but most are C4 or later. The latest pieces tie in well with the LRPW, as do a *dolium* sherd with impressed wavy lines (No1917) and many of the amphorae. The amphorae were variously dated. The earliest datable one was a Dressel 30 (No.1677 - C3–C4 AD) which is compatible in date with the ARS. Four can be dated to the C5 AD or later: the latest, a large cylindrical container (No.1714 on Area C), is C6–C7 AD goes with the combed tile (No.1917) from the general scatter on the Site. A small number of impasto and WMP sherds and probably some tile (T41) point to an earlier presence here, perhaps connected with the spring, which is hardly surprising since the site is close to the big Peucetian Site 223.

The site was not gridded but three areas of concentration, labelled 213A, 213B and 213C were identified, with very little scatter between them (see Plan List-10). Although all can be classified as Late Antique, the material on them varied somewhat. The earliest was on Site 213C on which all but two of the ARS sherds were found. They were probably fairly late, though two could be as early as the C3 AD. The LRPW appeared on both 213C and 213A but the fragments were more numerous on 213A where there was also considerably more tile. There was evidence of a tile floor - flat tiles with a thickness of 4–6cm, some with concrete adhering in both areas, perhaps from a hypocaust. There was a little cookpot in both areas. These were obviously dwelling places presumably for a small farm. The tile was not abundant: it seems likely that they were only partly roofed with tile. There was a Late Antique *dolium* (No.1917) on 213A and a large fragment of millstone, probably from a donkey or slave mill, on the edge of the Site, which suggests that at least part of the production was arable. The number of amphora sherds was unusually large but there was not much *dolium*. There were two *spatheia*, small amphorae, probably for luxury liquids.

The most interesting feature of the site, however, was the presence of combed tile on the small central area 213B, indicating occupation well into the Lombard period. It was not abundant – there were some 10kg in all – but unexpectedly it constituted the majority of the tile fall. Some LRPW and plain wares were found with it but there was not much pottery here.

It seems likely that 213B was a small farm perhaps of the C6–C7 AD, again probably only partially roofed with tile, built when the rest of the site was decaying. The late amphora (No.1714), the latest pot on Site 213, also came from it.

The site as a whole was the centre of a Late Antique complex with several Late Antique sites (204, 207, 211, 214, 222) linked to it. They were small, each with two to four LRPW sherds, a number of plain sherds and very little tile. The complex seems best interpreted as a hamlet with a house at 213 C, and another, built slightly later below it with huts, probably roofed, or partially roofed in thatch or turf, two of them (214 and 222) on locations previously occupied by outbuildings of the later phase of San Felice. 213B was presumably rather later.

There were five lithic flakes found on the site, adding to evidence for Neolithic frequentation of this general area (see Site 210).

213x. ca. 611255/4518384, Puglia, Masseria Recupa di Scardinale.

An area of 600m² SSW of Site 213, about 300m below the Masseria, where a small rescue dig published in *PSF*, 201-211 was undertaken in 2016 by Annalisa Melillo for the Soprintendenza during the work for a cable duct for the wind generators on San Felice. (Not visited on the field survey). Water from the Spring at the Masseria and another source some 300m away downhill on a fairly marked, and now wooded slope. **Since the Site falls within the Survey area, the following data are given for the sake of completeness, but the numbers of sherds cannot be compared with those found on the surface of other sites. Sherds reported:** 1690 incl **BG** 33, **GG** 169, **WMP** 23, **plain** 497, **ckpot** 333, *mortarium* 1, **lamps** 3 (2 GG, 1 Hel red slip), **loomweights** 6. **Other finds** incl **spindle whorl** 1 (classified in the text as a fishing net weight), **glass** 1 (rim of moulded beaker, deep yellow, end C3/ beginning C2 BC), **stone pestle**, **metal** objects 6, **coins** 5 (4 *asses*, 1 *triens*, incl 2 datable to the mid-C2 BC and 1 almost illegible perhaps end C3 BC). Tile not weighed.

Date: L.Hell.

Discussion. The excavation revealed part of a building to the S roofed with *imbrices* and a few *tegulae*, with a paved area to the N. The excavators dated the BG to the end C3– beginning C2 but the one published example (tav. I.13) was compared to Morel 4363B and is directly comparable to our No.783 from San Felice. It must ante-date 275 BC and is better dated **ca.** 350–275 BC. The GG sherds (10% of the total) are datable between the mid-C2 and mid-C1 BC. Mellilo dates them to the C1 BC but some, including a small bowl (cf. Prag in *Gravina II* cat.1010) and three relief-decorated bowls including one with a kantharos and vegetable motifs, must be earlier, and since there is no reported ITS here the site is unlikely to have lasted beyond the mid-C1 BC. The coins point to a date in the C2 BC. The abundant supply of cookpot and the loomweights (1 very angled, one nearly rectangular, so from different sets) indicate that the Site was residential. The spindle whorl is unusual for this area but three were found on San Felice. Three lamps, all of the C2–C1 BC, imply that oil was either produced here or imported. The site was very isolated, the nearest settlements of comparable date (apart from Site 204 which probably marks the outer edge of this site) being the farmhouse (later villa) on San Felice (Site 229) over 3km NW and Site 813, 2.5km NE in the next valley. It is not clear whether there was a hiatus between the late C4/ early C3 settlement and the occupation of the mid-C2, but on all three sites a gap is probable. Here, as on San Felice, the re-occupation may have lasted into the early C1 BC but not later. Presumably Site 213x was then

subsumed into the Imperial estate and revived a little further E in Late Antiquity as Site 213.

214. 610687/4518707, Puglia, Masseria Recupa di Scardinale. Stubble field, silty loam, flat to gentle slope on a spur some 330m SW of Site 213. The spring at the Recupa is 500m NE uphill but another is some 330m downhill. Masl 400. Visibility 4. Area:1000m^2 with scatter over 2400m^2 on the spur and more down the steep slope to W. Density sherds 0.07, tile 123.

Sherds found: 114 incl **impasto** 2, **geom mono** urn neck 1, **WMP** 2 (No.636), **BG** 4, **ES-B** 1 (cf. No.1027), **RRS** 1 (No.1081), **LRPW** 4, **plain** 58 incl *mortarium* 1 (No.1284), **ckpot** 9, **recent** 5, **amph** 9 (Nos.1415, 1426, 1550-1552, 1563, 1723, 1727, 1804). ***Dol*** 0.4kg (No.1919). **Tile:** 227kg (*teg* 92 [T4,14], *imbrex*/ Laconian 95 incl some flanged; combed 200g, chimney tile 1 (No.2188)).

Date: EIA, **LIA,** M.Imp, **L.Ant, E.Med.**

Discussion. All these dates depend on one or two pots since few of the sherds are diagnostic. The quantity of tile is fairly large and the balance between *tegula* and *imbrex* unusually close, but this may be because the site was in use in both the LIA and Late Antique/ Early Medieval periods (there was one LIA *tegula* profile T4; T14 from the edge of the site, was also fairly early). The *mortarium* was heavily encrusted with mortar and appeared to have been used as building material. A Magna Graecian amphora (No.1415) dates to C5–first half C4 BC and a Greco-Italic (No.1426) to the last half of the C4 or first decades of the C3. Several other amphora fragments could not be classified, but two African and one Aegean/ oriental piece are likely to be Late Roman or Late Antique.

Most likely this was a small Peucetian site, presumably an outpost of San Felice, revived later. The ES-B implies some frequentation in the late C1/C2 AD and a *dolium* lid is most likely from that time so there may have been some commercial activity here in the early Empire, perhaps related to the unusually abundant spring. The later amphorae, the LRPW and the combed tile, however, indicate late Antique and Early Medieval activity presumably connected to Site 213.

222. 609519/4519703, Puglia.
Stubble field, silty-loam, gentle slope. Spring, now ponded, some 200m SE. Masl 450. Visibility 3/4. Area:2500m^2 with scatter over up to 20000m^2. Density sherds 0.2, tile 1.2.

Sherds found: 45 incl **geom mono** 1, **LRPW** 5 (Nos.1157, 1158, 1175), **plain** 47. ***Dol*** 14kg. **Other finds** incl **millstone** 1kg. **Tile:** 24kg (*teg* 8 [T52,58], *imbrex* 6).

Date of Site: EIA, **L.Ant.**

Discussion. The site is just below the scarp of the San Felice plateau. The geometric monochrome sherd and some of the tile, including a little flanged *imbrex* can be explained by this proximity but the Late Antique development may be related to the emergence of Site 213 when this was one of several small Late Antique sites (204, 207, 211, 214, 222), presumably working areas, in the general vicinity with a small number of sherds and probably not much tile. This one has a considerable quantity of *dolium*, though the only rim was too fragmentary to draw, and some millstone.

223 (including 225, 226,228, 245), 608900/420285 to 609448/4520285, Puglia, Piano San Felice.
Deep ploughed (in some cases almost to bedrock) or cleared stubble field, silty loam, on flat top of the plateau. Springs just below the scarp to W, and steeply downhill at the E end of the site. Masl 500. Visibility 4/5. Area:89700m^2 (9ha) with abundant scatter over 217479m^2 (some 22ha) which includes the areas designated 226, 228 and 245 where the artifacts were spread more thinly.

Sherds found: 74157 incl **Neo** painted 4 (Nos.200, 202), **Neo plain** 5, ***impasto** 5003 (Nos.221, 223, 224, 231, 233- 235, 243, 247, 248, 250, 251, 262-264, 266, 271, 273, 279, 283-287, 297, 300-303, 305, 306, 311, 312 =thymiaterion, 325, 333, 343-346, 350-352, 354-358, 363-368), **cordoned *dol*** 1 **(No.**1857), **geom** 4551 **(***mono 3804 (Nos.375, 377, 378, 380, 386, 387, 390, 392-395, 398, 405, 406, 410, 411, 413-416, 420, 423-426, 428-444, 446-481, 485-487, 491, 493, 495, 496, 503-505, 507-509, 536, 538, 542, 544-546, 548, 550, 552, 555, 558, 560, 561, 566-566c)), bichr 747 (Nos.488-490, 492, 494, 497-501, 510-513, 515, 516, 518-521, 523-528, 530-535, 539-541, 543, 549, 551, 553, 554, 556, 559, 562-565),**WMP** 2122 (Nos.567, 569, 571-574, 577-579, 582-586, 588-591, 593, 598, 601-603, 605, 607, 610-618, 620-625, 628, 630, 632-634, 638-643, 649, 651-653, 655-658, 660-662, 665-668, 670, 671), **imported Greek** 101 (Nos.675-687, 690, 692, 694, 695, 697, 698), **S. Italian RF** 66 (Nos.699, 700, 702-707, 709-711, 713-740), **reticulated lekythoi** 3 (Nos.741, 742, 743), **Overpainted and Gnathian** 14 (Nos.745-750, 752-756, 759, 760, 761, 762, 763), **BG** 1190 (Nos.764-766, 768, 770-773, 777, 779, 781-784, 789, 790, 792, 793, 795, 796, 799, 801-803, 806, 808-812, 814, 818, 819, 821, 822, 826, 829, 834-836, 839, 840, 849, 854, 856-859, 862-864, 866, 867, 871-877, 881, 885, 886, 888-890, 892, 893, 897-900, 902, 905, 906, 911-913, 915-918, most published in *Mouseion* 10), **Pre-Roman red slipped** 13 (Nos.959, 960, 962, 964, 965), ***unguentaria*** 4 (Nos.966, 972, 978, 980), **ARS** 4 incl ARS-A 2 (cf. No.1033×2), **RRS** 1 (No.1068), **LRPW** 58 (Nos.1128, 1160a, 1167), **Med** 2227 (incl Early Med. Painted Nos.2090-2094, Plain ribbed handles Nos.2095+1039 sim incl P4088, P4137, P4657, Plain 2097-2101, 2103, Green glaze Nos.2106-2115, 2117-2124, Sgraffito Ware Nos.2125-2129, RMR Nos.2130-2134, Protomaiolica Nos.2135-2138, 2140-2151), ckpot Nos.2152-2161, **plain** 47147 incl hm plain 1003 (Nos.1194, 1195, 1198 + 1 sim, 1199, 1205, 1208, 1211, 1214), wm plain (Nos.1215-1217, 1222, 1228, 1231,1233, 1236, 1237, 1242, 1249, 1250,1257, 1264, 1267, 1269, 1270, 1272, 1273, 1274, 1278, 1304, 1306, 1311-1314), ***mortaria*** 28 (Nos.1232, 1280, 1283, 1285-1287, 1293, 1295), **ckpot** 4024 (Nos.1327, 1334-1341, 1347, 1352, 1353, 1357, 1366-1369, 1396, 1405-1407), ***clibanus*** 2 (No.1389)**, recent** 24, **amph** 173 (Nos.1408-1414, 1416-1424, 1427, 1428, 1430, 1431, 1435-1442 1445-1447, 1450, 1467-1472, 1505, 1525, 1556, 1557, 1559, 1560, 1564, 1571, 1604-1655, 1658, 1659, 1661, 1669, 1673, 1683, 1690, 1707, 1708, 1720, 1735, 1738-1762, 1764-1771, 1774, 1775, 1780-1782, 1785, 1791-1793, 1795-1797, 1816, 1818, 1819, 1832-1841, 1843, 1844, 1853-1856), **lamps** 13 ancient and 17 Med (Nos.1925, 1936, 1938, 1939, 1940), **loomweights** 89 (Nos.1941-1943, 1945-1948, 1955-1957, 1959, 1962-1970, 1972-1976, 1978, 1979, 1981, 1982, 1986, 1987, 1989, 1992-1994, 1999, 1999b), **disc weight** 1, **spindle whorls** 3 (Nos.2002, 2003), **modelled horse legs and votives** 4 **(**Nos.2071-2074). ***Dol*** 83.5kg (Nos.1858-1861, 1863, 1864. 1866, 1870, 1871, 1873, 1874, 1877, 1878, 1883, 1889, 1892, 1894-1896, 1898, 1901, 1904, 1905, 1910, 1911-1913, 1915, 1916, 1918, 1921, 1922). **Other finds** incl **lithics** 18 (Nos.17, 18, 19, 20, 28, 33, 35, 54, 58, 59, 73), **glass** 14 (Nos.2009, 2010-2012, 2014), **glass beads** 3 (Nos.2016-2018), **coins** 3 (Nos.2021-2023), **millstone** 175.5kg (Nos.2024-2026, 2029, 2030, 2034), **architectural terracottas** 13 (Nos.2058-2070)**,** ***tabula lusoria*** 1 **(**No.2077**), pot wasters** 7, ***daub/ brazier** 3kg, [NB **Slag** 3kg (No.2088), **kiln material** 1.4kg, **firing ring** 3 (Nos.2080-2080b), **marble** 2 (No.2055=basin).

Tile: 8107kg (teg 842 [T1,7,10,16,39,46,48,50,51,67, 80,88], Laconian 4661 (Nos.2165, 2166),flanged 85 (No.2169), *imbrex* 17 (Nos.2170, 2173-7, 2181) [I12]), combed 18 (Nos.2244. 2245, 2247-51), chaff tile 767 (Nos.2269-2274), wasters 4, ridge tile (Nos.2183, 2184), chimney/skylight tile (Nos.2186, 2187), segmental (Nos.2231, 2232), painted (Nos.2189, 2190, 2192), grooved (Nos.2194-6, 2199), inscribed (Nos.2220, 2222, 2223), animal prints (Nos.2209, 2213-2217), other marks (Nos.2199, 2201, 2203, 2234-2236)).

*Fig.4 in *PSF*, said to refer to daub, is wrongly titled and refers to the distribution of highly burnished black impasto and geometric monochrome sherds. The plan of these also appears there (correctly titled) as Fig.3.

Date of Site: Neo, FBA, EIA, MIA, LIA, E.Hel**,** L.Hel, M.Imp**, L.Ant, E.Med, Med**.

Discussion. The Site of San Felice is some 10km W of Gravina toward the N end of our Survey area on a plateau which separates the Basentello river to the W from the Torrente Pentecchia di Chimienti to the East. Like the other hills above the Basentello the plateau is formed of sedimentary deposits capped in conglomerate with a thin covering of silty clay soil. (For a fuller analysis of the Geology and Geomorphology of the site see F. Boenzi, *PSF*, 7-8). Water was available: the spring line lies below the conglomerate cap and there is a particularly abundant water supply just to the NW, but getting it up the hill must have been laborious.



Photo List-11. Site 223. San Felice. Scarp at the W end of the plateau.



Photo List-12. Site 223. San Felice. Scarp along S side of the plateau and area of Recupa di Scardinale.

Our general survey on the plateau of San Felice was timely. Since we finished, several wind turbines have been set up across the site, playing havoc with the archaeological record.

Even before that, however, over a decade of deep ploughing had seriously compromised the archaeological potential of the site. The earliest formal archaeological activity there was the excavation of thirteen burials dug under the aegis of the Soprintendenza Archeologica della Puglia and reported in 1978. (Andreassi 1978. 438-443), They were in simple pit tombs and most had been systematically robbed, though one was found intact with a *rannicchiato* skeleton and grave goods at the feet. These included some silver fibulae with thickened bow, Ionian cups and matt-painted "subgeometric" pottery which suggest a date in the C6/ early C5 BC. More recently a series of small rescue digs (*saggi*) was undertaken towards the E end of the plateau from 2010 to 2013 in advance of the construction of the wind turbines, two of which (*Pali* 30 and 31) have been located on the plateau in the general area of the site.



Photo List-13. Plateau of San Felice from S showing wind turbines.



Photo List-14. View looking W along the plateau of San Felice.

The excavations

The results of the new excavations are published in *PSF.* The volume gives an impressive, albeit narrowly focussed, view of the development of the site over time.

The earliest feature, excavated in *Saggio* A (indicated on Plan List-11), consisted of a roughly oval-shaped placement for a hut with lateral extensions, filled with daub from the hut walls and occupation debris dated to the late C8 – mid-C7 BC on the



Plan List-11. Site 223. Location of archaeological investigations on the plateau of San Felice, including the grid established for the main survey; the outlying areas which were not gridded, although finds were reported from them; the areas of the resistivity survey by John Hunt (labelled H1–H8); the approximate locations of the main Superintendency excavations, *Saggio* A (A), *Saggio* B (B) near Wind turbine 30 and the *Saggio* (M) in the area of Wind turbine 31, outlined in blue. The locations of the turbines are shown in red. The Villa (Site 129) is indicated to the NW.

basis of comparisons with similar pieces found on other sites (Cossalter, *PSF*, 39-58). Most of the sherds correspond to types of period Gravina II, and some can be compared directly with pieces from our survey. Near to these hut remains there were two *rannicchiato* burials, one of an adult male in a pit covered with a stone slab, the other of an infant laid in a broken impasto *pithos* (*enchytrismos*) (Cossalter, *PSF,* 41-42). They are said to be of the same date as the hut, but that would make them the earliest known burials associated with settlement remains of this period in this part of the Fossa Bradanica, and since neither burial contained associated grave goods, there must be some doubt about the chronology. The date is derived from some fragments of geometric matt-painted ware said to be of the second half of the C8 found in the fill of the grave of the adult male below the cover stone, but the pieces are not illustrated, and could in any case only provide a *terminus post quem* for the burial.

It seems more probable that these burials, like most other burials found in these excavations, belong to the next cultural phase, along with two other burials with well preserved skeletons and a small quantity of grave goods, also found in *Saggio A*, one of which can be dated to the C7/C6 BC, the other to the C6/C5 BC. There were other burials of this period in a small necropolis near the planned site of Wind Turbine 30, where seven pit graves and four *enchytrismos* burials of infants were uncovered, all of which are thought to date to the last three quarters of the C6 BC. All but one of the pit graves had been ransacked by *clandestini* (Nanni in *PSF* 111-117).

The corresponding phase of occupation is represented by some of the walls excavated in *Saggio* B. They consisted of irregular blocks of stone forming the outer and inner faces of the wall (perhaps a socle on which a wall of mud brick was built). They are said to belong to several phases of habitation ranging from the mid-C7 to the end of the C4/ beginning of the C3 BC, but the dates appear to be derived from the range of associated pottery rather than from stratigraphic connections, and the phases of construction are not clearly distinguished. With one possible exception, none of the published fragments need date earlier than the beginning of the C6 when the first of the walls is likely to have been built. They mark the transition from huts to houses on this site (Santovito in *PSF*, 131-143).

No buildings of this phase were found in situ in *Saggio* A, but according to Depalo (*PSF*, 30) the ceramic evidence and some architectural mouldings, including a palmette antefix, show that there was a C6/ early C5 phase of occupation in this area which was obliterated by other structures in the mid-C5. Cossalter, however (*loc. cit.,* 67, 70-71 and figs. 20-21) holds that this antefix and a fragment of another found in the roof collapse belonged to the main phase of the building which must have been erected, therefore, around the end of the C6/ beginning of the C5. (Other fragments of antefixes of this type were found on our survey and are discussed in the Catalogue of Artifacts 27.11.2). Whatever the case, the building of the C5 was a large structure with several rooms which extended beyond the limits of the excavation. In some of the rooms there were traces of hearths or ovens, and the contents,

including loomweights, suggest that most of the spaces could be used for several domestic purposes. The complex was abandoned, apparently suddenly in a fire, around the end of the C5.

The last phase of Iron Age occupation is represented by remains of a 2-room building revealed in *Saggio* A which was constructed around the middle of the C4. Only the socle consisting of a single layer of stones survives. The walls above this level must have been built in perishable materials (the excavators suggest wooden beams, but mud brick would seem more probable). It was roofed with *coppi*: *imbrex* tiles, presumably alternately inverted. The building was abandoned late in the C4 BC. Some of the walls in *Saggio* B may also date to this period. The latest datable pottery from this part of the site consists of several black-gloss forms which were introduced before the end of the C4 BC. They can be compared with pieces from our Survey (Nos.774, 806, 817).

The excavation in the area of Pala 31 revealed medieval features, discussed below.

Some analysis of the botanical and faunal remains was undertaken. Of 2349 seed remains from domestic contexts of the C5 BC, the great majority (97.27%) were cereals – almost entirely barley (6-row and to a lesser extent 2-row), although seven instances of einkorn and one of emmer were also found. The 795 seed remains from late medieval contexts showed more variety with wheat (*Triticum*, particularly *Triticum aestivum/durum*) overtaking barley as the main cereal. More surprising is the evidence for small amounts of rye and oats which are rarely mentioned in written documents from S. Italy. The oats were perhaps for horses, also attested on the site (see below). There was evidence for vegetables including broad beans and, more unusually, for flax sufficient to suggest that it was grown. There were also a few indications of viticulture though the only possible commercial crops would have been wheat and barley. (Stellati in *PSF*, 185-192). In the Middle Ages the area of Gravina was primarily important for grain, particularly wheat, so commercial wheat production on San Felice is possible. It is likely, however, given the faunal record (see below) that San Felice itself may have been more engaged in stock raising. There is no evidence in any period for olive cultivation. It must be emphasized, however, that the area from which these analyses could be made constituted a tiny fraction of the whole site.

The analysis of the faunal remains showed that domestic animals on the earlier sites were primarily cattle closely followed by caprines but there was also a significant number of pigs. Wild animals were rare: red deer and boar are attested by one bone each in both the contexts of the late C8 – mid-C7 and late C6–C5 BC.

In the Middle Ages, the caprines outnumbered the cattle. For this period it was also possible to distinguish in some cases between sheep and goats, but the numbers of these were about equal (the number of identified instances of goats was 27 and of sheep 12, but the minimum number of the latter was 11 and of goats 9) (G. De Venuto in *PSF*, 193-199). Equines, particularly horses, formed a higher percentage of the domestic animals in the Middle Ages (10.2% up from around 5%). This is a relatively high percentage which De Venuto suggests may have been an effect of the proximity of the important horse farm at Gravina. Some horse bones show signs of butchery. A much greater sample of faunal remains was recovered from the Medieval pits than from the earlier buildings with a wider variety of species including cats, dogs, chickens and other birds, and at least four tortoises. Bones of red deer and roe deer imply that there was forest fairly close to the medieval village. There was a royal hunting reserve in Gravina under the Angevins, but it was probably nearer the town and centred on the castle. It would have been perilous for the inhabitants of San Felice to take animals from the royal forest but hunting outside it was not forbidden except in the months of April, May and June. Selling meat or hides from deer was, however, always forbidden. The deer were therefore for the use of the inhabitants themselves. Hare from the Middle Ages was also recorded.



Photo List-15. San Felice. Laying out the grid.

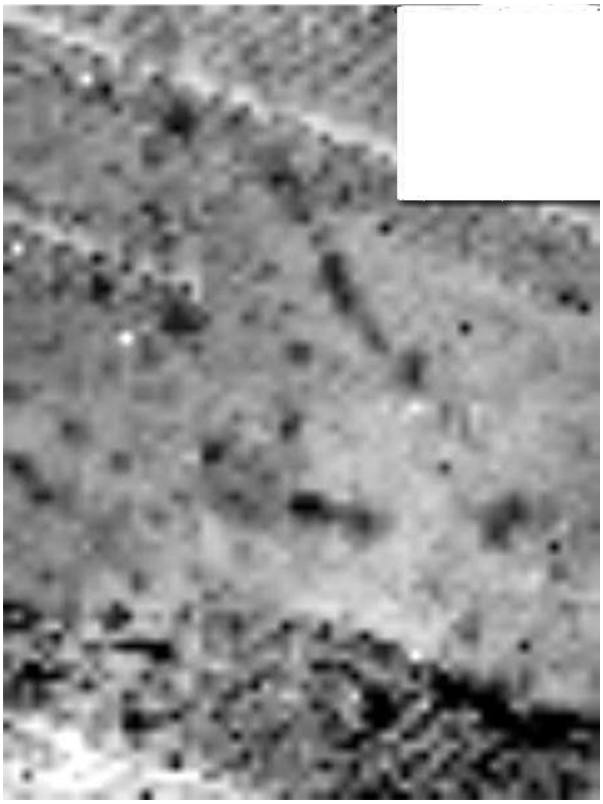


Photo List-16. San Felice. Surface collection within a grid square

It would be possible (and desirable) to excavate more extensively in some places, but over much of the plateau the ploughing and soil erosion have left very little cover above bedrock and excavation would be pointless. What follows is therefore likely to remain the best record obtainable for much of this important site. A preliminary report of the survey work done on the plateau was published by us in *PSF*, 9-18. It included twelve plans showing the distribution of various classes of artifact across the site. We have not repeated these below, but some extra plans are given.

The Survey

When the site was discovered in 1997 it became quickly clear that it was too large for a survey in detail at that time. We therefore tried a sample collection across the site. The results were very unsatisfactory: they told us what kind of material could be found there but very little else, though it was apparent even then that in the W part of the site the earlier Peucetian material which abounded all over that end of the ridge underlay a medieval area. More study was desirable,



Plan List-12. San Felice. Results of the resistivity survey by John Hunt in area H3 showing the possible line of the Medieval wall.

so in 2006 a more detailed survey was undertaken. A grid of 10m squares was surveyed in by Franco Taccogna and laid out in sections with string by Andrew Rich. The W end of the plateau was surveyed between the S scarp and the road for some 550m W-E until the quantity of artifacts appeared to be diminishing and we judged that we were coming to the edge of the main area of settlement. The results from the surface collection were informative so the survey was continued for another two seasons each of four weeks. We crossed the road to cover an additional 10000m^2 where there was particularly dense scatter. It became thinner fairly quickly.

In the second year a resistivity survey of six sample areas was also carried out by John Hunt (See numbers H1-H8 on Site 223. Plan List-11 above). The results of this were, on the whole, disappointing. The resistivity surveys to the W, in the medieval village, produced clear evidence of earlier building including a possible wall (discussed below) and an indication of the alignment of the settlement WNW – ENE but elsewhere no very clear data emerged.

Other forms of geophysical investigation were not undertaken. The nature of the conglomerate with heavy iron content makes magnetic surveys somewhat unreliable and the soil cover is so variable, with some fairly thick silty fill in the dips and effectively none in other areas where the plough has reached bedrock, that any sub-surface survey would produce very patchy results. For the same reason, while it is clear that the surface material has not shifted far on the relatively flat surface of the plateau, it is reasonably certain that there has been some displacement as a result of deep ploughing and subsequent erosion. The deep ploughing over many years has left the surface material extremely fragmented. Numerous diagnostic pieces were found on San Felice but remarkably few large ones. Nevertheless, the material offers many interesting insights,

Period	Date	Amphora type	P nos.	
VI	C6– early C5	Form 1a	1408-1410	3
	Late C6–early C5	Form 2	1411	1
	C5– early C4	Form 5	1414-1124	11
	C5–C4	Corinthian A	1758-60	3
	Late C5–C4	Chiota	1761	1
VII	EarlyC4–early C3	Vandermersch/ Gr-It III	1416-24, 1427, 1428, 1430	9
	Early C4–mid-C3	Vandermersch IV-V	1431	1
	C4–3/ early C2	Vandermersch	1436-1442, 1445	8
VIII	C3–C2	Bertucci	1450	1
	C3	Corinthian	1762	1
	C3–C1BC	Rhodian	1764-71	8
	C2–C1BC	Lamboglia II	1468-72	5
IX	C1BC–mid-C2AD	Betica	1658,1659	2
	C1AD	Non ID. (GD p16)	1795,1796	2
	End C1–early C2	Ostia XXIII	1661	1
	C1–C3	Antico-romano Cretese	1774	1
	1st half C3	Kingsholm	1775	1
	End C3–early C4	Tripolitana III	1669	1
	C3AD	Africana IIB	1673	1
	C3–early C4AD	Africana Non ID. cf Africana I or II	1720	1
X	C4–5AD	*contenitore cilindrico di medie dimensioni*	1683	1
	Early/mid-C5	*Spatheion* 1	1690	1
X/XI	C5–6AD	LRA2	1785,1791,1792	3
	C5–7AD	LRA1	1780-82	3
	Mid C3/C4–C7AD	Golfo di Hammamet	1707, 1708	2
	Mid C6–7	LRA4B	1793	1
	C4–C7AD	LRA4	1794	1

Table List-1. San Felice. Amphora types and dates.

The Site

The total area of the site was about 27ha. Within this was an area of dense ceramic scatter where we set up a grid for intensive survey, covering an area of some 9ha (89,700m^2). There was additional scatter round the edge of varying density. Initially we designated the denser outlying concentrations as separate sites, 226 to the NNW and 245 to the E. We have retained these as "Areas" of the site (see Plan List-11 above). They were not gridded (except for a part of 226) but part of 245 and all of 226 were explored in some detail so we were able to confirm that the material there was broadly speaking similar to that of the gridded area. Round the edges of all the Areas the scatter was noticeably thinner. Most of the buildings on the site were probably within the gridded area, but there may have been additional structures in Area 245 some of which could not be explored because the crop had not been harvested. We revisited it in subsequent years, but time constraints meant that we could only do so cursorily.

The site lies on a ridge above the valley of the Basentello which comes to a point at its W end. Here and extending to the S and to the NW is a steep and highly defensible scarp, with dense

pottery scatter right to the edge. To the E and NE, however, the ground slopes downhill much more gradually towards the valley of the Pentecchia for some 3km and in that direction the scatter of material also peters out fairly gradually. To the ESE a ridge forms a continuation to the plateau for a further 3km. Topographically there is no obvious break here between the settlement and the open country, but it is interesting that there does not appear to have been a man-made boundary either. This was the least defensible part of the site but there is no evidence for a wall or for a line where one might have been. In the Peucetian period this was the direction of Botromagno, a much larger site. We have argued (Chap. VII.11.iv) that the settlement on San Felice was subordinate to Botromagno and therefore did not expect attack (but did perhaps expect help) from there. It may be added that the climb up to the San Felice ridge even from the E end would ultimately have presented a challenge to marauding bands, but the ridge is too long to have been easily defensible from the settlement.

The survey produced an immense amount of material including some 91020 sherds of which most (68015) came from the gridded area shown on the plans but there was additional scatter round the edge of the grid. The material from the outlying areas 245 and 226 is included in the larger total. All the sherds were classified by ware, and 1447 special pieces were set aside for further study. The majority of these (921 pieces) are published in the catalogue.

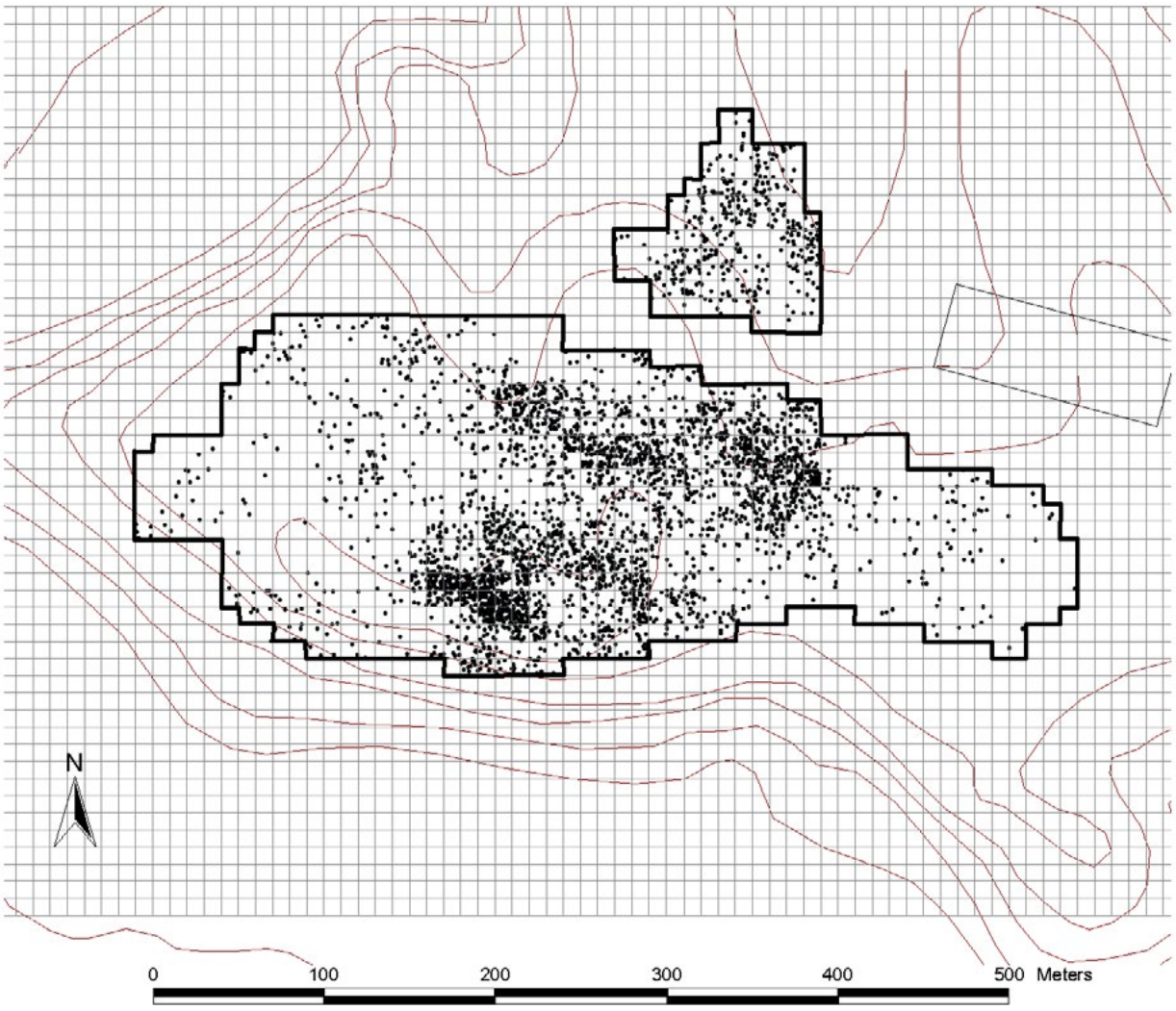
The Amphorae

These have been classified by Giacomo Disantarosa as part of his study of amphorae across the whole survey (Catalogue of Artifacts, 19), but since they are of considerable importance for the interpretation of Site 223, a summary of their occurrence on the site is given in the Table below. The Period number is that of the cultural phase in our section on the general interpretation of the Survey Area. Sherds reported by Disantarosa as of unidentified type (and therefore undatable) are omitted unless a date is suggested in his text.

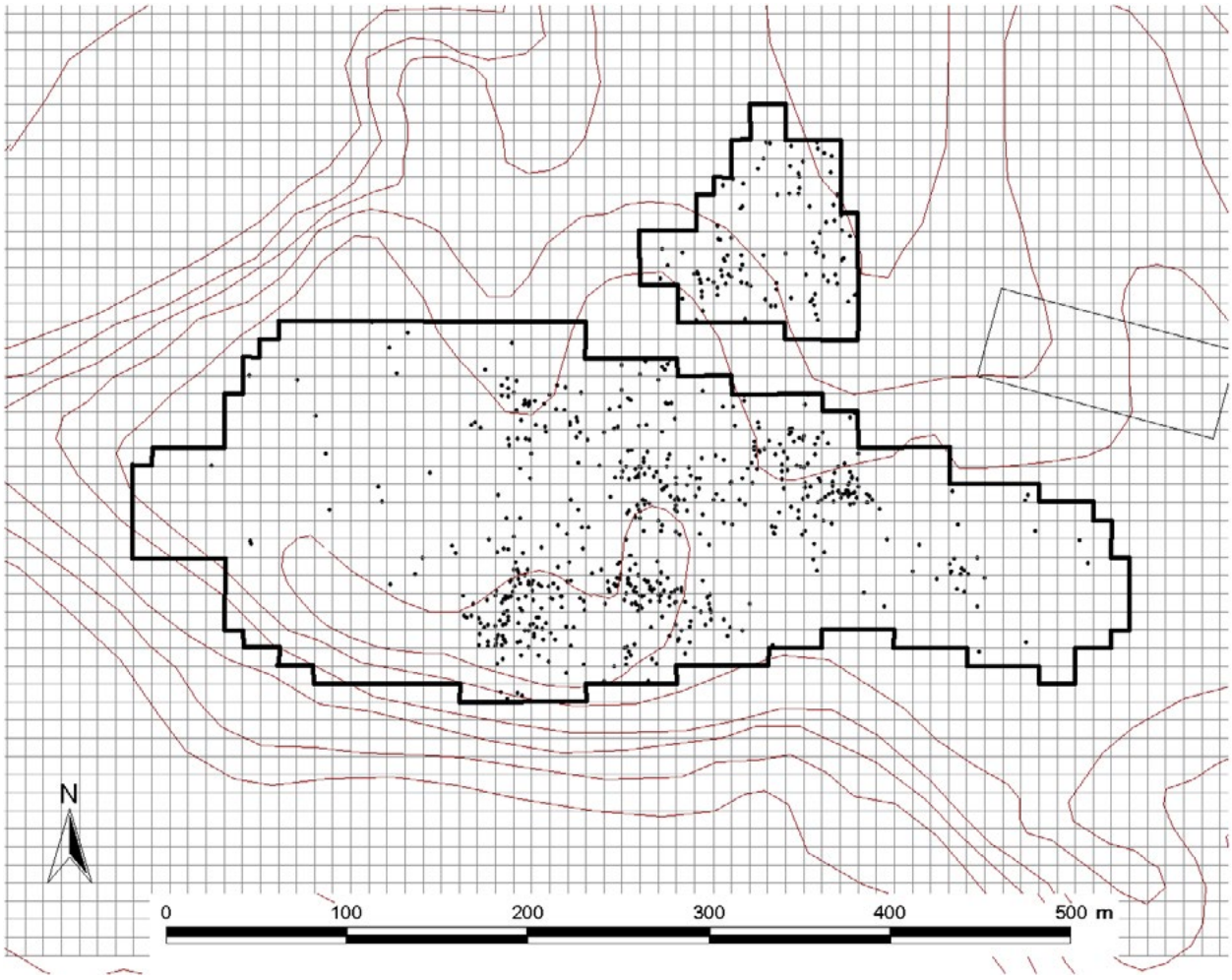
There is a discrepancy between the chronology of the amphorae and that of the rest of the material on the site, which is particularly remarkable in Periods VIII and IX. The reasons for this are discussed below.

San Felice in the Neolithic period

Only two sherds have been catalogued as Neolithic, both late and both from near the summit of the hill. There was also a little impasto. One piece of Serra d'Alto ware (No.200), rare in our area, dates to the 5th millennium BC, the other, less securely classified, is probably of the same date. A variety of lithics, eighteen in all, including one chert point of Campignano lanceolate type typical of the Early Neolithic (No.57), a Neolithic tanged arrow head (No.54), a small polished hand axe (No.73) and at least two cores and some debitage, confirm that the site was frequented in



Plan List-13. San Felice. Distribution of geometric monochrome sherds.



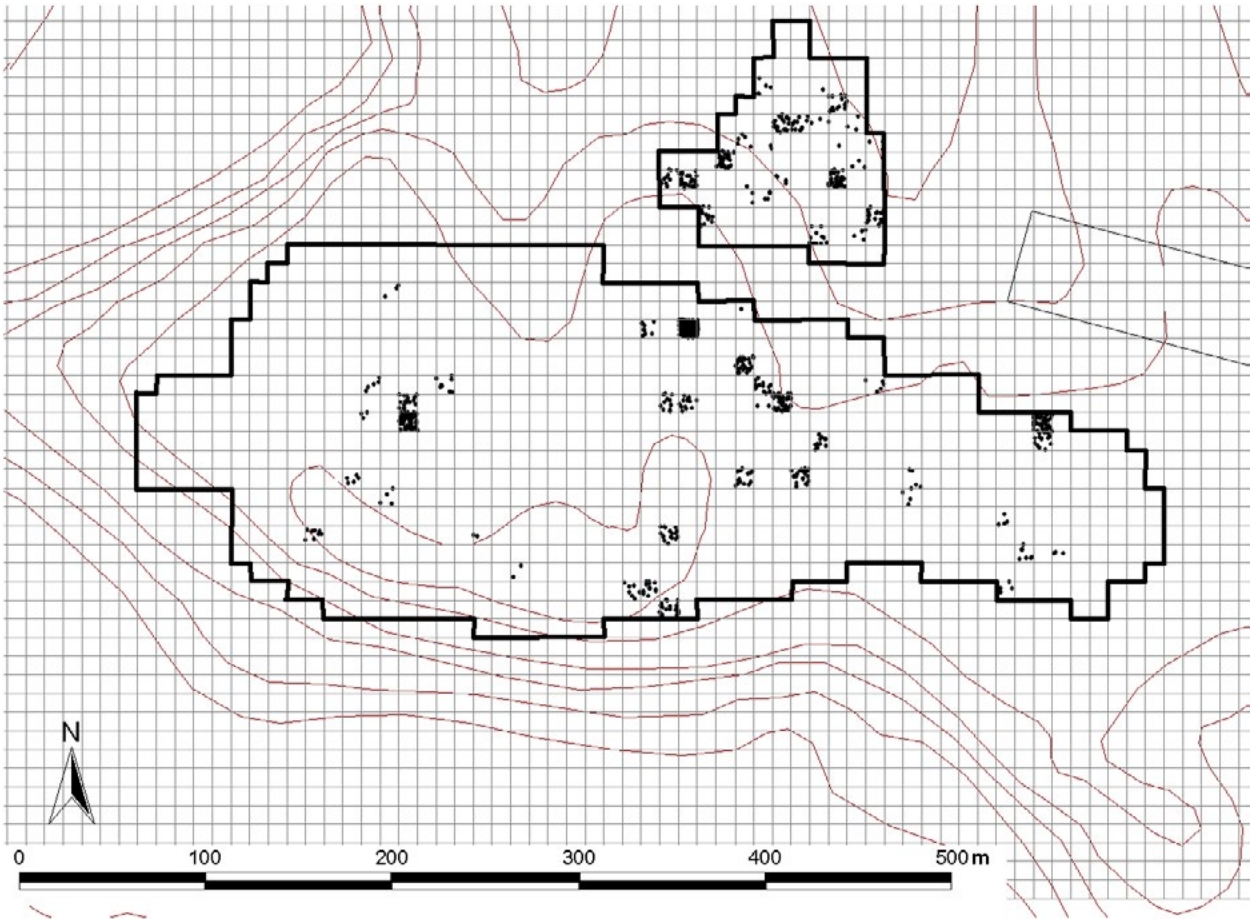
Plan List-14. San Felice. Distribution of geometric bichrome sherds.

Neolithic times, although it was not necessarily a permanent settlement.

San Felice in the period of impasto and matt-painted geometric pottery

There was a large quantity of fragments of coarse impasto vessels widely distributed across the site (For a plan see *PSF* 9, fig.1). Most of it was too fragmented to be identified by type, but none of it suggests that the site was frequented in the Eneolithic or EBA. There were no sherds specifically of the MBA or LBA. Of the better preserved rim sherds, a few pieces (e.g. Nos.268, 273, 286) could go back to the MBA but they are all of types which had a long life and can better be assigned to the FBA to which many of the other impasto sherds belong. The main phase of occupation on the site began, therefore, in the FBA. The earliest material includes a significant quantity of highly burnished black impasto pieces, including several fragments of turban-rimmed bowls, typical of the FBA/EIA, and a wall-sherd of a cordoned *dolium* rim in plain ware (No.1857). There are, however, no fragments of the "Iapygian protogeometric" ware which stands at the beginning of the matt-painted geometric pottery tradition in the FBA, even though it is attested on two other sites (Sites 401 and 407), in each case by a single piece. The ware was evidently rare in this area in this period.

The area of the impasto scatter is almost precisely matched, but much more thickly, by that of the geometric monochrome sherds, many of which can be dated to the EIA. The distribution on San Felice of all geometric monochrome pottery decorated only with black (or black-brown) paint is shown within the grid on Plan List-13. Although the scatter inevitably includes some small fragments which may come from later monochrome or even bichrome pots, much of it is likely to be of EIA date. Many show motifs of EIA type, especially patterns of concentric or hatched triangles, well-known in the so-called "Iapygian geometric" pottery, which are well attested in the earliest contexts on Botromagno and below it at Parco S. Stefano (*Gravina (PBSR) III (1)*, Phase 1). The plan, therefore, is likely to give a reasonable picture of the parts of the site that were most frequented in the period before ca. 725 BC. It shows a broad swathe across the central part of the site from the edge of the scarp in the S, being slightly less dense in the middle where there is a dip – it can hardly be called a valley. The swathe, some 100-200m wide, continues across a gap in the survey grid (corresponding to the modern farm road) for a total area of nearly 5ha. To the W the scatter of impasto and geometric monochrome sherds becomes gradually less dense though there is still plenty to indicate settlement as far as the top of the steep W scarp. To the S the settlement continued right up to the line of the S scarp. To the E the densest scatter finishes abruptly at a depression formed by a small rivulet, though there is further scatter beyond as indicated above. To the NE, the scatter peters out much more gradually (Plan in *PSF*, 10, fig.2). The fact that the distribution is much thinner towards the W end does not necessarily indicate that there



Plan List-15. San Felice. Distribution of daub.

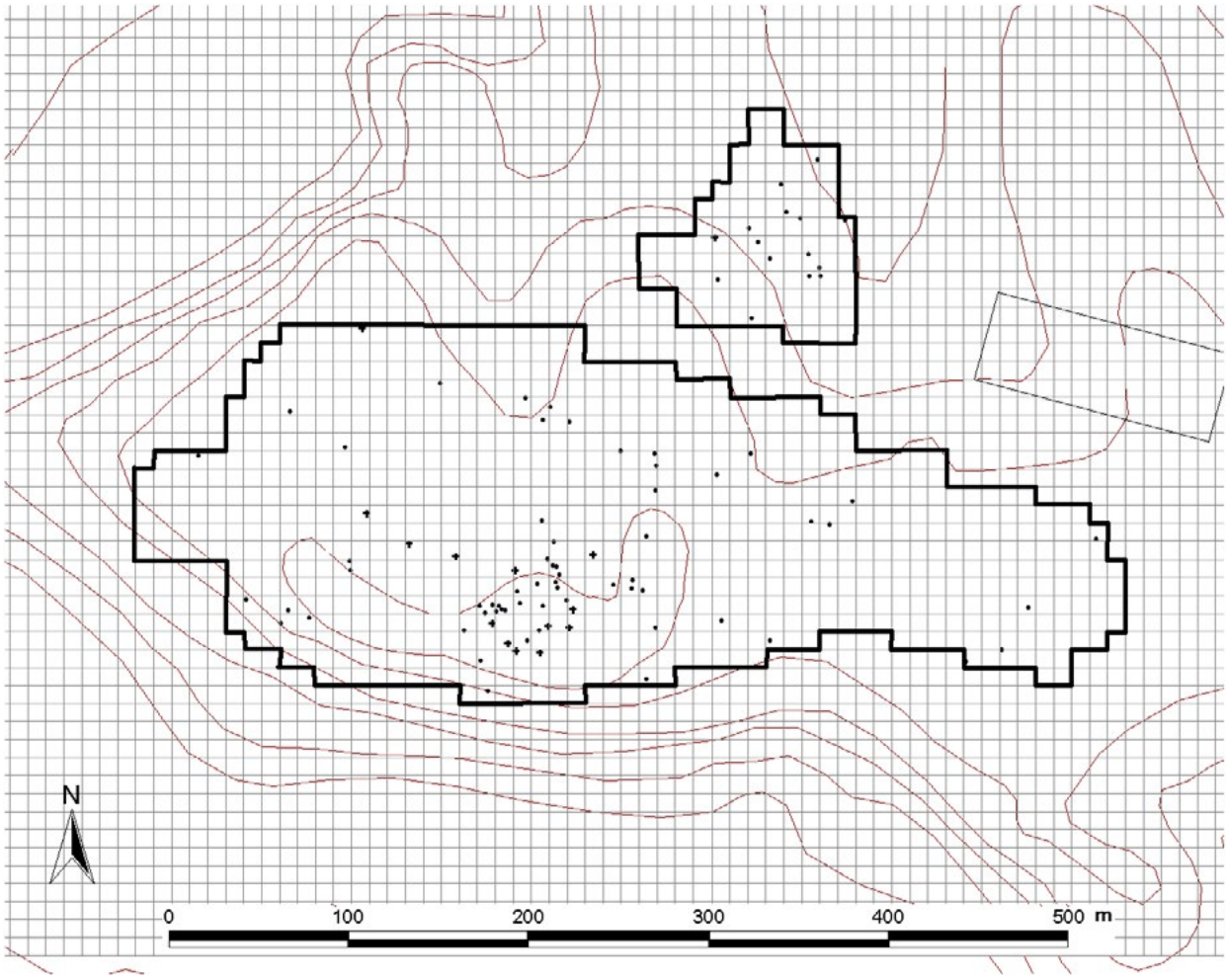
was less occupation in this area since EIA material may have been cleared or overlaid by the Medieval village which was established on this end of the plateau.

In short, the distribution of the highly burnished black impasto together with that of the geometric monochrome pieces attests to a new phase of occupation on the site which began in the FBA and was greatly intensified in the EIA. By the end of that period the settlement had already coalesced to form a community with a substantial nucleus of habitation in the central part of the site and a few outlying huts. This is at variance with the pattern of small groups of huts loosely spread across plateaus that is generally supposed to have been the norm in this period (cf. Yntema 2013, 44-45).

Not all of the geometric monochrome fragments, however, belong to this early period. Some are decorated with motifs typical of the more advanced geometric monochrome style of the late C8 and early C7 BC which show the influence of Greek Late Geometric pottery (*PBSR 1976*, Phase II). The hut remains excavated by the Superintendency in *Saggio* A (see above) belong to this period. A few of the sherds from the survey show motifs typical of the monochrome style favoured in the area around Bari in the late C7/C6 BC (De Juliis, 1995, 42-47: "Classe monocroma"; Yntema 1990, 197-219), and some others may be fragments of bichrome pots of the late C7/C6 BC, broken in such a way that there is no red paint on the sherd. Bichrome pottery is found on some coastal sites, such as Incoronata, in contexts of the late C8 BC (Castoldi 2006), but it does not appear on Botromagno until the late C7, when it is likely to have come into use also on San Felice. It remained current throughout the C6, although it increasingly gave place to wheel-made wares before the end of the century. Most of the pieces with distinctive motifs are typical of the bichrome style in use in the W part of the Murge and the Bradano valley in this period. The scatter of these geometric bichrome sherds is less dense than that of the earlier geometric monochrome but it does not show any significant differences in distribution. Moreover, since the ware covers a much shorter period than the geometric monochrome, the thinner distribution cannot be taken to imply that the occupation was less dense

For most of this period (from the FBA until around the middle of the C6 BC) the dwellings were huts made of wattle and daub. Daub is inevitably less well preserved than pottery on this site, and is less easy to detect on ploughed surfaces, but fragments were found distributed unevenly in several concentrations over the site. Some of these may have been pens for animals, but most are likely to have been used for daily living. The distribution pattern of daub, shown on Plan List-15 must therefore reflect the location of huts in the earlier phases of the settlement. The main concentrations coincide broadly with those of geometric monochrome, but two outlying groups to the E and W appear more discrete and suggest that there were outlying huts or groups of huts in these areas. The possibility that some daub, particularly the concentration furthest to the W, was medieval cannot, however, be excluded.

Much can be inferred about the nature of the IA occupation from the surface collection. Most of the impasto sherds come from large pots, *situlae* and *pithoi*, such as Nos.247, 248, 266, 284 and 287, which were probably used primarily for storage. (*Pithoi* with out-turned rims were also used for *enchytrismos*

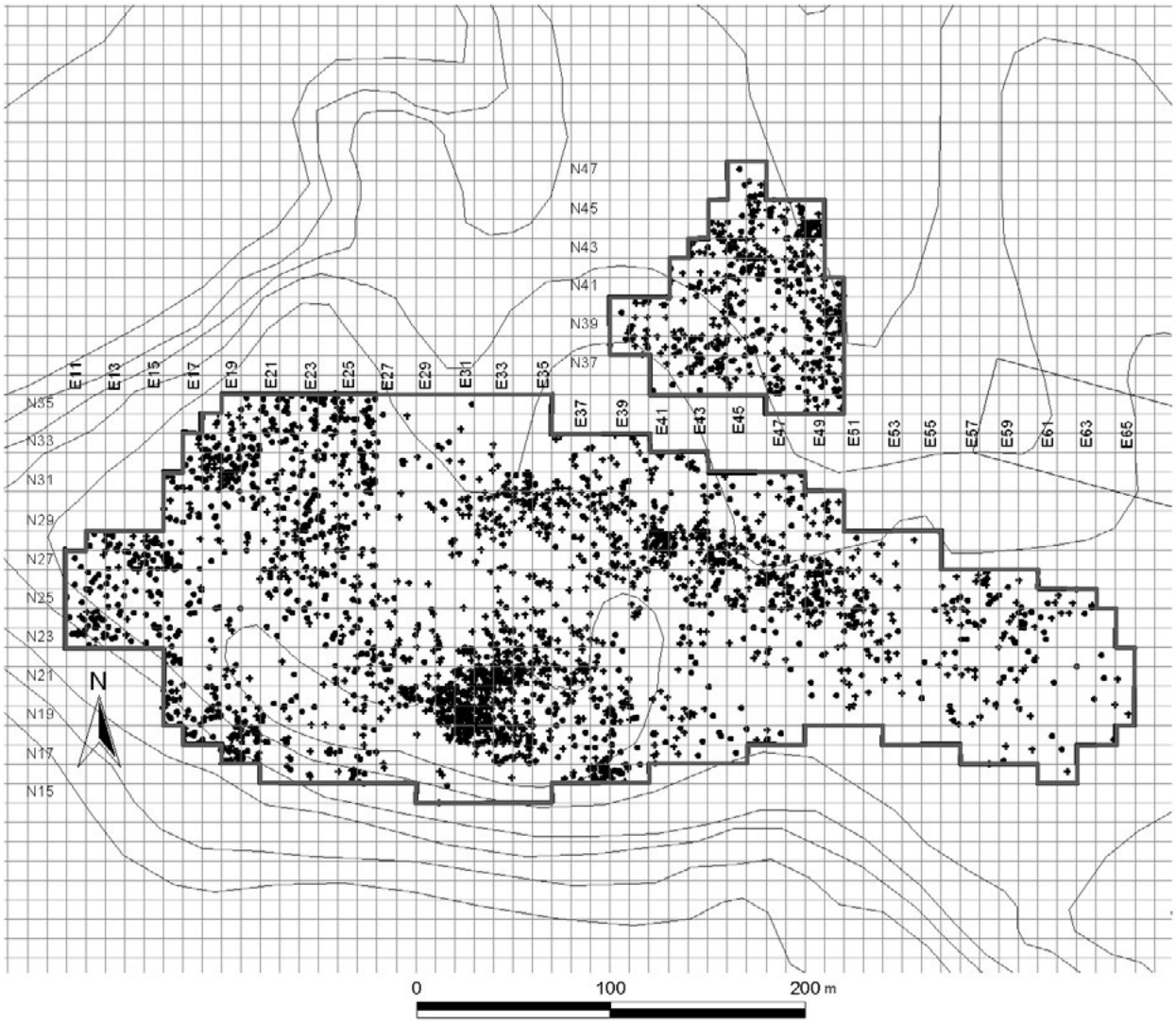


Plan List-16. San Felice. Greek type and Ionian type cups (dots) and antefixes and *sima* fragments (crosses).

burial of infants on Botromagno and other sites in this region, but not until the next period: see Catalogue of Artifacts, 13 and 15). Deep impasto bowls and shallower pans were used for cooking. Biconical urns and jars in the geometric monochrome style must have been used for storing smaller items and holding liquids (including probably wine and oil). The low carinated bowl with out-turned rim (*capeduncola*) is suited to drinking, and may have been developed in response to the need for drinking vessels (especially perhaps communal ones) in a society where the consumption of wine had become normal. Bowls with in-turned rims would have been better suited for holding cooked food. *Kantharoi* and mugs in matt-painted geometric ware may have been used for drinking and pouring. All these would have been part of the standard equipment of an EIA hut. Some of the loomweights may also have been used on looms set up in huts of the period, as they were in the hut excavated in *Saggio* A (Cossalter in *PSF*, 41).

Of special interest is a small group of vessels which must have been shaped like an hour-glass with concave upper and lower surfaces equally suited for holding liquids. The fragments all preserve the shape of the pot at the central point, and give little idea of the complete form, but parallels with (later) examples from other sites (given in the catalogue) suggest strongly that they are the remains of stemmed *thymiateria*, with the lower surface forming part of the stem. One (No.312) is in impasto, the other four in geometric monochrome (Nos.443, 566A-C), or perhaps in bichrome with the red missing. The shape occurs again later in wheel-made painted ware (Nos.617-623) of the C4–5 BC. None of these pieces shows any signs of fire damage, so they are unlikely to have been used for burning incense, as the term usually given to them suggests (See the remarks by E. Herring (2000, 159-164) on a "thymiaterion" of the second quarter of the C5 BC from Botromagno). In the C4 BC, vessels of the same type occur in great numbers in Lucanian sanctuaries, where they were used in religious cult, presumably to contain some sacred liquid(s) – water, oil or wine. The five pieces from San Felice in fabrics typical of the EIA and MIA are unusually early examples of the form. They are more or less evenly distributed across the area inhabited in this period. It is likely, therefore, that they were used in domestic cult attached to particular huts or groups of huts.

During the course of the C6 BC huts made of wattle and daub gave place to more solid structures using techniques learned from the Greeks on the Ionian coast. Remains of two such buildings were found in *Saggio* B of the Superintendency's excavation (see above). Generally these buildings had mud-brick walls resting on stone socles, and were roofed with tiles of either Laconian or Corinthian type (see the Introduction to the Catalogue of Artifacts, 32). Remains of both roofing systems were found in our survey of San Felice. Some of the earlier tiles were colour-slipped, including a Corinthian tile No.2190, and six Laconian tiles (see on No.2192). Another Laconian tile (No. 2189) was painted with red-brown stripes. Several fragments of palmette antefixes (mentioned above)



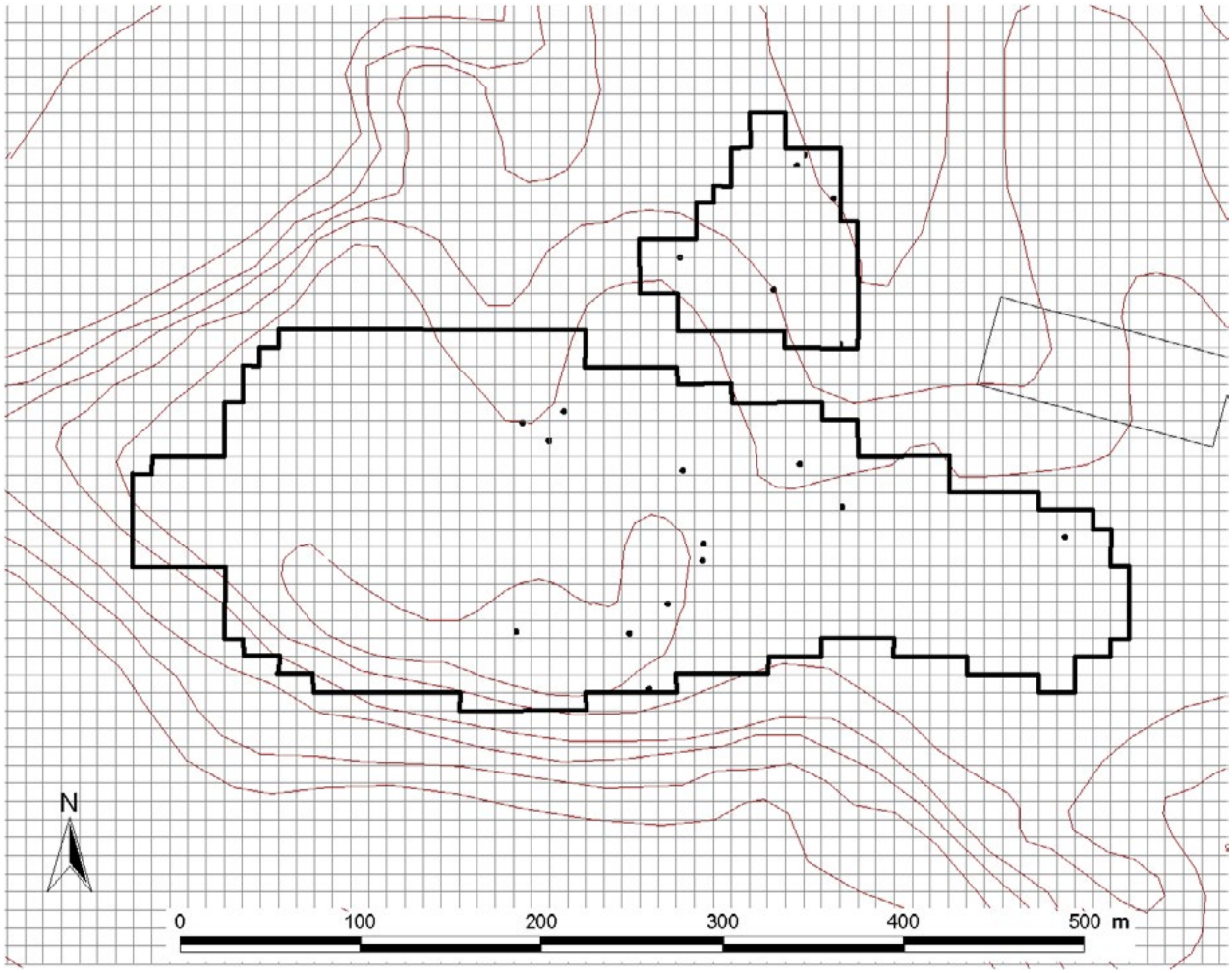
Plan List-17. San Felice. Distribution of black-gloss (dots) and wheel-made painted sherds (crosses).

also date to this phase of the settlement. They show that there were some prominent buildings, presumably of the local élite, marked out by their conspicuous decoration.

There are various other indications that contacts with the Greeks on the coast around Metaponto became more frequent in the C6 BC. This is most obvious in the large number of archaic Greek-type cups imported from Metaponto or imitated locally. They were designed to contain the mixture of wine and water consumed in a symposium. Since 105 of them were recorded on San Felice, and very few were found on other sites, their presence here in such numbers suggests that the inhabitants of San Felice had a more privileged life-style, or at any rate were more attuned to Greek customs than those who lived in the smaller settlements. From the C6 BC also came four amphorae (Nos.1408-1411), the earliest on the survey and found only here. They were probably wine amphorae (although they could have been used for honey, nuts or olives) and were presumably used to import wine for the symposium.

Plan List-16 shows the distribution of the fragments of antefixes and simas found on our survey of San Felice. There is a marked concentration of palmette antefixes on and around the highest part of the site which are likely to derive from a single building, probably the dwelling of the most powerful family in the community. The isolated fragment of another palmette antefix from the NW part of the site (No.2063) shows an unusual treatment of the leaves, and is likely to come from a different structure, as must the even more isolated fragment of a lateral sima from further N and E (No.2070). It has obvious affinities with buildings at Metaponto and may be slightly later than the others. Another isolated fragment (No.2060) is much closer to the hill-top group in style but it comes from too far away (from Area 245, some 50 to 100m E) to be derived from the same building. It is likely, therefore, that in the area of our surface collection there were four or five houses with architectural embellishment of Greek type, all datable, probably, to the early C5 BC. To these may be added yet another élite building near the E end of the settlement where other fragments of palmette antefixes were found in the excavation by the Soprintendenza in *Saggio* A (Cossalter, *PSF*, 67, 70-71 and figs 20, 21).

The burial practices of the late C7 and C6 are exemplified by a number of graves excavated by the Superintendency in *Saggio* A and in the vicinity of *Palo* 30 (see above). There was no clear separation between settlement and cemetery. Adults and children more than a few months old were laid in simple pit graves in the flexed, *rannicchiato*, position, females on their left side, males on their right, and were supplied with a few grave goods, normally a large vessel, probably for wine, a



Plan List-18. San Felice. Distribution of *thymiateria* including the so-called horse's legs.

smaller pot for drinking, and a third still smaller for use as a ladle. Infants were buried in pots without grave goods.

San Felice in the period of wheel-made painted and black-gloss wares

The extent of occupation on San Felice in this period is shown by the distribution of wheel-made painted and black-gloss wares characteristic of the period between the late C6 and end of the C4 BC. It shows a significant change in the organization of the settlement. There was a noticeable concentration of these wares above the scarp and probably also to the NE. (For a plan of WMP see *PSF*, fig.5; for a full analysis of the BG pottery on San Felice see Small & Small 2010. A plan of the distribution of BG pottery is also published in *PSF*, 13 fig.6). The plain wheel-made sherds, most of which probably also belong to this period, show the same pattern – there was a massive scatter of them all over the site, but the main concentrations were to the S above the scarp and to the W; and there was noticeably less in the dip.

The character of the settlement in the first part of this period is illustrated by the excavation by the Superintendency in *Saggio* A, summarized above. The house of the C5 excavated there was a large structure with a socle of well-laid drystone masonry, roofed with Laconian tiles. The interior was subdivided into a number of rooms, most or all of which were multi-purpose spaces for living, cooking and doing domestic work, including weaving.

The superior status of San Felice in relation to the other settlements of the period found in the Survey is shown by the distribution of Apulian and Lucanian red-figure pottery, which can be taken as an indicator of a degree of social status. Of the 73 pieces found on the Survey, 64 came from San Felice where they were scattered across the site (Plan, *PSF*, 13 fig.6). A few were early, notably a good fragment of a seated Eros (No.721), probably by the Early Lucanian Amykos Painter, but most were late and generally come from uninspired pieces of the late C4 decorated with standard motifs. Several of them are from bell-kraters designed to hold the mixture of wine and water consumed in a symposium, and like the red-figure jugs (*oinochoai*) and cups (*kylikes* and *skyphoi*), they suggest that many houses across the site were equipped for this aspect of domestic and festive life. A few pieces, however, may have been deposited in tombs destroyed by deep ploughing, particularly in Area 245 near the known location of some burials, and in the square E34N31 where two *lekanis* lid fragments from different pots (Nos.724-5) were found. The *lekythos* (No.735) is also likely to come from a burial since these vessels made to hold scented oil were commonly used in funerary rituals and deposited in tombs.

The nine overpainted and fourteen Gnathian pieces are generally contemporary with the later red-figure on San Felice and are equally indicative of a life-style above the minimum subsistence level. Like the red-figure pieces, they

were scattered over the site (*PSF*, fig.6, Gnathian shown as black crosses).

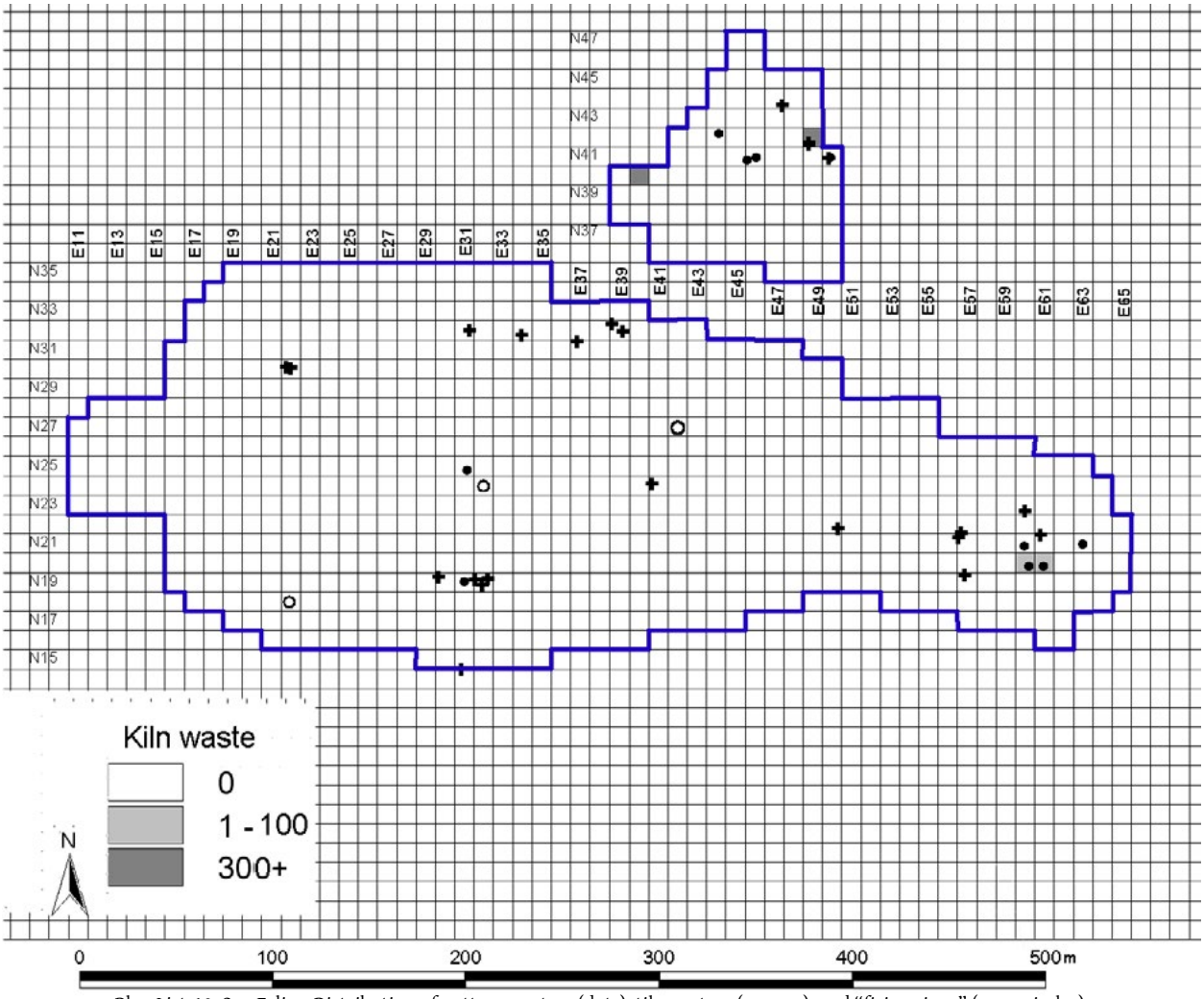
Much of the wine consumed in the settlement must have been imported in Greco-Italic amphorae from sources in Magna Graecia and Sicily between the C5 and C3 BC. Numerous fragments of them were found scattered across the site (Nos.1416-24, 1427-8, 1430-1, 1435-42, 1445-7). They are discussed by Disantarosa in the Appendix to this book. Some may have contained other products, but the great majority, including the Vandermersch III/ Greco-Italic III amphorae, are likely to have held wine. Since only a few Greco-Italic fragments were found on other sites in the Survey Area, and none on the other hill-top settlements which continued from the EIA and MIA (Sites 401-9, 407, 627), it seems likely that the settlement of San Felice was the only one in the Area sufficiently prosperous to be able to import these containers in any quantity.

Another aspect of domestic life is represented by fragments of wash basins (*louteria*), several of them with rouletted decoration of palmettes or olive fronds on the rim (Nos.1305, 1311, 1312). Another is a blue glass bead (No.2016) broadly datable to the C4 BC. A second bead (No.2017), blue with white inlay may also date to this phase of the settlement, although the type has a wide date-range from the C4 BC through to the Lombard period.

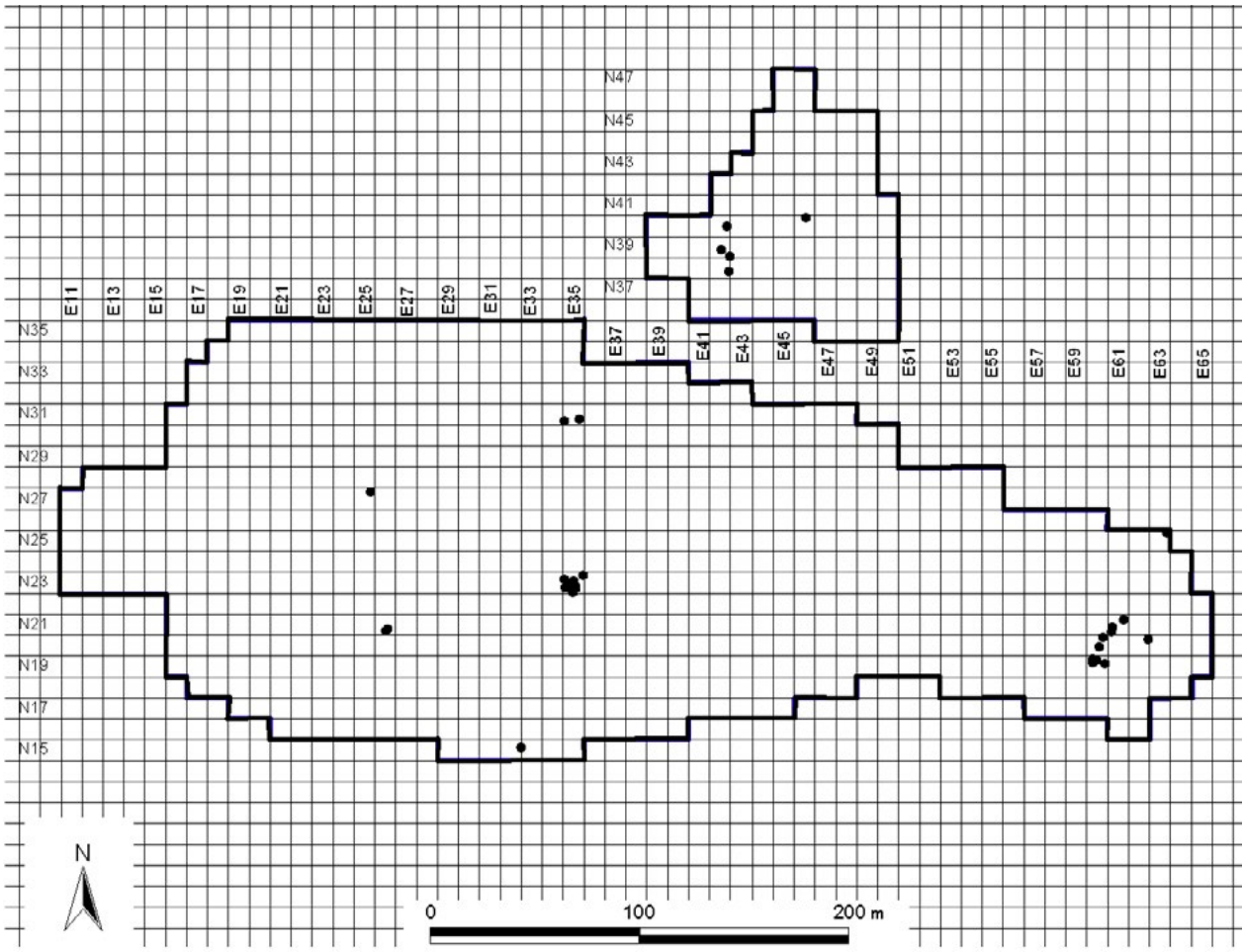
Several *thymiateria* in wheel-made painted ware (Nos.617-623) show that the domestic cult practices of the previous period continued down to the C4 BC. To them can be added four carefully modelled (but badly battered) horses' legs (Nos.2071-2074) which functioned as supports for wheel-made dishes. They too are likely to have been used as *thymiateria*. Since the closest comparisons for them (though none are very close) are vessels found in tombs, it is possible that they were used in funerary rituals.

Many of the surface finds came from the normal equipment of a kitchen. They include more than 4000 sherds of cooking-pot ware: fragments of boiling pans (*chytrai*) casseroles (*lopades*), jars, and bowls. Not all were used for cooking (Some show no signs of fire-blackening), but there can be no doubt that the great majority had a culinary purpose. There were at least 32 *mortaria* in plain ware, some with grit incorporated in the inside wall for grinding foods.

Numerous fragments of lava millstones, weighing in all 175.5kg were also widely distributed across the site. They are good evidence for the importance of cereals in the economy of the settlement. Most of the fragments were too small to give a shape or date, but among the more distinctive pieces there were two saddle querns (Nos.2024, 2025), which might belong to almost any phase of the site, three flat grinding stones (Nos.2026, 2029, 2030) and a rubber (No.2034). None of these is precisely datable, but their widespread distribution



Plan List-19. San Felice. Distribution of pottery wasters (dots), tile wasters (crosses), and "firing rings" (open circles).



Plan List-20. San Felice. Distribution of slag. Each dot = 100g.

leaves little doubt that all or nearly all belong to the Peucetian settlement, and that many of the houses had their own mills for grinding. It is interesting that no fragments of rubber-hoppers were identified, although these more sophisticated mills had been introduced elsewhere in South Italy in the C4 BC. This is one of several factors that suggest that San Felice was not in the forefront of economic and cultural development in this period. (The lack of really good-quality red-figure pottery and the scarcity of lamps are others).

Fragments of *dolia* were also fairly widely distributed across the site (Plan, *PSF*, 13 fig.7). In some areas (e.g. on the E of the area N of the road) there must have been several *dolia* in close proximity to each other which may have been used for the production of a quantity of wine that went beyond domestic requirements. In addition, however, many houses must have had their own domestic *dolia* for cool storage. Most of the pieces were untypable wall sherds, but some rims could be classified. Seven catalogued pieces with rims folded back onto the shoulder (Nos.1858-61 and 1863-6) certainly belong to this period, as may those of the succeeding type with thickened rims, triangular in section, and spreading shoulders which was introduced before the end of this period, but continued later (Nos.1870-1, 1873-4, 1877-8, 1883, 1889). One large storage pot (No.1913) was decorated with a rouletted tongue pattern and ivy leaves.

Loomweights too were spread across the site (Plan *PSF*, 15, fig.9), without any large concentrations which might suggest that there were dedicated textile workshops in the settlement. The loomweights must have been used in the homes, but there were enough of them (54) to imply that wool working was of some importance in the economy of the site. Their domestic context is illustrated by two groups of loomweights found in the Superintendency's excavations: one cluster of ten in *Saggio* A (*PSF* 74 and fig.33) dated by the excavators to the second half of the C4, and another of eight in Room 2 of *Saggio* B (C7–C4 BC) at the E end of the site (*PSF*, 138 and tav.IV.34).Their measurements are not given but if they constituted single sets, their shapes (One is said to be cylindrical) and possibly their weights showed considerable variation.

Only one of the ancient lamp fragments (No.1925) can be securely dated to the C4 BC, though three uncatalogued lamp fragments in black-gloss ware may also date to this phase of occupation. Lamps in this period were still rare items. No lamps were found on other LIA sites in the Survey Area, and none are reported from the recent excavations on San Felice. The use of lamps was spreading throughout Southern Italy in the C4 BC, reaching as far as Botromagno, but not, apparently, getting as far as San Felice.

Industry

A small quantity of kiln waste indicates two places on the site where there were kilns, one at the E end, the other in the N. They must have been used for tile production, because a number of tile wasters were found in both areas, some of them fired badly enough to be mere shapeless masses, including No.2085a in the N. This and two other serious misfires were

apparently of *tegulae*. Others, sub-standard but not necessarily unusable, were scattered across the site. There were also imperfect Laconian tiles. One from towards the W end (E22/ N30) was badly twisted while four had impressed paw prints (Nos.2210, 2214-6) made by animals which had trodden on them as they were drying (only one print was identifiable, a cat). Two of these (Nos.2210 and 2215) were found in adjacent squares also in the W (E18/N33 and 34). There is no reason to suppose that the marked tiles were not sold, perhaps at a reduced price, and used on roofs, so they cannot necessarily be taken to indicate production *in loco*, but together with the one waster they imply a tilery somewhere in the area.

The evidence for pottery manufacture is rather meagre but none-the-less reasonably persuasive. Three objects can be identified as firing rings (Nos.2080, 2080a, 2080b), the first with certainty, the other two more doubtfully. They were not in close proximity to each other. There were also seven pottery wasters, not catalogued, and widely scattered across the site. Although they could have been misshapen by being burned after firing, the presence of the firing-rings suggests that there was a potter's workshop and kiln on the plateau most probably in the E where four of them were located near the kiln waste.

There was also a fair amount of slag. Like the kiln material it was scattered across the site but there were marked concentrations to the E and the N which must have been associated with the Peucetian settlement. A small lump of smithing material (No.2088) found towards the W end may derive from the medieval village.

The end of the Peucetian settlement

The Peucetian phase of the settlement on San Felice ended around the end of the C4/ beginning of the C3 BC. Only three of the catalogued black-gloss sherds from the site have a date range which extends into the C3 BC and all three are types which began before the end of the C4. No other fragments of table ware or fine storage vessels were found on the site datable within the last three centuries BC, with the possible exception of No.651, a WMP rim not easily datable. There are no certain (and only three possible) GG sherds of the Late Hellenistic period or ITS sherds of the Early Roman Empire.

Another, more enigmatic, piece which should probably be dated in this marginal period between the C4 and C3 is a fragment of a curved roof tile with part of a stamped inscription HPẠ[.. / EIẠ[.., which was found by Sig. Antonio Florido somewhere on the surface of San Felice. The inscription can be reconstructed as Herakleidas, probably the name of the artisan who made it, split into two halves set on different lines (Small 2006, 331-332). The letter forms, particularly the lunate *epsilon* and the attenuated *rho* with oblique bar show the influence of the cursive types used on papyri that were introduced in the C4 BC and became common in the C3, lasting, off and on, throughout the Roman empire. The same tendency is apparent on the stamp of another tile-maker, Herakas, found at the Contrada Sansone in the Chora of Metaponto (Lo Porto 1966, 152 No.11) which shows the lunate form of *sigma*. Other tiles with less complete stamps of Herakas have been found at several other sites in the Chora including Sant'Angelo Vecchio where they were used in the roof of the Hellenistic workshop and kiln complex dated to Phase 4, between the end of the C4 and the middle of the C3 BC (Rescigno *et al.* 2016, 473-476).

The negative evidence confirms that occupation of the site cannot have extended far into the C3 BC. None of the black-gloss shapes most typical of occupation in the C3 and C2 BC, such as large bowls with incurving rims, cups with vertical ring handles, plates with S profile rims and hemispherical bowls were found on the site. Nor were there any ribbed Gnathian sherds typical of this period such as are found on other indigenous sites which lasted into the C3. (This topic is discussed further in Chap. VIII.8.i.a). The combined evidence of the fine wares therefore shows that the main phase of occupation ended around the end of the C4/ beginning of the C3 BC. No dates derived from ceramic types can be precise, but since we know that a Roman army besieged Botromagno/ *Silvium* in 306 BC, took it by storm, and made away with a large number of captives and an immense booty, it is a reasonable assumption that the settlement on San Felice, which we have argued was a dependency of Botromagno, was abandoned as a result of this onslaught.

Frequentation of the plateau in the Hellenistic and Roman Imperial period

There is, however, some evidence of human activity on the plateau after the settlement came to an end. Most obvious is a surprisingly large number of amphora sherds datable between the C3 and C1 BC (Period VIII, seventeen pieces), continuing through the Early and Middle Empire (Period IX, seven pieces). Several *dolium* fragments may also be dated within the last three centuries BC, although the dating evidence is less reliable. They include Nos.1904, 1905 and 1910.

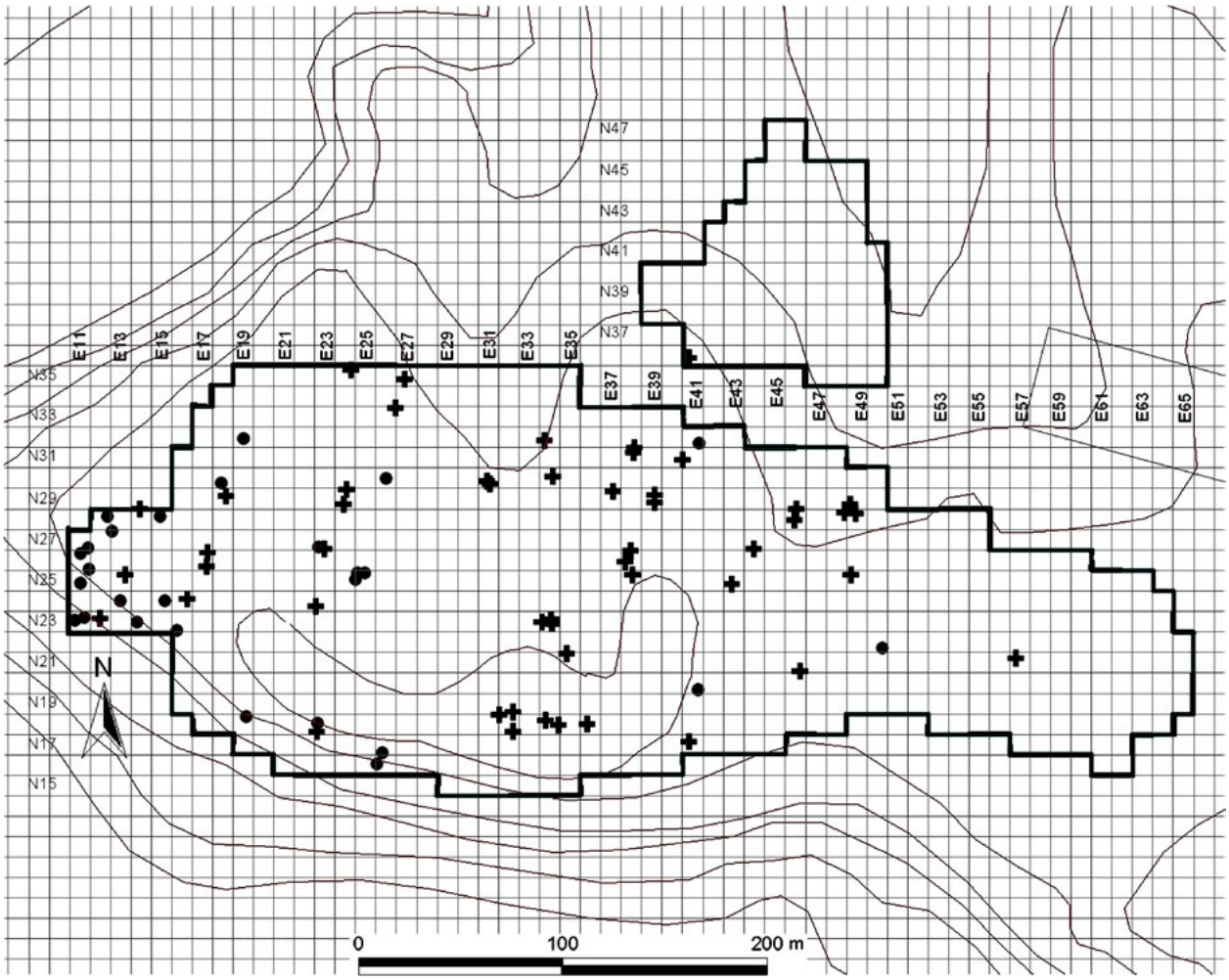
These large items are not the only anomalous pieces: other items include a badly worn Tarentine silver coin (diobol) of the middle decades of the C3 BC (No.2021), a fragment of a late sub-Gnathian hemispherical bowl of the late C3/ 1st half C2 BC (No.754), two *unguentarium* fragments, Nos.978 (dated between the late C3 and early C1 BC) and 980 (2nd quarter of the C1 BC), and a sherd of Regional Red Slip ware (No.1068). There are no fragments of Late Hellenistic lamps, but one lamp (No.1936) can be dated to C1/C2 AD. A fragment of a glass balsamary (No.2009) is datable to the C1 AD.

The existence of these pieces is at first sight surprising given the total absence of the most characteristic fine wares datable to this period. The presence of the *unguentaria* and the balsamary, however, suggests a possible solution to the conundrum. Both types of vessel were used in funerary rituals (balsamaries replacing *unguentaria* as containers of perfumed oil in the course of the C1 BC), and both were frequently deposited in graves. There is therefore a strong probability that these sherds may derive from ploughed-out graves of the Late Hellenistic period, connected, probably, with the villa on Site 229 on the shoulder of the hill on its NW edge. So, too, may the lamp fragment, since lamps were frequently deposited in graves in South Italy in the Roman Imperial period, as at Vagnari where lamps were found in six out of seventeen burials of the C2 AD excavated in 2002 (Small & Small 2007, esp. 142-143, and 213-218; De Stefano 2014). Indeed, in our area this seems to have been the commonest use of lamps. It may be noted that two rare instances of oil amphorae, No.1661 (Ostia XXIII) and No.1775 (Kingsholm 117) come from the plateau at this time when it was apparently not inhabited. The late Gnathian piece is less typically funerary, but would not be out of place in an assemblage of grave goods, as the pieces cited as comparanda in the catalogue, found in Hellenistic *grotticella* tombs, show.

Even the diobol may have been a burial offering since coins were often deposited in burials in Magna Graecia from the C4 BC onwards (Cantilena 1995), frequently put in the mouth

of the dead. They are normally taken as a ritual payment for the voyage to the afterlife equivalent to "Charon's obol" of the literary sources, though some have preferred to see them as talismans, or symbols of the individual's total wealth. (For discussion of the topic with further references, see Cantilena 1995 and Parente 1995). The practice was much less common in the indigenous communities of Apulia and Lucania, but a few instances are known in Lucania, notably in burials in the areas of Fossa Concetta and Vracalicchio near Montemurro in the upper Agri valley. There two coins were found in burials, one of bronze, the other a silver incuse coin of Metaponto datable between 550 and 480 BC deposited in a tomb of the second half of the C4 BC (P. Bottini 1997, 95-96; Parente 1995). The practice was equally rare in Central Apulia in this period. A Roman Republican *as* of the last years of the C3/C2 BC was found on the upper edge of the semi-chamber Tomb 6 at Monte Sannace (Siciliano 1989, 257 No.8), but the tomb had been robbed and the association of the coin with the burial is not secure. The custom is, however, attested in some Messapian burials at Egnazia on the Peucetian border (Travaglini 2010, 261 citing Maci 2004, 18). Normally the coins consigned to burials were badly worn pieces which had been in circulation for a long time, in some cases for more than a century, like the Metapontine coin found in the tomb near Montemurro just mentioned, or various Magna Graecian coins of the C4/ early C3 BC found in burials datable to the last half of the C2 BC at Heraclea (Siciliano 1995). The condition of our coin from San Felice is therefore fully compatible with the hypothesis that it was deposited in a burial of the late C2/ early C1 BC, and it may also be supposed that it was linked with the settlement on Site 229 on the N side of the hill which was re-occupiedat this time. This was a period when the traditional burial customs were undergoing rapid change (see Chap. VIII.2.vii, 3.iv.c), and the ritual of "Charon's obol" which had long been established in both Magna Graecia and Campania, may have become more firmly entrenched in Central Apulia.

A similar explanation may account for the presence on the hill-top of at least some of the amphora fragments of Hellenistic type. Disantarosa's analysis shows that after the main series of Vandermersch/ Greco-Italic types III-IV of the 4th-early 3rd centuries BC there are none that need be dated to the C3, although examples of Vandermersch V and VI types which can be dated to this period are found elsewhere in the Survey Area, on Site 813 (Nos.1449, 1451). The series of amphora types resumes early in the C2 BC with Lamboglia 2s. They too may have been derived from the settlement on Site 229 and may have had a funerary use. Amphorae were often deposited in the grotticella tombs in the Apulian culture of the C3 and C2 BC, and amphorae of wine may have been deposited as grave goods in burials associated with the revived occupation on Site 229. Some of the later amphorae may have been used in *enchytrismos* burials to hold the bodies of neonates or very small children. This was a practice that went back to the EIA when impasto *pithoi* were used to contain the bodies. In the



Plan List-21. San Felice. Distribution of LRPW (crosses) and combed tiles (black dots).

Hellenistic period wheel-made pots of various types replaced the impasto *pithoi* for infant burials, but it was not until the Roman imperial period that amphorae were commonly used for this purpose, as at Metaponto in the C2 AD (Giannotta 1980, 75). They might also be used as ossuaries to contain funerary ashes as at Foligno in the C2 AD (Bergamini 1988, 21), or they might be adapted to serve as libation tubes or as grave markers (J.M.C. Toynbee 1971, 101-102).

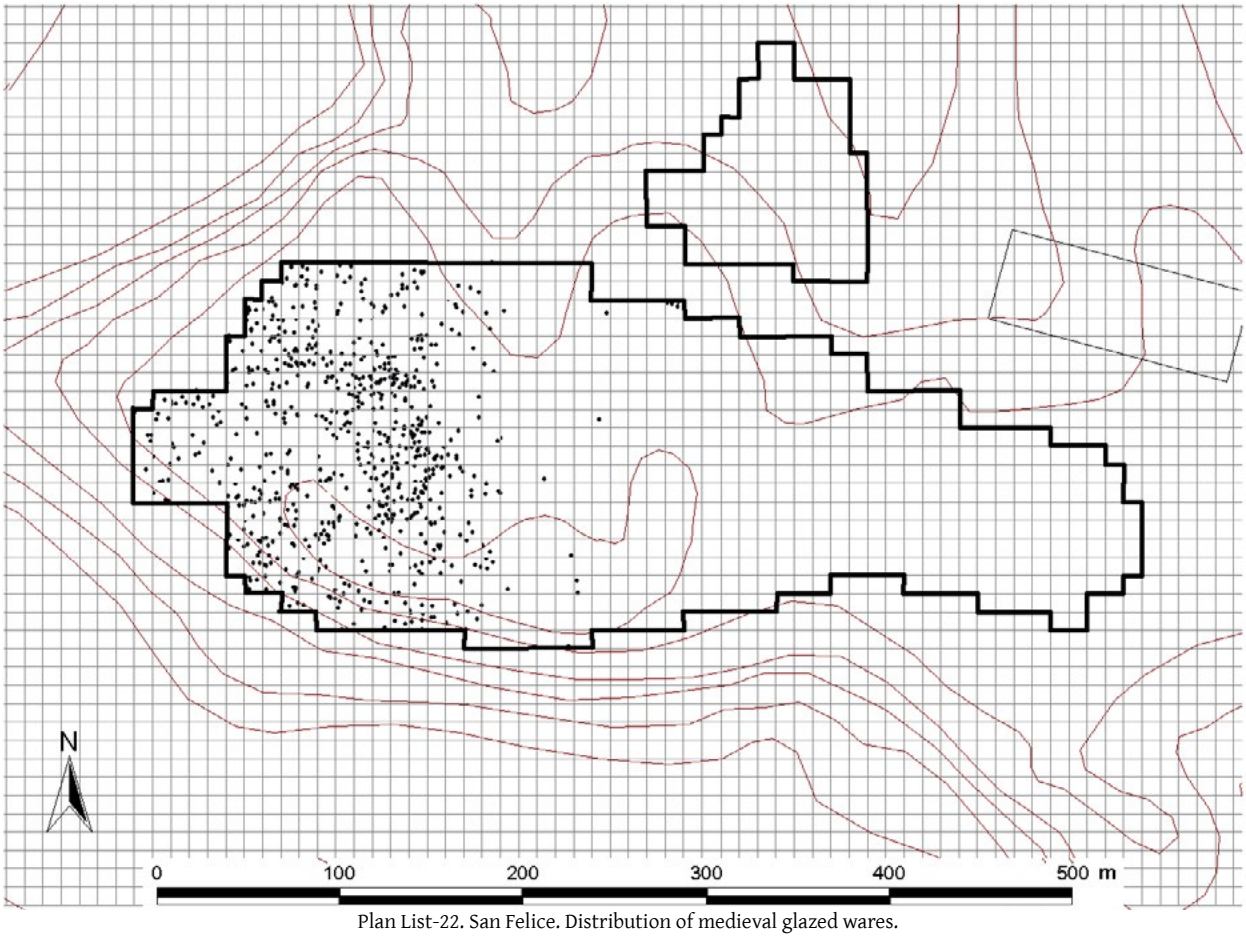
It is possible, therefore, that some of the amphora fragments that post-date the main phase of occupation derive from ploughed-out burials associated with the occupation of Site 229. Like the main IA settlement on the plateau, it was abandoned around the end of the C4 BC, but it was reoccupied early in the C2 BC and redeveloped in the middle of the C1 BC as a villa. It continued to be inhabited until the middle of the C2 AD, with some more limited use thereafter. That part of the plateau was used for burials after the end of the Peucetian occupation is confirmed by the discovery of two burials of adult males (Tombs 3 and 4) found in the excavation of *Saggio* A. Neither contained any grave goods, but the use of tiles in the construction of one of the graves suggests a Hellenistic or Roman date, and both burials are dated by Cossalter after the destruction of the last building on the site in the late C4 BC.

Three segmental tiles, including Nos.2231 and 2232, were found on the site. They are component parts of columns which would have been stuccoed and probably fluted. Since they had to be held together with mortar, they can hardly have come from the Peucetian settlement, but they may have come from the *aedicula* of a Roman funerary building. It is difficult otherwise to explain their presence.

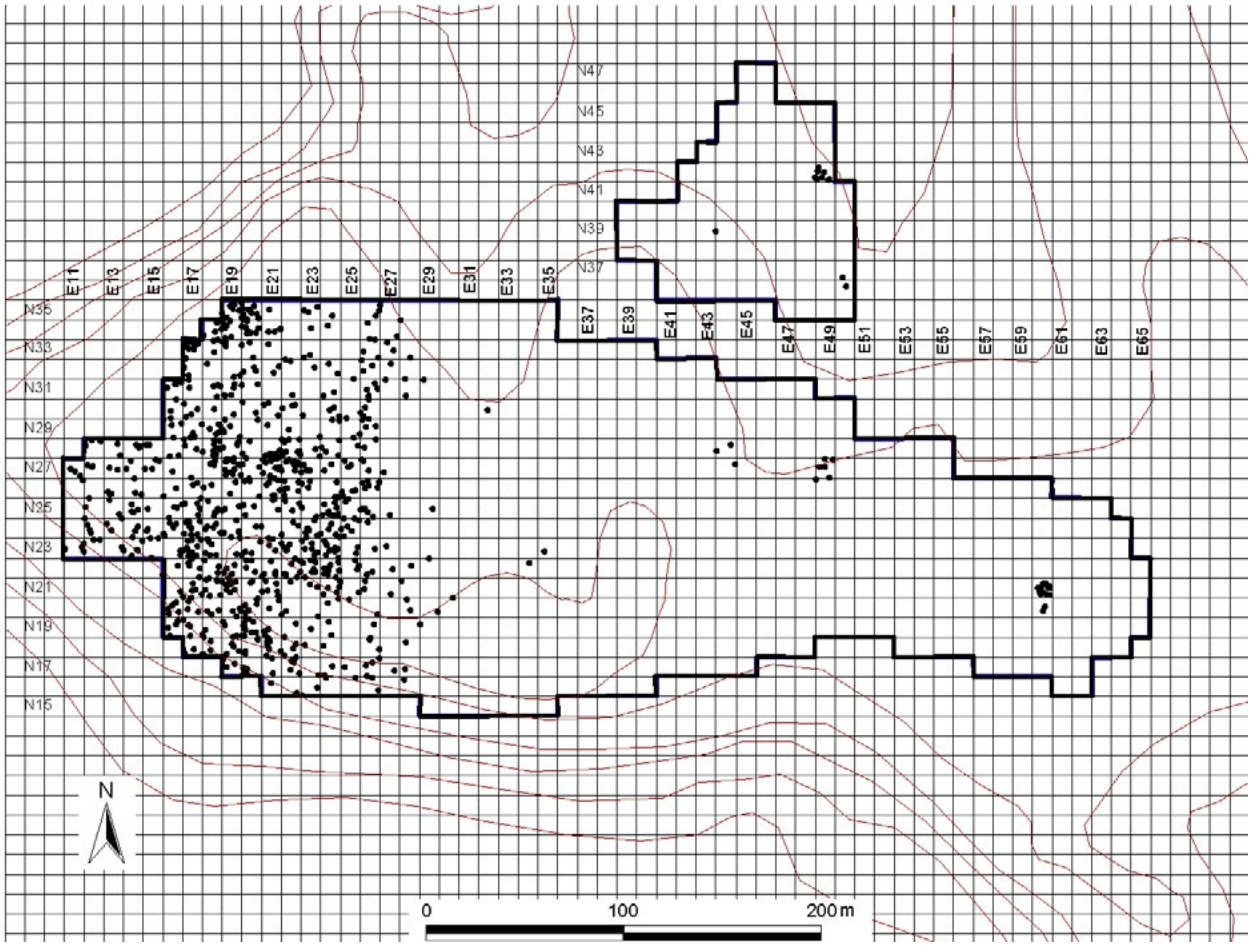
Obviously burials need not be the only explanation of discrepancies in the ceramic record. The plateau was presumably used for stock farming or arable cultivation by the inhabitants of the villa, and some or all of the amphora fragments may have been dumped on waste heaps and subsequently distributed over the fields as manuring scatter; or they may be the remains of amphorae brought uphill from the spring as water containers for the agricultural labourers, or to be used for watering plants.

The Late Antique/ Early Medieval settlement

It is likely that resettlement of the plateau began in a very modest way in the Late Imperial period (Period X). The first signs of it are four African red slipped sherds, two of which are in D ware of the C4–C7 AD, too late to be considered strays from Site 229. Two amphorae can also be assigned to this period: a cylindrical container of medium dimensions No.1683, and an early *spatheion* (No.1690), both imported from North Africa. The evidence increases in Period XI to which can be assigned about 50 sherds of colour-slipped pottery which are tentatively classified as LRPW. They were scattered over the site (see Site 223 Plan List-21) and show no obvious area of concentration. Most are too small or too badly damaged to be properly diagnostic, but three rim fragments (Nos.1128, 1160a, 1167) were sufficiently well preserved to be catalogued. The last is an anomalous form (a lid) and its classification is doubtful. Two *dolia* with Late Antique profiles (Nos.1915 and 1916) may also be attributed to the settlement of this phase. They came from opposite ends of the grid. Several *tegulae* with tall narrow flanges characteristic of the Late Antique period (e.g. Fig.55 T80, T88) were found.



Plan List-22. San Felice. Distribution of medieval glazed wares.



Plan List-23. San Felice. Distribution of medieval chaff tiles.

Broadly contemporary with these pieces are most if not all of the ten amphorae listed under Period X/XI in the Table. All are imports from the Eastern Mediterranean. As in previous periods their main use was probably to transport wine though their use or re-use as containers for oil or other produce cannot be ruled out (Disantarosa, Appendix). Like the LRPW sherds they were loosely scattered across the site.

The distribution of these wares suggests that the occupation in the Late Antique period was thinly distributed across the plateau.

There are some indications, however, that during the Early Medieval period (the last part of Period XI in our chronological system) the occupation began to be more concentrated towards the W end of the site where the Medieval village later developed above the scarp. Among the latest material are several fragments of glass vessels including the base of a stemmed goblet (No.2014) and three rims (Nos.2010-2012), also probably from stemmed goblets although the possibility that they come from lamp glasses cannot be ruled out. If so, they may be still later: the bottom of a suspension lamp glass found in one of the excavated pits in the medieval village is dated without discussion to the C13–C14 (*PSF* 172 and tav. X, 70). A glass bead (No.2018) of Early Medieval type was also found in the W part of the site.

Various tiles of Late Antique or Early Medieval type were also found in this area. They include four *imbrices* with finger impressed grooves (Nos.2234-6) broadly datable to the C5 AD with some margin on either side, and a group of some 27 combed tiles, probably of the C7/C8 AD (Nos.2269-2274), all but four of which were also found at the W end of the site (*PSF*, 16, fig.11).

Finally, two gaming boards roughly scratched on tiles, may tentatively be attributed to this phase. One is a tile marked for the game of *latrunculi* (No.2077), found near the W end of the plateau which can hardly belong to the Peucetian settlement, and may be attributed to the Late Antique or Early Medieval phase of the site – unless it was brought here by field workers from the villa at Site 229 wishing to while away time on the plateau. Another gaming board (No.2076) marked for the games later known as Three Men's Morris and Nine Men's Morris presents similar problems of date and interpretation. It is a sporadic find, but it lay just under the W scarp, and like No.2077 may go with the Late Antique/ Early Medieval phase of occupation.

The Settlement in the Middle Ages

Several pieces of Early Medieval painted wares (Nos.2090-2094) datable between the 7th and 11th centuries, and a single fragment of "chaffy" cookpot No.2161, all found near the W end of the settlement help to bridge the gap between the end of the LRPW in the 7th century and the Medieval wares of the 11th–14th centuries, but the quantity is meagre, so such occupation as there was must have been very thin. A much more consistent settlement was established in the C11 AD at the W end of the site where numerous medieval sherds attest to the vitality of the village. The majority of these were plain wares, notably medieval ribbed handles,

but there was also a significant quantity of glazed wares of the C12–C14.

A large number of medieval tiles can be distinguished by the conspicuous traces of chaff in their fabric (Nos.2269-2274). Their distribution corresponds closely with that of the medieval pottery and is a further indication of the location of the medieval settlement (*PSF*, 16, fig.12). Seventeen lamp fragments of medieval type including Nos.2158, 2159, 2160 show that lamps were widely used for illumination – which was not the case earlier (see above). Eleven more medieval lamps were found in the excavated pits (Nanna, Mellilo & Santovito in *PSF*, 168-170, tav. IX), and a suspension lamp (id. 172 and tav.X.30). There was also some cookpot (e.g. No.1353) which is probably medieval. The medieval site was not large – there was little evidence of either a church or a castle (though a marble basin, No.2055, could conceivably have been a font) – but it must have been an agglomeration of dwellings, in which some at least of the population were affluent enough to acquire glazed and decorated pottery. This affluence is also indicated by two coins found in the area of the medieval village (Nos.2022, 2023) including a gold *tari* of William I minted at Messina, probably in 1154. A *tari* was a relatively low-value gold coin but it would not have been used by peasants for everyday market transactions which would still have been mostly in kind. The other coin is billon (heavily alloyed silver), a quarter *tercenarius* of William II (1166-89). It was a new coin of William's time (the exact date is unknown), valued at one tenth of a *tari*. The coins together suggest that some serious buying and selling was taking place on or near San Felice. Alternatively, the *tari* may have been used for tax, but if so, the tax must have been paid from elsewhere: San Felice was never taxed as an independent settlement. Whatever their purpose the coins give a fairly precise indication of when the site was in use.

Also datable to the Central and Later Middle Ages was the scatter of some 60 pits and traces of walls belonging to two different buildings revealed by the Superintendency's excavation in an area of 675m^2 near *Palo* 31 at the highest point of the plateau (*PSF* 146). One of the buildings was a roughly rectangular dry-stone construction without foundation, two sides of which partially survive. It was interpreted by the excavators as a stall for animals since a large number of bones, mostly caprine, was found in the rubble. The pottery retrieved from it was very fragmented but most of the identifiable pieces came from amphorae, suggesting that the building may also have been used for storage. The remains of the second building consisted of a wall of well finished stone blocks preserved for a length of ca. 3m, and a small part of another, also of stone blocks but more roughly built, joining it at right angles. A scythe was found here, so it may have been a store for agricultural implements. The collapse of both buildings was probably caused by fire. The better-built wall may correspond to one indicated by Hunt's resistivity survey (Plan List-12, above) carried out near the area of *Palo* 31. Hunt thought that it was a defensive wall, but the area investigated was too limited to show this clearly.

The pits appear to have been used for a variety of purposes. The deepest were round bell-shaped cavities about 1.6–2.6m deep, interpreted as rubbish dumps. They were not lined and would not have been practical for storing cereals. The shallower pits had perhaps a storage function. One was full of clay and may have been intended to hold a supply of it. Ashes for fertilizing the fields may also have been stored. In nearly every case, however, the pits were filled with refuse, including much pottery, when they fell into disuse.

A surprisingly small quantity of pottery (1% of the fragments collected) was residual from the earlier settlement. Nearly all the rest was datable to the C12–C14 AD Most was in plain or cookpot wares with some 4.9% being glazed medieval fine wares. One piece (no.8, tav.4, 18) was of the C15 AD by which time the site had effectively come to an end.

A concentration of lava millstone fragments toward the SW of the plateau may indicate a public mill of the Middle Ages

Documentary references

Documentary evidence for San Felice is tenuous (summarized by Cacciapaglia & Nanni, *PSF*, 179-183). The earliest possible mention of it is in 1063 when, in the presence of the Bishops of Acerenza, Bari and Terracina, as papal delegates, and of Duke Robert (Guiscard) six Norman notables restored to the Abbey of Banzi lands which they had abusively occupied. The description of the confines of the territory says that it descends (probably from Monte Serico) to the tenement (essentially landed property held from a superior) of San Felice and then to the tenement of San Felice de Acci from which it goes by way of two fountains to the tenement of Santa Maria de Catepano to the Basentello (Pannelli/ Di Leo 1999, 30). Various attempts to make sense of the geography of the document have been made but without much success. It is fairly obvious, however, that the area referred to lay between Banzi and Gravina and not far from the Basentello. A privilege of 1090 issued by Robert's sons Roger I and Bohemund referring, among the holdings of the Abbey of Banzi, to the "locus qui dicitur Sanctus Felix" is not much clearer (*ibid*., 32), but subsequent confirmations in 1101/4 (the date is not certain) of the property and privileges of the Abbey of Banzi are more useful. They refer to the *casale* of San Felice, in other words to a surrounding settlement (see Chap. XII.6) – "in tenimento civitatis Gravine ecclesiam S Felicis cum casali suo" and elsewhere to a "cell", presumably an outlying dwelling attached to the church, with its *casale* – "in oppido Gravino ecclesiam S Arcangeli et in eius territorio cellam S Felicis cum casali suo" (*ibid.,* 46, 65), surely good reason for identifying our San Felice with the holding of the Abbey. If this is correct. however, there must once have been a church or at least a monastic cell there. It probably decayed quite early: a subsequent document of 1151 confirming to the Abbey the possession of the castle of Banzi and the *casale* of Andriace also lists the other holdings of the abbey but this time refers to the "casale S. Felicis" with no mention of a church or cell (*ibid*., 72).

While the identification of our San Felice with the *casale* of Banzi is highly likely, it was not made by Pannelli in the C18. He thought that the earliest documents must refer to somewhere nearer Banzi and rather oddly placed the San Felice of the later documents on the opposite side of the Basentello in the territory of Irsina/ Montepeloso. (He does not explain why in that case San Felice is not said to be in the territory of Montepeloso which certainly already existed).

A last mention of a medieval San Felice in this area is in the Angevin Registers for 1284 ordering a declaration of boundaries between the men of Montepeloso, Alto Johannes (near Grottole), Turbi (Tolve) and San Felice (*Reg.Ang*. 27, 1, pp.45-46, cited *PSF*, 182). This may refer to our San Felice though one on the other bank of the Basentello is perhaps more likely. In any case, our settlement came to an end,



Plan List 24. Site 229 showing the area surveyed, with subdivisions, in relation to the plan of the Canadian excavations based on that of McCallum and vanderLeest 2014, 126, fig.2. Contour intervals 1m, surveyed by F. Taccogna.

probably before the mid-C14 AD, perhaps in the Black Death of 1348 or one of its recurrences, perhaps in the devastating wars that plagued Southern Italy in the C14 and early C15 AD. Favia and Valenzano in their analysis of medieval sherds from the site (Catalogue of Artifacts, 31) assign the latest glazed wares to the 14th century with the possible exception of one dish in brown green and red "RMR" ware (No.2134) which begins in the C13 but could last at least into the C15.

229. 608781/4520507, Puglia, San Felice.
Stubble field, grey silty loam, gentle to moderate slope just below the scarp of the San Felice plateau. Spring just above the site. Masl 450. Visibility 4/5. Area:9500m^2 with a scatter extending to about 15000m^2. Density sherds 0.1, tile 35.5.

Sherds found: 1366 incl **WMP** 2 (No.664), **Ionian type cup** 1 (No.693), **RF** 1 (No.714B), **Gnathian** 1 (No.757), **BG** 29 (Nos.828, 837,838,878), **GG** 10, (Nos.924,957**), Pre-Roman red slip** 4, ***Unguentarium*** 1 (No.974), **ITS** 108 (Nos.988-1002,1013,1014,1025 + 1 sim,1027), **ARS** 59 incl ARS-A 3 (No.1038, and cf. 1033, 1042), ARS-A/D 3 (Nos.1046, 1048, 1049), **RRS** 16 (Nos.1070, 1071, 1075, 1077 TW, 1085, 1086), **TW** 18, **LRPW** 14 (Nos.1101, 1182), **med** 1 green glazed, **"Pompeian" red ware** 19, **plain** 838 (Nos.1238, 1256, 1266, 1308, 1314a), **ckpot** 161 (Nos.1321, 1325, 1344, 1370, 1379, 1393), ***clibanus*** 7 (Nos.1384, 1385), **lamps** 10 (Nos.1929, 1932), **loomweights** 5 (Nos.1988, 2000), **amph** 28 (Nos.1463, 1474, 1478, 1489, 1495, 1500, 1501, 1518, 1526, 1553, 1554, 1558, 1565-157 0, 1657, 1663, 1731, 1733, 1734, 1803, 1817, 1820, 1821, 1849). ***Dol*** 39kg (Nos.1868, 1872, 1881). **Other finds** incl **lithics** 5, **glass** 9 pieces (Nos.2006-2008), **disc weights** 2, **millstone** 86.5kg (Nos.2027, 2028, 2042, 2043, 2044, 2048, 2052), **kiln waste** 0.35kg, **cistern lining** 8.5kg, **wall plaster** 34g. **Tile:** 997kg (*teg* 488.5kg incl flat 351 [T55,59], *imbrex* 259.5), Laconian 4, segmental tiles 39, tile with hole (No.2202), thick tile 26kg (varying thickness 2.5 to 3.8); **stamped *teg*** 3 (Nos.2228, 2230 and P1376 already published).

Date of Site: MIA, **LIA, L.Hel, E.Imp, M.Imp,** L.Imp, **L.Ant.**

Discussion



Photo List-17. Site 229 seen from the path below the scarp of Site 223, looking NW. The site of Vagnari is in the middle distance.

This site lies some 300m NW of the summit of the San Felice plateau, on a natural terrace just below the scarp. Owing to time constraints it was not gridded when we first found it, though it was sub-divided into strips as shown on the plan. Nearly all the Roman material was in the upper part of the field. The earlier material was rather more widely spread, particularly to the NW. After our initial survey was made,

the site was made the subject of more detailed survey, geophysical prospection and excavation by a Canadian team under the direction of Hans vanderLeest and Myles McCallum (McCallum *et al.* 2011, McCallum and vanderLeest 2014). The excavators kindly placed the material from the second survey at our disposal. It was collected in a grid of some 37 10×10m squares numbered, but not consecutively, between 1014 and 2058. It produced little additional evidence for dating and we have not tried to publish it fully, but it supports our earlier assessment of the site.

The earliest pieces on the site were two of IA impasto and seven of geometric (2 of them bichrome). These could be scatter from the big IA site of San Felice (Site 223) just up the hill but are more likely to indicate a small outpost of it similar to those found at Parco Santo Stefano below Botromagno (*PBSR 1976)* and to a lesser extent near Crocevelina (Site 401) and Serra Meschina (Site 407). It would then have formed one of a number of small sites, including Sites 213, 214 and 222, which surrounded Site 223.

The material of the next phase, however, has a funerary look. The Ionian type cup base (No.693) of the C6 BC might be either funerary or domestic, but the pedestal base of an Italiote red-figure calyx krater of the late C5 or early C4 BC (No.714B), and the fine lion's head lug handle from a Gnathian bell-krater of the C4 BC (No.757) are types of pottery most commonly found in tombs, and they suggest that in the late C5 and C4 BC, if not already in the C6 BC, this area was used either wholly or partly for burials connected with the Iron Age settlement on the plateau. Some of the earlier BG pieces are also likely to come from tombs, including a *skyphos* base (No.878) of the late C5–early C4 BC, and (probably) two plates with projecting rims (Nos.837 and 838) of the late C4 or early C3 BC which are also objects frequently deposited as grave goods. But it is possible that there was also some LIA settlement in this area.

There is a gap in BG types of the full C3 and early C2 BC, which is likely to indicate that the site was abandoned at the same time as site 223 on the top of the plateau; but some of the material, including the bowl rim No.828 is later and indicates a resumption of settlement in the C2/C1 BC. To this new phase belong over 20 GG sherds found during the two surveys. There are few diagnostic pieces, but a fragment of a spouted vessel (No.957) belongs to Yntema's Form 43 or Form 44 dated between the middle of the C2 and beginning of the C1 BC. It has close comparanda in the pit group F202 of ca. 80-70 BC on Botromagno. The *unguentarium* No.974 may also date to this period. The bowl rim No.924, however, is likely to be rather later, datable with some margin around the middle of the C1 BC. The Lamboglia 2 amphora No.1463 and the Brindisine amphora No.1473 also belong to his phase of settlement, as does the lamp No.1929. The surface material collected by the Canadian team before their excavation of the villa also "ranged from the late C2 through the C1 BC, through the C2 AD" (McCallum, vanderLeest *et al.* 2011, 32).

The question arises whether any of this material throws light on the date of the foundation of the villa which the excavators have placed rather tentatively around the middle of the C1 BC. They note, however, that a small amount of material recovered from below the Phase 1 floors in two rooms suggests that the first phase of the villa may date to as early as the C2 BC (McCallum & vanderLeest 2011, 37). Since some of the survey material can be dated to the late C2/ early C1 BC, there is good reason to suppose that there was some occupation on the site at that time, but whether that relates to the construction of the villa is more doubtful. At both Monte Irsi and on Botromagno there was a new phase of settlement in the second half of the C2 BC which came to an end early in the C1 BC, to be followed after an interval by a new phase of construction. It seems likely that there was a similar sequence at San Felice, and that the C2 BC material found below the Phase 1 floors of the villa belongs to a previous phase of occupation, limited in extent, the remains of which were swept away when the villa was constructed around the middle of the C1 BC. The historical context of these developments in discussed in Chap. VIII.

The main material from the survey, however, is Roman and points to an early imperial villa of some social pretensions with a colonnade (implied by the segmental tiles), painted and moulded plaster walls, much fine pottery, some good quality glass, and a large number of amphora sherds from various sources (see below). Four lamp fragments datable to the C1/ C2 AD are significant finds in our Survey Area where there is generally a dearth of lamps. This material is compatible with Phases 2 and 3 of the villa, dated by the excavators to the early/ mid-C1 AD which ended at some time in the C2 AD when the building may have been destroyed in a landslide. But 59 ARS sherds show that occupation lasted somewhere on the site into the Late Empire. Some of the ARS was probably early but the datable pieces were of the C3/C4 AD.

The 39kg of *dolium* fragments collected on the surface imply that storage of wine was important. The excavators found *dolia* in situ in a small area of the phase 3 villa (*Beyond Vagnari*, 129), but our survey, which extended considerably beyond the limits of the excavated area, shows that there must have been more. Since we did not fully grid the site it is not possible to locate the main concentrations of *dolia* precisely, but one which was in or near the area where the villa was subsequently excavated may derive from the *dolia* found in the excavation. Others were situated to the N of the excavated part of the villa where15kg of *dolium* fragments were found on the surface, mostly in two relatively small areas (Plan List-24, Areas 5 and 8). There was also a fairly abundant scatter in the general collection to the S (Area 13). The rim fragments include Nos.1868, 1872 and 1881, all large pieces appropriate to a *dolium* yard of the Late Republic or Early Empire. They suggest that there was a *pars fructuaria* of the villa there, with equipment for wine making.

Twenty-nine amphora sherds were found on our survey and a further five on the later survey including two Dressel 2/4s of the C1 BC–C1 AD (not seen by Disantarosa) – not a large number. The earliest datable pieces from our own survey of the site include an Italic sherd apparently influenced by Knidian amphorae of the mid-C2 (No.1500), a Lamboglia 2 (No.1463) and a probable Brindisine amphora (No.1474), the two latter of the C2–C1 BC. All three may pre-date the construction of the villa. The latest pieces, a Tripolitana III of the late C3–early C4 AD (No.1663) and an Aegean/ East Mediterranean amphora (No.1803) which shares some of the features of the Tardo Romano Cretese 3 and Adamsheck RC 22 amphorae of the late C5–early C6 AD (Disantarosa, Appendix, section *Periodo tardo-antico*), must post-date the destruction of the villa. They provide further evidence for activity on the site after its abandonment. The dates of most of the rest accord well with the main span of occupation of the villa. Their provenance was as usual wide-ranging. Most are likely to have contained wine but a few were probably used for oil (incl No.1663). The survey also revealed more indications of

the industrial activity of the villa, kiln waste and millstones in particular. These last included a possible donkey or slave mill (No.2052) and four stones from rotary hand-mills. A flat grinding stone more probably dates to the earlier LIA or Republican phase of the site.

Early in the survey we conjectured that the site in the early Empire was a villa inhabited by an administrator of an imperial estate of which the main settlement was the *vicus* at Vagnari (see IX, The Roman imperial period). This remains entirely probable. Two stamped tiles of Gratus slave of Caesar were found here on the surface (Nos.2228. 2230). They have close parallels elsewhere on the survey (No.2229 from Site 707 and the Gratus tile from Vagnari) which can be taken as additional evidence for a network of sites created by the imperial estate. Other evidence, however, suggests that the estate had already been assembled before its acquisition by the emperor. A stamped tile found in the excavation which relates to the first phase of the villa, and another found on the site by a private collector have stamped inscriptions which, we believe, refer to the Roman general Pompey, as does a third tile stamp found by our survey team on Site 707. We argue above (Ch. VIII, The Hellenistic Phase) that Site 229 was the administrative centre of the estate amassed by him which in due course came into the hands of Augustus and formed the basis of the imperial estate of the early C1 AD. We do not suggest that either Pompey or Augustus visited here. The villa was fairly modest, though decorated plaster and other more elegant material mentioned above show that it had some sophistication. It was presumably the residence of a not very high-ranking overseer of the estate. It was clearly also the centre of a working area especially in the later years of the villa, termed by the excavators Phase 3 (mid-C2 – early C3), when various alterations were made which reduced the domestic amenities and increased the working functions of the villa. These changes perhaps coincided with changes in the imperial administration which concentrated imperial estates in administrative clusters so that the villa was no longer needed to house an imperial official.

The excavations showed that the villa came to an end in the late C2/ early C3 AD. There was, however, as we have seen, some evidence of continued activity on the site in what the excavators term a 'post-occupational' phase, notably a lime kiln apparently used for recycling material from the abandoned villa. One or two pieces of ARS, notably No.1049, and a small quantity of LRPW (14 sherds) from our survey must belong to this phase when Site 229 like Site 223 San Felice probably formed one of a cluster of small sites which emerged as the Imperial estate was parcelled out to tenant farmers. It is unlikely to have lasted long into the C6.

234. 609908/4516543, Puglia; Serra Caporosso.
Stubble field, dark silty loam on a low plateau above the Basentello overlooking the route of the ancient drove road. Water available from a small stream 300m W at the edge of the plateau but there is a modern well nearer and the proximity to the Basentello must have made wells a practical alternative if the water table was conditioned by the river. Masl 200+. Area:200m^2. Density sherds 0.056, tile 53.5.

Sherds found: 112 incl **impasto** 29 (No.290), **geom bichr** 1, **WMP** 4 (No.631), **BG** 4 (No.805), **plain** 99 (Nos.1226,1301), **ckpot** 2. **Other finds** incl **lithics** 1. **Tile:** 107kg (*teg* 37 [T3], *imbrex*/ Laconian 55, thick tile (th. 4cm) 0.8).

Date of Site: FBA/EIA, MIA, **LIA**.

Discussion. One impasto sherd No.290 is possibly FBA or EIA. The other impasto pieces were wall sherds, three of them highly burnished, probably of the same date. They suggest an FBA phase of the site and perhaps a hiatus before resumed occupation in about the C5/C4 BC although one geometric bichrome sherd may imply continuity. The chert flake may go with the earlier phase of occupation, though it could of course be earlier still. There was enough tile here to suggest a small building in the C5/C4 BC phase (indicated by an early *tegula* profile T3). The proximity to the drove road which is very unusual (for most of its length the drove road has no settlement near it) suggests that it may have been constructed in relation to the road which must have crossed the Basentello in the near vicinity, and was used when transhumant flocks were passing. One Late Antique plain ware sherd (No.1301) is most likely manuring scatter from Site 235, 600m uphill.

235. 609669/4517100, Puglia.
Partially ploughed and partially stubble field, silty loam, moderate slope. Seasonal spring to E but a well 200m SE suggests that the inhabitants may have relied on a well reaching to ground water. Masl 250. Visibility 4/5. Area:1600m^2. Density sherds 0.039, tile 15.

Sherds found: 62 incl **LRPW** 17 (Nos.1103, 1158, 1184), **plain** 38, **ckpot** 6. **Tile:** 24kg (*teg* 12 [T37], *imbrex* 3, combed *imbrex* 3 (Nos.2252, 2253)).

Date of Site: L.Ant, E.Med.

Discussion. A small single period Late Antique or Early Medieval site with relatively thin scatter. *Tegulae* and *imbrex* weights point to a building roofed with both types of tile, but combed *imbrices* were an important part of the *imbrex* count and suggest a date in the C7 AD to which the LRPW could also belong. The recorded *tegula* profile is not particularly late – it may be an anomaly, or it may have been re-used: some mortar adhering to *imbrex* No.2253 implies reuse of tiles in construction. Possibly a small dwelling of the Lombard period.

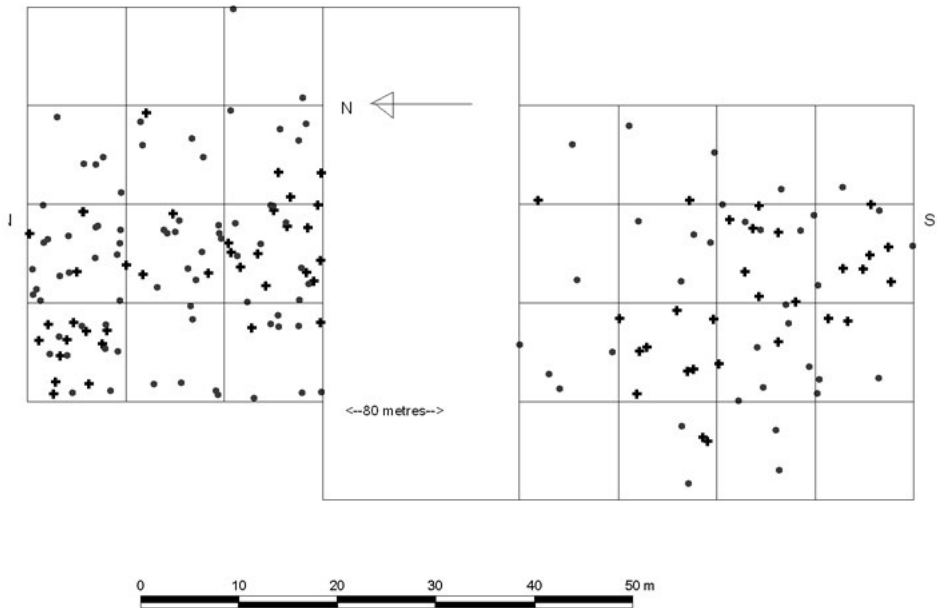
302. 611400/4513750, Basilicata, Mass. Cappiello.
Burnt stubble field, sandy loam, gentle to moderate slope above right bank of the Basentello. Modern wells 30m N and 100m E suggest wells may have been used for water. Masl 200. Visibility 5. Area:2 distinct concentrations 80m apart of 1200 and 1600m^2. Very sparse scatter in between and on edges. Density sherds 0.5, tile 82.

Sherds found: 177 incl **impasto** 1, **WMP** 1 (No.608), **BG** 13 (Nos.794, 831, 891, 903, 919), **plain** 156 incl 1 basin, **ckpot** 1 (Nos.1392), ***clibanus*** 1, **recent** 2, **amph** 1 (No.1802), **loomweight** 1 (No.1990). ***Dol*** 7kg. **Other finds** incl **lithics** 8 (Nos.21, 76), **millstone** 2kg, **kiln waste**. **Tile:** 46.5kg (*teg* 1 [T13], *imbrex*/ Laconian 19.5, ridge tile 0.5).

Date of Site: Neo, **LIA, E.Hel,** L.Hel.

Discussion. The WMP sherd is C4 or later, the datable BG covers an unusually long span, the earliest piece possibly going back to the C5 and not later than the mid-C4, the latest from the C3–C2/C1 BC but it is most likely that the site dates mainly to the C4 and C3. This date would also fit well with the Laconian tile and an early *tegula* profile. The absence of GG suggests that occupation had come to an end by the mid-C2 BC.

The two concentrations suggest two separate buildings, both roofed primarily with Laconian tiles and *imbrices*, although some *tegulae* were used in the northern one. The majority of the sherds, the loomweight and some *dolium* found amongst



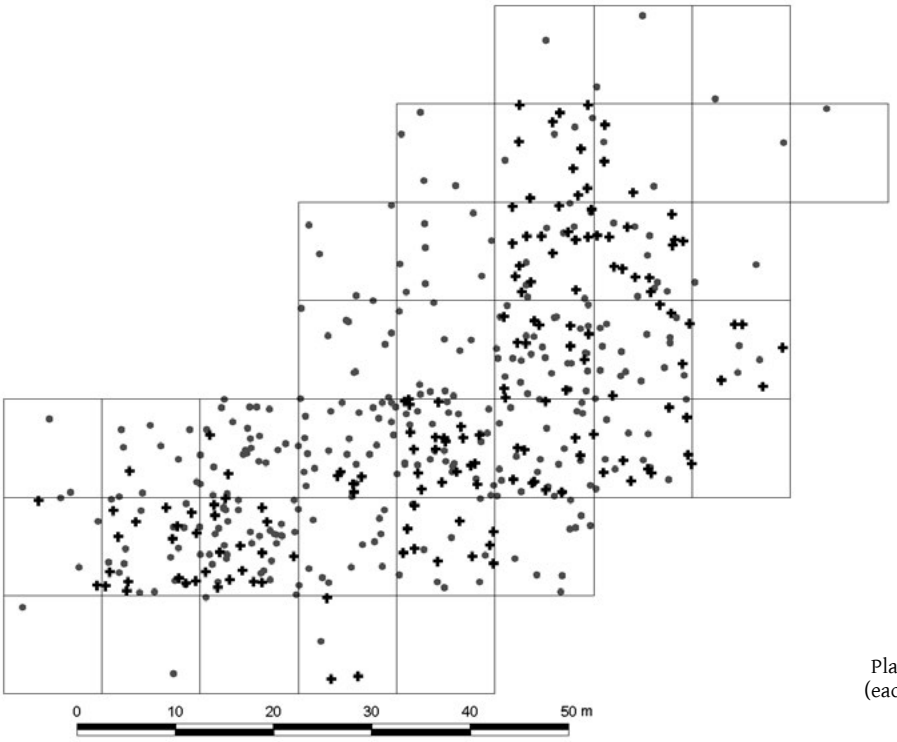
Plan List-25. Site 302. Distribution of tile, almost all Laconian, (each dot = 1kg) and sherds (each cross = 1 sherd).

the tile scatter came from the northern building (House B), while most of the *dolium*, the kiln material and the millstone were from the southern one. The *dolium* yard in this area must have been unroofed. We may see a division of function here with a small residential building to the N and a working area complete with *dolium* yard to the S, but the evidence is slight. The amphora fragment from the Aegean or Eastern Mediterranean suggests occasional frequentation of the area, probably in the Late Antique period.

In addition to the two catalogued lithics there were two cores and a scraper.

303. 611714/4512848, Basilicata, Villa Blanca on the Fosso Capicionna. Stubble field, friable sandy soil on a gently sloping platform above the floodplain of the Basentello which flows some 200m to the E. Just to the S of the site is a small tributary in a ravine. Masl 200. Visibility 3.5/4. Area:2600m^2 with dense scatter, gridded (the grid was of 3600m^2 but the outlying squares contained almost nothing). Some 30m downhill another small concentration of material but almost no scatter between them. Very sparse scatter (nearly all tile) W of grid over a further 4-500m^2.

Sherds found: 430 incl **WMP** 15, **BG** 27 (Nos.823, 832, 833), **GG** 15 (No.930), ***Unguentaria*** 3 (Nos.976, 982), **lamps** 2 (Nos.1926, 1928), **RRS** 2 (No.1078 TW), **plain** 328 incl basin 3, **ckpot** 6 (Nos.1358, 1400), ***clibanus*** 3 (No.1383), **loomweights** 5 (No.1995), **amph** 6 (Nos.1485, 1574, 1670, 1772, 1773, 1822), **recent** 8. ***Dol*** 17.5kg (1 rim as No.1881). **Other finds** incl **lithics** 9 (No.64), **millstone** (No.2037). **Tile:** 333kg (*teg* 36.5 [T24,27,43] and No.2164, *imbrex* 211).



Plan List-26. Site 303. Distribution of tile (each grey dot = 1kg) and *dolia* (each black cross = 100g).

Date of Site: LIA, E.Hel, L.Hel.

Discussion

A blade, a scraper and seven lithic flakes, show Neolithic frequentation of the area. After that the earliest pieces are probably the WMP sherds, not typed, but likely to be LIA. Some of the BG pieces may well be of that date although the three typed sherds were all Early Hellenistic. The GG sherds give a reliable date in the Late Hellenistic. The *unguentaria* are compatible with this, as are the lamps and three of the datable amphora sherds (Nos.1772,1773 of the C2 BC, and No.1485 of the C1 BC–C1 AD). The tile scatter was large but exceptionally fragmented resulting in many unclassifiable fragments. Most of the identifiable pieces, however, were of Laconian type, though there were also a few *tegulae* with low profiles (e.g.T.24). Two thick flat tiles with oblique flange (No.2164) may have been substitutes for *tegulae*, though their use is not clear. The cookpots and loomweights show that there was at least one domestic house on the site. A large quantity of *dolia* spread across the site may imply that *dolia* were needed for more than domestic use. There was probably also an outbuilding just downhill from the main site (not shown on the plan).

The evidence suggests there was a building or perhaps more than one, extending over ca. 600m^2, roofed mostly with shallow Laconian tiles. It was presumably a small Hellenistic farmhouse or group of houses. There may have been a tomb here which would explain three *unguentaria*, all of the C2–C1 BC. If so, some of the other material, including the lamps, may derive from it.

One amphora (No.1671) and the RRS/TW wall sherd No.1078 were Roman imperial but, though they show frequentation, they are hardly enough to suggest occupation at this date. There was a small amount of recent material – some seven sherds and about 7kg of tile – presumably manuring scatter from the Masseria Celentano across the ravine.

304. 611457/4512996, Basilicata, Mass. Capoiazzo.
Stubble field, sandy silty clay. Moderate to steep slope. Spring some 50m to E. Masl 200. Visibility 3.5/4. Area:460m^2. Density sherds N/A, tile 44.3,

Sherds found: plain 2. **Tile:** 20kg (*teg* 17 [T11,36], wavy impressed 2.5 (Nos.2237-2239), *imbrex* 0.5).

Date of Site: **L.Ant**.

Discussion. A relatively isolated post-Roman site. The virtual absence of sherds combined with the quantity of decorated tile suggest that this was a prestigious but non-domestic building. The three decorated pieces are fragments of *tegulae* marked on the tops of the flanges or on the flat surfaces with four-fold undulating or arching parallel lines impressed with a toothed tool. The same technique was used on larger LRPW pots, and these tiles are likely to be of similar Late Antique date, perhaps anticipating the use of multi-toothed combing instruments on curved cover tiles of the Lombard period. Similar pieces were found on Sites 309 (Nos.2240-2241) without other datable material, and on Site 213 (No.2242) where the piece was associated with numerous sherds of LRPW, confirming the date suggested for the type. The building was perhaps a chapel or tomb.

306. 610400/4514359, Basilicata, Mass. Capoiazzo.
Bean field, harvested, on clay-silt at top of fairly steep slope some 200m SE of the Masseria Capoiazzo above a seasonal stream. Masl 200+. Visibility 3.5/4. Area:900m^2 (600 gridded) with scatter extending to about 5000m^2. Density sherds 0.05, tile 37.

Sherds found: 58 incl **WMP** 1, **BG** 2, **LRPW** 6 (Nos.1099, 1131, 1132, 1155), **plain** 19, **ckpot** 3, **recent** 6, **amph** 1 (No.1823). ***Dol*** 0.2kg. **Tile:** 27kg (*teg* 5 [T28], *imbrex* 4.5, combed 6.5 (Nos.2254-2256)).

Date of Site: LIA, **L.Ant, E.Med**.

Discussion. A very small Late Antique – Early Medieval site, one of a number of small settlements which emerged in this period in the area. The date is attested primarily by the LRPW and the combed *imbrex*. The amphora is Aegean and undated but is likely to be C5–C7 AD (another sherd of the same type (No.1824) was found a little downhill). The WMP and BG are all from the outlying scatter from somewhere beyond the limits of the Survey Area or perhaps from Site 302; there is also one early *tegula* profile so there must have been some frequentation here earlier, probably in the C4/C3 BC. The recent sherds are presumably from the adjacent Masseria.

309. 610350/4514500, Basilicata, Mass. Capoiazzo.
Stubble field, Clay silt soil on a plateau some 180m up-slope from Site 306, very close to the Masseria. Masl 200+.

Sherds found: 6 incl **plain** 1, **recent** 5. **Other finds** incl **slag** and **limestone**. **Tile:** 40 (*teg* 33 [T53] incl *teg* with slag (No.2084), waster (No.2085), combed (Nos.2240, 2241); curved combed and/or wavy lined 2.5 (No.2257)).

Date of Site: E.Med.

Discussion. The dating rests on the *tegulae* and decorated tile. The five recent sherds are presumably from the adjacent Masseria. The slag was not weighed but the quantity was large. Some was found adhering to a *tegula* (No.2084) which had apparently been used to line the bottom of a furnace or smithing pit. No.2085 was a shapeless mass of vitrified clay, possibly also used in the smithing pit or perhaps indicating failed tile production. There were several large (15cm across) pieces of pure lime on the adjacent slope. This seems best interpreted as an industrial site, probably for iron working, perhaps also with a lime kiln. It is uphill from, and was presumably worked from, Site 306, also Late Antique/ Early Medieval.

314. 61386/4516494, Puglia, Masseria. Pezza dei Panni. Wheat stubble and ploughed fields. A substantial area under chickpeas was omitted from the survey. Gentle slope. Masl 250. Scatter very thin.
Sherds found: 38 incl **WMP** 2, **ARS-D** 1, **RRS** 1, **plain** 25. **Tile:** 0.8kg.

Date of Site: LIA, L.Imp.

Discussion. The *tratturo* runs just N of the area. There are two Masserie Pezza dei Panni. The older is totally destroyed except for gateposts. The C19 one is standing but abandoned, according to the present owner, for about 25 years. The area covered extended from floodplain near the Masseria Lettieri to the top of the scarp. There was much recent material, but the fragments of WMP and ARS of the C4/C5 AD show frequentation in the LIA and Late Imperial periods. The very small amount of tile and the lack of cooking pot, however, rule out a domestic site, though it is possible that there was one under the chickpeas.

318/320. 608644/4516971 – 608604/4516995, Basilicata.
Stubble field, clay-silt, gently sloping shelf E of the Basentello and some 200m N of the drove road. There is a modern well on E edge of the site. Masl 200+. Visibility 3.5. Area:1400m^2 made

up of 2 small concentrations, each originally given a different number (318-1000m², 320-400m²) with a very thin scatter over some 2500m². Density sherds max. 0.04, tile 18.

Sherds found: 22 incl **GG** 1, **plain** 18, **recent** 4. **amph** 1 (No.1670). ***Dol*** 2kg. **Tile:** 10kg (*teg* 2.5 [T44,56], *imbrex* 5).

Date of Site: L.Hel, L.Imp.

Discussion. The GG sherd implies frequentation in the Late Hellenistic period and is matched by *tegula* profile 44. The amphora (Tripolitana III) is end C3–earlyC4 AD. The 10kg of tile in an area where there is otherwise almost nothing imply some sort of site, perhaps a shepherds' bothy in use at various times: it lies above, and some 200m from, the drove road. The *dolium* may imply some permanency but it is not clear at what date.

319/321. 608652/4516872–608668/4516821, Basilicata, Puglia/ Basilicata border.
Stubble field, partly wheat, partly bean, clay-silt, gently sloping shelf E of the Basentello and just N of the drove road. There is a modern well some 50m to S. Masl 200+. Visibility 3.5. Area:850m² made up of two small concentrations, each originally given a different number (319=400m², 321=450m²) with a very thin scatter over roughly 2100m². Density sherds max. 0.06, tile max. 5.

Sherds found: 55 incl **Neo impressed** 31 (Nos.81,83, 98, 108, 110, 125, 152, 166), **Neo plain** 1, **BG** 1, **ARS-D** 1 (cf. No.1058), **plain** 20, **loomweight** 1. ***Dol*** 0.2kg. **Other finds** incl **lithics** 1, **daub** 170g (No.2078). **Tile:** 12kg (*teg* 5 [T38, 69], *imbrex*).

Date of Site: Neo, LIA, L.Imp.

Discussion. The Neolithic site was indicated by two separate concentrations, Areas 319 and 321. Neither was very large: some 25 sherds were collected at 321 and seven at 319. The site began early (No.81 suggests in the late M7/M6) and went on continuously or intermittently for a long time (No.166 is from the second half of the M6). The LIA reoccupation is primarily attested by one BG sherd and a loomweight from Area 319, *dolium* from Area 321 and a small collection of plain wares from both areas, though more from Area 319. There are also tiles including a *tegula* profile (T38) apparently of that time. The quantity of tile here is too great to let us dismiss the post-Neolithic accumulations as sporadic or manuring scatter but, at least after the Neolithic period, this was perhaps never a domestic site – there is no cookpot though the loomweight and the *dolium* imply some permanent occupation. It should probably be seen as connected with a crossing of the Basentello close by.

An ARS-D sherd (– cf. No.1058) of the C4 AD could be scatter from Site 318 but in conjunction with a Late Roman *tegula* profile (T69) and the preponderance of *tegula* over *imbrices* may imply frequentation also in the Late Roman period.

324. 6131200/4514500, Puglia. Masseria Lettieri.
Stubble field, friable brown/ grey silt, gentle slope SW of the Masseria in slight dip. The nearest reliable source of water is now a well some 100m to the E. Masl 200. Visibility 4/1 (the edge of the site was in an unharvested rape field). Area:200m² with scatter extending to about 4500m², not all of which could be examined since it was under crops.

Sherds found: 21 incl **LRPW** 7 (Nos.1098, 1140), **plain** 11, **ckpot** 1, **recent** 2. **Other finds** incl **slag** 200g. **Tile:** 6kg (*teg* 3.5, *imbrex* 1).

Date of Site: L.Ant.

Discussion. A very small isolated Late Antique site with not enough material to shed much light on its function. The cookpot suggests that it may have been a dwelling hut but the slag indicates some industrial activity. The recent sherds are probably from the Masseria.

329. 612400/4515165, Basilicata, Masseria La Torretta.
Stubble field, friable grey-brown silt, some 350m S of the Masseria. Gentle slope towards the Basentello about 5km W. There was a modern well some 100m N. Masl 200. Visibility 4. Area:25m² with tile scatter for 50–100m in all directions. Density sherds 0.18, tile 117.

Sherds found: 37 incl **geom** 1, **Ionian type cup** 1 (No.689), **WMP** 2, **plain** 30, **recent** 1. ***Dol*** 2.5kg (No.1862). **Tile:** 18.5kg (*teg* 1.5, *imbrex* 17).

Date of Site: MIA.

Discussion. A small MIA dwelling. The best date for it comes from an Ionian type cup (No.669) of the last half of the C6 BC, with which one geometric sherd and one Type 1 *pithos* sherd (No.1862) are roughly compatible. More *pithos* fragments and an early tile profile (cf. T10 on Fig.23 from Site 223) a little N of the main accumulation must also belong to the site. There may have been renewed frequentation in the Late Antique period to which a second *tegula* profile (cf. T76 on Fig.55 from Site 120) probably belongs. Two other *tegula* fragments with finger-impressed arcs must also be Roman or Late Antique.

332. 612800/4512050, Basilicata, Mass. Palombella.
Stubble field, friable brown-grey soil, gentle slope some 500m E of the Basentello, close to the Masseria. Some possible building stone. Masl 200. Visibility 3.5/5. Area:150m² with some tile scatter up to 2000m². Density sherds 0.06, tile160.

Sherds found: 10 incl **RRS** 2 (C1–C3 AD), **plain** 7, **recent** 1. ***Dol*** 2kg. **Tile:** 25.5kg (*teg* 4.5 [T30], *imbrex* 11, combed 1 frag.).

Date of Site: M.Imp.

Discussion. Recent material (including some of the tile) probably comes from a ruinous hut at the top of the slope but the RRS and *tegula* suggest a very small Roman imperial site, perhaps a field hut. The *dolium* suggests some permanent use. The combed tile was perhaps sporadic from Site 337 or 342 just up the hill.

335. 613270/4511519, Mass. Ribelli.
Stubble field, friable grey-brown silty soil, moderate N facing slope on a promontory between two streams. N and E of the site the slope falls steeply down to a ravine. Terrace about 3400m² on the N slope where further material was accumulated. The nearest water is in the ravine to E fed by a spring further up the hill. Masl 200+. Visibility 3.5. Area:1400 gridded, with scatter, some fairly dense, over 16000m², esp. to N and W. Density sherds 0.06, tile 53.

Sherds found: 141 incl **BG** 2, SG 1, **GG** 6 (No.949), **ITS** 3 (No.1010, 1020), **ARS-A** 3 (cf. Nos.1033, 1034). **RRS** 1 (No.1074), **LRPW** 1 (No.1107), **ckpot** 10, **plain** 70 (one sherd dated to C1 BC), **recent** 8, **amph** 11 (Nos.1443, 1473, 1477, 1482, 1575, 1576, 1587, 1798, 1825, 1850), **lamp** 1, **loomweights** 2 (No.1977), disc weight 1 (No.1998). ***Dol*** 9.5kg some with mortar. **Other finds** incl 1 frag. **limestone**, 2 frags. **millstone**. **Tile:** 195.5kg (*teg* 101 [T35,77], *imbrex* 56, thick tile 37kg (th. 4.5, 5.2, 6cm)).

Date of Site: E.Hel, L.Hel, E.Imp, M.Imp, L.Ant.

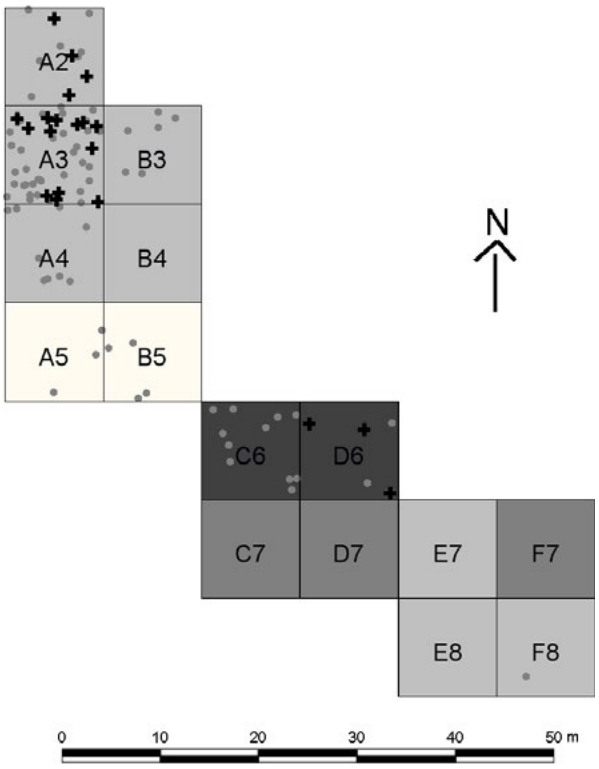
Discussion. The grid suggests that there were probably three separate buildings, the largest being in the middle, roofed with *tegulae* and *imbrices*.



Photo List-18. Site 335 looking E.



Photo List-19. Site 335 looking SW towards Monte Irsi.



Plan List-27. Site 335. Distribution of sherds (dots) and *dolium* (crosses). The background shows the density of tiles in the grid.

There was also some thick tile, much of it too fragmented to be measurable. Some of it was perhaps used to floor a *dolium* yard N of the most northerly building. There were only 3kg of *dolium* fragments, but they lay in an area where there were traces of concrete flooring and little tile (2kg). Given that there were three thicknesses of floor tile there must have been other floors in the middle building.

Most of the fine wares and nearly all the cookpot were in the most northerly building, as was one of the loomweights (the other was in scatter to the N) and the round weight. This was presumably the main residential area. The mill stone was in the central building and also on the edge of the site. The S building, with little except tile to denote it, was perhaps a barn. There is little here to suggest commercial production of any importance.

One amphora (No.1443 C4/C3–early C2 BC) and three slightly later BG sherds from the edge of the site (one semi-glazed and two local), probably of the C3/C2 BC show that the area was frequented in the Early Hellenistic period and possibly earlier, but none was from the buildings and there was probably not yet a dwelling place though some of the *tegulae* were probably of this earlier period (No.35). The site was inhabited from the mid-C2 BC onwards as is shown by GG, ITS, ARS some of it C3/C4 AD, one amphora sherd from near Brindisi (No.1473) of C2–C1 BC and two Dressel 2-4 amphorae (Nos.1477, 1482) of the C1 BC/C1 AD. One of the rare lamps from the survey (GG) came from here. Occupation is likely to have finished by the end of the C5 AD. An LRPW sherd (No.1107) must belong to its latest phase as do probably an Aegean or E Mediterranean amphora sherd (No.1798) and some of the *tegulae* (e.g. T77).

336. 613414/4511475, Basilicata.
Rough uncultivated land, at times dense bush, some 300m WSW of Site 335, a kiln built into the side of the gulley of a seasonal stream. Masl 200+. A carbon sample from the kiln, analyzed by the IsoTrace Radiocarbon Laboratory at the University of Toronto, yielded a radiocarbon date in the C17/C18 AD (250 ± 70 BP). There was a small amount of *imbrex* and brick scatter incl obvious *imbrex* waster. Conceivably the kiln was made to provide building materials for the construction programme of Attilio Orsini, bishop of Montepeloso from 1638 to 1654, who reconstructed the episcopal palace, redoing the roofs *con coperture di tegole* (letter to the Holy See dated 16 March 1641, cited in Di Pasquale 1990, 141-150, esp. 144).



Photo List-20. Kiln on Site 336. Scale = 1m.

337. 613866/4511797, Basilicata, Fontana Fico.
Ploughed field, grey-brown silty soil, moderate slope some 30m below a spring line and 300m W of the Fontana Fico.

Slope ended to the W in a terrace where the main, very small, dense concentration was situated. Masl 300+. Area:25m^2 with scatter extending mostly to W over 1100m^2. Density sherds 0.5, tile 0.74.

Sherds found: 14 incl **LRPW** 1 (No.1148), **plain** 9 incl basin 1, **amph** 1 (No.1682), **recent** 1. **Tile:** 18.5kg (*teg* 8 [T22], *imbrex* 5.5, combed 3).

Date of Site: L.Ant. E.Med.

Discussion. The amphora is of the C4–C5 AD, the LRPW sherd late C5 – mid-C7, and the combed *imbrices* probably C7. This suggests a small site used perhaps intermittently in the Late Antique/ Early Medieval period. The *tegula* profile (T22) is not late but was perhaps reused. This and Site 342 are either side of the abundant Fontana Fico. Perhaps a field hut or shed.

342. 614392/4511744, Basilicata, Fontana Fico.
Stubble field, grey brown silty soil, small flat area on the spring line about 200m SW of the Fontana Fico. Masl 350+. Visibility 3.5. Area:400m^2 with thin scatter extending esp. to S over 4500m^2. Density sherds 0.3, tile 15.

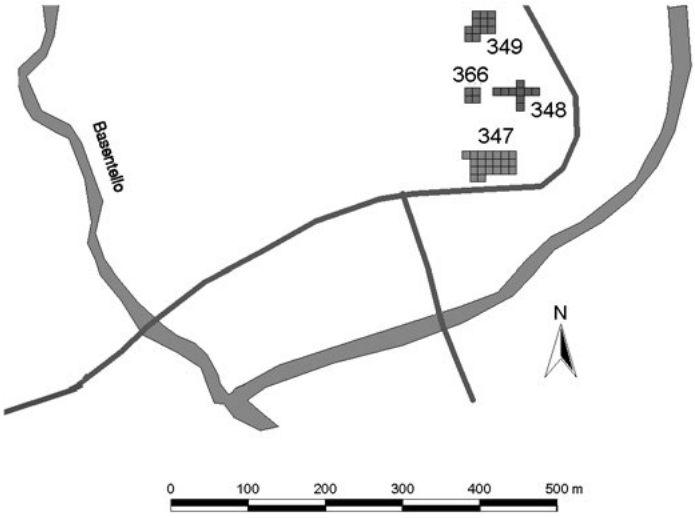
Sherds found: 102+, incl **impasto** 6, **geom mono** 1 (No.484), **LRPW** 12 (Nos.1119, 1176), **plain** 79 incl hm plain 1, **ckpot** 3 (Nos.1359, 1403). **Other finds** incl **lithics** 2. **Tile:** 6kg (*teg* 3, *imbrex* 2.5, 1 piece combed 0.1).

Date of Site: EIAII/MIA, **L.Ant. E.Med.**

Discussion. The geometric monochrome sherd, with the six impasto fragments and single piece of hand-made plain ware, suggest frequentation in the C7 BC but hardly a site in that period. Most of the material including the LRPW and the datable cooking pot is Late Antique or more probably Early Medieval (C6/C7) as is the combed *imbrex*. There is not much tile. This was a very small site, perhaps a field hut or tile-roofed cabin connected with the Fontana Fico.

345. 613306/4511173, Basilicata,
Stubble field, grey-brown silty soil, on a nearly flat terrace beside a ravine. Masl 200+. Visibility 3. Area:600m^2 with scatter of a few tiles to 1500m2. Density sherds N/A, tile and brick 501.

Sherds found: 9 incl **plain** 8, **recent glazed** 1. **Tile:** 51kg (*imbrex* 8.5, some wasters (No.2081, 2082)). **Brick** 301kg incl 3 wasters. **Other finds incl** some **kiln waste**.



Plan List-28. Site 347-9. Location and layout of the site.

Date of Site: Perhaps **C17 AD.**

Discussion. The quantity of brick and absence of sherds suggests that this was a brick yard, producing both bricks and *imbrex* tiles. The wasters and several misfires suggest that there was a kiln in the vicinity. Alternatively, the site may have been a brickyard associated with the kiln on Site 336, some 300m N across the ravine.

347-9,611931/4514576, Basilicata/ Puglia border.
Stubble field, grey brown silty soil on a flat terrace some 500m W of the river and only just above its floodplain. The site is bordered to the E and S by a considerable, unnamed, tributary of the Basentello. Masl 200. Visibility 3. Area: 4 concentrations of 2400, 900, 800 and 400m^2 with scatter over 24700m^2.

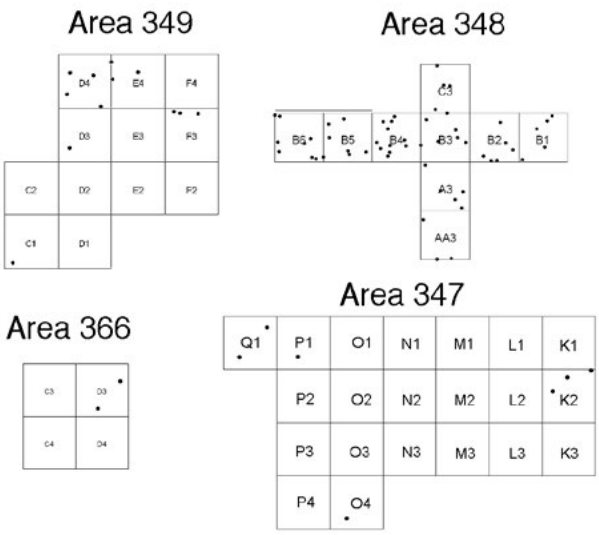
Sherds found: 620 incl **Neo impasto** 88 (Nos.174, 175), **Neo figulina** 19 (Nos.180, 181), **red and white painted** 2 (Nos.195, 196), **Serra d'Alto** 1 (No.201), **Bellavista** 2 (Nos.203-204), **Macchia a Mare** 1 (No.205), **Eneolithic** 2 (Nos.210, 211), **post-neo impasto** 76 (Nos.321, 359, 360), **geom** 4 (mono 2 (No.385), bichr 2 (Nos.547, 557)), **Metap.*skyphos* 1** (P827 not in cat), **WMP** 15 (Nos.581, 646, 674), **BG** 13, **ARS** 14 incl ARS-A 2 (Nos.1045 + 1 sim, 1050), ARS-D 2 (Nos.1062-1064), **RRS** 4, **LRPW** 42, (Nos.1111, 1120, 1121, 1142, 1146, 1147, 1149, 1153, 1192, 1193), **plain** 241 incl hm plain 7, **ckpot** 35 (No.1346), ***clibanus*** 5, **loomweight** 1 (No.1980), **recent** 2, **amph** 14 (Nos.1429, 1573, 1577-1581, 1671, 1771, 1778, 1783, 1786-1788). ***Dol*** 4kg. **Other finds** incl **lithics** 7 (No.62), **glass** 1 (No.2015), **millstone** 8kg (Nos.2032, 2038, 2050, 2051). **Tile:** 255kg (*teg* 87 [T5, 17], *imbrex*/ Laconian 128 (Nos.2163, 2168), combed 2).

Date of Site: Neo, Eneo, BA**, EIA, MIA, LIA**, **M.Imp**, **L.Imp, L.Ant, E.Med.**

Discussion. Originally four sites (347, 348, 349 and 366) but it became obvious that although different concentrations could be identified, the material was to some extent spread over all four and, since they were very close together, we have treated them as a single, albeit long-lived, site.

More periods are represented on this site than on any other in our survey area. Frequentation may or may not have been continuous but there are sherds from the M6/M5, later M5, M4, M3, Eneolithic, EIA, MIA and LIA periods. It is unlikely, though not impossible, that some of the impasto wall sherds were from the BA. There was not much datable to the Republic and Early Empire but ARS sherds from the C2 through to the C5, LRPW, and Early Medieval combed tiles were found. There was not necessarily permanent occupation at all these times, but the traces of Neolithic are enough to suggest that there may have been a collection of huts then. The Neolithic sherds were scattered over the whole site with the greatest concentration in Area 348. There were also seven lithics, all but one in Area 348, all probably Neolithic, including No.62. One millstone rubber (No.2032) from Area 348 is also probably Neolithic.

The later impasto pieces were also spread throughout the site, again most in Area 348 with markedly fewer in Areas 366 and 349. Most of them are not highly diagnostic; those that are show evidence of frequentation in the IA. The IA material was predominantly in the S and E (Areas 347, 348) though there was a little, including one loomweight, in Area 349. The WMP and BG, some cooking pot (No.1346 C5/C4 BC), two loomweights, a millstone from a hopper-rubber (No.2038) and an early *tegula*



Plan List-29. Site 347-9. Distribution of Neolithic sherds.

profile suggest domestic occupation in the LIA. There was a small group of *dolium* sherds on Area 347 which, from the date of the pottery nearby, are likely to have been pre-Roman. They were concentrated in one roughly 10×10m square. One Greco-Italic amphora (No.1429, of the C4 or early C3 BC) and four other Italic amphorae were also found in Area 347.

The ARS sherds (including two C2/C3 AD, two C3–C4, two C4, two C4–C5, two C5 AD and two D-ware C5–6 AD) are fairly sparse but overlap with the substantial quantity of LRPW. The core of this Late Roman/ Late Antique settlement was in Area 349 and seems to have been a dwelling with a considerable amount of pottery including cooking pots and two late (C5–C6 AD) amphorae. Six more amphorae, two of the C5–C6, one a little earlier and the other three not securely dated, were from Area 348. There was also the base of a Late Antique/ Early Medieval stemmed glass goblet (No.2015), but material of the period was spread over the whole site. Two of the millstones (Nos.2050, 2051) at the S edge were large, from a donkey or slave mill, and probably belong to this period. The combed tiles imply that the site lasted into the Early Middle Ages

The site is atypical, both in its longevity and in its location in the valley bottom near the floodplain of the river. The route of the *tratturo* linking the Lucanian Appenines with the coast at Metaponto probably followed the Basentello in this area and crossed it to the E bank at this point (as it did in the C18 AD and still does on the SS96), and the road from Gravina to Irsina used the same route across the river. The crossing was therefore an important one. There is no record of when it was bridged (though a bridge was probably in existence by the late C18 AD since a road-crossing is shown on the Zannoni map) but it is likely that there was some means of crossing the river at this point already in the Iron Age if not before: fording the Basentello would present problems now, even in summer, because of the thick mud of the river bottom and the dense thickets of tall reeds which encroach on the river bed, but these problems must have been aggravated by the construction of the dam on the Basentello which has reduced the flow of the river to a trickle, and prevented any natural scouring of the river bed by the current after heavy rainfall. It may have been easier to ford the river here in ancient times, though any ford would probably have had to be maintained. In any case, some control of the crossing must have been needed and this would explain both the location and long existence of our site. The crossing was perhaps less used during the early Roman Empire when there were few other sites in the vicinity. But the settlement must always have been more than simply a river control. Millstones, probably from three different periods, imply that there were arable lands in the vicinity of the site and a need to process the grain from them.

It is also possible that wine was produced here and transported either by road or by the river if and when it was navigable (see General Introduction). Two underfired amphora fragments (Nos.1573 and 1577) may have been made on the site, but we found no kiln material here. In any case, the unusually large quantity of amphorae found on the site suggests that it was a centre conveniently placed on the river crossing from which amphorae imported from various parts of the Mediterranean were distributed over a wider area by a known transport route. Most are Italic and not precisely datable but one from Area 347 dates from the LIA/ Hellenistic period (No.1429) while a Tripolitana III amphora dates to the late C3 – mid-C4 AD (No.1672). There are also five Late Roman amphorae, including four (Nos.1778 and 1787 from Area 348, 1786 from Area 349, and 1788 from Area 466) of the C5/C6 AD, and one (No.1783 from Area 366) of the mid-C6 – C7 AD. Their dates are compatible with other material on the Site.

351. 612949/4509374, Basilicata, Masseria Fenicia.
Stubble field, clay silt, on a small hill with gentle slope just below Monte Irsi. It lies above a small ravine about 800m W of the Basentello. Masl 200+. Visibility 3.5. Area:400m^2 with scatter mostly to NE over 1600m^2. Density sherds max. 0.1, tile 155.

Sherds found: 41 incl **Neo** 1, **WMP** 3, **BG** 1, **Hel red slip** 1, **plain** 25, **amph** 1 (No.1432), **loomweight** 1 (No.1991), **white slipped** 6, **basin** 0.4kg. ***Dol*** 1.5kg (No.1882). **Other finds** incl **kiln waste** ca. 300g (No.2086). **Tile:** 62kg (*teg* 12.5 [T18], *imbrex*/ Laconian 37.5).

Date of Site: LIA.

Discussion. Most of the tile scatter was exceptionally concentrated in a small part of the site. The amphora rim is later C4 – mid-C3 BC and the fine wares also suggest roughly this date with which the preponderance of *imbrex* over *tegulae*, the profile of the *tegula* and the loomweight are all compatible. The *dolium* rim is also possibly of this date though it could be later. The kiln waste (No.2086) suggests that this may have been primarily the site of a tile kiln with a dwelling hut near it.

352. 612601/4509632 Basilicata, Masseria Fenicia.
Bean stubble field, clay-silt, on a small terrace which interrupted a gentle-moderate slope a little below the top. Masl 250. Visibility 4. Area:600m^2 with scatter extending over 1600m^2. Density sherds 0.1, tile 12.

Sherds found: 76 incl **plain** 5, **recent** 62. **Tile:** 7.5kg.

Date of Site: recent.

Discussion. A surprisingly dense scatter in an area where there is now almost no modern building.

353. 612646/4510124, Basilicata, Masseria Fenicia.
Alfalfa stubble field, clay silt on a gentle slope about 500m W of the Basentello below Monte Irsi on the edge of a small stream.

Masl 200. Visibility 4. Area:200m² with scatter extending to about 2000m². Density sherds 0.2 tile 32.5.

Sherds found: 57 incl **BG** 1, ***unguentarium*** 1, **ARS-A** 2 (cf. No.353), **plain** 42, **ckpot** 2, **recent** 7. **Tile:** 6.5kg (*teg* 0.5, *imbrex* 3).

Date of Site: E.Hel, M.Imp.

Discussion. The *unguentarium* is C3 BC or later as probably is the BG. These, with the preponderance of *imbrices*, suggest a Hellenistic site, presumably a field hut. There is too little tile or cookpot to imply habitation. The ARS is early, C2/C3 AD, and is possibly sporadic, perhaps from the Roman site on Monte Irsi.

355. 609956/4515462, Basilicata, Masseria Pinna.
Bean stubble field, clay silt, on a gentle slope on the side of a small promontory some 300m SE of the Masseria Pinna and 400 W of the Basentello. Small stream immediately to S. Masl 200+. Visibility 4. Area:1400m² (gridded). Max. density sherds 0.2, tile 140. Very little scatter beyond the grid.

Sherds found: 31 incl **BG** 2 (No.816), **plain** 24 incl basin 4, **ckpot** 2 (No.1342), **amph** 3 (Nos.1515, 1582, 1851). ***Dol*** 1kg. **Tile:** 196.5kg (*teg* 41, *imbrex*/ Laconian 135), some thick tile and building stone.

Date of Site: E.Hel.

Discussion. The BG No.816 should be dated to the C3 BC; probably also the cooking pot No.1342 although the type continues later. The high figure for *imbrice*s probably includes more Laconian tiles since the two forms cannot be distinguished in small fragments, in which case the preponderance of *imbrex* over *tegulae* supports a Hellenistic date. The quantity of pottery was very small in relation to the amount of tile. Perhaps a small dwelling with storage building or stock yard attached. The amphorae are all Italian and undated.

356. 609130/4515671, Basilicata, Masseria Pinna.
Stubble field, clay-silt soil, gentle slope some 500m SW of the Basentello and just above its floodplain. Nearest water the river or a well (there is a modern one just above it). Masl 350. Visibility 3.5. Area:400m² with scatter extending to about 2400m². Max density sherds 0.06, tile 18.8.

Sherds found: 23 incl **LRPW** 10 (No.1139), **plain** 7, **ckpot** 5. **Tile:** 7.5kg (*teg* 1.3, *imbrex* 2.2, thick tile 2.3kg).

Date of Site: L.Ant.

Discussion. A very small site, probably a small dwelling.

361. 607680/4521070, Puglia, Masseria Vagnari.
Stubble fields, clay-silt soil, variable but gentle slope on either side of a pronounced ravine with seasonal torrent. Nearest water a spring at Masseria Vagnari ca. 550m away. Masl ca. 350. Visibility 5. Area: 41300m² with scatter extending to ca. 25ha. Max. density sherds 0.4, tile 180.

Sherds found: 16140 incl **WMP** 10, **BG** 86, **GG** 27, **ITS** 310, ES-B 11, **ARS** 811, **LRPW** 333, **plain** 7138, **ckpot** 3974, **lamps** 31, Loomwts 8, **amph** 263. ***Dol*** 55.5kg. **Other finds** incl **lithics** 24 (probably Pal Nos.2,3,52; Neo Nos.60, 61, 69; cores 5), **millstone** 20 frags. **Tile:** 7542kg (*teg* 4833, *imbrex* 1210, combed 6 frags.).

Date of Site: LIA, L.Hel, E.Imp, M.Imp, L.Imp, L.Ant, E.Med.

Discussion. This is the site of the Roman *vicus* at Vagnari, the largest and most important site of the Roman Imperial and Late Antique periods in our Survey area, and the centre of the Imperial property. For the excavations, which we undertook to obtain a key for interpreting the survey data of these periods see esp: (for the first phase of excavations in the settlement) *Vagnari*; (for the second phase of excavations in the settlement) Carroll 2012, and forthcoming; (for the ongoing excavations in the cemetery) Small & Small (eds.) 2007; Prowse *et al.* 2010; Marciniak *et al*. 2016. Other studies on these topics, have appeared in *Beyond Vagnari*, and in annual reports in *PBSR*. For the surface survey carried out ahead of the excavations, see C. Small in *Vagnari*, 53-72, and *Beyond Vagnari*, 65-72. The statistical data, **from the survey grid only**, are given above for comparison with other sites. They show that the site was continuously occupied from the Late Iron Age to the Early Middle Ages, except for a gap in the Early Hellenistic period.

362. 608000/4521400, Puglia, Masseria Vagnari.
Stubble field, clay-silt soil, some 250m NE of the main site of Vagnari and 250m NW of the Masseria. Nearest water a spring at the Masseria. Visibility 3, Area: 14000m².

Sherds found: 9 incl **LRPW** 2, **plain** 5, **amph** 2 (Nos.1464, 1465). **Other finds** incl **lithics** 2, **Arch.terrcotta** 1 (No.2070a). **Tile:** 13kg (*teg* 1.5, *imbrex* 2.5, thick tile/ brick (4cm) 2kg).

Date of Site: L.Hel, L.Ant.

Discussion. There is enough material here to suggest a small construction, but the pottery is from different periods. The amphorae were Lamboglia 2s (C2–C1 BC) and probably came from the main site at Vagnari. The architectural terracotta fits neither period and is possibly a stray piece from San Felice.

365. 611450/4511400, Basilicata, Serra S Vito.
Stubble field. Clay silty soil, gentle slope, just W of a seasonal stream. Masl 200+. Visibility 3, Area:100m² with a little scatter downhill. Density sherds 0.2, tile 5.7.

Sherds found: 27 incl **LRPW** 1, **plain** 26. ***Dol*** 0.6kg. **Other finds** incl **millstone**. **Tile:** 57kg (*teg* 27.5 [T47], *imbrex* 4.7, combed 6.3 (Nos.2258-2261)).

Date of Site: L.Ant, **E.Med.**

Discussion. Not much pottery and little of it diagnostic but the one LRPW sherd and the combed tiles suggest the Early Medieval date. Unusually abundant tile. The millstone and *dolium* may imply a working area.

367. 61150/4515050, Basilicata, Jazzo Basentello.
Stubble field on clay silt soil on top of the plateau 800m NE of Basentello, 100m up a S facing slope from the destroyed Jazzo Basentello. Masl 200. Visibility 3. Area: 400m² with scatter extending to ca. 2500. Max. density sherds 0.004, tile 11.5.

Sherds found: 11 incl **impasto** 1, **plain** 9, **ckpot** 1, **amph** 1 (No.1801). **Tile** 4.6kg (*teg* 6 [T63], *imbrex* 2).

Date of Site: Roman.

Discussion. A small concentration of material, not very convincing as agricultural scatter and more likely to have been from a small hut or temporary shelter. There is not much evidence for date: the impasto sherd was probably EIA and sporadic but some of the plain wares are probably Roman as are the *tegula* profile and the E Aegean/ E Mediterranean amphora.

370. 614000/4509850, Basilicata. Azienda Pilota Irrigua.
Olive grove on silty soil, gentle slope, perennial stream to S. Masl 150+. Visibility 5. Area:1200m² with very little further scatter. Density sherds 0.05.

Sherds found: 60 incl **LRPW** 17 (Nos.1127, 1141), **plain** incl 1 combed 27, **ckpot** 11, **amph** 3 (Nos.1584, 1789, 1790). **Tile** 0.5kg (*imbrex* 0.4, combed *imbrex* 0.1).

Date of Site: L.Ant. E.Med.

Discussion. Very little tile. Perhaps a small, mostly thatched dwelling. Two at least of the amphorae (Nos.1789, 1790) are C5/C6 AD, the LRPW of the late C5 – mid-C7, and the combed *imbrex* probably of the C7 AD.

371. 615106/4510756, Basilicata. Azienda Pilota Asciutta. Edge of two fields, one stubble, one ploughed. Moderate slope. On the spring line, nearest spring at present 300m S. Masl 300+. Area:25m^2 with a little scatter over about 300m^2. Density sherds 0.4, tile 76.

Sherds found: 11 incl **WMP** 1 (No.604), **plain** 9, **loomweight** 1. ***Dol*** 3kg (No.1902). **Tile:** 19kg (*teg* 4, *imbrex*/ Laconian 15).

Date of Site: LIA.

Discussion. The date is derived from one WMP sherd of C4/3 BC. The proportion of *tegula* to *imbrex*/ Laconian tile weights (1:3.75) accords well with this date. This was a very small site, not necessarily residential, though the *dolium* does imply some permanence; perhaps a field hut or shed. This site formed one of a group of LIA settlements in this area comprising Sites 371, 411, 413, 415, 416, 417, 418, 419, 420, 423 of which the two most widely separated are only 1.8km apart.

372. 615279/4510883, Basilicata, Azienda Pilota Asciutta. Stubble field, grey-brown silt on a gentle slope 150m S of the Azienda, on the spring line – there is now a spring ca. 500m W. Masl 350. Visibility 4/5. Area:2200m^2 of which 1400 were gridded. Thin scatter extended over ca. 4250m^2. Density sherds 1.4, tile 419.

Sherds found: 2210 incl **WMP** 14, **BG** 27 incl 5 semi-glazed (No.848, 904–semi-glazed), **GG** 10 (No.951), **ITS** 52 (Nos.1006, 1012), **ES** 9 (8 ES-B (No.1026), 1=Candarli), **TW** 32, **ARS** 49 incl ARS-A 7 (No.1032 and cf. Nos.1033×4, 1034, 1036), ARS-A/D 3 (No.1044 and cf. 1050), ARS-C 4, ARS-D 4, ARS-CkA 2 (cf. No.1066), **RRS** 100 (No.1095 and cf.1078), **LRPW** 21, Pomp. red 13, ***clibanus*** 12, **plain** 1097 (No.1271) incl *mortarium* (No.1294), **ckpot** 459, (No.1316) **lamps** 13 (No.1938 and 12 more mould-made frags.), **loomweights** 2, **amph** 17 incl 1 with 12 frags. from 1 place (Nos.1434, 1479, 1480, 1490, 1491, 1496-1498, 1502, 1506-1508, 1516, 1585, 1702, 1715, 1826), basin 4. ***Dol*** 79.5kg. **Other finds** incl part of a **marble volute krater** (No.2005), **glass** 17 frags. (No.2005), **millstone** 5 frags. 550g, slag 400g. **Tile:** 586kg (*teg* 240 [TL20,42], *imbrex* 236, incl stamped and impressed (Nos.2205, 2227), wasters 200g). Thick tile/ brick 61kg incl 6.5kg small bricks/ floor tile, 2 cemented together. Large building stones noted on the side of field.

Date of Site: LIA, E.Hel, L.Hel, E.Imp, M.Imp, L.Imp, L.Ant.

Discussion. This was the largest Roman Imperial site in our area after Vagnari. It lies well S of the *tratturo,* high on the ridge which forms the E side of the Basentello valley towards its confluence with the Bradano. It is on the spring line on which there are still abundant water sources, but since these have now mostly been canalized, it is not possible to reconstruct the precise location of springs in Roman times. Clearly, however, there was good soil and no shortage of water.

Although some of the Special pieces are available for study in the Soprintendenza deposit in Matera, we have been unable to locate much of the pottery from this site. Fortunately, all of it was given a preliminary classification at the time of the field work, including the Roman material which was examined by John Hayes. The following report draws on his notes. The preliminary analysis provides some guide not only to the date but to the nature and scope of the site.



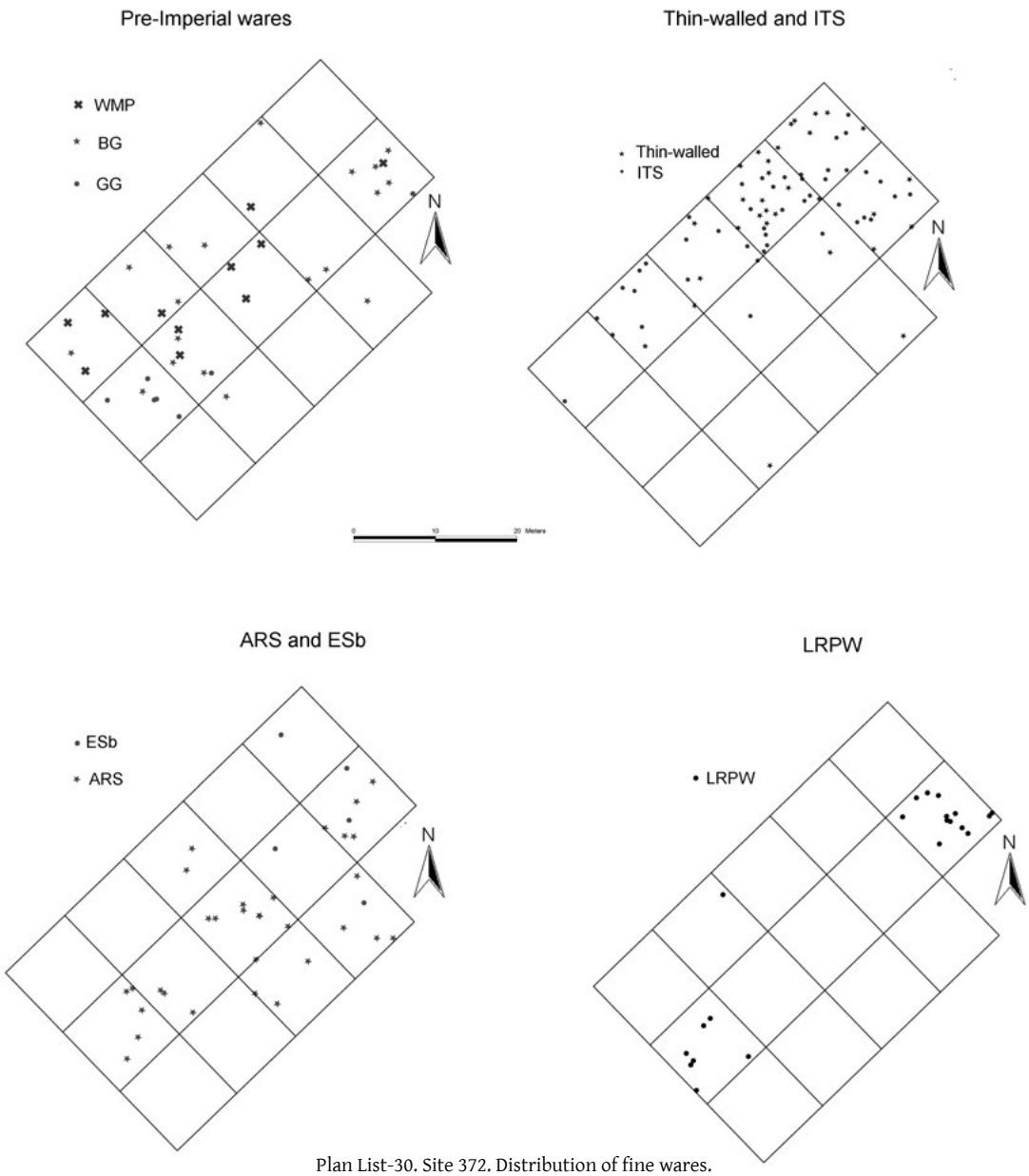
Photo List-21. Site 372 looking NE.



Photo List-22. Site 372 looking SW. Monte Irsi is in the background.

The earliest development of the site must have been in the C4/C3 BC as implied by some of the WMP, some BG and at least one amphora (No.1434). One *tegula* profile (T20) is likely also to belong to this phase. Occupation in the earlier phase was probably towards the SE edge of the site. This would also explain a rather larger proportion of *imbrices* in the tile fall in the lower area. Unusually for this area occupation seems to have continued, probably as a small settlement, through the C3/C2 BC to which the catalogued BG sherds and at least four other semi-glazed pieces can probably be dated. It then, expanded into the Late Hellenistic (GG) and Early Imperial periods (ITS, ES-B, TW, RRS and at least two amphorae (Nos.1478, 1479)). Some of these pieces are too small for analysis but although they include a substantial quantity of local wares, they also show a wide range of imports – ITS, ES and a TW sherd of Rimini fabric This was not a humble, local site. Two ITS are stamped (No.1012 and another, Pisan fabric, with an inscription CRISP(?)). The thin-walled material was unusual on our Survey. At least four of the thin-walled sherds from Site 372 were rouletted and slipped, so probably Early Imperial. The site continued to flourish well into the Empire.

There was a large quantity of early ARS, about half of which can be dated to the C2 AD or earlier. At least twelve pieces of



Plan List-30. Site 372. Distribution of fine wares.

glass are also Early Imperial (seen and dated by Hayes), some of it very fine (notably No.2005). Ten are coloured blue or blue-green. There were also at least ten mould-made lamps (seen and dated by Hayes although only two were typed (No.1938 and another, also Loeschke VIII) and two amphorae (Nos.1490, 1491). Later pottery is scarcer: there are four fragments in ARS-C ware (roughly C3 AD) and another four in ARS-D ware (probably C4 AD). The site then must have reached its peak in the C1/C2 AD and declined thereafter. A number of LRPW sherds, two C4/C5 AD amphorae and perhaps one *mortarium* fragment show that it continued into the Late Antique period but probably not into the Early Medieval: there was no combed tile or markedly late *tegula* although there were two late amphorae (No.1702, C5–6 AD and No.1716 (C5–C7 AD)). One Otranto type amphora of the C11–C13 AD (No.1498) must be sporadic.

There was an unusually large number of cooking pots comprising fifteen Pompeian red ware and two ARS-CkA sherds as well as fragments of local/ regional products which included twelve *clibani*.

The tile scatter indicates a fairly large building extending over some 800-1000m^2, roofed with *tegulae* and *imbrices*. There were at least 61kg of thicker fired fragments which might be remains of bricks or conceivably hypocaust floor tile, mostly found in the NW part of the site. A rather lighter tile fall in the centre may indicate a small three-sided courtyard. One *tegula* profile (T42) must be part of this building. The overwhelming majority of the plain and cooking pot sherds were to the NE of this structure as were all the lamps, but the fine wares were a little further S, the ARS preponderantly to the E of the ITS. This may imply a slight change in habitation, but it would be risky to lay much stress on it. A little marble suggests some pretensions to luxury. It included part of a marble volute krater (No.2053) found just outside the main concentrations of both tile and sherds. It was perhaps used as a garden ornament.

Just under 1kg of millstone on the site indicates that milling took place. It was fairly scattered but outside the main tile fall, though there was some in the possible courtyard. Some indication of industry in addition to milling comes from

a little slag and two small fragments of tile waster in the possible courtyard. though the activities which gave rise to them must have been further to the edge of the site. There is little to suggest a dedicated *dolium* yard but there was a fairly dense scatter of *dolium* sherds over much of the area (the ratio of *dolium* to tile of 1:7 is fairly high). Some, particularly in the more southerly concentration may have been re-used for building.

It seems that this was a reasonably sizable villa lying S of the imperial estate. A broken tile stamp (No.2227) reading ?]CAELID[?] datable by the letter forms to the C2 AD may refer to the owner of the site at that time (*Beyond Vagnari*, 74). Another tile with the imprint of a hobnail boot (No.2205) is perhaps C1 BC.

This area has undergone substantial changes since we visited it in 1998, as the land has been taken over by large scale enterprises for farming. There is little now to be seen of the Site.

374. 614600/4511400, Basilicata, Fontana Fico.
Partly ploughed field, partly stubble, on a moderate slope near the Fontana Fico. Area: 2000m^{2,} thin scatter. Density sherds 0.001.

Sherds found: 30 incl **LRPW** 2, **plain** 26. **Tile:** 1.5kg.

Date of Site: L.Ant.

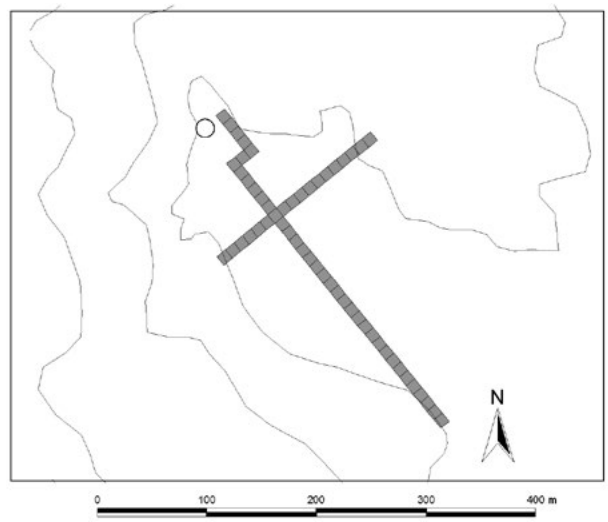
Discussion. A very small site about 500m from Site 372. The scarcity of tile was not uncommon on sites of this period but given how thinly the fragments were spread, it may be that this was simply manuring scatter from Site 424 150m E.

401/409. 613905/4513078. Puglia, Crocevelina.
Stubble field, brown dark forest soil, fairly level undulating site on ridge between the NW-SE trending valleys of the Basentello and the Canale dell'Annunziata, with steep scarps downward to S and E and upward to N and NW. Spring and well on S. edge of site, spring to N. Masl 450. Visibility 4/5. Area:50,000m^2 in main, largely enclosed, part extending SE, still fairly densely, for another 250m across a field in an area originally labelled Site 409. A grid of eighteen 10×10m squares N-S and 38 E-W was laid out and alternate squares were surveyed intensively. Density sherds (in grid) 0.7, tile 11.6.

Sherds found: 2806 incl **impasto** 962 (Nos.227, 228, 249, 255, 269, 272, 292, 309. 347, 353), **geom** 219 (mono 199 (Nos.370, 389, 396, 397, 399, 412, 417, 418, 421, 427, 445, 482, 483, 502, 506, 514), bichr.20 (No.529)), **WMP** 30 incl 16 matt red slip (Nos.568, 576, 594, 596, 637), **imported Greek** 5 (Nos.688, 691, 696), **BG** 20 (Nos.807, 869, 870), **GG** 3, **plain** 1486 incl hm (No.1200), basin 5, **ckpot** 74, **recent** 4, **amph** 2 (Nos.1524, 1799). ***Dol*** 5.5kg (Nos.1884, 1890). **Other finds** incl **lithics** 21, **millstone** 760g, ***gorgoneion*** 1 (No.2057), **slag** 1 piece. **Tile:** 81kg (*teg* 16 [T31,60], *imbrex*/ Laconian 66, waster 1).

Date of Site: FBA, EIA, MIA, LIA, L.Hel.

Discussion. Crocevelina was the third largest site in the area of the survey (Sites 223 (San Felice) and 361 (Vagnari) being the two largest) so in view of our time constraints we decided to experiment with laying out a sample grid consisting of two rows of 10m squares on the major and minor axes of the site intersecting in an area of very dense scatter which seemed likely, from the topography, to be the centre of the settlement. The two rows of the grid were extended until the limits of the site were reached so that they eventually measured 1170m NW-SE, and 28 NE-SW. Within these rows a collection was made in every second square. We thus surveyed intensively some 7.2%



Plan List-31. Sample grid on Site 401/ Crocevelina. The circle shows the location of the probable tumulus – see below.

of the site. Since we began at the area of densest concentration, we calculate that, extrapolating from the finds in the grid, we probably collected a little over one eighth of the material available on the surface within the area. Neither the sherds nor the tile were evenly distributed. The scatter also showed that the length of the site extended some 200m beyond the obviously defensible area and, with a slightly thinner scatter in between, into another concentration which we originally identified as a different site (labelled 409) but which was in fact simply an outlying part of Site 401. We were able to obtain a good sample of the pottery used on the whole site, and therefore a fairly reliable indication of its date. But the results were not altogether satisfactory in that very little could be deduced from the sample about the internal organization and development of the settlement. In the absence of a full collection covering the entire area even conjectures about the changing size of the site must be made cautiously. The analysis does not therefore provide a paradigm of the development of an IA site such as we were able to obtain at San Felice. The location and topography were, however, unusually interesting and a full study of them was made by the late Ian Campbell. Sections 1-6 of what follows are by him, slightly edited.

1. Location

The site (ca. 50,000m^2) lies near the NE limits of a narrow flat-topped ridge-like series of plateaus which lie between the NW–SE trending valleys of the Basentello and the Canale dell'Annunziata. This latter valley separates the plateau system from the extensive *Bosco Comunale* of Gravina, and is a narrow steep-sided drainage system, while the Basentello to the W is a broad, flat-bottomed depression.

The site lies at an elevation of ca. 450m (highest point 457m) and has a rolling undulated surface. It is separated from adjacent surfaces to the NE and SE by shallow depressions and is bordered on its N and W perimeter by steep (ca. 30°) escarpments (see plan). Along the escarpment edge, where it joins the plateau surface, is an almost continuous low (2m) wall-like band of large conglomerate blocks of loosely piled rubble. This wall-like band is interrupted by three gaps (entry points) herein referred to as A, B, and C (see plan). Entry points A and C appear to be the old main entrances along the escarpment edge; entry B seems to be of younger, historically recent origin. Well constructed newer walls define the

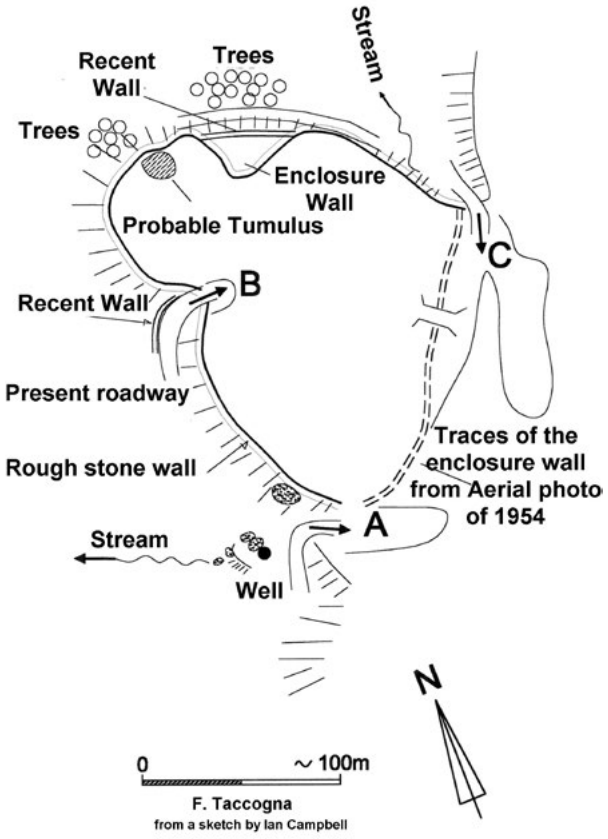
track entry at B and delimit the down-slope portion of the 'enclosure' area at the N edge of the site.



Photo List-23. Site 401 looking NW.



Photo List-24. Site 401. View down the scarp across the Basentello to Monte Irsi.



Plan List-32. Site 401. Sketch plan of the whole area of Crocevelina based on a sketch plan by Ian Campbell.

2. Geology

The site plateau and its related parts to the SE and elsewhere in this region, consist of relatively flat-lying sedimentary units of coastal and marine origin and of late Pliocene/ early Pleistocene age. Uplift was accompanied by thrust-faulting from the W and gentle flexures. Resistant conglomeratic formations typically create flat-topped hills, plateaus and ridges. These rise above gentler slopes developed on softer sandstones and shale/ clay units.

Contact at the junction between the coarser, more permeable materials, with the clay-rich deposits, frequently produces spring lines and seepage planes for groundwater flow. Such areas were important in terms of local settlement as water-supply points; they have also acted as controls triggering local landslides where failure of the saturated clay units has led to slope instability. Much of the region's slope forms reveal evidence of retrogressive slope failure.

Soils

The conglomerates and the coarser sandstones weather readily into silty/ sandy loams forming a well-drained substrate suitable for woody vegetation. Much of the present woodland cover in the region is found on these geologic materials and in optimal conditions a dark brown forest soil has formed.

Pedigenic carbonate horizons typically accumulate at depths of 1–1.5m replacing the original silicic conglomeratic/ sandstone matrix.

On the clays, dense argillic 'B' horizons form creating impeded drainage and blocky, dense subsoils. These tend to favour grass and shrub growth.

3. Vegetation

The site surface is entirely formed on a rotation system of cereals and legumes: it was undoubtedly forested with oak (*Quercus* spp) at some time in the past as is shown by the adjacent *Bosco Comunale* and the site's brown forest soils.

4. Site characteristics

From the perspective of potential settlement, the site has numerous advantages – but some drawbacks. Its W and N margins are topographically clearly defined and easily defensible. They are steeply sloping and the presence of extensive outcrops of coarse sandstone and conglomerates 8–10m below the plateau edge formed an ideal supply of blocky materials which could be carried up and piled in effective loose rubble walls to prevent access. To the E and S, however, the site has no such natural defensive characteristics, and it is not clear either in the field or on the 1991 IGM aerial photographs how these margins of the site were defined and protected.

The fields contain only widely scattered isolated blocks suitable for rubble walls, and while it is possible to argue that the farmers have simply removed such material in the course of ploughing etc, it is also the case that conglomeratic units lie well below most of the field surface so that this material is not readily available for wall construction.

If rubble walls were not used, or were not present to any extent, then two other defensive systems may have been used,

either separately or in combination; these are (a) palisades using timber which would have been amply available, and (b) ditch and upcast rampart.

5. The probable tumulus

There is a rubble pile at the N edge of the site, quite low (ca. 2.5m max in height and ca. 15m in diameter). It is located at one of the highest points of the perimeter wall, and it affords an excellent view across and along the Basentello valley and the region to the N. It is also sited at one of the steepest areas of the slopes below the site. If the rubble is simply field-clearing debris there appears to be no obvious reason for piling the rocks here (which involves needless effort since they could simply have been thrown over the nearest scarp edge), so most probably it is the remains of an EIA tumulus burial.



Photo List-25. Site 401. Rubble pile – possible tumulus.

6. Water supplies

Entry points A and C, probably the main entrances, are located at, or close to, locally important water sources. Entry A overlooks a partially-lined well, ca. 4m deep and 3m in diameter, excavated into the conglomerate. This is probably more recent than the site and connected with the later use of the area for animals, but it shows the potential for supplying water to the site. It drains a spring-fed, large seepage cavity which has formed a cave, perhaps artificially enlarged, in a 3m high conglomerate cliff-face. A short (20m) wall of rubble has been placed near the entry point A and above the well site.

Entry point C also lies adjacent to a major seepage or spring site. Two parallel walls of stacked rubble blocks ca. 4m apart appear to be placed there as if to partially direct or protect the flow. The roadways follow the margins of these walls thus bordering the channel.



Photo List-26. Site 401. Spring at S entrance.



Photo List-27. Site 401. Oak wood at N end.

These two water sources appear to be the only currently active conduits, but the position of the oak woodland at the N edge of the site suggests that it reflects local seepage. The road-cut which goes through the wooded area follows the contact between the basal portion of the conglomerates and the upper part of the shale/ clay unit, a likely point of seepage.

The oaks are quite large. Three multiple trunked trees were measured at their basal/ ground contacts giving circumferences of 3.0, 3.65, and 2.20m for trees of 3, 4, and 2 trunks respectively. A dead, burned out stump on the slope just below the 'new' enclosure wall measured at 2.60m in diameter. Hence, quite large trees can and do grow here suggesting a complacent, well-watered site. Tree heights were estimated at 6–8m. The site was thus potentially well supplied with timber.

7. Chronology and nature of site – by Carola Small

The earliest material on the site was two groups of ten and eleven lithics, of which one was a core and the rest unidentifiable flakes. These might date anywhere between Upper Paleolithic and the Early Iron Age but are most likely to be Neolithic, since there was a Neolithic site 403/404 situated 0.5km N. There was a fairly large scatter of lithic material all along the path below the ridge here. Settlement probably did not begin until late in the FBA. This is indicated most clearly by the Iapygian protogeometric piece No.370, but some of the impasto pottery including the turban-rimmed bowls Nos.227 and 228 and the colander No.309 are also most likely to be of this period, although the types continued into the EIA. The bulk of the impasto pottery and most of the geometric monochrome pottery pieces show that the site was flourishing in the EIA. It is likely that the settlement began to decline in the C6 BC when geometric monochrome gave way to geometric bichrome, since the latter represents only just over 10% of the total number of geometric sherds. While it is possible that some of the monochrome wall sherds came from bichrome pots, most probably did not. Eleven WMP sherds show that the site continued into the C5/C4 BC to which much of the Black gloss can also be dated, but it seems unlikely that it regained its former importance. None of the sherds shows that the site was occupied in the C3 BC, but two GG sherds are evidence for some frequentation in the C2/C1 BC.

There are some unexpected absences. No loomweights were found and, since it is highly improbable that no weaving was done on the site or that textiles were woven on a site of this date without a warp-weighted loom, it is likely that the looms were located away from the main axis of the survey. There was less cooking pot than might have been expected but this again was probably because our sample excluded material

from domestic/ kitchen areas. There was only one Italic amphora sherd. A second amphora sherd, from the E Aegean, (No.1799) may have been as late as the C7 AD. It must have been sporadic. There was very little tile and most of it was *imbrex* or Laconian but there was a little *tegula* including one fairly early profile (T31), and one which seems to belong to the later smaller phase of the site (T60). A small quantity of *dolium* (5.7kg) was found towards the edges of the main site. The two rims from it (Nos.1884, 1890) are early examples of types 3 and 4 (C4 BC – Roman imperial). A tile waster and a little slag are indications that there was a tile kiln and probably a smithy on the site. Some millstone fragments imply cereal processing on the site, and probably arable cultivation in the vicinity.

The grid survey was very selective, but it would appear from it that this was an EIA site, built at least partly for defence, which continued into the LIA as a much smaller settlement and came to an end or shrank drastically like so many others in the area after the Roman invasion at the end of the C4 BC.

403/404, 614450/4512500, Puglia.
Stubble field, sandy silt, moderate slope up to a flattish ridge running N-S, on which the main concentration was located, in a strip some 40m wide. The site continues downhill into a field (under plough) for a further 20m or so to W. On spring line. Masl 450. Area:6400m^2 with scatter extending to 19600m^2. Max density sherds 0.4, tile 0.2.

Sherds found: 228 incl **Neo impressed** 44 (Nos.77, 87, 106, 107, 109, 114, 118, 120-123, 127, 135, 138, 140-145, 161), undecorated **impasto** 87 (Nos.276, 293), **RRS**? 1, **plain** 139 incl hm plain 34, **recent** 4. ***Pithos*** 0.24kg. **Other finds** incl **lithics** 69 (Nos.9, 13). **Tile:** 1.5kg (*imbrex*).

Date of Site: Neo, FBA, EIA.

Discussion. Sites 403 and 404 (100m apart) are taken together, 404 being possibly a lithic working floor for 403. This was predominantly a Neolithic site, the largest in our area with the possible exception of Site 432, as shown by much Neolithic pottery and an unusual number of worked stones (mostly flakes but six cores, predominantly from Area 404). The Neo sherds were mostly "advanced early Neolithic" (M7–M6 BC).

Four **impasto** rims, however, including Nos.276, 293, are attributable to the FBA/EIA; and the hand-made plain wares, including a neck, a plain base, six staff-handles and a handle-spring suggest that occupation continued in both areas into the EIA.

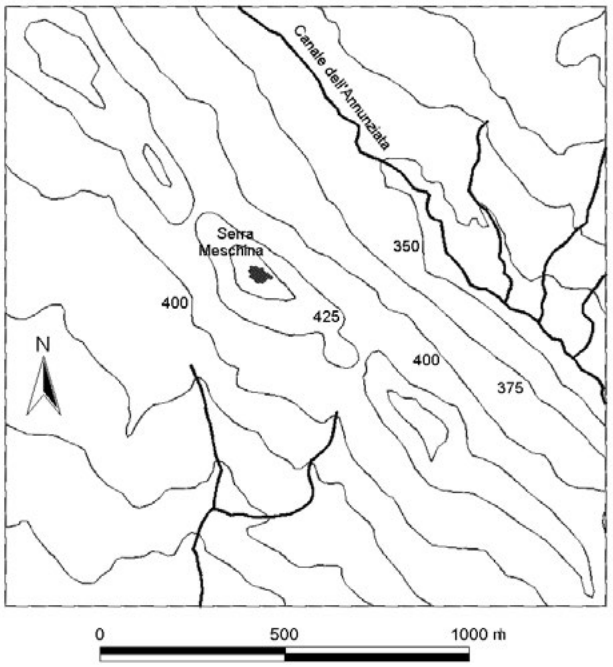
406, 614600/4512300, Puglia
Stubble field downhill and some 240m E of 403. Moderate to steep slope, masl 450. Visibility 4. Area:20000 m^2. Density sherds 0.002, tile 0.7. Large area of thin scatter.

Sherds found 44 incl **Neo** 1 (No.182), **impasto** 13, **geom mono** 1 (No.404), **plain** 29. ***Dol*** 200g. **Other finds** incl 2 lithic flakes. **Tile:** 15kg (*imbrex* 400g).

Date of Site: Neo, **EIA.**

Discussion. The Middle Neo sherd is probably sporadic from the nearby Site 403/404. There is much scatter all over the slope.

407. 613373/4510973, Puglia, Serra Meschina.
Scrub area on dark forest soil on a small plateau on the ridge between the Basentello valley and the valley of the Canale dell'Annunziata. The land falls steeply to the E. The slope to the W is more moderate ending in a sandy clay loam



Plan List-33. Site 407. Topographical location. Gridded area shown in black.

ploughed field and a bean stubble field next it, where there was a little more material, perhaps slope-wash. Nearest water probably from springs below the site though a well is possible. Masl 450. Visibility 2 in the scrub – 4 in the cultivated areas. Area:13580m^2 extending to 20,000m^2 plus slope-wash. Density sherds 0.04, tile 0.4.

Sherds found: 610 incl **impasto** 107 (Nos.280, 281, 361, 362), **geom** 6 (mono 5. (No.369), bichr 1 (No.522)), **RF** 1, **WMP** 40 (Nos.592, 597, 599, 600, 606, 619, 629, 659, 669), **BG** 20 (Nos.767, 774, 778, 780, 827, 884), Gnathian 2 (Nos.751, 758), ***unguentarium*** 1 (Nos.970, 981), **plain** 303 incl hm 3 (Nos.1197, 1213), wm. (Nos.1223, 1227, 1268, 1275, 1300, 1303) incl *mortarium* (Nos.1282,1291), **ckpot** 32 (No.1375), ***clibanus*** 6, **loomweights** 3 (Nos.1953, 1954), **amph** 1 (No.1595), **recent** 1. ***Dol*** 59kg (Nos.1865, 1867, 1880, 1891, 1893, 1923). **Other finds** incl **millstone** 9 bits, 3kg (Nos.2031, 2047), **slag** 1.5kg. **Tile:** 540kg (*teg* 46 [TL6,12,57], *imbrex*/ Laconian 491 (No.2172), ridge tile 1, chimney tile 1 (No.2188), wasters 1.9kg).

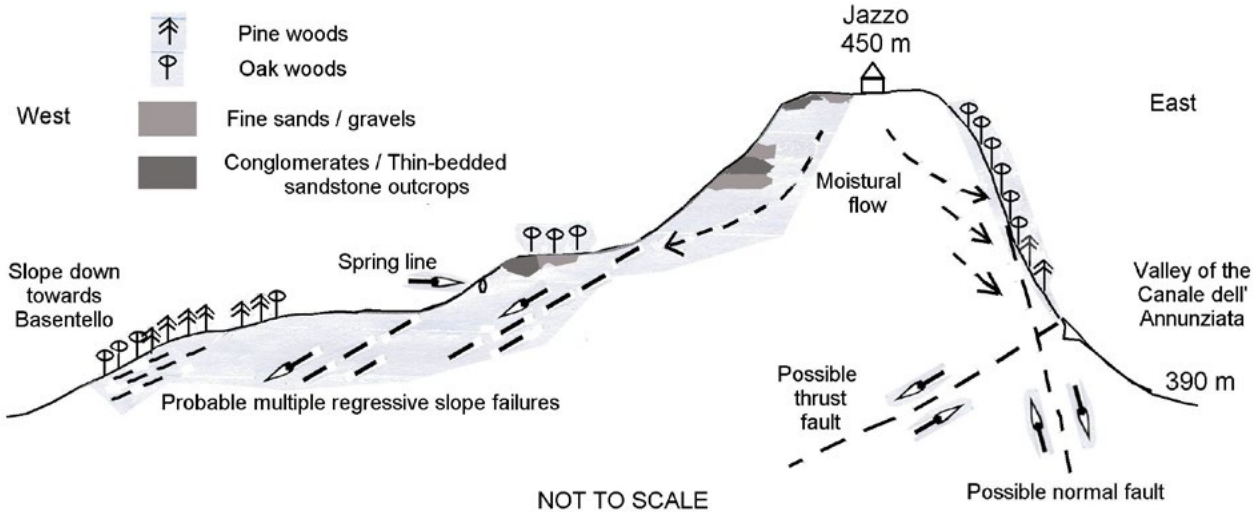
Date of Site: FBA, EIA, MIA, LIA, E.Hel, L.Hel.

Discussion

1. Geomorphology – *by* **Ian Campbell (edited)**

The site is on one of a series of small plateaus which make up the central and S portions of a narrow NE-SW trending upland between the valley of the Basentello to the W and the Canale dell'Annunziata to the E. It has a mean elevation of ca. 450m, and covers approximately 30,000m^2 (ca. 300×100m) with the greatest distance following the line of the ridge. The eastward falling slope is steep (>600) and is part of a fault line scarp which borders much of the E margins of the entire ridge. It is likely that the Canale dell'Annunziata is a fault-guided stream. The W-facing slopes are less steep (ca. 300) and have formed mainly as a result of the landslide processes which dominate most of the E slopes of the Basentello valley

Geologically the ridge consists of late pliocene/ early pleistocene (2-3 million years BP) beach and shallow marine deposits. The main ridge-controlling unit, which forms a caprock for most of the ridge, is a thick (15-25m) unit of



Plan List-34. Site 407. Diagrammatic cross section of the hill of Serra Meschina from a sketch by Ian Campbell.



Photo List-28. Site 407. Location of the hill-top site.



Photo List-29. Site 407. The survey in progress.

coarse, well cemented, conglomerate. Above and below the unit are coarse and weak sandstone beds. The basal parts of the slope are formed in weak marine shales which control the processes of landsliding. The coarser units, especially the conglomerates, are a regionally important aquifer, and springs occur frequently at the contact between the coarser units and the more impermeable marine shales.

Soils in the region closely reflect control of texture, porosity, and colour of the parent material and the plant cover. On the well-drained conglomerates, which weather into thick (2-3 m) gravel deposits, dark brown forest soils formed. Relics of an oak (*Quercus* sp) dominated forest are found at the site and to the E (in the *Bosco Comunale*); also to the W on the thinner, less fertile and less moisture-bearing clay soils which formed on the marine shales of the lower slopes. Ample resources were available to the site occupants for water, wood and pottery/ tile fabrication.

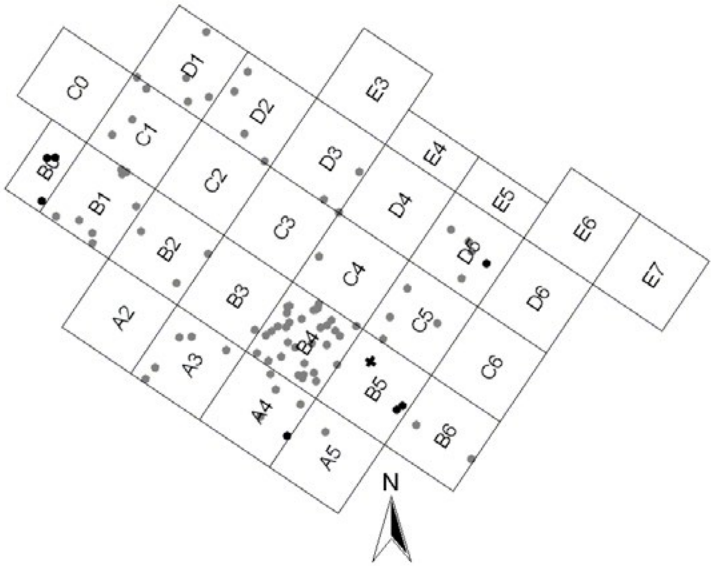
2. Natural resources – *by* **Ian Campbell (edited)**

Water. The coarse conglomerate units and their associated thin-bedded weak sandstones are excellent aquifers with high water-holding potential. The fact that these units also form the highest topographic areas means that they would be better watered – with greater precipitation than the lowlands – and hence likely better vegetated, thereby reducing surface water loss by rapid run-off and evaporation.

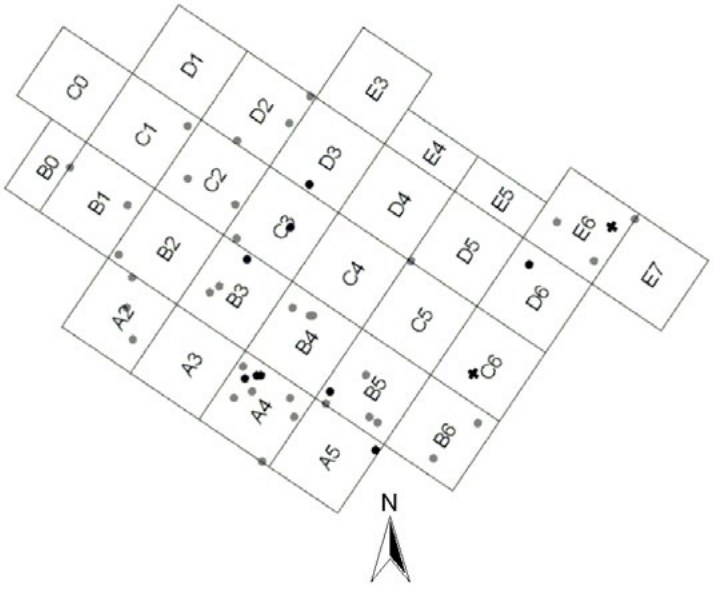
Because the coarser units lie atop the clay-rich marine shales, spring lines are common along the geological contact. Slope failures along the slopes would have juxtaposed permeable/ impermeable units, forming excellent subsurface groundwater impoundment sites which would result in springs and seepage zones. An example is shown in the springs/ seepage area which supplies the band of scrub/ *macchia* below the site (see sketch below) It is also likely that shallow wells (< 3m in depth) would have encountered the water table on the plateau surface, though this could have fluctuated in terms of supply, depending on seasonal variations in moisture.

Wood. The site lies adjacent to the present *Bosco Comunale*, a well forested (oak dominated) area. It is thickly wooded by scrub and trees (oak) on its steep E slopes. Extensive timber for fuel (cooking, heating) and for pottery kilns etc. would have been plentiful within short distances of the site – as they are today, although it is impossible to know how the nature and extent of the present woodlands reflects its character in antiquity. Aerial photographs taken in 1991 (IGM) show a marked reduction in the extent of woodland cover compared to photos (IGM) taken in the mid-1960s; extensive re-forestation was undertaken in the early 1950s in the highly eroded shale outcrop areas along the E side of the Basentello valley where serious soil erosion problems related to landslide activity and localized badlands formation had occurred. But much of the re-planted area has been lost to encroachment of cereal cultivation especially in the Basentello valley and the upper portion of the valley of the Canale dell'Annunziata.

Clay. Ample supplies of clay are available from the marine shales which form the lower slope units around the site. The fact that the springs/ seepage areas coincide in most cases with the clay



Plan List-35. Site 407. Distribution of impasto (grey dots), geometric monochrome (black dots) and geometric bichrome (black cross). Squares 20×20m.



Plan List-36. Site 407. Distribution of WMP (grey dots), BG (black dots) and Gnathian (black crosses). Squares 20×20m.

units also is important. These clays do not appear to contain swelling minerals such as montmorillonite/ illite and thus would be likely to be easily moulded and fired. In short, water, wood, and clay occur in close proximity to the site and to each other.

***3. Defensive capability – by* Ian Campbell (edited)**

Serra Meschina is surrounded by steep slopes, especially on its E margins. It allows excellent observation over the adjacent lowlands in all directions and the site possesses ideal defensive advantages. Attack up the very steep loose gravel-surfaced, E face would be near suicidal; more feasible access is via the W slopes and, to a lesser extent because of their restricted size, the extremities of the site at its NW and SE limits. In either case, however, potential attackers would still face a short (10-15 m) steep, final approach in order to gain access to the plateau surface.

While there is no evidence remaining of wall-like structures around the plateau perimeter there are ample supplies of conglomeratic blocks within easy transport distance and plentiful timber for palisades. An outcrop of sandstone tubular slabs at the SE limits of the plateau could have formed a suitable base for a defensive construction.

It would seem likely that the most feasible, and the most used access route would lead directly from the S-central portion of the plateau – close to a ruined sheep farm (*Jazzo*) – down slope to the nearest spring head (along a SW route) a distance of about 150-200m.

The relatively restricted area of the site suggests that the main farming activities were on the SW facing slopes immediately below the site.

4. The Surface collection – by Carola Small

Collection on this site was unusually difficult because of the dense cover of long grass or scrub. By comparison with other sites the rate of collection was probably low. Nevertheless, a large number of artifacts was collected, and the restricted area of the site gives a more informative distribution pattern than on many sites. Deep ploughing had only recently been undertaken on the site. Consequently, the material recovered was less fragmented here than on most of our sites.

The earliest pottery on the site is LBA impasto. A piece of Iapygian protogeometric (No.369) indicates that it was in use in the FBA. The habitation continued into the EIA when it probably expanded or at any rate became denser: the greatest number of diagnostic sherds was of IA impasto. A thin scatter of geometric monochrome also indicates that the site was inhabited between the C10 and the C7 BC.

There is, however, only one certain piece of geometric bichrome (No.522) so it is likely that habitation ceased or was massively reduced in the C6 BC. It was revived in (or carried on into) the C5 to C4. To this phase belong a scrap of red-figure with a palmette motif, most of the diagnostic BG pieces (Nos.767, 774, 778, 780, 884), a large relief-decorated basin rim (No.1300), and a *mortarium* rim (No.1282). It is likely that most of the wheel made painted and black glaze sherds belong to this time.

A few pieces show occupation continuing or resumed in the next period: a plain basin rim (No.1223) probably late C3 BC, a *lekane* rim (No.1227) probably of the same period, and perhaps a fragment of another *mortarium* rim (No.1291), although this piece is not well dated. The *catillus* of a rotary hand-mill (No.2047) cannot be earlier than the C3 BC, one piece of BG (No.827) has parallels in the C2 and a plain ware sherd (No.1275) could also be C2/C1 BC. No.1923 from the edge of the site, if it is from a *puteal*, enclosing a well or cistern, is likely to be of the C2/C1 BC. But the absence of grey-gloss suggests that the site came to an end before ca. 150 BC.

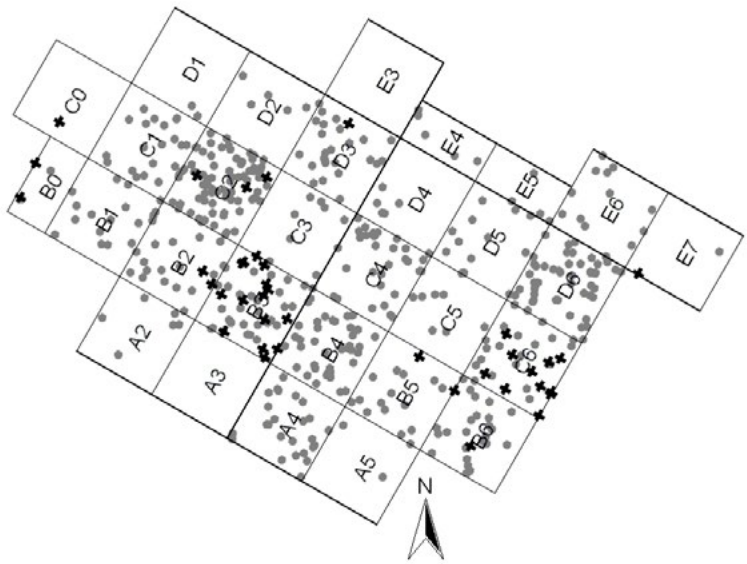
The evidence therefore suggests that there was a further decline of the site after the end of the C4 BC, and that it petered out gradually in the Hellenistic period.

The distribution of the EIA material showed a marked concentration in Square C4 which was presumably from a

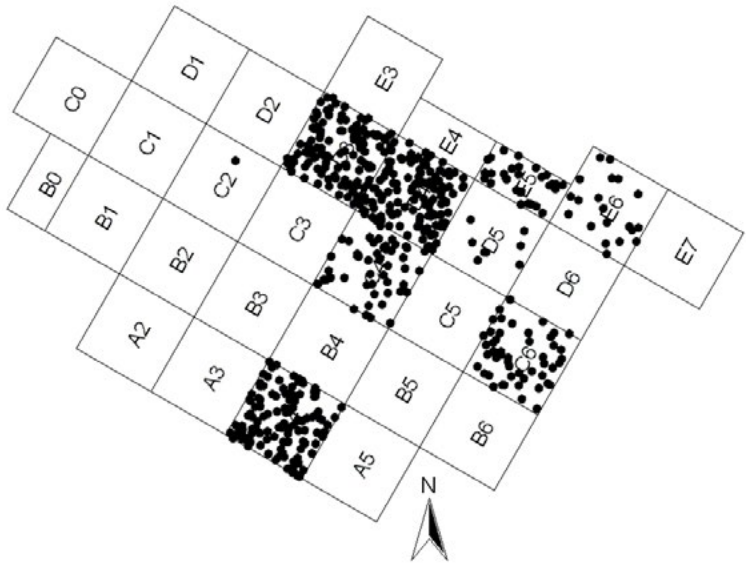
dwelling hut, with other possible huts to the W (B1/B0) and E (C5). The later Peucetian settlement must also have been in small separate buildings. The fall of the tile suggests that they were laid out round three sides of an open area facing roughly NNE with marked concentrations in squares C2, B3/B4 and C6/D6. The possibility that the area was closed on the N side by a building now eroded away on the very steep hillside cannot be ignored but there is not much evidence for it. As is common on pre-Roman sites the quantity of curved tile (much of it Laconian) was much greater than that of *tegulae* (about 10:1). A few *tegulae,* however, including No.12 (= T292) have profiles typical of the C5/C4 BC and must belong to this phase of the site.

The building in square C2 had few *tegulae:* it was perhaps built later than the other two, in the Late Hellenistic period when the use of *tegulae* was more or less abandoned. The curved *imbrex* with thickened rim (No.2172) which is likely to be relatively late, came from here. A few *tegula* profiles, however (notably no.57=T296) may have come from this phase. It is not unusual to find a few *tegulae* in the context of a building with a roof largely of curved tiles.

The greatest accumulation of sherds was just S and E of B3. It seems likely that there was a dwelling house in B3 roofed with both *imbrices* and *tegulae*, another lesser one in C6, and a third building in which *tegulae* were used little if at all, in C2. In each area, the greatest accumulation of pottery was adjacent to, rather than among, the tile fall suggesting that the roofs may have blown over rather than simply collapsed. The fine wares were distributed fairly evenly throughout the three "buildings ", but again not in the central clear space.



Plan List-37. Site 407. Distribution of *tegulae* (black crosses) and *imbrices* (grey dots). Squares 20×20m.



Plan List-38. Site 407. Distribution of *dolia*. Each dot = 100g. Squares 20×20m.

The remains of a horse-shoe kiln and some kiln waste were found in a pit dug into the hillside to the SE, one of three apparently excavated by clandestine tomb-robbers in this area. Two tile wasters indicate that it was probably used for firing tiles, and a thin scatter of fragments of misfired curved tiles (Laconian or *imbrices*) and *tegulae* found on the main site reveal that even sub-standard pieces produced in the kiln might be used in the buildings, in the walls if not on the roofs.

Evidence for domestic use of the site was fairly sparse. It included one loomweight from B0, a small number of millstone fragments from hand-mills including a flat grinding stone (No.2031) and a scatter of cooking pot. *Pithos* fragments were, however, abundant on the site, their distribution clearly indicating that some at least were kept in dedicated spaces. The 53kg of *pithos* or *dolium* fragments recorded were found in only eight of the twenty-nine 10×10m squares investigated, and rather more than two thirds of that total (37kg) were located in two areas, one of two squares, the other of one (See plan above). The densest (square 21) had 12kg *dolium* and only 6kg of tile, so it is probable that there was a small unroofed *dolium* yard in this area. In the other two squares (squares 2 and 22) there were 25kg of *dolium* suggesting that there was a *dolium* yard here too; but in these cases, the greater quantity of tile (32kg) suggests that part of the yard was roofed – probably not the whole of it since the tile count falls far short of the densest concentrations of 45 to 79kg found elsewhere on this site. They perhaps had lean-to roofs. Whatever the case, there can be little doubt that the owner was not just storing commodities to meet the needs of his household but was producing a surplus for sale. The pithoi were probably used for storing grain. Wine storage is an alternative but would presumably have involved some use of amphorae, and an undatable Italic amphora was the only such container identified on the site.

We have referred to the three pits dug apparently by would-be grave robbers in the hillside to the SE, one of which exposed the remains of a kiln. In the second pit, a few pieces of non-diagnostic pottery (not collected) were found. If it had contained a tomb it had been robbed of more interesting

material. The third pit had certainly contained a burial. Fragmentary hand and foot bones were found inside it and numerous other bones in the dirt pile next to it. They were analyzed by Tracy Prowse who reports that they included parts of the left *calcaneus*, R and L *fibulae*, R *ulna*, R *radius*, a fragment of R *ilium* (female – sciatic notch is wide), pronounced pre-auricular *sulcus* (female), left frontal bone – metopic suture still evident, left *tibia* (max length 33cm), part of the *sphenoid*, and one probable thoracic vertebra fragment. The irregularity of the sacroiliac joint indicates a possible "older" individual. One piece of *imbrex* and some cut stone were found in the dirt pile, but grave goods, if they existed, had been robbed.

The red-figure sherd found in square C6 is likely to have come from a burial, for, as in Athens, red-figure was hardly used in the countryside except in sanctuaries and tombs (Morris 1992,121-22).

408. 615429/4512076m Puglia, Masseria Annunziata.
Ploughed field on thin brown forest soil – weak sandstone and conglomerate, and fine silty clay loam on the NE slope of the ridge between the Basentello valley and the valley of the Canale dell'Annunziata on a fairly steep slope straight down from a gravel quarry. Masl 400+. Visibility 5. Area:450m^2 with some extended scatter down the slope. Density sherds 1.9, tile 0.07.

Sherds found: 1097 incl **LRPW** 262 (Nos.1104, 1109, 1110, 1112-1115, 1124, 1130, 1133, 1134, 1136-1138, 1143, 1159, 1161, 1164, 1169, 1171, 1172, 1180, 1181+ 1 sim, 1183, 1185, 1186, 1189, 1190), **plain** 742 (No.1219), **ckpot** 78 (incl sandy red 10 and sandy grey 14), **recent** 2. **Tile:** 8kg (*teg* 3.1, *imbrex* 4.1).

Date of Site: L.Ant.

Discussion. The concentration of sherds was unusually great but they were exceptionally battered, although less fragmented than on many sites. The date as suggested by the LRPW is late C5 – mid-C7 AD. The one classifiable plain rim (No.1219) is ca. C6/C7 AD. There was no building stone in the vicinity and very little tile on the site, so the building must have been largely of wood and thatched. The pottery, including the cookpot fragments show that it was domestic. There is little evidence for any other activity on the site.

410. 615557/4512013, Puglia, Masseria Annunziata.
Ploughed field on sandy silt, light brown soil on a slight shelf at the bottom of a moderate slope somewhat above the spring line, 100m SE of Site 408 over a small gully. Masl 400+. Visibility 5. Area:100m^2 with scatter extending to 400m^2. Max. density sherds 0.4, tile 41.

Sherds found: 44 incl **LRPW** 1, **plain** 42 incl *mortarium* (No.1279). ***Dol*** 15kg. **Other finds** incl **slag**. **Tile:** 4kg (*teg* 2.5 [T25], *imbrex* 1, waster 50g).

Date of Site: L.Ant.

Discussion. The *mortarium* is early, perhaps C6/C5 BC. But most of the datable material is Late Antique, including the fragment of LRPW and a plain piece with combed decoration, and the high proportion of sherds to tile also supports this date. The *tegula* profile is also Late Antique. The *dolium* was perhaps used in conjunction with the iron working indicated by the slag – there must always have been a need for water on such sites. The earlier material forms part of a widespread scatter in this area which is mostly farming and manuring debris from Site 407. The so-called tile waster may have been discoloured by use in the forge.

411. 615940/4511092, Puglia.
Ploughed and stubble field on dark brown silty clay loam on the spring line on a moderate slope. Just above the main area of concentration is a small natural platform cut to the W by a modern fence. It is possible that the site was originally on this platform and that it has since been cleared downhill. There was additional scatter just N of it (originally designated 412) which must be part of the same site. Masl 350+. Visibility 4. Area:2 concentrations of 525 and 100m^2 some 200m apart. Max. density sherds 0.02, tile 81.

Sherds found: 11 incl **impasto** 1, **BG** 2, **plain** 7, **ckpot** 1. ***Dol*** 8kg. **Tile:** 62 (*teg* 1, *imbrex*/ Laconian 60).

Date of Site: LIA.

Discussion. One BG sherd was an *olpe* handle of the C4 BC, the other a fragment of a *skyphos* of the C4/C3 BC. The proportion of *tegula* to *imbrex* weights (1:60) was very low, as on most sites of this period. This was presumably a field hut and *dolium* yard. The site formed one of a group of LIA settlements in this area comprising Sites 371, 411, 413, 415, 416, 417, 418, 419, 420, 423 of which the two most widely separated are only 1.8km apart.

413. 615479/4511205, Puglia.
Stubble field on grey silty soil on a moderate slope. A modern well 60m SW and the spring line is at most 100m uphill. Masl 350+. Visibility 2/3. Area:250m^2 with no scatter extending further. Density sherds 0.13, tile 124.

Sherds found: 34 incl **WMP** 1, **BG** 6 (Nos.775, 868), **plain** 27, **ckpot** 2, **pot waster** 2. ***Dol*** 1kg. **Other finds** incl **kiln material** 25g. **Tile:** 31kg (*teg* 2, *imbrex*/ Laconian 29, waster 3 frags.).

Date of Site: LIA.

Discussion. Two BG are C5 and another C4 BC. The WMP sherd is a ribbon handle of the C6–C5 BC. The proportion of *tegulae* to *imbrex* was very low as on most sites of this period. This was presumably a field hut or small dwelling. The fragments of kiln material and waster imply that there was a small tile kiln here at one time. This site formed one of a group of LIA settlements in this area comprising Sites 371, 411, 413, 415, 416, 417, 418, 419, 420, 423 of which the two most widely separated are only 1.8km apart.

415. 616075/4150724, Basilicata.
Ploughed field extending into stubble, on grey silty soil on a flat platform below a steep scrub slope some 450m WSW downhill from Site 407 Serra Meschina. Spring some 100m W. Masl 350+. Visibility 5. Area:200m^2 with little extra scatter. Density sherds 0.2, tile 65.

Sherds found: 41 incl **WMP** 3 (No.635, 672), **BG** 2 (Nos.846, 865), ***unguentarium*** 1 (No.977), **plain** 29 (No.1230), **ckpot** 5. ***Dol*** 3kg. **Tile:** 14.25kg (*teg* 1.25, *imbrex*/ Laconian 13).

Date of Site: LIA, E.Hel, L.Hel?

Discussion. One WMP is C5 BC, one BG is early (C5/C4 BC), the other C4, the *unguentarium* C3/C2 BC, the *mortarium* probably C2 BC so there are signs of frequentation over a long period. Very little roof tile was found, but with a low proportion of *tegula* to *imbrex*/ Laconian tile weights (1:10.4), as usual on LIA sites. This site formed one of a group of LIA settlements in this area comprising Sites 371, 411, 413, 415, 416, 417, 418, 419, 420, 423 of which the two most widely separated are only 1.8km apart though this one seems to start earlier and last longer than most of the others.

416. 616052/4510485, Basilicata.
Deep ploughed field, silty brown soil on gentle slope to SW. Spring 100m SW. Masl 350+. Visibility 5. Area:2000m^2 with little extra scatter. Density sherds 0.01, tile 2.75.

Sherds found: 41 incl **WMP** 1, **plain** 56, **ckpot** 4, **recent** 1. ***Dol*** 1kg. **Tile:** 12.75kg (*teg* 1.75, *imbrex* 11).

Date of Site: LIA.

Discussion. This site formed one of a group of LIA settlements in this area comprising Sites 371, 411, 413, 415, 416, 417, 418, 419, 420, 423 of which the two most widely separated are only 1.8km apart. The scatter was thinner than on most of these sites and there was no identifiable fine ware but given its location and the one WMP sherd we have assigned it to the group.

417. 616245/4510490, Basilicata, La Guardiola.
Stubble field, friable silty dark brown loam on a small platform on the slope of a ravine below Serra Meschina and about 50m up from the ravine which is the nearest source of water. Masl 350+. Visibility 3/4. Area500m^2, with scatter extending to some 20000m^2 (2ha). Density sherds 0.24, tile 301.

Sherds found: 120 incl **WMP** 4, **BG** 14 (Nos.776, 791, 901), **plain** 100 (No.1244) incl *mortarium* (No.1289), **ckpot** 13, **amph** 1 (No.1433), **loomweights** 2 (badly damaged). ***Dol*** 17kg (Nos.1879, 1899). **Other finds** incl **lithics** 2 flakes, **Tile:** 150.5kg (all *imbrex*/ Laconian, many flanged (No.2179), 1 misfired tile 100g).

Date of Site: LIA, E.Hel.

Discussion. The lithics are part of a scatter found all along this ridge. The WMP and BG sherds are of the late C4/C3 BC, but the *mortarium* is probably later (C3/C2 BC). This site formed one of a group of LIA settlements in this area comprising Sites 371, 411, 413, 415, 416, 417, 418, 419, 420, 423 of which the two most widely separated are only 1.8km apart. The datable scatter suggests that this site started later than most of the group, but it flourished like them in the C4/C3 BC. The amphora (one of a very few from these sites) was of that date. This site was larger than most of the others in the group and both the cooking pots and the loomweights suggest domestic occupation. There were at least three *dolia*, the dates of which were very broad but compatible. They imply permanent settlement. The *imbrices* were mostly flanged. This was presumably a small farmhouse.

418, 616135/4510026, Basilicata.
Partly stubble, partly green fallow crop on good friable brown loam on a platform breaking a moderate slope some 450m downstream from 417. Perennial spring NNW of the site and a seasonal stream 30m SE. Another small spring 80m W. Masl 300. Visibility 3. Area:225m^2, no additional scatter. Density sherds 0.5, tile 12.4.

Sherds found: 113 incl **impasto** 4, **WMP** 1 (No.673), **plain** 107 incl hm plain 6, **amph** 1 (No.1510). **Other finds** incl **lithics** 12 (9 flakes, 2 cores 1 scraper), **daub** 1 bit. **Tile:** 2.8kg (all *imbrex*/ Laconian).

Date of Site: EIA**, LIA.**

Discussion. Very little datable here. The hm plain with the impasto and possibly the lithics suggest an EIA site. The WMP is C5/C4 BC and probably goes with most of the plain sherds and the Italic amphora. At that time this site perhaps formed a minor one of a group of LIA settlements in this area comprising Sites 371, 411, 413, 415, 416, 417, 418, 419, 420, 423 of which the two most widely separated are only 1.8km apart, but there is no BG to confirm the date. The slag suggests some iron working as at Site 419.

419. 615722/4510223, Basilicata, Azienda Pilota Asciutta.
Ploughed field, silty light brown clay, ploughed to sub soil on a platform (ploughed out now) on a moderate to steep slope. Springs 40m away to both E and W. Masl 300+. Visibility 5. Area:400m^2 with little additional scatter. Density sherds 0.2, tile 315.

Sherds found: 87 incl **WMP** 1, **BG** 14 (Nos.785, 842), **Pre-Roman red slipped** (No.963), **plain** 49, **ckpot** 21, **loomweights** 2, **recent** 1. ***Dol*** 0.5kg. Other finds incl **slag** 250g. **Tile:** 126kg (*teg* 1, *imbrex*/ Laconian 125).

Date of Site: LIA, E.Hel.

Discussion. This site formed one of a group of LIA settlements in this area (cf. Site 411). The very low proportion of *tegula* to Laconian tile or *imbrex* weights (1:125) bears this out. It may have been one of the slightly later sites in the group – one BG fragment is probably C4/C3, but two others are dated C3 and C3/C2 BC. The loomweights and cookpot suggest that this was a dwelling, presumably fairly small, and long enough lasting to have been provided with at least one *dolium*. The slag perhaps suggests some iron working here as at Site 418.

420. 616050/ 4510419, Basilicata, Azienda Pilota Asciutta.
Stubble field, on light friable loam, on a roughly flat platform on a gentle to moderate slope with a spring 100m W. It was next to a field of barley. This could not be explored so the site may perhaps continue into it. Maybe same site as 416, 70m away. Masl 350. Visibility 3. Area:150m^2. Little further scatter except possibly in the barley field. Density sherds 0.16, tile 53.3.

Sherds found: 24 incl **BG** 10, **plain** 13, **ckpot** 1. ***Dol*** 5kg. **Tile:** 8kg (all *imbrex*/ Laconian).

Date of Site: **LIA.**

Discussion. This site formed one of a group of LIA settlements in this area comprising Sites 371, 411, 413, 415, 416, 417, 418, 419, 420, 423 of which the two most widely separated are only 1.8km apart. The BG is likely to be C5/C4 BC. including one s*kyphos* and one *olpe* fragment. Probably a field hut with some storage (*dolium*).

422. 615255/4511314, Basilicata, Nr. Jazzo delle Conche (Puglia).
Stubble field on brown silty loam on a gentle slope. There is a spring ca. 200m N. Masl 350+. Visibility 3. Area:300m^2 with about 1kg additional tile scatter below the main concentration. Density sherds 0.07, tile 30.

Sherds found: 22 incl **impasto** 2, **geom mono** 1 (No.517), **plain** 16 incl hm plain 1 (No.1203), **ckpot** 3. ***Dol*** 3.5kg. **Other finds** incl 4 pieces **daub** 105g. **Tile:** 9kg (*teg* 0.6 [T9], *imbrex*/ Laconian 8.4).

Date of Site: EIA, **MIA.**

Discussion. This is a very small IA site confirmed by the impasto, hm plain and the geom mono (late C7/C6 BC). The *tegula* profile is also very early. The presence of *dolia* and cooking pot suggest a small dwelling.

423. 614750/4511450, Basilicata, Nr. Jazzo delle Conche (Puglia).
Stubble field on light sandy silty loam on a gentle to moderate slope on the spring line – spring some 50m SW. Masl 350.

Visibility 3/4. Area:5000m² with scatter for a further 4000m² downhill. Density sherds 0.5, tile 17.6.

Sherds found: 302 incl **impasto** 10, **geom mono** 1, **WMP** 8 (No.580), **BG** 6 (Nos.769, 908), **GG** 1 (No.928), **RRS** 1, **LRPW** 1 (No.1160), **plain** 237 incl *mortarium* 3 (No.1281) and 1 basin, **ckpot** 34 (No.1332), **loomweights** 2, **amph** 1 (No.1588). ***Dol*** 26.5kg. **Other finds** incl **lithics** 6 (chert flakes), **daub** 115g, **millstone** 62g. **Tile:** 115kg (*teg* 24 [TL19], *imbrex*/ Laconian 65, grooved 0.15, combed 0.1).

Date of Site: EIA, **LIA,** L.Hel, L.Ant?, E.Med?

Discussion. The BG is probably of the C4/C3 BC as is the datable cookpot, though one BG fragment (No.908) could be of the C2 and, with the GG and *mortarium*, may indicate that the site lasted into or was revived in the late C2/ early C1 BC. It presumably began as one of a group of LIA settlements in this area comprising Sites 371, 411, 413, 415, 416, 417, 418, 419, 420, 423 of which the two most widely separated are only 1.8km apart, though it is much larger than the others and perhaps formed the central focus of the settlement and lasted later. No.769 could be Attic – one of a very few imports into the area apart from those at Vagnari and San Felice. The *tegulae* and grooved tile are LIA or earlier, but the combed tile must be Early Medieval, as probably is one LRPW basin (No.1148), although it could be Late Antique. They may be intrusive from Site 424 100m away. The amphora is Italian and undated. The *dolia* are numerous for so small a site (the ratio of *dolium* fragments to tile was an astonishing 1:4.3). They came from the W end of the site and slightly W of the tile fall, probably from a small *dolium* yard, open or partially open to the sky. They imply a considerable capacity for storage and suggest that there was commercial wine production here rather than simply storage of wine and oil for domestic use. The millstone was not abundant, but it implies some processing, and therefore production, of grain on the site.

424. 614950/4511550, Basilicata, Nr. Jazzo delle Conche (Puglia).
Stubble field, brown-grey sandy silt, gentle to moderate slope. On spring line. Masl 350. Visibility 3. Area:1575m², fairly compact except for a small accumulation some 100m NE of the same date and probably associated with this site. Max. density sherds 0.7, tile 50.4.

Sherds found: 127 incl **BG** 1, **LRPW** 5 (Nos.1123, 1165), **plain** 110 (No.1292), **ckpot** 17, **amph** 6 (Nos.1509, 1520, 1586, 1589, 1590, 1827). **Tile:** 80kg (*teg* 32 [T8,71,78], *imbrex* 29, 13 combed (No.2262)).

Date of Site: LIA, **L.Ant, E.Med.**

Discussion. This was a densely concentrated site, probably a small Late Antique or Early Medieval farmhouse. Two *tegulae* are Early Medieval as is the combed tile and one plain sherd (No.1292). Another plain sherd is early and is presumably scatter from Site 423, as is the BG. There is an unusual number of amphorae including five Italian and one (no.1586) from the Aegean or Eastern Mediterranean, but none were typable or datable.

430. 606545/4519274, Basilicata, Serra Inchiancata.
Bean stubble field on grey brown clay on a small hill and the fairly steep slopes running down from it. The nearest water is a perennial stream ca. 30m NNW. Masl 200. Visibility 3. Area:15000m². Density sherds 0.03, tile 1.9. Thin scatter over the hill.

Sherds found: 45 incl **ARS-D** 1, **RRS** 2, **plain** 32, **ckpot** 3 (No.1329), **recent** 9. ***Dol*** 0.5kg. **Other finds** incl **lithics** 2. **Tile:** 3kg (*teg* 2, *imbrex* 1).

Date of Site: L.Imp.

Discussion. There was no clear concentration of material though most of pottery came from the slope to the SSE. There was very little tile. The ARS-D fragment can only be dated loosely to the C4–C6, and the cooking pot No.1329 between the C4 and C7 AD. But the absence of LRPW and combed tile fragments favours a Late Imperial rather than a Late Antique date. This was presumably a small dwelling hut, thatched rather than roofed with tiles.

431. 607298/4510809, Basilicata/ Puglia border, Masseria Inchiancata.
Burnt stubble field on friable grey-brown clayey loam some 0.5km E of Basentello and some 50m above it. Nearest water a tributary 250m S. Gentle slope. A track runs E of site linking two modern houses, with a construction area on its E side. Masl 250+. Visibility 4. Area:2500m² with thin scatter extending to 70,000m² (7ha). Max density sherds 0.3, tile 2.7.

Sherds found: 767 incl **impasto** 389, **geom** 48 (mono 47 (Nos.372, 381, 400, 401, 403), bichr 1), **plain** 358 incl hm plain (No.1212), **recent** 5. **Other finds** incl **lithics** 9 (6 flakes, 3 cores), **daub** 13 (590g.). **Tile:** all *imbrex*/ Laconian 6.8kg.

Date of Site: EIA, MIA.

Discussion. This was a surprisingly isolated site, perhaps connected to San Felice but over 2km distant from it. One geometric bichrome sherd and a very small quantity of Laconian tile suggest that it lasted into the C6 BC, but the material was mostly earlier. Since the proportion of tile to pottery was very small and there were no *tegulae* it is unlikely that the site lasted long after the introduction of tile-roofed buildings. The pattern of scatter suggests that there were at least two modest dwellings made of daub initially roofed with thatch. The lithic material does not form part of any obvious general scatter unless it goes with two small flakes on Site 430, 200m away: it may be late (EIA) and contemporary with other material on the site.

432. 608132/4515100, Basilicata, Costa del Forgione.
Ploughed field, friable silty light grey-brown soil, different from surrounding soils which are lighter and more clayey, moderate to steep NE facing slope some 20-40m below summit of ridge, perennial spring nearby. Masl 400. Visibility 5. Area:1375m² in a roughly oval zone with scatter extending to 5300m². Density sherds 0.28. No tile.

Sherds found: 385 incl **Neo impressed** 125 (Nos.78, 89, 102, 103, 105, 111, 117, 119, 124, 128-130, 134, 147, 165, 167, 168, 170), **Neo impasto** 81, **Neo painted** 24 (Nos.186-194, 197-199), **Neo figulina** 66 (No.178), **Eneo** 5 (Nos.210, 211b,c), **impasto** 2 (No.314), **burnished impasto** 17, **plain** 71, **recent** 1. **Other finds** incl **lithics** 14 (Nos.27, 49), **daub**.

Date of Site: Neo, **Eneo**.

Discussion. The site was in a large ploughed field on friable silty light grey-brown soil, different from surrounding soils which are more clayey. The state of the ploughing gave excellent visibility. The scatter extended over a roughly oval area on a gentle slope just below a steep rise to the summit some 20m above, and above a moderate to steep NE facing slope running down towards the Basentello. There is a perennial spring at the edge of the site.



Photo List-30. Site 432. View uphill to the S.



Photo List-31. Site 432. The hill-top above the Site.



Photo List-32. Site 432. View across the Basentello towards the pass of Sferacavallo.

The site was not readily defensible though it would have been difficult to attack it from the valley up the steep slope, but it would have been easy for the inhabitants to defend the top of the hill in an emergency. It occupies a position of command over the valley and from it the other settlements of the valley would all have been visible (though not of course those over the hill in the valley of the Pentecchia di Chimienti). The Basentello would have presented an obstacle to crossing the valley (it still does, though the water level is much reduced from Neolithic times) but the existence of the valley sites (348/9, and 319/21) suggests that there were recognized passages across it. The majority of the sherds are impressed ware datable to the early Neolithic (ca. 6200–5600 BC), but some 24 sherds of painted *figulina* show that the site continued to be occupied in the Middle Neolithic (5600–4800 BC). There was also one piece of possible Middle Neolithic Matera scratched ware (No.170) unique in our Survey Area but found on a number of sites in the Older Survey Area situated close to the N route through the Fossa Bradanica, below the scarp of the Murge (Chap. II.4.i.b). There were in addition fourteen lithics, mostly débitage though there were two fragments of blades. Several of the pots were very large (e.g. Nos.78, 102) and were probably used for storage – this was clearly a permanent site and the terrain is well adapted to primitive cultivation.

The site probably came to an end before the Late Neolithic since there are no identifiable pieces of that period. It revived, however, or was at least frequented, in the Eneolithic as indicated by five pieces, including No.210 and two similar indented fragments, and two Late Eneolithic punch-decorated pieces (Nos.211b and 211c).

The settlement seems to have shifted in the Bronze Age to Site 433, some 300m to the N although two or three fragments of BA impasto including No.314 show occasional frequentation at that time, presumably by the inhabitants of Site 433.

433. 608152/4515194, Basilicata, Costa del Forgione.
Burnt stubble field on yellow brown silt with much gravel washed down from the denuded exposures on top of slope. On a NE slope facing towards the Basentello on the spring line (one spring was on the site, another 70m N). Masl 350+. Visibility 4/5. Area:900m^2 in 3 distinct concentrations with thin scatter extending between and beyond them to about 20000m^2 (2ha). Max. density sherds 0.8, tile N/A.

Sherds found: 599 incl **Neo impasto** 1 (No.173), **BA impasto** 549 incl 37 highly burnished, 21 with cordon (Nos.213-215, 218, 238, 260, 265, 275, 291, 315, 316, 320, 321, 323, 324, 326, 330, 332), **recent** 1. **Other finds** incl **lithics** 11 (flakes and 1 scraper).

Date of Site: BA.

Discussion. The site was situated on a shoulder of the ridge above the right bank of the Basentello where the slope eased off to form a platform about 30-50m wide below the scarp that defines the top. In conformity with this topography the site was fairly long and narrow running along the contour of the hill. There were three marked concentrations. The furthest S was about 2500m^2 with a heavier concentration some 20m in diameter in its centre. On the next, about 100m further N and a little W along the contour, the scatter was a little larger – 7500m^2 – but the central concentration was about the same. The third was much smaller, with a nucleus of only 25 m^2 some 40m downhill to the E. Between these was a less dense but still appreciable scatter of pottery with some slope-wash running downhill. The first concentration was less than 200m from the Neolithic Site 432 but there was little overlap – we found only one probably Neolithic sherd on Site 433, and only three or four BA ones on Site 432. Both sites however were on the same yellow-brown silty soil, less clayey and darker in colour than the surrounding soils. Like Site 432, Site 433 was also on the spring line (a trickle currently runs just below the first concentration). The site had been heavily ploughed and, when we first visited it, burned, but the scarp protected it to some extent from erosion. To the N a small platform had been bulldozed into the edge of the scarp, presumably for a recent field hut but

there is little trace of it now except for a few modern sherds, mostly from small water jars.



Photo List-33. Site 433. View N along Site.



Photo List-34. Site 433. View NE across Basentello.

No Eneolithic sherds were found, so it is likely that there was a hiatus between the end of Site 432 and the establishment of Site 433. The overwhelming majority of the pottery was BA impasto. Few pieces were large enough to catalogue. One or two might date to the EBA (No.214) but could equally well be later, and it is probable that occupation of the Site began in the MBA to which several pots can be dated (e.g. Nos.238, 315). It continued into the LBA (No.215) and perhaps in the FBA (No.275): there are some 37 very highly burnished black sherds, mostly from concentration 1, which might belong to that period. The quantity of sherds found was relatively large but, given the long duration of the site (ca. 600+ years), perhaps not exceptionally so. Indeed the site may have been only seasonally occupied for much of its existence, although the presence of some markedly large vessels (e.g. Nos.238, 260) suggests that there was permanent habitation at some times. The three concentrations suggest that there were three separate huts or groups of huts but whether these were contemporary or the result of the movement of settlement along the hill cannot be established.

Several chert lithics (flakes and two much fragmented blades) were found on the site.

501. 681810/4521076, Puglia, Masseria Vagnari.
Stubble field on light clayey loam on slight slope. Spring at edge of field. Masl 350. Area:400m^2 with scatter up to 1500m^2. Density tile 0.2.

Sherds found: 5 incl **plain** 2 (perhaps recent), **recent** 3. **Tile:** 9.5kg (*teg* 6.5 [TL45,74]).

Date of Site: E.Imp? L,Ant.?

The concentration of tile was too great for manuring scatter. The *tegulae*, although all Roman, seem to be widely spaced in date. Two, T45 and another cf. T44 from Site 338, are probably Early Imperial whereas T74 is likely to be Late Antique. This was probably one of a series of outbuildings of Vagnari.

509. 608984/4520008, Puglia, Masseria Mastrocaccia.
Stubble field on sandy soil, on a small platform breaking a fairly steep slope, some 200m S of Site 223 and downhill from it. Nearest water probably a spring some 200m SE. Masl 450. Visibility 4/5. Area:200m^2 with scatter extending to 600m^2. Density sherds 0.06, tile 0.03.

Sherds found: 26 incl **plain** 22, **recent** 1, **amph** 7 (Nos.1475, 1483, 1519, 1664, 1675, 1737, 1779), **med** 3 incl glazed 1 (No.2116), strap-handle 2 (No.2096). **Tile:** 13.2kg (*teg* 3, *imbrex* 5.5), wasters 2 (1kg).

Date of Site: E.Imp?, L.Imp?, **Med.**

Discussion. The three datable sherds are medieval, as is the tile which is chaffy and badly made. The site was presumably connected with the medieval part of San Felice some 200m uphill, but the material is too great and too concentrated to suggest that it is just slope-wash from it. The amphorae show a much broader range of dates: two (Nos.1475, 1483) are early imperial, two (Nos.1664, 1675) Late Roman, one (No.1737) possibly Late Antique, and one (No.1779) Early Medieval. These later pieces must derive from a long period of agricultural activity in the area with the fields worked from one or other of the Sites in the vicinity, e.g. Site 229 (Roman Imperial, 2km to the NW), Site 213 (Late Roman – Early Medieval, 2km to the E), Site 223 (Early Medieval) or from the *vicus* at Vagnari which was occupied throughout this period, 3km to the NNW.

513. 607830/4521044, Puglia, Masseria Vagnari.
Stubble field on silty loam soil on very slight slope. Spring at the Masseria. Masl 300+. Area:400m^2 with scatter round it, as there was all round Vagnari. Density sherds 0.02, tile 85.3.

Sherds found: 9 incl **LRPW** 1, **plain** 7 (one combed). **Tile:** 34kg (*teg* 32 (one with thumbprint, one with finger-impressed concentric circles), *imbrex* 0.3, waster 0.1).

Date of Site: L.Ant.

Discussion. 150m E of Site 361 Vagnari. One of a series of Late Antique outbuildings of that Site.

514. 607892/4525921, Puglia, Masseria Vagnari.
Stubble field, on silty soil, flat terrain. Spring at the Masseria. Masl 300+. Visibility 3/4. Area:200m^2. Density sherds 0.14, tile 25.

Sherds found: 35 incl **LRPW** 4, **red slip** 1, **plain** 26 (3 combed), **ckpot** 3 incl 1 combed. **Other finds** incl **millstone** 250g. **Tile:** 5.kg (*teg* 2.5 (some combed), *imbrex* 0.7, combed 0.5, waster 0.1).

Date of Site: L.Ant, E.Med.

Discussion. 230m E of Site 361 Vagnari. One of a series of Late Antique outbuildings of that site. The LRPW gives a date between the late C5 and mid-C7 for the Site and the combed tile suggests that it lasted into the Early Middle Ages.

515. 607970/4521111, Puglia, Masseria Vagnari.
Stubble field, on silty soil, flat terrain between the Masseria Vagnari and Site 361. Spring at the Masseria. Masl 300+. Visibility 3/4. Area:100m^2.

No sherds collected. ***Dol*** 0.1kg. **Tile:** 1.35kg (*teg* 900g, *imbrex* 150g, waster 200g).

Date of Site: unclear

Discussion. 300m E of Site 361 Vagnari. Barely classifiable as a site and not enough evidence for a secure date but probably one of a series of Late Antique outbuildings of Vagnari.

516. 607911/4521021, Puglia, Masseria Vagnari.
Stubble field on silty soil, flat terrain between the Masseria Vagnari and Site 361. Spring at the Masseria. Masl 300+. Visibility 3/4. Area:300m^2. Density sherds 0.009, tile 0.7.

Sherds found: 29 incl **LRPW** 3 (No.1129a), **plain** 23 (5 combed), **ckpot** 3. ***Dol*** 0.2kg. **Other finds** incl **millstone** 175g. **Tile:** 24kg (*teg* 20.5, *imbrex* 2, waster 0.4).

Date of Site: L.Ant.

Discussion. 250m ESE of Site 361 Vagnari. One of a series of Late Antique outbuildings of that site.

517. 608009/4521136, Puglia, Masseria Vagnari.
Stubble field much overgrown with bindweed on sandy silty soil on a slight slope facing W. Nearest water is the spring at Masseria Vagnari. Masl 300+. Visibility 3. Area:200m^2.

Sherds found: 10 incl **LRPW** 3 (No.1154), **plain** 6 (2 combed), **ckpot** 1. ***Dol*** 0.5kg. **Other finds** incl **marble** (855g). **Tile:** 8kg (*teg* 5, *imbrex* 0.1), Thick tile/ brick 7kg.

Date of Site: L.Ant.

Discussion. 350m E of Site 361 Vagnari. One of a series of Late Antique outbuildings of that site. The LRPW No.1154 was on the edge of the site in an area of thinner scatter.

530. 607857/4521328, Puglia, Masseria Vagnari.
Stubble field on silty soil on flattish terrain. Nearest water is the spring at Masseria Vagnari or the seasonal stream which divides the excavated site. Masl 350. Visibility 3. Area:200m^2. Density sherds 0.1, tile 40.

Sherds found: 20 incl **ARS** 2 (cf.No.1047), **plain** 11 (1 ribbed). ***clibanus*** 1(No.1386). **Tile:** 8kg (*teg* 5.4, i*mbrex* 0.23).

Date of Site: L.Imp.

Discussion. 300m NNE of Site 361 Vagnari. One of a series of outbuildings of that site.

In this case there is some evidence for habitation. and it is earlier than most of the out-buildings –the ARS is C4/C5 AD.

531. 607787/ 4521368, Puglia, Masseria Vagnari.
Stubble field on silty soil on flattish terrain. Nearest water is the spring at Masseria Vagnari or the seasonal stream which divides the excavated site.

Close to and a little NW of Site 530. Small collection of pottery. Masl 350. Visibility 3.

Sherds found: 15 incl **ARS** 2 (Nos.1034, 1051), **plain** 11, **ckpot** 1 (No.1377), ***clibanus*** 1 (No.1391). No tile in immediate vicinity.

Date of Site: L.Imp.

Discussion. 300m N of Site 361 Vagnari. Small collection of sherds. One ARS is C4 AD, the other C3 AD. The cooking pot seems late imperial or later. The finds suggest habitation but if so, it was in a thatched dwelling, probably connected with the larger site at Vagnari.

606. 606508/4520698, Puglia, Jazzo La Cattiva.
Ploughed field on a slight slope E of the Masseria La Cattiva and S of the Jazzo. There is a seasonal spring at the Jazzo. Masl 250.Visibility 5. Area:1000m^2 with some further scatter.

Sherds found: 13 incl **ARS-C** 1, **plain** 9 incl basin 1. ***Dol*** 0.34kg. **Tile:** 2kg (*teg* 0.8.[T66], *imbrex* 0.6).

Date of Site: M.Imp.

Discussion. 1.2km SW of Site 361, Vagnari. A very small concentration, possibly an outlying building (?shed) of Site 607.

607. 606675/4520812, Puglia, Masseria La Cattiva.
Ploughed field on sandy clay soil, near the Masseria La Cattiva. Nearest water springs at the Masseria or Jazzo. There is a seasonal ravine to S. Masl 250. Visibility 5. Area:1200m^2 with a very thin scatter extending to 2400m^2. Density sherds 0.8, tile 75.

Sherds found: 72 incl **WMP** 1, **BG** 1, **ITS** 1, **ARS** 1 (cf. No.1042), **RRS** 1, **plain** 50, **ckpot** 14 (Nos.1365, 1371, 1404), **recent** 1, **loomweight** 1. ***Dol*** 0.75kg. **Tile:** 140kg (*teg* 19 [T65], *imbrex* 12, thick 2.3, waster 4kg, hypocaust box tile 1), thick flat tile/ brick 750g.

Date of Site: LIA, **E.Imp, M.Imp.**

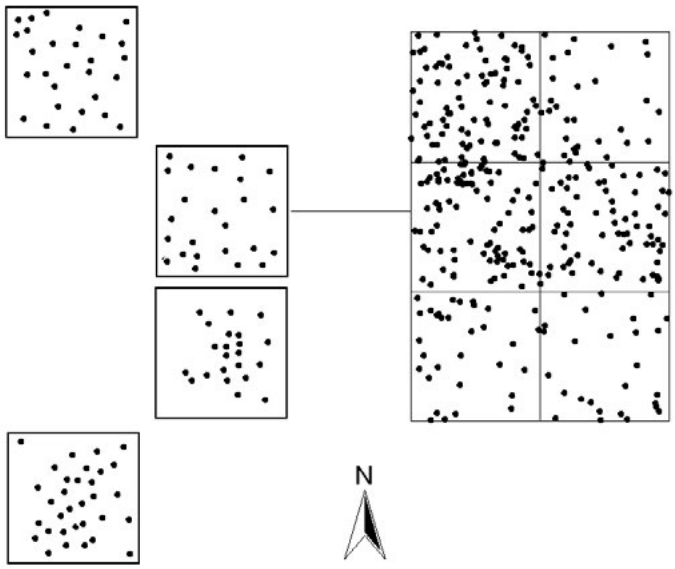
Discussion. In addition to the WMP and BG, two pieces of cooking pot and probably the loomweight are LIA. They presumably indicate a dwelling of the C4/C3 BC. The ARS is ca. 70–150 AD, also the imitation African black-top cookpot (No.1404) and the tile profiles. The site must have re-emerged as a small tile-roofed dwelling, probably a farmhouse, in the Roman period. The tile was heavily concentrated in one 10×10m square as was most of the small quantity of *dolium*, though there was a little bit just to the SW. The box tile, presumably from a hypocaust, was a little S of the main tile scatter – a surprising find for such a small site. Together with the fragments of thick tiles, probably from *bipedales*, it suggests that there was a small bath suite in or beside the building. The number of "wasters" was high, but they were discoloured rather than misshapen and were perhaps used in the hypocaust.

622.605743/4521897, Puglia,Serra del Corvo.
Burnt stubble field on sandy silt soil on a gentle southward slope with a ravine at the S end of the field and a ditch ca. 20m W of the gridded area of the site, just above a tributary of the Basentello, very close to the Basentello itself and 0.5km S of the Diga del Basentello. The construction of the dam and the building of a row of houses of the *Riforma Agraria* in 1952 have disturbed the area considerably. Masl 250. Visibility 4/5. Area:5600m^2 with multiple concentrations of ca. 100–400m^2 within it. Density sherds 0.8. Tile not registered.

Sherds found: 443 incl **impasto** 436 (Nos.216, 220, 222, 226, 239, 241, 244, 259, 278, 288, 308, 317, 329, 334, 335, 337, 338, 339, 340, 348, 349), **plain** 1. **Other finds** incl **lithics** 5 (4 flakes, one core).

Date of Site: FBA.

Discussion. The great majority of more precisely datable pieces were of the FBA and although others (e.g. No.278) had a longer date range, virtually all of them could be ascribed to that period. It seems likely then that this was a site solely of the



Plan List-39. Site 622. Schematic plan showing distribution of impasto sherds. Each dot = 1 sherd.

FBA. The worked lithics may well be contemporary with it. The uneven distribution of the sherds suggests that it consisted of a series of huts. It is situated 500m NE of Vinson's Site V94 where he found a thin scatter of BA impasto and quern fragments over an area 150m across. It is likely that, as in many BA and FBA sites there was a series of well-spaced huts here.

624. 605923/4520580, Puglia, Masseria La Cattiva.
Recently harvested chickpea field on brown silty soil on the flat top of a promontory W of the Masseria La Cattiva and on the moderate slopes down from it. The only water source is a tributary of the Basentello which runs past the site. Masl 200. Visibility 4. Area:15m^2 with very thin scatter to 100m^2. Max, density sherds 0.9, tile 1.3.

Sherds found: 17 incl **LRPW** 1, **plain** 13, **recent** 3, **storage jar** 1. **Tile:** 25.5kg (*teg* 12.5, *imbrex* 10, waster 0.05).

Date of Site: L.Ant.

Discussion. A very small area of dense tile scatter. One piece of probable LRPW implies that it may be Late Antique. It is less than 2km from Vagnari and just above the current alluvial surrounds of the Basentello.

625. 606817/4520138, Puglia, La Cattiva.
Burnt stubble field on sandy silt on a low-lying flat field, between 2 seasonal streams. Masl 250. Visibility 5. Area:2000m^2 but in various concentrations up to 300m apart with virtually no scatter in between.

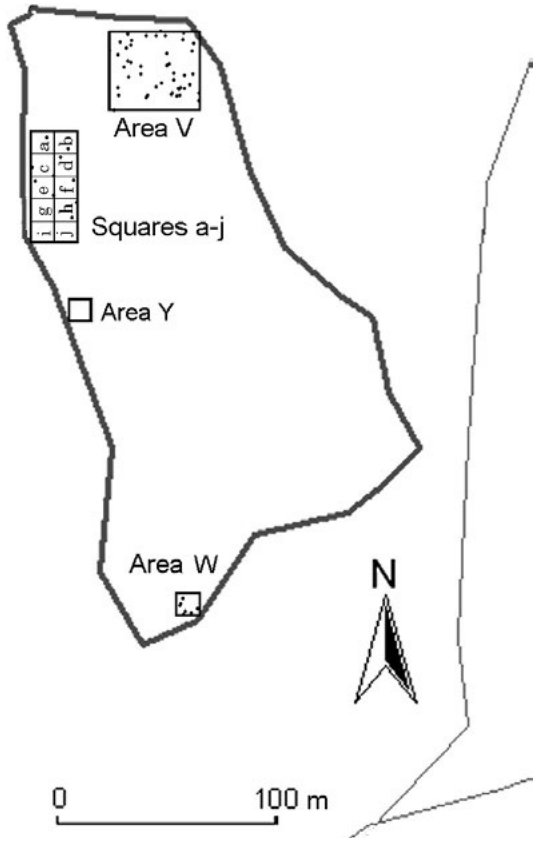
Sherds found: 143 incl **impasto** 6 (Nos.217, 219, 261, 327, 342), **WMP** 1 (No.654), **ARS** 2 (cf. No.1047), **RRS** 2, **LRPW** 4, **plain** 119 incl 3 basin (No.1311), **ckpot** 2, **recent** 16. ***Dol*** 2kg (No.1918a). **Other finds** incl **lithics** 2 (1 flake 1 core) and a quantity of **marine shell**. **Tile:** 95kg (*teg* 49 [T29,87] incl dog? print (No.2211), *imbrex* 28 [incl thick *imbrex* 3], wasters? 5.2).

Date of Site: FBA, EIA, LIA, **L.Imp**, **L.Ant.**

Discussion. The relatively small quantity of pottery on this Site was restricted to two main areas, the Area of the grid, squares a-j on the plan, and Area V. Four other areas had some ancient tile but apart from one EIA carinated bowl, we found no diagnostic pottery on any of them except Area W, where there were two more hand-made plain fragments of the EIA and two sherds of LRPW. Since we found no material in the areas between the lettered squares shown on the plan, we made no attempt to grid them.

The earliest nucleus was in the squares (c and e) where there was a group of impasto sherds, four of which are probably FBA, though at least one (No.327) could be earlier. The lithics were also found in this square, so are probably BA/FBA. This must have been a very small site at the time, if indeed it can be called a site at all.

In Area V a sherd from a WMP column krater (C5/C4 BC) shows some use of the place in the LIA. The krater perhaps comes from a tomb. The main occupation of Area V, however, is likely to have been Late Antique, to judge by one piece of ARS-D, two of LRPW and a late plain rim found here, together with 4.5kg of *tegula*, including one Late Antique profile (T87) and 11kg of *imbrex*. Elsewhere on the site the high counts of tile and relatively high count of plain wares compared with fine wares and cooking pots suggest that there were buildings used for storage rather than domestic purposes. There were notable concentrations of tile within the grid (squares a-j) with two others outside it, and of *dolium* fragments in square Y, which also had an ARS sherd (cf No.1047 C4 AD). Two LRPW sherds were found in square W. Between the lettered squares there was almost nothing. The rather scrappy evidence suggests that there was a Late Antique farmhouse in Area V, with a number of widely scattered outbuildings to the S and W. There is nothing to suggest that it lasted long. The "wasters" probably belong to this Late Antique phase. They were discoloured but not unusable, and there was no other sign of a kiln.

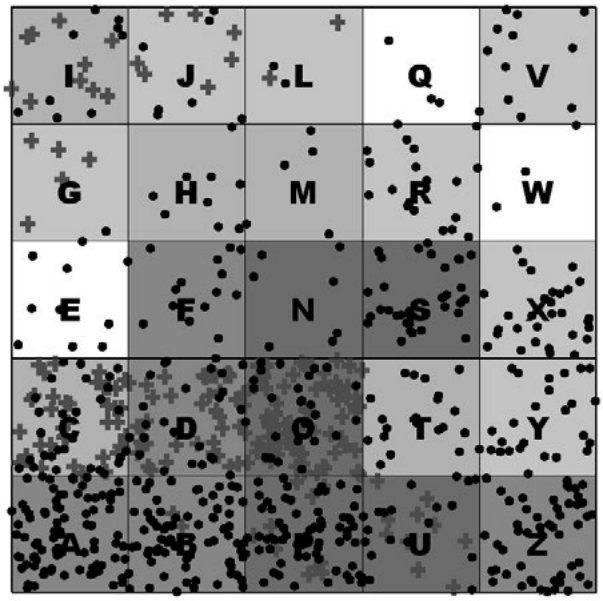


Plan List-40. Site 625. Schematic plan showing main concentrations of material. Scale approximate.

627. 606617/4522600, Puglia, Serra del Corvo.
Part scrub, part stubble field on sandy clay on top of the ridge of Serra del Corvo. Spring 250m E. Slight evidence of artificial walling to N. Masl 450. Visibility 4. Max density sherds 0.2, tiles 265. Area: 3000m^2 with considerable scatter to about 22500m^2.

Sherds found: 607 incl **impasto** 13 (132g), S. Italian **RF** 5 (Nos.701, 708), **WMP** 14 (Nos.570, 595), **BG** 59 (Nos.804, 845, 860, 861, 879, 880, 882, 909), **plain** 478 (Nos.1298, 1307), **ckpot** 16, **recent** 8, **loomweights** 10 (No.1944), **pot waster** 3. ***Dol*** 20kg (No.1920, 1 with mending hole). **Other finds** incl **lithics** 20 incl 14 flakes, 4 cores (Nos.31, 36); ***gorgoneion*** 1 (No.2056), **millstone** 4 frags. **Tile:** 858kg (teg 228 [T2], grooved (No.2193), ridge tile? (Nos.2197, 2198), imbrex/ Laconian 435 (No.2218), thick *imbrex* 3), waster 38kg.

Date of Site BA?, **MIA. LIA.**



Plan List-41. Site 627. Sherds (1 black dot = 1 sherd) and *dolium* fragments (1 grey cross = 100g). Background shows tile density.

Discussion. One Levallois flake shows Upper Palaeolithic frequentation but most of the lithics were probably later. The impasto is not datable but since there is no geometric pottery it was probably BA as perhaps were the other lithics. But if this was a BA site, there was a hiatus before it was re-occupied. The WMP and BG range from the C6/5 to the C3 and perhaps early C2 BC (No.845) when occupation came to an end. The tile was predominantly Laconian or *imbrex* as would be normal for an LIA site but there was a significant quantity of *tegula* including one grooved piece and a very early profile (T1). There were also 38kg of misfired tile and three probable pot wasters, so there may have been a kiln in the vicinity, though no kiln waste was found. The main accumulation of pottery was fairly small, being mostly concentrated in eight squares in the SW. But this was clearly a domestic site as shown by the cooking pot, the loomweights, the millstone and perhaps the quantity of plain pottery. Most of the *dolium* fragments (15.5kg) were concentrated in three squares (C, D, O) perhaps in a partially open court (the tile fall in C and D was lower than in O), probably adjacent to the main residential area. The high *dolium* count suggests that they were assembled for something other than simple domestic use. They may also show occupation over a reasonably long period since one *dolium* wall sherd has a mending hole in it. The site was probably of moderately high status in the late C6/ early C5 BC as implied by a terracotta *gorgoneion* antefix or plaque, and a little decorated tile. Possible household cult in the C4 is shown by a miniature WMP dish (No.595) and three miniature loomweights with oval impressions from a finger-ring or seal, which are likely to have been intended as votives. Sanctuaries are unusual in Peucetia but there is evidence for household cult also on San Felice (Site 223) in this marginal area. Two fragments of bell-kraters (Nos.701,708) probably came from a tomb: there were two robbed pits, almost certainly more tombs, just down the hill.

629. 606734/4523035, Puglia, Serra del Corvo.
Burnt stubble field on silty clay in and to the N of a small gully with gently sloping sides, the main concentration being on the N slope. The nearest water is a spring some 250m to the NE. Masl 450. Visibility 4/5. Area:400m^2 with scatter over 6000m^2 especially to the N and S. Density sherds 4.

Sherds found: 1977 incl **impasto** 928 (Nos.225, 229, 230, 252-254, 256, 257, 270, 274, 294), **geom** 78 (Nos.371, 373, 374, 376, 379, 382, 388, 391, 402, 407-409, 419, 422), **WMP**? 1, **BG** 1, **plain** 372 incl hm plain 370 (Nos.1196, 1201, 1206, 1207, 1241), wm plain 2 (Nos.1241, 1265), **ckpot** 4 incl sieve 1, **recent** 13. ***Dol/ Pithos*** 3 (553g). **Other finds** incl **lithics** 28 (No.70 + 7 cores, 20 flakes), **daub** 215g. **Tile:** 0.4kg.

Date of Site FBA, EIA, MIA, LIA.

Discussion. Some of the impasto is highly burnished. All of the datable pieces are FBA/EIA and with the large quantity of geometric monochrome and hand-made plain fragments indicate an FBA–EIA site. The dense scatter of these sherds in a relatively area small suggests that there was a small cluster of huts, or perhaps a single hut. The small amount of MIA or LIA material including the WMP, BG and wheel-made plain and cookpot sherds is perhaps scatter from Site 627, 400m away. The very small quantity of tile rules out the possibility that there was a building here in that period. The recent pieces are presumably from three ruined huts 200–300m E.

630. 606764/4522834, Puglia, Serra del Corvo.
Stubble field, on clayey silt, moderate slope. The nearest water is a spring on the road about 0.5km NE. Masl 450. Area:2 small areas each of 25m^2 with scatter over 1200m^2.

Sherds found: 42 incl **impasto** 10, **plain** 32 incl basin 1. ***Dol*** 1kg. **Other finds** incl **lithics** 9 (No.45). **Tile:** 30kg (*teg* 12, *imbrex* 15).

Date of Site EIA?

Discussion. The lithics included five cores, as well as the blade (No.45), Upper Palaeolithic or Neolithic. The impasto sherds are probably EIA as are some hand-made plain sherds. The site may initially have been connected with Site 629 some 200m away and slightly uphill. But most of the material is later, including the tile (*tegula* and *imbrex*), the *dolia* and some wheel-made plain pottery. The absence of cooking pot indicates that this was not a domestic site. It was perhaps a hut with storage facilities connected with Site 627, 250m away down a slight slope

631. 607455/4522776, Puglia, Jazzo Lamacolma.
Ploughed (but not recently) field, brown forest soil with much gravel, on a flat site near the edge of the plateau, about 100m above spring line. Masl 450. Visibility 5, Area:900m^2 with scatter extending to 5600m^2. Density sherds 0.11.

Sherds found: 275 incl **Neo impressed** 91 (Nos.80, 82 86, 88, 92, 93, 96, 99, 100, 112, 115, 126, 131-133, 136, 137, 139, 154, 156, 157), **Neo impasto** 39 (176), **plain** 44, **recent** 4, **loomweight** 1. **Other finds** incl **lithics** 61 (Nos.32, 46, 66), **daub** 32g. **Tile:** 0.5kg.

Date of Site: Pal, **Neo**.

Discussion. The lithics included débitage, some twenty cores and three blades. Apart from No.46 (Upper Palaeolithic) they were probably Neolithic, presumably contemporary with the Neolithic sherds which are all Early Neolithic impressed ware. Their small concentration together with a piece of daub suggests that there was a single dwelling hut here. There must have been some frequentation here after the prehistoric period to explain the collection of plain wares and the loomweight, but the virtual absence of tile shows that there was no habitation site here from which they could have come. The two recent sherds are probably manuring scatter.

701. 608990/4521836, Puglia, La Porticella.
Stubble field, clayey loam soil, flat platform on slope above the pass from the Pentecchia di Chimienti valley to Vagnari, spring about 200m W over top of hill. Masl 450, Visibility 3/4. Area:150m^2.

Sherds found: Neo impressed 2 (Nos.104, 155), **Neo impasto** 1. **Other finds** incl **lithics** 4, **daub** 2250g (No.2079).

Date of Site: Pal, **Neo.**

Discussion. This was classed as a site because of the daub – evidence of one or perhaps two huts but the quantity of pottery is very small. The lithics include two probable Middle Palaeolithic flakes (Levallois technique), an Upper Palaeolithic blade and a core.

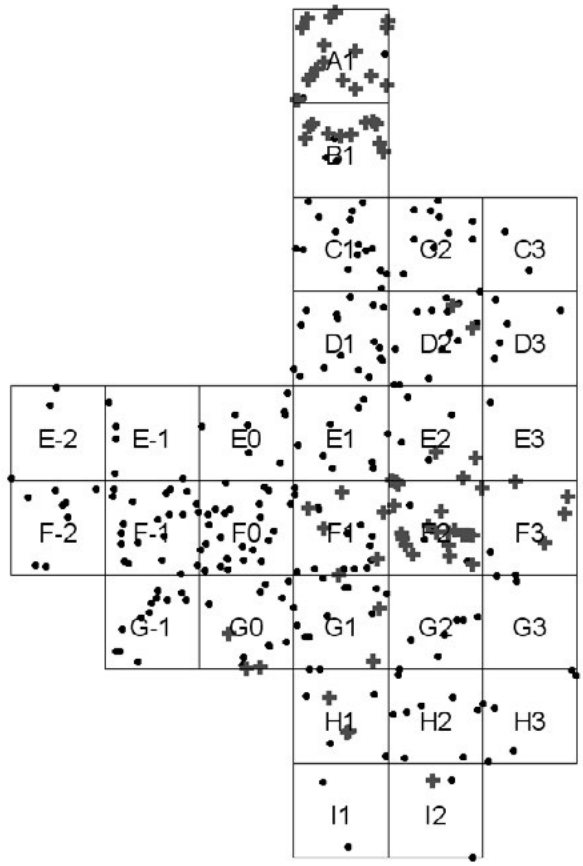
703. 608715/4522443, Puglia, Lamiecelle.
Stubble field on heavy clay soil on a roughly level platform from which the land sloped southwards. There was a scatter downhill from the platform, but it contained little pottery. Spring where a seasonal torrent rises 50m S. Masl 450. Visibility 3. Area:3000m^2 with tile scatter extending to some 180000m^2 (18ha) especially downhill but with little extra pottery. Max density sherds 0.12, tile 78.

Sherds found: 366 incl **WMP** 2, **BG** 11 (Nos.825, 895, 910) **GG** 12 (Nos.927, 944, 955), **ITS** 6 (No.1021), **RRS** 6, **plain** 266, **ckpot** 58, ***clibanus*** 3, **lamp** 1 (No.1933), **amph** 6 (Nos.1476, 1484, 1486, 1829, 1831, 1843). ***Dol*** 7.65kg + 9.0kg in stone piles. **Other finds** incl **lithic** 1 (scraper–?mousterian), **millstone**. **Tile:** 236.3kg (*teg* 129.3, *imbrex* 73.7, wasters? 5.5).

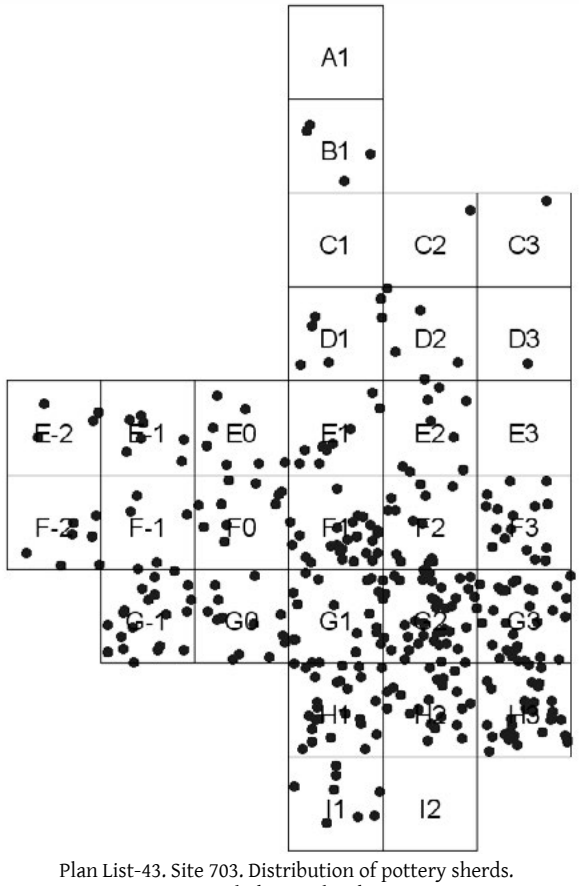
Date of Site: Pal, **E.Hel, L.Hel, E. Imp.**

Discussion. An unusually precisely datable site with nearly all the pottery including the BG datable between the C3 BC and the C1 AD. The cooking pot and plain ware fragments are compatible with such a date, as are the three Dressel 2-4 amphorae (late C1 BC–C1 AD). The lamp is probably C1 AD, as is most of the ITS. One ITS sherd is perhaps from the Po valley. There was much tile on the site but a lot of the large tile had been cleared: there were two stone piles to the N from which came 34kg and 20kg respectively of *tegula* profiles, and 4kg and 5kg of *dolium* (the other tile from them was not weighed).

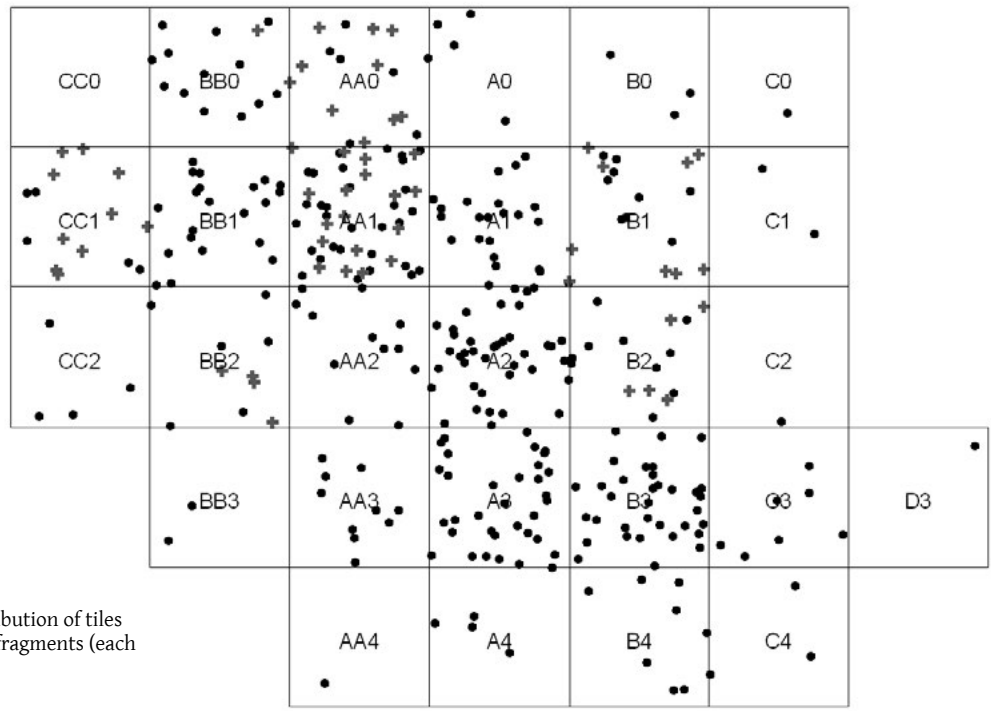
There were two obvious tile concentrations on the platform but given the clearance of the *tegulae* it would be risky to infer much from them. The main concentration of sherds was to the S in an area of some 900m^2. There seems to have



Plan List-42. Site 703. Distribution of tiles (each dot = 1kg) and *dolium* fragments (each cross = 100g).



Plan List-43. Site 703. Distribution of pottery sherds. Each dot = 1 sherd.



Plan List-44. Site 704. Distribution of tiles (each dot = 1 kg) and *dolium* fragments (each cross = 100g).

been an unroofed *dolium* yard just N of this area and another further S with traces of concrete in the flooring, closer to the residential area indicated by the pot sherds. A scatter of 61 sherds of cooking pot, including three *clibanus* sherds and at least one piece datable to the C2 BC, shows that the site was in domestic use, probably throughout its life. Ancient coins are said by a local antiquary to have come from this site (We have not seen them and have no precise date for them, but his reports are usually reliable).

This seems to have been a farmhouse, probably with a yard and outbuildings behind it, which began in the late C3 BC, flourished in the C2/C1 BC and in the Early Empire and then came to an abrupt end, possibly with a migration to Site 704. The quantity (taking the pieces recovered from the tile piles into account) and distribution of the *dolia* suggests that they may have been used for commercial as well as domestic purposes.

704. 608589/4522286, Puglia, Lamiecelle.
Stubble field on clay soil on more or less flat terrain, about 100m from the edge of the scarp of Lamiecelle. Nearest water the spring for a seasonal torrent (as for Site 703 on the opposite side of the dip). Masl 450. Visibility 3/4. Area:2800m^2 extending to 6000m^2. Max density sherds 0.075, tile 105.

Sherds found: 208 incl **ARS** 30 incl ARS-A (cf. No.1037×2, 1042), ARS-A/D (Nos.1043 and cf. 1044) ARS-CkA 2 (No.1066×2), **RRS** 7 incl RRS2 2 (Nos.1090 and cf. 1092), **plain** 135, **ckpot** 30, ***clibanus*** 1, **recent** 1, **amph** 1 (No.1830). ***Dol*** 5.8kg. **Tile:** 293.56kg (*teg* 196 [T82], finger-impressed (Nos.2201, 2207), animal prints (Nos.2212, 2213), *imbrex*, waster 10.5), thick tile/brick (5cm) 18.5kg; **stamped *teg*** (No.2225).

Date of Site: M.Imp.

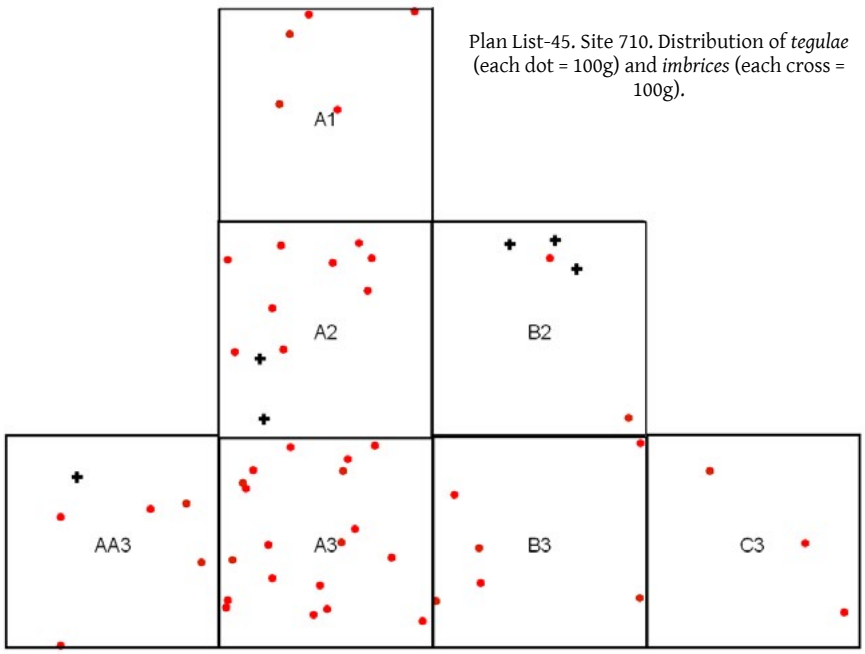
Discussion. The datable pottery is all of the second half of the C1–C3 AD. Some 6kg of *dolium* in three discrete groups were to the N, two on the edge of the tile fall, one within it but in a square which had no potsherds although all the surroundings squares did. There seems to have been a dedicated storage area



Photo List-35. Site 704, looking NW.

here. The tile fall suggests a single, reasonably large building. The cookpot implies that it was residential but there was no evidence here of even moderately high-status living. The site is some 200m from Site 703 – perhaps the result of a move in the early C3 AD (cf. Site 361 Vagnari). The amphora here was from the E Aegean. We found no kiln waste, but one tile waster was extremely distorted and there was a large proportion of sub-standard tiles. These included two with animal prints and perhaps the two with thumb prints. The *tegulae* far outnumbered the *imbrices* and there was an unusual quantity of floor tile. It seems possible that there was a tile kiln here. The tile inscription MPM'Ḍ[- was from the same stamp as a tile found on Site 229, 1.5km away across a small valley where it must antedate the early Imperial phase of the villa, so this piece from Site 704 must also be earlier than the other material from this site. It is likely to have come from Site 703 and to have been re-used on this site. We argue that the stamp refers to Mucia, wife of Pompey (see Chap.VIII.9.viii).

707. 609527/4521201, Puglia, Masseria Macinole.
Stubble field on friable clay soil below and W of the Masseria Macinole on a small platform before the field slopes down to the ravine. The site was fairly clearly delimited to the N



Plan List-45. Site 710. Distribution of *tegulae* (each dot = 100g) and *imbrices* (each cross = 100g).

and S but its boundary to the E and W was hard to define, as slope-wash continued down the hill in a decreasing dribble. Nearest water was the stream (or a well at the farm). Masl 450. Visibility 4. Area:1080m^2 with scatter down slope for 100m. There was also a dense collection of tiles (*teg* 19kg, *imbrex* 1) on the farm track about 200m away which was perhaps clearance from this field and the one above it.

Sherds found: 55 incl **Campanian orange sigillata** 1, **ES-B** 1, **LRPW** 1, **plain** 46 (No.1255), **ckpot** 5, **recent** 1, **amph** 1 (No.1594). ***Dol*** 1kg. **Tile:** 21.2kg (*teg* 12.5), round (No.2233), *imbrex* 4, waster 1, thick tile/ brick (5cm) 0.25kg; **stamped *teg*** (No.2229).

Date of Site: E.Imp, L.Ant.

Discussion. The stamped tile was of Gratus and can be securely dated to the early C1 AD. The ES-B sherd fits well with this but one LRPW base and the plain ware small table amphora (No.1225) suggest Late Antique frequentation. The amphora was Italic, undated. A very disturbed and fairly small site, probably a farmhouse.

710. 612482/4520352, Puglia, Masseria Leblè.



Photo List-36. Site 710. looking N.

Stubble field on sandy loam soil, slight slope to N. just above a short steep scarp, some 50m uphill from the abundant fountain opposite the Masseria Leblè. Masl 450. Visibility 3. Area:200m^2, with further scatter to some 10000m^2. (The site was gridded: the grid showed that the material was largely concentrated in two squares). Max density sherds 0.22, tile 3.36.

Sherds found: 154 incl **impasto** 13, **ARS** 19 incl ARS-A/D 3 (No.1052 and cf. 1047, 1050), **RRS** 4 (cf. No.1072), **plain** 87 incl hm plain 1, **ckpot** 44, **lamp** 1, pot wasters 2. ***Dol*** 0.4kg. **Tile** 7.5kg (*teg* 5, *imbrex* 0.7).

Date of Site: BA (or EIA), **M Imp, L.Imp.**

Discussion. The impasto and hm plain may imply EIA frequentation. The ARS suggests that the site was occupied in the C2–C4 AD. The cooking pot points to domestic use, and a few *dolium* fragments on the edge of the tile fall indicate the existence of a single *dolium* for domestic storage, so it is likely that there was a small farmhouse here. There was very little tile and since the high proportion of *tegula* to *imbrex* weights (1:0.14) is more typical of a burial *alla cappucina* than of a roof, the site may be interpreted as a farmhouse roofed with thatch, associated with a burial. The absence of LRPW suggests that it came to an end before ca. 450 AD.

711. 612141/4519785, Puglia, Leblè.
Ploughed field on a fairly steep slope beside a seasonal torrent above the Valle Leblè. Masl 480. Area:35m^2 with a little slope-wash to E. Density sherds 0.002, tile 4.25.

Sherds found: 5 incl **BG** 2, **ckpot** 3. **Tile:** 8.5kg (all *imbrex*/ Laconian).

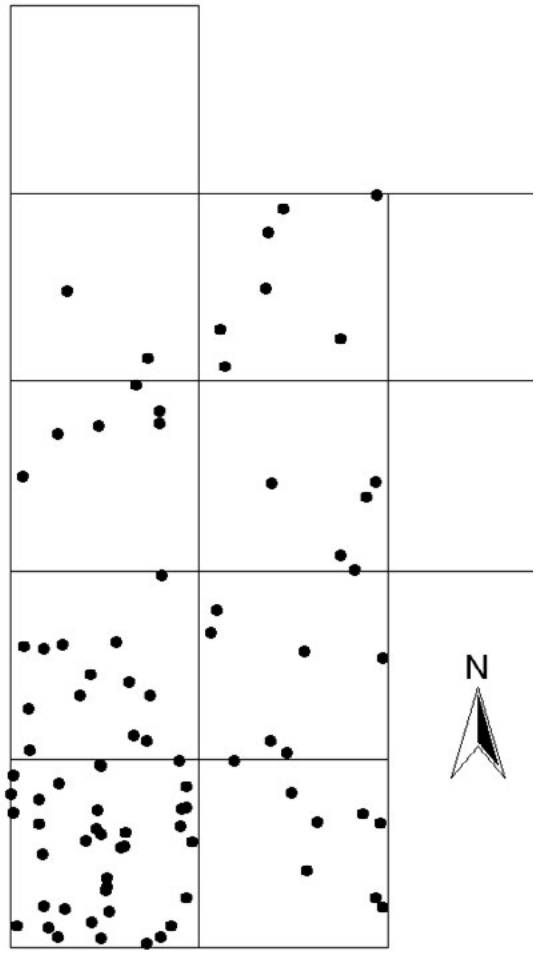
Date of Site: LIA.

Discussion. The tile was concentrated in a fairly small area. There is a modern hut above but the tile of its roof was recent and has not been taken into account. The site was perhaps a small LIA dwelling hut. The combination of BG and cookpot suggests a date in the C4/C3 BC.

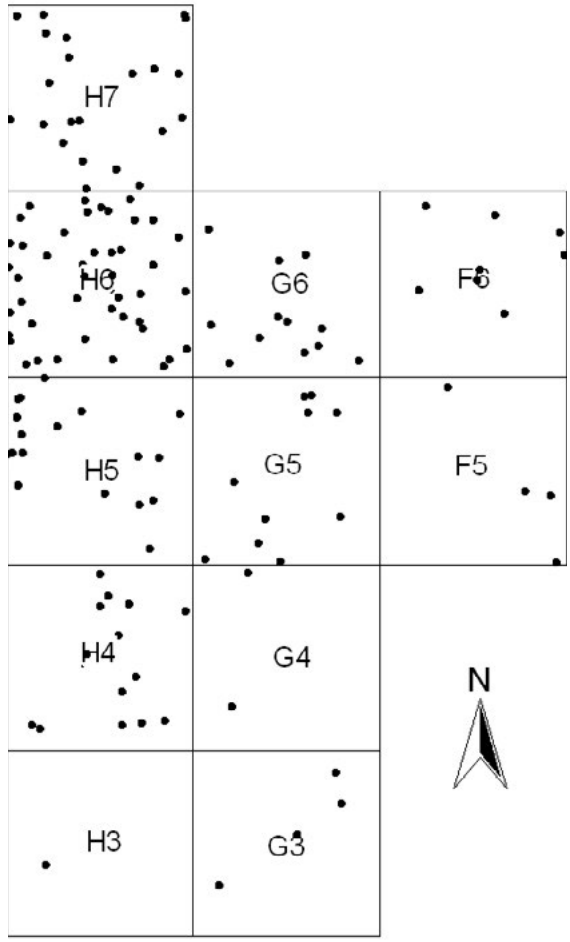
712. 612470/4520453, Puglia, Masseria Leblè.
Ploughed field on sandy loam on a flattish platform (slight slope to N) below the steep scarp above which is Site 710 on the opposite bank of the Torrente Leblè from the present Masseria Leblè. There is abundant water from the spring of Leblè, some 50m up the hill. Masl 400. Visibility 5. Area:1100m^2 with scatter extending to 4500m^2 mostly along the valley. Density sherds 0.26, tile 3.8.

Sherds found: 284 incl **impasto** 104 (Nos.240, 242, 296, 310), **WMP** 1, **BG** 1 (No.851), **ARS** 10, **plain** 121 incl hm plain (No.1209), **ckpot** 46 (Nos.1330, 1345), **med** 1, **amph** 3 (Nos.1591, 1593, 1716). ***Dol*** 0.1kg. **Other finds** incl **lithics** 3 flakes (2 obsidian). **Tile:** 4.2kg (*teg* 3.3 (No.2208), *imbrex* 0.3).

Date of Site: Neolithic, **BA**, LIA, **L.Imp.**



Plan List-46. Site 712. Distribution of impasto sherds.



Plan List-47. Site 712. Distribution of Roman imperial sherds.

Discussion. Two impasto sherds can be assigned to the MBA and the rest are likely to be BA (not late). Some of the lithics may be contemporary but the obsidian at least must be Neolithic. There is no geometric, so the BA site probably came to an end in or more likely before the FBA. It is sufficiently concentrated to suggest that it was a dwelling site.

A small amount of LIA material (the WMP and BG sherds, and perhaps some of the cooking pot) is hardly enough to suggest occupation in this phase and is more likely to have been left by causal visitors to the spring. The ARS is mostly C3/C4 AD: one sherd could be earlier and one later but there is no ITS and no LRPW, so the Roman site was probably only late imperial. It was a little to the N of the BA site. It seems likely that most of the numerous plain ware and cooking pot pieces belong to this period, also the small quantity of tile, mainly *tegula* (one with a thumb print). One African amphora, a large cylindrical container of the C6/C7 AD, must be sporadic, perhaps brought to the spring from Site 223 (San Felice). The other amphorae were Italian and undatable. The *tegula* was concentrated in two squares and probably belonged to a very small building near the spring, presumably connected with Site 710 just above it. The cooking pot and *dolium* suggest it was for domestic use.



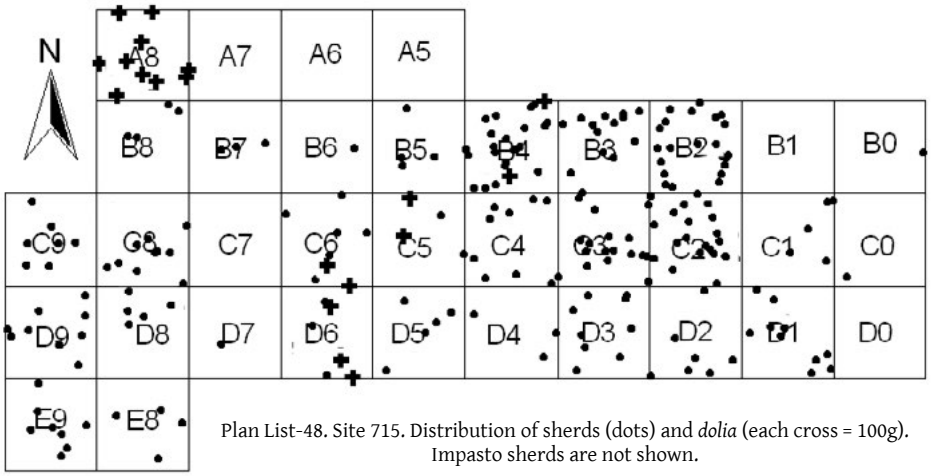
Photo List-37. Site 712. View NW to the Masseria Leblè.

714. 611994/4520895, Puglia, Leblè - Upper Masseria.
Ploughed field NW of the Upper Masseria Leblè on sandy loam, flat. Spring for a seasonal stream just to the N. Masl 400+. Visibility 4/5. Area:900m^2. Density tile 22.2.

Sherds found: 19 incl **ARS** 2 (at some distance in same field), **plain** 11, **ckpot** 3, **recent** 4. **Tile:** 20kg (*teg* 12 [T83], *imbrex* 0.5).

Date of Site: L.Imp.

Discussion. The small quantity of ancient pottery and the very high proportion of *tegula* to *imbrex* weights (1:0.04) suggest a "tomba alla cappucina", probably relating to Site 712. It is unusually far from it but not impossibly so. The *tegula* profile is late.



Plan List-48. Site 715. Distribution of sherds (dots) and *dolia* (each cross = 100g). Impasto sherds are not shown.

715. 609005/4520999, Puglia, Casa Cantoniera.
Thin stubble field on light clayey loam, fairly flat, below the Masseria Macinole and just N of the Casa Cantoniera. The nearest water was a spring on the edge of the road near the Masseria Vagnari about 200m away. Masl 400+. Visibility 5. Area:3500m^2 with scatter extending to 10000m^2, Density sherds 0.2, tile 3.8,

Sherds found: 221 incl **impasto** 43 (Nos.232, 277, 336), **WMP** 1 (No.647), **BG** 1 (No.798), **ARS** 3 (P7154), **RRS** 1, **plain** 131 incl hm plain 3 (No.1210), **ckpot** 32, **recent** 1, **loomweight** 1 (No.1985). ***Dol*** 1.8kg. **Other finds** incl **lithics** 2 (No.30). **Tile**: 38.1kg (*teg* 14.2, *imbrex* 17, waster 1kg).

Date of Site: FBA, EIA, E.Hel, **M.Imp.**

Discussion. The site is probably the same as Vinson's V91, where he reports BA, hm plain, probable WMP, BG and plain though nothing Roman. Of our finds, two impasto sherds are FBA and most of the impasto probably belongs to that time (there is no geometric, so it is unlikely to have lasted long into the EIA though hand-made plain No.1210 is probably of that period). The impasto came from a fairly small area – squares C1, C2, C3 and B2 with a smaller group in D8 and D9 to the E. They probably relate to one or two small huts.

The WMP is C6 BC. The one BG sherd is Early Hellenistic (C3 BC) and perhaps goes with the loomweight. These support the nature and date of Vinson's finds (he had a similar date-range for his BG). The three ARS sherds (one a casserole lid of Hayes' Form 23b, C2/ early C3 AD) show mid-imperial use of the site. The proportion of *tegula* to *imbrex* weights (1:1.98) reflects the fact that it was occupied in both the Hellenistic and mid-imperial periods. In the latter, the site was probably an outlying development of Vagnari. The clusters of sherds suggest that there were then two buildings with the gap between them partly filled by *dolia*. There were perhaps also *dolia* in a yard to the NW (square A8) where no other material was recorded. The lithics, one possibly a sickle blade, were probably Neolithic and sporadic.



Photo List-38. Site 715, looking WSW.



Photo List-39. Site 715, looking S.

716. 612771/4520074, Puglia, Leblè.
Stubble field on sandy loam soil on a steep slope running up from the Torrente Leblè and just beside a tributary of it. The scatter lay over much of the slope. The steepness of the slope made gridding impracticable. Masl 400+. Visibility 4. Area:30000m^2. with additional scatter over much of the hill (some 250000m^2 (25ha)).

Sherds found: 126 incl **Neo or BA** 2 (Nos.207, 208), **BA impasto** 120 (Nos.237, 245, 307, 341), **plain** 5. ***Dol*** 0.1kg. **Other finds** incl **lithic** 1 (flake). **Tile:** 0.2kg (*teg* 0.1, *imbrex* 0.8).

Date of Site: Neo?, **BA,** ?FBA.

Discussion. Frequentation perhaps began in the Neolithic period but it is uncertain whether Nos.207 and 208 belonged to the Neo or BA. The main occupation was probably in the MBA/ FBA to which No.237 and probably No.245 can be assigned. Most of the unclassifiable wall sherds seem also to be BA. One handle, No.341, is perhaps FBA but the type appeared earlier. The precise location of this site is not easy to identify – this concentration was greater than any other encountered on the hill but the top of the hill has been ploughed to bedrock leaving a thin scatter of BA material all over it. A very sparse scatter of later material (one small fragment of *tegula* and one of *dolium*, and two possible fragments of *clibanus*) may have been manuring scatter, perhaps from Site 813 some 200m away.

717. 612889/4521077, Puglia, Leblè.
Low stubble on sandy loam between the Masseria Leblè and the road, on a small platform below a slight slope to E and

above a steeper one down to a seasonal stream some 300m away. Masl 350. Visibility 4/5. Area:1010m² with scatter extending to some 30000m² (3ha). Density sherds 0.06, density tiles 2.78.

Sherds found: 90 incl **BG** 3 (No.887), **GG** 3, ?**Hel red slip** 1, **plain** 65, **recent** 13, **loomweight** 1 (No.1950), **amph** 1 (No.1455). ***Dol*** 3kg. **Tile:** 3kg (*teg* 1, *imbrex* 2) plus some 3kg modern tile.

Date of Site: LIA, L.Hel.

Discussion. The site is somewhat contaminated by material from a ruined C20 AD hut further up the hill. The BG is all C4, perhaps continuing into the C3 BC after which there may have been a gap before the site was re-occupied in the GG period (mid-C2 BC–C1 AD) to which time the amphora No.1455 also belongs. It does not seem to have been frequented later. The quantity of tile is small but the slope is steep so some material may have fallen to the bed of the *torrente*. The material here suggests a small dwelling, possibly only seasonally occupied, but stable enough to have had a *dolium* at some time.

718. 610715/4521445, Puglia, Masseria S.Antonio Pace.
Partly stubble, partly ploughed field on sandy loam soil, on and around a platform on a moderate to steep E facing slope. The top of the hill is ploughed to bedrock. Nearest water a seasonal stream running past it. Masl 400. Visibility 4. Area:750m² with scatter extending over 6000m². Density sherds 0.92, tile 4.

Sherds found: 69 incl **ARS-D** 12 (No.1060 and cf. 1054), **plain** 50, **ckpot** 6. ***Dol*** 0.3kg. **Tile:** 3kg (*teg* 2 [T84], *imbrex* 0.5, waster 0.2).

Date of Site: L.Imp.

Discussion. The datable pottery is the ARS mostly of C4 or C5 AD, but the earliest pieces are C3. There is no LRPW, so the site is unlikely to have lasted long into the C5. The *tegula* is late. The quantity of tile is very small. This may have been linked to the settlement at Site 719 some 250m uphill (though there was a ditch between the two).

719. 610461/4521347, Puglia, Borgo San Felice.
Burnt and partially deep ploughed field on loam soil, but ploughed almost to bedrock next to the settlement of Borgo San Felice which was built in the 1950s after the Agrarian Reform, and is now largely abandoned. Nearest water a spring some 30m below the site in the direction of the Borgo. Masl 450. Visibility 5. Area:900m² with sherd scatter extending to 3000m². Density sherds 0.006, tile 37.5.

Sherds found: 27 incl **ARS** 3 (cf. No.1066 × 2), **LRPW** 1, **plain** 20, **ckpot** 1, **recent** 2. **Tile:** 38.8kg (*teg* 29.5, *imbrex* 1.5, combed 0.5 (No.2263)).

Date of Site: M.Imp, L.Imp, L.Ant, E.Med.

Discussion. Two ARS sherds were of the C2/C3 AD, one of the C3/C4 AD. The tile was fairly concentrated in a small area near the Borgo, but the sherds were widely scattered. There was clearly much displacement here when the Borgo was built and occupied. This was perhaps part of the same settlement as Site 718 some 250m downhill (though there was a ditch between the two) but the combed tile suggests that it may have lasted into the Late Antique/ Early Medieval period.

721. 611520/4521261, Puglia, S.Antonio Pace.
Stubble field on sandy loam on a moderate slope which turns down steeply towards a stream just below the site. Masl 400+. Visibility 4/5. Area:1750m² with additional scatter extending sparsely over much of the hill – about 14ha. Max density sherds 0.1, tile N/A.

Sherds found: 199 incl **impasto**165 (Nos.258, 267, 268, 282, 298, 299, 304, 318, 319), **plain** 9 incl hm plain 2, **ckpot** 3. **Other finds** incl **millstone** 2 frags. (No.2033).

Date of Site: BA.

Discussion. The date range for the BA datable sherds was very wide. Two could have been EBA (Nos.258, 267) but could also have been later, two were probably MBA (Nos.282, 298) and two others probably LBA (Nos.299, 304). Nothing need be as late as FBA. This was a long narrow concentration, but the wide surrounding scatter suggests that much of the area was frequented throughout much of the BA. Two millstone rubbers imply processing of grain.

722. 611750/4521402, Puglia, S Antonio Pace.
Deep plough on friable sandy loam in a flat field. Not much water though there is a small seasonal stream 200m E. Masl 400+. Visibility 4. Area:100m² with a little scatter up to 400m². Density sherds 0.1, tile 380.

Sherds found: 46 incl **ARS** 5 incl ARS-A 3 (No.1039 +2 sim), **plain** 31, **ckpot** 5 (No.1394), **recent** 4, **amph** 1 (No.1592). ***Dol*** 0.3kg. **Other finds** incl **millstone** 2kg (No.2035). **Tile:** 38.8kg (*teg* 31 [T61], *imbrex* 0.7). **Human bones** (from 2 adults).

Date of Site: M.Imp.

Discussion. The scatter, both tile and pot sherds, was heavily concentrated in one 10m square. The ARS was early (C2–C3 AD) and one *tegula* profile was probably mid-Imperial, but one piece of Campanian cooking pot was of the C4/C5 AD or later. There was a large quantity of *tegula* and very little *imbrex*. The presence of human bones from two individuals suggests that there were two graves, one at least probably *alla cappuccina* which would explain the high proportion of *tegula* to *imbrex* weights (1:0.02), but the *dolium* and the millstone are surprising, particularly the millstone which is a rubber, normally held to have been out of date by the Roman period. There is no plausible location in the vicinity from which it could have come. It was perhaps used for hulled grains for which a rotary mill was less suitable. The site may have been an extremely poor habitation with associated burials of the mid-Imperial period, and some frequentation. The amphora was Italic and undatable.

724. 612151/4520996. Puglia, N of Vagnari.
Stubble field on sandy loam, slight slope, just N of Vagnari. A small scatter of sherds over a fairly wide area. Visibility 3/4.

Sherds found: 5 incl **impasto** 2 (Nos.295, 330), **hm plain** 1 (No.1202), **ckpot** 2.

Date of Site: BA, FBA, EIA.

Discussion. Not really a site and the scatter is disparate. The impasto sherd No.295 is probably EIA, No.330 may be earlier.

734. 612826/4521486. Puglia. S.Antonio Pace.
Ravine. Thin stone slabs, traces of mortar. Part of bottle-shaped cistern exposed in edge of ravine, partially cleared by us in 2003 to reveal structure. Stone masonry frame coated with plaster, now mostly lost. Two small undiagnostic fragments of impasto (base and ws) were found in the infill. Presumably there was a structure with it destroyed by the ravine. The nearest site is 717 (C4/C3 BC) 416m to S.

Date of Site: Hellenistic or later.



Photo List-40. Site 734. Clearing the cistern in the ravine.

801. 611365/4521837, Puglia, S.Antonio Pace.
Stubble field on sandy loam soil, on a gentle slope rising to steep beside a small seasonal stream 200m above the Basentello. Masl 400. Visibility 3/4. Area:200m^2. Density sherds 0.03, tiles 94.

Sherds found: 17 incl **plain** 16 (No.1310) **ckpot** 2. ***Dol*** 1.7kg. **Other finds** incl ***putealia/*** **well-heads** frags.2 (Nos.1923a, 1924), **millstone** (300g). **Tile:** 105.5kg (all *imbrex*/ Laconian).

Date of Site: LIA.

Discussion. There were over 100kg of tile, all *imbrex* or Laconian, heavily concentrated in three contiguous squares. The roofing system they imply, with the lack of *tegulae*, is suitable for a building of LIA date in this area. The basin rim (No.1310) is a type current from the late C6 to the C4 BC. There were only seventeen sherds of pottery, none of it fine ware, so this was probably not a domestic site, although it was equipped with the basin rim for washing. The quantity of millstone was small but it suggests that the building was connected with arable farming, as does the *dolium* which must have been intended to store foodstuff. The probable well-head may also be of this date in spite of the lack of good comparanda. If so, the site is likely to have been used for watering animals as well as for agricultural processing.

803. 611410/4521876, Puglia, S.Antonio Pace.
Stubble field on friable clayey loam. A small stream runs by the site and joins the Pentecchia some 200m away. Masl 350+. Visibility 3/4. Area:400m^2 with very thin scatter up to 1000m^2. Max density tile 42.5.

Sherds found: 39 incl **plain** 30, **recent** 4. ***Dol*** 0.3kg. **Tile:** 25kg (*teg* 0.1, combed *teg* 0.3 (No.2243), *imbrex* 15).

Date of Site: E.Med.

Discussion. There is too much tile to be dismissed as manuring scatter, with 17kg concentrated in 400m^2. Only fourteen of the plain sherds were close to the main tile concentration. This was presumably a field building and not residential. The only datable item apart from the recent material was the combed *tegula* but it was found downhill from the rest of the material so it may be casual scatter.

804. 611480/4521708, Puglia, S.Antonio Pace.
Fallow scrub field on clayey loam. On a flattish area at the top of a moderate slope used for turning the plough. Masl 400. Area:200m^2, no extra scatter.

Sherds found: 24 incl **impasto** 11, **BG** 2, **plain** 10 (No.1309) incl *mortarium* 1, **ckpot** 1. ***Dol*** 0.1kg. **Tile:** 1.4kg (*teg* 0.2, *imbrex*/ Laconian 1.2), waster 0.4kg.

Date of Site: BA, **LIA.**

Discussion. The impasto (undatable) is presumed to be BA – there is much BA on the hill. The plain basin/ *louterion* or *dolium* lid (No.1309) is o the C5–C3 BC. One BG sherd seems to be C4 but is too small to classify accurately. This was a very small site, presumably a field hut, much disturbed.

809. 611509/4521873, Puglia, S.Antonio Pace.
Stubble field on friable clayey loam, 100m, E of Site 803 across small stream. Masl 350+. Visibility 4. Area:100m.

Sherds found: 8 incl **LRPW** 2 (No.1177), **plain** 4, **recent** 2. ***Dol*** 0.3kg. **Tile:** 11kg (*teg* 8.75, *imbrex* 2.5, some very sharply curved).

Date of Site: L.Ant.

Discussion. Possibly a field hut. The *tegulae* were well preserved retaining several profiles but the quantity of tile was small.

810. 611783/4521612, Puglia, S.Antonio Pace.
Stubble field on light clayey brown soil, on a gentle NE facing slope, spring ca. 500m W. Masl 400+. Visibility 4. Area:15000m^2. Density sherds 0.012, tile 0.73.

Sherds found: 183 incl **impasto** 1, **WMP** 13, **BG** 11 (Nos.830, 853), **GG** 13 (Nos.933, 943), ***unguentarium*** 1 (No.969). **ITS** 1, **ARS** 10 (Nos.1054, 1055+ 1 sim), **LRPW** 1, **plain** 136, **ckpot** 18, **amph** 10 (Nos.1688, 1689, 1693 - 1696, 1703-1705, 1717). **Other finds** incl **lithics** 5 (1 flint burin, 1 chert blade, flint and chert débitage), **millstone** (Nos.2045, 2046). **Tile:** 11kg (*teg* 3.25, *imbrex* 3.5), thick tile/ brick 500g, overfired 180g.

Date of Site: MIA, **LIA,** E.Hel, **L.Hel, E.Imp, M.Imp, L.Imp, L.Ant.**

Discussion. The site was probably primarily LIA and Late Imperial, but the lithics and a single impasto sherd imply frequentation earlier. It probably did not outlast the C5 AD. The scatter was very thin with no obvious area of concentration. The proportion of table wares to plain and cooking pot wares was high, among the highest on the survey, but since the date range of the table wares is unusually long it is difficult to infer much from this. At the E end where density was slightly greater we laid out a grid of four squares, but the distribution was not informative. One WMP is C4 BC. One BG is C5/C4 BC, one C3/C2 BC. The relatively large number of GG pieces suggests that occupation was intensified between the mid-C2 and late C1 BC. It probably shrank in the Early Empire, attested by the single sherd of ITS, but began to grow again in the Middle Empire. There were three early ARS sherds (late C1/C2 AD) and two late (C5 AD). One sherd of probable LRPW matches these last, as do two amphora (*spatheia* 1) fragments of the C5–C6/C7 AD. The latest datable pieces are four *spatheia* 3 amphora sherds of the later C7 AD perhaps intended to hold fish sauce, perfume or liturgical wine. The two pieces of millstone (Nos.2045, 2046), probably from the same geared rotary mill, are likely to be Roman imperial or later. The quantity of tile is surprisingly small and sparse in comparison with the number of pottery fragments which can be accounted for if, in some of the periods of occupation, the building or buildings were thatched. That is most likely to have been in the Late Antique period when the quantity of roof-tile is generally low on sites in the Survey Area (as



Photo List-41. Site 813, looking N towards the scarp of the Murge.



Photo List-42. Site 813, looking NE from near the top of the plateau.

has been noted on Sites 124, 213, 370, 408, 821, 823). In most periods the site seems to have been occupied by a small farmhouse. The cookpot (undated) implies domestic use of the building, and the mill was presumably used to grind grain produced on the farm.

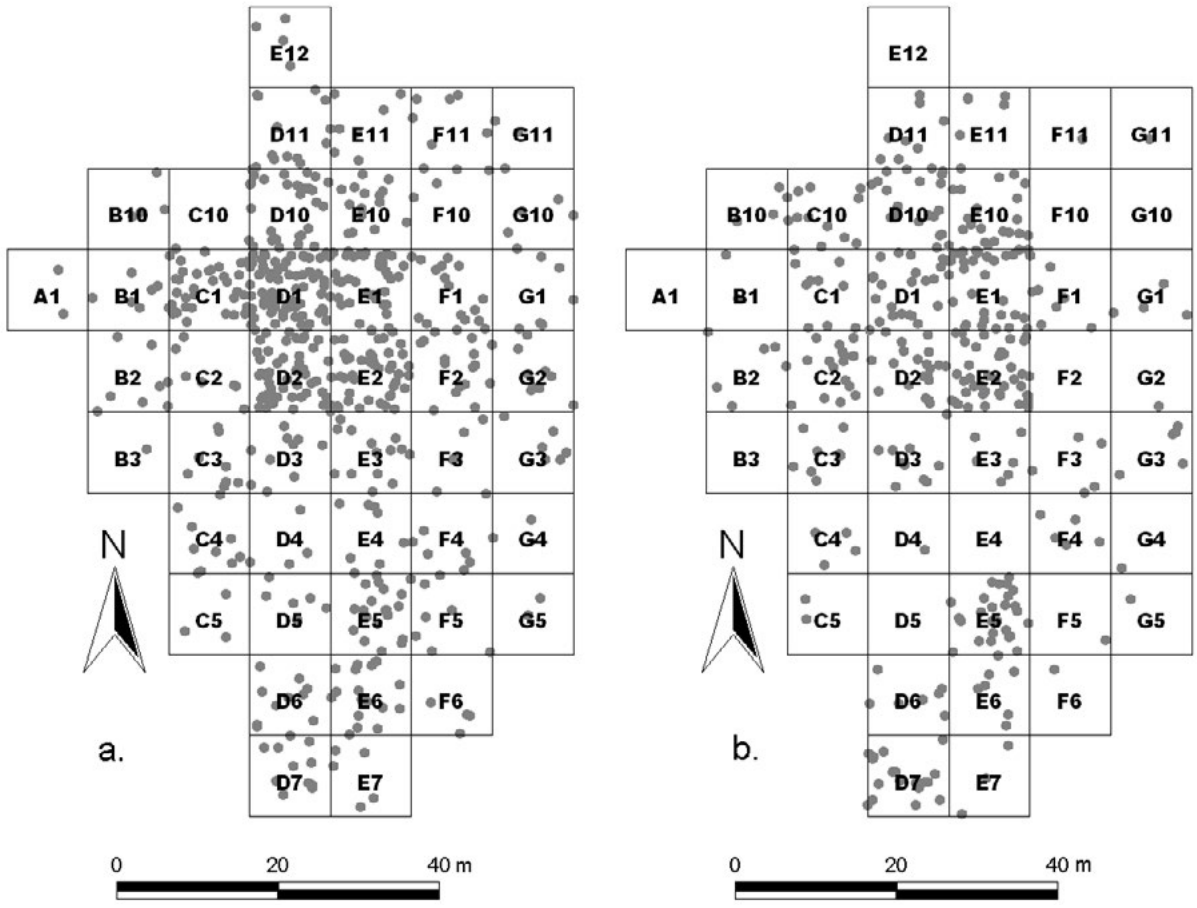
811. 611696/4521644, Puglia, S.Antonio Pace.
Deep ploughed field on sandy loam soil, sometimes ploughed to bedrock. On a hill-top with a small recent hut destroyed to its foundations. There is a spring some 250m E and a well some 250m W. Masl 400+. Visibility 5. Area: 200m^2. Density sherds 0.085, tile 8.

Sherds found: 17 incl **ARS** 1, **plain** 13, **Med** 3 (Nos.2102, 2105, 2139). **Tile:** 16kg (*teg* 60, *imbrex* 6).

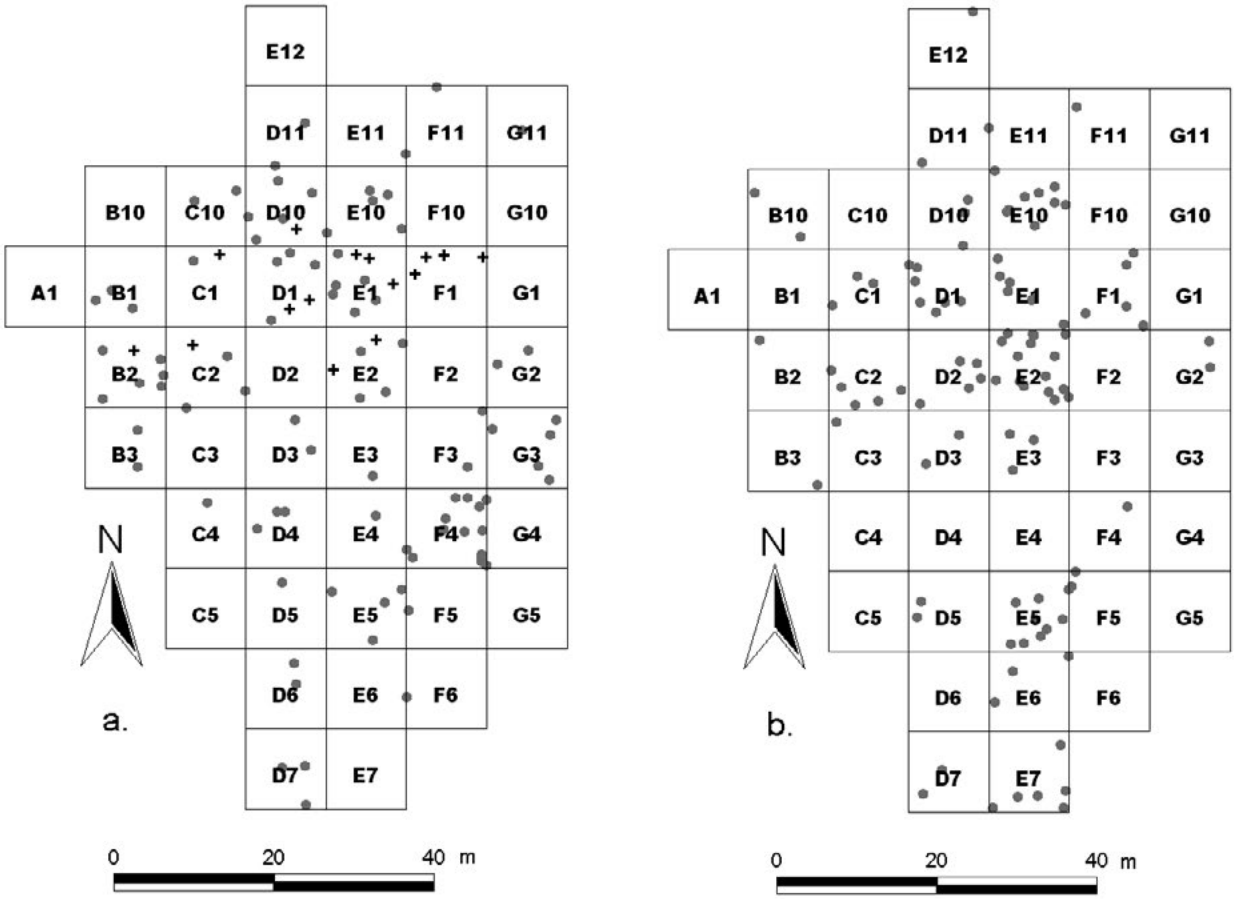
Date of Site: Med, recent.

Discussion. Some of the tile was recent and presumably came from the destroyed hut. The single ARS sherd and the *tegula* fragment may be scatter from Site 810 at the E end of the hill-top, but the small quantity of medieval pottery is much later (No.2139 is C13–14 AD) and must indicate frequentation at that time – the nearest site with material of a similar date is San Felice, 2.3km away across the valley.

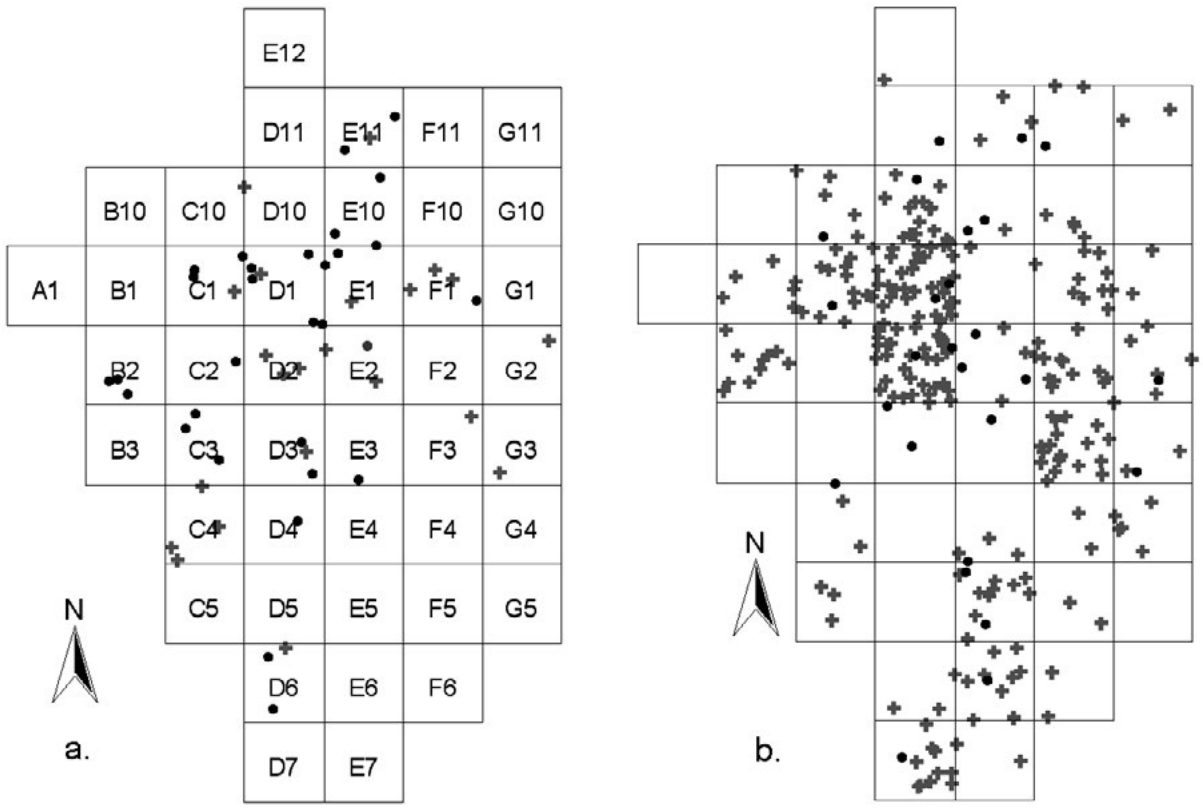
813. 612939/4520284, Puglia, Masseria Leblè.
Ploughed and harrowed field on sandy loam soil on a spur of the San Felice ridge, on a gentle double slope with a sharp drop away from the site to a perennial and abundant stream to the W. Masl 400. Visibility 5. Area:4300m^2 with a little scatter down the slope. Density sherds 0.51, tile 133.5.



Plan List-49. Site 813. Distribution of a) tile (each dot = 1kg) and b) cookpot sherds.



Plan List-50. Site 813. Distribution of a) BG (dots) plus WMP (crosses) and b) GG sherds.



Plan List-51. Site 813. Distribution of a) *dolia* (each dot = 100g) and amphora sherds (crosses), and b) Roman fine wares (dots) and *tegulae* (crosses: each cross = 1kg).

Sherds found: 2193 incl **Neo impasto** 12, **impasto** 10, **WMP** 29 (Nos.626, 627, 644, 650), **BG** 93 (Nos.786-788, 797, 800, 813, 824, 843, 844, 852, 883, 914), **GG** 110 (Nos.920-922, 925, 926, 929, 931, 932, 934-938, 940-942, 945-947, 950, 953, 956, 958), **pre-Roman red-slip** 1, ***unguentaria*** 6 (Nos.968, 973, 979), **Hel relief dec** 2 (Nos.983, 985), **TW** 1 (No.987), **ITS** 4, **ARS-A** 1 (No.1028), **RRS** 21 (Nos.1076, 1080, 1084), **plain** 1454 (Nos.1225, 1229, 1235, 1245, 1252, 1259-1262, 1290, 1302, 1305) incl *mortarium* 3, basin 2, **ckpot** 341 (Nos.1326, 1333, 1348, 1349, 1360, 1361, 1378), **amph** 23 (Nos.1425, 1449, 1451, 1453, 1456-1458, 1487, 1511-1513, 1517, 1521, 1522, 1596-1601, 1662, 1736, 1800), **lamps** 5 (No.1927), **pottery waster** 8. ***Dol*** 24.6kg (Nos.1886, 1903). **Other finds** incl **lithics** 4 (3 débitage and an Upper Pal blade), **loomweights** 5 (Nos.1949, 1960, 1984), **votive object**? (No.2075), **bronze handle** (No.2019), **nail** (No.2020), **millstone** 3 bits 1kg. **Tile:** 605kg (*teg* 63, *imbrex* 522, dec *imbrex* 2, floor tile 9.2), thick tile/ brick 4.5kg.

Date of Site: BA, **LIA, E.Hel, L.Hel, E.Imp.**

Discussion. The site, originally found by Antonio Florido, lies on the lower end of a spur projecting from the ridge running E from San Felice. There is a perennial stream just below it with springs, including a particularly abundant one just below the site and just above the confluence with the stream which runs along the Valle Leblè to join the Pentecchia di Chimienti about 1km downstream. There must always have been abundant good water here.

There was a dense collection of tile and pottery. The earliest pottery was 22 sherds of impasto. There is BA pottery all over this slope with a site just uphill at Site 714, so the presence of these sherds is not surprising. It shows frequentation of the site but not necessarily a dwelling place.

The earliest BG was a *guttus*, No.914, from the edge of the site (C5 – mid-C4 BC). An *oinochoe* (No.852) found with it was probably of the same date though it could be later. It was found with five sherds (one WMP, three impasto and one plain), just downhill and 50m from the main site, and probably came from a tomb.

The main settlement seems to have begun in the C4 BC and continued throughout the C3 and into the C2. The WMP sherds, some cooking pot and basin rims can be dated to this phase of the settlement (e.g. Nos.650, 786, 787,788, 797, 813, 843, 883 and perhaps1304). Much of the WMP and BG, however, is later, contemporary with the GG which dates from the mid-C2 to the mid-C1 BC and forms the main class of fine wares on the site. The grid suggests that the settlement at this time consisted of a fairly large building occupying some 600m^2, and a lesser dwelling or dwellings rather further S, both roofed with *imbrices*. There was cooking pot associated with both areas as was the GG pottery. The BG and WMP were also densest in these areas though the BG was more widely dispersed. Four sherds of ITS, one ARS-A (No.1028 Late C1 – mid-C2 AD) and some 23 RRS sherds indicate that the site continued into or was revived in the Early Roman Empire. One amphora (No.1662) could be of this period or later and the small quantity of *tegulae* (some 10% of the total tile count) probably also belongs to it. It seems possible that Site 813 was abandoned in the first half of the C1 BC at the same time as the great site on Botromagno and was, like Botromagno, re-occupied on a much smaller scale in the Early Roman Empire with a small building roofed with *tegulae* and *imbrices*. which did not outlast the C1 AD.

Twenty-three amphora sherds were distributed fairly evenly over the site. Interestingly most of the datable amphorae are earlier than the heyday of the site (Nos.1425, 1449 1512 date to the second quarter C4 BC– early C3 BC, No.1451 to the late C4–C2 BC, and Nos.1452, 1455, 1477 to the C3–C2 BC). No.1456, however, dates to the C2–C1 BC and No.1486 to the C1 BC–C1 AD.

Of the five loomweights found, three, including No.1949 with a seal impression of a bull's head with a stag's antler and monogram ΠΑΥ, came from the area of the big building.

Dolium sherds were scattered across the site, but the quantity (24kg) was not large for the size of the site and there is no evidence of a separate *dolium* yard. There was probably a paved yard to the E of the larger building and another to the W at C4, both indicated by the counts of thicker tiles, but no particular concentration of *dolium* sherds near them. There was remarkably little millstone. What there was must presumably have belonged to small hand-mills, but it seems likely that some milling was done off the site, perhaps by one of the larger donkey or slave mills already in use in the C2 BC.

There is little here except its size to suggest a high-status building. The proportion of fine wares to plain ware and cooking pot was fairly low and there were few other signs of luxury. Two lamps (a GG handle, and a late BG body No.1927) were found in the scatter associated with the larger building. These are unusual enough in our survey area to suggest that they were not used by ordinary labourers although they are hardly luxury objects. The whole assemblage suggests that there was a large farmhouse/ villa here with additional buildings broadly comparable to those of the Late Hellenistic period on Botromagno and Monte Irsi (see Chap. VIII).

Most of the lithics are, as usual, not datable but one from here and two from Site 814 up the hill are probably Upper Palaeolithic and imply frequentation of the area in that period.

814. 613326/4520609, Puglia, Valle Leblè.
Ploughed field, sandy loam, flat, just above an abrupt scarp to the field below. No very near source of water but water in valley abundant. Masl 400. Visibility 4. Area: two concentrations ca. 900m^2 each, thin scatter extending between the two over 6000m^2 in all. Max density sherds 0.4.

Sherds found: 70 incl **Neo impressed** 9 (Nos.97, 113, 148, 149, 153), **Neo impasto** 30, **Neo figulina** 2 (Nos.183, 185), **plain** 26 incl hm plain 4, **ckpot** 4, **wasters** (*imbrex* and ?pot) 3. **Other finds** incl **lithics** 4 (Nos.10 – Middle or Upper Pal, 44 – prob. Upper Pal, 71 – perhaps Epipalaeolithic). **Tile:** 0.5kg (*imbrex*).

Date of Site: Pal, **Neo.**

Discussion. Some earlier frequentation in the Upper Palaeolithic period, but the site was mainly Advanced Early – Middle Neolithic. The scatter was only about 30m wide at any point and there was little in the field below. A long narrow site with two concentrations. The tile and cooking pot were undatable as was the small quantity of tile. They may represent later scatter over a long period.

817. 613812/4520549, Puglia, Leblè – Upper Masseria.
Ploughed and harrowed field on clayey loam, on moderate slope, ploughed in places to bedrock with much erosion. The nearest water was a spring about 100m quite sharply uphill, or the Pentecchia 300m downhill. Masl 350+. Visibility 4/5. Area:1800m^2. Density sherds 0.014, tile 1.66.

Sherds found: 26 incl **plain** 22, **ckpot** 2. **Tile:** 3.5kg (*imbrex*, one combed).

Date of Site: uncertain, perhaps E.Med.

Discussion. The one combed tile suggests a date in the C7 AD or later. The other material is compatible with this but there were no more precisely datable pieces. Too much material to be manuring scatter, perhaps a hut.

818. 614030/4519738, Puglia, Santa Teresa.



Photo List-43. Site 818, looking NE.

Thin stubble field on sandy loam soil, ploughed almost to bedrock. Fairly flat with a moderate slope to S and E. Spring some 350m downhill. C20 AD hut on top of the hill. Masl 350+. Visibility 5. Area:400m^2.

Sherds found: 7 incl **BG** 1, **GG** 2, **plain** 3 (No.1221). ***Dol*** 0.6kg. **Tile:** 6kg (*teg* 0.1, *imbrex* 5.9).

Date of Site: L.Hel.

Discussion. A very small fairly sparse scatter, but too much to be attributed to manuring or other casual process – probably a shed.

819/822. 614030/4519738, Puglia, Santa Teresa.
Olive grove with sandy loam soil at top of a steepish slope and on terraces down it, with main concentration at top. A further discrete concentration on stubble 100m due W. Ground near top much burnt. Nearest water at the Masseria 250m below to E. Masl 400. Visibility 4/5. Area:350m^2 with a little scatter extending along the terraces to a second much thinner concentration 100m W. Density sherds 0.07, tile 50.

Sherds found: 51 incl **impasto** 2, **ARS-C** 1, **plain** 38 (No.1243), **ckpot** 8, **amph** 1 (No.1685). ***Dol*** 2.7kg (No.1876). **Tile:** 31kg (*teg* 2.5, *imbrex* 27.5, 1 combed 0.25).

Date of Site: E.Hel, M.Imp, L.Imp, E.Med.

Discussion. There were two concentrations 100m apart, originally given separate site numbers. Two plain rims of the C4–C2 BC found somewhat downhill from the main concentration (Site 819) give some evidence for dating, and the date is supported by the low proportion of *tegula* to Laconian/ *imbrex* weights in both concentrations (1:11). They may represent field huts or small dwellings.

The later material including the ARS-C sherd, the late *spatheion* amphora (1st half C5 AD) and the combed tile show frequentation also in the Roman Imperial and Early Medieval periods.

820. 614392/4519517, Puglia, Santa Teresa.

Burnt stubble field on sandy loam soil, fairly flat, at bottom of steep slope behind wall of the recent farmhouse above Santa Teresa. Nearest water is a well at the farmhouse ca. 100m NW. Masl 350+. Visibility 4/5. Area:300m^2 with scatter extending more thinly over 600m^2. Density sherds 0.193, tile 100.



Photo List-44. Site 820 at Santa Teresa looking N.

Sherds found: 71 incl **ARS** 4 incl ARS-A 1, ARS-C 1, ARS-D-1, **LRPW** 3 (No.1179), **RRS** 2 (No.1072), **plain** 44, **ckpot** 17, **amph** 1 (No.1706). ***Dol*** 2.6kg. **Tile:** 50kg (*teg* 27, *imbrex* 7.05, waster 0.15).

Date of Site: M.Imp, **L.Imp, L.Ant.**

Discussion. The ARS spans the periods from Mid-Imperial to Late Imperial/ Late Antique. The *spatheion* amphora and RRS No.1072 date to the C5–6 AD, and the LRPW sherds are Late Antique. This was therefore a long-lasting Mid-Imperial to Late Antique site with a fairly thin scatter, very much disturbed by the recent farm and village. The ARS and cooking pot imply domestic use.

821. 613950/4519600, Puglia, Costa Rizza.
Stubble field on sandy loam. No apparent close source of water but it is on a spring line. Masl 450. Visibility 4. Area:2500m^2. Density sherds 0.008, tile 0.8.

Sherds found: 21 incl **plain** 16 (Nos.1239, 1299), **ckpot** 5 (No.1355). **Tile:** 2kg (*teg* 1.3, *imbrex* 0.6).

Date of Site: L.Ant.

Discussion. The two plain catalogued sherds are probably Late Antique, the cookpot Late Antique or Early Medieval. The very thin scatter suggests a field hut or shelter, presumably thatched, with nearest neighbour at Site 823 500m W.

823. 614435/4519754, Puglia, Costa Rizza.
Stubble field on sandy loam. Site roughly triangular, sloping at first gently and then steeply into a funnel-shaped gully to S. Spring and stream in gulley. Masl 450. Visibility 4. Area:8500m^2. with additional very sparse scatter over some 50,000m^2 (5ha). Density sherds 0.03, tile 0.5.

Sherds found: 258 incl **LRPW** 33 (Nos.1097, 1122, 1126, 1166, 1187), **plain** 130, **ckpot** 105 (No.1324), **loomweight** 1. **Tile:** 4.5kg (*teg* 0.5, *imbrex* 4).

Date of Site: L.Ant.

Discussion. The datable material was virtually all Late Antique except the loomweight which may be manuring scatter, probably from the group of Hellenistic dwellings at Sites 818 and 819-822. A very wide-spread rather thin scatter with very little tile. The absence of combed *imbrices* suggests that it came to an end before the beginning of the C7 AD. This was probably a group of small dwellings (the abundance of cooking pot suggests residential use), roofed with thatch. Sites 820 and 821 are fairly close and were presumably part of the same complex.

824. 613283/4519300, Puglia, Costa Rizza.
Tomato patch, sandy loam, flat platform above road, below which there is a steep slope. Springs fairly near and a well ca. 400m W with abundant water. Masl 350+. Visibility 5. Area:450m^2. Very little further scatter. Density sherds 0.3, tile N/A.

Sherds found: 135 incl **Neo** 2 (Nos.177,184), **Eneo** 1 (No.211a), **BA impasto** 78 (Nos.212, 236, 246, 313, 328), **misc impasto** 49, **LRPW** 1, **plain** 3 incl hm plain 2 (Nos.177 184), **ckpot** 4. **Other finds** incl 1 **lithic** (No.43).

Date of Site: Neo, Eneo, **BA.**

Discussion. This was primarily a Bronze Age site though it was frequented earlier: there was a little Neolithic and at least one Eneolithic (No.209). The lithic blade, however, is likely to have been Upper Palaeolithic. Some of the non-diagnostic impasto could also be Neolithic but most was probably Bronze Age as were the majority of the datable sherds. These were MBA or LBA so there must have been a hiatus in the use of the site in the EBA. Like other BA sites in our area, it was long and narrow running along a contour of the hill. It is likely that there were at least two BA huts, perhaps preceded by a smaller Neolithic one. The LRPW and cookpot are probably manuring scatter from Site 823 100m E.

826. 613993/4520314, Puglia, Fontana Conti Cello.
Partly in an olive grove, partly in a stubble field on clayey loam soil. Moderate slope becoming steep just beside the Fontana which provides abundant water. Masl 350. Visibility 3/5. Area:1250m^2 with scatter extending over 5000m^2, especially downhill. Density sherds 0.07, tile 6.

Sherds found: 89 incl **BG** 4, **GG** 1, **LRPW** 1, **plain** 55, **ckpot** 26, **amph** 2 (Nos.1448, 1601). ***Dol*** 0.17kg. **Tile:** 8.5kg (*teg* 0.5, *imbrex*/ Laconian tile 8).

Date of Site: LIA, L.Hel, L.Ant.

Discussion. The BG sherds are of the C4/C3 BC as was amphora No.1448. though it could have been a little later. The building implied by the presence of the tiles was probably of that date, as the low proportion of *tegula* to *imbrex*/ Laconian tile weights suggests (1:16). It was probably residential, given the large number of cooking pot sherds. The site was frequented at other times as might be expected near a good water source.

827. 613762/4519537, Puglia, Costa Rizza.
Stubble field, sandy loam soil, almost flat, on top of ridge. Spring some 200m W. Masl 450. Area:1500m^2. Density sherds 0.3.

Sherds found: 52, incl **Neo impressed** 26 (Nos.85, 90, 91, 94, 150, 151,164, 169, 171, 172), **Neo impasto** 25 (Nos.171, 172), **Neo figulina** 1. **Other finds** incl **lithic** 1 (No.67).

Date of Site: Neo (Middle).

Discussion. Some 500m E of Site 824 and possibly part of it – the terrain here does not lend itself to continuous survey.

833. 613293/4520618Stubble field, sandy loam, 100m uphill from Site 814 with which it must be connected. Masl 400. Visibility 3. Area: 100m^2.
Sherds found: 16 incl **Neo** impressed 6 (Nos.84, 116), **Neo impasto** 9, **Neo figulina** 1 (No.179).

Date of Site: Neo.



Photo List-45. Site 827, looking E.

Discussion. This was a small Early/ Middle Neolithic site. The Neolithic on Site 814 was probably an outlying hut of the settlement.

903. 613092/4517022, Puglia, Mass. Pezza dei Panni.
Stubble field on sandy loam soil on a flattish hill-top which falls off steeply towards a stream and cistern some 150m downhill. Masl 250+. Visibility 4/5. Area:200m^2 with some scatter beyond. Density tile 170.

Sherds found: ***unguentarium*** 1 (No.971). **Tile:** 34kg (all *teg* [T32]).

Date of Site: L.Hel.

Discussion. The *unguentarium* is most probably late C2/ 1st half C1 BC. The absence of *imbrices* and pottery implies that this was a tomb or tombs (the quantity of *tegulae* is quite large), probably *alla cappuccina*. It is very isolated, but it may perhaps be linked to Site 317 at the Masseria which could not be fully explored.

905. 614977/4519201, Masseria. Santa Teresa.
Stubble field on sandy loam soil. Nearest water the spring at Santa Teresa. Masl 200+. Visibility 3/4. Area:600m^2 with scatter up to 1600m^2. Density sherds 0.2, tile 76.5.

Sherds found: 103 incl **ITS** 2, **ARS** 9, **RRS** 5 (No.1093), **LRPW** 1 (No.1100), **ckpot** 23 (Nos.1364, 1372, 1402), **plain** 54, **amph** 3 (Nos.1514, 1672, 1718). ***Dol*** 0.2kg. **Tile:** 46kg (*teg* 24 [T64,70], *imbrex* 7.25).

Date of Site: E.Imp, M.Imp, L.Imp, L.Ant.

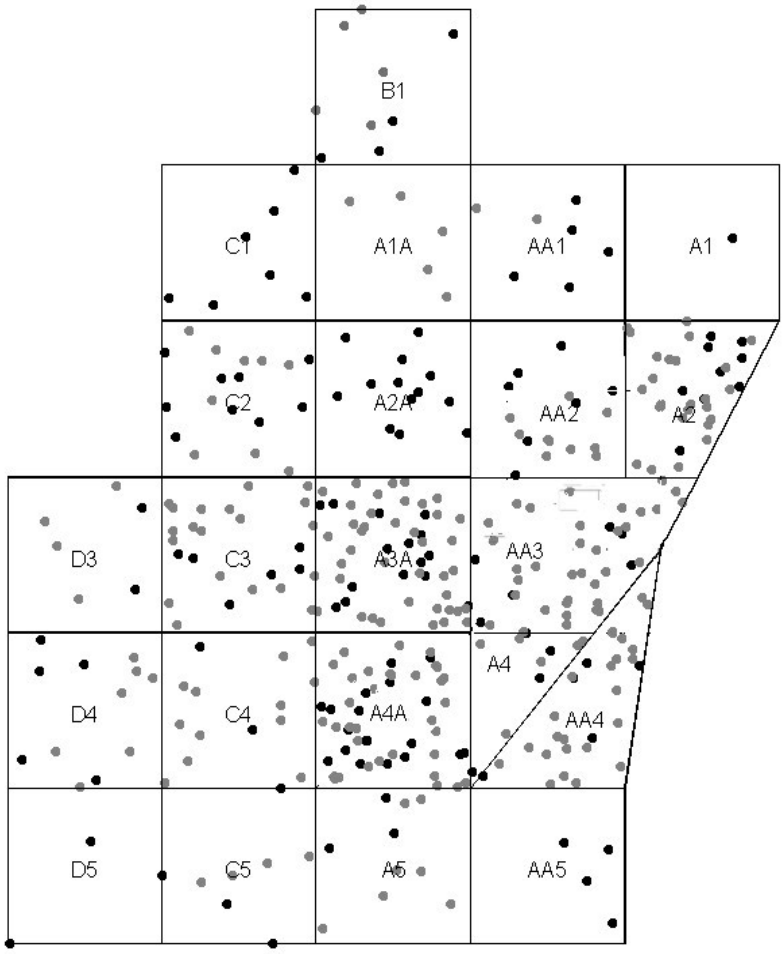
Discussion. The ITS sherds are Early Imperial. Most of the ARS is A-ware of the Mid-Imperial period, as probably is the RRS sherd No.1093, although it may be ARS of the C5 AD. One amphora (No.1364) is of the C3–C4 AD, another (No.1718) is late (C6–C7). There is one LRPW sherd. The cooking pot could well be Roman but cannot be closely dated. The tile lay in a fairly precisely limited area of some 550m^2, W of the track at Santa Teresa. This was probably a small Roman Imperial farmhouse, which perhaps lasted into the Late Antique period as an even smaller one.

906. 614927/4519260, Puglia, Santa Teresa.
Stubble field on clayey loam soil on a fairly steep S and SE facing slope just above the village of Santa Teresa. Spring next to it at the village. Masl 200+. Visibility 4. Area:1800m^2 with scatter extending to 3500m^2. Density sherds 0.085, tile 71.4.

Sherds found: 305 incl **GG** 6, **ITS** 11 (Nos.1004, 1022), **ES-B2** 2, **ARS** 12 incl ARS-A 1 (cf. Nos.1033, 1037, 1041, 1042), ARS-CkA (cf. No.1066), **RRS** 6 (No.1079 TW), **plain** 151 (No.1246), **ckpot** 84 (Nos.1319, 1331, 1374 and 1 casserole C2 AD), ***clibanus*** 2 (Nos.1382, 1390), **loomweight** 1 (No.1951), **amph** 10 (Nos.1454, 1459-1461, 1466, 1603, 1660, 1719, 1763, 1852). ***Dol*** 5kg (No.1885). **Other finds** incl **millstone** 2 (No.2049). **Tile:** 128.5kg (*teg* 46.5, *imbrex* 54, overfired 0.3).

Date of Site: L.Hel, E.Imp. M.Imp.

Discussion. The GG, the loomweight, five amphorae (Lamboglia 2), a plain sherd (No.1246), and some tile suggest occupation in the C2–C1 BC but probably not earlier. A Rhodian amphora (No.1763) of C3–C1 BC falls mainly within this time frame, and the *dolium* rim No.1885 may also belong to a building of this period. It was heavily lime-encrusted and may have been set in a concrete floor. It was found in the N part of the site, and probably came from a different structure from the majority of the *dolium* sherds which were found to the W of the site, partly outside the tile fall, and may belong to the next period. The great majority of datable sherds fall within the period from the late C1 BC to C3 AD, including an African wine amphora (No.1660) of the C1–C2 AD, the ITS, ES-B, RRS, and the ARS pieces which are not later than the C3. The millstone which is the *meta* of a rotary hand-mill also fits this period though it could be later. A large cylindrical amphora (No.1719) is Early Medieval and must be sporadic,



Plan List-52. Site 906. Distribution of tile (each black dot = 1 kg) and sherds (grey dots).

The grid showed a marked concentration of tile in even or eight 10×10m squares where most of the pottery (though not the *dolium* or millstone) was also located. This was probably a small farmhouse which perhaps formed part of a single complex with Site 905 which may have been an outbuilding of it, though the scatter is discontinuous. It is likely to have lain outside the boundary of the imperial estate.



Photo List-46. Site 906, looking W towards Santa Teresa.

907. 614650/4517234, Puglia, Masseria Zingariello. Stubble field. Water at well about 100m N. Masl 450. Visibility 4. Area 2500m^2.

Sherds found: Impasto 3, **LRPW** 1, **ckpot** 2, **plain** 25.

Date of Site: E. Med.

Discussion. A very small site. Much of the plain ware is recent, presumably from the Masseria. It is, however in roughly the same place as Vinson's Site 87A, also very small, which yielded similar material. An early Lombard ring fibula inscribed LUPU[S] BIBA[S] in the Fondazione Santomasi at Gravina is said to come from *località Zingarello* [sic] (D'Angela 1994, 82).

910. 611355/521208, Puglia, S. Antonio Pace. Stubble field on sandy loam soil on plateau. Spring at the farm about 200m away. Masl 450. Visibility 5. Area:120m^2. Density tile 32.1.

Sherds found: 11 incl **impasto** 1, **BG** 1, **plain** 7, **ckpot** 2 (No.1354). ***Dol*** 0.5kg. **Tile:** 38.5kg (*teg* 12.5, *imbrex* 8, combed *imbrex* 15 (Nos.2264, 2266, 2267, 2268)).

Date of Site: E. Med.

Discussion. There was a very small but intense concentration of Early Medieval tile in the middle of a field together with a small collection of sherds, many not precisely datable. The cooking



Photo List-47. Site 910 looking N towards the Masseria Sant'Antonio Pace.

pot No.1354 had a long date range but can best be dated to the late C7/ early C8 AD. The site was presumably an Early Medieval dwelling hut. The impasto and the BG plate rim (C3/ C2 BC) must be sporadic – there is much scatter in this area.

Sites outside the Survey area but close to it

The following two Sites were explored during the survey but are not contiguous with the Survey Area. The small kiln site Site F1 at San Gerolamo is included because a tile stamped by Gratus came from it. F2, Santo Staso, is important. There is more material to be classified from it and we hope to bring out a longer study of the site, but it is included in summary here because it has a bearing on the interpretation of the Survey Area and of Vagnari.

F1. 618189/4516694, Puglia, San Gerolamo. Stubble field beside stream, slight slope. Hill rises sharply just above it to the N. Visibility 4. Area:400m$^{2.}$ with scatter over 1200m^{2}.

Sherds found: 24 incl **plain** 21 (227g), **amph** 1 (No.1676). **Tile:** 632.6kg (*teg* 292, *imbrex* 35.5, brick/ thick tile (4–10cm) 39, waster 213.5, hypocaust box tile 0.8).

Date of Site: E.Imp.

Discussion. This was a Roman kiln site with a tile on it stamped by Gratus Caesaris (Small *et al*. 2003, 81 (2) fig. 2) so early C1 AD. There was no evidence of a dwelling. A high proportion of the tile was imperfectly fired and there were some clear wasters. There was only a small amount of pottery, mostly undiagnostic plain ware fragments. The distinction between waster and ordinary tile was somewhat arbitrary - some pieces were very distorted but most even of the good pieces were not well fired. We visited it because our local contact, Antonio Florido reported finding the tile of Gratus there. The amphora of the C3/C4 AD shows later frequentation of the site.

F2. 617426/4519306, Puglia, Santo Staso. Stubble field, slight slope, below Botromagno. Visibility 4/5. Area gridded 5400m^{2} with fairly dense scatter over 90000m^{2} (9ha). Nearest water seasonal stream 250m E, or the Pentecchia di Chimienti ca. 450m SW.

Sherds found and classified to date: 1448 incl **impasto** (?IA) 7, **geom mono**. 1, **WMP** 4, **BG** 35 (mainly C4 BC), **RF** 1, **Gnathian** 1, ***unguentarium*** 1, **ITS** 3, **ARS** 71 (ARS-A 11, ARS-C 1, ARS-D 13 (No.1059), ARS-CkA 2), **Phocaean red slip** 1,**RRS** 134, **LRPW** 28, **Med** 3 (majolica), **ckpot** 463, ***clibanus*** 2, **plain** 468 incl hm plain 1, **loomweights** 2, **lamps** 2, **recent** 16, **amph** 16. ***Dolium*** 3.7kg. **Other finds** incl **glass** 19 frags., terracotta ***formella*** 1, **millstone** 11 frags. 2.2kg, **marble basin** 1 frag., daub 1 piece. **Tile:** 711 (*teg* 101, *imbrex* 103.3, combed *teg* 2.5, combed *imbrex* 62, wasters 9), thick tile/ Brick 28.7kg.

Date of Site: EIA, LIA, E.Imp, M.Imp, L.Imp, L. Ant, E.Med.



Photo List-48. Surveying on the Site of Santo Staso below Botromagno.



Photo List-49. Site of Santo Staso below the scarp of Botromagno. The road follows the presumed course of the *Via Appia.*

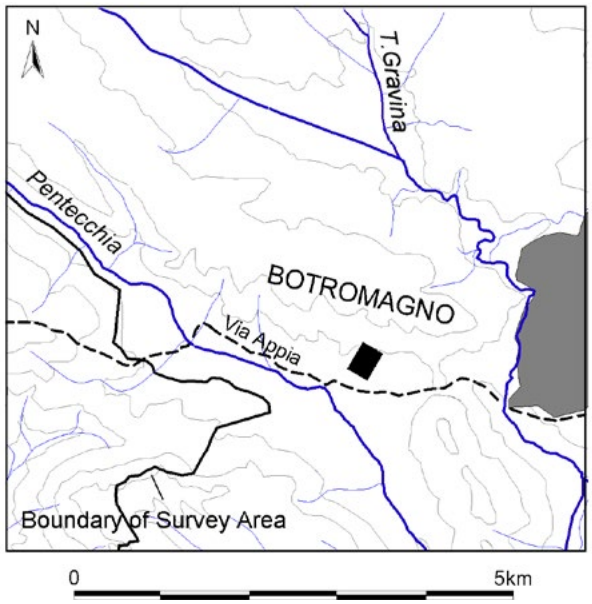
Discussion. A small excavation was undertaken on the site in 1971 by the Soprintendenza Archeologica della Puglia under the direction of Elena Lattanzi (1984). It revealed parts of three walls enclosing a space measuring a minimum of 7.6m E-W × 9.5 N-S, which must originally have extended further to the S. The N and E walls were pre-Roman, and the W wall Late Roman/ Late Antique. In the report it is presumed that the earlier walls were still standing and able to be used in the later construction. Associated with these walls was a series of stratified layers. "Apulian" (i.e pre-Roman) pottery was found in the lowest stratum, above which was a sterile layer of slope-wash. Above it, there was a sequence of two layers each of which contained late ARS (*terra sigillata chiara*) pottery and much wood carbon. Numerous fragments of terracotta plaques (*formelle*) decorated with palaeochristian motifs in relief were found in the upper of these layers, where there was also a deposit of burnt clay, perhaps the remains of an oven.

The number, date and purpose of the *formelle* are all uncertain. Mola (1983) suggested a date as late as the C7/ C8 AD, Sardone (1984, 113) and Bertelli (2002, 170-173) both in the C6. The very full comparanda assembled by di Zanni (1999) support the C6 date. Sardone thought the fragments (some 400 in all according to Bertelli) added up to 80 panels.

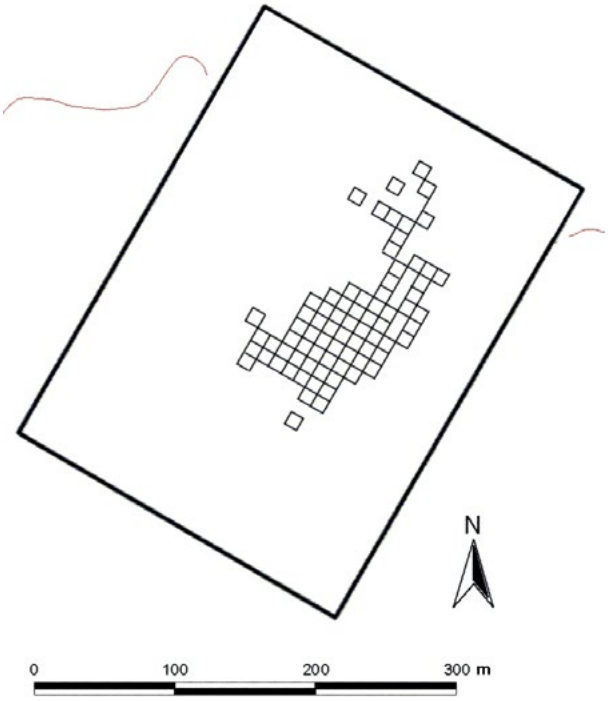
This must be too many: Di Zanni's more detailed calculation suggests 40 including six now in Bari (Di Zanni, 1999, 33). Further fragments were found on our own survey (still to be published), so this number is a minimum. Since those found in the excavation appeared in an area roughly 11×11m they clearly were not *in situ*. There were no traces of mortar on them so they had presumably never been put up.

Lattanzi concluded that the excavated space could not have been a church and must have been a store-room where the *formelle* were kept, awaiting use either on the site or elsewhere. Her idea that they were being stored on the site has been generally accepted. There are however many problems with this interpretation. The excavated area was too small to reveal the full plan of the building; and in particular the late, presumably palaeochristian, wall, was only partly excavated. To judge by the published plan, it may have belonged not to the pre-Roman building with the E and N walls, but to another structure further to the W outside the limits of the trench. The large amounts of carbon found in the upper layers suggest that the walls of the late building may have been of wood resting on a stone socle, to which the *formelle* may have been attached. These problems cannot be resolved without further excavation.

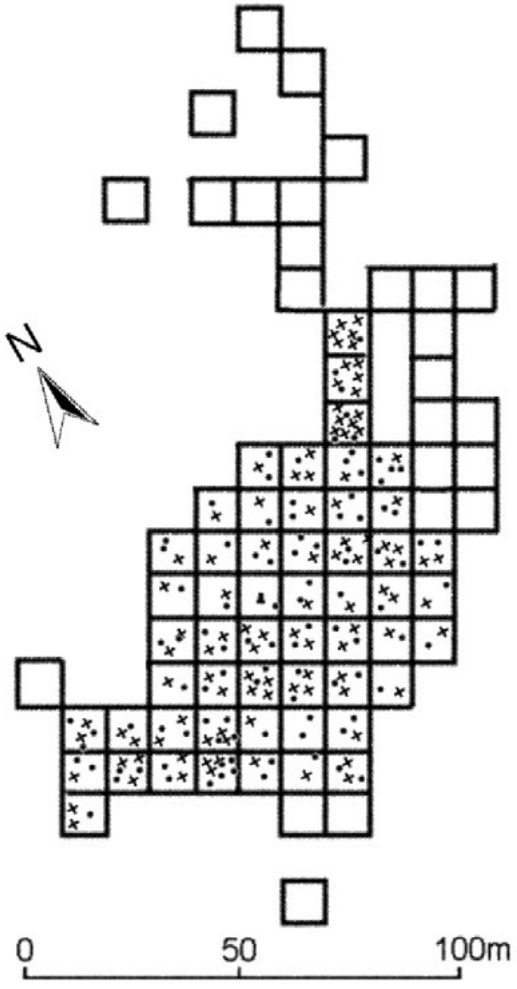
The surface collection on the site was carried out for our project in 2003–2004 by Annalisa di Zanni assisted by Giuseppina Alloggio, Lucia Ricciardi and Maria Turturo, and by ourselves, working in a collection grid of 10×10m squares laid out by Franco Taccogna. Material was collected in 54 of the squares, all that could be accomplished in the time available. The tile counts have been calculated for all of them, but so far the pottery from only about half has been classified. A full study of all the material is planned. The results to date, however, provide evidence for activity, including settlement, over a long period, extending considerably the knowledge gained from the excavation. The site was first frequented in the EIA to which the pieces of impasto and handmade plain are tentatively assigned together with the geometric sherd. Evidence for occupation in the MIA is at present meagre, but the BG, WMP, millstone (P1892) and *dolium* (P2226) show a substantial settlement in the LIA.



Plan List-53. Santo Staso and Botromagno. The black rectangle indicates the area of the survey grid laid out by F. Taccogna in the area of Santo Staso.

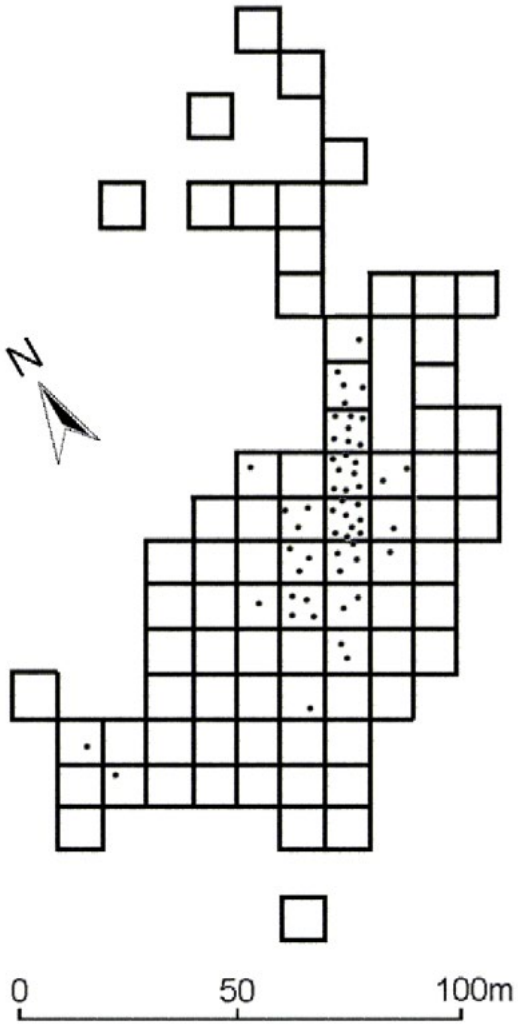


Plan List-54. Santo Staso. Grid squares from which some or all finds have been processed.



Plan List-55. Santo Staso. Provisional plan of the distribution of *tegulae* (each cross = 1 kg) and *imbrices* (each dot = 1 kg) over the area in which the surface collection was completed.

By the C2 BC the site had dwindled drastically – only one GG fragment is recorded in the sample analyzed. A few ITS sherds suggest that it revived a little in the C1 AD and the number of ARS-A fragments indicates further development in the Middle Empire. The site grew in importance in the Late Roman period, to judge from the quantity of later ARS sherds found there. Seven African amphorae are likely to belong to this period together with much of the millstone and some *dolia*.



Plan List-56. Santo Staso. Provisional plan of the distribution of combed tile over the area of the surface collection. Each dot = 1kg.

The tile fall across the site, a fairly even mix of *tegulae* and *imbrices*, suggests that there were several buildings roofed with typical Roman tiles, enough to constitute a small *vicus*. The site lies on the presumed line of the Via Appia, and we have suggested elsewhere that it was the road station of *Silvium* recorded in the *Antonine Itinerary* (*Silutum* in the *Tabula Peutingeriana),* taking its name from that of the earlier settlement on hill-top above the site (see Chap. IX.13.i).

A substantial number of LRPW sherds shows that the site continued to flourish in the Late Antique / Early Medieval period. Fourteen of those from the excavation of 1971 have been analyzed by Eufemia Ianetti (2007-8) and can be assigned largely to the C6/ early C7 AD. A large number of combed tiles shows that the site continued well onto the Early Middle Ages, to which period the upper layer of the excavation must belong. By then there was probably a small church or chapel in the settlement, decorated with the terracotta relief panels.

The site does not appear to have outlasted the C7 AD though a document of 1549 refers to a church of Mary Magdalene commonly called Santo Staso, outside the walls of Gravina, which was probably on this site (*ecclesia Santa Maria Maddalena extra moenia* che il volgo chiama *Santo Staso*: Di Zanni 1995-1996, 35-36, citing Fondo vescovile II w (1)).

SECTION V. CATALOGUE OF ARTIFACTS found in our Survey Area

1. THE LITHICS[1]

I. Introduction by Vito Volterra and Carola Small

765 worked lithics (including cores and flakes) were found in the course of our survey of the Basentello valley and returned for analysis. Of these 623 came from sites: that is, they were found in conjunction with significant accumulations of pottery of different periods. Since lithics are often found as isolated and fairly small examples, and since the distance between surveyors was normally about 15m, it is not claimed that the recovery rate was complete. In fact, the relatively high number of worked lithics found on sites suggests that the more intensive survey carried out in these cases increased the probability of finding them. Elsewhere the distribution of find spots shows a fairly even scatter, though towards the centre of the area to the E of the river the density was slightly thinner. There were rather more along the steep slope of the San Felice ridge and also on the route past the Fontana Fico, both just below the ridge tops. Predictably few lithics were found in the valley bottoms where more recent alluvial and erosional deposits overlie most of the terrain. For the distribution of lithics see Chap. II, Map II-5.

The variety of lithics recovered is not unusual. The majority were predictably débitage or unidentifiable flakes. Several can be assigned with some probability to the Middle Palaeolithic – see Nos.1 -7 (Pl.1). Lithic evidence for the Upper Palaeolithic is slight although some of the burins, backed blades and points could be of Gravettian or Epigravettian manufacture (Calattini 1996; Gamble 1987; Palma di Cesnola 1996), including Nos.41 and 44 (Pl.2) and possibly 57 (Pl.3). One piece, No.75 (Pl.3), a small unifacial blade/ bladelet core is probably Epipalaeolithic. Another, heavily damaged and difficult to interpret (No.71 – Pl.3), might be an Epipalaeolithic trapezoid (Peretto 1993). There is, however, evidence that such forms continued elsewhere in Italy through the Neolithic (Price 1987; Grifoni Cremonesi 1996; Cipolloni Sampò 1993), and given the paucity of other evidence for Epipalaeolithic/ Mesolithic settlement in the interior of Puglia, that is perhaps the case with our piece. The great majority of the lithics found, however, can be assigned to the Neolithic period. Most were probably of local manufacture though there is one large bifacial "Campignano" flint flake, No.57 (Pl.3), typical of the Gargano area.

The tools found are typical of lithics used in Italy from the Middle Palaeolithic to the FBA/EIA (Broglio 1995; Gambassini *et al.* 1995). It is clear that stone tool production continued in this part of South Italy into the EIA (e.g. at Monte Sannace: Galeandro 2013, 62). Four of our sites had lithics on them but only EIA pottery. The lithics need not, of course be contemporary with the pottery but it is likely that in some cases they are. This is particularly true of Sites 401, 629 and 630. On Site 401 there were 11 lithics with a further 10 on the extension to it (Area 409). Apart from one core they were all unidentifiable flakes, but it seems probable that they are evidence of stone working by the FBA/EIA inhabitants of the site. Site 629 had 28 lithics including 7 cores and a truncated burin (No.30) but the pottery did not predate the FBA/EIA.

Our tools are generally smaller than those found in most other parts of the continent, as they were obtained from the chipping of pebbles of chert and flint. The use of such pebbles extended through the Neolithic and Bronze Ages even though flint mining developed in the Gargano in the Early Neolithic period (Galiberti 1999). The great majority of lithics found on the survey are of chert (some 640 in all), much of it of poor quality or containing faults which would have hampered tool production. The next most common material was flint (41). A few pieces were of quartzite (7) and limestone (3). Obsidian, probably from Lipari, is present in many of the lithic assemblages on the Tavoliere and in the Materano. It is attested in the area of the Older Surveys where one core from Site V81 is evidence that the material was sometimes imported in raw form to be worked *in situ*. It was rare, however, in our Survey Area. We found only two certain pieces (not illustrated), from isolated findspots.

In general, technological change in lithic manufacture seems to have taken place in a slow continuous evolutionary process often overlapping cultural periods (Peretto 1993). There was a wide variation in technique between tools intended for long term use which would have been manufactured with some care and discarded infrequently, and opportunistic products. The latter were roughly made from local materials for immediate use and were probably soon discarded.

The manufacture of these expedient tools was widespread. Most of our finds consist of opportunistic chopping tools, discards or débitage of poor quality, brought to the surface by ploughing, animal action or soil erosion. Without stratified contexts, it is usually impossible to assign specific lithics to precise cultural periods through analysis of their form and attributes with confidence. None of the lithics recovered was subjected to wear analysis, which might have made it possible to infer forms of subsistence living and resource exploitation more reliably. Nevertheless, it is worth noting that among the 38 blades identified in the area some were probably used for sickles, including Nos.25-33 (Pl.2). Most were in the NE part of the Survey Area, where the best land for cultivation is to be found and where most of the Neolithic hut sites were situated.

Only two certain arrowheads were found, Nos.53, 54 (Pl.2), and one miniature ground and polished hand axe, No.73 (Pl.3). Such hand axes are not uncommon in Southern Italy. Our single example is perhaps unfinished – there are indentations for a suspension hole on both sides but it was not completely pierced.

[1] We are very grateful to Paul Pettitt for reading this text and offering helpful advice on it.

Find-spots other than Sites listed in column 2 are prefixed with "L". Their coordinates in UTM are as follows: **L1** 616200/4510500, **L2** 611300/4513700, **L3** 613915/4507118, **L4** 612329/4517228, **L5** 612438/4518280, **L6** 613725/4516817, **L7** 612335/4518368, **L8** 615198/4518576, **L9** 613250/4509030, **L10** 608900/4517350, **L11** 613400/4519800, **L12** 612919/4520237, **L13** 613453/4520021, **L14** 608150/4519850, **L15** 607685/4520663, **L16** 607750/4521300, **L17** 611738/4521648, **L18** 613950/4519600, **L19** 611791/4521696, **L20** 607635/4521775, **L21** 611788/4521863, **L22** 606450/4522900, **L23** 606675/4520812, **L24** 614600/4511400, **L25** 613500/4512800, **L26** 611400/4513750. **L27** 613866/4511797, **L28** 612939/4520284.

II. Catalogue

cat. no	Site/ find-spot	Description
1. Middle Palaeolithic? The following pieces, some showing Levallois technique, are likely to be Middle Palaeolithic.		
1	L3	Pl.1. Cream chert point, damaged edges. Probably Mousterian, a pseudo-Levallois point; lg. 4, w. 2.7.
2	361	Pl.1. Honey-coloured chert. Transversal scraper. No retouch; lg. 3.8, w. 2.9.
3	361	Pl.1. Dark grey chert - thick flake with retouch on all edges except striking platform. Possible denticulate; lg. 3.5, w. 2.2.
4	L9	Pl.1. Light grey flint with lighter inclusions, showing probable centripetal/ discoidal technology; lg. 4.1, w. 3.3.
5	L17	Pl.1. Dark grey chert flake; lg. 4.5, w. 3.4.
6	L15	Pl.1. Chert flake, Levallois technique; lg. 5.6, w. 4.6.
7	L2	Pl.1. Chert, small disc core; lg. 38.2, w. 53.1.
2. Upper Palaeolithic and Neolithic (arranged roughly by shape/ function)		
2a. Denticulates		
8	L2	Pl.1. Chert whole flake, denticulated, some cortex; lg. 4.7, w. 1.8.
9	404	Pl.1. Green chert denticulate, some cortex; lg. 4.1, w. 2.9.
10	814	Pl.1. Brown chert, denticulate, Uluzzian? Evidence of retouch.
11	L25	Pl.1. Orange chert, broken flake, talon end, possibly denticulated; lg. 37.5, w. 39.3.
2b. Scrapers		
12	L23	White chert flake with cortex on 3 sides. One edge retouched. Transversal scraper.
13	403	Pl.1. Side scraper, broken, marginal retouch; lg. 1.8, w. 2.3.
14	L16	Pl.1. Chert sidescraper, truncated; lg. 3.2 w. 1.8.
15	L24	Pl.1. Grey chert sidescraper; lg 4, max. w 2.1
16	L23	Pl.1. Light honey-coloured chert flake/ scraper. Some retouch. Some cream-coloured cortex; lg. 3.8, w. 2.8.
17	223	Pl.1. Light brown chert scraper; lg. 2.5, w. 2.0.
18	223	Pl.1. Yellowish light grey chert scraper; lg. 1.9, w. 1.2.
19	223	Pl.1. Orange-yellow chert scraper, some cortex on both sides; lg. 3.0, w. 2.4.
20	223	Pl.1. Grey chert scraper, 3 facets on one side, one on other, slight retouch; lg. 1.3, w. 0.8, th. 0.2.
21	302	Pl.1. Chert scraper, 2 facets one side; lg. 3.8, w. 3.5.
22	L1	Pl.1. Chert scraper (almost "horseshoe" type. Neo/BA); ht. 3.0, w. 4.5.
23	L18	Pl.1. Dark grey flint. Thumbnail scraper (Late Neo/BA); lg. 2.3, w. 2.0.
24	L11	Pl.1. Greenstone. Thumbnail scraper (Late Neo/BA); lg. 2.1 w. 1.6.
2c. Backed blades and sickles		
25	631	Pl.2. White chert blade with shoulder edge retouch, possibly Uluzzian, Proto-aurignacian or Aurignacian; lg. 3, w. 1.3.
26	L12	Pl.2. Grey flint. Frag. of a backed blade/ sickle. Evidence of retouch; lg. 2.8, w. 2.0.
27	432	Pl.2. Brown chert blade, roughly triangular in section, damaged – possible sickle blade. Cf. Tinè 1983, tav. 139, no.817 from Passo di Corvo; lg. 3.3, w. 2.3.
28	223	Pl.2. Greenish streaked yellow chert sickle blade; lg. 3.5, w. 2.2. Tinè 1983 tav.139, nos.813, 814 from Passo di Corvo.
29	L5	Pl.2. Light brown flint with dark enclosures. Sickle blade (some sickle gloss); lg. 3,9, w. 1.2. a bi-obliquely truncated blade, perhaps with additional backing, ?Epipalaeolithic.
30	715	Pl.2. Light grey flint blade, possibly sickle; lg. 2.3, w. 1.3
31	627	Pl.2. Quartzite whole flake. Blade ?sickle; lg. 2.3, w. 1.4.
32	631	Pl.2. Light brown chert flake with very fine retouch, sickle; lg. 4.1, w. 2.5.
33	223	Pl.2. Chert. Backed blade, possible sickle.
34	L8	Pl.2. Grey chert with light and dark inclusions. Frag. of backed blade; lg. 4.3, w. 1.8. Cf. Lo Porto 1988, pl. XCI.2 from the Grotta dei Pipistrelli (Neolithic).
35	223	Pl.2. Pale yellow chert; lg. 3.1, w.1.
36	715	Pl.2. Light brown flint with dark inclusions. Bi-obliquely truncated blade. ?Epipalaeolithic; lg. 3.9, w. 1.2.
37	L27	Pl.2. Chert. Whole flake. Blade. Retouch both sides, cortex both ends; lg.3.5, w.2.

cat. no	Site/ find-spot	Description
38	L28	Pl.2. Translucent quartzite. Frag. of blade; one side badly worn; lg. 3.5, w. 1.1. Cf. Lo Porto 1988, pl. XC.4 and 14 from the Grotta dei Pipistrelli (Neolithic).
39	F2	Pl.2. Grey flint with dark inclusions. Blade, from Santo Staso; lg. 3.2, w. 1.1.
40	L10	Pl.2. Green chert blade; lg. 2.5, w. 1.0.
41	L21	Pl.2. Grey chert. Frag. of backed blade. Possibly Gravettian; lg. 2.3, w.1.5.
42	L13	Pl.2. Grey flint. Frag. of blade. Neolithic lg. 3.0, w. 1.2.
2d. Two sided blades		
43	824	Pl.2. Grey chert. Endscraper/ blade, Upper Palaeolithic; lg. 4.5, w. 1.5.
44	814	Pl.2. Light grey chert. Frag. of blade, evidence of retouch. Endscraper/ blade, probably Gravettian or Epigravettian; lg. 3.6, w. 1.5.
45	630	Pl.2. Dark honey-coloured chert blade; retouch on 2 edges; lg. 2.2, w. 1.9.
46	631	Pl.2. Dark mottled grey chert blade frag. Upper Palaeolithic; lg. 1.6, w. 1.4.
47	L19	Pl.2. Brown-green chert. Frag. of backed blade; evidence of retouch; lg. 3.3, w. 2.0.
48	L21	Pl.2. Green-grey chert blade frag.; evidence of retouch; lg. 2.9, w. 1.4.
49	432	Pl.2. Dark grey-brown chert blade; lg. 2. 8, w. 1.4.
50	134	Pl.2. Flint. Frag. of blade, evidence of retouch; ht.1.6, w. 1.7.
51	134	Pl.2. Grey-brown flint with light flecks. Frag. of blade; ht. 1.6, w. 1.4.
2e. Chopper		
52	361	Pl.2. Chert chopper. Cf. Lo Porto 1988, tav. XC.5 from the Grotta dei Pipistrelli, identified as a Mousterian discoid; lg. 4.8, w. 3.8.
2f. Arrowheads		
53	L7	Pl.2. Flint arrowhead. Neolithic; lg. 2.0, w. 1.0.
54	223	Pl.2. Dark brown chert arrowhead, probably Neolithic; lg. 2.1, w. 1.9.
55	L2	Pl.2. Green chert flake – perhaps an arrowhead waster. Cortex platform; lg. 35.6, w. 22.7.
2g. Points and burins		
56	L4	Pl.2. Grey chert. Frag. of flake, possible point; lg. 2.2, w. 1.1.
57	L6	Pl.3. Very light grey flint. Lanceolate point, possibly a spearhead, bifacially retouched, broken at point; possibly Campignana (Neolithic); lg. 4.6, w. 2.2.
58	223	Pl.3. Light cream chert point. Awl; lg. 4.3, w. 2.9.
59	223	Pl.3. Light brown chert point. Some cortex, some retouch; lg. 2.3, w. 1.0.
60	361	Pl.3. White chert point perhaps used to impress motifs on pots. Cf. Lo Porto 2006-7, pl.1.5 116 (p.373). lg. 2.2, w. 1.1.
61	361	Pl.3. Light grey flint. Awl; lg. 3.2, w. 1.1.
62	347-9	Pl.3. White chert flake. Point, talon end; lg.2.4, w 1.7
63	F2	Pl.3. Greenstone point (from Santo Staso); lg. 1.7, w. 1.3.
64	303	Pl.3. Chert whole flake point; lg. 4.3, w. 3.6
65	L21	Pl.3. Chert whole flake point; lg. 2.7, w. 1.8.
66	631	Pl.3. Yellow chert with cortex. Backed point – burin; lg. 4, w. 3.1.
67	L14	Pl.3. Grey chert burin; lg. 3.1, w. 2.
68	827	Pl.3. Dark grey chert burin; lg. 2.6, w. 2.7.
69	361	Pl.3. Burin. Some cortex; lg. 4.0, w. 2.7.
70	629	Pl.3. Light brown to dark brown chert flake with retouch. Truncated burin; lg. 3.2, w. 2.5.
2h. Miscellaneous		
71	814	Pl.3. Flint trapezoid. ? Epipalaeolithic; lg. 2.4, w. 1.6.
72	L20	Pl.3. Ovoid pebble sharpened at one end, seemingly by grinding; some cortex remaining at other end; stone heavily faulted. Some possible retouch on lower right edge; lg. 6.3, w. 5.5. Cf. Lo Porto 1988, tav.XCIV.8 from the Grotta dei Pipistrelli upper levels. *Lisciatoio* (Smoother).
2i. Miniature hand axe		
73	223	P4355. Pl.3. Miniature hand axe, Neolithic, with narrow slightly oblique butt; pecked, ground and polished. Dark greenish-black stone slightly mottled with lighter grey. Numerous minute peck-marks on surface in upper half; some fine parallel grinding scratches obliquely across lower surface towards cutting edge; polished on all sides; slightly damaged at top edge. Indentation perhaps for suspension 4.5 mm 1mm deep and max. 2 mm in diam. on each side; lg. 2.9, th.5.0. For the widespread use of polished axes in South Italy in the Late Neolithic, the types of stone used, the techniques of working them, and the trading networks involved in the case of the harder and rarer stones, see O'Hare 1990. Our piece is certainly an import, perhaps from the area around Catanzaro in Calabria, though without petrographic analysis, this is uncertain. The small size of our piece, and the attempt to perforate it suggest that it was intended as a votive object: see O'Hare's comments on similar pieces deposited in caves used

cat. no	Site/ find-spot	Description
73	223	for ritual practices. Cf. also Mertens 1995: pp. 37 and Pl.1.5 for miniature Late Neolithic hand axes from Ordona, and Lo Porto 1988, pl. XCIV.2, 3 and 4, for similar axes from the Grotta dei Pipistrelli near Matera. D. Santoro (1998, 33, fig. 18) publishes several from sites on the Murge near Altamura.
2j. Cores and débitage		
74	L22	Light grey chert with dark specks. Core with evidence of flaking; lg. 5.1, w. 3.7.
75	210	Light grey-brown chert. Small unifacial blade /bladelet core. Epipalaeolithic?. Some cortex; lg. 6.7, w. 3.9.
76	302	Chert core/ scraper-end, denticulated; lg. 6.8, w. 4.5.

2. THE NEOLITHIC POTTERY

I. Introduction (Alastair Small)

Chronology and typology of the pottery

Neolithic pottery in Apulia extended over a timespan of about 3000 years, from the end of the M7 to the end of the M4. This long period can be broken down into four subdivisions, Early, Middle, Late and Final Neolithic, each marked by a characteristic pottery type. Until recently there was much argument about the chronology of these phases, the pottery types that define them, and the degree of overlap between them (see R.Whitehouse 1969, 270-273; 1986, 41; 2013, 61-62; cf. Skeates 2005, 89-90), but the increasing number of reliable radiocarbon dates and new techniques of analysis have helped to clarify the chronological framework. The summary of these results recently published by a group of Italian specialists (Fiorentino *et al.* 2013) is followed in this section of the catalogue. They date Early Neolithic from ca. 6200–5600 BC, Middle Neolithic from ca. 5600–4800 BC, Late (or Recent) Neolithic from ca. 4800–4300 BC, and Final Neolithic from ca. 4300–4000 BC. Muntoni (2003) divides the Early Neolithic of Central Apulia into three sub-phases, I, III and III, with their chronological horizons defined by radiocarbon dates.

The principal subdivisions correspond to the main periods in the development of Neolithic ceramics: Early Neolithic is characterized by coarse impasto pottery with simple impressed decoration, followed, towards the end of the phase, by the first pots made with purified clay. The impressed impasto pottery continued into the Middle Neolithic with the decoration becoming more highly organized, and then gradually dying out. Improvements in firing technology led to the development of plain *figulina* ware, early in Middle Neolithic. It provided a suitable medium for painted decoration, and several regional painted styles emerged, culminating in the Serra d'Alto painted ware of the Late Neolithic phase. This too died out, giving place in the Final Neolithic to Diana-Bellavista plain ware. All these are discussed more fully below.

Recent studies, have, however, added to the complexity of the picture by drawing attention to the importance of sub-regional factors (cf. Robb 2007, 163-165, 180-184, 271). The development of pottery types was not uniform across the whole of Apulia. Some types were introduced earlier or lasted longer in some areas than in others, and some which were common in some areas were totally absent, or rarely used, in others. This is apparent in Muntoni's study of the Early and Middle Neolithic pottery of the Murge (2003) which impinges directly on our Survey Area. He points out significant differences in the distribution of some pottery types between the Adriatic coastal fringe and the SW extension of the plateau into the Materano. Our survey material throws some light on these matters, but it must be emphasized that there are still many uncertainties about the classification and chronology of Neolithic pottery and that future studies may lead to significant revisions.

II. Catalogue (Angelica Portagnuolo and Alastair Small)

1. Impasto

The characteristic pottery of the Early Neolithic period is impasto ware in which the gritty material, mainly sand, was worked into the raw clay to prevent it from cracking when fired and to make it resistant to fire if used for cooking. Both clay and sandy temper were readily available in the Fossa Bradanica from the sedimentary deposits of the Pliocene period which outcrop everywhere, and finer clay could be obtained from more recent alluvial deposits in the valley bottoms. Studies carried out in the vicinity of other sites show that the Early Neolithic potters got their raw materials from the immediate vicinity (cf. Muntoni 2003, 49), and this was no doubt the case in our Survey Area although though no quarry or potting site has yet been found. The pots were built up by hand, either by pummelling the clay with the fist and drawing the sides up with the fingers, or by working up coils of the clay to form the pot walls. At Favella the former technique was used for finer pots, the latter for larger and coarser ones (Natali 2009, 271), and this was no doubt the normal practice. The pottery typologies worked out on excavated sites of the Early Neolithic period show only a limited number of shapes, principally dishes with flaring walls, hemispherical bowls, collared jars with near-vertical rims, and large storage pots with slightly in-turned rims, but they occur in many minor variations. The treatment of the surface varied. In some pieces, particularly the largest vessels used, no special effort was made to improve the quality of the surface, but normally it was smoothed while wet with a stick or bone. Smaller and finer pots might be burnished by rubbing the surface when hard-dried (but before firing) with a smooth stick or polishing it with a leather cloth. The larger, coarser pots were probably used mainly for storing foodstuffs; the finer smaller ones for preparation, including cooking, and consumption of food (cf. Natali 2009, 273 on the function of these shapes at Favella).

Once made, the pots had to be left to dry as completely as possible before being fired. There were at this stage no kilns, so the pots must have been baked in firing pits. Archaeometric analyses show that the temperature might be as low as 500° (Muntoni 2003, 49), barely enough to convert the clay into ceramic form, but the norm must have been above ca. 550° at which point the chemical transformation of the clay was secured (S.Cassano *et al.* 1995, 36). Temperatures of 600–700° indicated by some analyses of pottery from sites on the Murge (Muntoni 2002, 212) are more likely to have been normal. Even at these temperatures the pots remained rather brittle, and most of the pieces found in the survey were highly fragmented. The surfaces tend to be mottled reddish/ brown/ grey showing that there was no consistent control of the atmosphere (oxidizing/ reducing) in the firing pit.
Most of the impasto pottery recorded in detail from our Survey Area is impressed ware, which is easily photographed and recorded. But the predominance of these pieces in the catalogue is misleading, because all Neolithic sites also produced pieces of finer undecorated impasto. A few rim or handle sherds of undecorated impasto have been recorded with drawings or photographs (Nos.171-177), but the great majority of fragments are small wall-sherds impossible to record in detail.

1a. impressed ware

Many impasto pots, especially the large jars, were adorned with numerous lightly impressed marks made on the outer surface of the pot with the finger-nails or finger-tips, or with sticks, sea-shells (especially cockle shells), or other simple implements (see Natali 2009 for a broad range of such impressions). This might be done while the surface of the clay was still soft and moist, leaving a rather blurred impression, or when it had dried and hardened to some extent, in which case the impressed mark would be more sharply defined. Both conditions can be seen in our survey material (contrast e.g. Nos.138, 150, moist, with Nos.131, 149, partially dry). Sometimes the surface was pinched between the thumb- and fingernails while it was still moist (as on No.147). Another technique which produced a distinctive effect, was to rock the edge of a cockle or clam shell backwards and forwards while moving it gradually over the surface of the pot to produce a zig-zag "rocker" pattern (as Nos.159-169). The technique was not used in the earliest "Archaic" phase of Early Neolithic (Natali 2009, 278 notes that it is absent at Favella, and at Rendina in Period I) but it appeared mid-way through the Early Neolithic period (as at Rendina in Period II: Cipolloni Sampò 1977-1982, 252 fig. 40 no.12), and was particularly favoured on inland sites in the Middle Neolithic. Since the shells used to make the patterns had to be imported from the coast (ca. 55km from the Adriatic, ca. 70km from the Ionian shore at Metaponto to the centre of our Survey Area), pots decorated in this way must have been specially valued.
Impressed ware is the characteristic pottery of Early Neolithic. It continued in use throughout the first part of Middle Neolithic but came to an end late in the M6 BC. During this long period there was a gradual development in the decorative style. Initially the impressed marks were loosely organized without any coherent pattern, but as time went on the marks tended to be more tightly organized.
The pieces catalogued here are all frags. of large impasto pots, decorated externally with impressed marks. Those which have parallels at Coppa Nevigata and the Masseria Candelaro are typologically the earliest (cf. Mosso 1909; *Coppa Nevigata e il suo Territorio*, figs. 22-24 and tavv. II-III from the fill of the ditch at Coppa Nevigata) with loosely arranged and relatively simple decoration. They are followed, still within the limits of Early Neolithic, by others with parallels in periods I and II at Rendina at the end of the M7 and first third or so of the M6 BC (Cipolloni Sampò 1977–1982, 231-245). Those with more tightly organized decoration which have closer parallels with pieces from the Villa Comunale at Foggia (Simone 1977–1982) and from Rendina in period III probably belong to a later phase of Early Neolithic, though this form of decoration continued into Middle Neolithic (in the last half of the M6 BC), for instance at Passo di Corvo in period IV (S.Tinè 1983) and in the Grotta dei Pipistrelli at Matera (Lo Porto 1988). Many of the parallels indicated are surface pieces from the territory of Ostuni published by D. Coppola which can only be dated on stylistic grounds. Most of the sites there are likely to be Middle Neolithic, though Fontanelle and Lamacornola probably go back to Early Neolithic (see Coppola 1983, 129-135 for the classification).
The pottery is easily broken, and most of the pieces in the catalogue are wall sherds with a maximum dimension of less that 10.0. The few rims belong mainly to large storage jars or cooking pots which show little or no development in form over the thousand years in which the ware was current.

1a-1. Pieces with simple impressed motifs made with the fingers or natural tools

77	403/404	Pl.4. P913. Neck sherd of a bellied pot. Hard drab brown fabric, dark grey in core. White gritty inclusions up to 7mm (but mostly small). Some micaceous flecks. Small impressed slightly wedge-shaped notches more or less in rows, made with a narrow-tipped tool; also part of an angular linear motif with lightly impressed lines. Max. dim. 4.9, th. 1.6. Cf. *Coppa Nevigata e il suo Territorio,* tav. II row 2 right; tav. III bottom left, both from ditch at Coppa Nevigata.
78	432	Fig.1. P1202. Vertical rim of large pot. Hard pinkish-brown impasto with small inclusions, slightly burnished out and in. Diam. and exact angle of sherd uncertain. Shallow straight nicks, roughly horizontal, lightly impressed below rim; loosely scattered ?fingernail impressions near bottom of sherd. Max. dim. 7.3, th. 1.3. Cf. *Coppa Nevigata e il suo Territorio*, figs 22, 23 from Coppa Nevigata ditch; Natali 2009, tav. IV nos.4 and 5 from Favella (Early Neolithic). The shape recurs in the Defensola flint mines in the Gargano in Early Neolithic: Galiberti 2002, 565 (top left, with lower wall curving inwards to a narrow base). For the elongated nicks, made with a straight-tipped tool, cf. Natali 2009, fig. 7 SRv/1, *Strumento ad estremità rettilinea* (at Favella, Early Neolithic).

79	210	Fig.1. P399. Near vertical rim of large pot. Pinkish surface, grey core. 6 thin impressed vertical lines, ca. 0.8 long on outside immediately below rim at varying angles. Ø ca. 18.0. Cf. *Coppa Nevigata e il suo Territorio*, fig. 34 from the Masseria Candelaro stratum 2; Muntoni 2003, fig.27.6 from Pulo di Molfetta, Fondo Azzollini saggio 3, US2., Early Neolithic (classified as a collared pot). For the straight impressed lines, see No.78.
80	631	Pl.4. P1622. Ws. Grey impasto with small inclusions and 1 larger one on surface. Surfaces light brown. Exterior surface burnished pink and decorated with small finger-nail nicks. Max. dim. 3.8, th. 2. Cf. *Coppa Nevigata e il suo Territorio*, figs 22 and 23 (several) from Coppa Nevigata ditch.
81	319/321	Pl.4. P775. Ws. Red-brown coarse micaceous impasto with small black inclusions and some (more sparse) white inclusions. Interior black. Exterior light brown with 2 faint finger-nail marks (ca. 2.0 long) in slight arc. Max. dim.7.5.
82	631 5	Pl.4. P1708. Ws. Brown impasto. Interior smoothed. Exterior decorated with rows (2 preserved on the sherd) of fairly deeply impressed marks made with the edge of a cockle shell. Max. dim. 4.7, th. 1.1. Cf. Cipolloni Sampò 1977–1982, fig. 34, 1,3,6 from Rendina Period 1; Martinelli 1987, fig. 3, 9 from Mortara near Polignano (Early Neolithic surface assemblage); Natali 2009, fig. 6 CDFv/1 from Favella (Early Neolithic).
83	319/321	Pl.4. P743. Ws. Coarse orange impasto. 1 medium large white inclusion. Exterior decorated with the edge of a cockle shell. Internal surface smoothed and burnished orange. Max. dim. 7.0, th. 4.5. Cf. Cipolloni Sampò 1977–1982, fig. 34. 1 from Rendina Period I; S.Tinè 1983 tav. 67.66 from Passo di Corvo, period III.
84	833	Pl.4. P1956. Ws. Medium hard brown impasto, black on interior surface. Decorated with irregular rows of small incised lines and another row of deeper cockle shell impressions. Max. dim. 5.0, th. 41.2. Cf. Cipolloni Sampò 1977–1982, fig. 34.1 from Rendina Period I; S.Tinè 1983, tav. 67.66 from Passo di Corvo period III; Santoro 1998, 19 fig. 4e from a site at the Masseria Santoro in the territory of Altamura (surface find).
85	827	Pl.4. P1951. Ws. Hard impasto, blackish interior, reddish exterior, with some mica and small white and brown water-worn pebbles (up to 3mm). Series of cockle shell impressions. Max. dim. 4.8, th. 1.5. Cf. Cipolloni Sampò 1977–1982, fig. 34.1 from Rendina Period I; Muntoni 2003, fig.22 centre and tav. V from Pulo di Molfetta, Fondo Azzollini saggio 3 US10, Early Neolithic; S.Tinè 1983, tav. 67.66 from Passo di Corvo period III.
86	631	Pl.4. P2350. Ws. Impasto, pale greyish-brown outside, pinkish-brown inside, some small white and 1 large white lime (up to 8mm) inclusion, decorated with cockle shell impressions. Max. dim. 4.8, max. th. 1.0.
87	403/404	Pl.4. P912. Ws. Hard drab dark brown fabric with micaceous flecks and a few small white grits (up to 1mm). Decorated with clam shell impressions in irregular vertical rows. Max. dim. 6.1, th. 1.3. Cf. Cipolloni Sampò 1977–1982, fig. 34, 1,3,6 from Rendina Period 1; S.Tinè 1983, tav. 67. 66 from Passo di Corvo period III; Muntoni & Radina 1994, fig. 9, 1 from Capo Colonna, Trani.
88	631 A	Pl.4. P1718. Ws. Black impasto, outside surface black, interior buff. Decorated with vertical parallel clam shell impressions. Max. dim. 3.9, th. 1.4.
89	432	Pl.4. P1162. Ws. grey impasto, exterior smoothed and decorated with 4 rows of impressions made with a narrow-tipped tool. Max. dim. 5.5, th. 1.8. Cf. *Coppa Nevigata e il suo Territorio*, tav.III centre, from ditch at Coppa Nevigata; S.Tinè 1983, tav. 68.82 from Passo di Corvo period III.
90	827	Pl.4. P1944. Ws. from a large pot. Hard pinkish-brown clay, unburnished. Decorated on outer surface with irregular rows of cockle shell impressions, up to 2.2cm long, some parallel, some at slight angles. On one side of the sherd is part of a suspension hole. Max. dim. 8.5, th. 2.3. Cf. Cipolloni Sampò 1977–1982, fig. 33. 9 from Rendina Period 1; S.Tinè 1983, tav. 67.73 from Passo di Corvo period III.
91	827	Pl.4. P1945. Ws. Hard grey impasto with pinkish-brown exterior surface; numerous small white grits, especially on the outer surface. Dense but irregularly spaced rows of cockle shell impressions. Max. dim. 7.1, th. 1.2. Cf. Cipolloni Sampò 1977–1982, fig. 34.3, 7 from Rendina Period 1; S.Tinè 1983, tav. 67.66 from Passo di Corvo period III; Radi 2002, 700, row 2, centre, from Trasano phase I, dated between 6300 and 5300 BC; Muntoni 2003, tav. V from the Pulo di Molfetta, Early Neolithic.
92	631	Pl.4. P1621. Ws. Dark grey-brown impasto with numerous white (shell) specks, small brown pebble inclusion (3mm). Interior surface burnished, ext surface smoothed with 3 small groups of finger-nail incisions running horizontally (0.5-1.0 long). Max. dim. 4.5, Max. th. 1.8.

93	631	Pl.4. P1626. Ws. Grey impasto. Inner surface abraded. Exterior burnished beige and decorated with horizontal and oblique ?clam shell impressions. Max. dim. 6.3, th. 0.6. Cf. Cipolloni Sampò 1977–1982, fig. 34.7 from Rendina Period I.
94	827	Pl.4. P1948. Ws. of a large pot. Grey impasto with small brown inclusions (up to 1.5mm), surfaces burnished light brown inside and out. Decorated with impressed criss-crossing lines and long finger-nail impressions. Max. dim. 5.6, th. 2.2. Cf. Cipolloni Sampò 1977–1982 fig. 46.4 from Rendina Period II; S.Tinè 1983, tav. 70.95, Passo di Corvo period III.
95	210	Pl.4. P400. Ws thickening towards ?lug. Hard reddish-brown micaceous impasto with large brownish grits. Interior burnished brown. Exterior decorated with sparsely distributed clam shell impressions. Max. dim. 6.7, th. 2.6. Cf. S.Tinè 1983, tav. 68. 81 from Passo di Corvo period III ; Coppola 1983, fig. 15. 2 from Fontanelle near Ostuni; Santoro 1998, 17 fig. 2b from S.Spirito in the territory of Altamura (surface find).
96	631 F	Pl.4. P1713. Ws. with traces of handle spring? Black impasto, with small inclusion. Surfaces burnished beige. Exterior decoration of clam shell impressions. Max. dim. 4.6, th. 2.2. Cf. Coppola 1983, fig. 30.6 from Rialbo.
97	814	Pl.4. P1978. Ws. of large pot. Grey-black impasto, interior surface burnished brown, exterior surface burnished pinkish-brown and decorated with ?cockle shell impressions in irregular rows. Max. dim. 6.5, th. 1.2. Cf. Coppola 1983, fig. 30, 5 from Rialbo.
98	319/321	Pl.4. P746. Ws. Semi-fine black impasto, internal surface highly burnished black, exterior burnished pink and decorated with rows of finger-nail impressions. Max. dim. 12.1, th. 1.6. Cf. Coppola 1983, fig. 30, 5,8 from Rialbo.
99	631	Pl.4. P2349. Ws. Light greyish-brown impasto with a few small white inclusions, finger-nail impressions on outer surface, smooth finish inside. Max. dim. 5.0, th. 1.0.
100	631 1	Pl.4. P2079. Ws. Hard brown impasto with numerous small white grits and some brown grits up to 2mm. Interior smoothed black, exterior smoothed brown and decorated with scattered horizontal and oblique finger-nail impressions. Max. dim. 5.1, th. 1.4.
101	spor 612080/ 4518300	Pl.5. P2014. Ring handle and wall of large pot. Handle broken in 4 pieces; mended. Hard dark reddish-brown fabric with numerous small white grits and some larger white pink and reddish-brown pebbles (up to 4mm). Finger-nail impressions in loose rows. Max. dim. 12.1, th. 1.6. Cf. Coppola 1983, fig. 30, 1 from Rialbo.
102	432	Fig.1. P1203. Vertical ring handle and ws. Hard greyish-brown impasto, blackish in core. Row of 4 vertical finger-nail impressions above (below?) handle root (top or bottom uncertain). Max. dim. 8.5, th. 1.2.
103	432	Pl.5. P1167. Ws. Coarse biscuit coloured impasto. Interior highly burnished buff, exterior burnished pink and decorated with vertical and oblique shallow finger-nail impressions. Max. dim. 6.1, th. 1.0. Cf. Coppola 1983, fig. 30, 3 from Rialbo.
104	701	Pl.5. P1767. Ws. Hard well-fired reddish-brown impasto with small white and larger (1.5mm) brown inclusions, some pock marks (firing bubbles?) on outer surface. Exterior burnished pink and decorated with irregular rows of clam shell impressions, some grouped in pairs, ca. 0.2 deep. Max. dim. 10.5, th. 2.0.
105	432	Pl.5. P1164. Ws. carinated, probably of a small bowl. Grey impasto, surfaces burnished light grey. Exterior decorated with rows of small vertical impressions probably made with a clam shell. Max. dim. 4.7, th. 1.1. Cf. Coppola 1983, fig. 18.1 from Lamacornola; idem fig.22, 4-5 from Morelli Settlement A.
106	403/404	Pl.5. P908. Ws. from a large vessel. Hard reddish-brown fabric fired brighter red and dark grey in core. Sandy grits incl. pebbles up to ca. 3mm. Many small black specks, some mica. Very crudely decorated with irregular vertical and parallel fingertip impressions. Max. dim. 7.6, th. 2.2. Cf. Guilaine & Cremonesi 2003, 180 fig. 6 no. 2 from Torre Sabea, Early Neolithic; Coppola 1983, fig.23, 2 from Morelli Settlement A; Muntoni 2003, tav. VIII right, second from top, from Balsignano, Advanced Early Neolithic.
107	403/404	Pl.5. P906. Ws. from large vessel. Hard reddish-brown fabric with sandy grits and small pebble inclusions of various colours (especially white) often emerging on surface. Decorated with irregular rows of close-set parallel finger-nail impressions. Max. dim. 7.7, th. 2.8. Cf. Coppola 1983, fig.23,5 from Morelli Settlement A.
108	319/321	Pl.5. P747. Rim frag. Coarse fabric with pink surface inside and out, black core. Decoration of 4 rows of thin oblique parallel linear impressions, made with a straight-tipped tool. Max. dim. 6.3, th. 6.0. Cf. Radina 1987, tav. III, 4 from Ciccotto on Botromagno.

109	403/404	Pl.5. P914. Ws. Hard impasto with many gritty inclusions, especially white, often emerging on surface. Brick red outside; drab brown inside. Decorated with finger-nail impressions in irregular oblique rows. Max. dim. 5.9, th. 1.6. Cf. S.Tinè 1983 tav. 66.53, 67.63 from Passo di Corvo, period III; Coppola 1983, fig. 30, 8 from Rialbo.
110	319/321	Pl.5. P749. Ws. Semi-fine black impasto, interior surface highly burnished light brown, outer light brown, decorated with finger-nail impressions randomly spaced. Max. dim. 3.5, th. 5.0. Cf. S.Tinè 1983, tav. 68.82 from Passo di Corvo period III; Coppola 1983, fig. 15. 2 from Fontanelle near Ostuni.
111	432	Pl.5. P1163. Ws. Semi-fine light brown fabric with coarse white grits. Exterior burnished and decorated with vertical ?clam shell impressions (2 preserved on sherd). Max. dim. 3.9, th. 1.8.
112	631 1	Pl.5. P2078. Ws. Drab brown impasto, unburnished. Exterior has decoration of parallel rows of small wedge-shaped nicks (3 preserved on sherd), and 2 small pock marks. Max. dim. 6.2, th. 1.2. Cf. Coppola 1983, fig.23, 3-4 from Morelli Settlement A; *idem* fig.34.4,7 from Grotta Sant'Angelo. For the wedge-shaped nicks, cf. Natali 2009, fig. 7 Ptr/1, *punta circolare impressa* from Favella.
113	814	Pl.5. P1959. Ws. slightly carinated. Brown impasto, surfaces burnished buff. Decorated with parallel rows of clam shell impressions. Max. dim. 5.4, th. 0.9. Cf. Coppola 1983, fig.22, 6-7 from Morelli Settlement A.
114	403/404	Pl.5. P910. Ws. from a large storage pot. Very coarse hard fired reddish-brown fabric with sandy gritty inclusions including some white pebbles up to 5mm diam. emerging on inside and outside surfaces. Finger-tip impressions up to 3mm deep irregularly spaced. Max. dim. 9.0, th. 2.6. Cf. Coppola 1983, fig.23, 3 from Morelli Settlement A.
115	631 E	Pl.5. P1704. Ws. Biscuit coloured impasto, Surfaces burnished buff. Straight-edge and finger-tip impressions. Max. dim. 5.2, th. 1.6. Cf. Coppola 1983 fig.22.9 from Morelli Settlement A.
116	833	Pl.5. P1955. Neck sherd. Hard impasto, grey in core, pinkish-brown towards the edge. Surface burnished buff. Decorated with irregular rows of dragged finger-nail impressions. Max. dim. 5.7, th. 0.6. Cf. Coppola 1983, fig. 34, 9 from Grotta Sant'Angelo.
117	432	Pl.5. P1171. Ws. Coarse impasto, biscuit coloured. Surfaces light brown. Interior surface highly burnished. Exterior burnished and decorated with shallow finger-nail impressions. Max. dim. 7.0, th.1.2. Cf. Coppola 1983, fig.23, 1 from Morelli Settlement A (2nd half M6); S.Tinè 1983, tav. 68.81 from Passo di Corvo period III.
118	403/404	Pl.5. P905. Ws. Hard gritty fabric: dull light reddish on exterior, grey on interior. Small pebbles (up to 3mm in diam.) of varying colour emerge on surface. Slightly curved vertical ?clam-shell impressions, irregularly spaced. Max. dim. 6.0, th. 1.5. Cf. Guilaine & Cremonesi 2003, 180 fig. 3 no. 10 from Torre Sabea in Salento, Early Neolithic; S.Tinè 1983, tav. 68. 78 from Passo di Corvo period III; Coppola 1983, fig.23, 8-9 from Morelli Settlement A; Cipolloni Sampò 1977–1982, fig. 57, 8 from Rendina Period III; Simone 1977–1982, fig. 5.2 from Villa Comunale di Foggia, Advanced Early Neolithic.
119	432	Pl.5. P1204. Rim frag. of large pot, near vertical. Hard pinkish-brown impasto smoothed on surfaces, grey in core. 1 fairly large inclusion in the break. Vertical ?clam shell impressions of uneven depth. Max. dim. 5.3, th. 1.6. Cf. S.Tinè 1983, tav. 68. 81 from Passo di Corvo period III.
120	403/404	Pl.6. P911. Ws. Hard drab brown impasto with many sandy/gritty inclusions – pebbles up to 7mm. Very rough inside where the surface is worn. Exterior decorated with thin undulating impressions, perhaps made with a frag. of a scallop shell. Max. dim. 8.5, th. 2.1. Cf. Coppola 1983, fig. 34.2 and pp. 132-3 from the Grotta S.Angelo.near Ostuni.
121	403/404	Pl.6. P919. Ws. Impasto, grey in core, drab brown on exterior and reddish-brown on interior surface with small white gritty inclusions and some micaceous flecks. Decorated with vertical columns of oblique impressions made with the tip of a clam or mussel shell, ca. 1.5cm long, alternating in a "herring bone" pattern. Max. dim. 5.1, th. 1.6. Cf. Guilaine & Cremonesi 2003, 180 fig. 23 no. 2 (horizontally) from Torre Sabea in Salento, Early Neolithic; Simone 1977–1982, fig. 5.2 from Villa Comunale, "ceramica impresso di tipo arcaico", Advanced Early Neolithic; Coppola 1988, 64 and fig. 50 nos.1 and 2 from Santa Candida in plain ware. Santoro 1998, 17 fig. 3d from a site at the Masseria S.Agostino in the territory of Altamura (surface find).
122	403/404	Pl.6. P907. Ws. Hard gritty grey black impasto with some mica and many small black specks. Drab brown surface in and out. Exterior decorated with rows of oblique ?finger-nail impressed slashes in slight herring-bone pattern. Max. dim. 3.9, th. 1.5.

123	403/404	Pl.6. P923. Ws. Drab brown clay, dark grey in core, fired reddish inside, some grits mostly white, up to 3mm. A few micaceous flecks. Decorated outside with vertical rows of irregular small oblique notches arranged in "herring-bone" pattern. Max. dim. 5.8, th. 1.5.
124	432	Pl.6. P1166. Ws. Pinkish impasto, interior surface grey, exterior burnished red, decorated with rows of oblique ?clam shell notches arranged as broken chevrons. Max. dim. 5.4, th. 1.8. Cf. S.Tinè 1983, tav. 68. 78 from Passo di Corvo period III; Simone 1977–1982, fig. 5.2 from Villa comunale di Foggia, Advanced Early Neolithic.
125	319/321	Pl.6. P748. Ws. semi-fine. Light grey impasto with many small inclusions. Internal surface abraded. External surface buff, decorated with rows of horizontal and oblique parallel notches. Max. dim. 5.0, th. 1.6cm. Cf. Simone 1977–1982, fig. 5.1 from the Villa comunale di Foggia, Advanced Early Neolithic.
126	631	Pl.6. P1615. Ws. Grey impasto. Interior abraded. Exterior burnished buff and decorated with columns of thin oblique notches made with the tip of a clam or mussel shell. Max. dim. 6.8, th. 1.2. Cf. S.Tinè 1983, tav. 66.52-53, 68.81 from Passo di Corvo period III; Cipolloni Sampò 1977–1982, fig. 57, 7 from Rendina Period III. Mosso 1910, fig. 3 from the Pulo di Molfetta; Lo Porto 1992, fig. 52.2 from the Lunetta in Tirlecchia Village B.
127	403/404	Pl.6. P918. Ws. Hard reddish-brown fabric with small sandy/gritty inclusions; very roughly finished inside. Exterior decorated with irregular rows of oblique finger-nail impressions. Max. dim. 7.0, th. 1.8. Cf. Radina 2002a, 635, top right from Balsignano (advanced Early Neolithic).
128	432	Pl.6. P1170. Ws. Semi-fine biscuit coloured impasto. Interior abraded, exterior burnished pink; ?fingernail impressions in irregular rows. Max. dim. 5.2, th. 1.2.
129	432	Pl.6. P1172. Neck sherd. Light brown impasto, surfaces burnished red. Exterior decorated with oblique ?clam shell impressions. Max. dim. 4.1, th. 1.1.
130	432	Pl.6. P1173. Ws. Semi-fine light grey impasto. Internal surface abraded. Exterior burnished beige and decorated with rows of oblique ?clam shell impressions. Max. dim. 5.4, th. 1.1.
131	631	Pl.6. P2348. Ws. Hard pinkish-brown impasto with numerous white shell inclusions up to 3mm long and brown grits up to 2mm. Uneven columns of slightly serrated cockle shell impressions. Max. dim. 5.5, th. 1.4. Cf. Guilaine & Cremonesi 2003, 180 fig. 7 no. 7 from Torre Sabea, Early Neolithic; Natali 2009, tav. XXV no.22 from Favella, Early Neolithic.
132	631 1	Pl.6. P2077. Ws. Brown impasto with numerous medium and large inclusions in the break and on the interior surface. Exterior burnished brown and decorated with parallel rows of linear impressions made with the tip of a clam or mussel shell impressions. Max. dim. 6.8, th. 4.6.
133	631 5	Pl.6. P1707. Ws. from a large container. Inside burnished pink, Exterior buff coloured, decorated with numerous dragged finger-nail impressions. Max. dim. 10.0, th. 2.2. Cf. Guilaine & Cremonesi 2003, 180 fig. 18 no. 3 from Torre Sabea, Early Neolithic; S.Tinè 1983, tav. 67.55 from Passo di Corvo period III; Cipolloni Sampò 1977–1982, fig. 57, 11 from Rendina period III, Advanced Early Neolithic.
134	432	Fig.1. Pl.6. P2370. Rim. Greyish-brown, highly burnished inside only. Irregular finger-nail pinch marks on outside. Decoration on top of rim with criss-cross lines. Max. dim. 7.0, th. 1.2. Cf. Cipolloni Sampò 1977–1982, fig. 58, 15 from Rendina period III, Advanced Early Neolithic.
135	403/404	Fig.1. P909. Incurving rim. Hard fired. Drab brown clay with some small white grits and some micaceous flecks. Parallel rows of close-set fingertip impressions on exterior. Smooth-finished inside. Ø uncertain, pres. ht. 6.5, max. lg. 7.0. For the decoration cf. No.145 below.
136	631	Pl.6. P2351. Ws. Impasto, micaceous, some white inclusions up to 3mm (lime), hard, black outside, burnished brown inside, irregular rows of impressed notches outside. Max. dim. 5.5, th. 1.0. Cf. S.Tinè 1983, tav. 67.75 from Passo di Corvo period III. The motif corresponds to V. Tiné (ed.) 2009, fig. 7 Pe/1, *punta ellitica impressa* from Favella, Early Neolithic.
137	631	Pl.6. P1625. Ws. Rather soft brown clay with some small white and brown specks; surfaces burnished light brown. Elliptical notches, and shallower straight-edged impressions. Max. dim. 6.0, th. 1.8. For the criss-crossing notches cf. S.Tinè 1983, tav. 69.87 from Passo di Corvo period III.
138	403/404	Pl.6. P916. Ws. Hard fabric with some small white gritty inclusions and some micaceous flakes. Drab brown on exterior, dark grey/black in core and inside; decorated outside with shallow irregularly spaced fingertip impressions. Max. dim. 7.0, th. 0.8. Cipolloni Sampò 1977–1982, fig. 76.1,3 from Rendina period III; S.Tinè 1983, tav. 67.59 from Passo di Corvo period III; Radina 1981a, 54 fig.23.1-2 from Torre delle Monache, Rutigliano (Surface material).

139	631	Pl.6. P1624/Ws. Dark grey impasto, slightly micaceous. Surfaces burnished buff. Exterior decorated with scattered stick impressions. Max. dim. 5.2, th. 0.9. Cf. S.Tinè 1983, tav. 67.56, Passo di Corvo period III.
140	403/404	Pl.7. P917. Ws. of large storage pot. Hard reddish-brown fabric, burnt black on part of outside, some white gritty inclusions up to 2mm. Row of narrow undulating impressions perhaps made with a frag. of a scallop shell, flanked on each side by a: row of shallow finger-tip impressions. Max. dim. 6.7, th. 2.1. Cf. Coppola 1983, fig.22. 9 from Morelli Settlement A.
141	403/404	Pl.7. P899. Ws. of large pot. Hard fired drab brown impasto with white inclusions. Exterior decorated with rows of impressions made with a tpointed tool. Max. dim. 8.5, th. 2.3. Cf. S.Tinè 1983, tav. 67.55, Passo di Corvo period III.
142	403/404	Pl.7. P904. Ws. Drab reddish impasto, dark in core with sandy grits and small white pebbles (2mm); Triangular impressions up to 2mm deep with the clay dragged to one side. Max. dim. 4.8, th. 2.1. Cf. S.Tinè 1983, tav. 67.55, Passo di Corvo period III; Coppola 1983, fig. 30, 11 from Rialbo.
143	403/404	Pl.7. P915. Ws. Drab greyish-brown impasto with a few small white grits and micaceous flecks. Decorated with rows of irregular finger-nail impressions. Max. dim. 3.6, th. 1.2. Cf. S.Tinè 1983, tav. 67.63, Passo di Corvo period III.
144	403/404	Pl.7. P920. Ws. Drab greyish-brown clay, black towards centre. Decorated with rows of vertical, parallel finger-nail impressions. Max. dim. 3.6, th. 1.2. Cf. S.Tinè 1983, tav. 67.63, Passo di Corvo period III.
145	403/404	Pl.7. P922. Ws. of large storage pot. Hard fired, coarse dark grey impasto, some grits of varying colour up to 6mm. Exterior decorated fairly densely with parallel rows of fingertip impressions with clay dragged to one side on them. Max. dim. 7.0, th. 1.6. Cf. S.Tinè 1983, tav. 67.55, Passo di Corvo period III.
146	spor. 613450/ 4519900	Pl.7. P1968. Ws. Hard dark reddish-brown impasto with many small black grits. Outside surface decorated with a row of vertical parallel notches (damaged) and beginning of another row. Max. dim. 5.0, th. 1.2. Cf. Cipolloni Sampò 1977–1982, fig. 56.4 from Rendina Period III.
147	432	Pl.7. P1174. Ws. Semi-fine light brown impasto, internal surface partly abraded, external surface burnished brown with pinched finger-nail marks, randomly distributed. Max. dim. 11.0. Cf. S.Tinè 1983, tav. 67.54, Passo di Corvo period III.
148	814	Pl.7. P1960. Ws. Black-brown impasto with small inclusions and a fairly large one on outer surface, surfaces buff. Exterior decorated with impressed marks made with a three-pronged tool. Max. dim. 8.6, th. 1.2. Cf. S.Tinè 1983, tav. 67.57, Passo di Corvo period III.
149	814	Pl.7. P1961. Ws. Impasto, grey in core and grey brown towards outsides. Irregular columns of impressed cockle shell marks up to ca. 1.4 long. Max. dim. 7.7, th. 1.6. Cf. S.Tinè 1983, tav. 67.66, Passo di Corvo period III; Lo Porto 1988, tav. LXVII.4 from Grotta dei Pipistrelli.
150	827	Pl.7. P1949. Frag. of a flat rim. Hard grey impasto. Interior surface burnished pink, exterior burnished grey. Decorated with finger-tip impressions (5 preserved on sherd) on the wall below the rim, some with clay pulled to one side. Max. dim. 6.5, th. 1.5. Cf. S.Tinè 1983, tav. 67.54 and 55, Passo di Corvo "ceramiche impresse di tipo arcaico (classe a) period III; Lo Porto 1988, tav.LXVII.3 from Grotta dei Pipistrelli; Mosso 1910, fig. 51 from the Pulo di Molfetta.
151	827	Pl.7. P1947. Ws. Hard grey impasto, yellowish-grey on surface in and out. Exterior decorated with impressed irregular oblique rows of notches made with a triangular punch. Max. dim. 5.4, th. 1.2. Cf. S.Tinè 1983, tav. 67.55,57-8 from Passo di Corvo period III; Radina 1981 fig. 31.15 from Madonna delle Grazie I, Rutigliano; Lo Porto 1992, fig. 52.1 from Tirlecchia, village B; Muntoni 2003, tav. VIII right, second from top, from Balsignano, Advanced Early Neolithic.
152	319/321	Pl.7. P776. Ws. semi-fine. Light grey impasto, surfaces burnished beige. Exterior decorated with oblique rows of notches made with a triangular pointed tool. Max. dim. 5.2.
153	814	Pl.7. P1958. Ws. hard impasto, reddish in core and grey-brown towards the outside. Surfaces burnished grey. Exterior decorated with rows of irregular impressions made with a triangular punch. In some cases the clay has been pulled sideways. Max. dim. 5.0, th. 1.0.
154	631 A	Pl.7. P1717. Neck sherd from a flask. Impasto, micaceous with numerous medium sized inclusions. Surfaces light brown. Scatter of irregular impressions made with a triangular punch. Max. dim. 6.4, th. 1.1.
155	701	Pl.7. P1786. Ws. Drab greyish-brown impasto, surfaces brown. Exterior decorated with rows of vertical notches made with a neat triangular punch. Max. dim. 7.5, th. 0.9. Cf. Lo Porto 1998, tav. XXIX no.227 from the Lunetta at Murgia Timone, village B; Tramonti 1978, fig.2.1 from Trasano; Radina 2002a, 635, centre right from Balsignano (advanced Early Neolithic).

156	631	Fig.1. P1709. Frag. from a flat base. Impasto with surfaces burnished beige. Decorated immediately above the base with uneven rows of small nicks. Max. dim. 6.6, th. 1.7. Cf. Natali 2009, tav. XIV no.6 from Favella (Early Neolithic); Cipolloni Sampò 1977–1982, fig. 58, 15 from Rendina period III (Advanced Early Neolithic), Geniola 1979, fig.69 from Trinitapoli.
157	631	Pl.7. P1616. Ws. Grey impasto with small white inclusions. Interior surface burnished brown, exterior burnished pink and decorated with impressed triangular and oblong marks in herringbone pattern. Above the decoration are traces of a cordon or handle spring. Max. dim. 1.7, th. 0.5. Cf. Cremonesi 1979, fig.215 from Taranto; Martinelli 1987, fig. 3.3 from Mortara (Early Neolithic surface assemblage).
158	210	Pl.7. P395. Ws. Pinkish-brown impasto with many small rounded pebble inclusions (river sand). Outer surface burnished pink and decorated with an irregular pattern of oblique roughly triangular impressed notches. Max. dim. 11.0, th. 0.7. Cf. Cipolloni Sampò 1977–1982, fig. 56.9 from Rendina Period III; Coppola 1988b, fig. 61, 1b from Grotta della Tartaruga di Lama Giotta; Martinelli 1987, fig.2, 7 from Mortara (Early Neolithic surface assemblage).
1a-2. Pieces with rocker or micro-rocker impressed decoration The instruments used on these pieces were smooth-edged clam or similar bivalve shells.		
159	210	Pl.8. P396. Ws. Hard reddish-brown impasto, with numerous volcanic black, glassy inclusions and small brown pebbles (up to 6mm.). Exterior has an indented line, group of small notches made with a cockle shell, and lightly incised micro-rocker scratch marks. Max. dim. 8.7, th. 1.8. Cf. Cipolloni Sampò 1977–1982, fig. 32. 13 from Rendina Period I (end M7/ early M6 BC); Coppola 1983, fig.22. 3 from Morelli Settlement A.
160	210	Pl.8. P397. Ws. Hard fired impasto burnished reddish-brown on surface, dark grey in core. Rocker impressed zig-zag motif on outer surface. Interior highly burnished. Max. dim. 6.8, th. 1.0. Cf. S.Cassano & Manfredini 1983, fig. 41 from Masseria Valente (not dated), tav.II from ditch at Coppa Nevigata, and tav.VI from Masseria Candelaro; Santoro 1998, 19 fig. 3e from a site at the Masseria Santoro in the territory of Altamura (surface find).
161	403/404	Pl.8. P921. Ws. Drab brown impasto, dark grey in core with some small white grits. Smooth buff surface inside. Outside brown, decorated with 2 rows of shallow (1mm) finger-nail impressions and on the edge with a lightly incised micro-rocker decoration. Max. dim. 8.3, th. 1.8. Cf. Cipolloni Sampò 1977–1982, fig. 42. 1 from Rendina Period II.
162	210	Pl.8. P394. 3 joining frags. from the wall of a large container with perforation hole. Drab greyish-brown clay with a few small pebbles (up to 2mm). Row of impressed crescent shaped marks, and several others unaligned. Exterior and interior surfaces both burnished. Exterior decorated with 3 rows of rocker impressions. Max. dim. 10.3, th. 2.1. Cf. Guilaine & Cremonesi 2003, 180 fig. 20 no. 6 from Torre Sabea, Early Neolithic; S.Tinè 1983, tav. 67. 72 from Passo di Corvo period III; Vinson 1974, fig. 3. 3. from Casa San Paolo; Mosso 1910, fig. 56B from the Pulo di Molfetta.
163	spor. 613013/ 4518417	Pl.8. P2013. Ws. Very coarse pinkish-brown impasto with numerous grey and white grits and small pebbles, up to 4mm. Broken in two and mended. Exterior decorated with 2 rows of random rocker decoration on either side of a central stem. Max. dim. 8.2, th. 1.3. This type of dense but loose rocker decoration is found on sites in the Tavoliere applied to the outside of pots decorated internally in the style of La Quercia painted ware: cf. Trump 1987, fig. 83.a from La Quercia; Simone 1977–1982, fig. 6 no.11 from the Villa Comunale, Foggia, Advanced Early Neolithic.
164	827	Pl.8. P1950. Ws. Hard impasto, grey in core and brown towards surfaces. Surfaces burnished beige with 2 rows of rocker decoration and between them a row of incised Xs . Max. dim. 3.7, th. 1.0.
165	432	Pl.8. P1211, Rim. Hard light brown clay. Decorated externally with a tight rocker pattern resembling scales. Exact angle and diam. uncertain. Max. dim. 6.0, th. 1.0.
166	319/321	Pl.8. P745. Ws. semi-fine. Light grey impasto. Interior burnished black, exterior burnished beige and decorated with rows of rocker impressions. Max. dim. 7.3, th. 1.3. Cf. Cipolloni Sampò 1977–1982, fig. 53, 8 from Rendina Period III, ca. mid-M6 BC; Vinson 1975, fig. 12 from Casa San Paolo Hearth.
167	432	Pl.8. P1189. Ws. semi-fine light grey impasto, outer surface burnished grey, inner one much abraded. Decorated with 4 rows of rocker motif. Max. dim. 9.0. Cf. Muntoni 2003, 179 fig. 37, top right from Balsignano hut 1, Advanced Early Neolithic; Santoro 1998, 19 fig. 5a from a site at the Masseria Santoro in the territory of Altamura (surface find).
168	432	Pl.8. P2371. Ws. Hard fired reddish-brown clay, grey in core, drab brown inside. Much encrusted with lime. Parallel rows of rocker impressed decoration. Max. dim 7.4, max. th. 1.3. Cf. Cipolloni Sampò 1977–1982, fig. 58. 6 from Rendina period III.

169	827	Pl.8. P1946. Ws. Hard pinkish impasto with burnished brown surface inside. Dense vertical rows of "rocker" decoration on outside. Max. dim. 5.0, th. 0.8. Cf. Cipolloni Sampò 1977–1982, 267, 289, fig.33.8 from Rendina, Period III.

1b. Scratched ware

Before the end of Early Neolithic and for most of the Middle Neolithic phase some impasto pottery was fired black, burnished, and decorated with simple geometric patterns, lozenges, zigzags, triangles etc, scratched into the surface (see esp. R.Whitehouse 1969, 296-298). The decoration covered most of the pot and was incised when the surface had hardened, but before firing. The ware was especially popular in the Materano. It reached various sites in the Tavoliere (see esp. Trump 1987, 159-160), but was rare on the Murge (Muntoni 2003, 248), and is attested by only one piece in our Survey Area.
For the ware, see R.Whitehouse 1969, 296-298. The following piece has incised decoration similar to that of Matera scratched ware, but the frag. is too small for certainty, and other classifications cannot be ruled out (Eneolithic? Bronze Age?).

170	432	Pl.8. P1200. Ws. Dark grey impasto, surfaces highly burnished black. On outside 2 thin oblique incisions, parallel to each other, traces of white filling. Max. dim. 4.5, th. 1.1.

1c. Undecorated impasto pieces

Most of the finer impasto pieces on Early Neolithic sites were undecorated, though they were often burnished; and this tradition lasted throughout the Neolithic period. Frags. of the ware were found on the sites in our Survey Area which also produced impressed ware, but they are under-represented in this catalogue because of the impracticality of recording small wall sherds without form in detail.

171	827	Fig.1. P1943. Rim frag. of open shape. Pale brown impasto with blackish-brown glossy surface outside and inside to 1.3cm below rim. Some blackish grits and a water-worn pebble ca. 3mm in core. Max. dim. 4.0, Ø uncertain.
172	827	Fig.1. P1942. Flat base, strongly offset forming short concave stem. Hard-fired impasto, reddish in core, grey-brown on surfaces, some small grey and brown grits. Max. dim. 6.4, th. 1.4. Probably Neolithic. For the shape cf. S.Tinè 1983, tav. 69, 84, from Passo di Corvo, Period III. In "archaic impressed ware".
173	433	Fig.1. P1150. Frag. with short vertical rim turning into slightly convex shoulder. Hard pinkish brown fabric with some small white and brown inclusions. Smoothing marks made with a stick on outside wall. Ø 14.0, pres. ht. 3.2. Middle or Late Neolithic. The shape occurs in *figulina* ware at Ciccotto on Botromagno (Muntoni 2003, fig. 59 no.6) and in Serra d'Alto ware: cf. Bernabò Brea, 1976, tav. XVII nos.5, 6.
174	347-9 B1	Pl.8. P857. Small ring handle. Hard grey coarse impasto, pinkish inside. Max.dim. 4.6. Cf. S.Tinè 1983, tav. 117.628, from Passo di Corvo, Period IVa1; Ponzetti 1989, 63 fig. 76 from Malerba near Altamura.
175	347-9 B1	Pl.8. P856. Rim and broad vertical ring handle. Surfaces burnished brown. Max. dim. 6.0. Cf. Lo Porto 1998, tav. XXIX no.221 from the Lunetta at Murgia Timone.
176	631	Fig.1. P1711. Rim of large closed shape vessel. Hard fired impasto, brown in core with some small white inclusions, surfaces grey. Ø 17, ht. 2.6. Cf. S.Tinè 1983, tav. 112,567, from Passo di Corvo, Period IVa1.
177	824 605923/ 4520580	Fig.1. P1936. Rim frag. slightly incurving. Reddish fabric smoothed on surface. Max. dim. 3.3, th. 0.7. Cf. Coppola 1983, fig. 61.2 and p.116) from Rosa Marina B in apparently similar fabric. For the shape, see Manfredini 2002, 592, lower fig. no. 4 from Coppa Nevigata, Early Neolithic.

2. *Figulina*, including painted pottery (Middle and Late Neolithic, ca. 5600–3800 BC)
The development of *figulina* pottery made with purified clay marks the beginning of the Middle Neolithic period. Some plain pottery made without added grit had already appeared in Early Neolithic, using natural clay which must have been selected for its relatively fine quality. True *figulina* pottery was made from more specific clays rich in calcium, manganese and potash (Spataro 2009, 70). They were unsuitable for cooking pots since the calcium oxide component would make the pot likely to fragment at high temperatures, but were preferred for the lighter colour they gave to vessels used for eating and drinking. The clay had to be purified by being slaked in water and left to settle for several days to allow the coarser particles to sink, so that the finer material could be decanted. Archaeometric analyses show that *figulina* pots were fired at a considerably higher temperature (ca. 700–900°, in some cases reaching 900–1100°) which caused more minerals to fuse and resulted in the fabric of the pot being much harder and stronger (Muntoni 2003, 164, cf. Spataro 2009, 70). This was made possible by the development of two-tier kilns with separate combustion and firing chambers which allowed higher temperatures to be achieved in a more controlled atmosphere. The first excavated kilns in Apulia date to a late phase of Early Neolithic (S.Casssano *et al.* 1995, 39-50), but a long period of experimentation was needed before potters were able to achieve the temperatures needed for *figulina* pottery. True *figulina* ware began to be produced, on present evidence, in both the Tavoliere and in Salento ca. 5600–5400 BC, but only appeared on the Murge at the end of this period (Fiorentino *et al.* 2013, 8).
Another development around the middle of the M6 BC was the discovery of techniques of painting the surfaces of pots, using slips containing manganese to produce a matt brown-black paint. In La Quercia ware, which developed before the end of Early Neolithic, the paint was normally applied to impasto pots, but it was also used on some early plain ware pottery, as on our

Nos.186-190. A little later, in the Middle Neolithic, red paint, obtained by firing iron-rich slips in an oxidizing atmosphere, was introduced, as were white slips containing caolin (Corrado 2010, 66). The combination of colours gave rise to several distinctive decorative styles with different chronologies and ranges of distribution. The type site for identifying them is Passo di Corvo. which was excavated first by John Bradford in 1949–1950 (Trump 1987, 117-136), and then by Santo Tinè between 1967 and 1980 (S.Tinè 1983). Those found in our Survey Area include Red and White ware (Nos.191-196), with white bands on red surface, and Red-painted ware (Nos.197-199), decorated on the rim with reddish-brown bands. The painted tradition culminates in Serra d'Alto ware, discussed below subsection 2f.

2a. Undecorated figulina ware

178	432	Fig.1. P1206. Rim of open dish, oblique and slightly incurving. Hard brown clay slightly levigated. Horizontal wipe marks outside. Burnished inside and on top of rim. Diam. large but not ascertainable. Max. dim. 6.0, th. 1.6. Open dishes were a common shape in Middle Neolithic *figulina* ware. Cf. Muntoni 2003, 260-264 figs 56-58 from Ciccotto saggio 16N on Botromagno (various examples with minor differences in profile).
179	833	Fig.1. P2057. Oblique rim, tapering towards lip. Fine buff clay with moderate very fine white and dark inclusions and moderate very fine mica. Max. dim. 2.5, th. 0.6. Cf. Muntoni 2003, 262 fig. 56.4 from Ciccotto (Botromagno) saggio 16N, Middle Neolithic.
180	347-9	Fig.1. Pl.8. P849. Rim of open bowl with slightly convex wall. Hard pale yellowish-brown fabric, micaceous with numerous small black specks, highly burnished on both sides. Suspension hole pierced through wall at edge of sherd (wider inside than out (9mm inside, 5mm outside) inclined downward. Max. dim. 5.0, max. th. 1.0; Ø ca. 30.0. Cf. eg. S.Tinè 1983, tav. 94. 344 from Passo di Corvo period IVa2; Lo Porto 1998, tav XLI no.364 from the settlement at Murgia Timone in a plain greyish-brown fabric.
181	347-9	Fig.1. P824. Frag. of a rounded rim of a vessel with slightly carinated walls, Fine greyish clay. A small knob outside below rim, projecting 0.9cm. Max. dim. 4.3, th. at bottom of sherd 1.1. Cf. S.Tinè 1983, tav. 114.596 in undecorated brown ware from Passo di Corvo, Period IVb-c.
182	406 614600/ 451230	Pl.8. P1222. Ws. Grey partially levigated clay. Surfaces burnished grey. Thin cordon with vertical notches round outside. Max. dim. 5.0, th. 0.9. Cf. Lo Porto 1988, tav LXX.3, p.104 no.159 from the Grotta dei Pipistrelli near Matera in a similar fabric.
183	814	Fig.1. P1962. Flaring rim with slight indent below tip. Hard drab greyish brown rather gritty fabric with some mica. Exterior surface beige. Max. dim. 6.7, th. 0.7. The simple shape goes back to Early Neolithic in impasto, e.g. at Rendina in Period I (Cipolloni Sampò 1977–1982, fig. 38.1), but it continued into Middle Neolithic and is attested in *figulina* ware at Ciccotto on Botromagno: Muntoni 2003, 268-269, fig. 60, *scodella 1*.
184	824	Fig.1. P1938. Rim of bowl with tapering wall. Both surfaces highly burnished brown. A large inclusion on exterior surface. Max. dim. 10.0, th. 0.7.

2b. *Figulina* ware with impressed decoration

In the Middle Neolithic period impressed decoration began to be transferred from impasto to *figulina* pottery, and this mode of decoration continued in *figulina* well into Late Neolithic after the end of impressed impasto ware. In the Materano and in Central Apulia it is found in very small amounts at Tirlecchia (Bernabò Brea 1984, 56 and fig. 9.14) and at Scamuso in period II (Muntoni 2003, 64), Middle Neolithic, and at Santa Candida in Late Neolithic, with more complex herring-bone patterns (Coppola 1988, 64 and fig. 50 nos.1 and 2). Only one instance was found in our survey.

185	814	Fig.1. P1963. Rim frag. slightly incurving. Pale pinkish-brown surface, grey fabric. Small pock marks made with the fingernail on exterior. Levigated clay. Max. dim. 5.1, th.1.2. Cf. Muntoni 2003, 272 and fig. 56 no.2, fig. 58 no.6 from Ciccotto on Botromagno saggio 16N, Middle Neolithic.

2c. Painted with thin brown lines

The following pieces are in plain ware painted with reticulated motifs in thin brown lines. They resemble the so-called La Quercia ware of the Tavoliere, named from a site at the Masseria La Quercia near Ordona, excavated by Bradford in 1950 where great quantities of the pottery were found: Jones *et al.* 1987, 130-131, 150-159 (D. Trump). The ware occurs at Passo di Corvo in Period III (latter part of Early Neolithic (S.Tinè 1983, 61-62). According to Muntoni (2003, 68) it is not found in Central Apulia, but a sherd decorated in this style is reported from the site of Malerba near Altamura (Geniola & Ponzetti 1987, 214 and fig. 3 no 12). The style is characterized by a range of simple geometric motifs – hatched triangles, rectangles, chequers etc. painted in thin brown lines on the base clay. In larger pots the fabric is impasto, but on smaller ones, with walls less then 1.0cm thick, the fabric may be purified clay. On impasto pieces, painted decoration is sometimes combined with rocker-impressed patterns (frequently at the Masseria La Quercia; apparently less frequently at Passo di Corvo). Our pieces differ in that they are both in plain ware and neither has impressed decoration.

A number of pieces with this type of decoration were found in the excavations of the Neolithic trenched village at the Masseria Candelaro, in contexts of Phase II, datable to the mid-M6 BC: S. Cassano & Manfredini (eds.) 2004, tav. I, nos. 3, 4, 7.

186	432	Pl.9. P1178. Ws. Pinkish-brown clay, turning yellowish on outside; burnished. Painted net pattern in dark brown, and a large blob of red paint at top of sherd. Max. dim. 10.5. Cf. Simone 1977–1982, fig. 7, 17 from the Villa comunale di Foggia; Trump 1987, 151, fig 83.b and c from the Masseria La Quercia, Advanced Early Neolithic; Santoro 1998, 19 fig. 11d from Dirienzo in the territory of Altamura (surface find).
187	432	Pl.9. P1179. Ws. Pinkish-brown clay. Inside surface eroded. Outside burnished. Horizontal and oblique lines painted in brown. Max. dim. 6.0.
2d. Red painted ware (Middle–Late Neolithic mid-M6– early M5 BC) The practice of painting *figulina* pottery with red stripes was introduced in Central Apulia at the beginning of Middle Neolithic: cf. Muntoni 2003, 64. The ware corresponds to S. Tinè's class l at Passo di Corvo: *ceramiche dipinte con fasce rosse sul bordo*, found in contexts of Period IVa1 (Middle Neolithic): S.Tinè 1983, 65 and tav. 82. Cf. also S.Cassano & Manfredini (eds.) 2004, tav. IX no. 11 from Masseria Candelaro Phase III (2nd half M6 BC). The type is attested at the Masseria Serra Loparco in the territory of Matera and at several sites in the territory of Altamura, including the Masseria S.Agostino (surface finds: Santoro 1998, 27 fig. 12), and it is well represented in Middle Neolithic contexts at Ciccotto on Botromagno: Muntoni 2003, 250-255.		
188	432	Pl.9. P1183. Ws. from a bowl. Orange-brown *figulina* with paler surface in; slightly burnished out; reddish-brown paint. Interior (illustrated) decorated with vertical line, 3 oblique lines parallel to each and a fourth oblique line joining the lowest of the 3 at an acute angle. Wide horizontal band on exterior. Max. dim.7.6. Cf. Trump 1987, 253, fig. 85 for various bowls from the excavations at La Quercia decorated on the interior with groups of parallel stripes at varying angles.
189	432	Pl.9. P2367. Ws. Hard reddish-brown *figulina*, dark orange red slip out, dark orange red lines set at right angles inside. Max. dim. 4.9, th. 0.9.
190	432	Pl.9. P1180. Ws. Medium brown *figulina* burnished inside and out. Interior decorated with 3 parallel slightly curved lines running across the centre of the sherd, and part of a fourth at a different angle in one corner. Reddish-brown paint. Max. dim. 4.5, th. 1.
191	432	Pl.9. P1212. Rim frag. of open shape. Hard brown clay, reddish-brown paint (slip) around rim, esp inside, down to ca. 1.1cm. Burnished inside. A suspension hole shows at extreme edge of sherd. Max. dim. 8.5. Cf. S.Tinè 1983, tav. 82.219, Period IVa1.
192	432	Fig.1. Pl.9, P1181. Rim. Very fine, well purified medium brown clay, burnished out and in. Reddish-brown paint; band on outside of rim and another round inside on rim. Solid angular motif on outside. Max. dim. 6.0, th. 0.5. Cf. Coppola 1988, 51 fig. 34.5 from Scamuso Period II, late M6 or early M5BC (radiocarbon dates p. 40, re-calibrated in Fiorentino et al 2013, 6 Table 1); Lorenzi & Serradimigni 2009, 47, fig. 4.3 from Le Grottelline near Spinazzola; Muntoni 2003, 260 fig. 54.1-3, fig. 58.4 from Ciccotto on Botromagno, saggio 16N, Middle Neolithic.
193	432	Fig.1. Pl.9, P2366. Vertical rim and splayed shoulder. Hard pinkish-brown clay, semi lustrous reddish-brown painted band round top of rim. Rim is slightly asymmetrical. Ø ca. 2.0, w. rim 1.5. For the shape, S.Tinè 1983, tav. 82.210 from Passo di Corvo, *ceramiche figuline*, Period IVa1.
2e. Red and White ware The ware corresponds to S.Tinè's class h: *ceramiche dipinte con motivi in bianco e rosso*, found at Passo di Corvo in Period IVa1 (Middle Neolithic): S.Tinè 1983, 64-65, 75 and tav. XIII.1 and tav. 79. Several pieces with this type of decoration were found in the excavations of the Neolithic trenched village at the Masseria Candelaro: S.Cassano & Manfredini (eds.) 2004, tav. I, nos. 6, 8 (Phase II, mid-M6 BC), tav. IV no. 2 (Phase III, last half M6 BC); and others in the Lower Cave of the Grotta Scaloria (Middle Neolithic, ca. 5500–5200 BC): Traverso 2016, 213 fig. 5.1.15.1 and 2.		
194	432	Fig.1. P1213. Ws. from a carinated vessel. Hard pinkish-brown clay, pale brown paint (slip) in upper part of outside. Reddish-brown slip below it on outside. Surfaces burnished brown, the exterior highly burnished. Max. dim. 5.2, th. 1.3. Cf. S.Tinè 1983, tav. 79, 183, from Passo di Corvo.
195	347-9	Pl.9. P843. Ws. of a wide-bellied vessel with sharply curving wall. Hard pinkish-brown *figulina*. Interior burnished pink. On exterior, white band and burnished brown band running obliquely across carination. Brown band fired to reddish-brown near bottom of sherd. Max. dim. 11.4. Cf. S.Tinè 1983, tav.79, 183, from Passo di Corvo.
196	347-9	Pl.9. P848. Sharply incurving ws. thick at point of curve. Pale brown clay decorated outside with a) burnished brown band and b) creamy coloured band obliquely over carination. Max. dim. 5.0, th. 0.3/1.0.
197	432	Pl.9. P1182. Ws. Grey-brown *figulina*, surfaces highly burnished brown. Outside angular motif over-painted in white. 1 white inclusion on exterior surface. Max. dim. 6.0. Cf. S.Tinè 1983, tav. XIII.1, also tav. 79.186, from Passo di Corvo.

198	432	Pl.9. P2365. Ws. Hard fired reddish-brown *figulina*, white slip outside over-painted with reddish-brown vertical stripes slightly burnished. Max. dim. 6.5, th. 0.5/0.9. See above No.197.
199	432	Pl.9. P2369. Ws. Orange-brown hard fabric, highly burnished outside and in, white paint on exterior worn but apparently in bands. Max. dim. 3.2, th. 0.8.
2f. Serra d'Alto ware (Late Neolithic). Serra d'Alto ware represents the acme of Apulian Neolithic pottery. It is named after a site located across the ravine from the modern centre of Matera, where there was a large Neolithic settlement excavated by Ridola and Rellini in the first quarter of the 20th century (Rellini 1934; Lo Porto 1989) which yielded abundant pottery in hard-fired *figulina* ware painted with meanders, spirals, triangles and other geometric motifs in purplish-brown paint. Many pots had horizontal tubular handles, often surmounted by animal or other appendages. The ware was probably produced at the site (though the only kiln so far discovered was producing earlier red-painted ware: Lo Porto 1989, 48). It was perhaps also made at some other sites in the Materano; but the production of the pottery probably required a high degree of skill, and the ware is likely to have been made by specialist potters in a limited number of workshops. It marks, at any rate, a new degree of specialization. The products were widely distributed, reaching the Aeolian islands and the Po valley (lists of occurrences and distribution map in R.Whitehouse 1969, 290-291 fig. 11; Saracino 2005, 35).		
200	223	Pl.9. P4306. Painted tubular handle and attachment to neck. Base of a ?zoomorphic *protome* at apex of turn. Drab grey-brown clay, cream slip outside, matt dark brown paint – 2 bars down each side and 1 horizontal cross bar and band at join with neck. Max. dim. 4.0. Cf. Geniola 1979, 113 fig.257 from Scoglio del Tonno.
201	347-9	Pl.9. P826. Frag. probably from the upper part of a grip-handle. Pale brown clay, thin reddish- brown slip. Max. dim. ca. 5.0. Cf. Lo Porto 1988, tav. LXXXII.5-6 from the Grotta dei Pipistrelli.
202	223	Pl.9. P4557. Frag. of vertical strap handle with projecting knob. Pinkish-brown clay with pale brown surface, black-brown paint. Broken ladder pattern, circle on top of knob. Max. dim. 3.1, th. 0.5, Ø of knob 1.1, projects 0.2. A puzzling piece. The knobbed motif seems Neolithic (cf. No.200 above), but the quality of the clay and paint resembles the geometric pottery of the Early Iron Age.
3. Diana-Bellavista ware (Final Neolithic) This was a regional variant of the unpainted but highly burnished Diana ware which was widespread throughout South Italy in the latest phase of Neolithic. The Apulian variant is named after the site at the Masseria Bellavista near Taranto where there were numerous Final Neolithic burials equipped with pots of this type. It represents a return to a simpler type of pottery made of hard-fired compact dark clay, characterized especially by thin tubular handles spreading towards the edges which were attached to the rims of bowls (as on No.205). Although plainer than the preceding Serra d'Alto ware, it was technically even more advanced.		
203	347-9	Pl.9. P839. Tubular ring handle (*ansa a canone)*. Pale brown clay with buff surfaces. Max. dim. 6.5, th. 0.5. Cf. Lo Porto 1988, tav. LXXIV.7,8 from Grotta dei Pipistrelli in *figulina* ware of the Diana-Bellavista culture; Ingravallo 1997, fig. 38 from S.Anna, Oria. Another more fragmentary tubular handle, P839, was found on the same site.
204	347-9 Ar.349	Fig.1. P862. Rim and part of tubular handle. Fine hard grey fabric burnished inside and out. Max. dim. 4.2. Cf. Lo Porto 1988, tav. LXXXIV.4 from Grotta dei Pipistrelli; Ciancio & L'Abbate 2013, 168 fig. 18 from Contrada Chienna (Rutigliano); Ponzetti 1989, 21 fig.23 from Malerba near Altamura; Santoro 1998, 29 fig. 14f from the Masseria Serra Loparco in the territory of Matera (surface find).
4. Macchia a Mare ware (Final Neolithic, transitional to Eneolithic, 1st half M4 BC) The ware is named after Macchia a Mare in the Gargano, one of a number of sites on the coast of the promontory between Lago di Varano and Rodi Garganico where it marks the end of the Neolithic pottery tradition. Its most characteristic pottery type is a bowl in hard-fired grey-black impasto with flaring wall, decorated on the inside a little below the rim with a simple zigzag line (cf. Corrado 2010, 94 and tav. XVIII, top left and right). Similar or closely related material has also been found on several sites in Central Puglia, where it has been variously classified as Final Neolithic and Eneolithic.		
205	347-9 Ar.348 B2	Fig.1. P838. Rim frag. of bowl with flaring wall. Hard grey fabric, irregular zig-zag pattern faintly incised on inside just below rim. Max. dim. 6.0, th. 1.1. Cf. Geniola 1979, 90 and fig. 199; also Radina 1989, 15-17 fig.2 nos 1-2, 7 from Madonna delle Grazie at Rutigliano; Coppola 1983, fig. 60.1 from Rosa Marina B at Ostuni (considered Neolithic); Radina 1988, fig. 186 no.1 from Santa Candida (considered Eneolithic).

2/3. NEOLITHIC OR BRONZE AGE

In the following three pieces the potter evidently rested the pot on a mat which he must have used as a simple turning device, leaving characteristic impressions in the damp clay.

They are difficult to date. The comparanda for such mat impressions are Neolithic, which suits the context of No.206. The context of Nos.207 and 208, however, is Bronze Age (with later re-occupation in the Hellenistic/Roman period). None of the three can be dated by shape. It seems probable that the potting technique continued in use well into the BA.

Base sherds of impasto showing impressions of woven mats The following three pieces, all flat frags. from the bases of pots, show the imprints of woven basketry mats on the underside, caused by the potter resting the wet clay of the pot on the mat during the construction process. He probably used the mat as a simple turning device. Such imprints are barely known from S Italy, but have been reported from several Neolithic sites in the North, especially in the territory of Ravenna. A recent study of basketry imprints from N Italian sites by S.Harris (2013) provides good parallels for all our pieces. In the case of No.206, the mat was made by coiling the passive element (a reed?) and stitching it at intervals with a flat active element (straw?). The example published by Harris belongs to a late phase of the N Italian Square Mouthed Pottery culture of the Middle Neolithic (ca. 4900–4250 BC), but she notes that the technique is attested elsewhere in N Italian Early Neolithic. Since our piece comes from Site 210 which was occupied in the (S. Italian) Early and Middle Neolithic, it is more likely to date to the M6 than the M5. The remaining two pieces were made on mats in which the passive elements (plant stalks) are stitched together with a woven thread (twining). The technique is attested from the Middle into Late Neolithic in N Italy, i.e. in the M5 BC, which corresponds to Late Neolithic in Apulia. Our two pieces come from Site 716 which produced much impasto pottery including Nos.237, 245, 307 and 341 all assigned to the BA as well as 120 pieces without shape or decoration.		
206	210	Fig.1, Pl.9. P398. Base frag. Grey-red very sandy impasto with numerous white and some brown and black inclusions; exterior surface grey, interior surface lost. Underside marked with the impressions of a spirally coiled mat of thin reeds, bound at intervals by thinner (straw?) cross stitches. Max. dim. 3.4. Cf. Harris 2013, 119 fig.21 from Rocca di Rivoli (Verona).
207	716 612771/ 4520074	Pl.9. P1828. Base frag. Coarse sandy impasto, black in core, dark brown on inner surface, reddish-brown on outer surface, marked with impressions of close twining in 3 parallel rows. Max. dim. 2.6, th. 0.8. Cf. Harris 2013, 117 fig. 17 from Quinzano (Verona) on the base of a pot of the Middle Neolithic Square-Mouthed Pottery culture of N Italy, ca. 4900–4250 BC.
208	716 612771/ 4520074	Pl.9.P1826. Base frag. Fabric as No.207. Marked with impressions of irregularly spaced twining in 2 double, partly overlapping rows and 2 single rows. Max. dim. 4.3, th.1.0. Cf. Harris 2013, 117 fig. 18 from Quinzano (Verona) in the same cultural context as No.207.

3. IMPASTO POTTERY OF THE COPPER, BRONZE AND IRON AGES

I Introduction

The *figulina* tradition of pottery manufacture died out in South Italy at the end of Neolithic, leaving impasto with added grit as the normal ware in the Eneolithic and Bronze Ages for all types of pottery. It continued well into the IA long after the introduction of the matt-painted "geometric" pottery (Section 4) around the turn of the 2nd/1st millennium BC. Impasto eventually gave place to the *dolia* of refined clay and cooking wares of Greek derivation which were introduced in the course of the late C6/ C5 BC.

Eneolithic/ Copper Age

After the end of the Diana-Bellavista culture of Final Neolithic there appears to have been a demographic and cultural crisis which affected the whole of South Italy. The impasto pottery tradition continued, but it was fragmented into various regional and sub-regional styles. Few settlements continued to be occupied throughout this period with the result that it has proved difficult to establish cultural sequences, and there are still many gaps in our knowledge of pottery typologies. Nevertheless, there are some decorative features in some of the impasto pottery from our survey area which are found in one or other of the Eneolithic pottery styles current in South Italy at some point in this long period, and which allow the pieces to be registered accordingly, even though none of them has enough shape to be classified by form. Several sherds (see Nos.209, 210) are decorated externally with rows of dense rounded thumb- or finger-impressions which create an undulating surface quite different from the sharper-edged impressions of Neolithic pottery; one of them also has narrow parallel furrows. Both motifs are typical of a middle phase of Eneolithic, corresponding perhaps to the late 4th or early 3rd millennium BC.

Other typical Eneolithic elements are the dense "scales" of impasto applied to the pot surface as seen on No.211, and the use of triangular and cross-shaped punches as on Nos.211b and 211c. The scales appear already in the middle phase of Eneolithic in Calabria but continue into the Laterza period of Late Eneolithic in Apulia. The punched patterns also belong to this late phase of Eneolithic. The parallel incised lines enclosing rows of dots seen on No.211a are also typical of the Laterza culture.

The Eneolithic fragments are found only on Sites 347-9, 432 and 824. It is possible that some other pottery from these sites which has been assigned to the Neolithic or BA is in fact Eneolithic. They include some of the finger indented patterns classified here as Neolithic, and some of the finger indented cordons classified as BA. The motifs ae found in both cultural phases, and without stratigraphic definition it is difficult to be sure.

Bronze Age

The BA ceramics are better known, if only because they form an evolving sequence without the discontinuities of the Eneolithic period.

The quality of the impasto was determined by the function of the pot. Large vessels used for cooking or storage were made in a particularly coarse fabric with thick walls. Their surfaces were frequently wet-smoothed and occasionally lightly burnished. The pots were often unevenly fired; the surface colour consequently varied considerably from brown to reddish-brown to blackish-brown, while the core was frequently lighter grey. In the Iron Age, the pots were generally more evenly fired, though the core might still be lighter greyish, and the surfaces were generally less smooth, and rarely burnished.

In the BA the rims of large coarse-ware pots were often decorated with rows of finger- or stick-impressed notches, and the walls might sprout small lugs or arched grips to assist handling. They frequently had cordons running either straight or undulating around the shoulder, enlivened with finger-impressions. These were functional in that they made it easier to grasp the pot, or to tie a lid of leather or fabric to its mouth, or to hold a rope in place by which the pot might be suspended over a fire. The finger-impressed cordons continued into the IA on some pots, but their importance was progressively reduced, leaving lugs (especially elongated vertical ones) as the main feature of the pot.

Finer pots, especially cups and bowls used for eating and drinking, were generally made with finer grit, and were regularly wet-smoothed, and burnished on both the inner and outer surfaces with a stick or other tool, to produce a glossy finish that both looked pleasant and improved the impermeability of the pot. In the MBA the potters generally aimed to produce an attractive dark brown ware, whereas in the LBA, and especially in the FBA and EIA the finer pots were often fired black and were highly burnished. In the fine wares the carinated bowls and smaller mugs were fashioned with a wide range of ornamental vertical handles, rising high above the rims; and at the peak of the Apennine culture in the MBA, the walls of these vessels were often decorated with bold meander or spiral patterns either excised in the surface of the pot or imprinted with numerous dots between spaced parallel lines. The dots were frequently filled with white.

The shapes used in the bodies of impasto pots are generally very simple, easily built up by hand from coils of clay. Most forms were developed in the EBA and were gradually adopted and modified over more or less the whole of the Italian peninsula south of the Po valley. It was not a uniform process. A study of common pottery forms used in different parts of the peninsula early in the MBA has shown that that there were various sub-regional groupings (Damiani 1996). By the end of the MBA the forms had become more standardized, but even then, there were centrifugal tendencies within the culture which show themselves in marked regional and even local preferences for the specific types of decorative elements that potters attached to the vessels: the cordons and knobs of the large coarse pots, and the handle forms of the fine-ware vessels. (Trump 1958, 169-181). In Central Apulia, Radina (2010, 34) distinguishes two regions on the basis of ceramic typology: (a) the North Barese, more open to contact with the Ofanto valley and the Tavoliere, and (b) the South, with affinities with the Ionian-Salentine area. These variations have been plotted in detail in some areas, especially where there have been major excavations of large BA sites, but not yet in the Basentello valley where there has been very little excavation. Our surface finds suggest, however, that the BA culture of the valley is distinct in several respects from that of neighbouring regions. We have found no BA impasto pottery with excised ornament, although this technique of decorating fine impasto pots was widespread in the Tavoliere and the Ofanto valley and in Campania; and only two of our sherds exhibit the dot-filled patterns that were favoured in the MBA in some other parts of Apulia (notably at Taranto) and in Lucania. In this respect the BA pottery from our area conforms to the norm in Central Apulia and the Materano where the walls of fine-ware pots were usually left undecorated (Trump 1958, 180; Peroni 1967, 95, S. Bianco in Bianco & Cataldo 1994, 106).

Another factor which appears to distinguish our fine-ware vessels from those found in adjacent areas is the lack of handle-types with distinctive appendages. To judge by our very limited sample, the standard handle type, at least towards the end of the BA was a vertical "axe" handle which split into two branches with a long narrow cleft (Nos.340,341). Axe handles with a central aperture were common in the Apennine culture, but not of this form. Another fragment, No.337, must come from the top of a divided handle, and shows that it was formed like an inverted hollow delta. It is possible, though not certain, that it shows how the cleft type of No.340 terminated. Without a good parallel from a well-dated site, the date of these pieces is uncertain, though the fact that both Nos.337 and 340 are in highly burnished black impasto suggests that they are of the Final Bronze Age, or perhaps Early Iron Age, as the rather inadequate comparanda for No.337 given below might suggest.

Towards the end of the BA, several new shapes were introduced, especially deep bowls with in-turned rims in fine black-burnished ware (Nos.219-226). A particular form of this bowl with a "turban" twist to the rim is characteristic of the FBA and EIA periods (Nos.227-235).

The Early Iron Age

During the EIA matt-painted "geometric" pottery of purified clay was increasingly used in S Italy, especially for vessels intended for eating and drinking and for storing food. The role of impasto pottery was correspondingly diminished, e.g. at Ripacandida (Carollo & Osanna 2012, 400). The highly-burnished fine black impasto came to an end, but coarser brown impasto pots continued to be made, predominantly *situlae* and the *pithoi* with out-turned rim used for storage and cooking and for the *enchytrismos* burial of infants. Impasto pottery continued to be made throughout the C6 and probably into the early C5 when it gave place (gradually) to wheel-made cooking wares. The latest impasto pieces already show the use of a fairly fast wheel, resulting in

thinner, lighter, and more symmetrical pots. Examples have been noted in the pottery associated with the *anaktoron* of Torre di Satriano, dated ca. 560–475 BC (Ferreri 2012, 61).

Because many of the impasto shapes continued with little alteration from the EBA into the EIA, it has proved impossible to separate the two periods systematically in this catalogue. Without stratified evidence, it is often impossible to be sure how a piece should be classified by period. The catalogue is therefore arranged typologically, by shape or decorative feature. The comparanda which are given are not intended to be exhaustive – rather to indicate the form of the pot to which a fragment may have belonged, and the possible chronological range of the shape. A single piece will be a very unreliable guide to chronology, but when combined with the evidence of the other artifacts with which a piece is associated on the site where it was found, it is often possible to make some inferences about the probable date of the pot, and (with care to avoid the dangers of a circular argument) the date of the site, and its place in the series of BA/EIA sites in the survey area.

II. Catalogue

A. Eneolithic (Copper Age)		
1. Impressed ware Several pieces from Site 432, and one from Site 347-9 are decorated with rows of close thumb or finger impressions which create an undulating exterior surface. This type of decoration seems to have been confined to large storage pots and begins immediately below the rim. It was current in the middle phases of Eneolithic in much of South Italy, e.g. at Malanotte in the Gargano peninsula (Palma di Cesnola & Vagliardi 1984, 73-74 and fig. 88, row 1 left); on pottery from the Grotta dei Pipistrelli, Matera (Lo Porto 1988, tav. LXXXVI.4-6 and p. 121), and on pots from the necropolis of S. Antonio, Buccino, tomb 3.25, dated by radiocarbon analysis of human bone to 4320 +- 120 BP = 2490–2250 BC (uncalibrated), attributed to the Gaudo culture (Holloway 1973, 26 and pls 15 and 30). It is also found in Calabria in pottery of the Gallo-Colarizzi facies, notably at the site of Gallo di Briatico for which there are two radiocarbon dates equivalent to 3015–2920 BC and 3010–2890 BC (Pacciarelli 2011, 275-278 and fig. 12). It is likely, therefore that these pieces illustrate a cultural phase in the middle of the Eneolithic period, immediately preceding the development of the Laterza culture.		
209	347-9 Ar. 349 E4	Pl.9. P861.Wall sherd. Reddish-brown impasto, grey in core. Cordon with deep finger impressions. Max. dim. 6.2, th. (below cordon) 1.0.
210	432	Pl. 9. P1177. Wall sherd. Light grey coarse impasto. Surfaces burnished buff. 2 shallow parallel furrows at top (?) of sherd and rows of shallow thumb- or finger-impressed indentations below on outer surface. Angle of sherd uncertain. Max. dim. 9.7. The shallow parallel furrows are a characteristic feature of Eneolithic pottery, especially in the Piano Conte style that preceded the Laterza culture in Apulia: see Palma di Cesnola & Vagliardi 1984, 71 and 74 for examples from Malanotte. This piece therefore combines two typical Eneolithic motifs. 2 other sherds with similar indented surfaces from Site 432.
2. Scaly ware No.211 has pieces of clay resembling scales applied to the surface. The technique is characteristic of Eneolithic over much of South Italy (cf. e.g. Cremonesi 1980, 413 and tav. I no.5 from the Grotta Pertosa). It is seen already in the Middle Eneolithic phase in Calabria (as on Pacciarelli 2011, fig. 12.2 and 12 from Gallo di Briatico and Colarizzi on the Tropea peninsula); but in Apulia it is especially characteristic of the Laterza culture of Late Eneolithic (as at Lama Rossa near Rutigliano: Radina 1989, 21 and fig.7.9).		
211	347-9 Ar. 349 E4	Pl.9. P863. Rim frag. of large open pot. Coarse reddish-brown impasto, grey in core, white grits (shell) up to 2.5mm. Applied scales of clay in at least 2 rows. Max. dim. 6.8, max. th. 1.4. Cf. Palma di Cesnola & Vigliardi 1984, 72, fig 88, row 2, left, from Malanotte in the Gargano; Radina, 1981, 74-76, fig. 37, 1-6, 9.
3. Incised and dotted ware Although very small, 211a is decorated with incised lines enclosing narrow rows of dots typical of some pottery of the Laterza culture. It was found on Site 824 together with Late Neo and BA sherds.		
211a	824	Fig.2. Pl.9. P1940. Ws. Black impasto. On exterior 4 parallel rows of impressed dots in single file between horizontal lines; a vertical double file of dots below. Traces of white fill in the dots. Max. dim. 2.9, th. 0.9. Cf. Biancofiore 1979a, 145, fig. 332, Laterza culture.
4. Punch-decorated ware The following two pieces have been decorated on the outer surface with punched triangles (No.211b) and crosses (No.211c). The technique is typical of Late Eneolithic (cf. Pacciarelli 2011, 279).		
211b	432	Pl. 9. P1176. Wall sherd. Brown impasto. Surfaces burnished light brown. Exterior decorated with small triangular notches made with a punch. Max. dim. 5.1. Cf. the rows of punched triangles on a sherd from a Late Eneolithic context at Lama Rossa near Rutigliano: Radina 1989, 21 and fig. 7.11, 17.

211c	432	Fig.7. Pl.9. P1199. Black impasto, surfaces burnished buff, exterior decorated with a motif of shallow crosses incised and arranged in rows, probably 2 double rows at right angles. Traces of white fill in some of the crosses. Max. dim. 3.9, th. 1.2. Cf. Lo Porto 1988, tav. LXXV no.332 from Murgecchia. He assigns the piece to the MBA, but the motif is typical of the Zungri-Corazzo *facies* of the transition from Eneolithic to EBA in Calabria which is also found in the Materano: see Pacciarelli 2011
For another possible Eneolithic piece from Site 347-9, see No.321 below.		
B. Bronze Age		
1. Carinated bowls Bowls with out-turned rims merging with concave necks and with carinated walls, made in fine burnished impasto, were in use throughout the Bronze Age. They vary considerably in proportions. Earlier examples tend to have taller and less concave necks and more rounded bodies. The shape is still found in the EIA layers of Parco S. Stefano at Botromagno, (*Gravina (PBSR) III (1)*, fig. 23, nos. 176-177), and in the earlier contexts at Incoronata: Castoldi 1986a, 66 and cat. 2, 3, and has been reported at Monte Irsi (IA, redeposited: *Monte Irsi*, fig. 21 no.58), and at Roccagloriosa where occupation appears to begin in the C5 (*Roccagloriosa* I, fig. 175.3a). but these late instances are exceptional. The shape is not attested in the EIA contexts at Timpone della Motta where the impasto pottery has been fully published (Colelli & Jacobsen 2013), and none of the bowls listed here was found associated with geometric monochrome pottery of the EIA.		
212	824	Fig.2. P1935. Out-turned rim of slightly carinated vessel. Surfaces burnished brown. Ø uncertain, pres. ht. 3.2, th. 0.7. Cf. Fornaro 1988, 106, fig. 83d from Bari S. Scolastica (MBA).
213	433	Fig.2. P1197. Carinated bowl rim. Black impasto. Surfaces highly burnished. Ø 13.0, th. 1.1. Cf. *Coppa Nevigata e il suo Territorio*, fig.73.5; Fornaro 1988, 106, fig. 83.8 from Bari S. Scolastica (MBA).
214	433	Fig.2. P1198. Frag. of bowl with out-turned rim and carinated wall, black burnished. Ø ca. 18.0, th. 0.9. Cf. Radina 1988b, fig. 127.1 from S. Maria del Buon Consiglio, Bari (EBA). The shape continued with little or no change into the EIA: cf. Ciriello *et al.* 2012, fig. 10 no.3 from Monte Serico.
215	433	Fig.2. P1185. Rim frag. of bowl with out-turned slightly tapering rim and carinated wall, black burnished. Ø uncertain, pres. ht. 3.5, th. 1.5. Cf. Cazzella & Recchia 2012, tav. 24.4 from Coppa Nevigata from a context of Late Subapennine 2B (end of LBA).
216	622	Fig.2. P1480. Ws from a carinated bowl. Surfaces highly burnished black. Ø uncertain, pres. ht. 3.3, th. 0.6. Cf. Cazzella & Recchia 2012, 92 tav. 24.5 from a Late Subapennine 2B context at Coppa Nevigata (end of LBA); Baumgartel 1953, fig. 2 no.11 in burnished black impasto from *stratum III* in the Grotta Manaccora (FBA).
217	625 C	Fig.2. P2068. Complete profile of carinated bowl – 2 joining sherds, handle missing. Mastos-shaped, with concave rim above carination. Black impasto, highly burnished inside and out. Ø 14.0, th. 1.0. The type begins in the MBA and lasts into the FBA. Cf. e.g. Barker 1976, fig. 4.12 from Petrella, Molise (MBA); Cazzella & Recchia 2012, tav. 12.9-10 from a Late Subapennine 2B context at Coppa Nevigata (LBA, C12 BC); Pagliara *et al.* 2007, fig. 12 IV.18 from Roca Vecchia, Phase IV (FBA1); Giardino 1994, fig. 69 no.23A from Broglio di Trebisacce (LBA); Buffa, 1994a, 551 and tav. 83.18 in lustrous black impasto from Broglio di Trebisacce (rim profile, FBA). The fabric suggests that our piece is FBA.
218	433	Fig.2. P1151. Part of carinated cup, including 1 side of lower part of handle, and wall to below carination. Rim profile preserved at edge of sherd. Medium brown impasto with smoothing marks, highly burnished. Ø (est. at carination) 20.0 (v. approx), pres. ht. to rim 5.0, th. at bottom of sherd 0.6. For a complete example of the type, cf. Lo Porto 2006–2007, fig. 42 no.342 and p. 417 from *grotticella* Tomb 1 at Cappuccini (Matera), attributed to Protoapennine B (C17 BC).
2. Bowls with tapering walls and plain in-turned rims (*scodelle*) Wide bowls with tapering sides and slightly in-turned rims in burnished impasto were popular in the full BA. In the FBA the rims become more sharply in-turned, and the impasto generally blacker and more highly burnished. They are still common in the EIA contexts at Gravina: cf. *Gravina (PBSR) III (1)*, 129 nos.181,185 from Parco Santo Stefano (Gravina); also Herring, in R.Whitehouse *et al.* 2000, 26 fig 14a and b from an EIA 1 context on Botromagno; De Faveri 2005, tav. XV.6 from Torre di Satriano (IA); Greco & Soppelsa 2012, 448 and fig. 20 from the EIA village at Serra di Vaglio (with refs). Those listed here below are all in highly burnished black impasto and are likely to be FBA or EIA. They are found associated with BA pottery on Sites 622 and 625, and with EIA pottery on Site 223. See now Cossalter in *PSF* 44-45 tav. 1.6 for a piece of this shape with applied serpentine motif on the shoulder in a context of late C8 – mid-C7 BC.		
219	625 C	Fig.2. P2069. Rim, sharply incurving and rounded. Highly burnished black impasto. Consists of 2 joining frags. Ø ca. 15.0, th. 1.2.

220	622 D	Fig.2. P1507. In-turned rim of small and fine pot. Very fine highly burnished black impasto. Ø and exact angle uncertain, pres. ht. 1.0, th. 0.2.
221	223 E29N19	Fig.2. P4388. Black impasto, highly burnished inside and out. Ø ca. 30.0, max. th. 0.9.
222	622	Fig.2. P1502. Carinated ws, probably from a bowl of this type, but in reddish-brown impasto, lightly burnished outside. Ø uncertain, max. lg. 4.8.
223	223 E42N19	Fig.2. P4430. Rim of carinated bowl. Highly burnished black impasto. Ø 14.0.
224	223 E24N27	Fig.2. (angle approximate). P4245. Rim of carinated bowl. Highly burnished black impasto, brown outside below carination. Ø ca. 25.0, th.7.5.
225	629 gen.	Fig.2. P8161. Rim and handle spring. Hard reddish-brown slightly micaceous impasto, black, lightly burnished inside. Rim damaged: exact angle uncertain. Ø rim ca. 30.0, max. dim. 5.5.
226	622 C	Fig.2. P1487. In-turned rim of large bowl. Black impasto, burnished inside and out, with clear traces of burnishing tool on the surface. Ø ca. 32.0, th. 1.1.
3. Bowls with tapering walls and in-turned rims with oblique turban-edge ribbing See the comments on the shape in *Gravina (PBSR) III (1)*, 130, cat. 182. They are common in South Italy in FBA and EIA sites. For some more recently published examples from datable contexts, cf. Orlando 1994, fig. 9.1 from an FBA context at Otranto; Muntoni 1996, tav. XXX.4,7 from Madonna del Petto near Barletta (FBA); Pancrazzi 1979a, 132 and fig. 42 from the lowest, EIA, layer of Sector B at Cavallino; Castoldi 1986a, 65-66, tav. 28.7, 8, also Tibiletti 1991, fig. 13, from "fossa indigena no.3" at Incoronata, end C9/ first decades C8; Kleibrink 2006, 93 fig. 33.6 from the *casa al muro grande* at Timpone della Motta (EIA). Two other examples from Botromagno, published by Herring in R.Whitehouse *et al.* 2000, 34, come from a context dated to the C7 BC. The form is still found in burials of the C6 at Gravina, though these late examples are easily distinguished by their smaller size and drab reddish-brown impasto. Several other small frags. of black-burnished turban-rimmed bowls were recorded from Sites 223 (P4389, P4434). and 407 (P1050). For the handle type, see No.335 All the pieces listed here come from sites which have also produced geometric monochrome pottery typical of the EIA, except No.232 from Site 715.		
227	401/409 Ar.409	Fig.2. P8092. Rim frag. Black highly burnished impasto with slight turban twist across rim. Ø ca. 28.0 (v. approx).
228	401/409 Ar.401	Fig.2. P2394. Rim frag. Highly burnished black impasto. Exact Ø and angle uncertain, pres. ht. 2.2.
229	629	Fig.2. P8159. Rim frag. Dark greyish-brown impasto with numerous minute white gritty inclusions; some mica. Surfaces smoothed but not burnished. Ø ca. 25.0.
230	629	Fig.2. P1589. Rim, wall and handle spring. Blackish impasto, highly burnished reddish-brown outside and inside. Ø uncertain, pres. ht. 4.6.
231	223 E16N28	Fig.2. P4015. Small rim frag. Highly burnished black outside, unburnished drab brown inside. Ø uncertain, pres. ht. 3.9.
232	715	Fig.3. P1969. Rim frag. Drab dark grey impasto with some mica. Surface worn leaving only slight traces of burnishing. 1 turban facet and start of another. Ø uncertain, pres. ht. 3.6.
233	223 E47N25	Fig.3. P4529. Rim frag. Highly burnished black impasto, 1 turban facet running obliquely across sherd, carination below rim. Ø uncertain, pres. ht. 2.5.
234	223 E32N18	Fig.3. P4401. Small rim frag. in black burnished impasto. Ø uncertain, pres. ht. 2.8.
235	223 Ar. 245	Fig.3. P647. Rim frag. Burnished dark brown impasto. Ø uncertain, pres. ht. 2.6.
4. Bowls, of varying dimensions, with steep, slightly convex sides The simple form was in use at least from EBA to EIA. Most of the pieces listed here come from sites which have also produced BA pottery, though No.243 comes from site 223 which begins in the FBA/ EIA.		
236	824	Fig.3. P1937. Rim. Black impasto, surfaces burnished brown. Ø ca. 15.0. Cf. Pancrazzi 1979, fig. 112 no.1 from Cavallino (MBA); Capoferri & Trucco 1994,153 fig. 59 no.58 from Broglio di Trebisacce (MBA), with vertical strap handle.
237	716	Fig.3. P1829. Rim of a large open shape with slightly tapering wall. Black impasto. Internal surface burnished beige, external one burnished brown. Max. dim. 6.2, Ø uncertain. As No.236 but larger. Cf. Radina *et al.* 2008, 179 fig. 4.3 from Carluva, EBA.
238	433	Fig.3. P1186. Rim of large pot. Dark greyish-brown impasto; surfaces smoothed and burnished dark brown. Max. dim. 8.5, Ø uncertain. Cf. Pancrazzi 1979b, fig. 112 no.2 from Cavallino (MBA); *Coppa Nevigata e il suo Territorio*, fig. 78.23 (MBA); Giardino 1994, tav. 34 no.29 from Broglio di Trebisacce (FBA); Buffa 1994, tav. 86 no.28 from Broglio di Trebisacce (FBA/ EIA); *Monte Irsi*, fig. 21 no.52 (IA, redeposited); Mutino 2006, tav. IX.99911 from Barrata (undated).

239	622 B	Fig.3. P1486. Rim of large bowl or small *situla*. Black impasto burnished outside and in. Max. lg. 3.0, th. 0.9. Cf. No.238. The fabric suggests an FBA date.
240	712	Fig.3. P8064. Rim. Grey impasto with numerous greyish-brown grits, 1 pebble 0.6cm long; outer surface highly burnished, inner lightly burnished. Rim rises to right of sherd as if to a handle. Max. dim. 4.6, pres. ht. 3.5, pres. w. 3.2, th. at rim 0.6, at bottom 0.8. Cf. Fornaro 1988, fig. 85.4 from Bari, S. Scolastica (MBA).
241	622 C	Fig.3. P1513. Black impasto slightly burnished on outside, decorated with shallow notches on top of rim. Ø. ca. 15.0, th. 1.0. Shape as No.238, but with notched rim.
242	712 H3	Fig.3. P1973. Rim and wall of small bowl – slight indentation 1cm below rim. Near vertical wall thickened and in-turning sharply near bottom of sherd. Grey impasto with mottled lighter areas on surface, highly burnished on outside. Ø. ca. 13.0. Close to Capoferri & Trucco 1994, tav. 17 no.18 from Broglio di Trebisacce (MBA) but a little less bulbous.
243	223 E58N22	Fig.3. P4995. Rim and part of wall of deep bowl. Brown impasto, light grey in core with many black and brown grits (up to 3mm) and a little mica. Tip of rim slightly out-turned, wall incurving towards rim. Horizontal turning or smoothing marks on upper part of wall inside suggest made on a slow wheel. Angle and Ø uncertain. Pres. ht. 11.8. Cf. Pancrazzi 1979, 129 and fig. 40.8 and 9 from the middle layer of Sector B at Cavallino, tentatively dated to C8/ C7 BC; also Colelli & Jacobsen 2013, tav. 108, form g – *scodelloni* at Timpone della Motta (IA).
5. Deep bowls with straight, slightly tapering, sides The simple shape was in use throughout most of the BA, continuing well into the IA. Two of these pieces (Nos.244 and 245) have notched rims.		
244	622 E	Fig.3. P2110. Rim of deep bowl. Impasto. Surfaces black and abraded, but very slight traces of burnishing. Exterior decorated with 3 vertical notches, irregularly spaced. Max. dim. 4.4, th. 1.1. Cf. Baumgartel 1953, 15, fig. 7.2 and 9 from the Grotta di Manaccora *stratum III* (FBA) (with lug handles).
245	716	Fig.3. P1827. Rim of deep bowl. Pinkish-brown impasto, grey in core, unburnished. 1 notch and traces of 2 others ca. 7mm apart, on top of rim. Max. dim. 4.2, th. 1.2. Cf. No.244.
246	824	Fig.3. P1939. Rim, probably of deep bowl with vertical lip and slightly convex wall. Hard grey impasto, highly burnished greyish-brown surface. Ø 23, pres. ht. 2.9, th. at base 0.7. Cf. Cazzella *et al.* 2012, .fig. 72.7 from Coppa Nevigata (MBA); Giardino 1994, tav. 36.12 from Broglio di Trebisacce (LBA); Buffa tav. 98.32 from Broglio di Trebisacce (FBA/EIA); *Monte Sannace* tav. 148 no, 6 from a context of Phase 1 (end C9–mid-C7 BC), with notched rim.
6. Deep bowls/ *situlae* with straight, slightly tapering, sides, and rims bevelled on the inside; in coarse impasto, unburnished An EIA type.		
6a. With cordons below the rim		
247	223 E35N24	Fig.3. Pl.10. P4449. Rim and upper wall. Hard reddish-brown impasto, grey in core. Thick cordon below rim; smoothed exterior. Ø uncertain, max. dim. ca. 7.0, th. at break 1.0. The hard dense fabric and uniform finish of this piece distinguish it from other impasto pottery in the survey area and suggest that it was either an import or made by a visiting artisan. For the shape, cf. Buffa 1994a, fig. 150 no.42d from Broglio di Trebisacce (FBA/EIA); Muntoni 1996, 186 and tav XXIX.8 from Barletta, FBA; Ciriello *et al.* 2012, fig. 11 no.39 from Monte Serico (EIA). Close to Colelli & Jacobsen 2013, 178 and tav. 71 no, 299 from Timpone della Motta, unstratified, but referable to the pre-Greek settlement of the C8 or early C7 BC (with undulating cordon). For the cordon: *ibid*, tav. 105, e3 and e4 variant 1. Cf. No.262 (much smaller).
248	223 E23N27	Fig.3. P4229. Rim with finger impressed cordon. Hard impasto, pinkish-brown surface, grey in core, numerous small white grits and some larger brown ones. Slanting rim. Traces of 3 impressions perhaps finger made. Angle of sherd uncertain. (if rim horizontal this was a wide mouthed bowl – as drawn –, if oblique, a *situla*). Max. dim. 5.3, Ø uncertain Cf. Buffa 1994b, fig. 152 no.64c from Broglio di Trebisacce (FBA/ EIA); *Monte Sannace* tav. 116 no.1 (Phase I: end C9 – mid-C7 BC); *Monte Irsi* pl. XX no.55 (with added lug), IA re-deposited.
6b. With lug-knobs below the rim		
249	401/409 Ar.401 L13	Fig.3. P8089. Rim and lug; rim bevelled with tip slightly out-turned. Light greyish-brown impasto, slightly micaceous. Ø 16.0 (v. approx). Close to Colelli & Jacobsen 2013, tav. 48 no.174 from Timpone della Motta (IA); Ferreri 2012, 62, fig. 1b from the *anaktoron* at Torre di Satriano, ca. 560–475 BC.

6c. As 6b but with no lug preserved on sherd		
250	223 E38N23	Fig.3. P4405. Rim. Hard fired greyish impasto, numerous small white grits, rim bevelled inside. Ø ca. 24.0, ht. 4.7. Cf. *Gravina (PBSR) III (1)*, fig. 24 no.191 from Parco S. Stefano at Botromagno, Gravina (EIA); also Tibiletti 1991, 90, fig. 126 from Incoronata, *Fossa greca* n. 5, first half C7 BC.
251	223 E37N21	Fig.3. P455. Rim. Hard fired reddish-brown, grey in core, slightly micaceous, gritty – some brown and white inclusions up to 2mm. Rim bevelled inside. Ø ca. 20.0, ht. 3.5. Cf. Castoldi 1986a, tav. 27.6 from Incoronata (EIA); Colelli & Jacobsen 2013,190 and tav. 79 no.336 from Timpone della Motta, EIA.
7. Deep bowls/ *situlae* with straight, slightly tapering, sides, flat-topped rims and lug-knobs at or below the rim; in coarse impasto, unburnished Such lug–knobs are a common feature on deep impasto pots throughout Central and South Italy in the Early Iron Age. Cf. e.g. Colelli & Jacobsen 2013, 244 and tav. 112 nos. 11 (vertical elongated) and 12 (rounded).		
252	629	Fig.4. P2075. Rim, lug and upper wall. Drab brown impasto with a little mica; some white inclusions up to 1.5mm. Smoothed inside; roughly finished outside. Ø ca. 29.0, pres. ht. 7.0. Cf. *Gravina (PBSR) III (1)*, 126 fig. 22 nos. 168, 169 from Parco S. Stefano, Gravina (Period Gravina I: EIA); Lo Porto 2004, 38-39 nos. 81, 82 from the Borgo Nuovo deposit in Taranto, 790–740 BC; Garaffa & Vullo 2009, 35, fig. 2e from Torre di Satriano, C6 BC.
253	629	Fig.4. P8157. Drab brown impasto, unburnished, roughly shaped (so Ø uncertain); rim dips to left of knob. Ø ca. 16.0, pres. ht. 4.9. Cf. *Monte Sannace* tav. 145 no 1 of Phase 1 (end C9 – mid-C7 BC).
254	629	Fig.4. P1590. Rim with lug below rim edge. Black burnished impasto. Body of piece below the lug shows evidence of vertical combing. Max. dim. 6.0, Ø uncertain. Cf. No.253.
255	401/409 Ar.409	Fig.4. P8093. Rim and lug. Drab dark grey impasto, white and brown inclusions slightly micaceous, dull reddish-brown out and on top of rim. Bottom of lug missing. Ø ca. 21.0, pres. ht. ca. 2.5.
256	629	Fig.4. P8160. Rim and vertical lug. Hard reddish-brown impasto; some mica. Ø ca. 22.0, pres. ht. 3.7. Cf. *Gravina (PBSR) III (1)*, pl. XXII no.192 from Parco S. Stefano, Gravina (EIA); Lo Porto 1964, 205, fig. 21.10, and 206, fig. 22.12 from Porto Saturo (FBA/ EIA), Small in *Cozzo Presepe,* 315, fig. 105 no.110, Site A, Phase 1B, late C8–end C7 BC; Pancrazzi 1979, 129 fig. 41 nos 8, 9 from Cavallino, listed among types common to all 3 levels, i.e. from C10–C6 BC. A similar piece was found in the excavation of *Saggio A* on San Felice in a context of the C6/ C5 BC: Cossalter, *PSF,* 76 tav. I.5. Cf. also No.349.
8. *Situlae*: bucket shaped pots with convex sides and cordons or knobs below the rim The shape appears frequently in contexts ranging from EBA to MIA. A pot of this type from an EBA context at Coppa Nevigata dated by radiocarbon analysis to C19/ C18 BC contained residues of cereals and olive oil: Evans & Recchia 2001–2003, 196 fig. 1, CN 24. For other instances, cf. e.g. Lukesh 1975, 42, fig. 38 nos 2-6 from Tufariello (EBA); Gorgoglione *et al.* 1993 tav. XXVII.2 from Torre Castelluccia (FBA); Lo Porto 1964, fig. 21.4 from the "Protovillanovan" (FBA) middle levels of *stratum d* at Satyrion (with finger-impressed cordon), and fig. 22.2 from the upper "Villanovan" (FBA2) levels of the same stratum (with notched lug). A complete pot (restored from frags.) of this type was found in the *grotticella*-kitchen of the "villanovan" phase there: *ibid*, p. 207, fig. 24, text p. 209. A nearly complete example was found in the EIA hut Vb at Timpone della Motta: Kleibrink 2006, fig. 33.6. The type probably continued well into the C7 BC: see the discussion of *situlae* used for *enchytrismos* burials in R.Whitehouse *et al.* 2000, 71, and fig. 27 from Botromagno. Of those listed here, No.258 is associated on Site 721 with BA material, and No.260 on Site 622 and No.258 on Site 629 with FBA/ EIA.		
8a. With plain rims		
257	629	Fig.4. P1594. *Situla* rim with lug. Drab greyish-brown impasto. Max. dim. 7.1, th. 1.4, Ø uncertain. Cf. *Gravina (PBSR) III (1)*. 126-7 no.168 from the EIA site at Parco Santo Stefano, Gravina; Castoldi 1986a, tav. 27.1 from Incoronata (EIA); Buffa 1994a, 747 tav. 156.7 from tomb XXXVI at Torre Mordillo (C8 BC). See now Cossalter in *PSF* 44-45 tav. 1.2 for a piece of this shape associated with hut debris of late C8 – mid–C7 BC.
258	721	Fig.4. P1985. Rim sherd. Drab greyish-black impasto, surfaces brown and partly abraded. Small projecting cordon with small irregularly shaped notches. Max. dim. 4.0, th. 0.9.
8b. With notched rim Two other frags. with notched rims, Nos.241 and 288, were found on this site (Site 622).		
259	622	Fig.4. P1535. *Situla* rim with oblique notches on top (3 in preserved part) and beginning of vertical lug. Drab brown impasto, grey in core. Max. dim. 3.8, th.1.5 . For the notched rim on this shape of pot, cf. Cinquepalmi & Radina, 1998, 159 no.9.040 "olla situliforme" from Torre Santa Sabina (?LBA); Cazzella *et al.* 2012, tav. 27 no.2 from Coppa Nevigata (FBA).

9. Large basin with slightly out-turned rim		
260	433 conc. 1.	Fig.4. P1188. Frag. of large bowl with sloping sides and out-turned rim. Thick impasto, dark grey in core, reddish at surface outside and on top, blackish inside. Outer surface wet-smoothed (not burnished). 1 grey pebble inclusion 0.7cm. Ø ca. 30.0, but rim very uneven making calculation uncertain. Cf. Giardino 1994, tav. 39 no.21, tav. 49 no.2 from Broglio di Trebisacce (LBA); Buffa 1994b, tav. 451m no.3, tav. 93 no.22, tav. 94 no.10 (FBA/ EIA) also from Broglio di Trebisacce.
10. Goblets with straight tapering walls		
261	625 C	Fig.4. P2070. Rim of small straight-sided pot, drab brown impasto with smoothed surface. Ø ca. 11.0, pres. ht. 3.9, th. 1.0. The piece probably turned steeply inwards below the break: cf. Capoferri & Trucco 1994, fig. 66 no.11 from Broglio di Trebisacce (MBA); Buffa 1994b, fig. 150 no.37 also from Broglio di Trebisacce (FBA/ EIA).
262	223 E28N17	Fig.4. P4853. Rim with elongated horizontal lug or partial cordon. Dull reddish-brown impasto. Ø ca. 14.0, ht. 4.8. Pots of this shape with cordons similarly placed below the rim were common at Broglio di Trebisacce in the LBA (Giardino 1994, fig. 68 3A) and FBA/ EIA (Buffa 1994b, 514 fig. 150 42d); Castoldi 1997, from the Greek *oikos* of *Saggio H* at Incoronata, late C8/ early C7 BC; Colelli & Jacobsen 2013, 234, tav 104 b – *coppe* b5 variants 1 and 2, from Timpone della Motta, C8 or early C7 BC. Cf. No.247.
263	223 E37N23	Fig.4. P4440. Hard grey impasto. Ø uncertain. Max. dim. 4.5. Probably from a small bowl of drinking vessel: cf. Colelli & Jacobsen 2013, 234, tav 104 b – *coppe*, from Timpone della Motta, C8 or early C7 BC.
11. Miscellaneous thickened or out-turned rims Nos.267 and 268 were associated with BA material on Site 721, and No.265 on Site 433. The remaining pieces were found on Sites 223 (San Felice) and 401/409 (Crocevelina) which began in the FBA and were occupied throughout the IA.		
264	223 E58N21	Fig.5. P4981. Rim, upper wall and lug. Hard brown impasto, unburnished. Outer surface fired partly dark brown, partly orange. Grey in core, numerous brown grits up to ca.1mm. Small vertical lug (max. 2.3×1.8) below rim. Ø uncertain, pres. ht. 3.8. Cf. Buffa 1994b, tav. 88 no.4 from Broglio di Trebisacce (FBA/ EIA) (without lug on sherd).
265	433	Fig.5. P1187. Jar rim, thickened externally. Drab greyish-brown impasto. Max. dim. 5.5, th.1.4. See Cossalter in *PSF,* 44-45 tav. 1.1 for a similar, but wider, piece of this shape associated with hut debris of late C8 – mid–C7 BC. Cf. also Cazzella & Recchia 2012, tav. 27.12 from Coppa Nevigata, context of Subapennine 2b – end of LBA (rather larger); Buffa 1994b, tav. 87 no.26 from Broglio di Trebisacce (FBA/ EIA); Castoldi 1997, 119 fig. 137 from Incoronata, late C8/ early C7 BC (larger).
266	223 E60N16	Fig.5. P413. Rim and wall of globular cooking pot. Rim slightly out-turned and very uneven. 2 projecting knobs with indented centres on shoulder. Hard reddish-brown impasto, greyish in core; large (up to 3mm) brown and greyish-brown grits (smooth surface: river washed), some quartz. Outer surface rough. Fairly close to Ferreri 2012, 64, fig. 3b from the *anaktoron* at Torre di Satriano, ca. 650–475 BC, in *ceramica da fuoco* – but this ware includes material intermediate between impasto and cookpot: cf. No.364.
267	721	Fig.5. P1987. Rim, thickened and incurving. Hard reddish-brown impasto, dark grey in core, lightly burnished. Max. dim. 6.3, th. 1.7. Cf. Coppola 1983, fig. 83, 16, 22 from Carestia, probably EBA.
268	721	Fig.5. P1979. Rim of large *pithos*, out-turned. Thick reddish-brown impasto, dark grey in core. Much battered. Ø uncertain, pres. ht. 5.5, th. rim 3.7. Cf. Fornaro 1988, 130 no.247, fig. 116.2 from San Francesco della Scarpa (Bari), *stratum a,* ?protoapennine/ EBA. Broadly similar thickened and out-turned rims are a feature of many of the cordoned *dolia* (*dolii cordonati*) found at Broglio di Trebisacce in the LBA and FBA: Tenaglia 1994, 346-371.
269	401/409 Ar.401	Fig.5. P2398. Drab greyish-brown impasto, micaceous with numerous white, brown, black grits, Flat rim slightly projecting out. Ø ca. 19.0. The shape appears to be imitating a Greek type: cf. Castoldi 1997, fig. 82 from the Greek *oikos* in *saggio H* at Incoronata, ca. 2nd quarter C7 BC.
12. Small pots with out-turned rims in fine black impasto The ware is typically FBA/ EIA.		
270	629	Fig.5. P1516. Small jar rim, fine burnished black impasto turning brown on inside of rim. Ø 10.0, pres. ht. 1.7. Cf. *Gravina (PBSR) III (1)*, 128, fig. 23 no.180 from an EIA context at Parco Santo Stefano, Gravina; Buffa 1994b, fig. 165 f5c from Broglio di Trebisacce (EIA); Carollo & Osanna 2012, 402 fig. 13 from Ripacandida (EIA).
271	223 E30N23	Fig.5. P4828. Jar rim. Highly burnished. Ø. ca. 12.0.

272	401/409 Ar.401 B11	Fig.5. P1010. Frag. of handle of ?*kantharos*, broken off at rim attachment and thickened as handle begins to turn downwards. Very fine thin impasto with highly burnished black exterior. Max. dim. 2.0. Angle of rim uncertain. Cf. Colelli & Jacobsen 2013, 213 tav. 92 no.403 from the IA site of Timpone della Motta, sporadic (in burnished reddish-brown impasto); Buffa 1994b, fig. 165 f5b from Broglio di Trebisacce (FBA/ EIA) in plain *figulina* ware.
13. Large storage jars – *pithoi* – with slightly convex walls and out-turned rims The shape had a long run. It is attested in EBA (cf. Lukesh 1975, fig. 40 no.6 from Tufariello). There is a complete (restored) example from hut γ at Leporano (MBA): Lo Porto 1963, fig. 29 (with finger-impressed cordon on the shoulder). The shape continued in use well into the IA, and is seen in several pieces found in the excavation of *Saggio A* on San Felice in a context of the C6/C5 BC: Cossalter in *PSF*, 76 tav. I.1-5. Of the examples listed here, No.275 is associated with BA material on site 433, No.276 was found on Site 403 which contained much Neo and some IA material; the others come from sites which began in the FBA or EIA, and in at least three cases (Sites 223, 407, 629) continued into the MIA or later. The type was sometimes used for *enchytrismos* burials (see on No.279).		
273	223 E40N33	Fig.5. P4574. Reddish-brown impasto with numerous white grits, fired grey inside. Ø ca. 26.0.
274	629	Fig.5. P8069. Rim. Hard dark brown fabric. Pres. ht. 5.3, Ø uncertain. Cf. Belardelli 1996, 109 and tav. XX.7 from Coppa Nevigata, trench 3 of 1904, upper 2 spits, found with material of the LBA (*ibid.,* 20). A similar shape (but with less pointed rim) occurs among the *dolii cordonati* at Broglio di Trebisacce, mainly of FBA date: Tenaglia 1994, 361 Forma 3, and tav. 67.2.
275	433	Fig.5. P1195. Rim. Dark greyish-brown impasto, surfaces burnished. Max. dim. 4.0, th. 0.7. The shoulder was perhaps nearly vertical: cf. Cazzella & Recchia 2012, 85, tav. 17.3 from Coppa Nevigata, context of Late Subapennine 2a (LBA); Buffa 1994b, tav. 88 no.11 from Broglio di Trebisacce (FBA/ EIA).
276	403	Fig.5. P903. Rim. Dull blackish-brown impasto, unburnished, hard. Ø uncertain, pres. ht. 2.2.
277	715	Fig.5. P7152. Rim. Hard reddish impasto, grey in core with numerous white grits. Cf. No.279.
278	622	Fig.5. P1482. Rim. Reddish-brown impasto lightly burnished. Max. dim. 2.9, th. 1.1.
279	223 Ar.245	Fig.5. P662. Rim of large *pithos* with relatively narrow neck. Roughly finished with impressions of fingers on underside. Ø. ca. 27.0. Cf. No.283 below; also Lo Porto 1973, 175 and pl. XXV.3, *pithos* from tomb 9 at Pisticci used for an *enchytrismos* burial, mid-C6 BC.
280	407	Fig.5. P8165. Rim and neck. Hard fired reddish impasto, grey in core, with numerous small white shell grits. Ø ca. 26.0. Cf. Santovita, *PSF*, 135 tav. I.3, from *Saggio B*, probably C6 BC.
281	407	Fig.5. P8167. Rim. Hard fired reddish impasto, grey in core, with numerous small white shell grits. Many tiny air holes on inner surface. Ø ca. 26.0.
14. Pot with short out-turned rim and globular body The rim meets the body in a continuous S-profile curve. The rim type is common in the BA. Cf. e.g. Fornaro 1988, fig. 84.1 from S. Scolastica (BA and later); Pancrazzi 1979, fig. 109 no.14 from Cavallino (MBA); Barker 1976, fig. 5 no.2 from Petrella, Molise (MBA).		
282	721	Fig.5. P1980. Hard reddish-brown impasto, greyish in core, outside burnished red, micaceous. Only 2cm of rim survive making it impossible to calculate Ø reliably. Max. dim. 6.0, th. 1.4.
15. *Pithoi* with high slightly out-turned rims, distinct neck and spreading shoulders. Many of these pots have a residual lug below the neck They were frequently used for *enchytrismos* burials in the C6 BC in the Gravina/ Matera area: cf. Ciancio 1997, 148-149, Botromagno Tomb 124 no.36 (missing lug), third quarter C6; R.Whitehouse *et al.* 2000, 85-86, figs. 42 and 43 from Tomb 7 on Botromagno, with suggested date of 2nd half C6 BC, q.v. for discussion of the type. For a group of similar *pithoi* used for *enchytrismos* burials at Matera, San Martino in the C6 BC, see Lo Porto 1973, 215 and tav. LXII.4, LXIII.1-4, and LXIV.1-2. Another from Montescaglioso with residual lug, also used for an *enchytrismos* burial, is dated by Lo Porto (1988–1989, 374 fig. 83) to the C4 BC on the evidence of a group of terracotta figurines found in the immediate vicinity of the *pithos* which he held to be grave goods connected with the burial.		
15a. With residual lug below neck		
283	223 Ar.245	Fig.6. P646. *Pithos* with out-turned rim and residual lug. Reddish-brown impasto with darker core and numerous small white inclusions. Ø ca.30.
15b. With no lug on sherd		
284	223 E51N24	Fig.6. P4934. Hard fired. Grey core with white grits, reddish-brown inner surface, drab brown outer surface, slightly micaceous. No lug preserved on sherd. Ø ca. 22.0, pres. ht. 6.0. Close to Small 1977, 315, fig. 105 no.108 from Cozzo Presepe Site A, phase 1B (late C8 - end C7 BC); Castoldi 1997, 119 fig.138, late C8 /early C7 BC (smaller, with lug).

285	223 E43N25	Fig.6. P4463. Slightly out-turned rim, vertical neck and rounded shoulder. Hard reddish-brown impasto with some dark brown and small white pebbles and bits of white shell. Ø 18.0, ht. 5.3.
16. Deep jars with near vertical rims merging into a slightly inclined shoulder The shape was current in the MBA and continued well into the IA: cf. e.g. Barker 1976, fig. 6.2 from Petrella (MBA); Cazzella *et al.* 2012, tav. 13.1 from Coppa Nevigata (FBA); Castoldi 1986a, tav. 28.4 from Incoronata (EIA). Corchia *et al.* 1982, tav. 5 no.2 from Cavallino, sector C (with notched cordon) (?C7 BC).		
16a. With plain rims		
286	223 E37N21	Fig.6. P453. Rim. Hard fired reddish impasto, red also in core but with a dark reddish-brown exterior surface (possible slip), some faint turning marks outside and in perhaps made on a slow wheel. Ø ca.16.0, pres. ht. 2.8. Cf. Buffa 1994b, fig. 163 no.75 from Broglio di Trebisacce (larger – FBA).
287	223 E44N39	Fig.6. P4300. Rim and upper wall with narrow tongue-shaped lug. Hard reddish impasto - dark brown outer surface. Rim slightly out-turned. Ø ca. 20.0, pres. ht. 5.6. Cf. Colelli & Jacobsen 2013, tav. 106, *vasi a bombarda* e6 from Timpone della Motta, C8/C7 BC.
16b. With notched rim This form of decoration was used throughout the BA, but was never widespread. It appears to have been most popular in the MBA, but continued to be used in Puglia down to the EIA. No.288 is associated with BA, esp. FBA, pottery on site 622. Cf. Nos.241 and 259 for other notched rims from this site.		
288	622 D	Fig.6. P1504. Rim and upper part of wall. Drab brown impasto, smoothed external surface. Notches at ca. 2cm. intervals round rim (2 and edges of 2 others preserved). Ø ca. 32.0, pres. ht. 4.6. Cf. Fornaro 1988, 130 fig. 116 no.4 from San Francesco della Scarpa near Bari, *stratum a* (EBA?); *ibid*., 132 fig. 118 no.4 from *stratum b*, (early MBA); Pancrazzi 1979, fig. 109 no.12 (MBA); Lo Porto 1963, 303 fig. 25.1 from Leporano (MBA), with higher rim and more pronounced shoulder; Ciancio 1989, 87 and tav. 115 no.9 from Monte Sannace, Phase I (C9–C7 BC).
17. Large pots with oblique walls and row of finger impressions on the lip of the rim The diameter of these two pieces – and therefore the typology – is uncertain. Out-turned rims decorated with rows of notches around the lip are found early in the Eneolithic period in the Piano Conte culture (cf. Cremonesi 1980, tav. 1 nos. 1-3), but that culture is not well attested in Apulia. The motif recurs intermittently throughout the BA in South Italy: e.g. in the EBA at Tufariello (Holloway *et al.* 1975, fig. 40 no.7); in the MBA (cf. Lo Porto 1963, 303, fig. 25 .1 from *stratum e* at Leporano), and in the FBA (cf. Baumgartel 1953, 15 fig. 7 nos. 5 [rim of a large globular pot] and 6 from *stratum III* at the Grotta di Manaccora). No.289 is a sporadic piece from a location without associated material; No.290 comes from a Peucetian site of the C5/C4 BC with a little earlier material.		
289	spor. 612461 /4519751	Fig.6. P1825. Rim, in black coarse impasto, smoothed on surface with impressed fingerprints on lip. Max. dim. 4.7, th. 1.2.
290	234	Fig.6. P575. Rim of open shaped vessel. Impasto with micaceous inclusions. Decorated on rim with close-set finger impressed notches. Max. dim. 4.5, th. 1.5.
18. Bowl with tapering wall and rim off-set at an angle The shape is found at the Grotta Manaccora with vertical knobbed handle in a context probably of the EBA (Recchia 1996, 63 and tav. X.1). It is common at Broglio di Trebisacce in contexts of the MBA (Capoferri & Trucco 1994, tav. 19 nos. 21-24, tav. 20 nos. 1-18) and is attested rather later at Torre del Mordillo: Pascucci 1994, 719 tav. 142.3 (context lost, but site dates predominantly to FBA/EIA). Cf. also No.371 in geometric monochrome ware.		
291	433	Fig.6. P1184. Bowl rim, out-turned. light brown burnished exterior; dark grey-brown burnished interior. Drab greyish-brown impasto, slightly micaceous. Some white inclusions up to 1mm. Ø ca. 22.0.
19. Large bowl with straight oblique wall and slightly off-set rim See Cossalter in *PSF,* 44-45 tav. 1.5 for a piece of this shape associated with hut debris of late C8 – mid-C7 BC. It is also attested in contexts of the last half of the C8 and beginning of the C7 at Timpone della Motta (Colelli & Jacobsen 2013, tav. 57 no.219, tav. 44 no.159 early C7). The piece is likely therefore to belong to the EIA/MIA phase of occupation on Site 401/409.		
292	401/409 Ar.409	Fig.6. P8091. Rim. Hard fired, grey in core, reddish-brown on surface; numerous minute white inclusions, and some mica. Ø 42.0 (v. approx.).
20. Large bowl with oblique wall and thickened flat-topped rim The piece was found on a site which contained mainly Neo material, but also some IA pieces. It is likely to go with the later group.		
293	403	Fig.6. P902. Rim and upper wall. Dull reddish-brown impasto, black in core; minute grits. Ø uncertain, pres. ht. 2.5.
21. Large shallow dish (or perhaps lid) with convex wall This simple shape was current at least from the MBA to well into the IA. It is attested on site 629 together with other material of the FBA/EIA.		

294	629 N slope	Fig.6. P1520. Rim and upper wall. Drab dark brown impasto. Ø ca. 24.0, pres. ht. 3.5. Cf. Coppola 1983, fig. 88.9 from Rissiedi near Ostuni (?late MBA); Fornaro 1988, fig. 85.4 from S. Scolastica near Bari (probably MBA); Cazzella *et al.* 2012 tav. 12 no.1. from Coppa Nevigata (LBA); Colelli & Jacobsen 2013,178 and tav. 90 no. 392 from Timpone della Motta, unstratified, but referable to the pre-Greek settlement of the C8 or early C7 BC; *Roccagloriosa I*, fig. 175 no.1b (IA).
22. Small shallow dishes (or lids) with straight or slightly convex walls No.296 is associated with BA and LIA material; No.297 with EIA and later.		
295	724	Fig.6. P1990. Flaring rim. Burnished black impasto with much mica. Ø uncertain. Max. dim. 3.2. The quality of the impasto suggests a date in the FBA or EIA when the simple form was certainly current: cf. e.g. Colelli & Jacobsen 2013, tav. 47 no.171 from Timpone della Motta; Frey 1991, Taf. 10, Grab 101.9 from the EIA necropolis at S. Maria d'Anglona.
296	712 H4	Fig.6. P1832. Rim, wall and beginning of base of a very shallow dish/ pan. Pinkish- brown impasto with numerous minute white and brown grits and a little mica, smoothed outside and in. A very uneven piece. Max. w. 6.6, th. at bottom of sherd ca. 0.9, Ø uncertain.
297	223 E17N19	Fig.6. P4147. Small dish or lid (perhaps a votive). Hard impasto, drab black micaceous fabric, grey in core, reddish but with some burning on surface, numerous black and white inclusions. Ø ca. 10.0. If the piece was a lid, it must have been broken off just short of the knob. Cf. Baumgartel 1953, 13 fig. 6.15 and 17 from the Grotta di Manaccora *stratum III* (FBA) in "polished red" ware – slightly deeper, and with vertical handle; Kilian 1970, taf. 108 II.6 from Sala Consilina, SE necropolis, Tomb 392, Phase IIB (later EIA – mid-C8 BC), with tongue handle.
23. Lids (or perhaps shallow dishes) with slightly convex walls These two pieces both come from Site 721 which has yielded exclusively BA pottery. Both have comparanda on BA sites elsewhere in Apulia.		
298	721	Fig.7. P1986. Rim. Grey-brown impasto, highly burnished. Max. dim. 3.5, Ø uncertain. Cf. Fornaro 1988, fig. 85.4 from Bari S. Scolastica (as dish, full Apennine = MBA); Recchia in Cazzella & Recchia 2012, 158 fig. 1.7 from Coppa Nevigata (as lid, Late Apennine = late MBA).
299	721	Fig.7. P1984. Rim. Dark greyish-brown impasto. Max. dim. 2.8, Ø uncertain. Cf. Recchia in Cazzella & Recchia 2012, 158 fig. 1.1 from Coppa Nevigata (as lid, Late Subapennine 2b – end of LBA).
24. Lid or pan with projecting lug		
300	223 E46N45	Fig.7. Pl.10. P7077. Hard drab dark brown fabric with numerous small grits. Lug projects 1.0 from edge of rim. Max. dim. 4.0, max. th. 0.9. Cf. L'Abbate 2013c, 183 fig18 no.1 from the Contrada Agnello near Conversano, attributed to the FBA/ Protovillanovan period; also Colelli & Jacobsen 2013, 208 fig. 50 no.391 from Timpone della Motta, sporadic but referable to the indigenous occupation of the C8 or early C7 BC (a much larger piece).
25. Pans with flat bases and low, steep walls in coarse impasto, mainly used for cooking These simple cooking pans were in use throughout the BA and remained so well into the IA, until they were supplanted by new products in cooking pot ware (q.v.). Of the examples listed here, No.304 was associated on Site 721 with BA material; the others come from Site 223 (San Felice) which was occupied throughout the IA.		
301	223 E34N31	Fig.7. P4788. Complete section rim to base. Black impasto with numerous black inclusions and some large grey ones up to 5mm, very roughly finished. Ext Ø ca. 20.0, ht. 4.2. Cf. *Gravina (PBSR) III (1)*, 129 fig. 24 no.188 from an EIA context at Parco Santo Stefano, Gravina (rather narrower); Small 1977, 316 fig. 106 no.113, from Cozzo Presepe Site A Phase IIA (ca. 600–575 BC); De Faveri 2005, tav. XVII.16 from Torre di Satriano (IA). For earlier examples of the type, cf. Pancrazzi 1979, fig. 112 nos. 17-19 from Cavallino (MBA).
302	223 E46N23	Fig.7. P4832. Whole section of pan, slightly convex wall, hard fired dark grey clay reddish-brown on surface, many small white grits, some brown up to 7mm. Roughly impressed shallow line ca. 8mm below rim. Ø uncertain, ht. 4.8. Cf. Castoldi 1986a, tav. 27.9 from Incoronata (EIA).
303	223 E47N25	Pl.10. P4523. Impasto dish or crucible. Large frag. giving whole section. Black impasto, brown towards outer edge at base, unburnished. Ø ca. 9.0, ht. 3.3.
304	721	Fig.7. P1982. Complete section (rim, wall and base) of a shallow pan. Hard blackish-brown impasto, surfaces lightly burnished black. Small gritty inclusions and a large pebble (up to 1.2cm). Max. dim. 6.0, th. 1.6. Cf. Recchia in Cazzella & Recchia 2012, 162 Fig.6, from Coppa Nevigata (early phase of LBA ca. C13); Giardino 1994, fig. 77 no.134 from Broglio di Trebisacce (LBA); Ciriello *et al.* 2012, fig. 11 no.47 (EIA); Castoldi 1997, 116, fig. 116 from Incoronata, C8 or early C7 BC.

305	223 E50N40	Fig.7. P4279. Rim and base of pan/ dish giving whole section. Hard greyish-brown impasto fired red on outer surface. Some white grits up to 1mm. Ø 28.0, ht. 6.0. Close to *Gravina (PBSR) III (2)*, 97 fig. 41, from *pithos* burial XVIII.1 at Gravina. The suggested date for the burial is given as C5 BC, but the last half C6 now seems more probable.
306	223 E32N25	Pl.10. P4638. Frag. from the floor of a dish. Hard fired coarse reddish-brown clay, dark grey in core, some brown pebbles up to 5mm included and a few smaller white grits. Roughly flat. Under side crudely finished. Finger impressed groove ca. 7mm wide and 2mm deep forming shallow curve across sherd. 2 finger impressed dimples on either side at edge of sherd. No turning marks on either side. Max. dim. 7.2, th. 1.3. The function of the grooves and impressed dimples is uncertain: perhaps to draw off whey from curds. The type is attested at Coppa Nevigata without stratigraphic context, but presumed to be BA: Belardelli 2004, tav. LV no.1; but otherwise it is known in IA contexts: Cf. *Monte Irsi* 113-114, pl. XX no.57 (out of context); Lo Porto 1973, pl. LXII.3.1 from S. Martino grave 1, late C7 or early C6 BC; pl. LXIII.2.1 from S. Martino grave 4, third quarter C6 BC; pl. LXIII.3.4 from S. Martino grave 8, late C6 BC. The shape is also attested at Incoronata in the C7 (Castoldi 1986a, 65-67 with fn 12, and tav. 27.8; Tibiletti 1991, 32 no.5 = 36 fig. 17, 113 fig. 186), and at Timpone della Motta, in a disturbed context, but referable to the pre-Greek settlement of the C8 or early C7 BC: Colelli & Jacobsen 2013, 178 and tav. 71 no.295 no.1 from with 2 parallel grooves.
26. Bases Flat bases were normal on impasto pots in all periods in which the ware was produced.		
307	716	Fig.7. P8179. Base frag. of a small pot. Hard fired fabric with minute sandy grits; reddish-brown with purplish-brown core and surfaces. Ø base 5.5.
308	622B	Fig.7. P1484. Base frag. of a large pot. Drab brown impasto, surfaces burnished buff. Max. dim. 4.0, th. 1.7.
27. Colanders/ milk-boilers Strainers were widely used in the Apennine culture. A particular form of vessel with central funnel and perforations around the tondo was developed in Southern Italy for making cheese (Puglisi 1959, 31-41, with figs 6, 9-11; Trump 1958, 170; 1966 p.111, and diagram fig. 35, from the Grotta Pertosa). No.310 from the BA Site 712 may belong to such a pot, but since there is no evidence for a central funnel on the sherd, this is uncertain. No.311 with perforations beginning immediately below the rim may have formed part of a perforated funnel of a milk-boiler of Trump's "Northern" type which is attested in the EIA at Incoronata (see below). No.309 is a frag. of a colander, perhaps used to strain solids in cheese-making (see Di Fraia 2015).		
309	401/409 Ar.401	Fig.7. P1016. Base and lower wall. Black impasto, pierced with 3 holes. Max. dim. 3.0, th. 1.0. Cf. Boccuccia & Recchia 1998, 34, fig. 11 from Coppa Nevigata (EBA); Di Fraia 2015, fig. 1 nos. 10, 12 from Archi in Abruzzo (FBA), with discussion of the function (predominantly in cheese-making). A date in the FBA is more likely to be valid in the context of this site. Another smaller piece with 1 hole, P1016a from the same site and square, in black impasto with black surface.
310	712 H3	Pl.10. P1820. Ws. in black impasto, pierced with 3 holes. Max. dim. 7.0, th. 0.9. Perhaps from a milk-boiler: cf. e.g. Belardelli 2004, tav. LIX.9 from Coppa Negivata (BA).
311	223 E48N28	Pl.10. P4674. Rim of strainer, probably a milk-boiler. Hard sandy red fabric, probably hand made. Max. dim. 4.5, th. of rim 1.2, ext. Ø ca. 12.0. Cf. Puglisi 1959, fig. 7 no.3 and tav. 3 no.2 from Casa Carletti (Cortona) (MBA); Castoldi 1986a, 73 cat. 7 "scrematoio" from Incoronata (EIA). There is a more complete example of the type, also from site 223, in plain ware: No.1264.
28. Thymiaterion An Iron Age type.		
312	223 E34N31	Fig.7. P4428. Part of pedestal and dish of an hour-glass shaped vessel. Sandy red impasto, grey in core where thickest. Ø at junction of pedestal with dish 7.5. Pres. ht. 3.0. Broadly similar pedestalled vessels were frequently deposited in EIA burials at Consilina (Periods I B and C IIA): Kilian 1970, Beilage 10. Another has been found on the acropolis at Timpone della Motta (Colelli & Jacobsen 2013, 63-64 and 239 "m - piatti m1", with further refs.). Colelli (*ibid*., 64) considers the type to have been one of the principal novelties between the end of the IA and the beginning of the orientalizing period. He believes that the shape was used for eating; but our piece is one of a number of pedestalled vessels in various wares found on Site 223 (San Felice) which are likely to have been "thymiateria". See also Nos.566A-C (geometric) and 617-623 (wmp).
29. Decorated Apennine sherds Only a few frags. from Our Survey illustrate the decorated forms of Apennine pottery which were popular in much of the Italian peninsula in the MBA, but less so in Apulia (Macchiarola, 1987). Three pieces show linear motifs of massed dots between parallel lines, filled with white, which are characteristic of this ware. They will have formed part of complex designs (meander patterns etc), but our pieces are too small for these to be identified. The remaining piece (No.314) is much more unusual. It is placed here on the basis of a parallel with a piece from Murgecchia classified as MBA by Lo Porto, but without comparanda, and its classification may be questioned (Eneolithic?). It comes from a site (Site 432) which produced mainly Neo material.		

313	824	Fig.7. P1941. Rim and upper wall of bowl with oblique wall. Greyish-brown impasto, smoothed but not burnished, Wall below rim decorated with impressed lines, horizontal and vertical and 2 rows of dots. Pres. ht. 3.9. Ø uncertain. Cf. Belardelli 2004, tav. XLVIII no.8 from Coppa Nevigata (context lost). For the shape cf. Recchia 1996, 63, form 3, tav. VIII.1 from the Grotta Manaccora, EBA or early MBA.
314	433 conc1	Pl.10. P1154. Ws, fine impasto. Surfaces burnished dark brown. Exterior decorated with 2 rows of small dots and to the right of them oblique rows of dots flanked by incised lines. All once filled with white. Max. dim. 2.5, th. 0.6.
315	433	Pl.10. P1155. Part of a flat base and walls decorated with thin parallel bands which alternate with 2 rows of small dot impressions. Black burnished impasto. Max. dim. 4.0, th. 1.0.
30. Fragments of large pots in coarse brown impasto with finger-impressed cordons The cordons may have had a double function – to assist handling, and to allow a cover of cloth or leather to be held in place with a tie-string below the cordon**.** They appear first on large coarse impasto pots before the end of the Eneolithic period, e.g. at Lama Costa near Rutigliano in Central Apulia (Radina 1989, 21 and fig. 7.1-6), and remained a normal feature of large impasto pots throughout the BA. Cf. e.g. Radina 1988b, 141 no. 295 and fig. 135, *orli con cordoni* from the MBA site of Santa Maria del Buon Consiglio near Bari, They were still used in the EIA (e.g. at Gravina Botromagno: *Gravina (PBSR) III (1)*, p. XXII no 171 of Period Gravina I), but more rarely. The examples listed here come mostly from sites which were occupied in the BA, or (No.321 from Site 347-9) in the Neolithic period. No.325, however, comes from the IA site of San Felice (Site 223).		
316	433	Pl.10. P1536. Rim of *situla*, with oblique notches (2 on preserved part) and cordon with lightly impressed notches below. Brown impasto, grey and burnished inside. Max. dim. 4.7. Cf: Baumgartel 1953, pl. IV.8 from the Grotta di Manaccora *stratum III* (FBA).
317	721	Fig.7.P1981. Ws. Brown impasto, internal surface black, external reddish-brown; cordon with row of finger impressions. Max. dim. 7.0, th. 1.7.
318	721	Fig.7.P1983. Ws. Grey impasto. Internal surface highly burnished black, external surface burnished grey; cordon with thumb impressions. Max. dim. 6.0, th. 1.2.
319	433	Pl.10. P1157. Ws. Black impasto with large white inclusions. Surfaces burnished brown. Cordon decorated with wide finger impressions. Max. dim. 8.3, th. 1.2. Perhaps Eneolithic.
320	433	Pl.10. P1152. Ws. Semi-fine black impasto. Surfaces highly burnished, the interior black the exterior red. Decorated with a cordon with impressed finger marks. Max. dim. 4.5, th. 1.8.
321	347-9 Ar.348	Fig.7. P844. Rim of *situla*. Hard fired impasto with numerous white and brown grits and 1 black pebble 4mm long; reddish-brown with orange surface out. Thin cordon (1.2 high) projecting ca. 0.3 with finger impressions. Max. dim. 3.7, th. at rim ca. 1.1. Exact angle uncertain. Without more of the shape it is impossible to date this piece reliably, but the fact that 2 other pieces from this site (Nos.209 and 211) have been assigned to Eneolithic suggests that this piece too may be of that period.
322	433	Pl.10. P1153. Ws. Dark brown semi-fine impasto. Surfaces burnished brown. Decorated with a cordon with impressed finger marks. Max. dim. 7.2, th. 2.0.
323	433	Pl.10. P1191. Frag. of cordon with vertical incisions. Drab greyish-brown impasto. Max. lg. 2.9, th. at bottom of sherd 0.8.
324	223 E47N45	Pl.10. P7099. Drab greyish-brown impasto with numerous white (shell?) grits. Cordon with 2 finger impressed dents. Ht. 3.6., w. 3.8, th. below cordon 0.9.
31. Thin cordon without notched impressions The motif appears early in the BA sequence. Cf. Bianco 1978, fig. 1.2 from the mainly EBA site at S. Marco near Metaponto; *Coppa Nevigata e il suo Territorio*, fig. 81 5, 7 (early MBA). It is found on some cremation urns from the FBA cemetery at Timmari (Lo Porto 2006–2007, fig 72, nos. 501-502) and is common on impasto pottery of the FBA/EIA from Broglio di Trebisacce (Buffa 1994b, fig. 151 nos. 44, 52, 61, fig. 152 no.70), and of the EIA at Timpone della Motta (Colelli & Jacobsen 2013, tav. 7 no.23, tav. 15 no.44, tav. 21 no.67 etc).		
325	433	Pl.10. P1156. Ws. Semi-fine dark grey impasto, surfaces highly burnished, the interior black, the exterior brown. Decorated with a thin cordon. Max. dim. 7.0, th. 1.1. Simple cordons such as this were a common feature of large impasto pots throughout most of the BA and well into the IA: cf. e.g. Capoferri & Trucco 1994, 115 tav. 6 no.7 from Broglio di Trebisacce (MBA), Giardino 1994, 188 tav. 29 nos. 12, 18 from Broglio (LBA); Buffa 1994b, tav. 87 no.8 from Broglio (FBA/EIA); Colelli & Jacobsen 2013, tav. 113 nos.1 and 2 from Timpone della Motta (C8/ C7 BC).
32. Vertical ring handles The basic type was common throughout the prehistoric period from Neolithic to the IA, but specific details of form or fabric sometimes allow a piece to be dated more precisely.		

326	625 C	Fig.7.P2071. Thick ring handle *a gomito* (elbow). Brown impasto, burnished brown and black. Max. dim. 5.1. The "elbow" is a feature of impasto mugs throughout the BA and into the EIA: cf. L'Abbate 2013c, figs 31.8, 32.9, 35.5 from the Gravina di Monsignore near Conversano, EBA; Capoferri & Trucco 1994, fig. 60 nos.69, 70 from Broglio di Trebisacce (MBA); Colelli & Jacobsen 2013, tav. 105 no.79 from Timpone della Motta (unstratified, but referable to the pre-Greek settlement of the C8 or early C7 BC).
327	824	Fig.7.P1933. Jug or deep cup with convex side, out-turned rim and broad vertical ring handle with raised edges. Greyish-brown impasto with numerous minute gritty inclusions, unburnished. Max. dim. 5.8, th. 0.7, Ø uncertain. Broad ring handles with raised edges were common throughout the Bronze Age. Cf. Coppola 1983, fig. 70.6 from Grotta San Biagio (Eneolithic); Lukesh 1975, fig. 48 no.7 from Tufariello (EBA); Lo Porto 1964, fig. 21.15 from the "Protovillanovan" (FBA) middle levels of *stratum d* at Satyrion.
328	622 D	Fig.7.P1503. Broad ring handle with slightly raised edges. Brownish-black impasto, surfaces highly burnished brown. Max. dim. 4.8, th. 0.9. Cf. No.328; also. Lo Porto 1964, fig. 12 nos 10, 11 from *stratum h* (LBA) at Satyrion.
329	433	Pl.10. P1159. Ring handle with raised edges. Max. dim. ca. 7.3. Cf. No.328.
330	724	Pl.10. P1838. Small ring handle and wall frag. Handle set at widest girth. Hard red clay with small white gritty inclusions, much worn. Max. dim. 4.5, handle projects ca. 2.2, max. w. of handle 2.0. A common handle form throughout the Eneolithic and Bronze Age. Cf. e.g. Coppola 1983, 179 and fig. 72.1 from the Grotta S. Biagio (Eneolithic); Cazzella & Recchia, 2012, 86 tav. 18.2 from Coppa Nevigata, Context of Late Subapennine 2A (LBA).
331	433	Pl.10. P1160. Ring handle. Dark brown impasto, surfaces highly burnished brown. Max. dim. 7.3.
332	433	Pl. 10. P1161. Ws of large globular pot with broad ring handle attached at shoulder. Reddish brown impasto, slightly burnished; fire-blackened on lower wall. Max. dim. ca. 13.0.
333	223 Ar.245	Pl.10. P534. Vertical ring handle with rounded edges, attached to the wall of a large globular pot. Hard greyish-brown sandy impasto with some inclusions and a brown pebble up to 0.5cm, fired pinkish-brown on surface. Roughly smoothed. Max. dim. 7.0, w. of handle ca. 1.8. max. th. ca. 1.2. The narrow aperture suggests that the handle was intended for use with a rope. The site contained both IA and medieval material. This piece is presumably of IA date.
33. Transverse staff handles These handles are typical of the new shapes of the FBA/EIA, used in fine impasto on bowls with incurving rims, including turban-rimmed bowls, and in coarse impasto on biconical urns (*olle*). The highly-burnished black pieces Nos.334 and 335 are likely to come from bowls, and No.336, in a coarser impasto, from an urn.		
334	622 C	Pl.10. P1492. Bowl rim, in-turned, with beginning of handle rise, perhaps from a turban-rimmed bowl. Black impasto with lustrous burnish in and out. Max. dim. 4.0, th. at base 1.2
335	622 B	Pl.10. P1485. Bowl rim and beginning of handle. Semi lustrous black impasto. Slight oblique depression on outer surface suggests it may be from a turban-rimmed bowl, and a rise in rim at left suggests handle spring. Max. dim. 4.6, th. 1.3.
336	715 C2	Pl.10. P1835. Frag. of a transverse staff handle, broken off at attachment to wall. Dark pinkish-grey impasto with some mica and small black and white grits, surfaces burnished brown. Oval in section at break (max. Ø 2.2). Max. dim. 5.5, th. 0.2. Perhaps from a "Protovillanovan" biconical urn rather than a bowl. Cf. e.g. Lo Porto 2006–2007, fig. 70 no.492 from Timmari Montagnola; fig. 71 no 494 from Timmari Fondo Guida; fig. 72 no.502 from Timmari Fondo Acito. FBA.
34. Divided handles Vertical tongue handles divided to create a central aperture are one of the most characteristic forms of the BA, used especially on carinated bowls. The handle-type was introduced in the EBA and became increasingly complex throughout the MBA and LBA before becoming simpler again in the FBA There are many local variants of these handles and some of ours (Nos.340, 342) with a narrow central slit do not seem to have close parallels elsewhere. It is unfortunate that more is not preserved of these pieces to show the complete shape. Three of the sherds from Site 622 in highly burnished black impasto are likely to be FBA or even EIA in date.		
337	622	Pl.10. P1534. Part of a divided handle of a bowl with triangular perforation. Highly burnished black impasto. Max. dim. 5.3, th. 2.1. The handle type occurs already in the EBA: cf. L'Abbate 2013c, 191, figs 32.1-2, 33.1-2 from the Gravina di Monsignore near Conversano, classified as Protoapennine; and it is attested at Leporano in the LBA (Lo Porto 1963, 326 fig. 45 no.28, and text p. 327). The highly burnished black impasto fabric, however, suggests a date in the FBA or EIA. Cf. Ciancio 1989, 85 and tav.111 no 12 right, from Monte Sannace phase I (end C9 – mid-C7 BC), perhaps of this type.
338	622	Pl.10. P1481. Vertical tongued handle. Brown-black impasto. Surfaces highly burnished brown. Max. dim. 6.0, th. 0.8. Cf. No.337.

339	622	Pl.10. P1496. Raised forked handle from a carinated bowl, broken at top, bottom, and right edge. Fine burnished black impasto. Max. ht. 4.5, th. at break at bottom 0.9. Cf. Castoldi 2014, fig. 11 a, left (treated generically as BA).
340	622 D	Pl.10. P1505. Part of a vertical forked handle. Black impasto with large inclusions. Max. dim. 4.4, th. 0.8.
341	716	Pl.10. P1830. Part of a vertical forked handle. Brown-black impasto. Max. dim. 2.7, th. 0.5. Cf. No.340.
35. Dimples Two frags. of carinated bowls in highly burnished blackish impasto with impressed "dimples" on either side of the handle are likely to date to FBA/EIA when dimpled decoration was widespread in South Italy: see my remarks in *Gravina (PBSR) III (1)*, 131 re nos.176 (a carinated bowl) and 194 from Botromagno (EIA). Dimpled decoration occurs on several pieces from FBA/EIA contexts at Broglio di Trebisacce: various examples in Buffa 1994b, e.g. tav. 82 no.9, tav.92 nos.21, 23, tav.94 no.19 (all wall sherds).		
342	625 C	Pl.11. P2072. Ws and handle-spring of carinated bowl. Black impasto, exterior highly burnished black-brown, interior completely abraded. Deep indented dimple to left of handlespring. Max. dim. 3.8, th. 0.7. Cf. *Gravina II* cat. 5 for another frag. of a handle *ad ascia* with central dimple from Botromagno. Probably EIA. Cf. also No.343 below.
343	223 E24N28	Pl.11. P4097. Ws and handle-spring of carinated bowl. Highly burnished black. Impressed dimple on inside of handle immediately above rim. Max. dim. 3.5, Ø of dimple 1.0. Cf. No.342.
36. Fragments of large pots in coarse impasto with attached lugs or knobs Knobs and arched lugs were used on some pots throughout the BA. They are attested already in the EBA, e.g. at Tufariello (Lukesh 1975, fig. 46 nos 2-4), but they are an especially conspicuous feature of large storage pots of coarse impasto in the FBA and EIA. There are two main types: (a) round and (b) long vertical protrusions normally set a little below the rim. The latter are particularly characteristic of the EIA. The examples listed here mostly come from sites occupied in the FBA (Site 622) or sites which began in the FBA but continued into the IA (sites 223, 401/409). No.353, however, is likely to be LBA; No.359 comes from a site (Site 347-9) which was occupied in the Neolithic period, and shows evidence of activity also in the IA.		
36a. Arched or inverted V-shaped lugs The type was in use at least from the FBA to the C6 BC.		
344	223 E50N37	Pl.11. P4282. Hard fired black impasto, red on surface. Numerous white grits. Max. dim. 6.5, th. 1.0. Lug projects 0.4. Cf. Small 1977, 315 fig. 105 no.112 from a context of ca. 600–575 BC at Cozzo Presepe; Lo Porto 1973, tav. LXII.4 no.1 from Matera, S. Martino tomb 2, early C6 BC; Pancrazzi 1979, 128 and fig. 41 no.2 from Cavallino, where the type is said to be common in all 3 levels of Sector B of the settlement, ranging from the C10/C9 to the end of the C6/ beginning of the C5 BC. See now Cossalter in *PSF,* 44-45 tav. 1.4 for a similar piece associated with hut debris of late C8 – mid-C7 BC.
345	223 E32N21	Pl.11. P7078. Hard reddish-brown impasto, grey in core with many white and brown inclusions. Rim with arched lug below. Pres. ht. 5.5, th. at bottom 1.5. Cf. Lo Porto 1964, 206 fig. 22 nos.1, 7, 13 from Satyrion, "livelli protovillanoviani" = FBA.
346	223 E50N35	Pl.11. P7046. Ws with lug handle from neck of a large pot with broad belly. Hard fired purplish-brown impasto with fairly numerous white grits, dark grey in core, slightly burnished. Lug projects up to 1cm from wall. Max. dim. 5.2, th. 0.8-1.0 (at top). Cf. Colelli & Jacobsen 2013, 73 no.1 and 1.1. from Timpone della Motta, unstratified, but referable to the pre-Greek settlement of the C8 or early C7 BC; Pancrazzi 1979, fig. 41 no.6 from Cavallino, C6 BC.
347	401/409 Ar.401	Pl.11. P885a. Inverted V-shaped lug of large *situla*. Hard impasto, reddish-brown on surface, black in core. Ht. of lug 6.0. Cf. *Coppa Nevigata e il suo Territorio*, fig. 81.9 and p. 175 D84 (LBA?), Carra Jacoli 1994, p. 690, tav. 132 no.4: *situla* from Belloluco, with discussion on the type on p. 696: C8 or early C7 BC.
36b. Knobs		
348	622	Pl.11. P1483. Ws of large *situla* with beginnings of slightly oblique lug. Drab greyish-brown impasto, slightly burnished on outside. Average thickness (away from handle spring) 1.3. For the oblique lug, cf. Fornaro 1988, fig. 202.1 from S. Scolastica near Bari, *Saggio C*, *stratum f* (C5, but containing redeposited EIA material).
349	622 C	Pl.11. P1491. Ws of *situla* from near rim, with vertical lug. Drab brown impasto. Interior burnished brown, exterior highly burnished brown. Max. dim. 5.8, max. th. 2.5. Cf. No.257 (EIA).
350	223 E38N27	Pl.11. P4647. Ws of *situla* from near rim, with vertical lug. Drab greyish-brown impasto. Max. dim. 6.7, th. 0.8. Cf. No.349.

351	223 E27N32	Pl.11. P4759. Ws. with vertical lug of a large pot. Hard reddish-brown in core; numerous white grits. Max. dim. 8.2, th. 1.2. Lug projects max. 1.5.
352	223 E45N41	Pl.11. P7071. Rim and lug of *situla* with vertical lug. Hard fired greyish-brown clay with white, black and brown grits up to about 2mm. Rim slightly thickened on outer edge. Max. dim. 5.0, th. of wall 1.0, max. th. of lug. 1.5, Ø uncertain. Cf. No.349. Another similar piece, not catalogued here: P4141 (Site 223, E17N18).
353	401/409 Ar.409	Pl.11. P8090. Ws of ?*situla* with tongue-shaped lug. Dark grey impasto, reddish-brown on surface; numerous small whitish and brown grits: 1 brown 0.5 across. Max. dim. 6.0, w. of lug ca. 4.3, projects 1.6. Cf. Bianco 1980, 16 and tav. 6 no.4 from the LBA village at Le Pazze near Ugento; Pancrazzi 1979, fig. 40 no.1 from Cavallino, C6 BC.
354	223 E46N46	Pl.11. P7054. Hard orange-brown clay. Broad thumb shaped lug attached to outer wall projecting 0.8cm. Max. dim. 4.6. The type is common at Timpone della Motta in the pre-Greek settlement of the C8/ early C7 BC: Colelli & Jacobsen 2013, 244-245 tav 112 no.8, "prese a lingua", with comparanda; Cf. Garaffa & Vullo 2009, 34-35 figs 1 and 2, b from Torre di Satriano, C7 BC. 2 other similar pieces (not catalogued here) also from Site 223 (San Felice): P4185 from E21N20; P4427 from E29N21.
355	223 E48N39	Pl.11. P4084. Hard orange-brown gritty fabric with pale greyish core. Small residual lug. Max. dim. 3.2, th. 0.6.
356	223 E51N24	Pl.11. P4935. Wall sherd with lug handle from small pot, broken short of the rim. Hard greyish impasto, reddish brown on outer surface. Numerous white shell grits. Small vertical lug projecting 0.4 at shoulder. Shallow horizontal groove above lug. Max. dim. 4.4, th. 0.6. Cf. No.354.
357	223 E39N29	Pl.11. P7063. Rim and lug. Hard fired, reddish-brown to dark brown. Rim slightly thickened and out-turned. Pres. ht. 4.5, th. of wall 1.1. Lug projects ca. 1.2.
358	223 E46N41	Pl.11. P7041. Rim and lug of small *situla*. Hard fired brick-red clay with some small white inclusions, lug projecting immediately below rim. Max. dim. 4.0. Cf. No.253.
359	347-9 Ar. 348 C3	Pl.11. P8082. Lug. Drab greyish-brown impasto, pinkish-brown on surface, numerous black, brown and white inclusions including 1 black. 0.4 across; slightly micaceous. Large oblong knob 4.0 × 3.0 projecting 2.5cm from wall. Cf. Pancrazzi 1979, fig. 41 no.17 from Cavallino, C6 BC.
360	347-9 Ar. 348	Pl.11. P823. Ws of a large ovoid or globular pot. Reddish-brown impasto with white inclusions. Exterior surface reddish, interior surface missing; rounded lug with vertical notch in the centre, projecting ca. 1.2. Pres. w. 3.2. Cf. Garaffa & Vullo 2009, 37, fig. 4a from Torre di Satriano, C7 BC.
37. Combed impasto Frags. of large vessels in coarse impasto with combed outer surfaces. A similar piece found on Botromagno was classified as Neo in *Gravina* II cat. 1, but is certainly IA, in common with the following examples which all come from IA sites. There are few published parallels from IA contexts in South Italy. See however, De Faveri 2005, tav. 21 no.41 from Torre di Satriano from a layer of ca. 350-250 BC (residual); also Ferreri 2012, 64-65, figs. 3e and 4, for a cooking pan and *pithos* with combed exteriors, from the *anaktoron* at Torre di Satriano, ca. 560–475 BC. He classifies the ware as *ceramica da fuoco*, but it appears from the photograph to be hand-made. A similar form of decoration with combed lines running in different directions was used on some Early Medieval coarse wares, as at Pianella in the Valle del Pescara in the C9–C12 AD (Siena & Terrigni 2004), in the Abruzzo (Staffa 2004, 228) but it is unlikely that our pieces are of that period. Those from San Felice all lie outside the limits of the medieval settlement, and there is no other evidence for medieval occupation on Site 407 (Serra Meschina).		
361	407	Pl.11. P1075. Ws. Hard reddish-brown impasto with darker core. White grits. Irregular combed decoration on outer surface. Max. dim. 9.5, th. at base 1.5, min. th. at top 0.6.
362	407 B4	Pl.11. P1066. Ws. Hard impasto, black inside, greyish-brown outside. many white grits. Combed markings on outside. Max. dim. 6.7, th. 0.8.
363	223 Ar. 245	Pl.11. P663. Ws. Hard reddish-brown impasto, greyer outside, with lightly impressed combed lines. Max. dim. 7, th. 0.8-1.2.
364	223 E38N21	Pl.11. P464. Drab greyish-brown gritty impasto with small white and brown inclusions and a few specks of mica. Drab reddish-brown on outer surface, combed, leaving shallow grooves ca. 0.15 wide. 2 overlapping bands of grooves, not fully aligned. Inner surface dark grey-brown. Max. dim. 6.3, th. 0.7.
365	223 E34N19	Pl.11. P4626. Ws. Hard reddish-brown impasto with brown pebbles up to 5mm; combed shallow grooves on outer surface. Max. dim. 6.8, th. 0.8.
366	223 E35N23	Pl.11. P4894. Ws. Hard black impasto, brown exterior, combed. Max. dim. 3.2, th.1.0.

367	223 E48N40	Pl.11. P4079. Hard reddish-brown impasto with numerous sandy inclusions. Combed and burnished on exterior. Max. dim. ca. 5.0.
368	223 Ar.226	Pl.11. P2240. Ws. Hard pinkish-brown fabric, slightly micaceous, small white and black grits, surfaces burnished pink with shallow roughly horizontal combed markings on outer surface made when pot wet, curved in 2 dimensions so pot, not tile. Max. dim. 5.7, th. 1.2.

4. MATT-PAINTED SOUTH ITALIAN GEOMETRIC WARES

I Introduction

I use the term indigenous geometric to refer to the Iron-Age painted pottery of Apulia and indeed of much of South Italy, that was made either entirely by hand or on a slow wheel, and decorated in monochrome black or bichrome black and red in a predominantly linear style, enlivened by an array of geometric (or sub-geometric) motifs. I do so partly out of long use, and partly because the term "matt-painted" for this class of pottery, popularized by Yntema (esp. 1990), does not suit my purpose so well, since I wish to distinguish it from the wheel-made painted wares which superseded it (Section 5 below), which were also largely matt-painted. The term "geometric" moreover has a long history applied to this ware, going back to Maximilian Mayer's classification of *Die geometrische bemalte Keramik* of Daunia, Peucetia and Messapia in his fundamental work of 1914.

Mayer's vast and almost unreadable work has been largely replaced by the detailed studies of Ettore De Juliis and Douwe Yntema (see bibliography) which are easily accessible, so there is no need to describe the general characteristics of the ware at any length. Suffice it to say that it was first produced in the Final Bronze Age (Iapygian protogeometric) and came to an end at various times between the late C6 and late C3 BC according to the region of production, and the degree to which the population of the area had absorbed Greek influence. The manufacture of the ware required a considerable amount of skill, demonstrated in the selection and preparation of the clay (which was generally well purified), in the production of the slip (containing manganese to be fired black, and iron to be fired red), in the shaping of the pot (mostly on a slow wheel), in the application of the slip (to produce patterns often with minute detail), and in the control of the firing process (generally reaching ca. 900 degrees C in an oxidizing atmosphere).

*A. The Final Bronze Age 1: "Iapygian protogeometric" (*Yntema*: "South-Italian Protogeometric)*

The earliest pots in the geometric pottery tradition of South Italy are large vessels, mostly urns (large globular or "biconical" vessels with shoulders sloping steeply towards the off-set rim) and bowls, hand-made, and decorated rather crudely with simple motifs in thin dark brown paint, mainly triangles, zig-zag lines, chevrons and rows of dots, arranged in zones defined by horizontal bands. This phase of the ware was first isolated stratigraphically by Lo Porto who labelled it "Iapygian protogeometric" in his publication of his excavations at Porto Saturo on the Gulf of Taranto (Lo Porto 1964, 209-212). The term was accepted by Cipolloni Sampò (1979, 497-499) who used it of the earliest matt-painted ware at Toppo Daguzzo, and by De Juliis (1988, 18-19) in his discussion of the origins of Apulian matt-painted pottery, and it has passed into general use, although Yntema (1990, 19-30) in the fullest analysis of this pottery to date prefers the term "South-Italian protogeometric" on the grounds that it was used not only in Apulia (Iapygia) but on various other South Italian sites. It was first made, probably, in the late C12 or early C11 BC by potters who derived some technical knowledge from the artisans who produced the latest Mycenean pottery in South Italy and combined it with decorative ideas derived from contemporary protovillanovan pottery in the impasto tradition. It therefore belongs to the Final Bronze Age (FBA) cultural phase, contemporary with protovillanovan. At Torre Castelluccia, there is a clear succession with "Iapygian protogeometric" of the FBA following "submycenean" of the Late Bronze Age (LBA) and preceding Early Iapygian geometric of the Early Iron Age (EIA) (Gorgoglione *et al.* 1993); and a similar sequence is found at Toppo Daguzzo (Cipolloni Sampò 1979, 497-499).

Yntema (1990, fig. 7) plots the distribution of known sherds of this type in 32 sites in South Italy (including Lipari, and Milazzo in Sicily), to which can be added pieces published more recently from Ripacandida near Melfi (Carollo & Osanna 2012, 402, fig. 14) and from Ordona (Mazzei 2010, fig. on p. 21). Also from Ordona are some of the pieces in Iker 1995a fig. 21, "frammenti di ceramica protogeometrica iapigia" – though others with toothed lines and hatched triangles are more typical of the next phase. The pieces from Trani, Capo Colonna, referred to by Yntema, have now been published: Muntoni & Radina 1994, 28 fig. 7, 31 fig. 8. The great majority of locations of the ware are in Puglia (from the Gargano to the tip of Salento), and in the E fringes of Basilicata; and most are situated on or near the coast, though there are distinct clusters in the Ofanto valley and in the valley of the Bradano as far as Timmari.

Two of the pieces from our field survey, notably Nos.369 from Site 407 (Serra Meschina) and 370 from Site 409 (Crocevelina) are decorated in a style typical of this phase and so are classified here as Iapygian protogeometric. They show that the ware penetrated ca. 20km further inland from Timmari along the Bradano/ Basentello corridor.

B. *The Early Iron Age: Period Gravina I*

The Iapygian protogeometric pottery developed almost imperceptibly into the full "Iapygian geometric" pottery of the Early Iron Age (De Juliis 1988, 29-33; Yntema 1990, 31-44, "Early South Italian Geometric"). The technique remained the same, but

new shapes emerged (especially smaller pieces: the *kantharos* and the jug). The existing motifs continued in use, especially the concentric triangles, but new ones were added (especially toothed lines, hatched triangles, and stylized water-birds). Some of these were derived from Devoll painted ware current in Albania in the EIA (Yntema 1990, 53-58). In general, the decoration was tidied up, becoming more compact and confined to the upper part of the pot. The paint became thicker and darker.

The sherds listed here are all decorated with one or more motifs characteristic of this phase: concentric triangles, cross-hatched triangles, toothed lines, zig-zags, stylized water-birds, vertical grids, rows of chevrons, thick wavy lines alternating with straight bands, and a pattern of angular motifs confronting each other on the necks of biconical pots. All these have parallels at Gravina in contexts of Period Gravina I (Small in *Gravina (PBSR) III (1)*, 76-132), at Cozzo Presepe in phase IA on Site A (where it is residual) (*cit.* – Small, 288-291), at Monte Serico associated with EIA hut remains (Ciriello *et al.* 2012), and in contexts of phase I at Monte Sannace (where, however, the definition given to that phase has it last into the C7 so that it includes material that has parallels in Period II at Gravina: *Monte Sannace*, 81-106). Some motifs also recur in the geometric monochrome pottery of pre-Greek Incoronata, before the middle of the C8 BC (Cossalter and De Faveri 2012, 85-91; Tibiletti 1991, figs. 21-25 from *fossa indigena* no. 3). A number of pieces are decorated with the "tenda" (tent) motif of concentric triangles neatly painted with slightly sagging sides expanding in width towards the base line (see below, sub-section 8a). It was especially popular in Basilicata but it is found also at Gravina and Monte Irsi. In Gravina and in our Survey Area it occurs in both "elegant" and less refined form. Some of the "elegant" pieces are probably imports from Basilicata, but others may have been made in the Bradano valley. The less refined pieces may be local imitations.

Various shapes (Fig. 3) are attested in the survey material assigned to this period, notably the deep bowls with incurving rim (Nos.372, 375, 406), the bowl with out-turned rim (No.377), and the *askos*-strainers with rounded spout (Nos.380, 381). Several of the wall sherds come from "biconical" pots with slanting walls and rounded bellies typical of Periods I and II at Gravina. The handle with protruding cores shows a potting technique that was in use in the EIA notably in Gravina I (cf. *Gravina (PBSR) III (1)*, nos 25, 37), but also at Cozzo Presepe in phase IB on Site A, late C8 to ca. 600 BC (*cit.* – Small, 294 fig. 89 no. 30 – a staff handle).

The date of the beginning of this period can only be established within broad limits. De Juliis (1988, 30) sets it in the 2nd half of the C9 BC, and Yntema (1990, 34-36) some time before the middle of the C9, emphasizing the scanty nature of the evidence. The radiocarbon analyses of two samples of bone from the earliest occupation layers uncovered by Ruth Whitehouse and her team on Botromagno have yielded calibrated dates in the C10/C9 BC. Since some Geometric monochrome pottery of Gravina I was found in these contexts, these dates confirm that the beginning of this phase of the ware must have taken place before the end of the C9, and may already have occurred in the C10 BC (Herring 1992).

C. The Early–Middle Iron Age: Period Gravina II. (De Juliis*: Iapygian Late Geometric;* Yntema*: Bradano Late Geometric)*

The key contexts for this period at Gravina are the sherd floor and related layers in Site A below Botromagno (Small in *Gravina (PBSR) I*, 145-147; *Gravina (PBSR) III (1)*, 109-114), and the latest contexts associated with the hut remains at Parco S. Stefano, also located below the hill, a little to the S of Site A (Small in *Gravina (PBSR) III (1)*, 114-119). They show a new decorative syntax, with more fine lines, and a new miniaturist style with smaller motifs in narrower decorative panels. Some of the motifs, such as the dog-leg, meander hook, and winged lozenge are new, derived from Greek Late Geometric and Protocorinthian sources. Others, such as small hatched and cross-hatched triangles, are older, but are treated in the new style. Filled lozenge patterns were especially popular, and were rendered in a variety of different ways. Other motifs characteristic of the period are a row of "wolftooth" zig-zag formed by alternating "V"s (Nos.451-453), an oblique grid pattern of fine lines (No.475), and a small pendant crow's foot attached to the band marking the widest girth (No.487). The principal shapes – biconical and globular urns with out-turned rims, jugs and *kantharoi,* bowls with incurving or out-turned rims, and *askoi,* all continue from the previous period, but the pillar handles attached to the shoulders of some globular urns (Nos.441-442), are probably a new feature in this ware.

The same stylistic development, with identical or similar motifs, can be seen in the indigenous geometric pottery of Cozzo Presepe (*cit.* – Small, 286, 291-301) in contexts of phase IB on Site A, late C8 to ca. 600 BC, and at Incoronata, especially in the discrete assemblage of Saggio T, Fossa 4, associated with an Early Protocorinthian *kotyle* of the late C8/ early C7 BC (Castoldi 1992, 30-34). The style is not well attested in the Adriatic fringe of Central Apulia, but that can best be explained by the lack of excavation in settlement sites of the period. Several examples found in an excavation at Bitonto Bellavista (Greiner 2003, 54 Abb 61) prove that it was current also in this area. A similar development can be seen in the matt-painted pottery of the Salentine peninsula, where motifs derived from Greek sources began to be incorporated in the repertoire of indigenous potters in the 3rd quarter of the C8 BC (Yntema 1990, 69-70, *Salento Late Geometric*). It may, however, have begun rather earlier in Salento given the greater proximity of the area to mainland Greece, and the importance of Otranto in particular as a port of call for Greek traders in this pre-colonization period (D'Andria 1979). It is probably safe to say that it had reached our survey area by the beginning of the last quarter of the C8 BC.

Material of this cultural phase has also been found at Matera, in the vicinity of the rock-cut church of San Nicola dei Greci, though in a less precisely datable context (Cossalter 2012, 349, fig. 12). Although there is a notable concentration of such pieces on sites in the Fossa Bradanica, the great diversity of local renderings of the motifs suggests that there were workshops producing the ware in most if not all of these settlements. Lara Cossalter's recent publication of matt-painted geometric pottery associated with hut remains of the late C8 to mid-C7 BC on San Felice provides more parallels for this style (*PSF,* 45-58).

At Gravina, a fragment of a conical-necked urn from below the sherd floor in Site A was decorated with both black and red paint (*Gravina (PBSR) I,* 147 fig. 9b). It is the only bichrome piece from the site that can be assigned with certainty to this phase. The use

of red alongside black paint can be seen already on a single sherd of "Iapygian protogeometric" type at Salapia in Daunia (Alberti *et al.* 1982, 165, figs. 9, 10), but that piece is exceptional, and the use of red alongside black is not otherwise found until well into the C8, when it appears on a number of coastal sites. Some of the pottery of the late C8/ early C7 BC at Incoronata is painted in reddish-brown as well as blackish-brown paint (Castoldi 2006); and the use of added red is attested on a number of sherds from Taranto and its vicinity which must pre-date the foundation of the Laconian colony: some come from an indigenous settlement in the area of the later Greek acropolis (Castoldi 2006, 18) and one from the Scoglio del Tonno deposit (Taylour 1958, 125). Red is also used as well as black on a one-handled jug found in tomb XX at Santa Maria d'Anglona associated with a serpentine fibula of the C8 BC (Malnati 1984, 72 tav. XIX B), on a sherd from a late EIA context at Broglio di Trebisacce (Buffa 1994, 565), and on some of the "Oenotrian subgeometric" pottery from the pre-Greek settlement on Timpone della Motta near Francavilla Marittima, ca. 700–650 BC (Kleibrink 2008, 195-197; Yntema 1990, 313).

In our Survey Area all the pottery attributable to this phase is painted in monochrome black-brown, with the possible exception of No.450. This reinforces the impression that the use of red paint in addition to black was limited to some workshops producing the ware in a few settlements around the Ionian Gulf before the end of the C8 BC, and that bichrome pots were slow to circulate inland. The technique of preparing the slip rich in iron, and in some cases potassium (Bruni and Guglielmi, 2006) was probably invented by indigenous potters in SE Italy (Yntema 1990, 72). It was perhaps a guarded secret, at least in the early phase of the ware. Castoldi (2006, 3, 5) suggests that the colour red evoked blood, and therefore sacrifice, and that bichrome pots are likely to have been prestigious products to be exhibited on special occasions or in domestic rituals.

D. The Middle Iron Age 1: Period Gravina III

Early in the C7, the use of bichrome decoration became much more common in the pottery of the Basentello valley. This can be demonstrated by the pottery from the occupation layers 3 and 4 of House 3 in the site of Parco S. Stefano (Small in *Gravina (PBSR) III (1)*, 55-58 and 119-122), which I took as representing a new phase in the development of the ware, which I defined as Gravina III. Most of the 14 sherds recorded were bichrome, but in motifs and decorative syntax they were different from the bichrome pottery found in the burials of the C6 on Botromagno, and seemed likely to be earlier. That hypothesis has been amply confirmed by the latest indigenous pottery from Incoronata which shows many similarities with the Gravina material, notably some of the pieces from the area of the *oikos* in saggio E (Castoldi 2003). Two sporadic pieces from Saggio T (Castoldi 1992, figs 92 and 93), and the complex lozenge patterns of Castoldi 2006, 90 figs 153 and 159, also show these features. All these must antedate the abandonment of the site ca. 640–630 BC (Orlandini 1976, 1986). There are analogies also with the latest geometric pottery from Cozzo Presepe found in contexts associated with the construction of the Early Fortification Wall after the Greek take-over of the site ca. 600 BC (*cit.* – Small, 304-305, fig. 100 nos. 67, 68, 70; for the date: pp. 221, 286-297). That might suggest a rather later date, but the same contexts contained a considerable amount of earlier monochrome geometric material, and the possibility cannot be ruled out that all the indigenous material in them is residual. Other pieces in the same decorative style have been found in the IA settlement at Murgecchia in the Materano, and in some tumulus burials associated with it (Lo Porto 1995a, 13, and 17 figs. 12 and 13: bichrome *olla* from Tumulus 14). The recent excavations on the acropolis at Monte Sannace have also produced indigenous pottery which can be assigned to this cultural phase (Amatulli *et al.* 2016, 36). The piece most similar to the material of Gravina III (*ibid*. fig. 7b) is dated by the authors on supposed stylistic grounds around the end of the C7 BC; but it could be earlier, since the occupation material from this part of the site includes a considerable amount of Middle Protocorinthian/ Transitional pottery of the middle of the C7. A conical-necked globular jar from the excavations at S. Nicola dei Greci in Matera has a subdivided winged lozenge motif in bichrome found also in the pottery of Gravina III (Cossalter 2012, fig. 11.22). Some sherds from Amastuola with motifs typical of this period have also been published, apparently from contexts of the C7 BC (Burgers & Crierlaard (eds) 2011, fig. 3-9 (several unnumbered pieces) and fig. 3-15d). At Otranto pottery in a broadly similar style with complex lozenge motifs, has been found in the hut remains in *cantiere 2* associated with Middle Protocorinthian cups and *kotylai* and with Corinthian commercial amphorae datable around the middle of the C7 BC (D'Andria 1979). The Gravina III cultural phase corresponds to Yntema's Bradano Subgeomteric (Yntema 1990, 165-172). In assessing the evidence available at the time, he puts the beginning of the style somewhere between 690 and 670 BC and the end between 640 and 620 BC. The more recent evidence, summarized here, fits comfortably within this date range.

Nearly all the pottery of this period comes from settlement excavations and is fragmentary. In a few rare cases it has been possible to reconstruct whole pots, at least in drawings, but without more whole pieces, it is difficult to appreciate the style of the ware fully. In the catalogue a number of pieces have been assigned to this phase on the basis of comparisons with the material from Gravina, Monte Sannace and Incoronata. Several other pieces which cannot be matched in the better-known pottery from burials of Period Gravina IV may also belong here.

E. The Middle Iron Age 2: Period Gravina IV

The transition to this period coincides with the growing custom of depositing the dead in individual tombs accompanied by grave goods – usually a large urn/ krater (Italian, *olla*), at least one smaller drinking vessel, and a *kantharos* or mug/ jug with high vertical handle that could be used for drawing a liquid, presumably wine, out of the large pot and pouring it into the drinking cup (cf. Colivicchi 2004, 34-39). The more solid tombs (whether rock-cut pits or sarcophagi) were often protected by a cover slab with the result that, unless they have been robbed, the pottery may survive more or less intact. We can therefore appreciate the decorative system of entire pots in a way that was impossible for the pottery of Period III. Moreover, since many burials contain at least one Greek pot or local imitation of a Greek pot (usually the drinking vessel), the pottery types can generally be dated within a generation or so by association with them.

The geometric wares of this period are dubbed "subgeometric" by De Juliis and Yntema. The term, borrowed by analogy from Greek subgeometric, is intended to indicate that the decoration has moved on from its original geometric sources. The motifs used are still geometric (especially lozenges and hooked motifs), but they are generally larger and more complex, and are set in more elaborate decorative systems in which much more use is made of red paint. The regional styles which had begun to emerge in Period III become more clearly defined, and in some areas (notably in the Fossa Bradanica) they break down further into a plethora of more local styles, implying, presumably, that the workshops producing these wares proliferated.

Pottery kilns of the C7/ C6 are attested at Ordona (Iker 1995c, 61-62) and Canosa (De Juliis 1984a, 157-158), each producing its distinctive form of Daunian pottery; and no doubt the same development took place in Central Apulia and the Bradano valley, though only one production centre of that period has so far been identified with certainty, at Montescaglioso. A group of three kilns was excavated there in 1957, two of them associated with Peucetian bichrome sherds of the C6 BC (Lo Porto 1988-89, 388-393; De Juliis 1995, 84). Numerous local variations in pottery styles within Peucetia suggest that there were workshops in many of the larger settlements (De Juliis 1995, 79-84). At Pisticci, in the Basento valley (to the west of Peucetia as the area was understood by later classical sources) a kiln, discovered in 1934, and inadequately reported, appears to have produced geometric pottery almost indistinguishable from that used at Gravina in Periods III and IV (early C7–mid-C6 BC): Lo Porto 1973, 154-157, pls. II-IV.

De Juliis (1995) dates the beginning of specifically Peucetian bichrome pottery (his *Classe B*) ca. 650 BC, and the beginning of the monochrome style (his *Classe A*) ca. 625 BC. This scheme, however, puts the beginning of the fully developed bichrome style a little too early, since we might then expect to find pottery of this class at Incoronata before the site was abandoned some time in the 3rd quarter of the C7 BC. In fact most of the Greek pots used to date the tomb groups (especially Ionian type cups, cups with banded lips (*a filetti*) and Corinthian running dog *kotylai*) can hardly be dated within a quarter of a century, and De Juliis himself dates the individual tomb groups (with one dubious exception) no earlier than the last quarter of the C7. After their beginning ca. 625 BC both bichrome and monochrome styles developed *in tandem* throughout the C6, becoming more standardized in the 2nd and 3rd quarters of the century (De Juliis' *Peucetian II*) and then increasingly simplified (*Peucetian III*) as they gave place to wheel-made painted and black gloss wares. The bichrome came to an end early in the C5, and the monochrome a little later, ending ca. 475 BC.

F. Problems of classification

The problems of classifying this material are, however, acute and have been much debated in the last thirty years, the chief protagonists being Yntema (1990), and De Juliis (1995, esp. pp. 21-23). In his pioneering study of the indigenous geometric pottery of Apulia, Mayer (1914) had distinguished three primary classes, each with its own characteristic shapes and decorative systems, which he labelled Daunian, Peucetian and Messapian since the areas in which the pots were mainly found corresponded broadly with the regions known from classical literary sources to have been inhabited by those tribes at the time of the Roman penetration into Apulia. He was aware that within each of these main classes there were significant local variations, but he had only limited knowledge of the class of bichrome pottery from Peucetia which he knew mainly from fragments found at Putignano, and from unprovenanced pieces in museums (Mayer 1914, 184-197, Taf. 2 and 24). With the publication of pottery from Monte Sannace including several important tomb groups by Gervasio in 1921, the two traditions in pottery decoration in Central Apulia became better defined, one monochrome, centred mainly on coastal sites in the vicinity of Bari, and the other bichrome used principally at Monte Sannace. There was, however, considerable overlap in the distribution of the two wares, and some exchange of decorative patterns between them. More recent excavations at Altamura, Gravina, Montescaglioso and elsewhere on the western fringes of the Murge show that the bichrome style extended westwards across the Murge and into the Bradano basin where it begins to merge with other bichrome styles centred on settlements such as Oppido Lucano. In effect pottery workshops throughout the region made pots in a sub-regional tradition, blended with ideas borrowed from their neighbours.

Recognizing this, Yntema (1985, 1990) abandoned the traditional classification of the material by ethnic names and re-named it using geographical terms for the primary level of classification and defining sub-classes by their most conspicuous features, so that Peucetian bichrome becomes Bradano Geometric (and Subgeometric), and the most characteristic pottery, particularly abundant at Monte Sannace, is labelled Poultry Group. The Peucetian monochrome class is labelled Matt Painted wares of the Bari District, and the most characteristic pottery of Bari and the surrounding area forms a sub-class of the Comb and Swastika Group which is further subdivided by phase into C&S I and II (see Map VI-1 in Chap. VI). This system of classification is rejected by De Juliis on the grounds that it is anti-historical and negates the (presumed) duty of the archaeologist to reconstruct the history of peoples and their culture. He also argues that the Bradano in antiquity separated rather than united tribal groups (the Oenotrians and the Iapygians), that this treatment of the material produces confusion and uncertainty in the analysis of the bichrome class that was characteristic of the interior of Peucetia, and that it ignores the links between the bichrome and monochrome classes.

The existence of two largely incompatible systems of classification poses serious problems for modern scholars, as C. Greiner (2003, 29-34) has noted in her comprehensive study of Peucetia, in which she adds to the complexity by proposing a third scheme for the phasing of Peucetian monochrome pottery. In general Italian scholars have tended to follow De Juliis (e.g. Riccardi in *Monte Sannace*; Amatulli 2010, Castoldi 2014), whereas non-Italians have generally followed Yntema (e.g. R.Whitehouse & Wilkins 1989; Herring 1998, 2000b; Bellamy 2017), though some Italian archaeologists have adopted Yntema's classification in part (e.g. Lo Porto 1988-1989). Lippolis (in Dell'Aglio & Lippolis 1993, 153-157), used some of Yntema's terminology to classify material from Ginosa and Laterza, but was cautious about the broader implications of his system, noting that placing Ginosa and Laterza in a Bradano "district" creates an excessively schematic and artificial classification; that the area is intermediate between

two distinct cultural communities normally known as Peucetian (to the E) and Oenotrian (to the W). He held that Yntema's "reductive" classification needs to be further discussed on the basis of more evidence than is currently available.

Yntema's classification undermines the traditional analysis of Peucetian pottery in two ways. In the first place he argues that the stylistic links between the predominantly monochrome ware of the Adriatic fringe of Central Apulia (Yntema's Bari district) and the predominantly bichrome pottery of the SW Murge and the Lower Bradano are weak. The shapes used in the matt-painted wares of the two areas are mostly distinct, and although there are some decorative motifs common to both, they are used quite differently. But the picture is not clear cut. There is some exchange of pottery types between the two areas, so that some bichrome pieces are found in the coastal fringe (Greiner 2003, 37-38), and some Bari type pieces were used at Gravina and Timmari (*Gravina II* nos. 50, 51; De Juliis 1995, 80 and Carta A; Yntema 1990, maps figs. 187 and 196). Among the material from our survey area, some rim fragments are decorated with monochrome black ray patterns between bands, often with accompanying narrow lines, typical of this ware (Nos.504-509). The pillar handle No.517, the hook motifs Nos.550 and 551, and the subdivided lozenge with meander-hooks in (probably) alternate compartments (No.552) may also belong here. One small fragment (No.534) has a motif considered by both De Juliis (1995, tav. XXXII no. 4) and Yntema (1990, fig. 185 no. 9) to be typical of the Peucetian monochrome/ Comb and Swastika class, but in shape and decorative syntax it is clearly a local product of Botromagno/ Silvium.

The second way in which Yntema overturns the previously accepted classification is by treating the elaborate bichrome ware of the high Murge traditionally identified as Peucetian bichrome (my "West Peucetian" in Small 1971, 175-182) as one of four bichrome groups which circulated in the Bradano valley and adjacent areas in the late C7/ C6 BC. The ware at issue is Yntema's *Poultry Group*, so-called from its most conspicuous motif which is a row of cocks (or hens) walking across the shoulder zone or a large urn/ krater. The motif is derived from Corinthian pottery and details of the wings are sometimes rather crudely incised after the manner of the Greek originals. The finest examples of the style come from Monte Sannace where the main workshops producing the ware must have been situated, but Poultry Group pots were distributed to (or copied in) other settlements on the plateau of the Murge or with easy access to it, including Altamura, San Magno, Ginosa, Laterza, Matera, Timmari, San Martino, Montescaglioso, Gravina, and the Jazzo Fornasiello (De Juliis 1995, 84; Small 1971, 178, Castoldi 2014, 43 fig. 24). Minor differences in treatment suggest that pots with this kind of decoration were produced in more than one workshop, and this is confirmed (if one accepts the priority of Monte Sannace) by the discovery of fragments with this decoration in the waste dump of two kilns of the mid-C6 BC at Montescaglioso (De Juliis, *loc. cit.*; Lo Porto 1988–1989, 383-391). Many of the sherds found in our survey are decorated with motifs typical of this group. They include complex rim patterns formed by broad rays between bands and attendant fine lines (Nos.510-513), rows of small concentric circles in the handle-zone (Nos.518-520), groups of narrow vertical lines alternating with rows of vertical squiggles (Nos.524-526), chequer-board patterns (Nos.521-523), and more or less complicated dot-rosettes (Nos.538-539).

The other three "subgeometric" wares which Yntema assigns to his Lower Bradano group are his *Montescaglioso kraters*, *M-jugs* and *Bradano banded wares*. The Montescaglioso kraters are characterized by a ray pattern on the rim, simple panels in the shoulder zone and pendant tails such as our No 486. They circulated primarily between Montescaglioso and Gravina. The M-jugs are small pots simply decorated with bands and vertical lines which leave a panel with vertical rows of M-motifs in the shoulder zone. They were widely (but thinly) distributed over the whole region from Pisticci to Monte Sannace and from Montescaglioso to Oppido Lucano. The Bradano banded wares were even more simply decorated with rows of bands and wavy lines covering the whole of the outside walls of the pots. They too have been found over a wide area extending from Miglionico to Monte Sannace, and from Montescaglioso to Gravina. Our No.523 may be an example of this type. Yet another class of bichrome pottery popular in the Bradano valley consists of small vessels (primarily jars and *kantharoi*) with relatively short oblique rims decorated with segments of red paint alternating with groups of black radial lines, rows of vertical squiggles between bands in the handle zone, and large red "W" or "Π" motifs (the latter sometimes filled with "X"s) filling large panels in the lower part of the pot. It is treated by Yntema as a local ware produced in Oppido Lucano; but the Oppido products are only a variant of a type that was widely used on both sides of the Basentello valley from Gravina to Monte Serico, taking in Monte Irsi, Irsina, and the Jazzo Fornasiello. Our Nos.514–516 are examples of the type, as may be Nos.527–529, although the rows of vertical squiggles seen on those pieces are also found in the West Peucetian "Poultry Group".

Even this does not exhaust the list of bichrome wares (or better sub-regional traditions of decorating bichrome wares) used on the High Murge and in the Bradano basin in the late C7 and C6 BC. De Juliis (1995, 84) identifies a later group of pots with globular body, short almost vertical rim and handles set nearly upright on the shoulder, decorated with a large rectangular panel filled with horizontal lines or zig-zag. It is found in his Period II, but mainly III, and had a limited area of diffusion, mostly at Ginosa and to a lesser estent Laterza. He suggests that the workshop that produced it was at Ginosa. Greiner (2003, 36-37) adds three other groups. The first consists of several kraters with high foot and vertical shoulder handles, decorated with horizontal bands and broad coloured lines and fine meander and zigzag below the rim and a curving pendant line behind the widest girth. It is represented by examples from Monte Sannace, Santo Mola and Matera. Her second group consists of a few globular kraters with transverse staff handles set vertically at the widest girth, and a panel on the shoulder zone subdivided by curved lines which leave spaces partially filled by small free-floating lozenges and "M" motifs. Below the belly is a large pendant sickle-shaped motif. Vases of this kind have been found at Santo Mola and in the Scattone tumulus at Conversano. The M motif seen on our No.546 might come from such a pot, but that is uncertain since the motif is shared by several pottery groups. Her third group contains two large ovoid "olle" with dense rows of bichrome decoration and a rich variety of motifs, one of which was found at Monte Sannace, and the other at Torre a Mare on the Adriatic coast. Several sherds from Castiglione recently published by L'Abbate (2013e, 443-444, figs. 13-14) can also be added to this group. The second and third of these groups demonstrate that other classes of bichrome repertory also circulated in the predominantly monochrome coastal fringe.

In fact, Yntema's classification combines in the Bradano Group four only loosely related wares with rather different distributions, and in so doing undervalues Monte Sannace as the main creative centre of bichrome geometric pottery in this area. The importance of the site is indicated both by its size and by the quality of the material found there. At its greatest extent, in the 4th century BC, it was one of the largest settlements in Apulia, with an outer circuit of walls 4,900m long (*cit.* – Ciancio, 221-225; Scarfì 1962, 25-96). It is impossible to estimate its size in the late C7/ C6 BC without more survey evidence, but it was undoubtedly very large, and its wealth at that time is demonstrated by the high quality of the Corinthian and Attic figured wares that reached it in that period, many of which are published in the volume of the *Corpus Vasorum* for the Museum of Gioia del Colle where the more recent finds from the site are stored (Ciancio 1995). The "Poultry Group" is the most highly developed bichrome style of the region, and expresses the cultural importance of Monte Sannace as the dominant site of the High Murge.

It is abundantly clear, however, that pottery (with, no doubt, other goods) was easily traded between settlements on the Murge (including the Materano) and in the Bradano valley where other bichrome wares were more intensively distributed. Given the plethora of different bichrome styles in the area, it seems likely that each major settlement in the region had its own production workshops in which potters borrowed and adapted ideas from their counterparts in adjacent settlements, with a consequent slippage in the main features of the style.

It is impossible in the present state of knowledge to assign all the pieces found in our survey area to an identified local ware. The fragmentary state of the material adds to the difficulty since a motif on a small sherd without shape might be classified in several ways. In many cases some indications are given in the comparanda, as in the case of the floating M and W motifs of Nos.546-548, the double pendant line ending in stylized birds' heads (No.531), the star-shaped motifs of Nos.535-537 (if these have been correctly interpreted), the double vertical squiggle of No.530, and the partly doubled dog-leg of No.534; but these are only suggestions, not to be regarded as definitive. A few pieces have been left out of this discussion either because I have been unable to find close parallels for them (the hook motifs of No.549, and the herring-bone vertical panel of No.541), or because the motifs are too widespread to allow any interesting conclusions to be drawn (the rows of rather crudely painted dots between red and black bands of No.532, and the dog-leg motif of No.533).

Some of our bichrome pieces have more distinctive motifs which allow them to be assigned to other classes of matt-painted geometric pottery from beyond the area traditionally associated with Peucetia. There is a small group of *Daunian* sherds (certain or probable) from the region immediately to the N. They include 4 fragments with free-floating hand-drawn concentric circles used on the lower belly of the pot below the widest girth. No.556 is certainly Daunian (most probably from Canosa) as the rest of the decoration confirms; Nos.553-555 are probably so. Nos.559-561 all show part of the typically South Daunian motif of the subdivided lozenge with alternate squares filled with dots. They too probably come from Canosa or its vicinity. No.558 has the dot-filled triangle which is probably Daunian though a rather similar motif is also found in Peucetian pottery. No.563 is more doubtfully Daunian, though the fine quality of the painting and density of the design of red zig-zag flanked by brown concentric triangles support that attribution. No.557 with free-floating orange-brown arc and chord perhaps comes from *Oppido Lucano* in the upper reaches of the Bradano valley. The double curved pendant lines of No.542 are probably *Western Lucanian*, as is the rosette with red centre surrounded by black dots crudely drawn of No.540, although a Messapian origin cannot be ruled out. Another group of fragments decorated in a finely drawn style with neat rows of motifs (combinations of hooks, zig-zags with dots, and cross-hatched bands) belongs to the latest geometric pottery of the C5 or early C4 centred on *Pisticci* in the lower Basento valley (Nos.562, 564, and probably 565-566). The pots are turned on a fast (or fairly fast) wheel, but painted off it in a style that develops out of the geometric tradition

Given the difficulties of classifying much of the matt-painted geometric pottery, this part of the catalogue is organized without indication in the first instance of subregional/ ethnic classification. Shapes are presented first (rims, handles), then wall sherds according to their motifs. Where there is a good parallel with another piece in an established subregional/ ethnic class, this is noted.

II. Catalogue

A. Iapygian protogeometric		
369	407 B5	Fig.8. P1073. Out-turned rim and upper part of large and deep basin with cordon below. Hard pinkish-brown clay. Zig-zag motifs in matt reddish-brown paint on rim inside and on outside above cordon, with concentric triangles below. Ø ca. 42.0. Cf. Biancofiore 1979, 191 fig. 408: "protogeometric" frag. from sanctuary of S. Maria di Leuca. The crudely painted simple motifs on our piece suggest that it too belongs to the earliest phase of the indigenous painted pottery. Cf. also Bettelli *et al.* 1999, 114 fig. 5, a basin with horizontal rim from Madonna di Ripalta with similar simple angular motifs, attributed to the FBA. Similar loose concentric triangles appear on the "Iapygian protogeometric" pottery of Torre Castelluccia: Gorgoglione *et al.* 1993, tav XLV, cf. tav. XLVI.
370	401/409 Ar.409	Pl.12 P1219. Frag. of neck and shoulder of large urn. Buff fabric with matt brown paint. Matt dark brown paint. 2 opposed toothed lines on shoulder; horizontal zig-zag and another line below. Max. dim. 13.5, th. 1.1. Cf. Mazzei 2010, fig. on p. 21.c, from Canne Fontanelle, Iapygian protogeometric. For the toothed-line motif, which remained in use throughout the EIA, see sub-section ***8f*** below.

B. Iapygian geometric (Period Gravina I)		
1. Deep bowl with out-turned rim/ kalathos		
371	629 N slope.	Fig.8. P8156. Rim, out-turned. Fairly hard pinkish-brown clay; some small white and grey inclusions, one air hole 3mm long. Matt brown paint, worn. Pattern of solid rays on upper part of rim. Ø 24.0, pres. ht. 3.2. For a similar shape in impasto, cf. No.291.
2. Bowls with steeply tapering wall and in-turned rim		
372	431	Fig.8. P1143. Large frag. of bowl with steeply tapering wall and in-turned rim. Soft yellowish-brown clay with matt dark brown paint. Part of two *tenda* motifs separated by 3 vertical bars. Paint partly worn off. Ø 33.0. Cf. Castoldi 1997, 120 fig.143 from Incoronata, to be associated with the indigenous settlement of the end C8/ early C7 BC; Fornaro 1988, fig. 206.7 from S. Scolastica, Bari.
373	629	Fig.8. P2073. *Tenda* motif (3 concentric triangles on outside of rim between bands). Pale greyish-brown clay, matt dark brown paint. Ø uncertain; pres. ht. 2.5.
374	629	Fig.8. P1425. Fairly hard light brown clay with paler surface out, matt brownish-black paint. Toothed band round rim; concentric triangles in band on shoulder (large part of 2 preserved). Ø of shoulder ca. 28.0.
375	223 E37N21	Fig.8. P457. Rim frag. of incurving bowl. Buff clay; oblique stripes on upper part of rim in evanescent black paint, also short vertical stripes around inner edge. Max. Ø ca. 32.0; pres. ht. 3.5. Cf. *Monte Irsi* fig. 21 no.1.
3. Bowls with out-turned rim		
376	629	Fig.8. P1517. Rim and wall of bowl or jar. Greyish-brown clay with paler surface. Matt black-brown paint. Toothed band at neck and parallel bands on shoulder. Ø uncertain; max. ht. 5.2.
377	223 E34N22	Fig.8. P4835. Rim and wall of large bowl, rim sharply out-turned, nearly horizontal. Fairly hard fired greyish fabric, small black inclusions, many air hole, pale brown slightly micaceous surface out, faint traces of hatched triangle in black-brown paint on shoulder below toothed band on neck. Ø ca. 38.0, pres. ht. 8.8. For the shape and hatched triangles, cf. Lo Porto 2004, 44 fig. 14 from the Borgo Nuovo deposit at Taranto, ca. 790–740 BC
4. *Kantharos* or jug		
378	223 E32N25	Fig.8, Pl.12. P4368. Frag. of jar or *kantharos* with out-turned rim and vertical handle rising above rim with horned appendages at point of down-turn. Staff of the handle that linked the horns with the shoulder is missing. Fairly hard pinkish fabric, grey in core, light orange-brown surface, matt black paint, band outside on neck, broken ladder of pattern on rim. 2 concentric triangles leading into horns on front of handle. Broken ladder pattern between horns on top of handle. Ø ca. 12.0. For the rim pattern, cf. *Cozzo Presepe*, no. 28 of phase CP I B, datable before ca. 625 BC; *Monte Irsi,* pl. XVI no. 6. The handle type remained popular in East Peucetian pottery of the C6 BC, with the horned tips increasingly emphasized: cf. De Juliis 1995, tav. LVII.A and LXVI.5 from Noicattaro.
5. Pedestal foot		
379	629	Fig.8. P1595. Frag. of the pedestal foot, probably of a globular urn or krater. Drab pinkish-brown clay, pale greyish-brown surface, matt dark brown paint. Band round edge with concentric triangles in zone above. Inner concentric triangle contains a V. Ext. Ø of base ca. 12.0. The piece may be compared with the frag. of a pedestal foot of an Oenotrian-Euboean pot, probably krater, from Timpone della Motta, which is of similar shape and has concentric triangles on the wall immediately above the turn of the foot: Jacobsen *et al.* 2012, 212, fig. 8. Our piece is a local product, but is likely to be roughly contemporary, late C8 BC.
6. Strainers Globular vessels with distinct neck and slightly out-turned rim, having a spout projecting from the shoulder connected with the body of the pot by a filter of small holes.		
380	223 Area 225	Fig.9. Pl.12. P528. Frag. of rim and spout of a strainer. Brown clay with paler surface, matt black-brown paint. Edge of 2 filter holes in spout. 2 rows of chevrons on shoulder, oblique ladder pattern on edge of spout. Max. dim. 7.1. Both the shape and the chevron motif are attested at Gravina in contexts of Gravina I: *Gravina (PBSR) III (1),*99 fig. 18, cat 21 and 70; pl. XVIII.a cat. 49. The chevron frieze recurs on the "Iapygian geometric" pottery of Porto Saturo: Lo Porto 1964, 215, fig. 33.1; and at *Monte Sannace* (tav. 166.3 of phase I end C9–mid-C7 BC). For the shape, cf. also *Cozzo Presepe*, fig. 92 no. 26 of phase IB Site A (late C8–end C7).

381	431 sw. 1	Pl.12. P1144. Spout and part of wall of a strainer with 5 holes in preserved part of wall at base of spout. Black band on wall around spout; beginning of panel of 5 black lines on shoulder, the central one slightly undulating. Pale yellowish-brown clay, black-brown paint. Max. dim. ca. 9.0. Cf. No.380
7. Handles		
7a. Transverse staff handles The normal handle type for large pots (urns/ *ollae* and bowls)		
382	629	Pl.12. P8154. Ws and handle frag. Hard reddish-brown slightly micaceous clay with scatter of small grey inclusions; brown on inner surface, pale yellowish-brown slip on outer surface; thin matt brown paint on outer edge of handle. Max. dim. 8.7, th. 0.7– 1.2; th. of handle at break 2.3.
383	140	Pl.12. P8083. Ws and handle frag. Rather soft orange micaceous clay with a few minute brown and white inclusions. Matt black-brown paint mostly worn off but preserved in patches above and below handle-spring. Traces of possible toothed band on handle. Max. dim. 6.5, th. 0.6–0.9. Ø of handle at break 1.6.
384	120 Row M	Pl.12. P258. Frag. of a horizontal staff handle. Pale greenish-brown clay; dull greyish-brown paint. Irregular toothed band crudely painted on upper surface. Handle extends ca. 6.0; th. at break 1.5. Toothed bands were frequently used to decorate staff handles in the EIA: cf. e.g. *Gravina (PBSR) III (1)*, fig. 18 no. 24 from Parco S. Stefano, Gravina, of Period Gravina I. They continued to be used on handles of large urns in both Daunian and Peucetian pottery well into the C6 BC: cf. e.g. Ciancio 1997, 168, 172-173 for several examples from C6 tombs on Botromagno, Gravina. Our piece might be dated anywhere between the C8 and C6 BC.
385	347-9 Ar.348 AA3	Pl.12. P842. Ws and handle spring. Dull brown clay, pale brown surface; faint traces of a brownish-black toothed stripe on side of handle. Max. w. 5.0.
386	223 E34N30	Pl.12. P4622. Transverse handle from belly of an urn. Pinkish-brown clay, cream surface out, black-brown paint. Zig-zag pattern with 4-fold lines in frame on handle, broader lines around handle root. Max. lg. 8.5, handle at break 2.5 × 1.2. The same zig-zag pattern appears on the handle of a *kantharos* from the pre-Greek Borgo Nuovo deposit in Taranto: Mayer 1914, Taf. 4 no.4.
7b. Vertical strap handles From *kantharoi* or jugs		
387	223 E28N34	Pl.12. P4569. Handle, probably of *kantharos*. Brown micaceous clay with paler pinkish-surface, dark brown paint. Oblique lines in vertical panel. Pres. ht. 3.2, w. at break 3.2, max. th. 0.7. Cf. No.386; also Castoldi 1992, fig. 68 (left) from Incoronata, fossa no. 5, dated by the excavators ca. mid-C8 BC.
388	629	Pl.12. P1597. Wall sherd with lower handle spring. Greyish-brown clay, matt dark brown slip, band below handle, 2 vertical lines flanking handle linked by 3 oblique lines, beginning of decorative panel at left edge of sherd. Max. dim. 6.2, w. of handle at break 2.5, th. of handle at break 1.1. Cf. No 386.
389	401/409 Ar.409	Pl.12. P1217. Out-turned rim and part handle. Group of horizontal bars on handle; broad ray(s) on rim. th. of wall at break 0.5. Cf. Castoldi 1992, fig. 68 (right) from Incoronata, fossa no. 5, dated by the excavators ca. mid-C8 BC.
390	223 E40N28	Pl.12. P4596. Pale yellowish-grey clay, dark brown paint. Concentric triangles at root of handle and group of 3 horizontal bars framed by vertical lines on exterior. Max. dim. 4.1, max. th. at break 0.9.
391	629	Pl.12. P1577. Light brown clay, pale surface, matt black-brown paint. Broken ladder pattern on outside. Max. lg. 3.4. The pattern occurs on several pots from the Borgo Nuovo deposit at Taranto, ca. 790–740 BC (Lo Porto 1964, 54 fig 127 no. 126, 56 fig. 22 no. 135, 59 fig. 24 no. 152 etc). It is also found at Cozzo Presepe Site A in phase IB, late C8–end C7 BC (*cit.* – Small, fig. 90 no. 15); and in waste material associated with kilns A and B at Montescaglioso, C6 BC (Lo Porto 1988–1989, 391 fig. 103 no. 8).
392	223 E23N16	Pl.12. P4242. Soft greyish clay. Matt thick black-brown paint. Row of 6 solid triangles – stylized birds? – on outside; black stripe along edges of handle. Ht. 4.5, w. 0.3, max. th. 0.9.
7c. Vertical ring handle		
393	223 Ar.245	Pl.12. P598. Vertical (probably) ring handle of large closed shape. Dark greyish-brown clay with paler surface, black-brown paint. Broken ladder pattern. Core of handle projects inside wall of pot up to 1.5cm. Max. ht. 10.0, w. of handle 3.2. For such projecting handle-cores, *Gravina (PBSR) III (1)*, 99-100, nos. 24 and 25 of Period Gravina I; *Cozzo Presepe,* fig. 89 no. 30, of phase IB at Cozzo Presepe Site A (late C8–end C7 BC); Amatulli *et al.* 2016, 38 fig. 11 from Monte Sannace, 2nd half C7 BC.

8. Wall sherds

***8a. Tenda* motifs**

The name is given to a pattern of 'concentric' triangles of diminishing size, sharing the same base line, that was characteristic of the matt-painted pottery of Basilicata and the Bradano valley in the EIA. It has been frequently studied, most notably by K. Kilian (1964, 76-101) and J. de la Genière (1968, 37-47) in the contexts of the Sala Consilina necropolis, and by M. Castoldi (1984) taking as her departure point the pottery from the pre-Greek contexts at Incoronata. My discussion of the style in *Gravina (PBSR) III (1)*, needs to be updated in light of her work. The motif is attested first in a comparatively coarse form at Sala Consilina in the 2nd half C9, but the main series of well-made "elegant" pieces dates there to the C8. They are a characteristic feature of the painted pottery of the burials of the late C9–mid-C8 in the S. Teodoro necropolis at Incoronata (Chiartano 1977, 1994, 1996), and of the 2nd and 3rd quarters of the C8 at S. Maria d'Anglona (Frey 1991).

Castoldi, following de la Genière, distinguishes three classes of *tenda* decoration: the "elegant" class, datable mainly to the 1st half of the C8 in which the lines forming the angles broaden towards the base and curve progressively towards the middle, separated by thin reserved lines; an "evolved" class, current in the Metapontino in the 2nd half of the C8, and still in use in the hinterland in the C7 in which the lines of the angles are thicker and more splayed; and a class of "false *tenda*", current in Apulia and eastern Basilicata in the C8 and 7, in which the lines of the angles are of even thickness. There is, however, some local variation in the way these motifs are painted. Castoldi's three classes correspond broadly to those in our sub-sections *8a-1, 8a-2* and *8b* below.

8a-1. 'Elegant' tenda *motifs*

Pots with the form of the motif were in use over much of Basilicata and NE Calabria, and were occasionally exported to Etruria in the C8 (Castoldi 1984, 21). They are found in some parts of the Fossa Bradanica, e.g. at Matera (at S. Nicola dei Greci: Canosa 1986b, 95 fig. 19; Cossalter 2012, 346 fig. 5 no. 9), Monte Serico (Ciriello *et al.* 2012, 323 fig. 12.6), and nearer to our survey area at Gravina (*Gravina (PBSR) III (1)*, fig. 16 no. 62 and pl. XIX no. 78) and Monte Irsi (*cit.* pl. XVI, nos. 12, 13). In some of the pieces from the Fossa, including our survey area, the lines of the angles, though carefully painted, lack the slight curvature which Castoldi regards as a characteristic of this class. See now Cossalter in *PSF,* 52 tav. 1V.21 for this form of the motif associated with hut debris of late C8–mid-C7 BC. It is likely to be from early in this date range.

394	223 E38N21	Pl.12. P466. Brown clay with paler surface; black-brown paint. Max. dim. 4.0; th. 0.6.
395	223 Ar.226	Pl.12. P424. Drab brown clay; black-brown paint. Max. dim. 6.0.
396	401/409 Ar.401	Pl.12. P887a. Slightly micaceous light brown clay, matt dark brown paint showing part of *tenda* motif. Max. dim. 4.3, max. th. 0.5. From SE slope
397	401/409 Ar.409	Pl.12. P1218. Pale yellow buff fabric, matt brownish-black paint. Bands with part of *tenda* motif below. Max. dim. 3.6, max. th. 0.4.
398	223 E36N28	Pl.12. P4491. Light brown clay with a few specks of mica, dark brown paint. Part of *tenda* motif with horizontal line below. Max. dim. 3.6, th. 0.5–0.6.

8a-2 Tenda *pattern, cruder, with slightly concave, only slightly splayed, sides*

This form of the motif is attested at Gravina in Period I: *Gravina (PBSR) III (1)*, fig. 14 no. 87, pl. XIX no. 36. On the first of the pieces listed here, the *tenda* motif is combined with the toothed line typical of the EIA matt-painted pottery of Apulia. See now Cossalter in *PSF,* 52 tav. 1V.22 for this form of the motif associated with hut debris of late C8–mid-C7 BC.

399	401/409 Ar.401 L23	Pl.12. P987. Neck and shoulder of a biconical urn. Dull brown clay; black-brown paint. Dotted black band at junction of neck and shoulder. Below band, 4 concentric triangles. Max. dim.7.5, th. 1.0.
400	431 sw. 3	Pl.12. P1142. Shoulder frag. Buff light brown fabric with dark brown paint. Concentric triangles below a band. Max. dim. 7.2, th. 1.0.
401	431 sw. 3	Pl.12. P1141. Frag. of neck and shoulder of jar or small urn/ *olla.* Pale yellowish-brown clay; black paint. 3 bands at neck-join; thin concentric triangles below. Max. dim. 4.5, th. 0.3–0.5.
402	629 N sl.	Pl.12. P8150. Very pale grey clay, slightly micaceous; some small white and grey inclusions; one larger grey one (3mm); matt black-brown paint. 3-fold narrow concentric triangles. Max. dim. 4.0; th. 0.6–0.8.

8b. Concentric triangles with sides of even thickness

The group corresponds to Castoldi's "false *tenda*," but the motif pre-dates the *tenda*, going back to the earliest "protogeometric" phase of Apulian geometric, e.g. at Torre Castelluccia (Biancofiore 1967, tav. XXXIX.g,l,n) and Trani, Capo Colonna (Muntoni & Radina 1994, fig. 7 nos. 2,4,5; fig. 8 no. 7). See also Yntema 1990, 22 fig. 6, "ornaments of South-Italian Protogeometric" no. 1. It was widespread in EIA Apulia, including the Fossa Bradanica in the vicinity of our survey area. Cf. *Gravina (PBSR) III (1)*, fig. 16 no. 90 and pl. XVII nos. 32, 33 from Gravina, Period I; *Monte Irsi* pl. XVI no. 11; Ciriello *et al.* 2012, 325 fig. 13 nos. 7, 8 from Monte Serico.

403	431 sw. 3	Pl.13. P1140. Neck and shoulder frag. of urn. Buff light yellow fabric with dark brown paint. Dotted vertical line on neck; concentric triangles below band on shoulder. Max. dim. 4.5, max. th. 1.0.

404	406	Pl.13. P1223. Shoulder frag. of urn. Pale brown clay with cream surface; black paint. Thin band and concentric triangles. Max. dim. 4.0, th. 0.8.
405	223 Ar.245	Pl.13. P600. Urn neck with rim spring. Pinkish-brown clay with a little mica. Pale surface out. Black-brown paint. Band, concentric triangles between horizontal and vertical bars, band, cross hatched band. Beginning of ray pattern on rim. Pres. ht. 4.2, inner Ø 6.5, th. at bottom of sherd 0.5. For the triangles used as a filling motif, cf. No.378 (handle).
8c. Hatched triangles Hatched triangles were another common motif in Apulia including the Fossa Bradanica in the EIA. It is attested at Otranto in contexts on early C8 (D'Andria 1979, 22 and tav 18); in the pre-Greek pottery from Incoronata (e.g. Cossalter & De Faveri 2012, 86 fig. 4 no. 13); in the EIA (mid-C8 BC) burials from Santa Maria d'Anglona (Frey 1991, Taf. 34B no. 3, Taf. 36A no. 4), and in the pottery of the "middle geometric" phase at Santa Scholastica in Bari (Fornaro 1988, 184 fig. 206.4, 7). It is very common at Gravina in Period I (*Gravina (PBSR) III (1)*, 91, re no. 2, with other refs). In most cases the hatching runs downwards to the right (as in P1530), but it sometimes slopes downwards to the left (as in No.406).		
406	223 E43 N29	Fig.9. Pl.13. P4623. Rim and wall of bowl with incurving rim, greyish-brown clay, black paint. Hatched triangle between bands on outside of rim. Max. Ø ca. 21; pres. ht. 5.3. Cf. *Monte Irsi,* fig. 21 no.1; Cossalter & De Faveri 2012, fig. 4 no. 13 from Incoronata.
407	629 N sl.	Pl.13. P1530. Pinkish-brown clay with pale surface out; black-brown paint. Large X motif with hatched triangle in lowest quadrant. Surface lost towards right edge of sherd. Max. dim. 5.0.
8d. Hatched panels Hatched panels were also part of the decorative repertoire in the EIA: cf. *Gravina (PBSR) III (1)*, pl. XVII no. 54 from Gravina, Period Gravina I; *Monte Irsi,* pl. XVI, no. 16; The hatched areas in the following pieces seem most likely to come from similar panels, though it is possible that some or all may be parts of concentric triangles.		
408	629 N sl.	Pl.13. P8149. Light brown micaceous clay with a few small angular brownish-grey grits; matt dark brown paint. 6-fold hatched lines between bands, perhaps part of a motif of concentric triangles. Max. dim. 5.2, th. 0.45.
409	629	Pl.13, P8152. Ws. of bowl with in-turned rim, broken across point of turn; upper part missing. Roughly finished inside. Drab greyish-brown clay; matt greyish-brown paint. Part of hatched panel (or concentric triangles) rising from horizontal band. Max. dim. 5.6, th. 1.0 at top, 0.7 at bottom.
410	223 E21N16	Pl.13. P4184. From shoulder of a biconical urn. Hard pinkish-brown clay, greyer in core. Pale creamy slip outside. Matt black-brown paint. Panel with hatched lines, and horizontal *klepsydra* motif to right. Pock marks on outer and inner surfaces. Max. dim. 8.0.
411	223 E46N23	Pl.13. P4697. Hard light brown clay, similar surface, black-brown paint. Part of hatched triangle(?) above hatched panel. Max. dim. 4.5, th. 0.8.
412	401/409 Ar.401 .	Pl.13. P883a. Rim and upper wall of carinated bowl. Dull brown clay; black-brown paint, burnt. Part of hatched panel between bands below rim. Large vessel, but Ø not ascertainable. Max. dim. ca. 9.5, th. at carination 1.2. from SE slope
8e. Cross-hatched triangles The motif is found in the earliest "protogeometric" pottery, e.g. at Madonna di Ripalta near Cerignola (Tunzi Sisto 1999, 115), and is popular in Apulia in the EIA, e.g. at Gravina in Period I: *Gravina (PBSR) III (1)*, fig. 15 no. 10, fig. 16 no. 17, fig. 17 no. 18 and pl. XVII no. 38. It lasts well into the C7. Cf. Small in *Cozzo Presepe*, fig. 88 no. 13, of phase IB, Site A (late C8–end C7 BC); *Monte Sannace,* tav. 121 no. 17 and 152 no, 7 both of phase I (end C9–mid-C7).		
413	223 E39N30	Pl.13. P4441. Wall sherd with beginning of handle spring at left edge. Pinkish-brown micaceous clay, pale grey in core, black-brown paint. Cross-hatched triangle and band. Max. dim. 6.9, th. 0.3–0.7 except at handle spring.
414	223 E44N39	Pl.13. P4299. Cross-hatched triangle (or less probably rhombus, with lower part missing) inside frame below band. Reddish-brown clay with pale brown surface out. Matt black-brown paint. Max. dim. 3.6. Cf. Bettelli *et al.*1999, 115 no 7 from Madonna di Ripalta near Cerignola (FBA/ EIA).
8f. Dotted/ toothed lines The motif is found in the earliest phase of matt-painted pottery (Iapygian protogeometric), as on No.370, and continues throughout Apulia in the EIA (Iapygian geometric). It is attested e.g. at Salapia in the "Protodaunian" pottery of the EIA; at Otranto in contexts of early C8 (D'Andria 1979, 22 and tav 18) and in the pre-Greek phase of the settlement at Incoronata (Cossalter & De Faveri 2012, 86 fig. 4 nos. 14-17); and it is very common at Gravina in Period I (*Gravina (PBSR) III (1)*, 91, re no. 2, with other refs).		
415	223 E19N17	Pl.13. P4158. Shoulder and neck frag. Greyish-brown clay, fired pinkish-brown nearer surface. Numerous small white inclusions. Cream slip on outer surface with irregular smoothing marks. Matt black-brown paint, angle motif of toothed lines. Max. dim. 6.5, th. 0.7–1.0. Cf. Ciriello *et al.* 2012, 323 fig. 12.2 from Monte Serico. EIA.

416	223 E32N23	Pl.13. P4364. Shoulder and neck frag. Pinkish-brown clay, grey in core, cream surfaces, worn brown paint. Band toothed on both sides. Max. dim. 7.2, th. 0.8.
417	401/409 Ar.409	Pl.13. P2106. Pinkish-brown clay; cream slip; matt blackish-brown paint. Toothed band. Max. dim. 2.5; th. 0.5.
418	401/409 Ar.401L9	Pl.13. P1104. Pale buff clay; black-brown paint. Max. dim. 7.0.
419	629	Pl.13. P1598. Horizontal toothed band, beginnings of hatched or concentric triangle. Max. dim. 5.5.
420	223 E29N20	Pl.13. P4472. Frag. of large urn with beginning of rim or neck spring. Reddish-brown clay with a little mica. One small white ?limestone inclusion, drab light brown surface, thin dark brown paint. Toothed band; row of solid lozenges between bands. Max. dim. 6.5, th. 0.6 (at bottom)–1.0. For the solid lozenge chain, see No.431.
421	401/409 Ar.401.	Pl.13. P884a. Buff clay with cream surface; black-brown paint. Horizontal bands, vertical dotted bar (2 small). Max. dim. 5.0; th 0.3–0.5. From SE slope.
8g. Alternating bands and wavy lines The simple motif goes back to the earliest "protogeometric" phase of matt-painted pottery: cf. Carollo & Osanna 2012, 402, fig. 14 nos 2 and 3; Mazzei 2010, fig. on p. 21.a, from Monte Saraceno near Manfredonia, C11–10 BC; but it continued in use at Gravina in Period I (EIA): cf. *Gravina (PBSR) III (1)*, 93 fig. 15.12 from Parco S. Stefano; R.Whitehouse *et al.* 2000, 35, fig. 16.e,f (latest EIA), and was popular at Francavilla Marittima in the 1st half C8 BC: Kleibrink & Barresi 2012, with discussion. It is found also in EIA contexts at Santa Scholastica in Bari: Fornaro 1988, figs 209.5, 212.9. See now Cossalter in *PSF,* 52 tav. 1V.20 for the motif associated with hut debris of late C8–mid–C7 BC.		
422	629 N sl.	Pl.13. P8151. Ws with beginning of rim turn at top of sherd. Light brown clay, pale brown surface out (slip?), matt dark brown paint. Dense pattern of alternating bands and wavy lines. Max. dim. 4.1, th. 0.7 at top, 0.4 at bottom.
423	223 E32N22	Pl.13. P4505. Ws of an urn, with rim spring. Greyish-brown clay turning to reddish-brown towards exterior. Pale brown slip out, dark brown paint. Crude wavy lines between bands. Max. dim. 5.8, th. ca. 1.0.
8h. Grouped sigmas For the motif, see *Gravina (PBSR) III (1)*, 94, no. 13. It is derived from Greek geometric sources, and was widespread in South Italy in the matt-painted pottery of the C8.		
424	223 E25N26	Pl.13. P4259. Ws from upper part of a large urn. Greyish-brown clay, matt dark brown slip. Triple sigma motif between narrow bands and broader band below. Max. dim. 5.0. Cf. R.Whitehouse *et al.*, 2000, fig. 16c, from the latest EIA context in those excavations on Botromagno; *Monte Sannace,* tav. 166.2 of phase I (end C9–mid-C7 BC); Cossalter 2012, 354 fig. 10 nos. 16, 18 from Matera (in combination with *tenda* motifs). It occurs on some pots in the Borgo Nuovo deposit at Taranto, ca. 790–740 BC (Lo Porto 2004, 67 fig. 29 nos. 188-189).
425	223 E38N22	Pl.13. P4606. Pale creamy brown clay, similar surface, dark brown paint. 3-fold vertical zig-zag, thin and thick bands. Max. dim. 2.3, th. 0.2–0.4.
426	223 E54N25	Pl.13. P4962. Medium brown clay, paler surface out, matt black-brown paint. 3-fold vertical zig-zag in panel framed by thin lines below, then 3 broad bands. Max. dim. 6.7, th. 0.6. Cf. *Gravina (PBSR) III (2)*, fig. 86 no. 2, phase IA on Cozzo Presepe Site A (mid- to late C8).
8i. Cross-hatched panels The motif is found at Madonna di Ripalta near Cerignola in a context of the FBA/ EIA, and is well attested at Gravina in Period I (EIA): *Gravina (PBSR) III (1)*, 103 and pl. XVIII a, b, nos. 43-47.		
427	401/409 Ar.409	Pl.13. P2105. Pinkish-brown clay with pale brown surface; matt brownish-black paint. 2 bands and vertical cross-hatched panel. Max. dim. 7.5, th. 0.6–0.8.
428	223 E44N28	Pl.13. P4722. Shoulder frag. Pinkish-brown clay, similar surface, black-brown paint. Cross-hatched pattern. Max. dim. 2.7, th. at top 0.8, at bottom 0.4.
429	223 E30N20	Pl.13. P4531. Pale brown clay with a dark brown pebble 3.5mm; cream surface out, black-brown paint. Edge of a cross-hatched panel, broad and narrow bands. Max. dim. 5.1, th. 6.0.
8j. Miscellaneous motifs		
430	223 E37N21	Pl.13. P460. Frag. from neck of large urn. Pale brown with cream surface; black-brown paint. Triple-line right-angle motif. Max. dim. 6.0. The motif is common in the EIA matt painted pottery of Gravina and Fossa Bradanica: see *Gravina (PBSR) III (1)*, 92 and pl. XVIIa no 6 with my discussion there (Period Gravina I). Cf. also Small in *Cozzo Presepe*, fig. 88 no. 13 (phase CP IB, late C8-end C7 BC); *Monte Irsi,* pl. XVI no. 10; Cossalter 2012, 351 fig. 8 from Matera; Greco & Soppelsa 2012, fig. 18 V90 US 99-9 from Serra di Vaglio, EIA.

431	223 E39 N29	Pl.13. P4573. Frag. from neck of a biconical pot. Brown slightly micaceous clay, similar surface, black-brown paint. Row of solid lozenges in horizontal panel between bands. Max. dim. 3.2, th. ca 0.6. The solid lozenges may be borrowed from Devoll ware current in Albania in the EIA which are attested at Otranto in the late C9–1st half C8 BC. Cf. D'Andria 1985, 338 fig. 10). It is found in the geometric monochrome pottery of Period Gravina I: cf. *Gravina (PBSR) III (1)*, 99, fig. 18 no. 73; pl. XIXa, no.83; on *Monte Irsi,* no. 18; on some pots from burials of the mid-C8 at S. Teodoro near Incoronata: Frey 1991, Taf. 13 no. 7, Taf. 34A no. 4, and on a jug in the Borgo Nuovo deposit at Taranto, ca. 790–740 BC (Lo Porto 2004, 51 fig. 19 no. 117). It is still found in the "late geometric" pottery of the late C8/ early C7 at Santa Scholastica in Bari (Fornaro 1988, 180 fig. 203 no. 5. Cf. also No.420.
432	223 E41 N28	Pl.13. P4494. Ws with beginning of flat base at bottom of sherd. Dull reddish-brown clay a little mica, pale greyish-brown surface out, dark brown paint. Cross-hatched pendant motif ending in stylized double bird; another linear pendant pattern to right. Max. dim. 4.8, th. ca. 0.6. Cf. *Gravina (PBSR) III (1)*, pl. XVIIb no. 47 of Period Gravina I.
433	223 E30 N10	Pl.13. P4373. Tiny ws with beginning of rim or shoulder turn. Drab brown clay, thin brown paint; herring-bone motif. Max. dim. ca. 2.5. For the herring-bone motif, found already on Botromagno in Period Gravina I, see *Gravina (PBSR) III (1)*, 106 and pl. XVIIIc no. 72; Cf. also *Monte Irsi.* pl. XVI no. 15; *Monte Sannace*, tav. 163 no. 15 from phase I (end C9–mid C7 BC).
C. Period Gravina II: late C8/ early C7 BC		
1. Bowls		
434	223 E45N23	Fig.9. P4570. Bowl rim. Pinkish-brown clay, paler surface, black-brown paint. Cross-hatched lozenge with vertical appendages in horizontal panel between thin lines, broad band below, hollow ray pattern inside on rim. Ø ca. 25.0; pres. ht. 3.4. Cf. Castoldi 2000b, 74 no. 134 from the indigenous settlement at Incoronata, late C8/ early C7 BC. For the lozenge, see No.435.
435	223 E46N24	Fig.9. P4662. From large bowl with out-turned rim. Pinkish-brown clay with grey core, cream slip, black-brown paint. Triple zig-zag and part of lozenge motif with vertical appendages in horizontal panel between thin lines. Broad band below, ray pattern inside on rim. Max. dim. of sherd ca. 6.0. Pres. ht. 5.3; Ø uncertain. For the shape, cf. Castoldi 1992, fig. 26 from Incoronata saggio T, fossa 4, end C8 early C7 BC; Carollo & Osanna, 406, fig. 17 no. 5 from Ripacandida (EIA); fairly close to *Monte Sannace,* tav. 155.1 with similar ray pattern on rim, from a context of phase I (end C9–mid-C7). The triple zig-zag is already found in the pottery of the C8 BC (as No.425), but the lozenge motif resembles the pottery of Period II at Gravina (late C8/ early C7 BC): cf. *Gravina (PBSR) III (1)*, pl. XIX nos 124-126.
436	223 E35N23	Fig.9. Pl.14. P4535. Rim and transverse handle-spring of bowl with incurving rim. Pinkish-brown micaceous clay, black-brown paint. Beginning of chevron pattern on edge of rim. Square with diagonals at upper base of handle and black stripe on handle edge. Ø ca. 22.0. Max. dim. 6.5, th. at bottom 0.6. The subdivided square suggests a date in Gravina Period II (late C8/ early C7 BC).
437	223 E55N16	Pl.14. P416. Ws with pronounced curvature, from the lower belly of a bowl. Light brown micaceous clay, fired light orange brown on outer surface. Matt black-brown paint. 3 bands at top of sherd with part of a reserved circle within a trapezoidal frame below, flanked by narrow vertical lines (at left edge of sherd). Paint rather worn. Max. dim. 5.1, th. 0.4 at top–0.2 at bottom. The motif appears already at Incoronata on both monochrome (Cossalter & De Faveri 2012, 96 and fig. 10.49) and bichrome (Castoldi 2006, fig. 26) pieces, and occurs in monochrome at Cozzo Presepe (*cit.*– Small, 302, fig. 97 no.72 from Site A – bowl with in-turned rim). The context there is phase II, ca. 600–575 BC, but it contains much earlier material, and the style of the piece is similar to that of Gravina II. Cf. also *Monte Sannace.* 65 and tavv. 223 no.1 and 288 no. 1 from Sector 3 dated by Riccardi in the first decades of the C6 (bowl with out-turned rim). Probably Period II.
2. Biconical pots with out-turned rims		
438	223 E35N31	Fig.9. P4758. Rim frag. of urn with slightly bulging neck and wide spreading rim set nearly horizontally. Drab brown cay with pale brown surface, matt dark brown paint. Band on neck just below rim. Pattern of open rays between bands on top of rim and black-brown band on inner edge of rim. Ø 18.0, max. ht. 2.5. This form of rim decoration was in vogue from at least the end of the C8 to the beginning of the C6 BC: cf. *Monte Sannace*, tav 151.2 dated to phase I (end C9–mid-C7 BC); Carollo & Osanna 2012, 404 fig. 15.2 from Ripacandida (EIA); Small in *Cozzo Presepe*, fig. 97 no. 52 Site A, phase IIA (ca. 600–575) – the last 2 with a single band around inner edge of rim.

439	223 E42N29	Fig.9. P4628. Rim frag. of a small biconical pot (jug?) with narrow rim offset at an oblique angle. Hard pale brown clay, cream slip out, black-brown paint. No decoration preserved on rim. Double panel of zig-zag between alternately inverted "V"s flanked by thin line on shoulder. Ø 9.2. In shape and decorative syntax with linear motif flanked by a group of thin vertical lines in a panel framed by broader lines the piece resembles protodaunian jars with vertical handles of the C9–C8 BC: cf. De Juliis 1977, tav. LIX.A from a tomb at San Severo. But the motif of a reserved zig-zag formed by alternately inverted "V"s is typical of the Yntema's Bradano Late Geometric (Yntema 1990, figs 143, 146). It is found on several sherds from Parco S. Stefano, Gravina in Period Gravina II (*Gravina (PBSR) III (1)*, pl. XX, nos. 129, 130), on an *askos* from Monte Irsi, datable to the late C8 or 1st half C7 BC (*Monte Irsi,* 106 and pls XIV, XV no. 4), and on the indigenous pottery of Incoronata of the late C8/ early C7 BC (Castoldi 1997, figs 150, 171). It was common on S. Felice (Site 223): cf. Nos.451, 452 and 453 below.
2a. Rim, out-turned		
440	223 E40N33	Pl.14. P4450. Rim frag with inner edge missing. Light greyish-brown micaceous clay, similar surface, dark brown paint. 4 solid rays touching band round outer edge of rim. Max. dim.7.8, th.at break 1.0. Cf. Lo Porto 1963 fig. 56 no. 1. from Porto Perone (late C8 BC). The rim pattern continued into the Peucetian monochrome style of the late C7/ C6 BC, but with rays less closely spaced: cf. De Juliis 1995, tav. XLI, motif 13
3. Pillar handles This type of handle, attached to the shoulders of large globular urns/*ollae,* appears already in the Middle Geometric pottery of Salento, ca. 800–725 BC (Yntema 1990, fig. 32 form 7B, "fungus handle on shoulder touching rim"). It is attested at Gravina (Parco S. Stefano) in Period Gravina II (*Gravina (PBSR) III (1)*, no. 117); at Montescaglioso with other material dated by the author to the 2nd half C8 and beginning C7 BC (Lo Porto 1988–1989, 358 no. 11, fig. 62 no. 3); at Incoronata in *fossa indigena* no. 1 in Saggio G (with other material typical of Period Gravina II). Castoldi 2000b, 60, no. 20 fig. 10; at Cozzo Presepe in contexts of phase III on Site A, ca. 600/575–ca 550 BC (*cit.* – Small, fig. 102 nos. 92 and 93); at Monte Sannace in phase I (end C9–mid-C7 BC), (*cit.* 1989, tav. 133 nos 3-6 and 162 nos 1, 8); and at Santa Scholastica in Bari with other material of the late C8/ early C7: Fornaro 1988, 180 fig. 203 no. 3. Cf. also Lo Porto 1998a, 178-179 nos. 442-446 "olle con anse a colonnetta" from Murgecchia, with further comparanda. It remained in use in the Peucetian monochrome style of the late C7 and early C6 BC, with more spreading "capital": De Juliis 1995, tav. LXV A and B.		
441	223 E41N20	Pl.14. P577. Pale brown clay, matt black-brown paint. 2 pairs of criss-crossing lines on top, 4 lines framing panel on outer side. H. 3.8.
442	223 Ar.245	Pl.14. P599. Hard greyish-brown clay, light brown surface, dark brown paint. Horizontal zig-zag between bands at base. Traces of another motif at top of shaft. Upper edge damaged but one band across it visible. Max. height 6.5, max. Ø of top 5.0.
4. *Thymiaterion*?		
443	223 Ar.228	Pl.14. P569. Frag. of a vertical shaft, round in section. Drab greyish-brown clay, matt dark brown paint. Decoration of 3 stylized double-headed birds. Between (a) and (b) and between (b) and (c) ?vegetation. Between (c) and (a), void. Traces of a brown band at bottom of sherd. Perhaps from a pillar handle, but the sherd expands towards the bottom which has a recess on the underside unlikely to fit the shoulder of an urn/ *olla*. From the stem of a *thymiaterion*? Max. h. 3.8. Ø at bottom 3.9, at top 3.0. For the birds, see my discussion of the motif in *Gravina (PBSR) III (1)*, 102 re no. 40, and more recently, Herring 1988, 46, Cossalter 2012 a, 354-355. The motif is derived from the Urnfield culture of Central Europe and was probably transmitted to the geometric pottery of the Fossa Bradanica by way of Sala Consilina. It appears on several jugs in the Borgo Nuovo deposit at Taranto, ca. 790–740 BC (Lo Porto 2004, 50-51 figs. 18-19 nos. 111-116). The examples from contexts of Period I at Parco S. Stefano at Gravina are mostly single-headed (nos. 20, 40-42, 7). The double-headed version of the motif occurs in Period I (ibid no, 47) cf. No.432 above, but is also found in Period II at Gravina (*Gravina (PBSR) III (1)*, no. 144), and again on a ?bichrome sherd found in the excavation of buildings of the C6–4 BC on San Felice: Sanvito in *PSF,* 136, tav. II.15. For *thymiateria* in geometric monochrome ware without motifs, see Nos.566A-C.
5. Miscellaneous wall sherds		
5a. Triangles Sherds with triangular motifs, hatched, cross-hatched, concentric, and solid-filled, are generally smaller and more neatly drawn than in the previous period. The pattern of a cross-hatched triangle inside two triangles *a tenda* (as No 448) is a development of Period II.		
444	223 E36N21	Pl.14. P4511. Pinkish-brown clay, grey in core, dark brown paint. Bands and part of small cross-hatched triangle. Max. dim. 5.0, th. 0.8. Cf. Castoldi 2000b, 71, 111 from the indigenous settlement at Incoronata, late C8/ early C7 BC.

445	401/409 Ar.409	Pl.14. P1214. Probably from bowl with incurving wall and rim. Buff fabric with dark brown paint. Small cross-hatched triangle between bands. Max. dim. 7.0; th. ca. 0.6. For the motif, cf. Small in *Cozzo Presepe*, fig. 91 no. 24, of phase IB, Site A (late C8–end C7 BC); Cf. *Monte Sannace*, tav 157.8 dated to phase I (end C9–mid-C7 BC).
446	223 E48N23	Pl.14. P4660, Shoulder and neck spring of small pot, dull brown clay similar surface, black-brown paint. Small hatched triangle in panel between bands, ray pattern on rim. Internal Ø Ca. 9.5, th. at break 0.4. For the hatched triangle, cf. *Gravina (PBSR) III (1)*, pl. XIX no. 110 from Gravina, Period II.
447	223 E26N33	Pl.14. P4290. Medium brown slightly micaceous clay. Matt dark brown slip. Dark brown band with 4 pendant triangles (solid) below. Max. dim. 6.5, th. 0.3–0.5. Single pendant triangles of these proportions are found already at Incoronata in *saggio T, fossa 5*, dated around the middle of the C8: Castoldi 1992, fig. 83, and for the date pp. 36-37; but they are also a feature of the pottery at Gravina in Period II (end C8/ early C7 BC): *Gravina (PBSR) III (1)*, pl. XX no. 141. At least 2 appear on *Monte Sannace.* tav. 152.4. and tav. 165.8 of phase I (end C9–mid-C7 BC).
448	223 E24N32	Pl.14. P4509. Wall sherd. Orange-brown clay with cream surface, black-brown paint. Cross-hatched triangle inside *tenda* motif. Broad and narrow bands. Max. dim. 5.6, th. 0.6. Cf. *Gravina (PBSR) III (2)*, fig. 88 from Cozzo Presepe Site A phase IB (ca. late C8 to ca. 600 BC); Castoldi 1992 fig. 33 from Incoronata saggio T fossa 4 with other material comparable in style to ours of Period Gravina II; *Monte Sannace.* tav. 152 no. 7 of phase I (end C9–mid-C7).
5b. Zig-zags Small-scale zig-zag or "wolftooth" motifs, composed of groups of opposed triangles, arranged in narrow panels. Cf. No.439.		
449	223 E34N29	Pl.14. P4504. Reddish-brown clay with pale brown surface out. Max. dim. 4.1, th. 0.4–0.7.
450	223 E35N22	Pl.14. P4915. Grey clay, pale greyish-brown surface, matt black-brown paint. Second band from the top has a reddish tinge suggesting that the piece may have been intended to be bichrome. Max. dim. 4.0, th. 0.6. This form of the motif recurs on the geometric monochrome pottery of Monte Irsi: cf. *cit*, pls XIV, XV no, 4, ca. late C8–mid-C7 BC; also *Monte Sannace*, tav. 153.3 of phase I (end C9–mid-C7 BC).
451	223 E30N20	Pl.14. P4363. Grey clay, paler surface, black paint. Reserved zig-zag between alternately inverted "V"s; bands. Max. dim. 4.6, th. 0.4.
452	223 E44N28	Pl.14. P4556. Pale creamy grey clay, dark brown paint. Max. dim. 5.2, th. 0.5.
453	223 E33N18	Pl.14. P4891. Greyish clay with pale brown surface. Max. dim. 4.2, th. 0.4–0.6.
5c. Small squares and lozenges		
454	223 E49N27	Pl.14. P4699. Pale greyish-brown clay with similar surface, black-brown paint. Part of motif with dotted rectangles alternately inverted in panel framed by narrow and broad bands. Max. dim. 3.1, th. 0.4. Cf.Small in *Gravina (PBSR) I*, pl. XXX.6 (sherd floor from below Botromagno); *Monte Irs*i, pl. XIX no. 45; Castoldi 1997, fig. 149 from Incoronata, late C8/ early C7 BC.
455	223 E35N29	Pl.14. P4592. Orange-brown clay, greyer in core, dark brown paint. Bands and row of cross-hatched lozenges. Max. dim. 2.7, th. 0.4–0.5. Cf. Small in *Gravina II* no. 24; *Monte Sannace,* tav. 161 no. 1 of phase 1 (end C9–mid-C7 BC).
456	223 E41 N27	Pl.14. P4634. Greyish-brown clay with paler surface, a little mica, black-brown paint. Concentric (×2) dotted lozenge, bands and zig-zag between alternating V motifs. Max. dim. 3.4, th. 0.3–0.4.
457	223 E45 N38	Pl.14. P4308. Dull pinkish-brown clay with light brown surface. Thin matt brown paint. 3 bands and part of a 4th. Motif of 2 linked filled lozenges with smaller hatched lozenges inside and opposed "V" motif in space between. Max. dim. 4.7, th. 0.9.
458	223 E38N27	Pl.14. P4486. Neck frag. Reddish-brown slightly micaceous clay, pale brown surface out, dark brown paint, 2 narrow bands, 2 cross hatched lozenges flanked by dots. Max. dim. 2.8.
459	223 E39N29	Pl.14. P4609. Drab brown clay, dark brown paint. Horizontal zig-zag between bands, solid winged lozenge (or lozenge frieze) in horizontal panel. Another motif with oblique lines (damaged) below. Max. dim. 4.8, th. 0.7–0.8.
460	223 E38N27	Pl.14. P4514. Hard pale grey clay, black-brown paint. Band and vertical motif of 2 winged lozenges with cross hatched centres. Max. dim. 3.8, th. 0.4–0.7. Cf. *Gravina (PBSR) I*, pl. XXX.3 (sherd floor); *Monte Irsi,* fig. 21. no. 3a. The motif is found on an *olla* from Monte Sannace tomb 65A of the end C7/ beginning C6 BC (De Juliis 1995 tav. LVIA) and on another of the same period from a tumulus tomb at Murgecchia, in bichrome, with the hatched lozenge in red (Lo Porto 1995a, 16-17 and figs. 12, 13 no. 1).

461	223 E40N28	Pl.14. P4487. Pale yellowish-brown clay no mica, similar surface, black-brown paint. 3-fold horizontal chevrons, thick band, crudely hatched lozenge and beginning of another flanked on left by 2 horizontal chevrons in panel between 3 thin bands. Max. dim. 4.5, th. 0.4–0.6.
462	223 Ar.245	Pl.14. P604. Pale greyish-brown clay with similar surface. Black-brown paint. 2 bands, 5-fold motif of concentric lozenges flanked by bands and curved line. Max. dim. 7.5, th. 0.5. Cf. Patrone & Canosa 1986, 84 and fig. 10 inv. 158927 from Matera, Piazza S. Francesco (walking surface). Morel (1970 fig. 18 no 15) publishes a similar motif from Cozzo Presepe with the squares aligned horizontally and having a central dot in place of the inner square.
463	223 E29N19	Pl.14. P4725. Light orange-brown clay, dark brown paint. Bands, cross motif with rectangles in 2 corners. Max. dim. 2.2, th. 0.5.
464	223 E32N19	Pl.14. P4599. Light brown clay with some small brown grits, similar surface, dark brown paint. Part of rhomboid (probably) motif, subdivided and cross-hatched inside frame, horizontal and oblique lines. Top/ bottom unclear. Max. dim. 3.0, th. 0.6. Cf. *Gravina (PBSR) I*, fig. 8a, from sherd floor; *Gravina (PBSR) III (1)*, pl. XIX no. 127 (Period Gravina II).
465	223 E29N32	Pl.14. P4484. Drab reddish-brown clay with pale brown surface in and out with very little mica and a few small white inclusions and one brown pebble 3mm, dark brown paint, 2 bands with lozenge motif partly filled with 2 hatched bars. Max. dim. 5.0, th. 0.5–0.6. Much the same motif recurs on a large urn frag. from Incoronata saggio T, fossa 4, early C7 BC: cf. Castoldi 1992, fig. 33.
5d. Hooked motifs		
466	223 Ar.228	Pl.14. P570. Frag. from neck-panel of an urn. Light brown clay with paler surface; black-brown paint; meander-hooks in vertical panel. Max. dim. 3.5; th. 0.6. The frieze of meander-hooks is typical of the geometric monochrome pottery of Period Gravina II: cf. *Gravina (PBSR) III (1)*, 109-110 and fig. 19 no. 93 (with discussion); *Gravina (PBSR) III (2)*, fig. 90 no. 25, of phase IB on Cozzo Presepe Site A (late C8–end C7 BC); *Monte Irsi*, pl. XVI no. 28; Castoldi 1997, figs 187, 192 from Incoronata (late C8/ early C7 BC).
467	223 E35N30	Pl.14. P4374. Drab buff clay, thin dark brown paint. Meander-hooks in a horizontal panel. Max. dim. ca. 4.7.
468	223 E33N22	Pl.14. P4483. Light brown clay with some mica, similar surface, dark brown paint. 2 meander hooks and beginning of a third in horizontal panel between broad bands, vertical bar below. Max. dim.3.5, th. 0.2–0.4.
469	223 E34N21	Pl.14. P4616. Pinkish-brown clay, pale brown surface, black-brown paint. Hook motif passing through multiple angles. Max. dim. 3.1, th. 0.5. Cf. Galeandro & Palmentola 2013, 83, fig. 47 top left, from Monte Sannace in a layer associated with a large building dated between C8 and C6 BC.
470	223 E46N29	Pl.14. P4644. Pale brown clay with a little mica, black-brown paint. Band, part of swastika in black frame. Max. dim. 3.2, th. 0.5. Cf. *Gravina (PBSR) I*, pl. XXX.3 (sherd floor).
5e. Dog-leg and "N" motifs		
471	223 E36N28	Pl.14. P4517. Pale grey clay, similar surface, black paint. Row of 5 horizontal dog-leg motifs framed by thick and thin bands. Max. dim. 5.1, th. 0.5–0.9. Cf. *Gravina (PBSR) III (1)*, 117-118 no. 132 (Period Gravina II). It remained popular in the area of Botromagno well into the C6, especially in vertical panels on the shoulder zone of globular urns. Cf. Ciancio 1997, 54, fig. 62; also No.534 below.
472	223 Ar.226.	Pl.14. P423. Slightly micaceous orange-brown clay, reddish-brown in core; matt black paint. String of reversed "N" motifs. Max. dim.7.2, th. 0.6–0.8.
5f. Miscellaneous motifs		
473	223 E49N40	Pl.14. P4314. Light brown clay, matt dark brown paint. Hatched meander pattern in decorative zone. Max. dim. 4.8, th. 0.4–0.5.
474	223 E48N27	Pl.15. P4670. Wall sherd from neck of large urn. Pinkish-brown clay with some mica, cream surface out, black-brown paint. Cross-hatched inverted triangle in horizontal panel and part of a ? free-floating arrow-head motif. Max. dim. 6.3, th. 0.4. For the hatched triangles in a complex pattern with double-line frame, cf. Galeandro & Palmentola 2013, 83, fig. 47 top row, third from left, from Monte Sannace from a layer associated with a large building dated between the C8 and C6 BC.
475	223 E26N32	Pl.15. P4293. Pale brown clay, matt dark brown paint. Oblique grid motif. Max. dim. 3.0 th. 0.5. The oblique grid motif is found in the geometric monochrome pottery of Period Gravina II: cf. *Gravina (PBSR) III (1)*, pl. XXa no.129; *Gravina (PBSR) III (2)*, fig. 92 no. 26 of phase IB from Cozzo Presepe Site A (late C8–end C7 BC); *Monte Irsi,* pl. XVI no. 21, XVIII no. 20; Castoldi 1997, fig. 148 from Incoronata, late C8/ early C7 BC; Fornaro 1988, fig. 203.5 from Santa Scolastica, Bari.

476	223 E60N25	Pl.15. P7005. Ws. Pale yellowish-brown clay, paler surface, matt brown paint. Vertical double sigma with 'serifs' at the angles. Max. dim. 6.0, th. 0.4. The motif appears on the shoulder of an early bichrome *olla* from Incoronata, associated with lozenge and meander motifs: Castoldi 2012, 242 fig. 5, probably last quarter C8 BC. Cf. *Monte Sannace,* tav 123 no. 26, phase I, (end C9–mid-C7 BC); Small in *Cozzo Presepe,* fig. 99 no. 62, site A phase 2 (600–575 – re-deposited?).
477	223 Ar. 226	Pl.15. P425. Light brown clay; dark brown paint. 2 hand-drawn concentric circles inside frame. Traces of a radial line inside the inner one. Surface damaged towards bottom of sherd. Max. dim. 4.8; th. 0.6 For the pair of concentric circles with radial line(s), cf. *Monte Sannace*, tav. 131 no. 8 from phase I (end C9–mid-C7); Cossalter & De Faveri 2012, fig. 9 no. 41 from Incoronata, with discussion on p. 93: end C8/ early C7 BC.
5g. Pendant motifs from the lower part of the pot. The earliest form of the motif is the cross-hatched pendant ray which was in all probability derived from the pendant ray with simple hatching used in Devoll wares current in Albania in the EIA which are attested at Otranto in the late C9–1st half C8 BC (Yntema 2013, 55, D'Andria 1985, 335-339 figs. 8-11). Over time the rays became narrower, the hatching was dropped and the motif comes to resemble a pendant rat's tail.		
(5g-1) Pendant cross-hatched rays The cross-hatched pendant ray appears already on the pre-Greek pottery from the Borgo Nuovo deposit in Taranto (Lo Porto 2004, 56 fig. 22 nos. 135-137 etc), but at Gravina it occurs first (on present evidence) in Period Gravina II: *Gravina (PBSR) I*, pl. XXX.4 (sherd floor); cf. *Gravina (PBSR) III (1)*, no. 139. It is common in the geometric monochrome pottery of W. Peucetia and the Bradano valley in the late C8 and C7 BC: cf. *Monte Sannace*, tav. 133 a of phase I (end C9–mid-C7); Small in *Cozzo Presepe*, no. 47 of phase IB (late C8–end C7 BC); *Monte Irsi,* pl. XVIII nos 20, 36; Cossalter 2012, 356-357 figs 11-12, nos 21 and 23-25 from Matera, San Nicola dei Greci; Castoldi 1997, fig. 150 from Incoronata, (late C8/ early C7 BC). See now Cossalter in *PSF,* 52 tav. 1II.19 for the motif associated with hut debris of late C8–mid-C7 BC.		
478	223 E35N22	Pl.15. P8171. Ws with spring of transverse staff handle from belly of small globular or biconical pot. Fairly hard pinkish-brown clay with a scatter of minute white grits, pale cream surface out; matt dark brown paint. 2 bands above level of handle with pendant cross-hatched ray below; toothed line on handle. Max. dim. ca. 6.0.
479	223 E28N20	Pl.15. P4552. Frag. of a strainer. Pale brown clay with cream surface out, black-brown paint. Pendant cross-hatched ray below band. The sherd is broken across the beginning of the spout and has strainer holes and part of 2 others in break. Max. dim. 5.1, th. at bottom of sherd 0.4.
480	223 E33N18	Pl.15. P4480. Pinkish-brown slightly micaceous clay, pale brown surface out, dark brown paint, band and cross-hatched pendant ray. Max. dim. 5.3, th. 0.5.
481	223 E36N21	Pl.15. P4512. Light brown clay, cream surface out, black-brown paint. Band, vertical wavy line flanked by narrow and broad bands, pendant cross-hatched ray. Max. dim. 6.2, th. 0.3–0.5.
482	401/409 Ar.409	Pl.15. P1215. Frag. from belly of small closed shape. Buff yellow fabric with faded brown/ black paint. Pattern of Vs between bands; pendant cross-hatched rays beneath broad band below. Max. dim. 4.0, th. 0.3. Cf. No.480.
483	401/409 Ar.409	Pl.15. P2107. Purplish-brown clay; slightly micaceous cream slip inside and out. Matt dark brown paint. Part of band and pendant hatched ray. Max. dim. 3.8.
484	342, field S of site	Pl.15. P831. Pinkish-brown clay, rather soft; matt brown paint. Hollow pendant ray. Max. dim. ca. 3.5. Cf. Small in *Cozzo Presepe*, fig. 95 no. 49 (with longer tail), Site A, phase IB (ca. late C8–ca. 600 BC).
485	223 E47N37	Pl.15. P4083. Hard pale greyish-brown clay with wheel marks (?) inside and out decorated with pendant ray with double outline and wavy line in matt dark brown paint. Wheel-made technique but geometric motif. Max. dim. 4.2. Cf. Small in *Cozzo Presepe*, fig. 95 no. 48 (with longer tail) Site A, phase IB (ca. late C8–ca. 600 BC).
(5g-2) Other pendant motifs		
486	223 E50N20	Pl.15. P4916. Drab greyish-brown fabric with pale slip. Matt black-brown paint. Part of 3 pendant tails. Max. dim.5.5, th. 0.5. The motif was commonly used to decorate the lower parts of bellies of urns in the W part of Peucetia. It is attested at Cozzo Presepe (*cit.* – Small) in phase IB on Site A (late C8–end C7 BC), and at Botromagno where it appears first in Period Gravina II (cf. *Gravina (PBSR) I,* pl. XXX.4, from the sherd floor). It was widely used in Gravina III/IV: cf. Ciancio 1997, 168, Tomb 48 "olla geometrica peucezia" in a Tomb of the late C7/ early C6 BC. An urn from Monte Sannace tomb 65A of the end C7/ beginning C6 BC has 3 pendant tails similar to these: De Juliis 1995, 56 and tav. LVIA (of De Juliis' Peucetian I class).
487	223 E59N22	Pl.15. P7025. Pale yellowish-grey clay, matt dark brown pain. Part of band with pendant crow's foot motif. Max. dim. 3.7, max. th. 0.8. For the motif, cf. *Gravina (PBSR) III (1)*, pl. XX no. 137 (Period Gravina II); Yntema 1990, fig. 152: urn from Ferrandina ca. 700–625 BC.

D. Period Gravina III (Yntema: Bradano Subgeometric)		
1. Bowls		
488	223 E33N21	Fig.9. P7104. Bowl rim, in-turned. Pale brown clay with uneven smoothing marks inside. Matt reddish-brown paint in horizontal band and vertical line inside. Black-brown band and possible traces of another outside. Internal Ø ca. 15.0. Open bowls were common in the geometric repertoire of Periods I and II, but virtually disappeared in Period IV when their place was taken by imported Greek-type cups and locally produced wheel-made painted types. They are, however, well represented in the bichrome pottery of Incoronata which corresponds broadly to that of Gravina Period III. The motif was perhaps a swastika.
489	223 E38N33	Pl.15. P4571. Ws of open bowl with pronounced curve towards base below handle-spring Greyish-brown clay with some white and brown inclusions up to 2mm, light brown on surface out and in, red-brown and dark brown paint. Part of a red ray pattern around edge of tondo, flanked by narrow black lines. Max. dim. 6.1, th. at top of sherd 0.4. For other bichrome bowls with ray patterns around the tondo, see *Gravina II*, fig. 3 nos. 28 and 69 (both probably residual in later contexts); Small in *Cozzo Presepe* fig. 96 no. 51 from a layer of phase 1B, Site A (late C8 to ca. 600 BC). Bichrome bowls with incurving rims were common at Incoronata before ca. 640/630 BC: Castoldi 2006, figs 17-26. None of these has the ray pattern in the tondo, though a version of this is seen in a base frag. fig. 41; and none of these frags. shows the transverse staff handle which looks back to the EIA. These partial parallels suggest that our piece should be attributed to Period III.
490	223 E46N36	Fig.9. P4320. Large bowl rim, out-turned. Drab greyish-brown clay with several inclusions. Matt dark brown and purplish-brown paint, much worn. Little differentiation in colour but that may be because of recent burning. Top of rim decorated with black rays reduced to a toothed band with row of inverted red triangles between the rays. Dark brown semi circles enclosing red-brown arcs below. The shape is well represented in the bichrome pottery of Incoronata (cf. Castoldi 2006, tav. 8 nos. 55, 56, 58). The toothed band which appears to descend from the EIA motif also favours a relatively early date.
2. Urn (*olla*)		
491	223 Ar.245	Pl.15. P597. Urn rim. Drab greyish-brown clay, paler surface, small black inclusions and a little mica. Black-brown paint. Ray pattern between 2 bands on top, damaged by an oblique scratch. Band below rim outside. Hole 4mm Ø in upper part of rim, which does not go right through. Outer Ø ca. 22.0 (uneven). Cf. *Gravina (PBSR) III (1)*, 119 no. 143 from Botromagno, Period III; Small in *Cozzo Presepe,* fig. 97 no. 70, site A phase II (ca. 600–575 BC).
3. *Askos*		
492	223 E34.N21	Fig.9. P4863. *Askos* rim with oblique neck and should turn to globular body. Rim offset at oblique angle, greyish-brown slightly micaceous clay, cream slip in and out. Matt black-brown and red-brown paint. Traces of red paint on rim, perhaps a ray pattern, dripping down into neck. Broad red band on under side of rim outside, broad black band below and 3 red bands below that at shoulder turn, crudely painted. Ø 7.0, ht. 3.5. Cf. Castoldi 2006, tav. 30 nos. 186-188 from Incoronata (before ca. 640/630 BC).
4. Wall sherds		
4a. Triangles		
493	223 E40N27	Pl.15. P4490. Greyish clay, paler grey surface, some small white grits, black-brown paint. Solid triangles with curved sides between bands. Max. dim. 3.2, max. th. 0.5. Cf. *Gravina (PBSR) III (1)*, pl. XXI no. 156 of Period Gravina III.
494	223 E34.N22	Pl.15. P4510. Drab brown micaceous clay, pale grey surface out, dark brown and brownish-red paint. Alternating solid triangles between bands in black, brownish-red band at upper edge of sherd. Max. dim. 6.6, th. 0.7.
4b. Meanders		
495	223 E46N29	Pl.15. P4643. Rim of ?shallow dish. Pale brown clay with some white grits, cream surface, black-brown paint. Part of ?meander motif filled with hatched panel in frame flanked by vertical panel with N motifs. Band near edge of rim. Hatched panel is fired reddish in places, but this is probably unintended. Max. lg. 3.1, max. th. 0.6, Ø uncertain. Cf. *Gravina (PBSR) III (1)*, 121 no.150; Burgers & Crielaard 2012, fig. 7 (towards top right of plate) from Amastuola, probably 2nd half C7 BC (all bichrome).
496	223 E38N33	Pl.15. P4410. Pale greyish clay, similar surface, monochrome black-brown paint. Bands. Hatched single file meander between rectangles. Max. dim. 6.5, th. 0.4–0.6. Cf. the double file meander found in the geometric monochrome pottery of Period Gravina II: *Gravina (PBSR) III (1)*, pl. XIXb no. 100; found also at *Monte Irsi* (pl. XVIII. 29, 30). Found also in bichrome: cf. No.497 below.

497	223 E47N43	Pl.15. P7097. Pale orange-brown clay slightly micaceous, dark brown and reddish-brown paint. Hatched red meander pattern inside brown lines. Max. dim. 4.0. The motif is common in the bichrome pottery of W. Peucetia and E. Lucania in the late C7 and C6, and is well attested on Botromagno: cf. *Gravina (PBSR) III (1)*, 121 and pl. XXIa no.150 (Period Gravina III); Ciancio 1997, 180 no. 123 from Tomb 15 mid-C6 BC. Cf. also Castoldi 2006, fig. 144 from Incoronata (surface material, but probably C7 BC); De Juliis 1995, 58 and tav. LIXA from Difesa S. Biagio in a tomb of the mid-C7 BC; Dell'Aglio and Lippolis 1993, 40-43, tomb 6.3 and 7.7 from burials of the 2nd half C6 BC at Ginosa; Lissi Caronna 1980 fig. 228 no. 16 from a hut of the late C7/ C6 BC at Oppido Lucano; ead. 1983, 282 fig. 71.7, also from Oppido. Some sherds with this motif were found in the waste dump associated with 2 kilns of the C6 at Montescaglioso: Lo Porto 1988–1989, 391 fig. 103 no. 5, 392, fig. 104 no. 1.
498	223 E38N20	Pl.15. P4500. From belly of globular pot. Light brown clay with orange-brown micaceous surface out, dark brown and red-brown paint. Hatched red meander or hook pattern framed by black lines, with black and red bands below. Max. dim. 5.4, th. 0.4. Cf. L'Abbate 2013e, 443, fig. 13.4 from Castiglione in the territory of Conversano (surface material).
499	223 E40N21	Pl.15. P4414. Pale brown clay, cream surface out with white grits, black-brown paint. Bands, 2 toothed lines forming horizontal panel, red hatched motif, probably part of a meander, in black frame below. Max. dim. 4.9, th. 0.5.
4c. Key pattern and swastika		
500	223 E48N45	Pl.15. P7088. Light orange micaceous clay, paler surface out. Matt reddish-brown and black-brown paint. Hatched key pattern in red between black bands. Max. dim. 4.2, th. 0.5.
501	223 E29N20	Pl.15. P4408. Pale brown clay with grey surface perhaps discoloured by burning, black-brown and brownish-red paint. Part of red swastika edged by black lines. Max. dim. 7.0, th. 0.6. Cf. Small in *Cozzo Presepe* (=Yntema 1990, 174 fig. 157), on the wall of a cover-bowl (ca. 660–620 BC); Castoldi 2006, 70 no. 43 (in the tondo of a bowl) from Incoronata.
5. Less certainly of this period		
502	401/409 Ar.409	Pl.15. P1216. Frag. of small pot. Light brown clay, black-brown paint; chequer motif. Max. dim. 2.7, th. 0.4. The chequer motif is attested in this Period (*Gravina (PBSR) III (1)*, pl. XXI no. 151), but the piece could be later: cf. No.521 below.
503	223 E29N20	Pl.15. P4508. Pale brown clay, cream surface, black-brown paint. Solid triangular motif flanked by dots, part of vertical bar, 2 thin bands below. Max. dim. 5.5, th. 0.5. Turning marks suggest made on a fairly fast wheel. Without close comparanda, the date of this piece is uncertain.
E. Regional geometric wares. (Period Gravina IV)		
1. Rims – monochrome All are complex patterns. Most are likely to date to the late C7 or 1st half C6 BC, but No.507 has a parallel on San Felice which shows that this type of rim decoration began earlier.		
504	223 E18N26	Pl.16. P546. Frag. of urn rim. Pale brown clay with paler surface, dark brown paint. Rim pattern with spaced narrow rays framed by thin then thick bands. 2 bands on shoulder. Inner Ø ca. 16.0. Close to *Gravina (PBSR) I*, 147-148, fig. 10 and pl. XXXII from a hearth floor of the 1st half C6 BC, in bichrome (Peucetian).
505	223 Ar.245	Pl.16. P596. From a globular urn with spreading rim. Pinkish-brown clay with light brown surface, dark brown paint. Pattern of spaced broad rays framed by thin bands on rim. Band outside at base of rim. Ø external 18.0, internal ca 7.5. Cf. De Juliis 1995, tav. XLII., motif 30 in his Peucetian monochrome class. The rim type was found in the recent excavations on San Felice: Sanvito in *PSF,* 135, tav. I.6, probably C6 BC.
506	401/409 Ar.401L9	Pl.16. P1105. Rim of urn. Pale yellow fabric with brown pebble 0.5 w emerging at edge of rim; black-brown paint. Ray pattern enclosed by 2 lines at edge of rim; band on underside of rim at neck. Est. Ø ca. 24.0. Cf. De Juliis 1995, tav. XLII, motif 23 in his Peucetian monochrome class.
507	223 E37N28	Fig.9. P4640. Out-turned rim of globular urn. Pinkish-brown clay, pale surface out, black-brown paint. Ray pattern edged by 2 bands on rim, band on edge of rim and on shoulder. Ø ca. 19.0. As No.505 but with an outer band. See now Cossalter in *PSF,* 52 tav. 1I.8 for the motif associated with hut debris of late C8–mid-C7 BC.
508	223 E46N43	Pl.16. P7079. Pale greenish grey clay, matt black-brown paint, pattern of hollow rays between bands. Band on top of rim and on top of inner wall. Ø ca. 20.0., th. of wall at break (bottom) 1.0. As De Juliis 1995, tav. XLIII, motif 36 but with additional outer and inner bands.

509	223 E39N25	Pl.16. P4454. Spreading rim of small urn or ?*askos*. Pinkish-brown clay, paler surface, black-brown paint. Band round inner edge of rim, hollow ray flanked by 2 thin lines. Uneven band at top of neck outside. Internal Ø ca. 4.0, but sherd is too damaged for exact angle and dimension to be calculated. Not one of the motifs illustrated by De Juliis (1995), but the component elements – the inner band, hollow rays and accompanying narrow lines are all typical of the Peucetian monochrome class.
2. Rims – bichrome		
***2a. Urns* (olle)**		
510	223 E31N29	Fig.9. P4418. Urn rim. Pinkish-brown slightly micaceous clay, pale brown surface, worn black-brown and red-brown paint. Red band, black band, black ray flanked by 2 red lines, red band at edge of rim, black band on neck outside. Ø 18.0. Probably Peucetian: cf. *Monte Sannace,* tav. 172.13 of phase IIa (C6 BC). But a similar rim pattern is found in South Daunian pottery: cf. De Juliis 1977, tav. XLVIII motif 219 of his "Subgeometric Daunian II" phase (550–400 BC), with an additional black band between the red band and the rays, and with the thinner lines in red.
511	223 E34N21	Fig.9. P4376. Urn rim. Rather soft orange slightly micaceous clay, paler surface, matt black-brown and red-brown paint. Black band outside of neck. Faint band of black rays and another black band flanked by red arcs and bands. Ø ca. 22.5; max. w. of rim 4.7, ht. ca. 2.7.
512	223 E48N29	Pl.16. P4780. Pinkish-brown slightly micaceous clay, similar surface, dark brown and orange brown paint. Broad brown ray flanked by orange and 2 thin brown lines. Internal Ø ca. 10.0. The rim pattern is not illustrated by De Juliis (1995) but is essentially the same as No.505 with an added red thin line.
513	223 E50N27	Pl.16. P4732. Flaring rim of globular urn broken off short of rim edge. Dull brown clay, pale brown surface, black-brown and red-brown paint. Red band round inside of rim flanked by black band and ladder pattern. Pres. w. of rim 5.2. Cf. Gervasio 1921, tav. III.3, bichrome globular urn from Monte Sannace, probably 1st half C6 BC.
514	401/409 Ar.401.	Pl.16. P882a. Out-turned rim. Brown clay; thin black paint; ladder pattern. Ø ca. 22.0.
***2b. Jars and* kantharoi**		
515	223 Gen coll	Fig.9. P497. Frag. of *kantharos* rim and upper wall. Drab greyish-brown clay. Matt blackish-brown paint. Pattern of solid segments alternating with 5 parallel radial lines on rim; 2 vertical squiggly lines in shoulder zone framed on either side by 2 thin and one thicker band. Possibly originally bichrome but discoloured by burning which may have turned some reddish-brown paint to black. Ø 8.5. The rim pattern was already current in the late C7 BC (cf. *Gravina (PBSR) I*, 141 fig. 5, pl. XXVII) and it remained in vogue in the Fossa Bradanica throughout the C6: cf. *Gravina (PBSR) II*, fig. 15.3. (S23), 1st half or middle C6 BC; Castoldi 2014, 46, fig. 27 from Jazzo Fornasiello tomb VIII (with comparanda), ca. mid-C6 BC; Ciriello *et al.* 2012, fig. 14 no. 21 from Monte Serico. It was common at Oppido Lucano: cf. Lissi Caronna 1980, 138 fig. 28, *tomba* 27 no. 2 and *tomba* 29 no. 2, ca. mid-C6 BC; *ead*. 1983, 234 fig. 2, *kantharos* in tomba 56, late C6 BC; 228 fig. 12 nos. 1 and 2, kantharoi from Tomba 54, C6 BC.
516	223 E42N19	Fig.9. P4677. Rim and handle spring of a "Bradano" style *kantharos*. Pinkish-brown clay with paler surface, dull orange-brown and dark brown paint: pattern of dark brown narrow radial "triglyph" lines flanked by broad orange-brown bars leaving reserved triangles. Dark brown band on shoulder below rim. One handle only attested on sherd, but parallels indicate from a two-handled *kantharos*. Ø 10.6. Cf. Andriani & Laricchia 2007, 113 from Tomb 19 in the Accurso necropolis at Gravina, C6 BC.
3. Handle		
517	422	Pl.16. P1087. Vertical handle broken away from vessel at shoulder and rim. Approx. rectangular, but expanding towards rim; rather crudely formed. Buff clay with abundant fine inclusions (lime or shell prominent) and moderate very fine mica. Traces of matt black-brown paint on outer and inner surfaces. Badly worn. Pres. ht. 8.5; cross section at centre 3.7 × 2.5. Because of the damage to the surfaces, it is impossible to tell whether the pot was hand- or wheel-made, or how much of the surface was covered by the paint. The closest analogies, however, suggest that it comes from an East Peucetian geometric monochrome urn with vertical column handles: cf. Yntema 1990, fig. 183, C&S class, form 8A, current in the late C7 and for much of the C6 BC; De Juliis 1995, tav LXV A from Santo Mola (Gioia del Colle) in a tomb group with an Ionian-type cup; *idem* tav. LXXXI A from Monte Sannace; Gervasio 1921, tav XI no. 1 from Valenzano.
4. Wall sherds		
4a. Rows of small concentric circles The motif is typical of the West Peucetian bichrome style of the 1st half C6: De Juliis 1995, tav XLVIII motif 45 of his phase Peucetian II. The motif was common in the pottery used on Botromagno: *Gravina* II, nos. 52-54.		

518	223 E50N26	Pl.16. P4747. Pinkish-brown clay with cream surface, red-brown and black-brown paint. Row of small double concentric circles between pairs of thin black lines flanked by broad red bands. Max. dim. 8.0, th. 0.6. Cf. De Juliis 1995, tav. LXXI. B from Tomb 33 / 1977 at Monte Sannace, C6. Cf. *Gravina* II, cat. 52-54; Castoldi 2014, 49, fig. 30g, and pp. 48-49 from Jazzo Fornasiello (with refs.). The pottery was exported westwards as far as Oppido Lucano: Lissi Caronna 1980, 230 figs 148, 149.
519	223 E38N27	Pl.16. P4515. Pale greyish-brown clay with cream surface out. Black-brown paint. Row of small black hand-drawn concentric circles in reserved panel between thin black bands. The broadest band has a slight magenta tone and was probably intended to be red, as normal in this type of decoration. Max. dim. 4.5, th. 0.4. Cf. No.518.
520	223 E32N30	Pl.16. P4370. Pale brown clay with cream surface, some small white inclusions. Black-brown and red-brown paint. Black concentric circles in reserved spaces inside red band flanked by thin red bands, black band at edge of sherd. Max. dim. 3.7, th. 0.5. De Juliis 1995, tav. XLVII motif 44. 1st half C6 BC.
4b. Chequer patterns		
521	223 E46N38	Pl.16. P4317. Wall sherd from belly of a pot. Slightly micaceous medium brown clay. Red chequer motif framed by 2 black lines and 2 thin red lines inside broader black lines. Thin red line below. Trace of vertical red line also at extreme right edge. Max. dim. 5.5, th. 0.4. Red and black chequer patterns were common in the West Peucetian bichrome style: De Juliis 1995, tav. L, motifs 32 and 33. Cf. *Monte Irsi,* pl. XIX no. 49. Ca. 1st half C6 BC. Another similar P4520 from E36N29 also on site 223.
522	407 B5	Pl.16. P1060. Pale brown clay. Chequer pattern in matt red-brown, bands in matt black-brown. Max. dim. 5.5, th. 0.4–0.5. As the above. Cf. also Sanvito in *PSF,* 135, tav. I.9, probably C6 BC.
523	223 E38N25	Pl.16. P4473. Greyish-brown clay with a little mica, paler surface (slip?) out, black-brown and reddish-brown paint. 2 black and one red line, chequer motif in black with reserved rectangles, beginning of red band below. Max. dim. 5.5, th. 0.5–0.5. Cf. *Gravina (PBSR) II*, from Botromagno, fig. 14, T. S21, C6 BC.
4c. Rows of narrow vertical lines This is a typical decorative pattern of the developed West Peucetian bichrome style of the 1st half C6: De Juliis 1995, tav XLV motif 16. The outermost line of verticals frequently terminates in a volute (as No.524), and the motif is frequently used in combination with rows of vertical squiggles (as in the next group *4d*).		
524	223 E46N18	Pl.16. P4679. Frag. of a small krater. Pale orange and brown clay with cream surface out; a brown pebble 3mm long in clay, black-brown and red-brown paint, worn. Broad black band, 2 thin red bands, "column" of 9 vertical lines terminating in dotted volutes (that on the left only partly preserved) – perhaps meant to be an Ionic column. Max. dim. 3.5, th. 0.3. Cf. *Gravina* II, no. 57; De Juliis 1995, tav XCIII in Bari Museum.
525	223 E43N39	Pl.16. P4298. Wall sherd from shoulder of urn. Pale yellowish-brown clay. Matt dark brown and red-brown paint. 2 horizontal bands in dark brown. Panel motif of narrow vertical bars and squiggles. Max. dim. 4.5, th. 0.4–0.6. Cf. De Juliis1995, tav. LXXXVII B, *olla* in Bari Museum, Peucetian bichrome, ca. 1st half C6 BC.
526	223 Ar.226	Pl.16. P420. Pinkish-brown clay with light brown surface; 2 black-brown wavy lines framed by thin brown lines. Probably intended to be bichrome. Max. dim. 5.0.
4d. Rows of vertical squiggles The motif forms part of De Juliis 1995, motif 16 in his Peucetian bichrome class, combined with the rows of vertical lines. But groups of squiggles were also used in other decorative patterns in sites in the Bradano valley (see on No.515). For a discussion of the motif, see Castoldi 2014, 52, fig. 31 d and e from Jazzo Fornasiello, with comparanda at Botromagno and Oppido Lucano. Mid-C6 BC. Several sherds with this motif were found in the waste dump associated with 2 kilns of the C6 at Montescaglioso: Lo Porto 1988–1989, 391 fig. 103 no. 7, 392, fig. 104 no. 2. Cf. also Sanvito in *PSF,* 136, tav. II.12, probably C6 BC.		
527	223 E33N21	Pl.16. P4488. Brown micaceous clay with similar surface out. Black-brown and magenta red paint. Thick black-brown band and 2 thin magenta red bands with 7 vertical zig-zag lines below also magenta red. Max. dim. 4.8, th. 0.4–0.5. Cf. *Gravina (PBSR) II*, fig. 15.3 from Tomb S23, 1st half/ mid-C6 BC.
528	223 E48N24	Pl.16. P4721. Brown clay, paler surface, purple-brown paint. Band and parallel vertical rows of zig-zag. Max. dim. 3.3, th. 0.5. Cf. *Monte Irsi,* pl. XVIII no. 38.

529	401/409 Ar.401	Pl.16. P1123. Wall sherd, probably of a *kantharos*. Plain buff yellow exterior. Orange buff interior surface. Black and red paint visible on external surface but red paint poorly preserved. Decoration in black except for red band at bottom of sherd. Group of 3 vertical wavy lines flanked by a four-winged lozenge motif in decorative panel. Max. dim. 6.5, th. 0.7 (at top)–0.3 (at bottom). For the combination of the lozenge with vertical squiggles, cf. Castoldi 2014, 46, fig. 27 from the *Jazzo Fornasiello* with suggested date ca. mid-C6 BC; also *Gravina (PBSR) II*, fig. 15.3 from Tomb S23 (row of vertical squiggles); Andriani & Laricchia 2007, 113 from Tomb 19 in the Accurso necropolis at Gravina, both C6 BC.
530	223 E32N18	Pl.16. P4760. Light brown clay, slightly micaceous, pale brown surface. Black-brown and red-brown paint. 2 thin vertical vertical wavy lines and 3 thin bands in black, the thick band in red. Max. dim. 5.0, th. ca. 0.5. The isolated squiggle or pair of squiggles appears top be characteristic of the Gravina area: Cf. No.515, and several unpublished pieces in the old collection of the Fondazione Santomasi in Gravina.
4e. Horizontal squiggly line		
531	223 E45N28	Pl.16. P4678. Pale brown slightly micaceous clay, cream surface out, black-brown, red-brown paint. Horizontal squiggly line flanked by narrow and broader bands, central band red. Max. dim. 4.3., th. 0.4. Cf. Andriani & Laricchia 2007, 113 from Tomb 19, C6; Ciancio 1997, 166 no. 58 from Tomb 47 late C7/ early C6 BC.
4f. Dotted line		
532	223 E31N20	Pl.16. P4507. Shoulder and neck turn probably of small urn. Hard pinkish-grey clay, pale brown micaceous surface out, black-brown and reddish-brown paint. Crudely painted – thin red line between dotted black lines flanked by red and black bands. Black and red bands on rim. Est. internal Ø 6; pres. ht. 4.7. Cf. *Gravina (PBSR) I*, 142 fig. 5, with Corinthian "running dog" *kotyle* and Greek type cup. Late C7 BC. Probably a local piece. The piece falls within Yntema's "Bradano banded wares" group (1990, 180).
4g. Dog-leg		
533	223 Ar.245	Pl.17. P601. Drab grey-brown clay with lighter brown surface. Dark brown and reddish-brown paint. Bands, hatched panel and hook motifs; third band from bottom in red. Max. dim. 4.9, th. 0.3–0.6. Probably West Peucetian: De Juliis 1995, tav XLVII, bichrome class, motif 23. The reversed form of the motif with the upper bar to the right of the lower bar can be seen on the shoulder of a small biconical urn/ *olla*, *Gravina (PBSR) III (2)*, 86 fig. 33.1 and pl. XXIV.a from Tomb IX, first quarter C6 BC. It was used also in the Basento valley in Central Lucania: Cf. Lo Porto 1973, tav. XXIII.2 from a tomb of the C6 at Pisticci; De la Genière 1968, pl. 52.3 from Vaglio (no context, in Potenza museum). The motif was already current in Period II, as on No.471.
534	223 E37N21	Pl.17. P4605. Pale brown clay, black-brown and red-brown paint. Black dog-leg motif with doubled vertical lines and single horizontal in a narrow panel between black bands; red band below. Max. dim. 2.8, th. ca. 0.4. Cf. Mayer 1914, 188 and taf. 18.4 from San Martino near Matera; Canosa 1986a, 88 fig. 11 inv. 151658, Frag. from Matera, area della Banca d'Italia.
4h. Star-shaped motifs		
535	223 E29N30	Pl.17. P4542. Reddish-brown micaceous clay, pale brown surface out, black-brown and red-brown paint. Red between 2 black bands, part of black diagonal motif inside black frame. Max. dim. 6.2, th. 0.4. Possibly part of a star-shaped motif inside a roughly square pendant frame attached to a broad band around the widest girth of a large vessel. The motif appears first in Period II, as on a large frag. form a sherd floor at Gravina, *Gravina (PBSR) I*, 146 fig. 8a, and on a large jug from Matera, S. Nicola dei Greci, Canosa 1986b, 96 fig. 20 bottom right; a sherd from Putignano (Mayer 1914, 190 and taf 19.k) is perhaps also of this period. It probably recurs on a bichrome frag. from Incoronata: Castoldi 2006, fig. 170. The motif reappears on the shoulder of a globular urn in the developed style of Gravina IV: *Gravina (PBSR) II*,134, fig. 14.1 from tomb S21, mid-C6 BC. This piece, being bichrome, might be of either Gravina III or IV.
536	223 E46N29	Pl.17. P4658. Pale brown micaceous clay fired orange-brown out. Black-brown paint. Band and part of star motif with reserved centre filled by 2 concentric circles; 4 and 5 dot rosettes between rays of star (probably monochrome part of a bichrome pot). Max. dim. 5.0, th. 0.4. Cf. *Gravina (PBSR) II*, 116 and fig. 14.1 from Botromagno, burial S21, Period Gravina IV.
537	223 E37N21	Pl.17. P461. Drab brown clay with light brown surface. Broad dark brown and narrow purplish-brown bands with ray flanked by dots below. Probably a clumsy version of the motif of No.536. Max. dim. 6.0; th. 0.9.

4i. Dot-rosettes		
538	223 E34N22	Pl.17. P543. Ws of a closed shape (oinochoe?). Reddish-brown clay with paler brown surface. Dark brown band and rosette with 6 dot petals surrounding a faint orange-brown central dot. Inside undecorated. Max. dim. 2.5, th. 0.4. The rosette was derived from Protocorinthian, and was used occasionally in Peucetian pottery in the C7, as on the bowl at *Monte Sannace* (tav. 160 no. 3), and in the C6, as in the shoulder zone of a jug from Ginosa, tomb 290 (Schojer 2010, 242 and tav. XXIX.a), or as fill for a meander motif on a bichrome urn from Monte Sannace assigned by De Juliis (1995, 63 and tav. LXXXIV) to his phase Peucetian I, mid-C7–first quarter C6 BC.
539	223 E36N29	Pl.17. P4614. Drab light brown clay, black-brown and brownish-red paint, probably discoloured by burning. Part of a black band and rosette of black dots with a roughly drawn red circle enclosing central dot. Max. dim. 6.0, th. 0.7. A cruder version of the rosette of No.538
540	223 E32N25	Pl.17. P4761. Neck sherd. Pale brown micaceous clay with pinkish core, black-brown and red-brown paint. Black band at top, rosette with red centre surrounded by black dots crudely drawn. Max. dim. 5.0, th. 0.5. This form of the motif is typical of West Lucanian pottery: cf. De la Genière 1968, pl 41.1 and 2, from Sala Consilina, Tombs D.24, A.133 of Period III.C, ca 580–540 BC; but it is also found in Messapian: cf. Yntema 1990, fig. 86 from Cavallino, middle–later C6 BC.
4j. Herring-bone		
541	223 E45N28	Pl.17. P4669. Orange-brown micaceous rather soft clay with small black and brown grits, similar surface, black-brown and red-brown paint. Vertical herring-bone motif in narrow panel, bands below, bottom 3 bands red. Max. dim. 6.0, th. 0.4–0.5. The motif is attested in Period I (No.433), but is rare in Apulian pottery of the bichrome phase. The decorative syntax suggests, however, that it is contemporary with the large urns with single vertical panel consisting of a column of N or V motifs in the shoulder zone, found in several tombs of the last half C7 and 1st half C6 BC at Gravina and Montescaglioso: cf. *Gravina (PBSR) II*, figs. 10, 11, tomb S3.1 from Botromagno; Laurenzana 2016, 50 and fig. 2 from Monte Irsi (tomb 8); De Juliis 1995, tav. LIX B, LX 1, LXI.1, LXIII. A, B.
4k. Pendant motifs		
542	223 E37N21	Pl.17. P459. Light brown clay; black-brown paint. Double curved pendant lines. Max. dim. 4.3; th. 0.4 The curved lines would have decorated the lower part of a vessel. Cf. *Gravina (PBSR) I*, fig. 10a (found on the sherd floor of the C6 BC); *Gravina (PBSR) II*, fig. 14.1 (S21); fig. 15.1 (S23) both C6 BC. Single curved pendant lines are a common motif on the bichrome pottery from W. and Central Lucania, including Sala Consilina (cf. Yntema 1990, 140, figs. 113-115), but a twin-line version is sometimes found there: cf. Mutino 2006, 67 and tav. XIX no. 99869 from Barrata, tomb 11, mid-C6 BC. It is attested also at Oppido Lucano: cf. Lissi Caronna 1980, 138 fig. 28, tomba 27 no. 1, mid-C6 BC.
543	223 E39N28	Pl.17. P4475. Reddish-brown micaceous clay with paler brown surface. Reddish-brown band above dark brown band and 2 pendant tails below. Max. dim. 5.8, th. ca. 0.4. Cf. *Gravina (PBSR) II*, fig. 10 from tomb S3 (1st half C6 BC). This was a very common motif in the W part of Peucetia and the Bradano valley.
544	223 E32N19	Pl.17. P4693. Hard pinkish-brown clay with some mica, cream surface out; black-brown paint. Pendant line terminating in an "M" motif. Max. dim. 4.1, th. 0.4. Probably from a *kantharos* of the C6. Cf. *Monte Irsi* pl. XIX no. 46.
545	223 E43N19	Pl.17. P4672. Wall sherd with handle-spring at right edge. Pale pinkish-brown clay with some white shell inclusions up to 2mm, black-brown paint. 2 pendant lines ending in a M motif at base of handle-spring. Max. dim. 4.3, th. at bottom 0.7. The pendant "M" motif appears to be derived from the stylized double-headed birds used as a pendant motif in the pottery of Period Gravina III: cf. *Gravina (PBSR) III (1)*, pl. XX no. 144 from Parco S. Stefano, Gravina.
4l. Floating W and M motifs		
546	223 E35N30	Pl.17. P4598. Pale brown clay similar surface, dark brown paint. Floating W or M motif. A monochrome sherd probably from the shoulder of a bichrome pot. Max. dim. 6.0, th. 0.4–0.5. Floating "M" and "W" motifs are perhaps derived from the schematic birds such as those seen on No.545 (as suggested by Cossalter & De Faveri (2012, 93) in the case of examples from Incoronata). They occur on some pottery from Incoronata (before ca. 640/630 BC) and were widely used in the pottery of Peucetia and the Bradano valley in the C7 and C6, especially on the shoulders of closed shapes. Cf. *Gravina (PBSR) III (2)*, fig. 93 no. 31 of phase IB on Cozzo Presepe Site A (late C8–end C7); Cf. Ciancio 1997, 166 no. 56 from Tomb 45 on Botromagno, mid-C6 BC (M and N motifs, bichrome); Ciancio 2013, 223 fig 5 from a tumulus burial of the C6 BC (the specchia Scattone) near Conversano.
547	347 P4	Pl.17. P818. Neck turn and shoulder. Orange-brown slightly micaceous clay, a few small brown and grey inclusions. Matt red-brown and black-brown paint. Traces of red band at top of sherd with 2 black bands. Below it and floating M motif in black. Max. dim. 5.3, th. 0.35–0.5.

548	223 E39N25	Pl.17. P4479. Light greyish-brown clay with some mica, similar surface, black-brown paint. Part of horizontal band with floating zig-zag (or extended M-motif) below. Max. dim.6.0, th. 0.7–0.8. The motif appears on the shoulder of an urn from Monte Sannace tomb 65A of the end C7/ beginning C6: De Juliis 1995, 56 and tav. LVIA (of his Peucetian I class). Cf. also. Ciancio 1997, 162 no. 42 from Tomb 22 early C6 BC.
4m. Angular hooked motifs These are found in both Daunian and Peucetian pottery, but were particularly popular in the East Peucetian monochrome style.		
549	223 E49N42	Pl.17. P7065. Grey clay, dark greyish-brown paint (burnt). Thin horizontal lines and row of (2 surviving) hook motifs. Possibly wheel-made and painted off the wheel. The colour differences between 'red' and 'black' are very slight. Probably discoloured by field fire. Max. dim. 3.5, th. 0.5. I know of no precise parallel for this piece.
550	223 E49N27	Pl.17. P4900. Pale greyish-brown clay, dark brown paint. 2 thin bands and interlocking hook motif, probably part of a running hook-scroll. Cf. Ciancio 1997, 171-172 from Tomb 48 below Botromagno, [late C7/ early C6 BC. The motif is particularly common in the monochrome style of the area around Bari: cf. Yntema 1990, 203, fig. 185 no. 11; De Juliis 1995, 56 and tav. XLVIB from Turi in a tomb of the early C6 BC; but is sometimes also found in the bichrome style: De Juliis 1995, tav. XLIV motif 3, XLVII motif 31.
551	223 E49N26	Pl.17. P4719. Pale brown clay, cream surface out, black-brown and red-brown paint. Bands and concentric lozenge or hook-scroll; central band red. Max. dim. 4.0, th. 0.4. Possibly part of a running hook-scroll: cf. No.550.
552	223 E40N22	Pl.17. P4456. Pale greyish-brown clay with similar surface, very little mica, dark brown paint. Part of 2 concentric lozenges, subdivided, with meander-hook; 2 vertical lines defining panel on the right side. Max. dim. 6.0, th. 0.7. Probably Peucetian: cf. De Juliis 1995, tav. XCIII, bichrome krater in Bari Museum, for a large quartered lozenge having a meander-hook motif in each quadrant. The shape is influenced by Corinthian column-kraters of the 1st half C6.
4n. Free-floating hand-painted concentric circles The motif is characteristic of Daunian pottery, used as a filling ornament in the lower parts of bellies of large pots, both in North Daunia (around Ordona) and in South Daunia (around Canosa). Cf. Yntema 1990, 245 fig. 222 "South-Daunian Subgeometric I" of unknown provenance ca. 625–575 BC; 258 fig. 235 from Canosa, fig. 235 "South-Daunian Subgeometric II" from Canosa 2nd half C6 BC; De Juliis 1995, tav CV.B and CVII.B, both from Ordona, assigned to phase "Subgeometric Daunian II (550–400 BC)".		
553	223 E44N39	Pl.17. P4301. Pale brown clay, matt red-brown band and 3 black hand drawn concentric circles. Max. dim. 3.5, th. 0.5. Cf. *Gravina (PBSR) III (2)*, fig. 34, a Daunian import found in sarcophagus burial IX at Gravina (C6 BC).
554	223 E46N28	Pl.17. P4810. Pinkish micaceous clay with some small black inclusions, cream surface out, orange brown and pale brown paint. Orange band and part of 2 brown concentric circles crudely painted. Max. dim. 6.9, th. 0.8. Cf. No.553.
555	223 E44N44	Pl.17. P7074. Orange-brown micaceous clay, lighter surface. Hand-painted concentric circles. Matt black-brown paint. Max. dim. 4.4, th. 0.4–0.7. Cf. No.553.
556	223 Ar.226	Pl.17. P419. Wall sherd from belly of medium-sized pot. Brown clay, micaceous, a few small inclusions, black-brown and reddish-brown paint (the uppermost band and vegetable motif). Hand-drawn concentric circles in a triangular frame of broad lines; frond with narrow leaves to right. Max. dim. 5.0, th. 0.4–0.5. Cf. No.553. A similar combination of a stylized vegetable frond with traditional (sub)geometric motifs can be seen on 2 Daunian ceremonial strainer vases puiblished by Mayer (1914, 133 taf 1.2 in Bari; cf. taf 13.11 in Berlin). They fall within De Juliis' (1977) class of Daunian Subgeometric II, form XII, *vaso-filtro*, ca. 550–400, and Yntema's (1990) South Daunian Subgeometric IIA, Form 17, strainer, ca. 550/525–477/450 BC.
4o. Floating red arc and chord		
557	347 N2	Pl.17. P807. Fairly hard reddish-brown clay, paler outside; black-brown and orange-brown paint. Floating orange-brown arc and chord, 2 thinner black bands, and orange-brown broad band. Max. dim. 4.7; th. 0.4. For the motif, cf. *Gravina II* pl. II no. 39. It is found in the pottery of Oppido Lucano, though normally accompanied by 2 narrow black lines: cf. Lissi Caronna 1972, 503 fig. 16, globular *deinos* from a tomb of ?C6 BC; eadem 1980 figs. 28, 32 from tomb 29, 2nd quarter C6 BC.

4p. Dot-filled triangle		
558	223 E39N27	Pl.17. P4723. Light brown clay, black-brown paint. Dot filled triangle in frame of fine lines. Max. dim. 2.2, th. 0.4 The dot-filled triangle framed by narrow lines is found both in South Daunian Subegometric I (Yntema 1990, 245 fig. 220 1 and 2 and fig. 222 ; e.g. Bottini 1982, figs 15-16 nos. 37, 41 and especially 42 from tomb 279 at Lavello, 3rd quarter C7 BC); and occasionally in the East Peucetian monochrome class, e.g. at Conversano in tomb 6, end C7 BC: De Juliis 1995, 55 and tav LV, anforetta 1.2A. Cf. *Gravina* II cat. 47.
4q. Rhomboid chequer patterns with compartments alternately dot-filled and void The following three pieces all show parts of rhomboid chequer patterns with compartments alternately dot-filled and void, set in a frame of thin black and reddish-brown lines. The motif is typical of South Daunian Subgeometric I pottery of the C7 BC (Yntema 1990, fig. 219). It can be seen on several Daunian pots (mostly jars) from Tomb 279 at Lavello found with a Greek colonial *kylix* of ca. 3rd quarter C7 BC: Bottini 1982, figs 12-17; Mazzei 2010, fig. on p. 109.		
559	223 E38N21	Pl.17. P4439. Pinkish-brown clay with pale brown surface out, black-brown and brown (for red) paint. Black dotted lozenge motif flanked by 2 brown lines in black frame. Max. dim. 5.5, th. 0.7–0.9. Cf. *Monte Irsi*, pl. XVIII no. 40.
560	223 E37N27	Pl.17. P4521. Pale brown clay, black-brown paint. Chequer pattern with alternate lozenges dot-filled. Max. lg. 3.5, th. 0.3.
561	223 E43N20	Pl.17. P4551. Pinkish-brown slightly micaceous clay with cream slip, black-brown paint. Dot-filled lozenge, thin and part of thicker bands. Max. dim. 4.5, th. 0.4–0.6. Perhaps part of a larger lozenge pattern on a bichrome pot. Cf. *Gravina* II cat. 48.
4r. Horizontal zig-zags		
562	223 E38N21	Pl.17. P584. Frag. from shoulder of small pot. Hard brown clay with smooth surface; matt brown and purplish-brown paint. Meander key pattern in narrow zone subdivided by vertical lines; horizontal zig-zag with dots in angles, brown except for zig-zag and surrounding frame. Est Ø at base of sherd 14.0. Cf. Holloway 1970, fig. 153 no. 215 from Satriano acropolis (zig-zag); Lo Porto 1973, tavv. V and IX for several examples of key-pattern frieze from Pisticci; *Monte Irsi* pl. VII.7 from burial of ca. 400 BC; Yntema 1990, 157 fig. 139 motif no. 12, "Bradano Late Geometric". Cf. also No.564 below.
563	223 E37N20	Pl.17. P4495. Medium brown slightly micaceous clay, slightly paler surface out, dark brown and reddish-brown paint. Single reddish-brown zig-zag line between dark brown concentric triangles, another narrow red band between brown bands below. Discoloured by burning near right edge of sherd. Max. dim. 2.7, th.3.0. Probably Daunian: a similar pattern, but with more triangles, is found in Daunian pottery of De Juliis' *Subgeometric Daunio II* of the C6 BC: cf. De Juliis 1977, tav. LXXX (with all triangles in black); and: Mazzei 2010, 139 (with triangles alternately black and red), both from Ordona. But perhaps Lucanian: a simpler version of the motif can be seen on an *oinochoe* from Roccanova in the Agri valley datable to the 1st half C6 BC: Yntema 1990, fig. 117 (his West Lucanian class, final phase), and on wheel-made column kraters of Oppido Lucano in use over a long period from the C6 to the end C5/ beginning C4 BC, with a reddish-brown zig-zag flanked by single brown triangles: Lissi Caronna 1983, 255 and figs 46, 47 no. 7 from tomb 64, last half C6 BC; 237 and figs 19, 24 from tomb 57, end C5/ beginning C4 BC.
4s. Cross-hatched panels		
564	223 E50N40	Pl.17. P4281. 2 joining sherds. Pale greenish-grey clay with large white inclusions including one up to 0.7cm. Decorated outside only with matt brown and reddish-brown paint of varying thickness. Cross-hatched zone in brown on shoulder of sherd (probable handle zone), 2 reddish-brown bands enclosing frieze of hook motifs and vertical bars; beginning of brown band below. Max. dim. ca. 8.0. *Kantharoi* with hook motifs in the handle zone separated by vertical bars are found at Gravina, e.g. in Tomb 20 of the Accurso necropolis, associated with (*inter alia*) several black-gloss pots of the last half C5 BC: Andriani & Laricchia 2007, tav. II.2 and figs. on p. 116; but these pieces lack the cross-hatched pattern which is found in various S Italian subgeometric wares, cf. e.g. De Juliis 1977, tav XXXVI no. 27, Daunian II (550–400 BC); tav. XLIX motif no. 3, Daunian III (400–300 BC); De Juliis 1995, tav. XXXIII no. 26, (East) Peucetian monochrome; Yntema 1990, 136 fig. 111 no. 4, West Lucanian (middle and later C6 BC). The combination of the two motifs is typical of the latest geometric pottery of Pisticci, cf. Lo Porto 1973, tav. V.2 for 6 examples from tombs of the C6 from Pisticci; Adamesteanu *et al.* 1971, tav. IV no. 20242 from Pisticci tomb 11, C5 BC. Much the same combination can be seen on a *kantharos* from Monte Irsi, in a tomb group of the late C5 or early C4 BC, but with a vertical and horizontal grid pattern in place of the cross-hatching : *Monte Irsi*, 26 and pl. VII no. 7. Cf. also No.562.

565	223 E34N29	Pl.17. P4635. Grey clay with cream surface and a little mica, brown paint. Cross hatched frieze above 2 bands. Max. dim. 3.9, th. 0.6. The fabric, however, and the similarity with No.564 suggests that this piece is an import from Pisticci or its vicinity.
566	223 E50N25	Pl.17. P4738. Pale brown clay, paler surface out, matt brownish-red paint. Bands and cross-hatched pattern. Max. dim. 3.4, th. 0.6. Probably from a *kantharos* of late Pisticci geometric style. Cf. No.562.

5. *Thymiateria* with banded decoration

These are tall vessels, consisting of a dish mounted on a high shaft often made in sections marked off with a projecting collar which imitate Greek originals at some remove. They appear in burials of the late C7 and 1st half C6 at Roccanova (Tocco Sciarelli 1980, 449-50, tav. V.2) and Chiaromonte (Russo Tagliente & Berlingò 1992, 257-258), and at Sala Consilina in phase SCIII.C, 1st half C6 BC (De la Genière 1968, 331and pl. 45.3). All have trumpet feet and tall shafts generally decorated with horizontal bands, but the form of the vessel supported on the shaft varies. The commonest type has two vertical handles attached near the top of the shaft. The evolution of the form is not quite clear, but by the C4 BC new types of *thymiaterion* stripped of their handles and rising from moulded pedestal bases appear in great numbers and in innumerable forms on some sanctuary sites in Lucania, notably at Fontana Bona of Ruoti (Fabbricotti 1979), at Torre di Satriano (Battiloro & Di Lieto 2005), Timmari (Lo Porto 1991, tav. LXXVII) and Rossano (Adamesteanu & Dilthey 1992, 28-33). They were also used in domestic shrines at e.g. Roccagloriosa *(cit.* I, 261-262.) and Oppido Lucano (Lissi Caronna *et al.* 1990–1991, 271 and figs. 96-97 nos. 53-55 (undecorated)). They are found more rarely in Apulia, principally in burials at e.g. Rutigliano (De Juliis 2006, 349) and Botromagno (Herring 2000b, 159-164), but also (probably) in domestic contexts, as at Monte Sannace (*cit.* – Rossi, 156 tav. 302.1).

The ceremonial character of these vessels is emphasized by the forms which are often highly ornamental with stepped feet, concave lower parts of the pedestals, and disks projecting from the main shaft. It used to be thought that they were used for burning incense (hence the name given to the shape), but they show no traces of burning, so it is more likely that they held water for ritual sprinkling (Herring 1998, 144; 2000a, 160). Russo Tagliente & Berlingò (1992, 258) note that one of the types found at Chiaromonte is hollow and cannot therefore have held liquid, implying that these were symbolic objects made specifically for burials. None of the pieces from our field survey, however, is hollow.

All the *thymiateria* found in the field survey were collected on San Felice. The majority were in wheel-made painted ware (Nos.617-623), but there was also a hand-made piece in impasto (No.312) and a probable example in geometric monochrome of Period Gravina II (No.443). The following three pieces were also made in the geometric tradition, but they are decorated only with monochrome black bands (at least on the surviving fragments) and cannot therefore be assigned to any of the geometric classes on the basis of motifs. Nos.566A and B were hand made in the traditional geometric technique and painted with uneven matt black bands on a pale creamy white slip. No.566C is an intermediate piece in that it appears to have been made on a slowly rotating wheel, but was painted off it with black bands of uneven thickness on a pale creamy slip.

566A	223 E32N19	Fig.9. P4424. Upper part of pedestal, shaft, and beginning of bowl. Pinkish-brown clay, yellow in core; some brown and white grits; pale brown slip; matt black paint in 2 bands on shaft. Round socket, Ø 2.7 and 1.7 deep, in centre of under side. Ø of shaft 6.0; pres. ht. 3.8.
566B	223 E47N28	Fig.9. P4753. Upper part of shaft, protruding collar and beginning of bowl, or possibly of another section of the shaft if this was made separately and attached. Clay red at centre of break, brown towards edge, with pale brown surface, matt black paint in band below collar. Ø of shaft 9.0, Ø of collar 12.3, pres. ht. 7.0. Such collars were a common feature on *thymiateria.* e.g at Satriano (De Lieto 2005), at the Fontana Bona of Ruoti (Fabbricotti 1979, figs. 43-44), and Roccagloriosa (*cit*. vol I, figs. 182 and 184, nos. 221-225).
566C	223 E42N24	Fig.9. P4451. Frag. from top of shaft showing base of bowl. Pinkish-brown clay with a little mica and a few small white inclusions; paler yellowish-brown surface out and in. 2 thin bands and traces of a thicker band on outside in dark brown paint. Ø of shaft 5.0, pres. ht. 2.4.

5. WHEEL-MADE PAINTED (WMP) POTTERY

I. Introduction

Terminology

This class of pottery is variously known in Italy as *vasi listati*, *ceramica a fasce*, *ceramica a decorazione lineare*, etc – terms generally rendered in English as "banded ware" (Riccardi in *Monte Sannace*: "ceramica a decorazione lineare"; Gualtieri and Fracchia in *Roccagloriosa I* : "banded ware"; Yntema 2001: "Colonial-Greek and native banded wares" (Valesio); Marchegiani in *Pomarico Vecchio 1*: "ceramica tornita matt-painted", Colangelo in *Torre di Satriano* I: "ceramica a bande"; Riccardi in *Rutigliano*: "ceramica a fasce e di stile misto"; Mastronuzzi 2013 "ceramica a fasce" (Monte Papalucio)). I continue to use the term "wheel-made painted ware" (WMP) for the simple reason that some of the pots which should be included in this category are decorated with vegetable and other motifs – Mayer's *Mischstil* (1914, ch. XIII). The term really needs other descriptors to indicate that it refers only to pottery of the Middle and Late Iron Age and Hellenistic period, and that it does not include the black- and red-figured pottery or the black- and grey-gloss wares of the Greek and Italiote tradition. But that would be excessively clumsy.

Characteristics

The WMP pottery of the survey area is generally made from well purified clay, and often shows no conspicuous inclusions, though in some pieces small white, brown and occasionally black grits are visible in the break. They are not sufficiently distinctive to suggest a different source of the clay. Most pieces are well turned and the great majority are hard-fired, though five of those recorded in the catalogue are soft or fairly soft, implying that the surface can be easily scratched with the thumb-nail. The clay shows considerable variation in colour reflecting differences in the firing conditions, but it is normally pale brown or pinkish-brown, occasionally greyish in core. The paint is generally applied directly onto the base clay without an intervening slip. It is usually black, tending to dark brown or orange-brown, depending on the thickness with which it is applied. In many cases these chromatic effects are likely to be deliberate. The paint is usually matt, but is sometimes slightly glossy. All in all, the quality of the production is uneven suggesting that standards varied between workshops and over time.

The decoration consists mainly of simple linear patterns, painted while the pot was still on the wheel, after the fashion of Greek banded wares. Frequently a pair of bands flanks a simple wavy line, as on some Greek banded pieces, but more complex patterns are also found. Five sherds show decoration in geometric style (Nos.613, 624, 661, 664, 671). They illustrate the hybrid style of decoration, discussed by Herring (1998, 187-189), in which the potter has applied motifs drawn from the geometric repertoire to pots made in the new wheel-made technique. They must date early in the development of the ware. No.589, decorated with alternating rows of dots and bands may also come in this category. Another sherd (No.617) shows a row of egg-motifs taken from Greek figured pottery. A number of pieces are decorated in the 'mixed style' with vegetable motifs also derived from Greek pottery. Such patterns were used in WMP pottery throughout Apulia (and to a lesser extent in Lucania), appearing first in Peucetia around the end of the C6 BC (Riccardi in *Rutigliano*, 351). They are frequent at Monte Sannace in phase IIb, 2nd half C6–C4 BC (*Monte Sannace* tav 242-245), and are attested in graves of the C4 BC at Gravina, especially on *kantharoi* and kraters (e.g. Ciancio 1997, 235 *kantharoi* 389, 390 from tomb 21 of the 1st half of the C4 BC; Andriani & Laricchia 2007, 91, *kantharos* and *stamnos* lid in tomb 5 in the Accurso necropolis, 1st half C4 BC). The motifs in this period were generally drawn from the repertoire of Apulian red-figured and Gnathian pottery.

Pots with this type of decoration are not well represented in the material from our field survey, though the rim of a globular *pithos* No.660 from Site 223 (San Felice) is decorated with an ivy frond, and three other sherds from Site 223 (Nos.666-668) and one from Site 407 (No.669) also have vegetable motifs (Plate 18).

Origins and development of the ware

The initial impetus came from mainland Greece and Ionia, but local production began in the Greek colonies on the South Italian coast before the end of the C7 BC, especially at Sybaris. Many of the pieces from Sybaris-Stombi listed under the title "Ceramica comune fine" in *Sibari II*, 281-322 are locally made pots decorated with simple bands and wavy lines. Some banded pots were also produced at Siris in the C7 and deposited in burials of the period (Berlingò 1986, 121 and tav. 13, *olpe* in Tomb 48, mid-C7; 125 and tav 24, mug in Tomb 50); and a kiln of the C6 for firing banded and other wares has been excavated there (Adamesteanu 1985, 63). Production of WMP one-handlers began at Metaponto too before the end of the C7, alongside *skyphoi* and Ionian-type cups (Carter & Toxey 1998). Workshops in the potters' quarters of the city continued to produce WMP banded pots alongside other wares down to the mid-C4 BC (Silvestrelli 2016, 137-140). There were also workshops in the Chora of the city. One excavated in the area of Torretta in the territory of (modern) Pisticci, 12km SW of Metaponto, had a large rectangular kiln used in the last half C6 and for most of the C5 to produce a variety of wares, including wheel-made banded pottery (Lecce 2010–2011).

The drinking vessels produced in the Greek colonies were imitated in the interior by indigenous potters who soon learned to use a rapidly rotating potter's wheel (Tagliente in Russo Tagliente & Berlingò 1992, 245), but their Peucetian counterparts in Central Apulia did so at much the same time (the late C7/ early C6) producing both drinking cups of Greek type (Section 6.4) and small red-slipped *kantharoi* and jugs with a distinct local character (Section 5A1), which were frequently deposited in tombs together with larger Peucetian geometric pots. Around the middle of the C6 they started to make a wider range of pots with banded decoration. The most popular shape was the one-handled cup which was in use throughout the region, but the stemmed

dish also appeared, as did the *stamnos*. *Kantharoi* and one-handled jugs of various types were more popular in the Eastern part of Peucetia. The plates of datable tomb groups published by De Juliis (1995, pl. LXII-LXVIII) give a good idea of the extent of this production before the end of the C6. Some shapes like the one-handled cups have close equivalents in Greek contexts, others like the stamnoid kraters and *lekanai* diverge considerably from their Greek counterparts.

In the C6 and C5 there were still sub-regional variations in forms and decoration, though less marked than they had been in the earlier geometric wares. The characteristics of the various local productions need much more study. Most of the pieces from our survey area can be matched with examples from Botromagno where there must have been several workshops producing large quantities of these vessels. It is likely that they supplied most of the pieces used in our Survey Area. The typology established for the Botromagno WMP pottery by Shari Saunders and Joan du Plat Taylor (in *Gravina II*, 1992) demonstrates the range of production. There are only a few primary shapes, but they occur in innumerable minor variations which show that the output was not standardized. There are many similarities with pots used and presumably produced at Rutigliano (*cit.* – Riccardi), and some with the ware used at Oppido Lucano (Lissi Caronna 1972, 1980, 1983, 1990–991) and Torre di Satriano (*cit.* – Colangelo, Di Lieto) in Lucania, although the banded decoration on those pieces tends to be heavier and vegetable patterns are rarer. The ware used in Ordona in Daunia is significantly different with a high proportion of closed shapes, particularly mugs, and a distinctive form of *kantharos* (Iker 1971, 1979, 1986). In the C4 and C3 BC production seems to have become more generalized, and parallels can be found in various key sites of the period, including Pomarico Vecchio (*cit.* – Marchegiani) and Civita di Tricarico (*cit.I* – Caravelli) in Lucania, and Valesio in Salento (Yntema 2001), though even in these cases there are marked differences in the popularity of shapes used.

As Herring has noted (1998, 179-183), the use of the fast wheel allowed potters to produce their wares much more quickly and efficiently than had been possible with the slow-wheel technique used for the earlier geometric pottery. As a result multiple vases of the same type were frequently deposited in tombs.

Shapes and functions

One of the commonest shapes represented in the field survey material is the one-handled cup, which was ubiquitous in South Italy on both Greek and indigenous sites from the C6–C3 BC. They could have been used either as ladles or as drinking vessels. A few beakers/ mugs must also have been used for drinking. Stemmed dishes were fairly popular, and were presumably used for holding small tit-bits of food, or perhaps as *thymiateria* for ritual offerings. Some larger stemmed vessels were certainly *thymiateria*. There was a considerable variety of open bowls (including *lekanai*) which must have been used mainly for serving food, though some could have been inverted to be used as lids. There were some lidded bowls (*pyxides* or *lekanides*) which may have held toiletries, and a variety of jars for storing food; also *hydriai* and/ or table amphorae for serving water or wine. Some stamnoid jars could have been used as kraters (as their occurrence in some tomb groups suggests) or as larger storage jars; and there were still larger storage jars in the form of decorated *pithoi*.

In short, the WMP ware served a variety of functions, mostly connected with the storage, serving and consumption of food and drink. It is interesting to compare the more important shapes used in this ware with those in the other wares generally available at this time. The great number of black-gloss *skyphoi* found on the survey shows that these were the preferred drinking vessels, rather than the WMP one-handlers. The main use of one-handlers is more likely, therefore, to have been as ladles, necessary in a symposium, if not in the kitchen. The fact that they were frequently part-dipped in slip (as No.572) may hint at this function. The stemmed dishes occur in both WMP and black-gloss, but the *thymiateria* are found only in WMP (following on earlier types in impasto and geometric wares). Large open bowls with out-turned rims are found in black-gloss and plain ware as well as WMP, but the carinated *lekanai* are principally WMP. The smaller lidded *pyxides*/ *lekanides* were found in red-figure as well as WMP. The stamnoid jars, *hydriai* and table amphorae are almost entirely in WMP; the larger *pithoi*, on the other hand, are more common in plain ware.

All this suggests that although there are some areas of overlap, most of these wares had rather specific functions. Black-gloss and red-figure wares were preferred for kraters and drinking vessels used at the symposium; WMP wares were intended for holding and pouring large amounts of liquids (presumably water and wine) and for storing, serving and eating food (at least before the introduction of the black-gloss plate in the late C4 BC). Generally the choice of ware seems to have been determined by social convention rather than by the cost of the vessels concerned.

The end of the ware

The problem of the end of the ware has not yet been finally resolved. A WMP stamnoid jar was found in the *grotticella* chamber tomb S7 on Botromagno (*Gravina (PBSR) II,* 128 and fig. 18 no. 6), the latest in the series excavated by the British School at Rome. It was found with other pottery including *unguentari*a which have counterparts in the Tarentine necropolis in phases E and F (Lippolis (ed.) 1994, 259), ca. 175–125 and 125–75 BC, and a large fragment of a grey-gloss plate of Yntema's (2005) form 2a which he dates from the middle of the C2 to the early C1 BC. The tomb, which had been robbed, may have contained more than one burial, but is likely to pre-date the reorganization of the site ca. 125 BC. It is probable, therefore that the WMP pot was made around the middle of the C2 BC. Many of the pieces published by Saunders and du Plat Taylor in *Gravina II* were found in contexts of period Gravina VIIIa, associated with the settlement of the late C2 and early C1 BC, but since these layers contained much re-deposited material, there is no certainty that the WMP pottery continued so late. The question remains open, though I hope that the study of the material associated with the late Hellenistic villa on the site (preliminary publication in Small *et al.* 1992, 1993, 1994) may resolve it in the final publication.

Duration of forms

The ware, therefore, lasted at least from the beginning of the C6 to the middle of the C2 BC. Within this long period there was some innovation, but many shapes show little development over time (as noted by Yntema (2001, 64) in his discussion of the WMP pottery of Valesio). This is particularly obvious in the case of the one-handled cups which were one of the earliest shapes to be made in this ware, and which remained in use down to the middle of the C3 BC. Other shapes too, such as the *stamnoi* and *lekanai* show only uncertain development. The problem of working out a chronological typology of the ware is complicated by the fact that the forms were not highly standardized. The workshops that made them cannot have been organized at an industrial level of production that aimed to produce a product of known proportions and capacity, like the slave-operated workshops that made the red-slipped wares of the Roman period. The pots were more probably made by individual artisans who did their own thing in their own time. Unless a WMP pot has a distinctive feature that can be matched elsewhere, it may be of only limited value for establishing the chronology of a site.

II. Catalogue

A. Matt Red-slipped		
1. Red-slipped *kantharoi* and jugs Small wheel-made pots with low rounded bellies, receding shoulders, offset rims, and one or two handles (as jugs or *kantharoi*), turn up frequently in Peucetian burials of the late C7 and C6, often associated with Greek-type cups, and at least one pot in traditional Peucetian geometric style. Many are illustrated by De Juliis (1995), together with the associated grave goods. The earlier examples are coated all over with a thick matt red slip. Towards the end of the C6 they change somewhat in proportions, with higher shoulders. Some acquire a distinct neck, and the slip becomes more brownish. They have not yet been properly studied, but they appear to have circulated over the W part of the Murge from Turi (De Juliis 1995, tav. LVI.B) to Gravina and in the Materano (Ciancio 1997, 137) – effectively the same area as Peucetian bichrome pottery of the same period. They do not occur in the archaic burials at Taranto and Metaponto. They must therefore have been produced in indigenous workshops using a more advanced technology than was used for the traditional geometric pottery.		
1a.* Kantharoi *or jugs		
567	223 E34N23	Fig.10. P4897. Rim and shoulder of thinwalled pot, grey clay with slightly lustrous orange-brown slip. Tip of rim broken. Ø rim. 7.0. From a red jug or *kantharos*, with the handle(s) missing. Both types are frequently found in W Peucetian burials of the 1st half C6: cf. e.g. Ciancio 1997, 145 no. 19 from a burial in the area of Padre Eterno below Botromagno, and p. 162 no. 43 from a burial in the area of S. Stefano also below Botromagno, both of the 1st half C6 BC.
568	401/9 B11	Fig.10. P2396. Small frag. of out-turned rim, slightly convex on upper surface, concave on lower surface, probably from a red ware jug or *kantharos*. Broken off at junction with shoulder. Orange-brown clay, fairly lustrous thick reddish-brown slip. Ø ca. 8.0. Probably from a *kantharos*: cf. e.g. Ciancio 1997, 162 no. 43 from a burial of the 1st quarter C6 below Botromagno.
B. Banded wares and pots with vegetable motifs		
1. One-handled cups Shallow vessels with convex walls and in-turned rims are common in the repertoire of WMP wares all over Apulia, and are well represented in the finds from Botromagno (cf. *Gravina II*, fig. 4). The frags. listed here have relatively narrow proportions and are most likely to come from one-handled cups, which came into use around the middle of the C6, inspired by Greek prototypes. Local versions were being produced in the 2nd half C6 BC at Metaponto (Cavallo 2016, 282; Lo Porto 1981, 307 and fig. 15.1), and numerous examples of the type were found in the accumulated material of the mid C6–mid C5 BC associated with the kiln excavated at Torretta in the Chora of the city (Lecce 2010-2011, 25 and fig. 6.7. See also Tréziny 1989, 53-54 and fig 34, *tasses à bandes*, for examples from Caulonia with discussion of the type). The shape remained in circulation down to the C3 and perhaps into the 1st half C2 (Yntema 2001, 67, Form C11, subtype C11a from Valesio: one handler, with references) showing little or no significant development in this long period. They are usually decorated with bands, variously organized, but are sometimes part-dipped in the slip. They are a common item in grave furnishings, as at Monte Irsi (Laurenzana 2016, 60 and tav. 2 17-21, *coppa monoansata*), but are also frequently found in settlement excavations.		
569	223 E32N21	Fig.10. P7113. Rim and most of wall (with handle missing). Pale greyish-brown clay. Semi-lustrous dark brown paint, varying in thickness. Thick band over top of rim and upper part of interior, and another band below, both inside and out. Ø 9.0.
570	627 C	Fig.10. P1562. Rim and most of wall. Greyish-brown clay, lustrous black slip inside and on top of rim; 2 bands on outside. Reserved area slightly lustrous. No handle preserved on sherd. Ø 9.0. Cf. Carter & Toxey 1998, 703 T336-3 from the Pantanello necropolis dated 460–440 BC.
571	223 E11N27	Fig.10. P4103. Rim and upper part of wall. Hard purplish-brown clay, very lustrous black slip on outer surface beginning 0.8cm from the edge of rim; above this, traces of a thin matt reddish-brown band with remains of more of black slip to top of rim. Surface smooth-finished inside. Traces of a thin matt reddish-brown band (ca. 0.2 wide) on inside 1.1 below rim, with dribble below it. A non-Apulian fabric, probably early, (?late C6–C5 BC). Ø 11.0.

572	223 E19N17	Fig.10. P4166. Rim and upper part of wall. Pale brown clay, thick matt reddish-brown slip over exterior of sherd and most of interior ending at a curved dipping-line. The corresponding line on the exterior lies beyond the edge of the sherd. Ø rim ca. 9.0. The dipping technique was in vogue in the C5 and early C4 BC. Cf. Lissi Caronna 1972, fig. 49-50 from Oppido Lucano t. 15.4, early C5 BC; Andriani & Laricchia 2007, 117 (2 examples) from tomb 20 in the Accurso necropolis at Gravina; *Monte Irsi,* 26 nos. 5 (with refs) and 10, in a tomb group with a BG *oinochoe* type 8 of late C5/ early C4BC.
573	223 E23N30	Pl.18. P4087. Rim of a miniature cup, probably one-handled, with handle-spring. Very fine light brown clay, smooth surface. Thin reddish-brown band on rim. Ø rim 5.5. Its small size suggests that this piece may have been a votive, though votives were normally in plain ware: cf. e.g. Mastronuzzi 2013, 107 no. 198 and p. 308 tav. 23 from votive deposit 3 at Monte Papalucio near Oria, ca. 470 BC, of similar size; *Roccagloriosa I,* 120-121, V39 and V40 (smaller).
2. Small dish with incurving rim The following piece is likely to come from a shallow dish, either stemmed (cf. No.583) or with a low foot (such as those in section 4).		
574	223 E34N21	Fig.10. P4727. Dish with steeply incurving rim. Pale brown clay with cream surface, black-brown paint. Rows of dots on top of rim, thin bands inside. Ø ca. 12.0. The shape, which appears to be derived from bowls with incurving rim of the earlier geometric series (as No.436 above), appears in WMP ware at Oppido Lucano in tomb 5 of the 2nd quarter C6 BC: Lissi Caronna 1972, 508 fig. 24 no. 4. At Gravina, however, the type is found in contexts of the C4: *Gravina II*, cat 93-95. Cf. also Riccardi in *Rutigliano*, 363, tav. 19 b, tomb 18.83, 1st half C4. It corresponds to Yntema's (2001) Subtype C21b in his classification of the pottery from Valesio where it is mainly present (re-deposited?) in contexts of the later C3 and early C2 BC.
3. **Larger dishes with convex walls**		
575	139	Fig.10. P4346. Dish rim, thickened and almost flat-topped. Pale buff clay, matt reddish-brown paint in thin band on tip of rim; traces of same paint on outside beginning 0.5cm below edge of rim, probably forming a band ca. 1.0 wide. Pres. ht. 1.8. The sherd is too small to give a diameter. Cf. Tréziny 1989, 53-54 and fig 34 no. 96 from Caulonia, ca. C5 BC.
576	401/9 Ar.409	Fig.10. P889. Dish with slightly convex side and thickened rim with inward-slanting upper surface. Dull brown clay with small dark brown gritty inclusions. Faint traces of semi-glossy black band on upper surface of rim. Ø ca. 26.0. The curvature of the wall suggests that the piece is likely to come from a stemmed dish. Cf. *Gravina II* cat 115 (with plain rim), with parallels of the late C5 and C4 BC. The bevelled rim, however, recalls geometric types of the C6 (cf. *Gravina II* cat 26, 62) and suggests an earlier date. Cf. also a bowl partially dipped in brown slip from votive deposit 1 of the early C5 BC in the Messapian sanctuary at Monte Papalucio near Oria: Mastronuzzi 2013, 71 fig. 37.25.
4. Bases of dishes etc The pieces listed here are all raised bases of open shapes. Most cannot be dated reliably, though some suggestions may be offered on the basis of similarities to black-gloss or other types.		
577	223 E44N43	Fig.10. P7084. Trumpet foot. Pale orange-brown clay with cream slip out (?imitating Gnathian), semi-lustrous orange paint on outside of foot. Traces of paint also in the tondo. Ø base 8.5.
578	223 E45N44	Fig.10. P7073. Convex-profiled base, in imitation of a Corinthian cup. Pinkish-brown clay with cream slip inside and out. Semi-lustrous reddish-brown band round tip of foot and junction between foot of bowl and cup. Ø base 8.5. For the splayed foot, cf. *Gravina II* cat 110 (re-deposited).
579	223 E43N25	Fig.10. P4459. Lower half of WMP dish with trumpet foot. Brownish-black paint. Drab brown clay with micaceous creamy slip in. Matt brown to black paint according to intensity. 2 bands in tondo and narrow thin concentric circles on lower wall inside. Outside undecorated. Ø base 4.5. The trumpet foot shows the influence of "Ionian-type" cups of the C6 and early C5 BC.
580	423 3	Fig.10, Pl.18. P1125. Base with ring foot of open bowl. Buff clay, matt dark brown paint, concentric bands inside, and outside over foot. 2 slightly incised concentric circles round centre of underside. Ø foot 6.4. Ring bases of this type, slightly splayed and more-or-less round in section are familiar from black-gloss *skyphoi* of the C5 and C4 BC.
581	347-9 Ar.347 P3	Fig.10. P809. Base with ring foot of large bowl. glazed unevenly in centre and black ring round tondo. Hard fired light pinkish-brown clay, a little mica, some small white and brown inclusions, pale greyish-brown surface. Semi lustrous black paint. 2 shallow concentric grooves round central medallion in tondo ca. 0.5mm deep. Traces of black band at edge of tondo and around central medallion and in one sector of medallion incl. shallow grooves. Ø base 18.0; Max. dim. 6.8.

582	223 E36N31	Fig.10. P4452. Foot of dish or bowl. Hard pinkish-brown clay, paler surface. Slightly lustrous orange-brown paint around outside of foot and in 2 bands round tondo. Ø base 7.0.
5. Bases of stemmed vessels		
583	223 E38N19	Fig.10. P4765. Splayed disc foot with concave moulding on outer edge; shallow groove on top of disc near outer edge; beginning of turn of bowl of pot at top of stem. Buff micaceous clay, paler brown at surface; slightly lustrous brownish-black slip over outside, and in a band 0.7 wide on underside where the slip is uneven and is fired orange where thinner. Dark reddish-brown dot 0.4 Ø in centre of tondo, surrounded by a black band 0.15 wide near break. Ø base 7.0. Cf. *Gravina II* cat 124 (re-deposited); *Rutigliano* p. 363 tav 19.g cat 80.2 – ?C4 BC; p. 368 tav. 22.b cat. 86.39, mid C5 BC; Mastronuzzi 2013, p. 68 fig. 35.6 from votive deposit 1 of the early C5 BC in the Messapian sanctuary at Monte Papalucio near Oria.
584	223 E46N42	Fig.10. P7052. Stem and part of tondo. Drab brown clay with pale greenish-yellow surface, numerous white and black inclusions up to 1mm. Stem reserved. Thin dark brown paint in two narrow concentric bands in centre of tondo. Ø stem 3.3; max. dim. 5.0.
584A	223 E41N40	Fig.10. P4275. Stem and part of tondo. The stem begins to turn outwards at break towards a trumpet foot. Deep (ca. 2.0) hollow in underside of stem. Hard orange-brown clay with traces of darker orange-brown slip outside; brown circle Ø ca. 1.3 in tondo. Ø stem 2.8; pres. ht. 4.7.
585	223 E31N18	Fig.10. P4655. Base of stemmed vessel with upturned edge. Hard pale brown clay with white grits, smooth finish. Black-brown and purple-brown paint. Black band on raised; black, purple, black bands on top. Underside unpainted. Ø 10.0. For a similar base with up-turned edge, cf. Lissi Caronna 1983, 259 fig. 49 no 6, stemmed jug from tomb 65 at Oppido Lucano, early C5 BC.
6. Miscellaneous dish/ bowl/ cup wall and base sherds, interiors (photographs)		
6a. With bands of varying thickness and variously spaced in interior This was the commonest way of decorating the inside of one-handlers and small dishes, used over a long period. For examples from datable tomb groups at Gravina, see Herring in R.Whitehouse *et al.* 2000, 151 fig. 87, one-handler from tomb 9, and 173 fig. 104, one-handler from tomb 8 on Botromagno, both 2nd quarter C5 BC; Ciancio 1997, 219 no 273, 2-handled *lekane* from Tomb 3 (1994), ca. 440–400 BC; Andriani & Laricchia 2007, 40-41 (various examples from burials of C5 and C4 BC). Numerous other examples from Gravina are illustrated by Saunders & du Plat Taylor in *Gravina II* figs. 4-9. The style appears to dry up at the end of the C4 BC.		
586	223 E21N30	Pl.18. P4183. Flat base. Hard pinkish-brown clay well fired. Semi-lustrous black-brown paint. 2 concentric circles in tondo. Outside unpainted. Ø of base ca. 5.2.
587	145-9 Ar.145	Pl.18. P183. Drab grey-brown clay; matt dark brown bands around tondo, worn. Max. dim. 4.3.
6b. With rays enclosed by bands		
588	223 E33N21	Pl.18. P4442. Frag. of base with low off-set foot. Pale brown slightly micaceous clay, grey in core, matt dark brown paint. Pattern of rays (one preserved on sherd) enclosed by 2 bands in tondo. Thin band round edge of foot outside. Max. dim. 6.2, Ø of foot ca. 8.0. For the ray, cf. *Gravina II* cat. 162, late C4 BC.
6c. With dots enclosed by parallel bands Rows of dots between bands were a common motif on the simplified geometric pottery of the W Murge and the Bradano in the C6 (cf. No.532). They were easily adapted to wheel-made pottery of the C5.		
589	223 E31N19	Pl.18. P4806. Rim and wall frag. Orange brown clay, lustrous black slip inside, reddish-brown outside, 2 rows of dots and bands. Rim preserved on extreme tip of sherd. Max. dim. 3.8, th. at bottom 0.4. Cf. Mastronuzzi 2013, 137 no. 298, *phiale* from the Messapian sanctuary at Monte Papalucio near Oria, context of ca. 490–470 BC. The simple pattern is combined with rays on *Gravina II* cat. 162, late C4 BC.
590	223 E47N22	Pl.18. P4746. Ws of dish/ cup or lid. Hard orange brown clay with smooth surface, lustrous black slip inside and in pattern of 2 bands and dots outside. Max.dim 2.3, th. 0.3.
7. Lids This is an ill-assorted group. No.593 must have been a lid since its shallow form makes little sense as any other kind of vessel, and it is decorated on the upper side. The remaining three pieces were probably lids, but might have been used as dishes.		
591	223 E56N21	Fig.10. P4973. Bowl rim, out-turned. 2 shallow rills ca. 2mm wide and 1.5mm deep in top of rim. Wall incurves below rim. Reddish-brown clay, medium brown on surface, semi-lustrous orange-brown slip poorly preserved on top of rim, inside for about 0.8cm below rim and outside for at least 1.4cm. Ø 22.0. The shape might serve either as a lid or as a bowl. The grooves on the flat upper surface of the rim are frequently found on pots of this type at Gravina: cf. *Gravina II*, 24, Bowls type 3 (with a flat rim) variant, with 1 or more grooves. They are first attested there in the C4 BC, and may be re-deposited in later contexts. Cf. also Yntema 2001, Form C22a from Valesio, *lekane* with convex rounded wall "current during much of the C5 and early C4 BC".

592	407 gen coll.	Fig.10. P1053. Lid rim with horizontal flange. Hard buff clay, virtually free of inclusions. Semi-lustrous brown bands on outer surface. Ø rim 16.0. This type of vessel is normally treated as a *lekane*: cf. *Gravina (PBSR) III (2)*, 122 fig. 258 from over the floor of House 2 in Gravina Site F, later C4 or C3 BC; Lissi Caronna 1972, fig. 49-50 from Oppido Lucano t. 15.2, early C5 BC; Caravelli in *Civita di Tricarico I*, fig. 292 no. 170, and pp. 390-391 in a context of the last quarter of the C3. The decoration on our piece, however, would be more clearly visible if it were used as a lid.
593	223 E38N20	Fig.10. P4716. Lid rim, perhaps of a pyxis. Pinkish-brown clay with grey surface, some mica, black-brown and purple-brown paint, probably burnt. 2 black bands of uneven intensity on top of sherd, black and red bands inside. Ø ca. 14.0.
594	401/9 Ar.409	Pl.18. P2103. Ws of a lid or perhaps shallow dish: slightly convex curve on outer side, sharper concave curve on inner side towards outer edge where wall thickened to form rim. Hard orange- brown clay with a little mica; fairly glossy black slip, showing brown on inner band where more thinly applied. Smooth surface. 2 bands on upper side (lid); underside reserved. Est original Ø 8.5.
8. Miniature dish with out-turned rim		
595	627 gen coll.	Fig.10. P1633. Small out-turned rim and wall in slight S-profile. Soft brown clay. Traces of a matt reddish-brown band below rim, on top and inside. Ø 5.5. Cf. (in plain ware) Caravelli in *Civita di Tricarico I*, fig. 340 no. 1096, miniature vase from the banqueting room at Civita di Tricarico destroyed ca. 200 BC.
9. Dishes and shallow bowls with out-turned rim and continuously curving walls This section includes several relatively shallow pieces, which must have stood on raised bases, or stemmed feet.		
596	401/9 L15	Fig.10. P2397. Rim frag. of a bowl with thickened and out-turned rim. Pale orange-brown micaceous clay, fairly soft, some small brown inclusions, faint traces of reddish-brown paint on rim. Ø 15.0. Cf. *Gravina II* cat. 187 (C4 BC). Close to *Cozzo Presepe* no. 211 from the final phase on site E, ca. mid C3 (re-deposited?). Cf. Iker in *Ordona III*, fig. 17.17, from a tomb, late C5/ early C4 BC.
597	407	Fig.10. P1054. Bowl rim. hard buff clay. Band on rim. Brown paint, semi lustrous. Ø ca. 18.0. Cf. Lissi Caronna 1983, 237 and fig. 19.7 from Oppido Lucano Tomb 57, end C5/ beginning C4 BC; *ibid*. 255–256 fig. 46.4 from Tomb 64 in a burial of around the end of the C6 BC; *Gravina II*, cat. 171-174, C5–C4 and perhaps C3 BC.
598	223 Ar.245	Fig.102. P602. Shallow dish with projecting flange; groove in upper surface of rim for lid. Small suspension hole 2mm Ø in flange at break. Brown and magenta paint. Brown band at rim, flange and 2 narrow bands magenta. Magenta band on outside near bottom of sherd. Ø ca. 19.0. For the form, see. Lissi Caronna 1972, 527n and fig. 49 no. 3 from Oppido Lucano Tomb 15, with 4 projecting flanges, one of which has 2 holes for suspension, and low ring base. It was found with a cup-*skyphos* of the 1st half of the C5 BC.; also *Rutigliano*, 353, tav. 13.c, cat. 39.2, with 4 flanges, pone with 2 perforations, from a tomb of the late C6.
599	407 A2	Fig.10. P8166. Rim thickened and projecting externally. Light brown micaceous clay with a scatter of minute brown and some white inclusions. Matt slip fired orange-brown in a narrow band inside below rim, with a trail from top of rim where thinner and fired blackish-brown in two narrow bands leaving centre of top of rim reserved. No traces of paint on exterior which has been discoloured by field-burning. Ø 17.0. Probably from a stemmed dish: cf. Riccardi in *Rutigliano*, 363 tav. 19.f (rather narrower), from a tomb of C5 BC at Rutigliano; *Gravina II* no. 171 (re-deposited).
600	407 A2	Fig.10. P1063. Bowl rim. Hard buff clay with moderate very fine mica. Traces of matt red-brown band on top of rim, below it and inside it. Ø 25.0. Cf. Lissi Caronna 1972, 531 fig. 53 no. 13 from Oppido Lucano Tomb 16 of the late C5 BC; *eadem* 1983, 234 fig. 19 no. 8 from Oppido Lucano Tomb 56, end C5/ beginning C4 BC.
601	223 E36N18	Fig.10. P4883. Rim and much of wall. Rim thickened on both sides. Continuous convex curve on outer wall. Reserved band below rim on outer wall in shoulder zone and on top of rim between narrow black bands. Ø rim 11.0. Cf. *Gravina II*, no. 188. The type appears associated with the fortification wall in assemblage 154, with other material of the C5/ C4 and early C3 BC. The decorative scheme of our piece with only 1 reserved band on the exterior suggests a date not later than the C5: cf. No.570.
602	223 E35N22	Fig.10. P8173. Rim and upper wall. Pale greyish-brown clay; matt grey/ black paint unevenly applied in a band on top of rim extending down inside for ca. 1.5cm, faint remains of a painted wavy line ca. 2.5mm thick on outside shoulder. Ø 28.0. The piece probably had two handles: cf. Andriani & Laricchia 2007, 93 Tomb 6 inv. 1054 (with concentric bands in tondo) from a burial of the C4 BC. The type was common on Botromagno: cf. *Gravina II*, nos. 186 and 187 of period Gravina VI (C4/ C3 BC); also on Monte Sannace: Scarfì 1961, fig. 106 tomb 6.16; fig. 125, Tomb 7.28, late C4 BC.
603	223 E46N46	Fig.10. P7056. Rim. Buff clay, semi lustrous dark brown slip inside lower rim and in band below rim. Pres. ht. 3.5; Ø uncertain. Cf. No.597.

604	371	Fig.10. P880. Tiny frag. of a bowl or lid rim, T-shaped. Light pinkish-brown clay with pale surface. Matt reddish-brown band outside below rim. Too small to calculate diameter. Thickness of band uncertain because of the break. Pres. ht. 1.8; Ø uncertain. Probably from a *lekane*: cf. *Gravina II* no. 184 (C4 BC); *Cozzo Presepe* fig. 116 no. 211 from Site E Phase IV (ca. mid C3 BC). Cf. also Caravelli in *Civita di Tricarico I*, fig. 318 no. 760 from Civita di Tricarico, surface find, treated as a lid.
10. Large bowls with out-turned rims and carinated walls (*lekanai*) Most pieces probably had two horizontal strap handles, though these are not preserved on any of the sherds from our field survey. The form probably originated in E Greece (Ionia). It was imitated in the Metapontino already in the late C7/ early C6 BC and remained in vogue there at least down to the end of the C4. Some bowls of this type were produced between the mid C6 and mid C5 in the kiln excavated at Torretta in the Chora of Metaponto (Lecce 2010-2011, 24, and fig. 6.2-4: *ciotole – piatti profondi, Tipo 1*). The type has been been well studied in the publications of the work done by the University of Texas in the Chora: Carter & Toxey 1998, 709-711; Cavallo 2014, 245-246 from the Fattoria Fabrizio; Cavallo 2016, 289-293 from Sant'Angelo Vecchio. Lo Porto (1981, 305-306) has published examples from Metaponto itself of the 2nd half C6 BC. Numerous *lekanai* were found in the excavations on Botromagno, where the shape remained in use down to the end of the C4 BC, and perhaps beyond: Saunders & du Plat Taylor in *Gravina II*, figs 8 and 9. At Valesio the form appears to have continued in use into the late C3/ early C2 BC: Yntema 2000, 77, subtype C22b.		
605	223 Ar.226	Fig.11. P429. Sloping body, carinated vertical wall, sloping out-turned rim. Finely granular buff clay, cream at surface; straight band of dull, dark brown paint below rim on inside, narrow wavy line on outside. Probably to be restored with 2 horizontal handles. Ø 27.0. Cf. *Cozzo Presepe* p. 338 fig. 116 no. 208 from Site A, Phase III B, late C6 BC; Carter & Toxey 1998, 709 T15-4 in the Pantanello cemetery, dated ca. 420–360 BC: "This is one of the commonest forms from sites in the chora of Metaponto". Another *lekane*, *ibid.* T 7-2 from a tomb of ca. 360–325 BC is also close. Cf. also Andriani & Laricchia 2007, 39, 93 from Tomb 6 in the Accurso necropolis at Gravina dated rather arbitrarily to the C4 BC; Riccardi in Rutigliano, 363 tav. 19.d and e, from tomb 84.4 (2nd quarter C5) and tomb 76.1 (early C4).
606	407 E6	Fig.11. P1071. Rim of carinated bowl with out-turned rim. Hard pale brown clay. Slightly lustrous reddish-brown paint on top of rim and inside down to carination. Dark brown band below rim outside. Ø 29.0. Cf. No.605.
607	223 E32N20	Fig.11. P7109. Rim and upper part of wall. Hard fired medium brown clay, semi-lustrous dark brown paint in band along outer edge of rim and in 2 bands on interior. Ø ca. 17.0. Cf. *Cozzo Presepe* p. 338 fig. 116 no. 209 from Site A Phase VI ca. 300–250 BC.
11. S-profile bowl with slightly up-turned rim		
608	302 B3	Fig.11. P700. Bowl rim, out-turned, with indent in upper surface, perhaps for a lid. Pale yellowish-grey clay; matt brownish-black paint: band on inner half of rim and part of curved motif on inside. Ø 20.0. Cf. (for angle and indent of rim) Caravelli in *Civita di Tricarico I*, fig. 317 no. 747 from Civita di Tricarico layer 4294. The layer is not dated in the Table of Phases, but according to the introduction to the section in the catalogue it is one of a group of pots which come principally from the houses of Phase I (360–340 BC). The type may continue later: cf. *Torre di Satriano* I, 259 tav. XXXIV no. 173, Tipo 3, *orlo a tesa piatta, con risega nella parte interna*, from Saggio I, US 267 of Phase V (ca. 250–?190 BC). The wall of our piece, however, is more carinated than either of these.
12. Bowls with down-turned rim		
609	124 B3	Fig.11. P43. Bowl rim, out-turned and downward sloping, straight upper surface. Greyish-brown micaceous clay, pinkish in core. Thin matt dark brown paint on top of rim. Ø ca. 17.0. Cf. Lissi Caronna 1983 fig. 136 no. 4 from Oppido Lucano;, C4/ C3 BC; Marchegiani in *Pomarico Vecchio I* 1997, tav. 56 no. 2 with suggested date of C4/ C3 BC, and no. 3, second half C3 BC. The shape continues later in local black-gloss: *Monte Irsi* no 154 (before ca. 100 BC).
610	223 E24N26	Fig.11. P4239. Pinkish-brown clay, very micaceous, cream slip outside and matt purple-brown paint all over inside, on top of rim and in a band below rim on outside. Ø ca. 21.0. Similar bowls with downward rolled rims are attested in the WMP ware of Ordona in the last half of the C4: cf. Iker in *Ordona VII.2*, fig. 341.11 from Ordona, tomb 148, ibid. fig. 359.5 from tomb 158, both 3rd quarter C4 BC. Our piece, though slightly more down-turned, may be of similar date.
13. Beakers Small drinking vessels with globular bodies, tall necks and vertical handles		
13a. Beaker with slightly out-turned rim		
611	223 E36N30	Fig.11. P4540. Rim, wall and handle-spring, pinkish-brown clay, pale brown surface, slightly lustrous orange-brown paint on top of rim dribbling down inside. Ø 13.0. There is no trace of a handle on the sherd, but it probably had one: cf. Vittoria in *Chora Metaponto III*, 375 no. 85 (surface material) with traces of a "horizontal vertically-oriented handle attached at the point of maximum expansion of the body, against which it abuts". The shape was perhaps influenced by Athenian black-figured cup-*skyphoi* of the early C5 which were certainly imported to Botromagno (R.Whitehouse *et al.* 2000, 138, fig. 77 and 143 fig. 83), but the triangular lip suggests a rather later date.

13b. Beaker with slightly S-profile wall		
612	223 E21N29	Fig.11. P4180. Pale greyish-brown clay, fairly hard. Thin matt black band (4mm) inside rim. Ø 12.0. The piece could be restored with 1 or 2 handles. Cf. a 2-handled beaker (R.Whitehouse *et al.* 2000, p. 200 figs. 128-129) from Tomb 4 on Botromagno, dated tentatively by the excavators to the 2nd half of the C4, but perhaps C3; Carter & Toxey 1998, 696 T125-13 from Tomb 125 Pantanello, dated 325–300 BC, with single vertical looped handle; Rossi 1992, 482 no. 2 from *grotticella* tomb 1, Canosa, 2nd half C4 BC (one-handler); Marchegiani in *Pomarico Vecchio I* 1997, tav. 58 no. 21, one of a number of types of *bicchieri* found in contexts of the late C4–late C3 BC at Pomarico Vecchio; Yntema 2001, 84, no. 120 from a context of the later C3/ early C2 at Valesio (drawn with 1 vertical handle).
14. *Kalathos* (?) The shape was widely diffused in Peucetia in the C5 and C4 BC e.g. at Rutigliano (*cit.* - Riccardi, 355), and was even more common in Messapia. The form was derived from that of wicker baskets traditionally used by women to hold wool, and as fruit containers. The ceramic vessels may have served the same purposes		
613	223 E32N21	Fig.11, Pl.18. P4811. Rim too small for certain diameter or angle, probably of *kalathos*. Light brown clay with paler surface. Semi lustrous black-brown and reddish-brown bands black-brown of uneven thickness turning to brown. Lozenge chain on and over edge of rim. Max. dim. 5.8. The profile and decoration of this piece are unusual, Its bichrome decoration with metopal structure of the frieze below the rim on the exterior derive from the geometric tradition and should place this piece near the beginning of WMP ware, in the late C6 or early C5.
15. Lidded vessels: *pyxides* and *lekanides* ***15a. Bowls with a recess on inner edge of the rim to support a lid* (pyxides)**		
614	223 E30N23	Fig.11. P4395. Rim and shoulder frag. Hardish greyish-brown clay with a little mica, drab black-brown slip over the top of rim. Rim slightly out-turned and has a ledge for a lid – or it could itself be a lid. Ø 39. For the rim and shoulder profile, Cf. R.Whitehouse *et al.* 2000, 157 fig. 92 from Botromagno, described as a bichrome bowl with projecting flanges and trumpet foot from Tomb 9, dated to the 2nd quarter of the C5 BC. Our piece is too small to know whether the bowl was of this type. Cf. also *Monte Irsi* no. 73 (Phase B VI, before ca. 150 BC).
***15b. Bowls with a recess on outer edge of the rim to support a lid* (lekanides)**		
615	223 E37N21	Fig.11. P456. Hard greyish-brown clay some mica, black slightly lustrous slip over top of rim and flange and in 2 bands outside. Extreme tip of rim missing. Ø ca. 30.0. Cf. *Rutigliano* tav. 20.b "*lekanis*" cat. Dd.1.1, 2nd half C4.
616	223 E47N25	Fig.11. P4533. Brown slightly micaceous clay, thin matt red paint over top of rim, wavy line below rim and band below on outside, inside unpainted. Ø rim ca. 25.0. Close to Yntema 2001, 72, no. 90 from Valesio, his Form C21b with suggested dating between the late C4 and early C2 BC.
16. Ritual vessels. *Kernos* and *thymiateria* **16a. *Kernos*** The following piece consists of a frag. of a small dish mounted on the shoulder of a larger globular pot, i.e. a *kernos*. The shape is unusual in the repertory of Apulian WMP wares, but Mayer (1914, Taf. 36.12) published one from Oria in N Messapia which has a ring of miniature vessels resting on a projecting flange attached to an ovoid belly at its widest girth. Our piece may have been similar. *Kernoi* are likely to have been used for ritual/ ceremonial purposes.		
616A	223 E32N30	Fig.11. P4724. Dull brown clay. Faint traces of 2 black bands on inner face of smaller vessel. Inside of larger pot reserved. Outer surfaces not visible (attached to each other). Max. dim. 3.8. Frag. too small to allow the diameters to be calculated accurately, but the larger pot probably measured between 25.0 and 35.0.
16b. *Thymiateria* These tall vessels, often consisting of a dish supported on a high pedestal, are a common feature of sanctuaries in late Iron Age Italy, and especially in Lucania where large numbers are known from the sanctuaries at Macchia di Rossano, Ruoti, Torre di Satriano and Timmari. They are widely supposed to have been used for sacrificial offerings, but these cannot have been burnt offerings, since they do not show traces of burning, and it is perhaps more likely that they held water for ritual sprinkling. The forms are often highly ornamental with stepped feet, concave lower parts of the pedestals, and disks projecting from the main shaft, but they are little standardized. Simpler ones were decorated with wavy lines (as Nos.618, 619), more elaborate ones with vegetable or other motifs. The sequence here follows on from the earlier *thymiateria* in impasto or geometric wares found at San Felice (Nos 312, 443, 566a-c) and see also Nos.2071-2074).		
617	223 E46N38	Fig.11. P4325, Vertical wall and oblique base, hollow inside. Dull pinkish-brown clay, light brown surface out. Some mica, some inclusions. Decorated with matt reddish-brown and dark brown paint: reddish bands top and bottom and decorative zone between them framed by dark brown bands enclosing row of egg motifs with dark arcs and reddish-brown filling. Inside unpainted. Painting done at least partly off the wheel. Ø base ca. 24.0.

617	223 E46N38	The sharp carination on the inside wall is unusual, but in external profile the piece may be compared with Fabbricotti 1979, 393 fig. 49 S43 from the Fontana Bona sanctuary at Ruoti, in use in the C4/ C3 BC. Cf. also *Torre di Satriano* I, 378 no, 521 Tipo 1 *a sostegno troncoconico*, dated stratigraphically between the middle of the C4 and beginning of the C3 BC. The egg-frieze was no doubt inspired by Italiote red-figure pottery in which it features frequently throughout its duration.
618	223 E33N29	Fig.11. P4318. Stepped base with pronounced carination at point of step. Upper surface of step slightly concave; beginnings of turn of stem of vessel at upper edge. Dull brown clay. Matt orange-brown paint. Decorated with bands and a wavy line on oblique surface of step; underside unpainted. Ø base 15.0. This is a common type of *thymiaterion* base, found e.g. in the sanctuary at Torre di Satriano (*cit.* – Di Lieto, 365 and 380-381, tavv. LXV and LXVI nos. 547-551: *thymiateria a sostegno cavo*, classified as Type 4, *piedino a base carenata*, datable mainly to the 2nd half C4 and 1st half C3 BC.
619	407 C2	Fig.11. P1133. Stepped base of a large *thymiaterion* (or perhaps *louterion*). Sandy buff clay with abundant v. fine mixed inclusions. Matt reddish-brown bands and wavy line on outside. 2 holes, 1 on each side of large frag. ca. 3.8 Ø set near top of pedestal, ca. 80 degrees apart. Ø base ca. 40.0. For the shape and wavy-line decoration, see No.618. The diameter of the piece is exceptionally large – more than twice that of the largest *thymiateria* in the group from the sanctuary at Torre di Satriano (*cit.* – Di Lieto).
620	223 E47N45	Fig.11. P7100. Frag. of shaft with projecting ring disc. Hard fired pinkish-brown clay with cream surface, semi-lustrous black paint. Tip of rim missing: spout broken off short of pot wall, original length uncertain. Paint round outer edge of rim and in 2 bands (thin, thick) at base of sherd where much eroded. Max. pres. height 5.5, Ø of shaft ring 4.2. Cf. *Torre di Satriano* I, 375 and 387, cat. 596 (with similarly inclined disc ring) from a destruction layer of C2/ C1 BC; Fabbricotti 1979, figs. 47, 49: numerous examples from the Fontana Bona sanctuary at Ruoti, C4–C3 BC.
621	223 E48N45	Fig.11. P7090. Frag. showing junction of dish with top of hollow shaft. Drab brown clay with pale brown surface. Horizontal band round dish in black-brown colour varying according to the thickness of the slip. Ø at junction of upper and lower parts 4.0. Perhaps the other way up: turning marks on underside of pedestal; band on outside of pedestal; broad dish above with inner surface worn. Cf. Adamesteanu & Dilthey 1992, 138, tav. XXXIIId, no. 73447 from the sanctuary at Macchia di Rossano, probably of the last half C4/ C3 BC.
622	223 E49N43	Pl.18. P7058. Frag. showing junction between shaft and dish. Hard pinkish-brown clay, matt reddish-brown paint in uneven band around point of junction. Inside of stem concave with corresponding slight rise in centre of tondo. Ø of stem 5.1. Cf. *Torre di Satriano* I, tav.LXIV.537, *thymiaterion a sostegno cavo*, probably 2nd half C4/ 1st half C3 BC. – Another (P7061) from the neighbouring square E49N44.
623	223 E38N19	Pl.18. P4630. Dish, probably of a *thymiaterion* with concave outer edge, shallow groove on top of disc near outer edge; concave underside. Buff micaceous clay, paler brown at surface; slightly lustrous brownish-black slip over outside; reddish-brown band 0.7 wide round tondo of dish (a); dot 0.4cm Ø in centre of tondo; 2 concentric blackish-brown bands around underside (b) with traces of a smaller band in centre. Apparently from a wide *thymiaterion*. The system of decoration both inside the dish and on its underside, is found on earlier *thymiateria* in the geometric monochrome technique at San Felice: see Nos.566A-C above. For another *thymiaterion* with wide stem, see Herring in R.Whitehouse *et al.* 2000, 159 fig. 94 from a tomb (their no. 9) on Botromagno of the 2nd quarter C5 BC.
17. *Kantharos*		
624	223 E34N22	Pl.18. P605. Shoulder frag. Brown clay; thin black and orange-brown paint (the broadest band). Triangular motif on long rod with angular projections (developed out of the stylized water-birds of the Early Iron Age examples?). Diam. at top of sherd ca. 15.0. The piece has been made and painted on a fairly fast wheel, but the decoration is derived from the earlier geometric tradition. The style is typical of the transitional pottery of Pisticci in the Basento valley: cf. Lo Porto 1973, tav. VI 1.2 from a tomb group with Ionian type cups and other WMP pots, late C6 BC. Cf. also *Monte Irsi* pl. XXI no. 62 (re-deposited in the Roman imperial context), "from a *kantharos* neck".
18. Jug or Jar with plain thickened rim		
625	223 E50N35	Fig.12. P7045. Rim and upper wall. Rim triangular in section, with flat top, over concave wall. Hard fired greyish-brown clay with smoother, slightly glossy surface. Fairly lustrous black slip on top of rim continuing as a band 0.5 wide around inside. Ø rim 8.0. I know of no exact parallel, but the piece should fit into Saunders' and du Plat Taylor's "Small Jugs Type 3" – a rather variable series with off-set rims, datable to Phases Gravina VI and VII, C4 to early C2 BC: *Gravina II*, 28, cat. 242-246.

19. Jars with out-turned rim and distinct neck		
626	813 D1	Fig.12. P7722. Jar rim, out-turned. Hard pinkish-brown clay, no obvious inclusions or mica. Matt reddish-brown band on upper surface of rim. Ø 14.0. Jars with simple out-turned rims with painted band on top are a common type on Botromagno, in use in Periods VI-VIIIa (C4–C1 BC): cf. esp. *Gravina II*, cat. 295, Period VIIIa (mid C2–C1 BC).
627	813 D1	Fig.12. P8146. Hard pale pinkish-brown slightly micaceous clay; matt dark brown band on top of rim. Ø 14.0; pres. ht. 2.5. Close to *Gravina II*, cat. 300, 304, probably in context in Period Gravina VIIIa (late C2/ C1 BC). The shape is influenced by that of the much larger stamnoid jars, of section 27 below.
20. Flaring rims, probably of globular storage jars The flaring rims derive from the geometric tradition, but remain in vogue in the Bradano basin until at least the end of the C4 BC, used on large globular storage jars, made and painted with bands on the wheel. They were especially popular in the territory of Botromagno and at Monte Irsi. It is common to find only the rim remaining, but in cases where a large part of the shoulder is preserved (as on Marchegiani in *Pomarico Vecchio I* 1997, 66, tav. 58.23 from Pomarico Vecchio, or *Monte Irsi* fig. 22 no. 83) it can be seen that the body of the pot was more-or–less globular. Cf. also *Monte Sannace* tav. 240.1 from Phase IIb, 2nd half C6–C4 BC.		
628	223 E35N20	Fig.12. P7120. Greyish-brown clay. Fairly lustrous black and less lustrous grey slip: black on outside of sherd and in upper and lower bands inside, grey in central band inside. Shallow groove running round edge of rim which is reserved. Ø 8,0. Shape as No.629, but narrower, perhaps from a round-mouthed jug. Cf. Caprio 2013, 468 fig. 26 no.3 from Castiglione near Conversano, mid C6–mid C5 BC.
629	407 B6	Fig.12. P1057. Hard pale brown clay. Matt grey-brown bands. Ø 14.0. Cf. *Gravina (PBSR) III*, 124 fig. 50 no. 266 From Site F at Gravina, Parco S. Stefano, fill of a pit datable to the late C4 BC (Small in *Gravina (PBSR) I*, 72); *Gravina II* cat. 228 and 262-264 (re-deposited).
21. Jug and *hydria* rims Jugs and *hydriai* with rounded flaring rims were popular in the Bradano basin between the late C6 and C4 BC, notably at Cozzo Presepe where they occur with numerous variations in rim profile on Site A in phases III and IV (ca. 575–480 BC): *Cozzo Presepe* 342 fig. 119, nos. 234-243. The following pieces all appear to be variants of this type.		
630	223 E61N25	Fig.12. P7034. Rim. Pinkish-brown clay, drab blackish-brown paint, worn, inside and out. Top of rim probably reserved. No trace of handles attachment. Ø 11.5. Close to Gravina *II*, fig. 11 no. 244 from Gravina, in context in Period VI, C4/ C3 BC. Cf. also Tréziny 1989, fig. 47 and p. 69 no 312, but more inward-tilted, from Caulonia, where such pieces with slight flat rims were found in layers of the C5–C4 BC.
631	234	Fig.12. P573. Oblique rim, slightly thickened and flat on top; beginning of shoulder turn at bottom of sherd. Hard pinkish-brown clay, semi lustrous black-brown paint of varying thickness leaving reserved band on top of rim. Ø 16.0. Cf. Mastronuzzi 2013, 79 fig. 45.66 from votive deposit 2 of the early C5 BC in the Messapian sanctuary at Monte Papalucio near Oria; Caprio 2013, 468 fig. 24 no. 3 (interpreted as a *coppa*) from Castiglione near Conversano, mid C6–mid C5 BC.
632	223 E33N29	Fig.12. P4566. Rim and neck. Light brown clay with cream surface out, slightly lustrous black paint in 2 bands on ext. Ø 14.0. The neck of this piece is shorter than on the other examples in this group, and the lip is thickened externally so that it is sub-triangular in section. The shape is common at Ordona in the last half C4 BC: cf. e.g Iker in *Ordona VII.2*, fig. 243 no. 11 from tomb 107, end of 2nd quarter C4; fig. 393.1 from tomb 172, last third C4 BC; Pianu 2002, 161 and 407 fig. 56, *brocche* no.162 from Heraclea, stratigraphic context of 375–270 BC.
633	223 E23N27	Fig.12. P4230. Rim sharply out-turned and projecting slightly inside. Hard pinkish-brown clay, semi-lustrous reddish-brown paint in 2 bands on rim and extending down on inside irregularly to ca. 1.8cm. Outside reserved. Ø 14.5. Close to *Cozzo Presepe* fig. 119 no. 239 from Site A, phase IIIB (ca. 575–550 BC). Cf. also Vittoria in *Chora Metaponto III*, 375 no. 83 (surface material); Marchegiani 1997 tav. 77 no. 149 from Pomarico Vecchio (topsoil).
22. Jug/ *hydria*/ *pelike* rims, thickened externally, with various mouldings The round mouldings of the C6–C5, exemplified by No.634, give way in the C5 to longer and thicker mouldings, often bevelled towards the inside of the pot, and slightly concave externally. The form is attested in votive deposits of the early C5 in the Messapian sanctuary at Monte Papalucio: Mastronuzzi 2013, 79, fig. 45 no. 67; 100, fig. 64.159. Jugs and *hydriai* with such rims were widely used in South Italy at least down to the end of the C3 BC. They are common in the Chora of Metaponto (Vittoria in *Chora Metaponto III*, nos. 137-163; Cavallo 2014, 249-251 from the Fattoria Fabrizio, occupied mainly in the 2nd half C4 BC). *Pelikai* with the same rim and neck form are attested in a tomb group of the end of the C4/ beginning C3 at Monte Irsi: Laurenzana 2016, 53 fig. 3 from tomb 21.		

634	223 E50N39	Fig.12. P4276. Rim thickened and rounded on outer side, separated from concave neck by a shallow groove. Pale pinkish-brown clay, reddish matt slip on rim and a black irregular band on shoulder. Slip on rim fired black on inside. Ø ca. 10.0. Cf. Carter & Toxey 1998, 708 T350.11, jug from Pantanello, dated by tomb context 560–440 BC; ibid 711 T 324-2, *pelike*, ca. 460-440; Lecce 2010–2011, 26 and fig. 7.14 from the kiln site at Torretta in the Chora of Metaponto, mid C6–mid C5 BC; Tréziny 1989, fig. 47 and p. 69 nos 302-304 from Caulonia, C6–C5 BC; *Gravina II* cat. 356, certainly re-deposited in a context of Gravina VIIIa (late C2/ C1 BC).
635	415	Fig.12. P1034. Rim with rounded external profile. Fairly hard pinkish-buff clay, semi-lustrous black slip outside to limit of sherd, and on rim extending inside ending in an irregular drip line. Ø 12.5. Perhaps from a *pelike* with banded decoration: cf. Carter & Toxey 1998, T324-2 from the Pantanello cemetery, 460–440 BC.
636	214 B	Fig.12. P410. Frag. of round-mouthed jug with thickened out-turned rim and vertical strap handle. Drab brown clay; semi lustrous black paint in band around top of rim and on upper edges of handle with traces of a horizontal bar. Possible traces of a horizontal band below rim on outside; possible black traces inside. Ø 17.4; handle 3.7 wide, 1.0 thick. Cf. No.634.
637	401/9 N11	Fig.12. P1082. Rim and neck; rim thickened externally with flat top sloping slightly downwards towards the exterior, and concave outer face. Fine, smooth orange-buff clay; thin, semi-lustrous brown to black slip at rim (inside and out) only. Ø ca. 13.0. The identical rim form is found on a large frag. of a *hydria* from votive deposit 3a in the Messapian sanctuary at Monte Papalucio dated by the excavators ca. 470 BC: Mastronuzzi 2013, 100, fig. 64.159. (The piece was previously dated to the 2nd half C6 BC in D'Andria 1990, no. 103). But cf. also *Cozzo Presepe*, 345 fig. 121 no. 262 from Site B phase VI, mid C3 BC; Yntema 2001, 90 no. 131 from a context of the late C3/ early C2 at Valesio.
638	223 Ar. 226	Fig.12. P426. Rim and neck. Rim thickened, with convex outer surface. Hard reddish-brown clay; lustrous black brown slip over top of rim and ca. 5mm down on either side. Ø ca. 16.0, pres. ht. 2.3. Cf. Marchegiani in *Pomarico Vecchio I* 1997, tav. 62 no. 44, datable, apparently, to the C4/ C3 BC; *Cozzo Presepe* 345 no. 265 fig. 121 from Site A Phase VI (ca. 300–250 BC); *Gravina II* cat 360, residual.
639	223 Ar. 228	Fig.12. P568. Rim and neck; rim thickened, with flat top and convex outer face. Hard pinkish-brown clay, rather dull black slip unevenly over top and edges of rim. Ø 12.0. Cf. Cavallo 2016, 250, FF BW 28 from the Fattoria Fabrizio in the Chora of Metaponto, before ca. 300 BC; *Cozzo Presepe,* 145 fig. 121 no. 265 Site A Phase VI ca. 300–250 BC.
640	223 E44N43	Fig.12. P7083. Rim and neck; rim thickened, with flat top and convex outer face. Hard pinkish-brown clay, slightly lustrous reddish-brown paint on top of rim and in uneven band below rim on outside wall. Ø 13.0. AsNo.639 but with more concave neck. Cf. Casagrande 2002, 407 fig. 56, Tipo 4, Scheda 164 from the Lucanian Agora at Heraclea, treated as a jug rim – from a stratigraphic context of 375–270 BC.
641	223 E49N37	Fig.12. P4179. As No.638, but with inward slope on top of rim. Hard orange-brown clay. Semi-lustrous blackish-brown slip over top of rim and for nearly 1.0cm down each side. Ø 16.0. Cf. e.g. *Gravina (PBSR) III (2),* fig. 50 no. 265 from Gravina Site A, probably C4 BC. Close to Marchegiani in *Pomarico Vecchio I,* tav. 62 no. 44 from abandonment layer 53 (ca. 2nd half C3) at Pomarico Vecchio – treated as a table amphora.
642	223 E31N29	Fig.12. P7117. As No.641. Dark reddish-grey clay with orange surface (slip?) Semi lustrous black slip on top of rim and extending down for ca. 0.5cm inside; darker orange-brown outside with darker oblique brush lines where more thickly applied. Ø 17.0.
643	223 E17N32	Fig.12. P4139. Hard greyish-pink clay with a smooth finish. Slightly lustrous black slip covering the rim and 2mm from the lip on inside of rim. On outside the black slip runs in a band 0.6 thick with a dribble 0.7 thick descending 1.1cm from the band. Ø 14.0.
23. Miscellaneous jug frags		
644	813 B4	Fig.12. P7711. Wall sherd from neck and shoulder of ?jug. Pinkish-brown fairly hard fired clay, some small white inclusions, matt orange brown roughly drawn wavy line and a dot on shoulder just below turn. Max. dim. 6.8. Ø uncertain.
645	126	Pl.18. P170. Shoulder and neck spring of a ?trefoil jug. Pale yellowish-grey clay with scarce mica; greyish-brown paint; smooth slightly lustrous surface. Max. dim. 7.5; th 0.8.
646	347-9 Ar.347	Pl.18. P810. Frag. closed shape with rounded body. Pale brown clay. Dark band and greyish-red wider band above it at edge of sherd. Max. dim. 6.0; th. 0.7.

647	715 B5	Pl.18. P1834. Frag. of a vertical jug handle, round in cross-section, straight to point of break, broken off at attachment to shoulder of pot. Pinkish-brown clay, grey in core, pale yellowish outer surface. Traces of matt reddish-brown paint in blobs on the outside. Ø at break 1.0; Max.l. 8.5. The piece must come from a medium-sized jug, Cf. Gervasio 1921, tav. XV.3 from Noicattaro tomb IV, trefoil jug with banded decoration, imitating Middle Corinthian examples imported into Peucetia, e.g. Noicattaro Tomb III.1 (Gervasio 1921, tav. XIV.1). Cf. also Lo Porto 1973, tav. XLV.7, Middle Corinthian trefoil *oinochoe* from Miglionico (with similar blobbed decoration on the handle).
24. Jar with out-turned rim with hooked lip		
648	124 C1	Fig.12. P47. Flaring rim, turned back to form small V section, with groove on upper side. Hard brown clay, fairly lustrous black-brown slip inside and outside of rim. Shoulder below rim reserved. Ø 16.0.
25. Jars / storage vessels with rims recessed for lids		
649	223 E32N19	Fig.12. P4629. Rim and wall of a stamnoid jar with flange for lid and beginning of shoulder turn at bottom of sherd. Soft fairly micaceous orange clay. Traces of orange-brown paint at extreme bottom of sherd. Ø ca. 17.0. Cf. for the full shape *Gravina (PBSR) II*, p. 138 large stamnoid jar from *grotticella* Tomb S7 (no. 6) on Botromagno, decorated on the neck with a wavy line, and in the shoulder zone with thick and thin bands and residual leaf motifs. The tomb, which was robbed, had contained at least 2 burials and grave goods mostly datable around the mid C2 BC. But the type was in use considerably earlier since it is found at Gravina in contexts associated with the fortification wall of the late C4 BC: *Gravina II*, fig. 17 no. 310, and similar rim-and-neck sherds were found in a context of the C4/ C3 BC in House 3 on Site F below the hill of Botromagno: *Gravina (PBSR) III (2)*, 124-125, fig. 49 nos. 272-274.
650	813 D1	Fig.12. P2082. Rim and beginning of neck. Rim thickened, with oblique outer edge. Hard fired pale brown clay, matt red-black paint on outside of rim which is flanged to take lid. Ø 28.0. The rim shape is more commonly found in cooking ware: Cf. Casagrande 2002, fig. 47 *Tipo 8b Scheda 208* from the Lucanian agora of Heraclea, dated stratigraphically 375–270 BC. It remained in use in cooking ware into the late Republic on Botromagno: cf. *Gravina II*, no. 1369 (casserole).
651	223 E60N15	Fig.12. P590. Rim and beginning of neck. Rim thickened, with oblique outer edge above a concave moulding. Pinkish-brown clay, hard fired, fairly glossy black slip on top and edge of rim. Ø ca. 30.0. Close to *Cozzo Presepe*, 345 fig. 121 no. 264, from Site E Phase III, early C3 BC.
26. Column-kraters Peucetian potters developed their own form of the column-krater which was inspired by Greek (especially Attic) prototypes, but was simplified and decorated with simple bands and vegetable motifs. The shape was common in Peucetia in the C5 and C4: cf. e.g. Ciancio 1985, tav XXXII no. 161 from Valenzano, in a tomb group of ca. 2nd quarter C5 BC; Miroslav Marin 1982, tav IV from Ceglie Peuceta in a tomb group of similar date. It continues into the C4, with increasingly slender body: *Rutigliano*, 369 with examples from the necropolis.		
652	223 E46N43	Fig.12. P7130. Neck and part of rim. Medium brown clay, burnt grey at one edge. Semi-lustrous slip, black inside, reddish-brown out. Perhaps BG. Inner Ø of rim ca. 24.0., Max. dim. (chord) 11.0. The shape might alternatively be a *stamnos* with tall neck, as e.g. Ciancio 1985, tav. XXXIII from Noicattaro Tomb 9 (C5 BC), but the decoration is more typical of a Peucetian version of the column-krater: cf. Andriani & Laricchia 2007, 45 and 109 from Botromagno (Tomb 18, 1972) in a group with BG pots of the late C5 or early C4 BC.
653	223 E40N28	Fig.12. P4522. Rim. Light brown clay, orange-brown and black slip, orange ladder pattern on rim, orange paint inside and out, dribbles of black slip on outer edge of rim. Ø 30.0. There is a close parallel for this piece, surely by the same potter, in Venturo 1989, fig, 72b, Gravina tomb 103/II, with other grave goods of the 1st half of the C4 BC – complete, red slipped, with olive frond inside frame of black lines in reserved space in the shoulder zone, and another reserved band framed by black lines above a 2-stepped foot. Cf. also *Gravina II* cat. 250 from a context of the C4 BC; Riccardi in *Rutigliano*, 373, tav. 24 a, from tomb 68, 2nd half C5 BC (but without the slight indentation below the rim inside).
654	625 V	Pl.18. P2340. Neck frag. of a large open shape, probably a column-krater. Fairly soft pale greyish-brown clay, matt dull brownish-black paint much worn on exterior. Band and vine tendril on outside, thick band on inside. Max. l. 4.0, th. 0.6. Leaf motifs were frequently used on the necks of Peucetian column-kraters in the last half of the C5 and for most of the C4. Cf. e.g. Moreno Cassano 1982, 69-70 and tav. III nos. 11-13, three column-kraters, all with vine tendrils on the neck, from Ceglie Peuceta tomb A1, ca. 400 BC; q.v. under no. 11 for further refs.
27. Large stamnoid jars The term is used here to include a range of large storage vessels of ovoid or globular body with neck, out-turned rim, and two transverse handles set vertically on the shoulder. The height and angle of the neck and the form of the rim vary considerably. The form tends to merge with that of the Peucetian column-krater.		

655	223 E47N27	Fig.13. P4524. Frag. with horizontal rim and neck tapering inward to shoulder turn at bottom of sherd. Hard light brown clay, matt black paint. Band and row of dots on rim, 2 bands inside below rim. The thin rim indicates that the sherd comes from a *stamnos* rather than a column-krater since it would be unable to support a handle attachment. Ø ca. 18.0. Cf. *Rutigliano* 356 tav. 15 a = no. 5 from tomb 34 of the 1st half of the C5 BC (described there both as a krater and as an *olla*), with 2 transverse looped staff handles on the shoulder.
656	223 E12N24	Fig.13. P4106. Drab greyish-brown clay, hard fired lustrous black slip on upper surface of rim. Traces of a black band at slight ledge below rim, obscured by encrustation. Ø rim ca. 22.0. The form appears already in Peucetia in the late C6 BC – as in a tomb at Santo Mola near Gioia del Colle (De Juliis 1995, 72 and tav. LXXIVA top row centre); but it continues much later, with handles set at differing angles: cf. R.Whitehouse *et al.* 2000, 198 fig 126 from Botromagno Tomb 4, tentatively dated by the excavators to the 2nd half C4 (but with handles set horizontal); *Gravina (PBSR) II*, 138 fig. 18.5, p. 128 (with vertical handles), from Botromagno tomb S7.5 associated with grave goods, mostly datable around the mid C2 BC (see on No.649); *Monte Irsi*, 117 and fig. 22 no. 81 (phase B VII; another in B V, ca. 400–150 BC).
657	223 E39N30	Fig.13. P4838. Out-turned rim curling back on itself, vertical neck and oblique shoulder. Red-brown fine clay; brown-black paint thinly applied on top, outside and inside (inside very worn). Red band along middle of top of rim and another below black on outside. Ø rim ca. 18.0. A variant of No.656.
658	223 E16N20	Fig.13. P4133. Rim frag. Short out-turned rim with triangular appendage, vertical neck, oblique shoulder. Black paint on lip of rim, dripping down inside. Ø rim 18.0. Another variant of No.656. Cf. *Gravina II* cat. 300 re-deposited in a late pit fill.
659	407 B6	Fig.13. P1058. Sherd from upper body of large bulbous closed vessel with a strap-handle placed vertically on the shoulder. Beginning of neck-spring between handles. Hard medium brown clay. Dull purplish-brown paint on handle, and in 2 horizontal bands just below. Est max. Ø 30.0. Cf. *Rutigliano* 356, tav. 15.d, cat. Dd 2.1, a stamnoid jar (*olla a fasce*) of similar proportions and with similar horizontal strap-handles, in a tomb group of the 2nd half C4 BC.
28. Pithoi Large globular or ovoid storage jars with rims folded back onto the shoulder of the pot are common in plain ware on Peucetian sites (and in the whole of Apulia) in the pre-Roman period: cf. Nos.1860-1868 below. They are not normally painted, but some are decorated with simple bands or vegetable patterns on the rim. The shape was not often deposited in burials in Peucetia. For a painted example from the Chora of Metaponto, cf. Vittoria in *Chora Metaponto III*, 379 no. 100.		
28a. Rims of globular* pithoi, *set horizontally		
660	223 E34N18	Fig.13. P4501. Soft orange micaceous clay; dark brown and semi-lustrous reddish-brown paint. Brown ivy trail between red bands on top of rim. Row of dots between red bands on outer edge. Ø rim ca. 24.0. Cf. No.1861 in plain ware (*pithos*). The form is found in banded ware in the Metapontino, at the Fattoria Fabrizio, occupied mainly in the 2nd half C4 BC: Cavallo 2014, 247 "Dinos Type 1".
661	223 E48N42	Fig.13. P7053. Hard drab brown clay with pale brown surface. Black-brown and orange-brown paint in alternate bands on outside of rim. Black band below rim and beginning of red motifs flanked by vertical line. Ø rim 22.8. Cf. No.1862 in plain ware (*pithos*). The group of vertical lines suggests that the decorative zone had a "metopal" structure in the manner of the local geometric pottery.
662	223 E48N28	Fig.13. P4666. Hard pinkish-brown clay, paler on surface, fairly lustrous orange-brown slip on top of rim. Ø rim 28.0.
28b. Fragments of* pithoi *with more ovoid body, and rim tapered and set more vertically The shape is more common in plain ware: cf. Nos.1858-1859, below.		
663	134 SW slope	Fig.13. P76. Rim slightly incurving. Hard pinkish-brown clay. Traces of a thin wavy reddish-brown line flanked by red blobs on rim. Ø rim ca. 26.0. Close to Yntema 2001, 94 cat 145 from a context of the late C4/ early C3 BC, (with outer edge of rim curved). Cf. also Vittoria in *Chora Metaponto III*, 377 no. 90 with comparanda of the end C4/ C3 BC.
664	229	Fig.13. P789. Pinkish-brown clay, paler surface, matt black-brown and red-brown paint. Black on top of rim, worn; 2 thin black bands outside at top and bottom of rim with frieze of black arcs framing red arcs between them; black band at top of wall inside. Ø rim 21.0, ht. 3.5. The pattern or bichrome arcs is derived from the rims of geometric urns.
665	223 gen. coll.	Fig.13. P2238. Hard sandy grey fabric, some mica. Badly preserved. Drops of drab black paint on outside of rim. Ø rim ca. 30.0. Cf. Lissi Caronna 1972, fig. 24 no. 2 from Oppido Lucano tomb 5, found with an Ionian type cup of the C6 BC (same rim form on a more globular pot). See also P2237 in plain ware, below.

29. Fragments of closed shapes with vegetable motifs		
666	223 E42N40	Pl.18. P4305. Pale brown clay, slightly lustrous matt dark brown paint. Row of 5 ivy leaves between 2 bands. Max. dim. 4.2, th. 0.4.
667	223 E32N21	Pl.18. P4711. Hard pale brown clay, smooth surface, matt black paint. Traces of a palmette motif. Max. dim. 3.7, th. 0.5.
668	223 E50N24	Pl.18. P4813. Hard greyish-brown clay, similar surface, slightly micaceous, slightly glossy dark brown paint. Lotus and palmette linked and pointing in opposite directions. Beginning of band below palmette. Max. dim. 5.7, th. 0.6–0.7. The trail of lotus and palmette alternately inverted recurs in Messapian pottery, cf. Mastronuzzi 2013, 187 fig. 132 no. 575 from Monte Papalucio (held to be archaic (i.e. early C5 BC?) but residual in a later context).
669	407 E6	Pl.18. P1070. Medium brown clay (hard), reddish-brown slip. Part of vegetable motif and large dot. Max. dim. 6.3, th. ca. 1.0.
30. Miscellaneous fragments of closed shapes		
670	223 E42N22	Pl.18. P592. Wall sherd of a closed shape with convex outer surface. Hard uniform greyish-brown clay with smooth external surface. Alternating glossy grey-black and less glossy reddish-brown bands. Max. dim. 3.5, th 0.25. The smooth surface and glossy grey-black slip suggest an early date: cf. the remarks by Joan du Plat Taylor on the shiny finish of wm banded wares in Phase II (ca. 600–575 BC) in Cozzo Presepe Site A (*Cozzo Presepe,* 351).
671	223 E50N27	Pl.18. P4736. Pale brown clay with small white grits, light brown and orange-brown paint. Bands and chequer pattern, edge of band at top of sherd and infill of central chequer in orange. Max. dim. 4.3, th. 0.6. The chequer pattern is derived from the repertoire of geometric bichrome pottery (cf. Nos.521-523).
672	415	Pl.18. P1095. Orange-brown clay with pale brown surface. Matt brown painted, bands and wavy lines. Max. dim. ca. 5.5. The pattern might date from any time within the range of WMP ware.
673	418	Pl.18. P1100. Hard greyish-brown clay with greyer surface out. Matt dark brown paint. 2 bands with wavy line between. Max. dim. ca. 5.0. Cf. No.672.
674	347-9 Ar.347	Pl.18. P808. Black band, thin dark red band, grey band, on creamy clay. Max.dim.ca. 2.5, th. 0.2. A fine piece. The fine dark red band suggests a relatively early date.

6. IMPORTED GREEK POTTERY

I. Introduction

Corinthian and imitations

Several sherds are likely to be colonial imitations of Protocorinthian or Corinthian types, including the wall sherd No.675 probably from an *aryballos* of the early – mid C7 BC, the tiny banded rim fragment No.676 of a lipped-cup or *skyphos*, datable in the C7 or early C6 BC, and the rims of *kotylai* Nos.678 and 679 which can be dated between the late C7 and the mid C6, after the foundation of Metaponto had led to increased traffic between the Greeks on the coast and the "natives" in the hinterland.

East Greek imitation

The fine fragment of a bird-*oinochoe* No.680, probably made in Incoronata, must be dated in the first two thirds of the C7 BC.

Archaic Greek type cups with reserved bands

By far the commonest imports in the late C7 and C6 were archaic Greek type cups, including so-called Ionian type cups. Some 111 fragments were found in the field survey, 105 of them on the site of San Felice (Site 223), 1 on Site 229, 4 on Site 401/9, and 1 on Site 329. They can be compared with numerous examples found at Gravina in tombs of the 1st three quarters of the C6 BC.

The typology of these cups in South Italy has become immensely complicated. It is now clear that they circulated widely, and that there were numerous centres of production, making cups of varying quality with many slight differences of shape and variations in the treatment of reserved areas. It is no longer possible to force all archaic cups into the typology devised by Villard & Vallet in 1955, based on imported Ionian prototypes (cf. the remarks of M. Vullo in Garaffa & Vullo 2009, 33-40). A more useful typology must be based on regional groupings. Excluding No.677 which is a hybrid of the Corinthian type with banded lip and the so-called Ionian type, our pieces fall into two main groups, distinguished by the proportions of the lip and body, and by the fabric and decoration.

Group 1

This is characterized by rounded bodies, though one of the pieces classified here, No.684, shows signs of tapering and may be regarded as intermediate to Group 2. The lips of this group rise directly from the shoulders or merge with them through a short convex neck. The shoulders are not normally offset or marked off by a groove: the only exception, No.685, has a minimal groove near the top of the shoulder. The size and angle of the lips varies from short and sharply out-turned to tall and nearly vertical: Nos.682 and 684 (the piece considered intermediate) mark the extremes of the range. The clay is well purified, but the fabric is relatively soft, and the slip is thin and matt or only slightly glossy, generally fired orange-brown, though sometimes more reddish or brownish. The variation in the colour suggests that the technique of firing was not fully controlled. The decoration usually consisted of reserved bands on the outside of the lip and in the handle zone (Nos.681 and 683), or on the outside of the lip and inside at the rim turn (No.682). There was evidently no fixed rule. The same variability has been noted in archaic Greek type cups elsewhere, e.g. in the Chora of Metaponto (Lanza Catti *et al.* 2011, 150-152) where it apparently has no clear chronological or local significance.

The cups of this group can best be compared with several published examples from tombs excavated on or below Botromagno. The earliest can be dated to the last quarter of the C7 by their association with Corinthian pots of the period deposited in the same tombs. The Gravina series shows the same lack of standardization in the form and decoration as the pieces from the field survey: some have no reserved bands (*Gravina (PBSR) IV,* no. 5; Ciancio 1997,169 nos. 65 and 66); others have a reserved band on the outside in the handle zone (e.g. Small in *Gravina (PBSR) I*, 142 fig. 5b). A single tomb (S3) datable to the 1st half of the C6 contained three cups of differing proportions, one of them only with a reserved band in the handle zone (*Gravina (PBSR) II*, fig, 11, nos. 2,3,4). Two cups from a tomb of the end of the C7 or 1st quarter of the C6 have low spreading feet, a reserved band in the handle zone, and a narrow reserved band inside near the tip of the lip (Ciancio 1997, 142 nos. 2 and 5), whereas another of similar date had no foot (other than a very slight offset at the base of the wall) and only one reserved band, in the handle zone (Small in *Gravina (PBSR) I*, 142 fig. 5d).

Group 2.

In the second group the lips are generally tall and only slightly out-turned, and the shoulders are rounded, but taper rapidly towards the base. In some pieces the lip rises directly from the shoulder, but in others the shoulder is marked off by a clear offset (Nos.689, 690). The base fabric is harder fired, brown or greyish-brown and generally smooth (in reserved areas). The slip is thick, dark brown tending to black, and is usually slightly glossy. All the pieces in this group have reserved bands, usually a thin band at the edge of the lip, and broader reserved bands on the outside of the lip and in the handle zone, but one piece (No.689) is slipped all over except for the narrow reserved band on the lip. One pot in this group (No.690) had a thin purple band painted over the slip inside below the lip. Three feet, all of trumpet form (Nos.691, 692, 693,) must belong to cups of this type.

The pieces in this group also have counterparts in the Gravina series, but only in tombs datable after ca. 575 BC. The cups of the last three quarters of the C6 are generally better made in harder-fired brown clay, have relatively tall rims, and are always fitted with feet: either low spreading ring feet (as *Gravina (PBSR) II*, 134, fig, 14.5) or higher, trumpet-shaped feet, comparable to No.692 (ibid. 135, fig. 15 no. 2; Ciancio 1997, 147 no. 28; 176 nos. 87, 88, 89); and they are coated in a more lustrous black slip, leaving a reserved band on the outside of the rim and in the handle zone. There may have been a development from lower to higher forms of foot, but the chronology of the tomb groups is not sufficiently precise to bear this out. The purple band on No.690 can be seen on cups found in a tomb on Botromagno datable in the 3rd quarter C6 BC: R.Whitehouse *et al.* 2000, 96, fig 49, 3rd quarter C6 BC.

The group corresponds broadly to Vallet & Villard's (1955) type B2 dated by them ca. 580-540 BC. They were produced in numerous workshops in Magna Graecia, including one at Torretta in the Chora of Metaponto overlooking the Cavone river 12km from Metaponto where a kiln which produced them has been identified (Lecce 2010-2011). The cups of this class circulated throughout South Italy, both in the Greek cities on the coast, and in the "native" Italic settlements of the interior where they were both used in domestic life and deposited in tombs. In Central Apulia they are a frequent component of Peucetian tomb group assemblages, e.g. at Bari (Andreassi & Radina (eds) 1988, 220 fig. 503, 343 fig. 491 no. 3), Ceglie (Miroslav Marin *et al.* 1982, tavv. XC, FXVIII.4, tav XXIII, FXXI.1), and Monte Sannace (Gervasio 1921, tavv. VII, Ciancio 1989, tav. 220 nos. 1, 4) as well as at Gravina. The date for the introduction of the type is confirmed by contexts in the Tarentine necropolis (Lo Porto 1959-1960, 162, 177) but its end date is less clear. In some parts of South Italy these cups continued to be made well into the C5 (Yntema 2001, 79), but the funerary contexts on Botromagno suggest that in our area they went out of use around the end of the C6.

Given the apparent dates of these groups, it seems clear that Group 2 superseded Group 1, but only after a period of overlap, since both types have been found together in the same burials on Botromagno (Ciancio 1997, 62, fig. 79, group from Tomb 14 on site 4) and elsewhere (e.g. Punta della Penna near Bari (Agresti 1988, 364 fig. 536)). The transition from the one group to the other reflects improvements in the production technology, marking a step in the development of the classical black-gloss ware that was firmly established in S. Italy around the beginning of the C5 (cf. the remarks by K. Swift in Lanza Catti *et al.* 2011, 148).

The broader context

The archaic Greek type cups of the survey area can be fitted into a much broader picture of the production and distribution of this kind of cup in South Italy in the late C7 and C6 BC. Various recent studies (e.g. Lanza Catti *et al.* 2011, 151; Vullo 2009; Van Campernolle 1996) have shown that there were numerous workshops producing these cups in many if not all Greek cities in South Italy, notably at Sybaris, Siris and Metaponto; but also at Taranto (Lo Porto 1959-1960, 192 nos. 5 and 6 with local manufacture assumed). At Metaponto there were kilns producing the ware both in the city itself (D'Andria 1975, 370), and in the Chora, at Torretta near Pisticci (Lecce 2010-2011), and probably in several other small settlements. But they did not altogether replace imports from Old Greece. Recent analyses of Ionian type cups from Torre di Satriano and Metaponto (*castrum*) by T. Giammateo and her colleagues (2012) show that whereas the cup fragments from the early apsidal building at Torre Di Satriano and from the field survey around it are likely to have been made in Metaponto, the large group of cups found in the *anaktoron* of the last half C6 and beginning C5 are different. The excavators note the high quality of many of these pieces, and suggest that they are East Greek, perhaps imported through Taranto, together with the pieces of high-quality Attic black figure pottery from the same context (Ferreri 2012, 70-71, 86). The *anaktoron* was a prestigious building, and it would seem, therefore, that the Oenotrian rulers preferred authentic imports to the regional Greek colonial imitations.

It might seem likely that the cups used in our Survey Area were imported from Metaponto or from one of the workshops in the territory that it controlled. But there are arguments to be made against this view. The early cups in particular (of our Group 1) are significantly different in proportions from published examples of the type from Metaponto, Pantanello or Cozzo Presepe (which was absorbed into the Metapontine *chora* at the beginning of the C6 BC); and to judge from the ware descriptions, the fabrics are also different, being generally darker and redder (or more orange) than their Metapontine counterparts described by Swift (in Lanza Catti *et al.* 2011, 146), and in some cases having conspicuous mica (Nos.681, 685, 686). Taranto is a possible source, since cups with low feet and reddish-brown slip appear to have been made there (cf. Lo Porto 1959-1960, 168-169, fig. 147e from tomb complex no. 76), but they have not yet been adequately studied. The possibility that they were made in an indigenous Peucetian workshop cannot be ruled out, especially since the same hypothetical workshop(s) may have produced the small red-slipped wheel-made *kantharoi* which are another common component of Peucetian burials in the late C7 and C6 BC: cf. Nos.567, 568. Certainty is impossible without archaeometric analysis of the fabrics.

Archaic *skyphoi*

At Metaponto, *skyphoi* with out-turned rims and simple reserved bands in the handle-zone were produced alongside Ionian type cups. The two series are closely related, and although the *skyphoi* are narrower in proportions and have taller more gently tapering bodies, it may be impossible to decide to which form a sherd belongs if only the rim and a small part of the body is preserved. Nevertheless, one sherd listed below (No.694) is likely, on the evidence of its relatively narrow diameter and gradually tapering body, to have been a *skyphos*, and two bases perhaps come from *skyphoi* of Ionian type.

This type of *skyphos* was identified as Metapontine by Ellen Macnamara (1977) who first identified them as a distinct class in her study of the archaic cups and *skyphoi* from Cozzo Presepe. Lanza Catti and Carter (2014b), however prefer the term "*skyphoi* with offset rim" since they must have been made in various production centres, including Taranto, between ca. 550 and 440 BC. They had a wide area of distribution among the Messapian, Peucetian and Oenotrian sites of the interior. Numerous examples were found in the accumulated kiln material of the mid-C6–mid-C5 at Torretta in the Chora of the city (Lecce 2010-2011, 25 and figs 6.8-9). But the shape was less popular than the wider Ionian type cup with trumpet foot. "Ionic" cups were roughly six times as numerous as *skyphoi* found in the field survey of the Chora (Lanza Catti *et al.* 2011, 146), and they were far more common at Botromagno where only one *skyphos* of this type is (so far) attested (*Gravina* (*PBSR) IV,*76 no. 2). Metapontine *skyphoi* appear to have been less in demand also in our Survey Area.

Attic pottery

Only two pieces of figured wares which can confidently be labelled as Attic were found in our survey, both on San Felice. One (No.697) is a fragment of a late Attic black-figure drinking vessel (*kylix*) of mediocre quality; the other is a piece of what must once have been a fine red-figure krater (No.698). A third, very small, fragment, recorded here under italiote red-figure (No.736), also from San Felice, was perhaps Attic. These pieces fall within the pattern of Attic imports already seen at Gravina and in other Central and Eastern Peucetian

sites. Attic figured pottery was more or less limited to the élite class, and the fact that there are not more such pieces from the LIA sites in the survey area gives the impression that in this period these minor settlements were subordinate to Botromagno and the people who controlled them were either resident elsewhere (presumably on Botromagno) or had relatively low status.

II. Catalogue

1. Colonial imitations of Protocorinthian vessels		
1a. Aryballos?		
675	223 E49N41	Pl.19. P7064. Ws from a small closed shape, probably *aryballos*. Very fine. Pale greyish-brown clay, cream slip out. Painted with 6 matt dark brown horizontal lines of uneven thickness. Max. dim. 1.3, th. 0.2. Probably from an Italiote imitation of a Protocorinthian *aryballos* of the early to mid C7 BC. For Corinthian originals in the Tarentine necropolis, see Lo Porto 1960, 8 and fig. 1a (globular); 10 and fig. 2a, 12 and fig 3 (both broad ovoid). Our piece is too small to be typed precisely.
1b. Lipped cups or skyphoi		
676	223 E30N19	Pl.19. P4633. Tiny rim frag. of lipped cup or *skyphos*. Pale ochre clay, fairly lustrous black slip. Narrow band at edge of rim, 3 narrow bands on outer edge; inside of rim black below reserved band. Lg. along rim 1.4. Lip-cups decorated with narrow parallel lines on the outside of the rim, known in Italian as *coppe a filetti*, were produced in Corinth throughout the Protocorinthian period (cf. Dunbabin 1962, 75-76) and were a common export to South Italy. An example from the Tarentine necropolis goes back to near the time of the foundation of the city in the late C8 BC: Lo Porto 1960, 9, fig. 1b, and others from Incoronata (San Pietro 1992) and Sybaris (A. Bedini in *Sibari II*, 379-383; cf. *Sibari V*, 126 fig. 109 no. 198) are likely to be of similar date. At Timpone della Motta they are current throughput the Middle - Late Protocorinthian and Transitional period (Jacobsen *et al.* 2010, 268-269). The type was imitated in the cities of Magna Graecia in the C7 BC, and these products circulated widely in South Italy, e.g. at Sala Consilina (De la Genière 1968, 188); Amendolara (de la Genière 1971, 452 and fig. 16, tomb 4 no. 2), Siris (Berlingò 1986, 121 and tav. 13), in the Agri valley (Bottini 1982, 67-70; Berlingò 1994, 15 and 14 fig. 34 from a burial of the early C7 BC), at Monte Sannace (Ciancio 2019, 134 and fig. 22, from a destruction context of the mid C7 BC – see also Gallo 2019, 173-175, figs 19-20), and in the Chora of Metaponto (Tubelli in *Chora Metaponto III*, 158-9). At Metaponto local production is attested by wasters from kilns in the proprietà Andrisani (De Siena 1986a, 149). A (presumed) Metapontine piece was found at Montescaglioso in a tomb of the late C7 BC (Lo Porto 1988-1989, 359-360 figs 63.1 and 2), and others were recorded at Cozzo Presepe in contexts of the 1***st*** half of the C6 BC (Macnamara in *Cozzo Presepe,* 322-323). They may have penetrated inland to Torre di Satriano, where Vullo (2009) reports numerous examples found in the excavation of the large apsidal building of the late C7/1st half C6, stratified in the earliest contexts. She is cautious, however, about identifying their provenance. Our frag., too small to type, might equally well be from a deeper *skyphos* of the late C7/1***st*** half C6. An Early Corinthian piece was found in a burial in Parco S. Stefano below Botromagno (*Gravina (PBSR) IV*, 73, fig. 27 and pl. XXIb no.3), and an italiote imitation (from Metaponto) in another tomb in the same area (*ibid*, 70, fig. 26.2).
677	223 Ar. 226	Fig.14. P428. Shoulder and lip-spring of cup. Light brown clay with smooth surface and thick slightly glossy purplish-brown paint. Solid painted inside and on lower part of outside; wavy line on shoulder and narrow band below rim-spring. Ø at shoulder ca. 11.0, th. at bottom of sherd 0.2. The narrow band below the rim-spring suggests that the rim was decorated with bands, as No.676. For a similar cup with narrow bands on the exterior of the rim and wavy line in the shoulder zone, cf. Vallet 1964, 144 and pl. 126 no. 1 from Megara Hyblaea, a local imitation of the Protocorinthian type. Cf. also *Sibari* I, 95 fig. 82 no. 218b; *Sibari* IV, 281 and fig. 310; *Sibari* V, 110 fig. 97 no. 121, all from Parco del Cavallo. A. Tubelli refers to cups with wavy line decoration found in the survey of the Chora of Metaponto (*Chora Metaponto III*, 149 - not illustrated). Cf. also a Metapontine *skyphos* with similar wavy line decoration in the handle zone from Cozzo Presepe Site A, phase IV, ca. 550-480 BC: Macnamara in *Cozzo Presepe*, fig. 111 no. 181.
2. Imitations of Corinthian **kotylai/skyphoi**		
678	223 E40N26	Pl.19. P4720. *Skyphos/kotyle* rim. Greyish-brown clay with semi lustrous black slip, probably burnt. 2 thick rays by handle-spring with 2 bands below. Inside slipped thickly at top, thinner below where it is largely worn off. Max. dim. 2.9, th. at bottom 0.4. A Metapontine (or local Peucetian?) imitation of a Corinthian linear *kotyle*: cf. Dunbabin 1962, 253 and no. 2463 from Perachora, with "vertical strokes" at rim and black bands below, held to be Early Corinthian. A similar piece from Megara Hyblaea (Vallet 1964, 78 and pl. 64.1) is said by the excavators to be a Rhodian import of 2nd half C7 BC but seems more likely to be a local imitation of the Corinthian type. Cf. also Ciancio 1997, 51 fig. 52 and 148-149 with figs, from Tomb 124 at Padre Eterno (site 20) below Botromagno, held to be a colonial product imitating Late Corinthian and datable to the 3rd quarter C6 BC, but a rather earlier date seems probable.

679	223 E45/ N44	Pl.19. P7072. Small frag. of rim and upper wall of a *kotyle*. Very fine pale buff clay. Fairly lustrous brownish-black slip over interior and top of rim. Part of a row of vertical petals immediately below rim; 2 bands at bottom of sherd. Max. dim. 2.4, th. 0.25. Italiote imitation of a Corinthian *kotyle* with a row of petals in place of squiggles or vertical bars, cf. Stillwell & Benson 1984, 233 and pl. 53 no. 1279, silhouette style, Middle Corinthian. Cf. also Small in *Gravina (PBSR) I*, pl. XXVII.1, Corinthian running-dog *kotyle* with a row of petals/tongues below the rim, from Botromagno, Early or Middle Corinthian; Rubinich 1992, 97 and tav XLIV no. 7 from Locri, "Casa dei leoni", 2nd half – end C6 BC.
3. *Greek colonial figured piece*		
680	223 E31N22	Pl.19. P4357. Frag. of a closed shape showing a bird in dark brown paint turning to medium brown where more thinly applied. The bird has its head down, browsing. Its long neck and fat body suggest that it is a goose, but its prominent ankle and rear toe are more like those of a crane or water-rail. The artist may not have wanted to be specific. The bird is represented in silhouette style except for a reserved wing-line and eye. Below it are 6 narrow horizontal bands, alternately medium brown and grey-brown. The colour differentiation is clearly intentional. To the left of the bird is a vertical dark brown line with short oblique lines departing from it at intervals on the right side. Since there appears to be the beginning of a similar line on the left side mirroring the lowest of these at the point of break, it is likely that the motif is a stylized tree. Immediately to the right of the bird is the beginning of another thin vertical line. It is too close to the bird to be the base of another tree, so it is likely to be a framing line containing the picture of the bird. Below the group of 6 horizontal bands there is another group of at least five narrow vertical lines, clipped by the edge of the sherd, of which two on the left are grey-brown, and the next mid-brown. They evidently divided the zone into separate decorative panels. The clay is pinkish brown with some mica, pale brown on the outer surface. The inside is unpainted. Max. dim. 5.6, th. 0.6-0.7. The depiction of the bird is inspired by E Greek models, but the use of two colour tones and the structure of the decoration have no close parallels in E Greek pottery. It is more likely, therefore, to belong to the class of Greek colonial products made in various cities of South Italy and Sicily which were influenced by imported E Greek pieces (Paribeni 1978). The structure of the decoration with the lower border of the principal zone defined by 6 equally thin parallel lines, and the zone below subdivided by a vertical column of similar lines, can be compared with a *stamnos* from Gela datable to the last half C7, which shows two birds - a hawk and a goose - in the principal zone (Orlandini 1978, pl. LV fig. 20). As on our piece, the birds are depicted with bodies in silhouette and heads reserved except for the eyes and beaks; the legs are bent, and the birds' feet are depicted with front and rear toes clearly separated. Orlandini argues that the Gela *stamnos* is a local product which shows a different taste from the repetitive and crowded decoration of the East Greek originals. Vases decorated with broadly similar bird motifs were also produced in Megara Hyblaea (Vallet 1964, 152 and pl. 150 nos. 2 and 6). But Gela and Megara Hyblaea are a long way from the Fossa Bradanica, and our piece is more likely to have been made in Incoronata where there was also a workshop or workshops which produced large pots decorated in a Greek pictorial style with orientalizing animal motifs set in "metopal" frames formed by multiple narrow lines (cf. Orlandini 1991). In the 1st half of the C7, the vase painters of Incoronata borrowed motifs from various contemporary Greek sources and used them in new ways to create a distinctive style which lasted from ca. 700 BC to the end of the settlement – ca. 640 BC (Denti 1999 etc). Of special relevance for our piece is a large globular *aryballos* decorated on one side with two opposed griffins, and on the other, with a hunter pursuing a lion: between them is a bird of similar proportions to ours, with the same treatment of leg and foot, and similar reserved band defining the wing (Denti 1999, 209 and fig. 2; 2000, 814 and fig. 12; 2002, 49-50 and fig. 6 [misnumbered for fig. 16]). It differs in that the neck is upright and the head faces forward. Most of the details of the head are lost in a break in the pot, but there appears to be the beginning of a reserved area on the side of the bird's head comparable to ours. Since our frag. is from a closed shape, it may also have come from a large globular *aryballos*, though certainty is impossible. An unusual feature of our piece is that it is decorated in a bichrome technique which shows most clearly in the treatment of the grey-brown and mid-brown bands, whereas the great majority of the orientalizing pieces from Incoronata are decorated in monochrome black (or blackish-brown). But there is a small number of pieces from the site decorated in what Denti (2000, 823-836) describes as a polychrome technique with black and brown pigment and details picked out in white. There are no traces of white on our piece, but otherwise it can be fitted well into the small corpus of orientalizing pottery from Incoronata.
4. Archaic Greek type cups with reserved bands		
4a. Group 1		
681	223 gen	Fig.14. P589. Lip and shoulder. Fairly hard orange-brown micaceous clay; matt reddish-brown paint all over except for reserved bands at tip of lip and outside in handle zone. Ø ca. 9.0.
682	223 E57N24	Fig.14. P4979. Lip and shoulder. Medium brown clay, some mica. Very slightly lustrous reddish-brown slip, brown where thickly applied, in band on outer part of rim below lip for ca. 6cm and inside on preserved part of sherd. Ø ca. 23.0.

683	223 E45N40	Pl.19. P4311. Lip, shoulder and handle spring. Pale yellowish-brown clay, matt reddish-brown paint on edge of rim and either side of handle zone, and all over inside. Ø ca. 12.0.
684	223 E47N25	Fig.14. P7135. Lip and shoulder. Broken near handle spring. Traces of reddish-brown slip on outside of rim and in interior; handle zone reserved. Max. dim. 4.5; Ø uncertain. Cf. Small in *Gravina (PBSR) I*, pl. XXVII.2, fig. 5b from a tomb on Botromagno datable to the last quarter C7 BC.
685	223 E39N26	Fig.14. P4498. Slightly curving lip, projecting fractionally beyond diameter of pot at shoulder. Slight offset at shoulder-turn. Soft orange-brown micaceous clay, reddish-brown slip preserved only in worn band on lower half of outer edge of lip and beginning of shoulder turn. Ø. ca. 17.0. For the form, cf. Tubelli in *Chora Metaponto III*, nos. 3 and 4 (with comparable external decoration on no. 4) from the Metapontine Chora, dated to C7 BC. But the micaceous fabric is not Metapontine.
686	223 E30N17	Pl.19. P4386. Rim and handle-spring. Soft rather micaceous orange clay, semi lustrous orange-brown slip around rim (on both sides), edge of handle-spring and at bottom inside of sherd, worn off elsewhere inside. Max. dim. 4.3.
4b. Group 2. Tapering body,		
4b-a. Pieces with lip rising directly from rounded shoulder, or with minimal offset; hard fired, smooth, thick blackish-brown slip; n*arrow reserved band on inside of rim; broader reserved bands on outside of rim and in handle zone.*		
687	223 E36N21	Fig.14. P537. Lip and shoulder. Brown clay with smooth surface; glossy black slip. Est. Ø 11.0. The form is close to R.Whitehouse *et al.* 2000, 96, fig 49e from a tomb on Botromagno datable in the 3rd quarter C6 BC. Cf. also Macnamara in *Cozzo Presepe,* 324 fig. 110 no. 161, from Site A, Phase IVA, ca. 550 - 480 BC.
688	401/409 Ar.401	Fig.14. P2395. Lip. Light brown clay, semi-lustrous black slip. Ø ca. 14.0. Cf. No.687.
(b) Pieces with the shoulder of the pot marked off from the lip by a distinct offset and carination. This corresponds to the standard "B2" Ionian type cup of Villard & Vallet's (1955, 27) classification, distributed throughout Magna Graecia, and is the commonest type in the series from the Metapontine Chora.		
689	329	Fig.14. P737. Lip. Pinkish-grey clay, semi-lustrous black-brown paint. Entirely slipped except for thin reserved band at edge of lip. Ø ca. 17.0. Close to Tubelli in *Chora Metaponto III* 162 no. 17 but without reserved band, with suggested date 550-500 BC.
690	223 E33N21	Fig.14. P4393. Lip and shoulder with handle scar. Hard medium brown clay, fairly glossy brownish-black slip. Narrow reserved band on top of rim. Reserved bands on outside of rim and in shoulder zone. Overpainted purple band ca. 0.15cm wide inside, below rim. Ø 14.2. Close to Tubelli in *Chora Metaponto III* 162 no. 15, with suggested date 550-500 BC. For the overpainted purple band, cf. R.Whitehouse *et al.* 2000, 96, fig. 49a and c from a tomb on Botromagno datable in the 3rd quarter C6 BC.
4c. Feet. All are of the conical trumpet type		
691	401/409 Ar.409	Fig.14. P2102. Foot and lower wall. Hard pinkish-brown clay, greyer in core; lustrous black slip in tondo and on outside. Underside reserved. Ø 5.5. Close to Tubelli in *Chora Metaponto III*, 163 no. 21 with suggested date 550-500 BC.
692	223 E38N21	Fig.14. P4583. Foot. Hard greyish-brown clay with smooth surface, lustrous black slip. Resting-surface inclined towards the interior. Ø 6.0. Cf. *Gravina (PBSR) II*, pl. XVb, fig. 15 no. 2 from Botromagno, 1st half or mid C6 BC; Tubelli in *Chora Metaponto III*, 164 no. 24 with suggested date 550-500 BC.
693	229	Fig.14. P736. Hard drab brown clay, Lustrous black slip rather uneven; tondo missing. Ø foot 5.5. The foot is taller in proportions than any of the published examples from the Metapontine Chora, or from Cozzo Presepe, but is close to a piece from Botromagno: Ciancio 1997, 62, fig. 78, top row, on right.
5. *Skyphoi* with offset rims The deeper proportions of No.694 suggest that it came from a *skyphos* with out-turned rim, comparable in date to the Ionian type cups with similar lip and offset shoulder, Nos.689 and 690. The shape had only a slight offset at the base. The classification of the base frags. Nos.695 and 696 is more doubtful.		
694	223 E33N20	Fig.14. P4387. Lip and shoulder with handle-spring. Pinkish brown clay, slightly lustrous slip, fired black on exterior, reddish-brown on lower half of rim on interior, and black below it. Reserved band on upper part of interior rim. Brown band inside near base of sherd where slip thinner (intentional?). Ø ca. 15.0. Cf. Tubelli in *Chora Metaponto III*, 166 no. 34 from the Chora of Metaponto with suggested date 550-500 BC; Macnamara in *Cozzo Presepe,* 329 no. 172 from Site A phase IV, ca. 550-480 BC.

695	223 E34N21	Pl.19. P4718. Tondo frag. broken at junction with foot. Hard orange-brown clay, lustrous black slip outside and in. Centre of tondo reserved. Thin purple bands round edge of reserved area over black. Max. dim. 3.4 cm, Ø of base ca. 3.5. Probably from an archaic *skyphos*. Cf. Tubelli in *Chora Metaponto III*, 167 no. 37 (with interior perhaps reserved). The reserved tondo is unusual on *skyphoi*, but is found on some Metapontine cups: Tubelli in *Chora Metaponto III*, 150 and nos. 21 and 25.
696	401/409 Ar.409	Fig.14. P1220A. Base of *skyphos* or cup-*skyphos*. Fine pale brown clay, reddish-brown slip, leaving underside of base reserved. Ø base ca. 5.0. Cf. Macnamara in *Cozzo Presepe,* 1977, 324 fig. 110, nos. 166-167, Site A Phase III (ca. 600/575 – ca. 550 BC) (considered *skyphoi*); also *Gravina (PBSR) IV*, 75-76 no. 2, cup-*skyphos* from a tomb group of ca. 600 BC.
6. Attic black-figure		
697	223 E43N28	Pl.19. P4489. Small rim frag, probably of a *kylix*. Orange-brown clay, smooth surface, lustrous black slip. Head and raised front leg of horse, reins and other details crudely incised. Narrow reserved band on either side of rim top. Max. dim. 2.7, pres. ht 1.8, th. at bottom of sherd 0.35. The hastily and inaccurately incised details are typical of the late Attic bf products of the group centred on the Haimon Painter, ca. 480 BC. The horse-drawn racing chariot was a favourite theme of the group, as on a cup-*skyphos* from Botromagno: L. Burn in R.Whitehouse *et al.* 2000, 138 fig. 77 from tomb 9 of the 2nd quarter C5 BC; cf. D'Amicis *et al.* 1997, I.3, 305 no. 83.8 from a tomb in Taranto dated 475-470 BC.
7. Attic red-figure **By Giuseppina Canosa**		
698	223 Ar.245	Pl.19. P651. Ws. of an open shape, probably a bell-krater (as indicated by its concave profile). Fine-grained light reddish-brown clay, not very compact, very friable, with micaceous inclusions. Thick black slip lustrous outside, opaque and tending to brown inside where more diluted. Decorated part of surface unslipped, showing many scratches and abrasions; edges worn by repeated working of the soil, and by atmospheric agents. Ht. 7.0, w. 7.0, th. 0.8. The sherd preserves part of a figured scene on side A. It is possible to make out the rear quarters and beginning of the tail of a bull running to the left, and an area of drapery, probably of a female figure. One thinks of Europa carried off by the bull/Zeus. Its technical characteristics call to mind the frags. of the Talos Painter from Serra di Vaglio (Greco 1985). The frag. is too small and badly preserved to allow an attribution, but it was certainly part of a vase notable for the interest of its figured representation and its dimensions: the work of a painter who must be held to be Attic rather than Italiote. [For the treatment of this theme in Late Apulian rf, see Pouzadoux 2005, 188-194. It is especially well attested at Canosa and Egnazia, on the N and S borders of Peucetia – AMS]

7. SOUTH ITALIAN RED-FIGURE WARES

I. Introduction

Italiote red-figure pottery was produced first at Metapontum around the middle of the 5th century (Early Lucanian), and shortly afterwards at Tarentum (Early Apulian). For most of the 4th century the Tarentine producers of red-figure pottery dominated the market in Apulia and Eastern Lucania. Their wares had a wide distribution in the indigenous communities in the interior and, around the middle of the 4th century, local workshops were set up in several Apulian settlements, including Ruvo, Canosa, and another unidentified centre in the South of Peucetia, to supply these local markets (cf. *RVAp* II, 450-451; Robinson 1990, 2014). In Tarentum the production of red-figure pots began to decline before the end of the 4th century as interest shifted to the overpainted "Gnathian" wares, and it died out altogether by the time of the Pyrrhic War of the 270s BC (Fontannaz 2014).

Stylistic classification

The sherds catalogued here are all small fragments, and it is often impossible, without more of the pot, to be confident of their classification. The catalogue is not, therefore, organized on strict Trendallian principles. The parameters of Trendall and Cambitoglou's classification are in any case no longer as clear as they once seemed, since recent studies have shown that the major schools of red-figure painting that concern us here – Lucanian and Apulian – have many points of interaction which blur the clarity of the distinction between them. (See the articles by S. Barresi, M. Denoyelle and E. Mugione in Denoyelle *et al.* (eds) 2005; also F. Silvestrelli in Chora Metaponto III, 110-111). Archaeometric analyses are of little help since the clays of the Ionian Gulf and the Fossa Bradanica show little variation in chemistry or petrology (Thorn & Glascock 2010; Robinson 2014, esp. 258-261). Even Attic pottery is not always easy to distinguish on grounds of style or subject matter, as can be seen from the discussion of No.736 below, and the colour of the clay may be a misleading criterion.

We have therefore followed the same principle as in other sections of the catalogue, arranging the entries typologically by shape, and leaving inferences about the stylistic classification of the pieces to the individual discussions. Nevertheless, some general remarks can be made about style and date. Many of the sherds are decorated with stock motifs which were current in Apulia and Lucania throughout the period of red-figure vase painting in those regions. They include the trails of laurel leaves (as Nos.699-705) which were regularly set below the rims of bell-kraters, and the meander borders (as No.737) which formed the base line of innumerable painted scenes on larger vessels. The frieze of ovules was another very common motif generally used on *oinochoai* (as Nos.732, 733, 735) and on *skyphoi* (as Nos.719, 720) over a long period, though it was especially popular in Late Apulian red-figure. The crested wave pattern was also used throughout the period of South Italian red-figure, though it was particularly favoured in Late Apulian red-figure for the rims of *lekanis* lids (as No.722). A few linear motifs, including the rays surrounding the *hydria* handle over-painted in yellow on No.727, and the grouped vertical lines on the *lekythos* neck No.728 are also typically Late Apulian. Much the same can be said of some filling motifs, including the rosette No.717, the vegetable scroll No.729 and the palmette No.730. None of these can be precisely dated.

Some of the fragments show parts of more-or-less standardized decorative tableaux which can be dated within broad limits. They include several elements from depictions of two or three draped youths which frequently occupied side B of large vessels: the chin and part of the bust of one of them (No.707), the sandalled feet of another (No.713), the hem of the mantel of yet another (No.738), and the diptych which was frequently depicted hanging above them (No.710). These are likely to be Middle or more probably Late Apulian.

Several fragments formed parts of other common images: the wreath (Nos.709, 740), usually offered by a young woman to a young man, and the *patera* with ritual offerings which he holds out towards her (No.709), a common theme in Middle and Late Apulian red-figure; the drapery of a woman in late classical pose, datable only broadly to the C4 BC (No.739); the heads of women, partly covered with a *kekryphallos* (as Nos.724, 725). Such heads occur over and over again on Late Apulian red-figure pots of various shapes. Ours decorated the lids of *lekanides*, one of the most popular shapes of this phase, to which the lid knob No.726 also belonged.

A number of fragments relate to Eros, particularly the hermaphroditic Eros who was also a favoured subject in Late Apulian red-figure. He is represented kneeling on another *lekanis* lid (No.723) and holding a palm branch (?) in a tableau probably from an *oinochoe*, the rest of which is lost (No.734). Another fragment (No.718) shows his slippered foot, and in another, a largely missing figure who was perhaps Eros held some object out in his out-stretched arm towards a seated woman (No.712).

These pieces are probably all Late Apulian, but another fragment which shows only part of the shoulder, chest and wing of Eros is certainly earlier, and probably Early Lucanian by the Amykos Painter (No.721). A few other scraps are also likely to be early (late C5/ early C4) including the bare foot (No.711), and two enigmatic pieces: the statue base (?) No.708, and the legs of a symposium couch (?) No.736, which is possibly Attic. No.731 perhaps represents a male torso, but the interpretation and date are uncertain.

Shapes and usages

The most common shape is the bell-krater with 7 certain and 6 probable instances. The next is the *lekanis*, or at least the *lekanis* lid, with 5 instances, then various other open and closed shapes. All these had domestic functions: the kraters, *kylikes*, *skyphoi*, *oinochoai* and *hydriai* were used in the symposium, *lekanides* in the boudoir, and *lekythoi* in the *palaestra*. But they were also commonly deposited in tombs, and it is impossible to know whether our pieces come from domestic or funerary contexts. Many may have served both purposes, being used during the lifetime of their owners and deposited with them in their graves.

The distribution of South Italian red-figure in the Survey Area

The great majority of the red-figure pieces in the catalogue come from San Felice, and if the presence of figured pottery can be taken as indicative of the prosperity of the inhabitants of a site, then San Felice (Site 223 with its associated collection areas 226 and 245) was the only really prosperous settlement in our survey area in the late C5 and C4. The other Iron Age hill sites on the left bank of the Basentello (Monte Marano (Site 627), Crocevelina (Site 401/409) and Serra Meschina (Site 407)) continued to be occupied throughout this period, but Monte Marano produced only two fragments of red-figure (Nos.701, 708), Serra Meschina a single minute fragment with part of a palmette (not illustrated here), and Crocevelina none at all. The relative figures are distorted by the fact that San Felice is a larger site and the surface collection covered the entire area, but the absence of significant pieces from the other sites where the survey was also intensive, though in more limited areas, is likely to be significant. On the right bank of the Basentello, Site 148 produced a single sherd (No.712).

II. Catalogue

We gratefully acknowledge the contribution of the late Giuseppina Canosa who advised on the interpretation of a number of the motifs on these sherds.

1. Bell-kraters The standard border motifs shown on these sherds were used in both Apulian and Lucanian productions		
699	223 Ar.245	Pl.19. P645. Rim frag. Hard pinkish-brown clay; fairly lustrous black slip. Laurel wreath on underside; thin reserved band below inner edge of rim. Ø 41.0, th. of wall 1.2.
700	223 E49N29	Pl.19. P4689. Rim frag. Orange-brown clay with traces of red slip out, fairly lustrous black paint. Laurel wreath. Max. dim. 6, th. at bottom 0.6.
701	627 P	Pl.19. P1587. Rim frag. Pale brown clay, semi-lustrous black slip. Laurel wreath. Max. dim. ca. 6.0; max. th. 0.9 near outer edge, thinning to 0.5 at inner edge.
702	223 Ar.226	Pl.19. P437. Rim frag. Reddish-brown clay; glossy black slip. Laurel wreath. Ø ca. 41.0.
703	223 E30N27	Pl.19. P4502. Rim spring. Pinkish-brown clay, grey in core. Thin red slip out, fairly lustrous black slip. Laurel wreath. Pres. ht. 5.5, pres. w. 6.0, th. at top 0.8.
704	223 E22N28	Pl.19. P4195. Rim spring. Reddish-brown clay, lustrous black slip. Laurel wreath on underside of rim turn. Edge of rim missing. Figured surface damaged. Max. dim. 6.0.
705	223 E57N26	Pl.19. P4992. Rim spring. Pinkish-brown clay, fairly lustrous black slip and dark red slip. Inside, red band below worn black. Outside, laurel wreath. Max. dim. 4.5, th. 0.6.
1a. Wall-sherds, probably or possibly of bell-kraters		
706	223 E19N32	Pl.20. P4160. Ws of an open vessel, perhaps a small bell-krater. Orange-red purified and compact clay, lustrous black slip, surfaces abraded. Meander decoration defining the figured area below. Ht. 4.7, w. 2.6 th. 0.4. This is a standard border motif used below figured scenes throughout S. Italian RF.
707	223 E18N32	Pl.20. P4148. Ws. Orange-red purified and compact clay, lustrous thick brownish-black slip, surfaces abraded. An area of the central part of side B is preserved showing chin and part of the bust of a cloaked youth facing right. His right shoulder is bare, and his left shoulder is covered with a cloak which falls in tight folds. He formed the left-hand figure in a matching pair (a standard theme on the reverse of larger Apulian vases, especially bell-kraters). Ht. 2.8, w. 5.2, th. 0.7. Middle Apulian (ca. 370/360 - 340/330 BC).
708	627 A	Pl.20. P2108. Ws of open shape, probably bell-krater. Reddish-brown clay, moderately lustrous black slip, largely worn off on the inside. Decoration on outside damaged at left side of sherd. On the more intact right side: a rectangular structure in two stages (there may originally have been more), surmounted by a badly preserved object divided by a slightly curved vertical line. This could be interpreted as a statue base with two legs of the statue partially remaining. Max. dim. 4.6, th. 0.6. The image may have resembled the statue of a nude youth on a high plinth represented on a *hydria* by the R.S. Painter: *RVAp* I, pl. 21.2 (Early Apulian. ca. first quarter C4 BC).
709	223 E40N18	Pl.20. P4412. Frag. of open shape, probably bell-krater. Reddish-brown clay, lustrous black slip inside and out. Man's (?) hand holding *patera* decorated with white on yellow dots and band, 2 white ?eggs and part of a third on *patera*, and another falling off it. Part of garland (held by a ? woman) to right. Max. dim. 6.0, th. 0.5. Cf. e.g. *RVAp* I pl. 70. 5, pl. 71.5, Group of Vatican V 14 (Middle Apulian); *RVAp* II, pl. 228.3 by the Painter of Vienna 751, Late Apulian. For the same motif on a sherd from Botromagno: *Gravina (PBSR) IV,* pl. XXVI no. 212a by a follower of the Dijon Painter, 2nd quarter C4 BC.

710	223 Ar.226	Pl.20. P438. Frag. from an open shape, probably from below rim of a bell-krater, with pronounced vertical curve. Diptych motif. Max. dim. 5.5. Middle Apulian. Cf. *RVAp* I, pl. 72. 2, Group of Geneva 2754. For a similar motif on a sherd from Botromagno: *Gravina (PBSR) IV*, pl. XXVI no 204.
711	223 E18N32	Pl.20. P4151. Ws of an open vessel, perhaps a bell-krater. Orange-red clay, lustrous black slip. Part of the bare leg and foot of a male figure, profile to the right. The black slip has not been applied right up to the outline of the leg. Ht. 2.8, w. 3.2, th. 0.65. The projecting rounded heel, prominent ankle bone and oblique line marking off the foot from the ankle (not a sandal strap) can all be seen in the work of the Amasis Painter (cf. *RVAp* I, pl. 21 6), but the rather careless painting suggests an inferior workshop, and possibly later date.
2. Other kraters		
712	145-9 Ar.148	Pl.20. P270. Frag. probably from the shoulder of a column- or volute-krater. Orange-brown clay, fairly lustrous black slip; possible traces of white over-paint. Badly damaged, especially by an oblique score mark up to 0.5 wide in the right half of the sherd, and by bad surface damage at the left edge. Preserved decoration appears to show a woman, draped, with left leg bent, facing left, and the lower part of an arm (of Eros? seated?) towards her, holding an indeterminate object in the hand (a mirror, over-painted in white, now lost?). Max. dim. 6.2, th. 0.9. This kind of tableau was common throughout Apulian RF, but was particularly popular in Late Apulian.
713	223 E50N38	Pl.20. P4274. Reddish-brown clay, fairly lustrous black slip out; inside surface lost. Sandalled feet of a draped youth above a border of meander and cross motif. Max. dim. 4.0. The youth would be one of a group of two or three: a stock theme on the minor side of Apulian RF pots. Cf. *RVAp* II, pl. 275 no. 3, column-krater by the Patera Painter. Late Apulian.
3. Raised bases		
714	223 E17N27	Fig.15. P4022. Part of raised base of a large vessel, missing the lower edge, but with beginning of turn to a vertical stem; much battered. Hard purplish-brown clay, fairly lustrous black slip. Reserved band corresponding to a groove round top of outer edge of foot; underside reserved. This type of base was commonly used for large RF pots especially bell-kraters and amphorae. Ø at top of base 11.5, w. of top of base 1.9. th. at top of sherd 0.8. Cf. e.g.Ciancio 1997, 184, protoitaliote panathenaic amphora from Botromagno Tomb 1 (1974) late C5 BC; *ibid.* 235, Gravina S. Vito Vecchio Tomb 21, proto-Apulian bell-krater of the Circle of the Painter of the Birth of Dionysus ca. 380 BC.
714B	229	Fig.15. P782. Edge and part of top of a raised base, broken off short of stem. Groove/ inset below top. Resting surface narrow, rounded. Smooth tan-brown fabric (reddish streak at core). Smooth BG on exterior with reserved band at top of side. Underside reserved. Ø base 14.0, height of edge 4.3. Cf. No.714.
715	223 E48N49	Fig.15. P4661. Base with thickened external edge and wall rising steeply then turning through an obtuse angle to form a horizontal ledge. Hard reddish-brown clay, lustrous black slip on exterior only. Reserved band on outer edge of base. Ø base 12.0, pres. ht. 2.4. Probably from an Apulian RF pot of the last half of the C4 BC (*oinochoe*, *hydria*, *pelike* or bell-krater). Cf. e.g. Trendall 1989: fig. 245, *oinochoe* of the Menzies group.
716	223 Ar.226	Fig.15. P436. Broad spreading foot turning into a vertical stem; torus moulding on the upper edge. Fine pinkish-grey clay; lustrous grey-black slip on outside only. Ø of base 17.0. This was the normal type of base used for Apulian RF volute-kraters of the last half of the C4 BC – as on the Patroclus vase by the Darius Painter in Naples, ca. 340- 320 BC (Pontrandolfo 2009, 120-121), but it is also found on *lebetes gamikoi* of the same period (e.g. Sichtermann 1966, 47 no. 67 by a painter of the Salting Group in the Jatta collection in Ruvo). The same type of base is also found on Gnathian pottery: cf. e.g. Green 1976, pl. 4 no. 3, bell-krater, but our piece being unslipped inside is more likely to come from a *lebes gamikos.*
4. *Kylikes*		
717	223 Ar.245	Pl.20. P650. Ws from open vessel, probably *kylix* from near base. Hard pinkish-brown clay, fairly lustrous brownish-black slip. Rosette and beginning of another motif inside. Max. dim. 2.6, th. 0.6-0.5. Rosettes with central dot and seven or eight triangular petals are a common motif in Apulian RF throughout the C4 BC.
718	223 E24N35	Pl.20. P4250. Ws. From *kylix*. Purified and dense beige clay, lustrous black slip over-painted in white and yellow. Decorated outside with spirals and volutes. Inside, a foot, perhaps the right foot, in a white slipper with two yellow dots at the strap (representing jewels?); the rest of the leg bare. Ht. 1.4, w. 2.6, th. 0.3. The bare leg with ?jewelled sandal must belong to (hermaphroditic) Eros, who is frequently represented in this way in Late Apulian RF: cf. e.g. *RVAp* II, pl. 307. nos 5 and 6 by a painter of the Group of the Trieste *Askoi.*
5. *Skyphoi*		
719	223 E21N26	Pl.20. P4196. Rim frag. Pale brown hard purified clay, lustrous thick black and reddish-brown slip. Row of ovules below rim. Inside slipped. Ht 1.1, w.1.2, th. 0.25. The row of ovules below the rim is common on Apulian *skyphoi* of the last three quarters of the C4 BC:

		cf. e.g. *RVAp* I, 288 and pl. 92 nos. 5-6, Zaandam Painter, Middle Apulian; *RVAp* II, 607, pl. 233 nos. 3 and 4, *Alabastra* Group, Late Apulian.
720	223 E26N29	Pl.20. P4108. Rim frag. Hard light brown clay, slightly lustrous black slip, surfaces abraded. Row of ovules below rim with the nuclei of the ovules reduced to a single line. Beginning of another motif at bottom. Ht. 1.9, w. 1.2, th. 0.25. The same treatment of the ovules can be seen on frags. of (stylistically) proto-Apulian *skyphoi* from a ceramic dump at Tarentum broadly datable between the C5 and C3 BC: Fontannaz in Denoyelle *et al.* (eds) 2005, 133-134 figs 7-8.
6. Cup-*skyphos*		
721	223 E60N24	Fig.15. Pl.20. P7011. Base and part of tondo of a ?plate. Stepped base with slight horizontal groove on edge of step. Orange-brown clay, fairly lustrous black slip. Part of chest, upper arm and wing of Eros on upper surface in tondo. Reserved band outside above step and inside below tondo. Max. dim. of tondo 3, Ø 8.5. The frag. comes from an Early Lucanian vase probably by the Amykos painter, showing part of a tableau of Eros sitting on a rock with his wings furled, left arm lowered to hold onto the rock, and right arm holding an object (ball, dove, phiale?) out towards a young man or woman. It would have fitted neatly into the space provided by the tondo of the plate. The iconographic type was devised by the Amykos Painter in the late C5 BC (Trendall 1974, pl. 4a, bell-krater in the Vatican; Burn 1998, 638 S29-1, *pelike* from the Pantanello necropolis). It continued to be used by later vase painters in both the Lucanian and Apulian tradition, as by the Primato Painter (Lucanian: *LCS* 174, pl. 76 no. 5, *lekythos* in Naples) and the Karlsruhe Painter (Apulian: Corrente 2005, 68 fig, 7 from Minervino Murge, ca. 380– 360 BC, Eros facing right); but the treatment of the arm held close to the body, and the arrangement of the feathers are closest to those of the Amykos Painter. The piece is shown in the illustration superimposed on a drawing of Eros on a bell-krater by the Amykos Painter, Trendall 1974, pl. 4a, Vatican U3 (inv. 17951).
7. *Lekanis* lids		
722	223 E20N32	Fig.15. P4171. Rim frag. Light brown clay, lustrous black slip. Row of crested waves round edge of rim. Ø 11.0. Cf. Elia in *Pomarico Vecchio 1.*, 117 tav. 48 no. 37 in a layer (US 195) dated by the excavators to 330– 300 BC; Ciancio 2013, 249 fig. 44; 291 fig. 71 from tombs at Conversano of the mid C4 and late C4 BC, both with the black and red reversed in relation to our piece; Laurenzana 2016, 53-54 fig. 3 no. 134, end C4/ beginning C3 BC.
723	223 E30N16	Pl.20. P4367. Ws. Orange-brown clay, lustrous black slip. Hermaphroditic Eros, kneeling with bent left knee and partly bent right, left arm lowered, right arm raised holding mirror; traces of white bracelets on right arm; fainter traces of necklace of beads round neck, a beaded bandolier across bosom and under left arm, and a string of beads across left thigh. No trace remaining of the handle of the mirror and tip of wing which would also have been in white. Edge of palmette frame on extreme left. Underside reserved. Max. dim. 3.7, th. 0.3-0.5. Cf. *lekanis* lids of the Baltimore Painter, with Eros in similar pose: *RVAp* II, 877, pl. 336 nos. 2 and 3. Last third C4 BC.
724	223 E34N31	Pl.20. P4846. Ws probably of a *lekanis* lid with spring of shaft of knob at upper edge of sherd. Light brown clay, orange brown and glossy black slip. The frag. shows part of a female head, with head-covering (*kekryphalos*) decorated with strings of beads represented by black and white dots, partly overlapping, Three black dots and traces of four white ones preserved on sherd. Underside solid black. Max. dim. 4.6, th. 0.5. The motif is common on *lekanis* lids in Late Apulian RF: cf. e.g. *RVAp* II, pl. 266 no. 4 by the Ascoli Satriano painter. For the form of the head there is a close parallel on a stamnoid vase of the T.P.S. Group in the Museo Ianora at Irsina: *RVAp* II, pl. 248 no. 8.
725	223 E34N31	Pl.20. P4586. Ws. Light pinkish-brown clay with both reddish-brown and fairly lustrous black slip. Faint traces of white over-painting over the reddish-brown surface near middle of sherd. Frag. appears to show part of brow, hair and *kekryphalos* decorated with black dots of another female head comparable to No.724. Underside black slipped. Max. dim. 4.2, th. 4.0. This piece and No.724. show similar decoration and come from the same square in the surface collection, but must come from two different pots, perhaps deposited together in a tomb.
726	223 E58N20	Pl.20. P4998. Frag. of lid knob with palmette on upper surface. Greyish-brown clay fired pinkish-brown near upper surface, fairly lustrous black slip. Ø hole 0.7 through stem of knob stopping just short of upper surface. Black slip on preserved part of upper edge. About a third of upper edge missing. The motif is a variant of the standard "cartwheel" motif normal on *lekanis* lid knobs in Late Apulian RF in which the spokes of the cartwheel have become a palmette. Pres. ht. 1.8, max. dim. at top 2.5. Cf. Ciancio in *Rutigliano I,* 425 fig. 45 from tomb 57, 2nd half C4 BC.

8. *Hydria* handle		
727	223 E50N23	Pl.20. P4728. Staff handle of a closed shape, probably *hydria*. Pinkish-brown clay, uneven semi-lustrous black slip, reserved area above handle with radiating lines. Another row of radiating lines over-painted in yellow below. Max. lg. of handle 5.4. The yellow over-painting indicates a date fairly late in the C4 BC.
9. *Lekythos*		
728	223 E49N39	Pl.20. P4309. Neck of *lekythos* with handle-spring. Pinkish-brown clay. Fairly glossy black slip. Series of vertical stripes in handle zone. Ø at break 1.9, Ø of aperture 1, max. l. 2.5. This is the normal way of decorating the neck and handle of *lekythoi* in the 2nd half C4 BC. Cf. e.g. Carando in *Pomarico Vecchio I*, figs 124 and 125, and 132-133 from burials; also two pieces from the necropolis of Rutigliano: Lippolis.2006, 434, fig. 56 cat. 12.29 from a tomb of ca. 340– 330; 443, fig. 69.b cat. 54.9. from a tomb of ca. 335– 315.
10. Wall sherds of miscellaneous open vessels		
729	223 E31N29	Pl.20. P4366. Ws of open shape, probably large *skyphos*. Reddish-brown clay, glossy black slip, interior very badly damaged, with only a little black slip surviving. Outside better preserved, but part of surface at bottom completely eroded. Decoration on exterior, part of a vegetable scroll and divided floret, with a schematic rosette at left edge of sherd beyond damaged area; probably from beneath the handle of the pot. Max. dim. 3, max. th. 0.5.
730	223 Neck of lekythos E16N29	Pl.20. P4004. Ws of open shape, probably *skyphos*. Pinkish-brown purified dense clay. Shows part of the leaves of a palmette. Ht.1.8; w. 1.9; th. 2.5.
731	223 E39N17	Pl.20. P4608. Ws with beginning of rim turn. Pale brown micaceous clay, fairly lustrous black slip. Perhaps nude male torso with head turned to right. Max. dim. 4.1, th. 5.0 – 6.0. If the interpretation is correct, then the clumsy drawing suggests a regional/ local workshop and probably late date.
11. Wall sherds of miscellaneous closed vessels		
732	223 E24N33	Pl.20. P4256. Shoulder and neck frag of *oinochoe* (shape 1). Reddish-brown clay, semi lustrous black slip. Row of egg and dot motif. Max. dim. 4.0. Late Apulian. Cf. e.g. *RVAp* II, pl. 378 nos. 1 and 2 by the White Sakkos painter.
733	223 E22N30	Pl.20. P4213. Shoulder and neck frag of *oinochoe* (shape 1). Hard reddish-brown clay, fairly lustrous black slip misfired or re-fired red in blotches over much of sherd. Part of a row of egg and dot motif between bands on shoulder. Small dribble of slip on inside at top. Beginning of a motif on shoulder. Max. dim. 5.5. Probably from same vessel as No.734. Late Apulian.
734	223 E22N30	Pl.20. P4214. Ws of closed shape, probably *oinochoe*. Hard reddish-brown clay, fairly lustrous black slip, unslipped inside. Splodge of potter's clay adhering on inside. Head and shoulders of hermaphroditic Eros facing left with edge of a palm branch (?) probably held in his right hand. Probably from same piece as No.733 from same coordinate. Pres. ht. 4.0, th. 0.3. For the depiction, cf. *RVAp* I, pl. 381.8 by the White Sakkos Painter. Late Apulian.
735	223 E45N25	Pl.20. P4572. Ws with concave external surface, giving part of neck and shoulder of a closed shape, probably an *oinochoe* of shape 3 (*chous*). Pale brown clay, semi lustrous black slip. Row of egg motif in reserved panel. Slip dribbled irregularly down inside. Max. dim. 3.0, th. 0.4. The ovule frieze occupying only the front part of the pot was frequently used on Late Apulian *choes* to frame the upper part of a panel with a figured scene. Cf. e.g. *RVAp* II, 612, pl. 235 nos 1 and 2 of the Paidogogos Group; 622-625, pl. 236 nos. 1-5 by the B.M. Centaur Group; 652, pl. 242, 5-6 of the Chevron Group; Lippolis in *Rutigliano*, 442 fig. 68 (Liverpool Group, from a tomb of ca. 335– 330 BC: p. 259). Cf. also Liseno 2013, 331 fig. 4, *lekythos*, in a tomb group with other Late Apulian RF from Conversano; Trefoil *oinochoe*: Trendall 1967, pl. 32.3, *oinochoe* shape 1 of the Intermediate Group.
736	223 E50N35	Pl.20. P7047. Ws from lower part of a fairly large closed shape. Warm orange-brown clay, lustrous but rather grainy black slip on outside only. Damage to surface at top, right and bottom edges of sherd. Two parallel vertical objects, slightly tapering, that on right interrupted by beginning of a curved feature near bottom. Max. dim. 4.0, th. 0.5 – 0.6. The tapering objects are most likely to be the legs of a dining couch (*kline*) or symposium table. Cf. the symposium furnishings on two Attic RF column-kraters imported to Peucetian settlements in the mid C5 BC: Ciancio 1997, 187, from Tomb 1 (1967) on Botromagno, and De Juliis in *Rutigliano*, 391-392 fig. 13, tomb 65. The theme recurs on an atticising calyx-krater from Mesagne attributed by Trendall to a Lucanian painter of his Intermediate Group (The Mesagne Painter) which he dated around the end of the C5: Trendall 1967, 77 no. 388 pl. 36.1. The pot was held by Lo Porto (1995b, 20 no. 11, figs 1-2) without reference to Trendall to be an Attic piece by the Phiale Painter: see Barresi 2005, 146. Our piece is placed here on the strength of that comparison, but without more of the pot or archaeometric analysis it is impossible to be sure of the classification. Perhaps Attic.

737	223 E23N27	Pl.20. P4231. From a large closed shape (amph, *pelike* or *hydria*). Purified dense yellowish clay, lustrous black slip. Part of a meander pattern which delimits the figured area below. Ht. 1.9, w. 2.4, th. 0.9. This was a common border pattern throughout the whole of Apulian RF.
738	223 E45N28	Pl.20. P4651. Hard orange-brown clay with smooth surface, lustrous black slip on outside only. Frag. of drapery with lines of varying thickness/ intensity. Max. dim. 3.5, th. 0.4 – 0.5. The frag. (of a *pelike*?) shows the hem of the mantle of the right-hand figure in a matching pair of youths – a very common motif on the reverse side of large pots in Apulian RF throughout the C4 BC. The high curve of the hem-line and the careless treatment of it in relation to the folds suggest a late date: cf. e.g. *RVAp* II, pl. 211, *pelike* of Trendall and Cambitoglou's Haifa group.
739	223 E25N33	Pl.20. P4065. Frag. of a small closed shape. Orange-red purified and dense clay, lustrous black slip on outside only. Shows lower part of a female figure turned towards left, wearing a *chiton* which falls in folds around slightly bent left knee. Ht. 2.6, w. 2.7, th. 0.4. The late classical pose of the figure and loose treatment of the drapery were current in italiote RF throughout most of the C4 BC.
740	223 E25N33	Pl.20. P4064. Uncertain form. Well purified dense beige clay, lustrous black slip. Edge of a wreath. Ht. 3, w. 2.6, th. 0.25. For the wreath, cf. No.709, Middle to Late Apulian.

8. OVER-PAINTED WARES

A. Over-painted in black-on-buff

1. Reticulated *lekythoi*

Lekythoi decorated with a net-pattern over-painted in black over the red clay. For the type, see Trendall 1955, 214; Maraschini 1988, 592-3, nos. 41.6a, 41.6b; Palmentola in *Rutigliano*, 402-403. They appear in Apulian contexts around the middle of the C4 BC and last until the end of the century. Several almost complete pieces were found in a waste dump no. 3 in the potters' quarters at Metaponto datable to the 3rd quarter C4 BC: D'Andria 1975, 427 and fig. 65 nos. 302-305. At Taranto they occur in burials of phases A2 and B1 (350–300 BC), although a few "realizzazioni molto povere" continue into Phase B2 (300–275 BC): Lippolis (ed.) 1994, 253-254. Scarano (1992, 19) distinguishes two types both datable to the late C4 BC in the necropoleis of the Hellenistic period at Metaponto, with more and less careful decoration.

741	223 E33N23	Pl.21. P4365. Ws with beginning of handle spring. Hard greyish-brown clay, fairly lustrous black paint. Band below handlespring and reticulated pattern. Max Ø 5.0, pres. ht. 4.5, th. 0.5-0.9.
742	223 E45N30	Pl.21. P4554. Ws. Hard reddish-grey clay, smooth brown surface, lustrous black paint. Rather careless decoration with the intersections of the reticulation overlapping the border line. Max. dim 4.1, th. ca. 0.5.
743	223 E42N23	Pl.21. P4493. Ws. Hard brown clay with smooth surface out, lustrous dark brown paint. Max. dim. 2.8, th. 0.3.

2. Black-on-Buff Ware

This ware, which has recently been distinguished by F. Silvestrelli in *Chora Metaponto III*, 309, consists of pots decorated with vegetable motifs painted in black silhouette on a light brown background. She describes it as characterized by a well-levigated, reddish-yellow clay, a thin greyish brush-painted gloss on the interior and a reserved exterior surface. The motifs are painted in black-gloss just below the rim: usually ivy fronds, but also rows of dots and stylized branches. Apart from four sherds from the survey of the Metapontine Chora, she identifies others from Cozzo Presepe, Pomarico Vecchio and Gravina, and suggests that the pots, mainly cups and *skyphoi*, were made in Metaponto, probably in the last half C4 and beginning C3 BC.

One sherd from our survey can be assigned to this ware. It differs from wheel-made painted ware in that the black paint is lustrous.

744	134	Pl.21. P106a. Ws. Hard reddish-brown clay; traces of an ivy frond in lustrous black slip on outside; inside reserved. A fine piece, but surface discoloured by burning. Max. dim. 2.1; th. 0.2.

B. Over-painted with colour on black

The practice of over-painting black slip with red or white had been common in Attic black-figure pottery of the archaic period; and the design of Ionian type cups had frequently been enhanced by the addition of red lines. In the C5 BC there was more experimentation with the use of added colour to black-gloss pottery, both in Athens and South Italy, and colour-over-painted wares produced in South Italy began to circulate in indigenous settlements in Apulia. In the second quarter of the C4 two new wares with their own distinctive decorative styles emerged in South Italy: the Red Swan group with over-painted decoration in red, which was distributed in Peucetia, Daunia and Eastern Lucania (De Juliis 2002, 10), and the polychrome Gnathian which was originally centred on Taranto and circulated widely throughout Apulia, especially in Messapia. They were produced by different workshops with distinct, though overlapping, areas of distribution.

1. Early? over-painted ware

Ia. Lekanis

745	223 E41N28	Pl.21. P4445. Frag. from lower wall of the bowl of a *lekanis* with projecting knob. Hard reddish-brown clay, fairly lustrous black slip on exterior only. Faint traces of over-painting in red: (a) single horizontal band at level of nipple, (b) 2 horizontal bands at other edge (bottom?) of sherd, (c) 2 spiral scrolls in zone between a and b. Max.dim. 4.5, th. 4.0. The knob would have been one of a pair framing a looped strap handle, as on Sparkes & Talcott, 1970: pl. 40 nos. 1216 (525–500 BC) and 1221 (ca. 425 BC), both with added red lines. Cf. 2 fragmentary *lekanides* from Tomb 9 at Monte Sannace (*cit.* - 123 and pl. 200, 2-3) considered by Ciancio to be colonial products of the archaic period. Both have projecting knobs on either side of the handles, and like our piece they have a pair of red lines near the bottom of the sherd. They do not, however, have the spirals of our piece. Similar spiral fronds occur, however, on a *lekanis* lid from the "Bottega del vasoio" at Oppido Lucano associated with material of the C5–C4 BC (Lissi Caronna 1980, fig. 131 no. 1, and it was used on some of the over-painted pottery at Rutigliano around the middle of the C4 BC (*cit.* – De Juliis, 138, figs. 21. 22).

2. The Red Swan Group

This group, first defined by Beazley (1947, 223-224) consists of drinking vessels, especially stemless *kylikes*, together with small closed shapes, particularly jugs, which were over-painted in red with a rather narrow range of motifs, principally bay fronds and "running dog" pattern (i.e. rows of obliquely set "S"s). The only figurative motif is a swan or goose inside one or two circles which frequently occupies the tondo of the stemless *kylikes*. Some of these pots were made at Metaponto, where fragments have been found in waste dump 5 in the *kerameikos*, datable to the end C4 BC: D'Andria 1975, 435, 437 no. 369, fig. 70; Silvestrelli in *Chora Metaponto III*, 309, De Juliis 2002, 186). The workshop seems to have made them principally for "indigenous" Italic customers, because Red Swan *kylikes* are better attested in Eastern Lucania and Central Apulia than they are in Metaponto. But there must also have been potters in some of the principal Apulian settlements producing good-quality imitations (De Juliis in *Rutigliano*, 531; *idem* 2002). The group as a whole can be dated in the last three quarters of the C4 BC (De Juliis 2002, 10).
Four fragments of Red Swan *kylikes* were found in our Survey Area (Nos.746-749), all on San Felice (Site 223).

2a. Kylikes

746	223 E45N40	Pl.21. P4310. Ws. from a little below the rim with lip on the inside. Thick greyish-black slip with reddish blotches and surface grains. Worn red paint. Bay frond turned to left outside and in. Ø at offset 10.0, pres. ht. 5.0, th. 0.5.
747	223 E16N26	Pl.21. P4019. Ws. Compact orange-red clay, thick black, very lustrous, slip with grains on the surface; worn red paint. Parts of 2 bay leaves turned to right. Ht. 2.9, th. 0.6.
748	223 E50N36	Pl.21. P4040. Rim frag. Compact well purified orange-red clay, lustrous black slip, worn red paint. Bay wreath turned left on exterior. Ht. 2.0, th. 0.35.
749	223 E24N18	Pl.21. P4327. Frag. of base with recess of foot on underside. Compact well purified orange-red clay, slightly lustrous black slip. In tondo: red swan in full profile, turned left inside 2 circles of different thickness. The tips of the swan's wings are rendered with curved lines above the tail. Ø base (ext.) 5.9, ht 6.7. Cf. De Juliis 2002, 150 fig. 38, *kylix* in Bari Museum. According to De Juliis (*ibid*. p. 183) the motif on the swan surrounded by a circle was already current in the 2nd half C5 in the bottom of *kylikes*. It is not found in the first quarter C4, but reappears in the second quarter surrounded by a frond of bay leaves, and lasted until the end of the century.

3. Gnathian ware and derivatives

Pottery of the so-called Gnathian ware was over-painted in a more polychrome style with white and yellow as well as red paint. There are some figured scenes, particularly in the initial phase of the ware, but its most characteristic feature is the decorative vegetable motifs, vine and ivy trails drawn from the Dionysiac repertoire, and rows of paired olive leaves, arranged in a distinctive decorative system with horizontal fronds and vertical sprays of small leaves. The larger bay (laurel) leaves of the Red Swan group are lacking in this ware; and whereas the main shape in the red-over-painted series was the *kylix*, in Gnathian it was the *skyphos* (and to a slightly lesser extent the cup-*skyphos).* Tarentum was the principal centre of production (Forti 1965, 110), but Gnathian pottery was also produced in the *kerameikos* at Metaponto in the third quarter of the C4 BC (D'Andria 1975, 424, 427), and there are reports of unpublished kiln wasters of over-painted wares at Heraclea (Pianu 1990, 218) and of Middle and Late Gnathian at Canosa (Lippolis 1996, 469; Puritani 2002, 395, note 88; Lanza 2006, 115). As in the case of the Red Swan Group, it is generally supposed that local workshops began to make Gnathian type pots in various Apulian and Lucanian settlements before the end of the C4 BC. Several suggestions have been made generally on the evidence of distribution, including (apart from Canosa, already mentioned), Ruvo (Calandra 2008, 18-23), Rudiae (Giannotta 1996), Valesio (Yntema 2001, 133), and Pomarico Vecchio (*cit.* – Preacco Ancona, 129). There may well have been another nearer to Botromagno. The existence of such production centres would help to explain why some of the shapes and decorative motifs preferred by the Peucetian inhabitants of settlements in the Adriatic coastal fringe differ significantly from those that circulated in the settlements of the interior such as Monte Sannace, Altamura and Botromagno (Lanza Catti 2011).
The main phases in the stylistic development of the ware are well known through the studies of Bernardini (1961), Forti (1965), Webster (1951, 1968) and Green (esp. 1968, 1976), but new evidence accumulated at various sites in the last thirty years has led to substantial revision of the chronology, especially of the latest phase of production: see esp. Kenrick 1985 (Sidi Khrebish/

Berenice), 68; Fozzer 1994 (Taranto); Giannotta 1996, 458-459 (Messapia); Yntema 2001, 133-136 (Valesio); D'Amicis in *Rutigliano* 541-566; De Cazanove in *Civita di Tricarico*. The arguments are summarized by Puritani (2002), Calandra (2008,9-12) and Miše (2014, 15-17). In Early Gnathian, datable in the middle two quarters of the C4, the potters experimented in depicting human figures and developing new forms of subsidiary ornament. This phase was followed in the last third of the century by Middle Gnathian in which the potters showed less interest in figured representation: the ornament became the principal feature of the decoration, and at the same time more static. In Late Gnathian, which began early in the C3 BC, vertical ribbing, which had occasionally been used in the earlier phases of the ware, was frequently applied to the principal shapes – stemmed cups, *oinochoai* and bottles. It generally extended over most of the body; and leaving only a limited space between the ribbing and the rim for the over-painted decoration which was progressively simplified. The quality of the ribbing varied considerably: in the best examples the ribs are well rounded and even; in the worst they are flat, and of varying thickness, separated from each other by narrow grooves. It is not yet clear to what extent these variations reflect a decline in quality over time, or a distinction between the output of different workshops. It is now generally recognized that production of Gnathian pottery continued down at least to the end of the C3 BC, but in some centres, including Taranto (Hempel 2001, 111-112), Valesio (Yntema 2001, 198-199, "Calotte-shaped cup") and Botromagno (*Gravina (PBSR) II*, 137 fig. 17.4), hemispherical bowls with residual over-painted decoration continued to circulate into the early C2 BC. Hempel and Yntema suggest that these late pieces reflect the influence of Attic West Slope ware, but it is difficult to see more than a vague similarity with the over-painted wares of mainland Greece, and it is surely better to see these pieces as local Apulian products at the tail end of the Gnathian tradition.

None of the pieces in our catalogue shows any figured motifs or other inventive iconographic feature typical of Early Gnathian. The standardized character of the decorative patterns on these sherds is characteristic of Middle Gnathian. Many of the motifs continue into Late Gnathian of the C3 with little change; but the ribbed pot forms typical of that phase are entirely lacking in our survey assemblage. Most of our pieces are therefore likely to date to the late C4 BC. The schematic olive leaves of No.753 may be Late Gnathian, though a Middle Gnathian date cannot be ruled out. The latest piece is likely to be No.754 with residual ivy frond decoration which is probably a fragment of a hemispherical bowl of the end of the C3 or beginning of the C2 BC.

The lack of ribbed pot forms in the Gnathian from San Felice is in marked contrast to the Gnathian assemblages from excavated sites in Central Apulia and Eastern Lucania which are known to have been occupied in the C3 BC, including Civita di Tricarico (*cit.* – De Cazanove, 373-391, figs 289-292), Pomarico Vecchio (*cit.* – Preacco Ancona, 127-137, tav. 49-50), Monte Sannace (*cit.* – Scarfí 1962, 38, fig. 20; 120 fig. 105; Rossi 1989, 159-161, esp. tav 282; Gargano 2019), and Gravina Botromagno (Jentel in *Gravina II*, 52-59, figs 24-25, pls. X-XII).

Gnathian vases were ornamental pieces intended both for domestic and funerary use: drinking vessels (*kylikes*, *skyphoi*, cup-*skyphoi*, *oinochoai* and kraters), perfume flasks (*lekythoi* and bottles), and occasionally other shapes. They were essentially more elegant versions of black-gloss types, and there is much overlap between the decorated and undecorated forms. Several pieces have been listed in the black-gloss section of this catalogue because there is no painted decoration on the sherd, but they belong to types which are also found in Gnathian, and may be fragments of decorated pieces. They include the lid No.846, alabastron rim No.854, a lug-handle fragment No.861, and the high bases with intermediate mouldings Nos.889-892. The lion's head lug handles (Nos.756 and 757) however, are listed here since, although they are not themselves over-painted, they are most likely to come from Gnathian bell-kraters.

3a. Skyphoi and cup-skyphoi.

The skyphos is the commonest of all shapes in Gnathian, found both in burials, and settlement contexts; but the cup-skyphos was also popular. On small wall sherds such as ours it is impossible to determine to which of these shapes a piece belonged.

750	223 E45N41	Pl.21. P7069. Very fine ws. Pinkish-brown clay, lustrous black slip. Purple, white and yellow paint: trail of yellow vine leaves and white tendrils on either side of a purple stem, the yellow much worn. Max.dim. 2.3, th. 0.2. The pattern of vine leaves alternating with vertical tendrils appears already in Early Gnathian, but is especially common on Middle Gnathian pottery of the last half of the C4. Cf. e.g. Green 1976, 3 and pl. 2 no. 2 *skyphos* of the Rose Painter; 4 and pl. 5a, no. 4, stemmed cup which "stands very close to the later work of the Rose Painter" (obverse); p. 9 pl. 16a no. 14, stemmed cup in the tradition of the Rose Painter's workshop.
751	407 E6	Pl.21. P1069. Ws. of *skyphos*. Lustrous black glaze. Faint traces of over-painted decoration, with the colours not clearly distinguishable: olive stem with curled leaves above trail of grape cluster, tendril and vine leaf. Max. dim. 3.1, th. 0.25-0.3. The olive branch with curled leaves over-painted in yellow was used as a framing motif in Late Apulian rf, as on a *phiale* from Conversano by the workshop of the Baltimore Painter: Ciancio & L'Abbate 2013, 256-257 and fig. 64. This form of the vine trail was common in Middle Gnathian: cf. e.g. Green 1976, 9 and pl. 15, no. 13, *oinochoe* of the Sidewinder Group.
752	223 E31N19	Pl.21. P4371. Small frag. of open shape, probably *skyphos*. Pinkish-grey clay, lustrous black slip in and out; exterior over-painted with sinuous yellow ivy frond with most of 1 leaf and the stem of another; 2 clusters of berries represented by a dot inside a broken circle. Max.dim. 2.3, th. 0.25. This form of the ivy trail with undulating stems and leaves alternating with berries was used throughout the C4 BC in Apulian rf to decorate the necks of column-kraters (cf. e.g *RVAp*, pl. 16, 1-2 and 3, Tarporley Painter, Early Apulian; Trendall 1989, fig. 232-3, Patera Painter, Late Apulian). It was adopted into Middle Gnathian in the late C4 BC: cf. e.g. Forti 1965, tav. 25 3 (stemmed bowl), tav. 27 b (cup *skyphos*), tav. XXVIII

752	223 E31N19	a (bell-krater). In all these, however, the berries are represented with a ring of dots around the central point. The ring of dots begins to be resolved into a circle around the beginning of the C3 BC and continues to be shown in that way throughout the century. Cf. Miše 2015, 80, no. 27, ribbed *oinochoe* from Canosa in Split Archaeological Museum with ivy trail on neck, dated by comparanda to the beginning of the C3 BC; *eadem* 111-112, nos. 91-92, locally produced ribbed *oinochoai* in the Gnathian style from Issa on the island of Vis in Central Dalmatia, dated to the mid/ 2nd half C3 BC. The same form of the motif can also be seen on a frag. of a Gnathian *situla* from Sidi Khrebish (Berenice) which can be dated after the middle of the C3 or even in the first half of the C2 when most of the Gnathian pieces reached Berenice (Kenrick 1985, 68-69 and fig. 12 no. 90.3). Our frag. does not have the ribbed body typical of Gnathian of the C3.
753	223 E11N25	Pl.21. P4100. Ws., probably from just below rim of a *skyphos* or cup-*skyphos*. Hard compact medium brown clay; lustrous black slip. Olive stem with pairs of lanceolate leaves in white and yellow. Pres. ht. 1.0, th. 0.2. The straight olive leaves are a simpler, but not necessarily later, version of the motif on No.751. It is found in various forms in Gnathian. Cf. e.g. the olive stem with pairs of leaves obliquely set on a *skyphos* from Lavello/ Forentum in a tomb of the 2nd half C4 BC: Bottini & Fresa 1991, 63-64, tavv. CXXXIII-CXXXIV, tomb 686 nos. 21-22. The motif remained in vogue throughout the C3, and is attested at Valesio in a context of the late C3 BC/ early C2 BC: Yntema 2001, 134 no. 203.
3b. Hemispherical bowl		
754	223 E17N18	Fig.15. Pl.21. P4142. Rim and wall frag. of a hemispherical bowl/ *mastos*. Compact orange-red clay, well purified; thick lustrous black slip. Rim slightly out-turned and marked on the outside by 2 grooves. Below the grooves, a horizontal line with rows of small dots and ivy leaves over-painted in yellow on white. Below, an incised line. Pres. ht. 2.6; th. 0.3. The bowl may be compared with 4 found in the lateral chamber of a *grotticella* tomb at Ordona, 3 of which had a narrow moulded foot while a fourth had a flat base. All 4 were simply decorated with stylized ivy fronds similar to ours. They are dated by K.Van Wonterghem-Maes (1971, 109-112 and pl XLIV nos. 27-30) to the beginning of the C3 BC on stylistic grounds, but that is probably too early. Similar bowls with simple over-painted decoration are attested in the Tarentine necropolis in phase D, ca. 225–175 BC (Hempel 2001, 51-52, 111-112, and esp. Taf. 25, Hemisphärische Becher 1-5).
3c. Bell-kraters		
755	223 E48N27	Fig.15. Pl.21. P4864. Rim frag. of a bell-krater (Type C) with tip missing, and broken off approximately at point of wall-turn. Hard-fired pale greyish-brown clay, fairly lustrous brownish-black slip in and out applied unevenly with brush. Broad red slipped band on top of rim, 3 narrow reserved red slip bands on outside wall; incised undulating ivy scroll on outer wall and part of 2 other incised curved lines apparently springing from it. 3 small white dots (berries) on outside wall, 1 of which overlaps the central red line. Ø inner edge 26.0, ht. 4.0. Cf. Silvestrelli in *Chora Metaponto III*, 333 nos 92, 94 for similar frags. with discussion of the shape in the repertoire of the workshops at Metaponto in the second half C4 BC; *ibid.* no. 91 for an incised ivy trail in a similar position on a frag. of a bell-krater of Type B. For the complete shape: Morel 1981, 4618b 1, Gnathian from Ruvo, ca. end C4 BC (with lion's head handle); Bernardini 1961, tav. 7 no. 1 from Rocavecchia.
756	223 E60N24	Pl.21. P7010. Lion's head lug handle. Part of wall of a krater with attached lug in the form of a lion's head. Hard reddish-brown clay, lustrous black slip. Reserved band inside 0.8 wide near upper edge of sherd. Edge of lug preserved below mouth of lion. Front of lion's head to right of eye lost; damaged also below ear. Eye, ear and details of mane finely finished, from a crisp mould. Underside of lion's head unfinished. The handle was mould-made and attached to the pot wall. Max.dim. 7.7, pres. lg. 6.1. Such lug handles were used on Gnathian bell-kraters. Cf. Bernardini 1961, tav. 57-58 for numerous examples in the Museo Castromediano, Lecce (Early and Middle Gnathian). The handle type continued into the beginning of the C3: Forti 1965, 77, 103, tav. XX.a. Cf. No.757.
757	229	Pl.21 (GS). P2028. Lion's head lug handle. Mould-made. Hard pinkish-brown clay; lustrous black slip. Reverse roughly formed and reserved. Edge of vessel finishes at line of lion's mouth. Ht. 4.5. Cf. No.756.
3d. Oinochoai, hydrai etc. The following fragments all come from large closed shapes, probably *oinochoai* or *hydriai*		
758	407 C6	Pl.21. P1064. Ws. with beginning of neck turn. Medium brown clay; lustrous black slip outside and in. 2 incised horizontal bands; remains of 2 white ivy leaves above the bands, and of 2 purple motifs below. Max.dim. 4.2, th 0.6.
759	223 E22N18	Pl.21. P4203. Ws. from shoulder. Slightly convex outer surface. Hard well fired reddish-brown clay, lustrous black slip. Pendant spray with incised line flanked by white over-painted leaves. Max. lg. 3.8, th. at break at bottom 0.5. The vertical spray is a common motif in Middle Gnathian, esp. on bell-kraters flanking a human figure or theatrical mask or other image (as on Green 1968, 36 and pl. Va by the Painter of the Louvre Bottle).

760	223 E37N21	Pl.21 (GS). P583. Ws. with beginning of neck turn of *oinochoe/ chous* or similar. Brown clay; semi glossy black slip; matt white paint. Pendant dotted spray. Approx Ø neck 10.0; pres. ht. 7.5.
761	223 E37N21	Pl.21 (GS). P462. Ws. Brown clay; rather drab black slip; yellowish-white paint. Horizontal spray. Max. dim. 7.2. For the spray, see No.759. The motif was sometimes set horizontally in Middle Gnathian, as on a squat krater with mask from Rudiae in the Museo Castromediano, Lecce: Bernardini 1961, tav. 10.3. Set horizontally it became a stock motif in Late Gnathian, especially in the handle zone of stemmed cups with vertical handles and ribbed bodies (as Bernardini 1961, tav 21.5 from Oria, tav. 21.6 from Rudiae).
3e. Lekythoi etc.		
762	223 E44N27	Pl.21. P4526. Ws. of *lekythos* or other closed shape. Hard pinkish-brown clay, lustrous black slip, pale yellow paint. "Running dog" pattern and 2 bands. Max.dim. 3.3, th. 0.3. The running-dog motif was popular in all periods of Gnathian.
763	223 E22N24	Pl.21. P4201. Lower wall and beginning of base. Hard pinkish-brown clay, fairly lustrous black slip leaving reserved band at bottom of sherd at the beginning of the turn for the base. Row of ovolo incised after firing between 2 pairs of incised bands; faint traces of over-painted white ovolo inside. Ø at break ca.5.5. Cf. Fozzer 1994, 328, figs. 266 and 267 from the Tarentine necropolis, phase A-B, last half C4 BC.

9. BLACK-GLOSS WARES

I. Introduction

BG pottery: the regional tradition

Almost all the diagnostic BG fragments found on the survey fall within the Apulian/ Lucanian tradition of pottery production, which differs significantly from that of Campania, Latium and Etruria. The prototypes were Attic, and down to the end of the C3 BC, Athenian models were imitated and adapted in numerous production centres in South Italy, giving rise to regional pottery traditions. Attic BG pots rarely reached our Survey Area (the only certain example being a small scrap of a stemless cup of the delicate class, No.769, of the 3rd quarter C5 BC), so the Peucetian inhabitants acquired their BG table wares from these regional workshops. There were many of them, as Di Giuseppe (2012) has shown. Some were isolated units operating in small settlements, others were clustered, especially in the major cities. The evidence is of uneven quality and far from complete, but it is clear that Tarentum was an important centre of production (Dell'Aglio 1996a: 61-63) which is likely to have supplied BG pottery to much of Central Apulia. There was also a flourishing ceramic industry at Metapontum (D'Andria 1975), which was probably the main source for our Survey Area. The recent publication of a kiln at Torretta in the territory of modern Pisticci, 12km SW of Metaponto, throws much light on the organization of the industry (Lecce 2010–2011). It fell within the Chora of Metaponto, in the valley of the Cavone river, and was in use from the mid-C6 to the mid-C5 BC producing at first archaic Greek type cups and *skyphoi*, and then a variety of BG and banded wares as well as some plain wares. There may have been a small settlement somewhere in the vicinity, but it has not been located and is unlikely to have been large, so it is probable that the workshop was situated there to be near to convenient sources of clay, water and fuel, and that the pottery it produced was sold in Metapontum and in villages elsewhere in the Chora. Other BG workshops in the Chora have been identified at Pantanello, and at a site in the lower Basento valley labelled 105 by the American survey team (Lanza Catti *et al.* 2011, 143-145). The products of these Metapontine workshops must have been imitated by potters in the indigenous settlements in the Fossa Bradanica. There is evidence for workshops at Montescaglioso (Lo Porto 1988–1989, 387-393), Grottole (Di Giuseppe 2012, 102) and Oppido Lucano (Lisi Caronna 1983, 316-321). Other pottery kilns of the Classical/ Hellenistic period have been excavated at Gravina, both on Botromagno (Small *et al.* 1994) and in the in the area of Padre Eterno between the hill and the ravine (Ciancio 2004, 20). There is no certainty that they were used for firing BG ware, but since kilns elsewhere were used to make BG as well as other kinds of pottery (e.g. in the *kerameikos* at Metaponto, and at Jesi in the Marche: Brecciaroli Taborelli *et al.* 1996-1997), that possibility cannot be ruled out. There is also some evidence for pottery production in our survey area at San Felice (Site 223) in the form of a spacer ring (No.2080) though no ceramic wasters were found which might indicate the kind of wares that were fired there.

Fabrics

None of the sherds found in our survey area was subjected to petrological analysis, but many can be assigned to tentative categories on the basis of the characteristics of the clay and slip visible to the naked eye. In *Mouseion* 2010, I grouped the BG sherds from San Felice (Site 223) in ten such categories, of which the first four were most important in terms of the number of instances. Much of the BG material from sites other than San Felice, published here, falls within the same categories. The largest group, with 17 instances, can be assigned to category 1: *Pinkish-brown clay with lustrous or fairly lustrous black slip*: Nos.778, 780, 786, 794, 805, 807, 816, 823, 827, 830, 851, 869, 880, 883, 884, 914. Nine fall within category 2, *Medium brown clay with a lustrous or fairly lustrous black slip*: Nos.775, 817, 842, 853, 865, 879, 887, 907, 909 and seven within category 4: *Reddish-brown clay with lustrous or fairly lustrous black slip*: Nos.800, 804, 850, 861, 878, 903. Three can be assigned to category 3, *Greyish-brown clay, with a lustrous or fairly lustrous black slip*: Nos.785, 791, 855 and six to category 5, *Pale brown clay, with a fairly lustrous black slip*: Nos.776, 785, 787, 820, 841, 895. The remainder do not suggest significant groupings.

The value of this fabric classification should not be exaggerated. The colour of the clay and the degree of lustre of the slip are likely to depend at least as much on the conditions of the kiln, the temperature at which the pot was fired, and the firing process as they do on the chemical composition of the clay. In fact petrological analyses of samples of BG sherds taken from several parts of South Italy, including Gravina, show that they are remarkably consistent in chemical composition (Prag *et al.* 1974). The differences between the categories listed above may in some cases reflect deliberate choices made by the potters in the management of the kilns, but they may also arise from the fact that some potters were more skilled and were able to achieve better results than others.

The best of these fabric groups in terms of the potting and brilliance of the black slip is category 4 (reddish-brown clay with lustrous black slip), which rivals in quality the best Apulian red-figure and Gnathian pieces from Central Apulia and the Bradano basin. The vases of this group were probably made by the same potters who produced the decorated pottery, or by others who were familiar with their techniques. This was evidently the case at Metaponto where fragments of red-figure, over-painted and BG wares were found associated in the same dump in the *kerameikos*, dated to the 3rd quarter of the C4 BC (D'Andria 1975, 424). The pots of category 1 (pinkish-brown clay) approximate to those of category 4 in quality. Their pinkish hue resembles that of BG sherds from Cozzo Presepe which Prag has argued were probably made in Metapontum (*Cozzo Presepe* 351-364). It is certainly possible that these pieces were produced there, but the fabric description also corresponds to that of Rossi's class A of BG pottery from Monte Sannace: *Vernice nera lucente; argilla beige rosata, ben depurata, dura e compatta,* (*cit.,* 164) and since Monte Sannace is more closely linked to Tarentum than to Metapontum, the possibility must remain open that the pots of category 1 were imported to San Felice from Tarentum. As we have seen, BG pottery was produced in both cities, and our Survey Area was

connected to both by easy routes of communication – to Metapontum by the valley of the Bradano/ Basentello, and to Tarentum by way of the route over the Murge which, after the Roman conquest, was developed as the Via Appia.

The quality of categories 2 and 5 is more variable. Both include some pieces which were less expertly made and which are likely, therefore, to have been cheaper. That would suggest that they were produced nearer to the survey area, perhaps at Botromagno/ *Silvium* itself.

Shapes

The great majority of the BG pieces listed in the catalogue are drinking vessels: *kylikes*, *skyphoi*, cup-*skyphoi*, stemless two-handled cups and one-handlers, typical of the production of the C4 BC. They were non-permeable, easy to clean, and the surface texture of the glossy slip was pleasant to the lips. The main beverage was probably wine, mixed with water, but only one BG fragment of a krater was found (No.861) – a lug handle which may well have been attached to a Gnathian bell-krater. Most of the kraters used in the survey area must have been decorated in the red-figure (as Nos.699-713) or Gnathian technique (as Nos.755-757). Table amphorae which would have contained the wine and *hydriai* for the water waiting to be mixed were all decorated with bands in the wheel-made painted technique.

Only a few closed shapes were found in the field survey, primarily *oinochoai* (Nos.852, 853, 916, 912, 917, 920) and *lekythoi* (Nos.855, 856). Two pieces, probably fragments of *thymiateria*, both from San Felice, show that the form of cult already attested on the site in the Early Iron Age, continued down to the late C4 BC (Nos.857, 858). There is one fragment of an alabastron (No.854), and another of a *guttus* (No.915). One piece only (No.851) comes from a storage jar, and it is decorated in matt paint more typical of WMP in which such vessels were normally made.

The range of BG shapes changed in the course of the C3 BC, as it did elsewhere in South Italy in the Hellenistic period. The *skyphos*, *kylix* and *lekythos* all disappeared. Of the types current in the middle of the C4, only the salt cellar, the plate with ring foot and out-turned rim, and perhaps the one-handler continue into the Late C3/ C2. Other popular BG shapes of the later Hellenistic period are low relatively thin-walled bowls imitating glass vessels that replaced the *skyphoi* as the normal type of drinking cup, rather deeper bowls with rims either down-turned or triangular in cross-section that must have been used for serving food, and smaller wide-mouthed dishes that probably held sauces or other condiments, and plates with ring feet and down-turned rims.

In the C2 most of this production came to an end, its place being taken by the GG pottery that became the normal table ware in the Fossa Bradanica and remained in vogue down to the Augustan period.

BG pottery and the development of sites in the survey area

In all, 1688 BG sherds were found on 50 sites in the Survey area (see Table 9-1 below). The figure includes a single sherd (No.894) not associated with any site, and classified as sporadic. To these may be added 86 sherds found in the surface collection at Vagnari (Site 361) and another 62 recorded in first phase of the excavations of the site between 2000 and 2009 (C. Small in *Vagnari*, 60); also 33 sherds from the excavation by the Superintendency at Recupa di Scardinale (Site 213x), reported by Annalisa Melillo in *PSF*, 203. The ware was therefore relatively abundant, and because well-preserved pieces with distinctive shape can usually be dated within about 50 years, it provides the most useful evidence for the development of settlement in this part of the Fossa Bradanica in the period from the end of the C6 to the beginning of the C2 BC. It must be emphasized, however, that much of the evidence is open to doubt. There are no complete shapes. All the pieces illustrated are small fragments, some of which may be reconstructed in more than one way leaving some uncertainty about their classification and date.

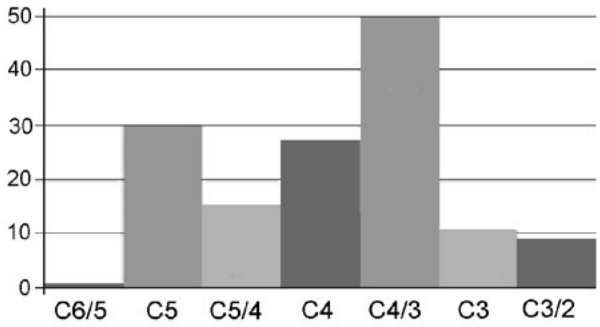
In spite of these difficulties, the BG pottery gives the best indication of trends in site occupancy in our Survey Area. Pieces with enough diagnostic characteristics to be worth cataloguing were found on 26 sites. The evidence is summarized in Table 9-1 below in which all the catalogued pieces are listed in rows by site numbers and in columns by century, according to the dates suggested for them. Pieces which straddle the transition between two centuries are listed in separate columns (e.g. C5/ C4). Cases where there is serious doubt about the classification are indicated by a question mark. No account can be taken of the 24 sites attested by undiagnostic BG sherds, other than to say that they are generally small in estimated area, yielded very few fragments of BG and were probably short lived. The earliest diagnostic piece dates to the late C6 or early C5 BC, and is attested on only one site. In the C5 the ware became much more common, with 30 catalogued pieces attested on 7 sites. The trend continued until it reached a maximum of 50 catalogued pieces on 13 sites at the end of the C4 or beginning of the C3 BC, after which it fell of sharply, to 9 catalogued pieces from 7 sites in the C3/ C2 BC. The beginning of the decline coincides with a drastic change in site occupancy. The largest of all the sites, San Felice (Site 223) which had produced 29 catalogued BG sherds datable to the late C4 or early C3 appears to have been abandoned for virtually the whole of the C3, as do most of the other sites which had been occupied in the C4. Conversely, at least 4 sites with BG pottery of the C3/ C2 BC appear to be new foundations. The implications of this for the broader history of the area are discussed in Chapters VII and VIII.

Site	sherds	C6/C5	C5	C5/ C4	C4	C4/3	C3	C3/ C2	C2	C2/ C1
114	1							896		
120	7						907?	841		
124	15			855		820 850				
126	4					815 817				
137	3				847					
223	1190	915	764 765 766 768 770 782 795 802 803 834 871 872 873 874 875 905 906 911 916?	771 806 862 863 864 866 867 876 877 888 890 892 914	772 784 789 790 792 799 808 809 810 819 826 854 856 857 858 893 918	773 777 778 779 781 783 793 796 801 811 812 814 818 835 836 839 840 849 859 881 885 886 889 899 900 902 912 913 917	897 898		821 822	829?
229	29		878			837 838				828
234	4				805					
302	13			919	794?	891		831	903?	
303	27							823 832	833	
355	2						816			
361*	86									
372	27								848 904?	
401/409	20		869 870?		807					
407	20		767		780 884	774			827	
413	6		775 868							
415	2		865		846					
417	14					776 791	901			
419	14					785	842?			

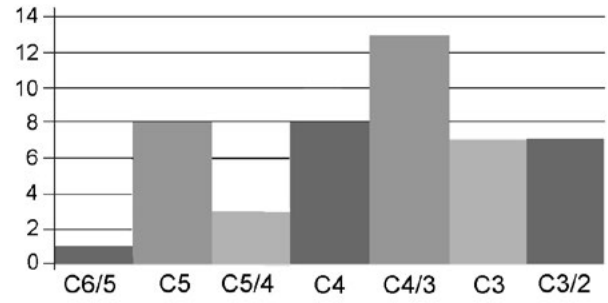
Site	sherds	C6/C5	C5	C5/ C4	C4	C4/3	C3	C3/ C2	C2	C2/ C1
423	6		769 908?							
627	59		880 882 909?		845? 860 879	804 861				
703	11						895?	825		910
712	1					851?				
715	1						798			
717	3					887				
810	11					853?		830		
813	93					787 813 843 852? 883	786 797 800	788 824	844	
sporadic	1								894	
totals	1584		30	15	27	50	11	9	8	3
No. of sites										
26		1	8	3	8	13	7	7	6	3

Table 9-1. Table of sites with BG pottery giving catalogued sherd Nos. and their approximate dates.

In addition to the sites listed in the Table, the following 24 sites yielded uncatalogued fragments of BG: 123 (10 sherds), 127 (2), 134 (2), 136 (7), 139 (3), 140 (3), 145-9 (8), 214 (4), 306 (2), 319/321 (1), 335 (3), 347-9 (13), 351 (1), 353 (1), 411 (2), 420 (1), 424 (1), 607 (1), 629 (1), 711 (2), 804 (2), 818 (1), 826 (4), 910 (1). *Vagnari is included since it produced identifiable material but we have not listed the special pieces (already published in *Vagnari* 2011). The number of sherds is from the surface survey only.



Graph 9-1. Number of catalogued BG sherds by period.



Graph 9-2. Number of sites with catalogued BG by period (excluding Vagnari and 213X).

II. The catalogue

Only 155 of the 1688 BG fragments found in the survey area had sufficient form to be worth publishing in this catalogue as potentially diagnostic pieces. Of the total 1190 were found within the grid on the pre-Roman site on the plateau of San Felice (Site 223). Nearly all the diagnostic BG pieces from that site have already been published by A.M. and C.M. Small in *Mouseion* 2010, with full discussion of the types. The drawings are republished here so as to maintain the comprehensive overview which the catalogue is intended to provide, but the reader is referred to the *Mouseion* publication for the detailed descriptions and related discussion of these pieces. The remaining pieces from all the other sites are described more fully here with sufficient comparanda (we trust) to enable the piece to be dated within accepted limits. The comparanda are not intended to be exhaustive, but they are mostly drawn from recent publications relating to Apulia and Eastern Lucania in which BG forms are discussed and dated in some detail, and in which further comparanda can be found. Apart from Prag's essential work on the BG pottery from Botromagno (*Gravina II*, 1992), the publications of the excavations at Roccagloriosa (*cit.*) Pomarico Vecchio (*cit.*), Civita di Tricarico (*cit.* I and II – De Cazanove), Torre di Satriano (*cit.* – Bruscella & Virtuoso), Valesio (Yntema 2001), Rutigliano (*cit.* – Palmentola) and Monte Sannace (*cit.*, and Laricchia *et al.* 2019) have been particularly useful. In addition the detailed studies of the BG from the Chora of Metaponto found in the excavations in the necropoleis (by M. Elliott, 1998), in the farmhouse at the Fattoria Fabrizio (by E. Lanza Catti, 2014), in the Pantanello sanctuary (by K. Swift, 2018b), and in the field survey of much of the Chora (by E. Lanza Catti, F. Silvestrelli, K. Swift, A. Tubelli &. E. Vittoria in *Chora Metaponto III*), have enormously improved our understanding of the development of the ware in the territory of Metaponto.

The catalogue is organized typologically, beginning with open shapes (first rims, then bases, then wall sherds), and finishing with closed shapes. BG lamps (Nos.1925-1928) and unguentaria (Nos.987, 969-970,977) are treated separately under those titles. Grey-gloss pieces and BG shapes which were deliberately fired red are treated as distinct wares (Section 10 Nos.920-958, Section 11 Nos.959-965).

1. Stemmed *kylikes* Stemmed drinking vessels with carinated shoulder and concave lip, current in S Italy in the late C6 and C5 BC. The shape imitates Attic types (Type C cups and Vicups), but continues beyond their time range.		
764	223 E37N31	Fig.16. P4396. *Kylix* rim. *Mouseion* 10, no. 1. Suggested date: mid–late C5 BC.
765	223 E35N18.	Fig.16. P4893. *Kylix* rim. *Mouseion* 10, no. 2. Suggested date: C5 BC.
766	223 Ar.245	Fig.16. P643. *Kylix* rim. *Mouseion* 10, no. 4. Suggested date: mid–late C5 BC.
767	407	Fig.16. P1055. Frag. probably of a stemmed *kylix* or cup-*skyphos* with out-turned rim and convex wall. Lustrous black slip, showing brush-marks. Ø ca. 14.0, pres. ht. 2.0. Cf. M. Elliott 1998: 657, K6 from a tomb at Pantanello dated ca. 470–450 BC; *Rutigliano*, tav. 40d *tipo* 9.1b, mid-C5 BC.
768	223 E30N20	Fig.16. P4829. *Kylix* rim. *Mouseion* 10, no. 3. ca. 480–420 BC.
2. Stemless *kylikes*		
2a. Delicate class (Attic)		
769	423 2	Pl.22. P1122. Small frag. from edge of tondo. Light brown clay. Lustrous black slip in and out. Impressed pattern of 2 narrow concentric circles and radiating tongues. Beginning of offset moulding on underside. Max. dim. 2.1. Cf. Sparkes & Talcott 1970, nos. 493 (ca. 430 BC) and 496 (ca. 420 BC), stemless cups of the delicate class, from the Athenian Agora.
2b. Italiote		
770	223 E41N36	Fig.16. P4269. Rim and upper wall. Pronounced ledge between inside of rim and tondo. Light pinkish-brown clay, lustrous brown-black slip. No handle preserved. Ø ca. 19.0. Cf. M. Elliott 1998, 657-658, Stemless *kylix* group 1 from the necropolis at Pantanello, with tentative date of 430–370 BC.
3. *Skyphoi* and cup-*skyphoi*: rims In the late C5 the *skyphos* replaced the *kylix* as the most popular drinking vessel. It remained in use until mid-C3. Some were of the "Corinthian" type with continuous convex wall (as Nos.771 and 775) and projecting base ring, but others conformed to the "Attic" type (as Nos.781-788) which was generally more slender and had a more sinuous profile with concave lower wall rising from a ring base with torus moulding on the exterior, marked off by a reserved band (Sub-section 34-b). They became progressively thinner, and so more easily held in one hand. In S Italy the two types were not kept rigidly distinct, and some pieces might be regarded as hybrid forms. I have not, therefore, tried to force all the pieces to conform to this typology, which in any case can often not be applied where only the rim and upper part of the wall is preserved. It is also possible that such pieces may come from cup-*skyphoi* (shallower and with a wider base). The two closely-related forms are therefore treated together here although a few pieces which are more likely to be cup-*skyphoi* are noted at the end of this section. For *skyphos* bases, see Sub-section 34.		

771	223 E49N35	Fig.16. P7043. Rim and upper part of wall. *Mouseion* 10, no. 6. Mid-C5–early C4 BC.
772	223 E40N30	Fig.16. P4458. Rim frag. probably of a cup-*skyphos*, with slight depression below tip of rim, part of one handle, and wall inclined perceptibly towards (missing) base. *Mouseion* 10, no. 15. 3rd quarter C4 BC.
773	223 Ar.228	Fig.16. P8163. Greyish-brown clay; a few minute white inclusions; no mica; thick fairly lustrous black slip. 1 handle preserved. Ø 10.0. Cf. *Gravina II,* no. 887, last half C4/ early C3 BC.
774	407 E7	Fig.16. P1061. Rim, upper wall and handle; 1 handle only preserved.. Hard pinkish-brown clay with some minute white and grey inclusions; thick, fairly lustrous, black slip inside and out. Ø ca. 9.0. Cf. Santovito in *PSF*, 139, tav. III.29, from S. Felice; *Gravina II,* no. 887, last half C4 / early C3 BC.
775	413	Fig.16. P2109. Rim and upper wall of *skyphos* or more probably cup-*skyphos*, thickening towards handle spring at left edge of sherd. Brown clay, moderately lustrous black slip, turning slightly purple below rim on outside. Only slight vertical curvature. Brush marks on slip on outside. Ø ca.12.0; max th. 3.0. Cf. M. Elliott 1998, 680-681 cup-*skyphoi* nos. S49, S56, S61, 1st half C5 BC.
776	417	Fig.16. P1030. Semi-lustrous black slip, inside and out except for a reserved band on rim. Buff clay. Ø 11.4. Cf. *Gravina II,* no. 886 (340–290 BC) (less likely no. 851, 350–250 BC, cup-*skyphos*); also *Rutigliano,* tav 38d *tipo* 6.2d, 2nd half C4 BC.
777	223 E23N25	Fig.16. P4224. Rim and handle frag. *Mouseion* 10, no. 8. Last half C4 / early C3 BC.
778	407 B3	Fig.16. P1077. Very fine. Hard, clean reddish-brown clay, lustrous black slip. wall 2-2.5mm thick. No trace of handles on sherd. Ø 9.5. Cf. No.776.
779	223 E56N22	Fig.16. P4975. *Mouseion* 10, no. 17. Cf. also *Gravina II,* no. 883 (as a *skyphos*), with suggested date of 340–290 BC, perhaps later. ? Late C4 / early C3 BC.
780	407 B6	Fig.16. P1056. Hard fired reddish-brown/ greyish clay, fairly lustrous black slip over all. Ø ca.10.0. Cf. No.776 with refs. Last half C4 BC.
781	223 E47N22	Fig.16. P4549. *Mouseion* 10, no. 16. ? Late C4/ early C3 BC.
782	223 E58N24	Fig.16. P4987. Rim frag. probably of a *skyphos*, with slight indentation below lip. *Mouseion* 10, no. 5. Last half C5 BC.
783	223 Ar.226	Fig.16. P439. Rim, upper wall and handle springs of a *skyphos*. *Mouseion* 10, no. 7. ca. 350–275 BC.
784	223 E38N16	Fig.16. P4819. Rim. Hard greyish-brown clay, lustrous black slip. Ø 14.0. Cf. Swift 2018b, 694, BG 105 from the Pantanello sanctuary, ca. 325–300 BC.
3a. Probable cup-skyphoi		
785	419	Fig.16. P1101. Rim. hard light brown clay, rather lustrous black slip. No evidence on sherd for handle spring. Ø 10.0. Profile comparable to No.783, ca. 350–275 BC.
786	813 D10	Fig.16. P7714. Rim. Hard pinkish-brown clay, semi-lustrous thick black slip. Same fabric as P7715. Ø ca. 10.0. Cf. *Gravina II,* no. 791, with suggested date ca. 325–250 BC; *Civita di Tricarico I*, fig. 294 no. 222, *skyphos* from a context of the last half C3 BC.
787	813 D4	Fig.16. P1878. Rim and handle probably of a large cup-*skyphos*. Rim inclined outward, with rounded lip above rapidly tapering wall; very heavy horizontal handle set immediately below rim. Finely granular buff clay with sparse, very fine, mica. Barely lustrous black slip. Rim badly damaged: precise diameter and angle of rest difficult to determine. Ø ca. 14.0. Cf. *Gravina II,* nos 850-851, ca. 350–250 BC.
4. Small bowl or cup with sloping rim and spreading shoulder		
788	813 G3	Fig.16. P8133. Small sherd with no evidence of handle preserved. Hard pinkish-brown clay, no obvious inclusions; fairly lustrous black slip, brush marks on interior, worn off most of exterior. Ø difficult to calculate, prob. 10.0; pres. ht. 1.5. Perhaps from a 2-handled cup: cf. Lippolis (ed.) 1994, 247 fig. 184 from the Tarentine necropolis, phase D (225–175 BC).

5. One handled cups		
The shape was introduced in Athens before ca. 480 BC and lasted there well into the C4 BC (Sparkes & Talcott. 1970, 126–127, and esp. fig. 8 no. 759 dated 375–350 BC from the Athenian Agora). In South Italy it is attested in the Chora of Metaponto by the mid–C5 BC (see below, under 5c). One-handlers were widely used throughout the C4, and especially in the 2nd half continuing into the early C3.		
5a. With the rim projecting out and the top slanting perceptibly inwards This was one of the most popular forms in Apulian BG. Cf. e.g. numerous examples from *Civita di Tricarico I*, 409-411, esp. nos. 284-286, and Yntema 2001, 164-166 Subtype K14b from Valesio, "the classic Apulian BG one-handler", current throughout the C4, and terminating in the early C3 BC.		
789	223 E24N35	Fig.16. P4252. Rim and wall. A relatively deep example of the shape. *Mouseion* 10, no. 18. 2nd half C4 BC.
790	223 E39N30	Fig.16. P4432. Shallower than No.789 and with wall less protruding. *Mouseion* 10, no. 19. 2nd half C4 BC.
791	417	Fig.16. P1035. Small frag. probably of a one-handled cup. Hard greyish-brown clay. Good lustrous black slip. Ø ca. 9.0. Cf. *Rutigliano,* 503 tav. 42e *tipo* 12.3b 2nd half C4 BC; *Gravina II*, no. 792 (325–250 BC).
5b. With flat-topped thickened rim and wall sloping steeply inwards below handle zone This group relates to Morel's (1981) *séries* 6213 and 6214 of the C4 BC, though the rims are a little thicker.		
792	223 E37N19	Fig.16. P4402. With gradually tapering wall, only slightly concave on the inside. *Mouseion* 10, no. 20. C4 BC.
793	223 E27N30	Fig.16. P7111. With continuous convex curve below vertical rim. *Mouseion* 10, no. 21, with suggested date C4 BC; but cf. Swift 2018b, 712, BG 156 from the Pantanello sanctuary, ca. 300–275 BC.
794	302 B1	Fig.16. P716. Large frag. of wall of an open shape, probably a one-handler, broken short of base ring and rim. Pale pink clay, semi-lustrous black slip with blotches on lower part of wall outside. Est. Ø at top of sherd 8.0. C4 BC?
5c. With slender in-turned rim		
795	223 E38N20	Fig.16. Pl.22. P4790. Probably this shape, though the handle is missing. *Mouseion* 10, no. 2 with suggested date of mid–C5 BC. Cf. also Lecce 2010–2011, 30 and fig. 8.24 from a deposit in the kiln site at Torretta in the Chora of Metaponto datable before the middle of the C5 BC.
5d. With flat rim, slightly convex upper wall, marked off from lower wall by a slight carination		
796	223 E50N38	Fig.16. P4272. Fairly hard pinkish-brown clay. Reddish-brown-black paint over top and outer side of rim. Slip slightly glossy. One handle spring preserved on sherd. Ø ca. 11.0. Perhaps from a two-handled vessel: cf. examples of "coppette" from the S necropolis of Heraclea: Pianu 1990, tav. I type 1, from tomb 231, no 1, 2nd half C4 BC, and type 2, from tomb 199, no 2, 1st quarter C3 BC. Our piece is intermediate between the 2 types.
6. Hemispherical bowl with thin wall. The shape is characteristic of the C3/ 2 BC.		
797	813 C4	Fig.16. P7715. Rim. Continuous gradual curvature of wall. Shallow groove ca. 13mm wide marked below slip obliquely across wall near bottom of sherd. Hard pinkish-brown clay, semi-lustrous thick black slip. Same fabric as No, 786. Ø ca. 12.0. Cf. *Civita di Tricarico I*, no. 496 (*bol à bord peu rentrant*) in a context of the beginning of Phase IIb, ca. 250 BC.
7. Large bowl with in-turned rim		
798	715 C7	Fig.17. P7153. Frag. of open bowl rim, in-turned. Dark orange brown clay, fairly lustrous black slip, worn in places, shallow groove defining outer edge of rim. Ø ca. 25.0. Cf. Lanza Catti *et al.* 2011, 249 no. 174 from the Chora of Metaponto, with comparanda ranging from 300–150 BC; Lanza Catti 2014, 212 BG 61 from the Fattoria Fabrizio farmhouse, 300–260 BC; Swift 2018b 723, BG 197 from the Pantanello sanctuary, ca. 300–275 BC.
8. Shallow cup with vertical ring handle(s)		
799	223 E47N25	Fig.17. P4527. Only 1 handle is preserved on the frag. *Mouseion* 10, no. 23. Late C4 BC.
9. Bowl with thickened rim		
800	813 D1	Fig.17. P1851. Fine pinkish-brown clay, semi-lustrous slip, unevenly red-brown to black. Ø ca. 12.0. Cf. *Civita di Tricarico I*, fig. 301 nos. 432-434 dated by the excavators in the last quarter C3 BC; *Pomarico Vecchio,* 1, p.72 and 2, tav 41.37, C3 BC; *Gravina II*, 290, fig.34, nos. 765, 768, *paterae with thickened offset vertical lip*, contexts of Period VIIIa, late C2/ C1 BC, perhaps redeposited.

10. Stemmed (?) dishes The following pieces have rim and upper wall profiles typical of stemmed dishes, though no evidence for the stem is preserved on them.		
801	223 E42N28	Fig.17. P4443. Rim frag. showing thickened rim, slightly offset with the top slanting perceptibly inwards and steeply convex wall. No trace of handle on sherd. *Mouseion* 10, no. 26. C4/ early C3 BC.
802	223 E40N17	Fig.17. P4563. Rim and upper wall, with thickened torus moulding outside, concave surface inside. *Mouseion* 10, no. 24. 1st half C5 BC.
803	223 E21N23	Fig.17. P4062. Rim and upper wall. Dull brown clay. Fairly lustrous black slip outside and in. *Mouseion* 10, no. 25. Late C5 BC.
11. "Salt cellars". This is one of the commonest forms of the C4, continuing well into the C3 BC. The form develops over time from relatively broad and low to tall and thin.		
804	627	Fig.17. P1537. An exceptionally wide salt cellar rim. Reddish clay; lustrous brownish-black slip, thinner and fired brown on outside of rim. Narrow groove on lower edge of rim Reserved band 4.5mm wide immediately above carination. Est. ext. Ø of wall ca. 15.5. Cf. Morel 1981, 2431a 1 from Ordona, 2nd half C4 BC; Cf. *Rutigliano*, 507, tav 43h *coppetta tipo 14.6*a (with 51 examples of the type), 2nd quarter C5–C4 BC; Yntema 2001, Form K11a from Valesio, with suggested dating of mid-C4–early C3 BC.
805	234	Fig.17. P574. Large. Fine pink clay; smooth, even, lustrous black slip; narrow groove at maximum diameter of rim. Ø 16. Cf. Morel 1981, 2441c 1 from Ordona, 2nd half C4 BC.
806	223 E30N30	Fig.17. P4384. Rim and part of foot. Narrow groove on lower edge of rim. *Mouseion* 10, no. 31. Late C5/ early C4 BC. The same shape was found in the recent excavations on San Felice, *Saggio B*: Santovito in *PSF*, 139, tav. III.27.
807	401/409 Ar.401 F11	Fig.17. P1091. Rim and wall; narrow groove at maximum diameter of rim. Hard pinkish-brown clay with minute white inclusions, no mica; lustrous black slip, worn in places. Traces of reddish-brown slip on underside of tondo. Ø ca. 9.0. Cf. No.805.
808	223 E19N21	Fig.17. P4168. Frag. giving whole shape except for the tip of the foot. Convex upper wall separated from concave foot by a shallow groove and fillet. *Mouseion* 10, no. 32. Mid-C4 BC.
809	223 E25N35	Fig.17. P4261, Rather less broad than no. 29, with a distinct offset between the upper and lower halves of the wall, and with ribbing on the upper part. *Mouseion* 10, no. 33. 2nd half C4 BC.
810	223 E63N20	Fig.17. P7048. Hard fired reddish-brown clay, semi-lustrous black slip, worn in places. Horizontal groove and fillet near bottom of sherd marking transition from bowl to stem. *Mouseion* 10, no. 34. 2nd half C4 BC.
811	223 E17N29	Fig.17. P4000. Rim to top of foot. The curve of the rim meets the counter-curve of the foot in a slight overhang without intermediate moulding. *Mouseion* 10, no. 35. Mid-C4–mid-C3 BC.
812	223 E22N29	Fig.17. P4200. The curve of the rim meets the counter curve without overhang, but their junction is marked by a residual fillet. *Mouseion* 10, no. 36. Mid-C4–mid-C3 BC.
813	813 B2	No illus. P8132. Wall sherd. Cf. No.812; also *Gravina II* no. 741 ; Yntema 2001, 162 no. 254, his form K11C from a context of the late C3/ early C2 BC at Valesio, with comparanda. The form lasts from the late C4 to the early C2 BC, with little variation.
814	223 E28N22	Fig.17. P4968. As No.812 above, but with the foot preserved and the rim missing. *Mouseion* 10, no. 37. Ca. 2nd half C4/ 1st half C3 BC.
815	126	Fig.17. P168. Base and lower wall. Oblique edge on inside of base, concave on outside. Clay fired reddish-brown on underside, but grey in break. Fairly lustrous uneven greyish-brown slip inside and out: almost grey gloss. Ø base 3.5. Cf. No.814, 2nd half C4/ 1st half C3 BC.
816	355 E4	Fig.17. P816. Base of open shape, probably a late salt-cellar. Thick semi-lustrous black slip, pinkish-brown clay, hard, under-side of base reserved except for band on foot (so not a lid knob). Ø base 3.1. Cf. e.g. *Civita di Tricarico I*, nos. 570, 571 from the destruction layer of ca. 200 BC.

12. Small bowls / dishes Probably for sauces, salt etc. Some may have been used as votives, though they are rather larger than typical votive miniatures. The development of the shape in South Italy between the C5 and C3 is discussed in *Cozzo Presepe,* 356. The later examples are generally thicker and have a more inward-turned rim. All these pieces probably had a simple ring foot.		
12a. With simple profile and up-turned thickened rim		
817	126	Fig.17. P235. Rim. Rather soft orange-brown clay with no conspicuous inclusions or mica; fairly lustrous black slip. Ø 7.0. Cf. *Chora Metaponto III*, 251 no. 188, with further comparanda of ca. 320–270 BC. The same shape was found in the recent excavations on San Felice, *Saggio B*: Santovito in *PSF*, 139, tav. III.25.
818	223 E47N18	Fig.17. P4544. *Mouseion* 10, no. 39. Also *Chora Metaponto III*, 251 no. 186, with suggested date of 330–275 BC; Laurenzana 2016, 53-54 no. 143 and 63, *coppetta tipo 2* with tav. 3.54, from Monte Irsi tomb 21, end C4/ beginning C3 BC.
12b. As above, but less up-turned		
819	223 E53N18	Fig.17. P4954. *Mouseion* 10, no. 38. Close to *Chora Metaponto III*, 250 no. 183, with further comparanda of 400–350 BC.
11-c. With even convex walls		
820	124 A1	Fig.17. P38. Rim of small bowl, pale buff clay, semi-lustrous brown-black slip. Ø 8.0. Cf. Cozzo Presepe p. 356 no. 320 from Site B Phase I (500/480 – ca. 325 BC) (but thicker, and so probably earlier); *Civita di Tricarico I*, no. 501 (*bol à bord peu rentrant*) from a context of the end of Phase IIb, 3rd quarter C3 BC (rather larger); Swift 2018b, 729, PZ BG 220 from the sanctuary at Pantanello, late C4 BC.
13. Vessels with fine steeply sloping wall Without more of the shape, the original form and therefore the date of these 2 pieces is uncertain (cup-*skyphos*, cup-kantharos, hemispherical bowl?)		
821	223 E52N23	Fig.17. P4945. *Mouseion* 10, no. 51. ?late C5 BC (cup-skyphos), or C2 BC (hemispherical bowl).
822	223 E11N23	Fig.17. P4071. *Mouseion* 10, no. 50. ?late C5 BC (cup-skyphos), or C2 BC (hemispherical bowl).
14. *Mastoi* Bowls with thin oblique slightly convex walls which merged with the base, and one or more horizontal grooves outside below the lip. The shape imitates mould-made glass bowls such as Corrente 1992, 344 nos. 40, 42 from the *Tomba degli Ori* at Canosa of the end C3/ beginning C2 BC.		
823	303 I8	Fig.17. P8078. With 2 shallow grooves round outer edge below rim. Soft pinkish-brown clay, fairly lustrous black slip. Ø 14.0. Suggested date end C3/ early C2 BC.
824	813 D1	Fig.17. P1850. With 3 concentric grooves on the outside surface. Pale yellowish-grey clay and slightly lustrous blackish-brown slip much worn on outside, probable narrow reserved band (2mm) on inside of rim. Ø ca. 22.0. Cf. Prag in *Gravina II*, 29, fig 32 no.774. He compares that piece to Morel 1981, 2566c1, 150–100 BC, but the type is attested in the Tarentine necropolis already in Phase D, 225–175 BC: Lippolis (ed.) 1994, p. 269. Suggested date end C3/ early C2 BC.
825	703 G3	Fig.17. P8177. Ws from just below rim. Hard-fired reddish-brown clay, turning grey near outer edge; no visible inclusions. Even semi-lustrous greyish-black slip out and in. Slight horizontal rib inside; groove outside at top of sherd. Ø at top of sherd ca. 12.0 (v. approx..), max. dim. 3.3. Yntema 2001, Form K45a with suggested dating end C3 to mid–C2 BC. But it is likely to continue to near the end of the C2, if not into the C1, since it occurs at Gravina in period VIIIa: *Gravina II*, 139 and fig. 41 no. 985. The same form occurs in grey-gloss: cf. No.930 below.
15. Bowl with thickened rim		
826	223 E34N31	Fig.17. P4397. Rim and upper wall frag. of a bowl (or perhaps lid) with slightly thickened rim, flat on the top, and oblique upper wall separated from a more steeply inclined lower wall by a slight carination. *Mouseion* 10, no. 28. Late C4 BC.
16. Bowls with slightly out-turned rim		
827	407 B5	Fig.17. P1072. Rim and part of wall of *mastos*/ hemispherical cup. Oblique wall and slightly thickened rim, chamfered on inside and marked off by grooves on outside. Fine pink clay with even, semi-lustrous black slip. Ø ca. 10 (v. approx.). Cf. *Gravina II*, no. 769, and his comments on the type which he dates predominantly to the C2 BC; Yntema 2001, 196 Form K45b no. 348 from a context of the middle to 3rd quarter C2 BC at Valesio. Similar bowls are found in the Tarentine necropolis in contexts of Phases D (225–175 BC) and E (175–125 BC): Lippolis (ed.) 1994, tav 203 and text p. 272.

828	229	Fig.17. P492. Bowl rim. Pale reddish buff fabric; slightly lustrous purplish brown slip in and out, blacker out. Ø ca. 17.00. The piece comes between *Gravina II*, nos. 784 and 803, both types found only in contexts of Gravina VIIIa, the late C2 and C1 BC.
829	223 E13N26	Fig.17. P4081. Hard greyish-brown clay, semi lustrous black slip. *Mouseion* 10, no. 29. Perhaps a BG version of a grey-gloss type: cf. Hayes 1994, fig. 7 no. 7 from pit F202 on Botromagno, filled ca. 70 BC. But without a reliable diameter and more of the shape certainty is impossible.
17. Bowls with down-turned rim		
830	810 E1	Fig.17. P7158. Rim only. Pinkish light brown clay, hard fired, with fairly glossy slip somewhat worn, inside and out. Ø ca. 15.0. Cf. *Gravina II*, p. 291 fig. 33 no. 808, with 2 examples from Gravina period VI of C4 / C3 BC, and others perhaps re-deposited in Gravina VIIIa; also no. 807 of Period Gravina VII (C3 and early C2 BC). The shape is common at Civita di Tricarico in contexts of the 2nd half C3 BC (*cit.*, 432-434 and fig. 304 nos 477-492); and it is still found in grey-gloss pottery of the C2/ early C1 BC: cf. Nos.922, 923. Probable date mid-C3–mid-C2 BC.
831	302 B3	Fig.17. P701. Rim only. Fine buff clay, slightly micaceous; worn, dull black slip. Ø 18.0. Cf. No.830.
18. Bowls with steeply sloping sides and rims triangular in section		
832	303 F5	Fig.18. P1274. Rather soft drab brown clay, matt dark brown slip unevenly over outside and inside. Ø 17.0. Cf. Yntema 2001, 178 Form K31 no. 300 from a context of the late C3/ early C2 BC at Valesio. The shape is more common at Gravina in plain ware, and probably lasted longer in that production (down to the late C1 BC): see No.1235, in plain ware.
833	303 F5	Fig.18. P8077. Soft light greyish-brown clay; matt slip brown-black all over, badly worn. Ø ca. 14.0 – 15.0. The slip resembles that of the matt painted wheel–made ware in which the shape is also found: cf. e.g. Saunders & Taylor in *Gravina II*, nos. 210 and 211. For the shape in BG, cf. *Gravina II*, no. 766. Prag links that piece and related bowls with Morel's (1981) *série* 2534 from Central Italy ca. 200–125 BC; also Vittoria in *Chora Metaponto III*, 250 no. 180, with suggested date of 200–150 BC.
19. Dish with thickened and overhanging rim		
834	223 E31N28	Fig.18. P4394. Rim of a (?stemmed) dish turned inwards then folded out; upper part of wall with convex curve out. *Mouseion* 10, no. 27. Add Lecce 2010–2011, 24, *ciotole tipo 2*, fig. 6.5 from a deposit of 2nd half C6 – 2nd half C5 associated with a kiln at Torretta near Pisticci, in the Chora of Metaponto.
20. Bowl with out-turned horizontal rim		
835	223 E49N26	Fig.18. P4756. Rim and wall of bowl (or perhaps stemmed dish) with convex wall and horizontal projecting rim *Mouseion* 10, no. 30. Late C4/ early C3 BC.
21. Plates with projecting rim. The shape was introduced in Apulia around the end of the C5 BC, became common in the last half of the C4, and evolved continuously through the Hellenistic period. Its development is outlined well by De Cazanove (*Civita di Tricarico I*, 412–418). The *assiettes à bord en z* of the late C4 and 1st half of the C3 shade into into *assiettes à bord en s* in the 2nd half of the C3. Numerous examples of the whole series were found on Botromagno: *Gravina II,* 75, section E "Plates with thickened out-turned rim". Nos.836-840 stand near the beginning of the series, with short rather stubby horizontal rims. No.841 which is a little more rounded and slightly down-turned is likely to be rather later.		
836	223 Ar.226	Fig.18. P442. *Mouseion* 10, no. 42. Cf. also *Rutigliano*, 510 tav 44c, *piatto tipo 2,* from tomb 49, end C5 BC; Iker 1986, fig. 401 no.1 from Ordona tomb 174, end of last quarter C4 BC; Swift 2018b, 719, BG 178 from the Pantanello sanctuary, ca. 350–300 BC; Lo Porto 1981, 353 and 342 fig. 49 no. 5 from Tomb 6 in the "Casa Ricotta" necropolis at Metaponto, associated with a worn bronze Metapontine coin of the 1st half C3 BC. Scarano (1992, 20 and fig. 6) dates a similar piece from tomb 6, at Pantanello to the mid-C3 BC.
837	229	Fig.18. P401. Hard drab grey clay; traces of fairly lustrous black slip inside and out. Ø 14.0, pres. ht. 1.5.
838	229	Fig.18. P491. Pale greenish-grey clay slightly micaceous, fairly lustrous black slip, badly worn in and out. Ø 15.0.
839	223 E21N23	Fig.18. P4178. Rim and wall; small rim protruding horizontally from convex wall with curve tapering off towards base. *Mouseion* 10, no. 40.

840	223 E17N26	Fig.18. P536. *Mouseion* 10, no. 41. Cf. Laurenzana 2016, 63 and tav. 3 no. 52, *piatto tipo 3* from Monte Irsi, Tomb 21 (no. 142), end C4/ beginning C3 BC.
841	120	Fig.18. P254. Rim of dish, out-turned. Light brown clay, fairly lustrous dark brown slip. Ø 16.0. Cf. Yntema 2001, 150 Form K03c no 220 from a context of the 2nd half C3 BC at Valesio; Lippolis (ed.) 1994, 271 fig. 204 from the Tarentine necropolis phase D (225–175 BC).
22. Plates with rounded down-turned rim		
842	419	Fig.18. P1102. Hard buff clay, semi lustrous black slip. Ø 14.0. Cf. *Gravina II*, no. 664 from a context of Gravina IV, with suggested date of late C4 or early C3 BC. The type is found in the Pantanello sanctuary in a context of ca. 300–275 BC (Swift 2018b, 721, BG 191), but continues later: cf. *Civita di Tricarico I*, fig. 299 nos. 373-400, *assiettes à bord pendant arrondi* with discussion of the type on pp. 418-421. It is found in phases III-IV of the site (ca. 240 –200 BC). Cf. also Yntema 2001, 103 Form K03c no 221 from a context of the 2nd half C3 BC at Valesio. The type is still found in the Tarentine necropolis in the C2 BC: Lippolis (ed.) 1994, 271 fig. 204, phase E (175–125 BC).
843	813 B1	Not illus. P8131. Rim. Cf. *Gravina II*, no. 664; also No.842 above. (C4/ early C3).
23. Plates with broad horizontal rim		
844	813 D10	Fig.18. P1882. Frag. of plate with wide convex rim, set off from floor at a sharp angle on the outside. Groove on top at outer edge. Finely granular orange to brown clay with semi-lustrous black slip. Ø 21.0. The rim form resembles Lippolis (ed.) 1994, 271 fig. 204 from the Tarentine necropolis, phase E (175–125 BC), though on this piece the floor of the plate rises towards the centre. The date suits other material from this site.
845	627 F	Fig.18. P1612. Small rim frag. giving part of top and outer edge. Lower surface mostly lost. Reddish-brown clay, fairly lustrous black slip. Max. dim. 3.0; Ø uncertain, but large. Perhaps from a plate, comparable to Yntema's (2005, 22-23) Form 2, *Plate with horizontal rim* in grey-gloss. If so, the piece should be dated in the last half C2 or early C1 BC. But such a date would be out of relation to that of the rest of the material from the site, so the piece is perhaps better interpreted as the rim of a bell-krater of Gnathian type such as No.755 above, datable to the 2nd half of the C4 BC.
24. Dishes / Lids These dish-shaped pots with simple rims were probably intended to be used inverted as lids. Some may have served either purpose.		
846	415	Fig.18. P1097. Hard greyish-clay, fairly lustrous black slip inside and out. Slip on outside worn, esp. near rim. Ø 14.0. Cf, in Gnathian ware, *Civita di Tricarico I*, nos 154-155 (drawn as dishes), attributed to the *andron* of the first phase of House E, ca. 360–340 BC.
847	137	Fig.18. P4347. Soft buff clay slightly lustrous slip, very worn. Rim of dish or more probably lid. Cf. Ciancio in *Monte Sannace*, 165 and tav. 307 no. 2. phase III.(2nd half C4–C1 BC) (drawn as a dish). She classifies it as Lamboglia Form 31. See also *Gravina II*, no. 705, "C4 BC probably 2nd half".
848	372 L6	Fig.18. P1272. Lid or dish rim, thickened and slightly out-turned. Pale greyish-brown clay, drab purplish-brown slip, mottled orange. Th. of rim 0.7; sherd too small to give Ø Perhaps from a small dish imitating Morel's (1981) *série* 2612 in Campana A ware, C2 BC.
849	223 E29N24	Fig.18. P4399. Frag. with short vertical rim and oblique wall. *Mouseion* 10, no. 43. C4/ C3 BC.
850	124 AA1	Fig.18. P36. Frag. of lid or small dish with convex wall and thickened rim. Reddish-brown clay, lustrous black slip. Ø 14.0. Cf. *Pomarico Vecchio,*1, p. 69 and 2, tav 32. no. 22 (drawn as a bowl), with discussion of the type which the authors regard as specifically Lucanian of the last half C4. See also *Torre di Satriano I,* p 284 and tav XLII p. 296 no. 293, with further comparanda in Lucanian contexts of the end C4 and 1st half C3 BC. Cf. also *Civita di Tricarico I*, nos. 349, 352 from Phase IIB, ca. 250 BC. The type was also current in Apulia in the C3: cf. Yntema 2001, 154 no. 239 form L03f from Valesio dated by context to late C 3/ early C2 BC (a rather more evolved form).
25. *Stamnos*/ storage jar		
851	712	Fig.18. P1824. Rim and shoulder, finely granular pinkish-brown clay, light to dark brownish-black slip. The form is more typical of WMP: cf. No.656 in Cat. Section 8. It is possible that the lower part of the pot was painted with bands. End C4–mid-C2 BC.

26. Jugs/ *oinochoai*		
852	813 50 m SW	Fig.18. P1846. Frag. probably of a round-mouthed jug ( ) with concave upper wall and sharply flaring rim. Fine, hard grey clay with a pinkish tinge; careful smoothed surfaces, lustrous black slip. Ø 6.5. Found at UTM612919/ 4520237 Small round-mouthed jugs (Morel 1981, *série* 5233) were fairly common in Apulian and Lucanian BG, where they are normally found in contexts datable between end C5 and end C4 BC: cf. *Rutigliano*, 474, tav 33f, *oinochoe tipo 2.5b,* end C5 BC (?); *Civita di Tricarico I*, 396-397 and fig. 293 nos. 171-176, with discussion of the type dated to the whole of the C4 BC; *Roccagloriosa*, fig. 181 no. 161, early to mid-C4 BC. But the type must have continued in use down to the end of the C3 BC: cf. Lippolis (ed.) 1994, 275 fig. 207 with an example from the Tarentine necropolis of phase D (225–175 BC).
853	810 field to W	Fig.18. P7155. Small rim frag. perhaps from a round-mouthed jug with out-turned rim. Hard orange-brown clay; glossy very worn black slip. Ø ca. 8; pres. ht. 1.3. Cf. No.852.
27. Alabastron		
854	223 E47N41	Fig.18. P7098. Broad flaring rim. Perhaps from a Gnathian pot. *Mouseion* 10, no. 72. 3rd quarter C4 BC.
28. *Lekythoi*		
855	124 D1	Fig.18. P1270. Bell-shaped mouth of a squat *lekythos*. Greyish-brown clay, good lustrous black slip. Ø ca. 3.0. Cf. *Rutigliano*, 484, tav. 36e, *lekythos* Form 5.3, end C5/ C4 BC; Morel 1981, *série* 5410, esp. 5411b 1 from Ruvo, ca. C4 BC.
856	223 E43N41	Fig.18. P7085. *Lekythos* neck. *Mouseion* 10, no. 47. 3rd quarter C4 BC.
29. *Thymiateria*?		
857	223 E48N23	Fig.18. P4671. Small frag. of a vessel consisting of part of a dish supported on a receding stem below a projecting moulding with angled facet. *Mouseion* 10, no. 48. ? C4 BC.
858	223 E59N25	Fig.18. P7026. Frag. of a ?*thymiaterion* with vertical stem off-set from beginning of dish by a low collar; concave inner facet of stem turning into convex at junction with underside of dish. Bottom of stem missing. *Mouseion* 10, no. 67 (as a miscellaneous base). ? C4 BC.
30. Bell-krater		
859	223 E43N29	Fig.18. P4871. Rim of a small bell-krater. Perhaps from a Gnathian pot. *Mouseion* 10, no. 73. ca. 300 BC.
31. Handles		
860	627 A	No illus. P8129. Handle of a stemless cup. Cf. *Gravina II*, no. 856 (350–300 BC).
861	627 D	Fig.18. P1568. Small frag. of a lug handle, curved elliptically in 2 directions. Hard reddish-brown clay, lustrous black slip; a high-quality piece. Max dim. 2.5; max th. 1.2. Probably from a bell-krater, either BG or Gnathian. Cf. Morel 1981, *série* 4618 Type c from Rudiae, ca. end C4 BC.
32. *Kylix* bases and stems		
32a. Feet of* kylikes *or stemmed dishes These high spreading feet imitate Attic examples of the late C6 and 1st half C5 BC, such as the Type C cup and the Vicup (see above, sub-section 1). The same type of foot was used for both *kylikes* and stemmed dishes, and without more of the pot it is impossible to be certain to which shape the following pieces belong. The type lasts in South Italy well into the C4 BC: see Miroslav Marin *et al.* 1982: 86 for the distribution and duration of such *kylike*s.		
862	223 E47N27	Fig.18. P4525. *Mouseion* 10, no. 54. C5–mid-C4 BC.
863	223 E48N25	Fig.18. P4867. *Mouseion* 10, no. 55. C5– mid-C4 BC.
864	223 E28N22	Fig.18. P4892. *Mouseion* 10, no. 56. C5–mid-C4 BC.
865	415	Fig.18. P1096. Small frag. Drab brown clay (but well fired) lustrous black slip on flat upper part of foot. Ø 3.0. Cf. *Rutigliano*, tav 44 e (*coppa su piede* 17.1), 2nd quarter C5 BC.
866	223 E59N21	Fig.18. P7023. With shallow concave moulding on outer edge of foot disc; slight groove at top of foot. *Mouseion* 10, no. 57. C5–mid-C4 BC.

867	223 E42N27	Fig.18. P4742. *Mouseion* 10, no. 58. C5–mid-C4 BC.
32b. Stepped kylix base		
868	413	Fig.18. P1221. Greyish-brown clay (greyish in core) rather dull dark reddish-brown slip on upper surface and outside of base. Underside reserved. Ø 13.0, pres. ht. 1.5. The piece must be a regional imitation of the stemmed Attic *kylix* of the C5 BC: see Section 2, No.769. The step near the junction of the base with the (missing) stem is unusual, but cf. M. Elliott 1998, 657, K3 from the Pantanello necropolis near Metaponto, ca. 470–450 BC; also *Rutigliano*, 493 tav. 39.d, *tipo* 7.4 (imitating Attic Vicup), 2nd quarter C5 BC.
32c. Kylix stems		
869	401/ 409 Ar.401	Fig.18. P1098. Pinkish-brown clay; smooth, lustrous black slip. Min. Ø 22.0, pres. ht. 4.7. An Italiote imitation of an Attic type (probably a Type C cup) of the early C5 BC: cf. Sparkes & Talcott 1970, fig. 4 no. 413 from the Athenian Agora.
33. Other stemmed form		
870	401/ 409 Ar.401	Fig.18. P8174. Hard reddish-brown clay with some minute black inclusions Lustrous black slip on outside of stem, in tondo at top of sherd, and in a small area of underside of foot. From area of circuit wall near well. Minimum Ø of stem 2.3, pres. ht. 2.4. Probably from a stemmed dish, as Burn 2000, 133, fig. 72d from Tomb 8 on Botromagno 2nd quarter C5 BC; *Rutigliano* 512 and tav. 44.e, 2nd quarter C5 BC. Possibly from a tall and narrow salt-cellar of ca. C4 BC, as Laricchia *et al.* 2019, 374 and tav. VII,12 from Monte Sannace.
34. *Skyphos* bases		
34a. With projecting base ring and convex lower wall, of "Corinthian" type.		
871	223 E45N23	Pl.22. P4807. Flat bottom with base-ring missing; shallow dimple (Ø ca. 1.0) in centre of tondo. Underside reserved except for a black circle (Ø 3.7) with large roughly oval-shaped central dot. Perhaps from a large cup-*skyphos*. *Mouseio*n 10, no. 9. ca. 475–425 BC.
872	223 E34N30	No illus. P4589. Base of *skyphos*. Hard grey clay, lustrous black paint. Part of 2 circles on underside of base, black slip on inside and outer edge of base. Ø base ca. 8.0; max. dim. 2.7, pres. ht. 9.0. Cf. No.871.
873	223 E27N22	Pl.22. P4745. Orange-brown clay with smooth surface, lustrous black slip inside and in ring around centre of base underneath. Sherd broken short of presumed ring foot. Max. dim. 2.8, th. 3.0. Cf. No.871.
874	223 E48N44	Fig.19. Pl.22. P7094. Pale brown clay, hard fired, with smooth surface; fairly lustrous black slip. Reserved band above base outside; interior black above reserved tondo (where shown on frag.) except for a black band 2mm wide corresponding to outer edge of ring base. *Mouseion* 10, no. 10. Mid-C5 BC.
875	223 Gen.coll	Fig.19. P4164. *Mouseion* 10, no. 11. Mid-C5 BC.
876	223 E45N42	Fig.19. P7060. Torus base ring, probably of a *skyphos*. *Mouseion* 10, no. 12. C5–mid-C4 BC.
877	223 E61N23	Fig.19. P7012. *Mouseion* 10, no. 13. 2nd quarter C5–2nd half C4 BC.
878	229	Fig.19. P735. Hard reddish-brown clay; lustrous black slip. Underside of foot and base reserved. Good quality. Ø of base ca. 10.0. Cf. No.877; *Rutigliano*, tav 38a *tipo* 6.2a. C5 BC.
879	627 J	Fig.19. P2074. Brown clay, lustrous black slip inside and out, underside of foot and base reserved, black ring round inside the foot. Good ?Italiote fabric. Ø of base ca. 6.5. Cf. No.877; also Lippolis 1994, 248 fig. 185 from the Tarentine necropolis phase A1 375–350 BC.
880	627 F	Fig.19. P1610. Base of *skyphos* or cup-*skyphos* with rounded base-ring. Fine pinkish-grey clay with brilliant black slip; resting-surface of foot and base ring reserved; underside had dark red slip, now much worn. Ø base 6.5. Cf. M. Elliott 1998, 681 no. S61 from the Pantanello cemetery, mid-C5 BC; *Gravina II*, no. 871, with suggested date of ca. 450 BC.
881	223 E36N22	Fig.19. P8169. Very hard fired reddish-brown clay with no obvious inclusions; brownish-black slip, fairly lustrous on exterior, duller on interior; underside and bottom of base ring reserved; inner edge of base ring slipped; no reserved band above base. Ø of base 5.7. Cf. Lanza Catti *et al.* 2011, 223 no. 43 from the Chora of Metaponto with comparanda and suggested date 330–280 BC.

882	627 U	No illus. P8130, Another of the same type as No.880. Mid-C5 BC.
883	813 D4	Fig.19. P1877. Fine pink clay with a fine brown specks. Smooth lustrous black slip all over, except for reserved area on outside above foot and on resting-surface/ inner face of foot. Ø 4.0., ht. 1.3. Close to *Gravina II* no. 898, 2nd half C4 or beginning C3 BC.
34b. With ring base and concave lower wall, of "Attic" type		
884	407 A4	Fig.19. P1081. Hard pinkish-brown clay, lustrous black slip; reserved band 0.6 wide above ring base; underside reserved. Cf. *Rutigliano*, tav 38d *tipo* 6.2d, 2nd half C4 BC.
885	223 E49N37	Fig.19. P4321. *Mouseion* 10, no. 14. Late C4/ early C3 BC.
886	223 E13N28	Fig.19. P8162. Hard reddish-brown clay with smooth surface, slightly grey in core; no obvious inclusions. Uneven reserved band above base and on most of underside: black band on outer edge of base extends for ca. 4mm onto underside, ending in an uneven edge. Ø base 3.7. Cf. No.885.
887	717	Fig.19. P1818. Orange-brown fine fabric. Semi-lustrous black slip inside and on outside of base. Lower wall and underside of base reserved. Cf. *Gravina II* no. 892, and Prag's discussion of the type under no. 883 with suggested date of 340–290 BC; *Civita di Tricarico I*, no. 245, with discussion of the type on pp. 403-404, 2nd half C4 BC; Lippolis (ed.) 1994, 185 from the Tarentine necropolis phase B1 325–300 BC.
35. Base of a cup-*kylix* (stemless)		
888	223 E48N45	Fig.19. P7089. With narrow fillet on outside of foot offset below by a shallow groove. *Mouseion* 10, no. 59. Last half C5/ C4 BC.
36. High bases with intermediate moulding This type of base is found frequently in Gnathian pottery and occurs in several BG shapes of the last half of the C4 and in the 1st three quarters of the C3 BC: see Prag's remarks in *Gravina II*, 115 in connection with no. 859. All the pieces listed here were slipped by dipping in the "semi-glazed" technique.		
889	223 E24N17	Fig.19. P4235. Complete 3-stepped base of a BG or Gnathian pot, probably a *skyphos* or cup-*skyphos*. Pinkish-brown clay, reddish-brown and fairly glossy black slips. Black: interior; exterior of belly; outside of upper steps and lower part of inside of base. Red: concave surface between belly and foot; torus moulding forming lowest step; resting surface of base; upper part of inner side of base. Ø base 4.8, pres. ht. 2.5. This type of base was current on *skyphoi* and cup-*skyphoi* in the Tarentine necropolis in phases B1 (ca. 325–300 BC) and B2 (ca. 300–275 BC): Lippolis (ed.) 1994, 248 fig. 185.
890	223 E19N31	Fig.19. P4163. High foot in 2 stages. *Mouseion* 10, no. 60. Ca. 450–325 BC.
891	302 B14	Fig.19. P708. Stepped base subdivided by horizontal groove. Hard-fired pinkish-brown clay, smooth-finished, but with visible turning marks outside. Slightly glossy dark brown slip inside, and outside, finishing at an irregular line ca. 2.5cm above bottom of base, with a thin (1mm) reserved line at 3.0 above base. The piece could equally well be classified as wheel-made painted. Ø base 3.6; pres. ht. 3.8. Fairly close to *Roccagloriosa*, p. 91 fig. 99 no. S9, found among the waste of the kiln on the central plateau in use from the end C4 to mid-C3 (*ibid*. p. 90).
892	223 E45N18.	Fig.19. P4787, *Mouseion* 10, no. 61. Ca. 450–325 BC.
37. Ring bases Ring bases were normal in BG pottery in Apulia from at least the last part of the C4 to the C1 BC. They tended to become progressively taller and more splayed, especially when used for open shapes, primarily dishes and plates. On several of these pieces (Nos.893, 894, 896, 897, 898, 901, 904) the clay of the underside of the base has been draw into a low pendant cone. This is a feature that appeared first around the end of the C4, e.g. in a two-handled cup (bolsal B10) from the Pantanello necropolis, T258.2, with weighted date range 320–275 (*Chora Metaponto I,* I, 328, vol. II, 650) and in a one-handler O3 from the same necropolis, T91-4, with weighted date range 318–282 BC: *ibid*, vol I, 298; vol. II, 669. It continued in vogue throughout the C3 and for most of the C2 BC, becoming increasingly pronounced.		
37a. Ring bases of medium height with convex outer edge		
893	223 E45N27	Fig.19. P4754. Probably from a one- or two-handled cup. Incipient pendant cone on underside of base, *Mouseion* 10, no. 62. End C4 or early C3 BC.
894	spor	Fig.19. P12. Ring base with pronounced pendant cone, offset from wall by a shallow groove. Pinkish-brown clay; drab brownish-black slip inside. Presumably the outside was slipped above preserved part. Ø base 5.2. Late C3/ C2 BC. Found at UTM 613250/ 4509025

37b. Low ring bases, splayed. This is the normal form of base used on BG plates and dishes. The low angle and relatively straight sides of these pieces show that they came from cups or plates, datable broadly between the late C4 and late C2 BC. Without more of the shape, most of them cannot be dated more precisely		
895	703	Fig.19. P1764. Base of dish, bowl or one-handled cup with curving wall. Finely granular buff clay with sparse v. fine mica; dull, even black slip on upper side only. Ø foot 6.2. Underside of base convex. ?C3 BC.
896	114 B2	Fig.19. P2092. Pendant cone in centre of underside; 2 shallow grooves round tondo. Pinkish-brown clay with some mica. Thin traces of drab dark brown slip inside, and on lower part of foot. Originally probably semi-glazed. Ø 5.7. The pronounced pendant cone in the centre of the underside is characteristic of the late C3/ C2 BC: cf. e.g Yntema 2001, 175 nos. 286, 287, bowls with slightly in-turned rim, from Valesio, with suggested date of the later C3/ early C2 BC.
897	223 E30N19	Fig.19. Pl.22. P4870. *Mouseion* 10, no. 65. Incipient pendant cone on underside of base. Cf. Swift 2018b, 707, BG 142 from the Pantanello sanctuary, "foot-ring base of small cup", ca. 300–±275 BC.
898	223 E38N29	Fig.19. P4881. *Mouseion* 10, no. 66. Cf. no. 897.
899	223 E32N29	Fig.19. P7101. *Mouseion* 10, no. 63. ?end C4/ early C3 BC
900	223 E31N19	Fig.19. P7105. *Mouseion* 10, no. 64. Cf. De Juliis 1992, 31 fig. 149, one-handled cup no. 64 from the *Tomba dei Niobidi* at Arpi, late C4 / early C3 BC; Swift 2018b, 707, BG 140 from the Pantanello sanctuary, "foot-ring base of large cup", 300–275 BC
901	417	Fig.19. P1099. High and slender ring base, with convex outer surface and slightly concave exterior. Rather soft buff clay, semi lustrous slip inside, reddish-brown over most of tondo turning to black at edge of frag. Pendant cone on underside of base. No slip on outside, presumably because semi-glazed. Ø foot 5.0. Cf. Morel 1981, 2565a 1, on a bowl from Stazzema in Tuscany, a local product of ca. 220 ± 30 BC. The form is also found in Lucania around the same time: cf. P*omarico Vecchio,* 2, tav. 32 no. 19 (a little more slender), on a plate/ low dish, unstratified, but antedating the end of the site in the late C3.
37c. As the above, but from a deeper vessel		
902	223 E16N20	Fig.19. P4132. Base and part of lower body. Black slip fired red in places inside and unevenly outside ending in dribbles (semi-glazed). Ø base 3.5, pres. ht. 3.2. Perhaps from an S-profile dish such as *Gravina II*, no 783, end C4/ early C3 BC (?). Cf. also *Pomarico Vecchio,* 2, tav. 36 no. 97, with suggested date (vol. 1 p. 79) in last decades C4 BC.
37d. Tall and narrow splayed ring bases The following 2 pieces, with lower walls rising steeply from a tall but narrow ring bases, are likely to come from bowls such as *Gravina II*, nos. 840 and 841 "Plain open bowls" of the C3 – C1 BC. They are large examples of the shape.		
903	302 A12	Fig.19. P4349. Tall narrow ring base with bevelled lower edge. Hard buff fabric. Slightly lustrous slip inside only, narrow groove defining tondo probably incised after slip applied. Ø base 7.0, pres. ht. 5.2. Cf. *Gravina II*, no. 776, with ring foot of similar form, though lesser diameter, in context in Period Gravina VII (C3 and early C2 BC) and VIII (late C2 and C1 BC).
904	372 L4	Fig.19. P864. High ring base with straight but converging outer and inner edges Pendant cone on underside of base. Warm pinkish-brown clay. Drab brownish-black slip inside where it turns purple in tondo, and outside where it ends in dribble lines above reserved base (semi-glazed). Inside of base reserved. Traces of a white band around tondo. Ø base 4.2 Cf. *Gravina II*, no. 840, attested first in Period VII, C3 and early C2 BC. This form of base with straight but converging outer and inner edges, the inner edge being shorter, is characteristic of Campana B ware of the 2nd and 1st half C1 BC: Morel 1981, pl. 234, *pieds à faces "rectilignes*" nos 250-251.
3e. Low narrow ring-base with concave outer and convex inner edge of foot-ring This type of foot ring is seen on several BG dishes deposited in Tomb 3 on Botromagno (1974 excavations), dated ca. 440–400 BC: Ciancio 1997, 218 no 271; 219 no. 274, 220 nos. 276, 277.		
905	223 E49N41	Fig.19. P7068. Ring base broken short of tip. 2 small concentric grooves on underside of foot. *Mouseion* 10, no. 68. Late C5 BC.
906	223 E51N21	Fig.19. Pl.22. P4921. Inside surface completely missing. Part of line on underside of base and beginning of another, incised before firing, probably the remains of an inscription. *Mouseion* 10, no. 71. Late C5 BC.
38. Offset bases (without foot-ring)		
907	120 H8	Fig.19. P166. Low pseudo-ring base marked off on underside by a shallow groove. Brown clay with smooth surface, much eroded. Semi-lustrous brownish-black slip inside. Outside reserved to height of frag. Ø base 5.2. Cf. *Pomarico Vecchio,* 2, tav. 44 no. 168 (a close parallel) with proposed date from end C4 to mid-C3 BC. There are several examples from Hellenistic contexts at Monte Sannace: Laricchia *et al.* 2019, 386, *tipo 20*, and tav. XI.14.

908	423 swathe 9	Fig.19. P1118. Small frag. of base, slightly offset. Soft orange clay. Surface badly worn. Traces of fairly lustrous black slip on inside and on underside of foot; upper part of foot reserved. Ø not ascertainable. The offset foot and reserved area above it suggest that the frag. may be from a mug of the C5 BC: cf. M. Elliott 1998, 667-668, "Mug and related shapes" from the Pantanello necropolis. But the frag. is too small for certainty.
909	627 F	Fig.19. P1611. Base slightly offset from convex body. Fine buff clay; lustrous black slip of moderate quality on inside and in a band on upper part of outside, terminating fairly evenly about 2cm from base. Ø base 4.4. Probably from a Metapontine type one-handled cup. Cf. M. Elliott 1998, 701-704 for numerous examples from the Pantanello necropolis, C5 – C4 BC; *Rutigliano*, 503 tav. 42b *tipo* 12.1b from with other comparanda, end C6 – C5 BC.
39. Recessed base		
910	703 G2	Fig.19. P1756. Curving bowl with recessed base. Fine granular red clay, slightly micaceous, very fine black, white and red specks; worn barely lustrous black slip, fired red in centre above and beneath. Campana A or an imitation. Ø recess ca. 3.0. Hemispherical bowls without distinct foot, and with a large dimple on the underside of the base are more commonly found in Apulia in grey-gloss ware cf. Yntema 2005, Form 31. He dates the form ca. 160/150–110/90 BC, but it is still found in the fill of pit F202 at Gravina, dated ca. 80/ 70 BC: Hayes 1994, nos. 3 and 9. For a BG example in ?Campana A fabric, cf. Morel 1981, 2154b 1, from Adria, dated ca. 190±30 BC. Suggested date: mid-C2–mid-C1 BC.
40. Bases of closed shapes (miscellaneous)		
911	223 E57N25	Fig.19. P4972. Flat base, a little inset from slightly convex lower wall. Lustrous black slip leaving reserved band on lower part of wall; black circle on underside of base. Probably from a mug. *Mouseion* 10, no. 45. C5 BC.
912	223 E31N19	Fig.19. P4383. Base of a small closed shape with rounded belly and oblique slightly tapering base ring with bevelled lower edge. *Mouseion* 10, no. 69. Late C4/ C3 BC.
913	223 E28N30	Fig.19. P7124. Base of a closed shape with rounded belly and low trumpet foot offset by a groove. Hard-fired reddish-brown clay. Purplish-black rather iridescent slip over upper part of outer side ending in an uneven line (dipped). Perhaps from a late *lekythos*, or early *unguentarium*. *Mouseion* 10, no. 70. Late C4/ C3 BC.
914	813 50m SW	Fig.19. P1845. Part of broad-based *guttus* with low ring foot and scar of spout. Fine pinkish-buff clay with smooth lustrous black slip on outside; resting-surface reserved; red ochre (*miltos*) on inner face of foot and possibly on centre of underside (missing). Ø base 9.2. Cf. Ciancio 1997, 210-211, nos. 239 and 240 from Tomb 2 (24/3/1994) on Botromagno, end C5/ 1st half C4 BC.
41. Wall sherds		
915	223 E50N26	Pl.22. P4755. Ws with spring of a double-ribbed handle from a Shape 1 *oinochoe*. *Mouseion* 10, no. 44. 2nd half C6 to 2nd half C5 BC,
916	223 E28N31	Pl.22. P4530. Lateral lobe of a small trefoil-mouthed *oinochoe*, pinched in so that the opposite sides of the lobe nearly join. Scar of handle attachment at bottom of photograph. *Mouseion* 10, no. 46. Trefoil-mouthed *oinochoai* were popular in Apulia from at least the mid-C6 to the mid-C4 BC: cf. e.g. *Rutigliano*, 472 tav. 32, and 474 tav. 33, for examples of several forms. Without more of the shape, this piece cannot be dated more precisely.
917	223 E22N20	Pl.22. P4202. Frag. from near the base of a shape sufficiently open to be slipped inside. 2 oblique grooves, ca. 0.2 wide and 0.1cm deep, impressed before firing, form a V shape, joining towards the bottom of the sherd. The V is likely to be part of an X motif frequently found on jugs and some other shapes, usually at the widest girth. *Mouseion* 10, no. 52. Ca. 375–250 BC.
918	223 E24N35	Pl.22. P4251. Wall of a fluted pot with rounded belly; rounded ribbing between flutes; oblique appliqué on 1 rib at edge of sherd. *Mouseion* 10, no. 53. C4 BC.
919	302 C11	Pl.22. P713. Frag. of closed vessel with convex surface; vertical fluting on wall, with flat ribs between evenly spaced flutes. 1 longer rib at edge of sherd appears to define a handle zone, and the wall in the top left part of the sherd curves outwards. Fine grey clay with pinkish tinge at surface; even, semi-lustrous black slip on outside only. Max. dim. 2.9. The piece probably comes from a small trefoil-mouthed *oinochoe* with ribbed body. Cf. *Rutigliano*, 474 tav.33a, *oinochoe tipo 3* ("Forma 2", mid-C5–mid-C4 BC, with other comparanda).

10. GREY-GLOSS WARE

I. Introduction

Grey-gloss (GG) is one of a number of grey wares in vogue in Italy and Sicily in the last two centuries BC, which appear to be inspired by prototypes in silver. It is distinguished by its well purified fine and compact grey clay, usually without visible inclusions, and its slightly darker more-or-less glossy grey slip. As in the case of the "semi-glazed" black-gloss pots, the slip was usually applied by dipping: the potter held the pot by the base and dipped it into the wet slip, then inverted it, allowing dribbles of slip to run down towards the base. The shapes are sometimes sloppy. Large plates, in particular, tend to sag towards the rims (as Nos.945, 946), suggesting that the potter was not always in full control of his material. Nevertheless, the same plates were usually carefully decorated with concentric bands of rouletting applied around the edge of the tondo (as Nos.953, 954). The firing temperature varied, presumably depending on the skill of the men operating the kiln. According to one archaeometric study (Ciancio *et al.* 1994) some pots were fired at only ca. 750°C, but others were fired at ca. 950-1050°C, resulting in a hard and impermeable fabric. Evidently the ware was produced in a number of different workshops by artisans with varying degrees of skill.

In her pioneering study of the ware at Metaponto, L. Giardino (1980, 283-286) proposed dating the beginning of the production in the first decades of the C2 BC, and put the end of it around the time of the end of the Roman Republic. Given the lack of closely stratified contexts for the material available at the time, her argument was based largely on comparison with other classes of material, and especially the Campana wares studied by Lamboglia, and early Arretine. Numerous more recent studies, conveniently summarized by E. Vittoria (2011b) in her study of the GG from the survey of the Metapontine Chora, have clarified the time-span of the ware, which now appears to have come into vogue ca. 160 BC and to have lasted until the beginning of the Augustan period. In the tombs of the Hellenistic period at Tarentum it appears first late in phase E1, shortly before the middle of the C2. It was most abundant in the second half of the C2 and beginning of the C1 (in phases E2 and E3), and died out in phase F in the 3rd quarter of the C1 BC (Hempel 2001, 113-114.). At Valesio the main period of circulation of the ware began around the middle of the C2 (Yntema 2001, 213). From the middle of the C2 until the middle of the C1 BC it was the normal table ware (at least for bowls, dishes and plates) used in much of Apulia and Eastern and Southern Lucania. It was abundant on Botromagno (Prag in *Gravina II*, 134-155) and on Monte Irsi (Small, *cit,* 124-127), and was associated on both sites with new structures erected in the second half of the C2 BC over the remains of the destroyed settlements of the C4/ C3 BC. A particularly useful context for dating the material from the survey area is the fill of the pit F202 on Botromagno, which contained much GG, datable by coin evidence ca. 80–70 BC (Small *et al.* 1994).

Giardino (1980, 283-284) comments on the lack of uniformity in the range of shapes produced by the Metapontine potters in this ware; but although there is considerable variation, the variants usually lie within a range of tolerance which allows them to be assigned to a number of distinct forms. Yntema lists 63 in his *Conspectus Formarum of Apulian Grey-gloss Wares* (2005), but some of these were much more common than others. Most of the rim-sherds of GG encountered in our survey area conform to a small number of forms, nearly all of them open shapes. Bowls with steeply sloping sides and more or less down-turned rims were particularly common (Nos.922-940, Yntema (2005), forms 16 and 3). Plates with up-turned or broad out-turned rims were also used (Nos.945-947), though they are much less well attested on these sites than on Botromagno.

Nevertheless, minor differences in fabric and in the distribution of specific shapes confirm that there were several workshops or groups of workshops producing the ware. Kilns in which GG pots were fired have been excavated at Oria (Maruggi 1996, 70, tav. XXIV.2), and at Pantanello in the Chora of Metaponto (Carter 1980; Vittoria 2011b, 273); and others have been identified by concentrations of wasters at Canosa (Todisco *et al.* 1992, 47, 52 and fig. 109), and at Sant'Angelo Vecchio, also in the Chora of Metaponto proved by wasters (Vittoria 2016, 265).

It is likely that there were many others. The great abundance of the material at Botromagno/Silvium indicates that there must have been a source within easy access of the settlement. Archaeometric analyses carried out on samples of the ware from Botromagno and Monte Sannace have shown that some of those from Botromagno match those from Monte Sannace (which form a consistent group), but the centre where they were produced remains for the moment uncertain. Other samples from Botromagno, less highly fired, and with a darker gloss, are likely to have been made on the site or somewhere else in the vicinity, while yet another sample remains an isolated instance with no obvious affinity (Ciancio *et al.* 1994).

Macroscopic analysis of the GG sherds from the Survey Area shows that there were at least three different fabrics in use there. The most common, which we have regarded as the standard ware, has fine grey clay without visible inclusions, and a slightly darker, fairly glossy (but not brilliant) grey slip. But one of the pieces in our catalogue is of a different fabric, with some visible inclusions and a greyish-brown slip (No.935); and another has grey clay and a blacker slip (No.924). To judge by her description, the fabric of the main series resembles that of Vittoria's class A1 of the ware in the Chora of Metaponto in having well purified hard and compact grey or light grey clay (Vittoria 2011b, 276), but there are differences in the range of forms attested in the two areas which make it doubtful that Metaponto was the main source of this material. The most significant, perhaps, is the *mastos* with more or less straight sides which is fairly common in the survey area and on Botromagno (*Gravina II*, nos. 985-989), but which does not feature in the material from the *castrum* or from the *chora* of Metaponto published by Giardino (1980) and Vittoria (2011b).

In the catalogue, the individual pieces have been grouped in so far as possible according to the classification of forms proposed in D. Yntema's *Conspectus* (2005), where further comparanda may be found. Reference is also given to comparanda from Botromagno published by A.N.J.W. Prag in *Gravina II*, and by J.W. Hayes in the publication of pit F202 (Small *et al.*1994).

II. Catalogue

1. Bowl with vertical rim marked off by two narrow horizontal grooves Yntema 2005, Form 33, dated there to 2nd half C2 BC. But the form is still found in pit F202 on Botromagno ca. 80–70 BC: Hayes 1994, 208, fig. 7 nos. 8, 9. It begins earlier in BG, e.g. *Torre di Satriano I,* pl. XXXIX nos 253-254, text p. 275.where it is found mainly in contexts of the C3 BC: For BG instances of the form from Botromagno: *Gravina II,* nos. 987-988.		
920	813 E5	Fig.20. P7713. Rim. Standard grey clay, slightly glossy darker grey slip worn at edges. Ø ca. 16.0.
2. Bowl with out-turned grooved rim Yntema 2005, Form 14. Middle to 2nd half C2 BC. The form is fairly common in Apulia in both BG and GG wares: See Yntema 2001, 171, Form K23 in BG and 219 Form L14 in GG, from Valesio. It occurs in BG on Botromagno: *Gravina II*, no. 809.		
921	813 E4	Fig.20. P7712. Rim out-turned almost to a right-angle. 3 shallow grooves on top of rim. Standard grey clay, slightly darker semi-lustrous slip. Ø 13.5.
3. Bowl with out-curving rim Yntema 2005, Form 16. In the complete shape the wall turned upward through a sharp curve from the pot floor, and had a ring foot. The angle of the wall varies considerably. Yntema distinguishes two principal variants, 16a and 16b, both of which are represented in our survey material. He dates both from ca. 110/80 to 30/10 BC, but the form appears rather earlier on Botromagno where it is attested first in Period VII in the fill of chamber tomb 3 on Site CA, ca. mid C2 BC: *Gravina II*, no. 1050. It is well attested on the site in Period VIIIa, late C2 BC and first part of C1 BC (*Gravina II*, nos. 1045-1050), and is represented there in Pit F202 of 80–70 BC: Hayes 1994, fig. 7 nos. 11 - 13. See also Vittoria 2016, 271, SAV GW 08 cup from Sant'Angelo Vecchio, with other comparanda of the 2nd half C2 BC.		
3a. Form 16a, with out-turned rim The form is also found in BG: cf. Nos.830, 831.		
922	813 B2	Fig.20. P1861. Drooping rim. Fine, laminar grey clay, semi-lustrous burnished grey slip. Ø ca. 20.0.
923	120	Fig.20. P16. Grey clay; lustrous grey slip inside and irregularly on outside to 3.5cm below rim. Ø ca. 18.0.
924	229 Area 9	Fig.20. P579. Light grey fabric with thin dark grey-black slip all over, very worn on interior. Ø ca. 26.0. More drooping, and perhaps later than Hayes1994, fig. 7 nos. 11 and 13 from pit F202 of 80–70 BC on Botromagno. Mid C1 BC?
3b. Form 16b, with thickened rim The form is also found in BG in the survey area: cf. No.829.		
925	813 D2	Fig.20. P1863. Part of bowl with steep curving wall and sharply down-turned rim; turning marks inside and out. Fine, hard grey clay, semi-lustrous grey slip. Ø rim 19.0.
4. *Mastoi*/ hemispherical bowls Yntema 2005, Form 31. These pots had a slightly sinuous wall and plain flat base, usually demarcated by a groove (as Nos.926, 942). Yntema suggests dating them ca. 160/150–110/90 BC, but they go on rather later. The form is well represented on Botromagno in Period VIIIA (late C2 and 1st part C1 BC: *Gravina II,* nos. 989-991), esp. in Pit F202, of 80–70 BC (Hayes1994, 208, fig. 7 nos. 1-6).		
926	813 C2	Fig.20. P1886. Fine, hard grey clay, occasional very fine glassy quartz grains; barely lustrous grey slip, not burnished. Ø ca.17.0, ht 5.0. Cf. Melillo 2017, tav. I.9 from Recupa di Scardinale (Site 213x).
927	703 F3	Fig.20. P1768. Groove beneath lip on outside. Fine grey clay; thin, semi-lustrous grey slip. Ø 15.0. Cf. Melillo 2017, tav. I.8 from Recupa di Scardinale (Site 213x).
928	423	Fig.20. P1116. Rather soft pale grey clay. Faint traces of slightly glossy slip of similar colour. Surface badly worn outside. Some traces of relief 'decoration' are probably accidental dribbles of clay. Ø ca. 18.0.
929	813 C2	Fig.20. P7708. Tip of rim slightly out-turned. Hard dark grey clay, slightly glossy dark grey slip inside and out. Ø 17.0. Another larger version of this form, P7709, from coordinate E5 on this site.
930	303 G7	Fig.20. P1275. Grey clay, semi-lustrous grey slip. Ø rim ca. 21.0. For the interior groove, cf. *Gravina II*, nos. 985, 986. Cf. No.825 in BG.
931	813 G2	Fig.20. P1860. Rim outward sloping with rounded edge. Light groove on outside surface. Ø 16.0.
932	813 E3	Fig.20. P1858. Steep wall, flaring, tapered rim. Fine, hard grey clay; lustrous grey slip, black on outer edge of rim. Cf. No.823 in BG.

933	810 F1	Fig.20. P7160. Small frag. of a bowl/ dish with slightly out-turned rim. Hard fired grey fabric. Darker grey slip best preserved on inside lip of rim; mostly worn off on exterior, entirely worn off interior below lip. Ø ca.7.0, pres. ht. 1.5cm.
934	813 E10	Fig.20. P1872 Standard hard grey clay; lustrous grey slip. Ø 14.0.
4a. Form 31 variant A The wall of the following 2 pieces is more sinuous than the above, and in the case of the more complete No.935 appears to be tapering towards a ring foot – perhaps a hybrid of Forms 16 and 33.		
935	813 E5	Fig.20. P1881. "Semi-glazed" (slip on lower part of pot finishes at an irregular line near bottom of sherd). Inside slipped. Fine, hard slightly brownish-grey clay with sparse black-brown and white inclusions; partial semi-lustrous grey slip. Ø 12.5. Cf. *Gravina II*, 1036; Giardino 1980, tav. 83 no. 35 from the *castrum* of Metaponto; Vittoria 2011b no. 11 with proposed date in the 2nd half C2 BC.
936	813 E2	Fig.20. P8143. Small frag. Standard grey clay, semi-lustrous grey slip; no obvious inclusions. Ø 11.0. pres. ht 1.4.
4b. Form 31 variant B With slightly convex wall.		
937	813 D1	Fig.20. P8144. Grey clay with brownish tinge, scatter of minute white inclusions; slightly lustrous black slip. Some horizontal turning marks visible on exterior. Ø ca. 14.0; pres ht. 1.4.
5. Shallow bowls with oblique walls and hooked rims The 3 fragments listed here probably had carinated walls: cf. Giardino 1980, tav. 83 nos. 41, 42 from the *castrum* at Metaponto. The form is not presented in Yntema 2005.		
938	813 E10	Fig.20. P1871. Steep curving wall, groove below rim. Fine hard grey clay, burnished grey slip. Ø ca. 14.0.
939	124 AA1	Fig.20. P34. Standard grey clay and slip. Ø 10.0.
940	813 E2	Fig.20. P8158, Grey micaceous clay, slightly glossy darker grey slip. Ø ca. 15.0 (v. approx.).
6. Bases of *mastoi* or hemispherical bowls The bases are frequently marked off by a groove, either on the underside near the edge, or at the bottom of the wall.		
941	813 E2	Fig.20. P1868. Base of hemispherical bowl. Fine grey clay, darker slip, mostly worn off. Groove on underside of base, near edge. Ø base 3.8. Cf. Hayes 1994, fig 7, no. 8 (80–70 BC).
942	813 E6	Fig.20. P1880. Slight external groove at bottom of wall. Pale grey clay and slightly darker semi-lustrous slip all over. Ø base 4.0. Cf. Hayes.1994, fig 7, no. 6 (80–70 BC).
7. Dish or more probably lid with convex wall and slightly thickened rim marked off by a groove (Form not presented in Yntema 2005).		
943	810 E1	Fig.21. P7157. Narrow groove 0.8cm below rim and beginning of another near break. Standard grey fabric with darker grey glossy slip. Ø ca. 19.0, pres. ht. 1.4. Cf. Giardino 1980, tav. 82 no. 19 from Metaponto (as a dish) with suggested date in the C1 BC, based on analogies with Campana C forms.
8. Lid with low sloping wall and thickened rim		
944	703 G3	Fig.21. P8178. Lid or perhaps plate. Hard rather coarse grey fabric with some white inclusions up to 1mm; a little mica. Traces of slightly lustrous dark grey slip on all surfaces. Not standard GG fabric. Ø 20.0. Shape not presented in Yntema (2005). It bears some resemblance to his Form 5 (Carinated dish), but the low thickened rim suggest that this piece was a lid.
9. Large plates with up-turned rim Yntema 2005, Form 4, with suggested dating 2nd half C2 and early C1 BC; but it probably continued later. It is attested in the pit group F202 on Botromagno, ca. 80–70 BC: Hayes.1994, 208, fig. 8 nos. 29-30, and it anticipates the production of plates of essentially the same shape (but crisper) in ITS (*Consp* Form 1). For other examples from Botromagno, see *Gravina II*, nos. 993-1007. It appears there first in Period VII (the first two thirds of the C2: no. 993c) and in most abundant in Period VIIIa (late C2 and 1st half of C1 BC). It is attested there also in BG in the same time frame: *Gravina II*, nos. 726-739.		
945	813 F5	Fig.21. P1879. Plate with sloping floor and short vertical rim. Hard grey clay, semi-lustrous grey slip out and in, worn. Ø 20.4.
946	813 F4	Fig.21. P1875. Plate with sloping floor and short vertical rim. Fine, hard grey clay; grey slip, burnished and lustrous on inside, dull and partial on outside. Ø 22.0.

10. Plate with horizontal rim The form falls within Form 3 in Yntema 2005, but none of the pieces illustrated by him corresponds to the favoured type at Gravina which had a broad horizontal rim turned downwards at the tip (as *Gravina II*, 963, 965, 971, 975). The small frag. recorded here is likely to have been of this type. The form is dated by Yntema from "the late C2 BC to the early Augustan period???"		
947	813 D2	Fig.21. P1864. Frag. of plate with broad flat rim. Fine grey clay, worn but lustrous dark grey slip. Ø not ascertained. Cf. No.844 in BG.
11. Ring bases This was the most common type of base used in GG pottery. The base ring is normally slightly splayed and of even thickness, though it tapers to a tip in some examples (e.g. No.950). The spreading walls on most of these pieces show that they came from plates or wide bowls. They frequently have rouletted bands around the tondo, as on numerous examples from Botromagno: cf. *Gravina II* nos. 1005, 1007.		
948	124	Fig.21. P19. Ring base, standard clay and slip. Slipped inside and in irregular dribbles outside. Ø base 8.0.
949	335 A4	Fig.21. P1276. Standard GG fabric. "Semi-glazed" outside, uneven finish to slipped area; some 'gloss' on base. Ø base 13.0. Perhaps from a Form 16 bowl (see above, sub-section 3). Another with same profile, P813, was found on this site, coordinate A3.
950	813 E7	Fig.21. P1874. Part of bowl, probably of Form 16, with low, flaring ring-foot. Fine, hard, pale grey clay; lustrous grey slip on inside only. Ø foot 9.5. Either Yntema 2005, Form 16 dated from ca. 110/80 to 30/10 BC, or Form 19, dated from middle to late C1 BC.
951	372	Fig.21. P1273. Standard fabric. Slip of uneven thickness covering lower wall and base, and irregularly on underside of foot; fired brownish in tondo. Ø base 8.0.
952	N. of 114	Fig.21. P2101. Soft grey clay, slight traces of semi-lustrous grey slip on upper surface. Ø base 10.0.
953	813 C1	Fig.21. Pl.22. P2080. Base of plate. Lustrous GG inside, reserved outside except for a dribble mark; tapering ring foot; rouletting inside round tondo. Ø base 6.5. Yntema 2005, Form 4c, 2nd half C2/early C1 B
954	141	Fig.21. Pl.22. P107. Hard fired grey clay, semi-lustrous grey slip inside and in irregular dribbles outside. Rouletted band round tondo. Ø base ca. 8.0. Probably from a plate of Form 4.
955	703 G-0	Fig.21. P1754. Ring foot of plate/dish. Standard grey ware. Traces of semi-lustrous grey slip inside, no slip outside on preserved part. Ø foot 6.5. Probably Yntema 2005, Form 4.
956	813 D1	Fig.21. P7703. Rim foot and lower wall, foot set slightly oblique with almost straight facets in and out, concentric rouletting round edge of tondo. Hard grey clay, semi-lustrous darker grey slip inside only (not preserved to level of sherd outside). Slip inside is darker and more glossy up to beginning of rouletting. Ø foot 8.2.
12. Spouted vessels and strainers The following two pieces are both likely to come from spouted jugs/ infant feeders. These pots were filled through a broad vertical funnel with a sieve at the base of the neck through which the liquids were filtered that would be poured through the spout set obliquely on the shoulder. They conform to Yntema's (2005) Form 43 (late C2 / early C1 BC?) or 44 (middle to later C2 BC). It is well attested in the pit group F202 on Botromagno, dated ca. 80–70 BC: Hayes 1994, nos. 32-35. Cf. also Whitehouse *et al.* 2000, 257 fig. 160, also from Botromagno.		
957	229	Fig.21. Pl.22. P2346. Frag. with spout. Grey clay, dark grey semi-lustrous slip. Pres. lg. 5.2.
958	813 C1	Pl.22. P1855. Frag. from the base of the neck with part of strainer. Fine, hard grey clay with smooth, fairly lustrous dark grey slip on the outside only, preserved at edge of sherd. 2 holes of strainer, Ø ca. 4mm, Max. dim. 4,0; Ø of sieve at neck break 3.5. Cf. *Gravina II*, 304, fig 46 no. 1071.

11. PRE-ROMAN RED-SLIP WARE

I. Introduction

This section includes a number of pieces which conform to the typology of black-gloss pottery, but which have been fired in an oxidizing atmosphere so that the slip has emerged as red, orange or reddish-brown, and ranging in surface finish from dull to glossy. It is possible that in some cases the effect is the result of mismanagement of the kiln during the firing process; but recent studies have shown that there are so many examples of well-fired pieces of this kind that it must be recognized as a distinct ware, contemporary with the black-gloss products of the same shape. The publication by M. Carrara Ronzani (1978) of Apulian red wares of the C4 BC, based mainly on material from tomb groups at Ordona, was important in drawing attention to this class of pottery; and the more recent studies of the ware at Torre di Satriano by L. Colangelo (*cit.*) and at Rutigliano and Monte Sannace by P. Palmentola (2006a, 2019) have helped to refine its date range and illustrate its eclectic character. At Rutigliano the ware is mainly attested between the end of the C5 and the end of the C4 BC. At Monte Sannace the range seems to have been rather wider, beginning around the mid-C5 and lasting well into the C3 BC.

It has not been generally noticed that the pre-Roman red-slipped material from Gravina is surprisingly abundant. Andriani & Laricchia (2007, 61-65) have published 13 pieces from the Accurso necropolis on Botromagno (a one-handler, a bell crater, two *kantharoi*, a *kothon*, four *olpai*, a *brochetta*, a stemmed dish, three dishes on ring feet) all from tombs datable between the end of the C6 and the end of the C4. But the main corpus is the catalogue of 59 Hellenistic red- or brown-slipped pieces from Botromagno published by Molly Cotton in *Gravina II* (157-160, figs. 48-50). A few of these pieces come from contexts of the C4/C3 BC, but most are associated with the settlement of Period VIIIa, the late C2 and first half of the C1 BC. The majority are bowls and dishes, though *lagynoi*, jugs and beakers are also found. They show that the regional Hellenistic red wares of Botromagno/ Silvium originated in an indigenous tradition of long standing and continued later than the contexts mentioned in the previous paragraph suggest.

The six pieces from our survey area are mostly from open forms (bowls, a *skyphos*, a dish). They range in date from the 1st half of the C5 to the C1 BC, though the majority are of the C5 or C4. To these may be added a red-slipped *unguentarium*, recorded separately under that class (No.974). The small number, compared to the great quantity of black gloss pieces, illustrates the occasional nature of the production, which must have been a minority taste.

II. Catalogue

1. Bowls		
1a. With incurving rim		
959	223 E47N36	Fig.21. P4078. Rim and wall. Light brown clay, reserved outside; reddish to dark brown slip on top and inside. Ø 8.0, th. 2.5. Perhaps from a stemmed dish. Cf. No.802 in BG, 1st half C5 BC; Colangelo in *Torre di Satriano I*: 303 and tav L, *coppetta* no. 379; Palmentola 2019, 394 and tav. 1I.12 *coppa* from Monte Sannace.
1b. With convex wall and thickened rim		
960	223 E39N18	Fig.21. P4425. Rim and wall. Reddish-brown clay, fairly lustrous reddish-brown slip inside and out. Ø ca. 18.0. Perhaps from a stemmed dish. Cf. No.795 in BG, ca. mid-C5 BC. Close to Palmentola 2019, 394 and tav. III.2 *coppa* from Monte Sannace.
1c. With down-turned rim		
961	132	Fig.21. P4345. Small frag. of a down-turned rim. Pale buff clay, lustrous reddish-brown slip inside and out, leaving a reserved band 0.9 wide above edge of rim. Max dim. 2.0. Cf. Nos.923-925 in grey-gloss. Ca. 1st half C1 BC; Palmentola 2019, 392 and tav. II.4 *piatto*, from Monte Sannace.
1d. With out-turned rim		
962	223 E35N29	Fig.21. P4398. Hard fired reddish-brown clay, no mica. Dark orange-brown slip inside and on top and edge of rim, fired dark grey to black on outside. Ribbed moulding on underside of rim. Ø 21.0, pres. ht. 1.5. The variable colour of the slip leaves it uncertain whether the intended effect was red. Perhaps from a bell krater of Gnathian type, as Morel (1981) série 4612a from Rudiae, ca. end C4 BC; *ibid.* 4618b1 from Ruvo, ca. end C4 BC, both in BG. For brown-slipped examples, cf. Palmentola 2019, 390 and tav. I.1 from Monte Sannace.
2. Dish base		
963	419	Fig.21. P1103. Ring base, splayed. Fairly hard light brown clay, worn slip inside only, fired red, matt. Ø base 5.5. The piece is likely to come from a class of small red slipped dishes, probably locally made, found in tombs of the late C4 on Botromagno: cf. Andriani & Laricchia 2007, 65, Piatto, tipo 3, with shallow bowl and similar slightly splayed foot. Close to No.897 in BG (Hellenistic).

3. *Skyphos* base		
964	223 Ar.245	Fig.21. P644. Base with curving floor and steep wall; oblique ring-foot with three shallow grooves on upper surface. Fine orange-red clay with v. fine black specks and moderate v. fine mica. Smooth, fairly lustrous red slip all over apart from the resting-surface. Clearly a black-gloss shape deliberately fired red. Ø base 5.6. For the treatment of the foot, cf. Elliott, 1998, 678 S23 from Tomb 151, and p. 680 S40 from Tomb 230 in the Pantanello necropolis in the Chora of Metaponto, black-gloss *skyphoi* dated respectively ca. 460–440 BC and ca. 460 BC.
4. Wall sherd of ?jug		
965	223 E40N28	Fig.21. P4904. Ws from shoulder of a large closed shape (jug?). Pale orange-brown micaceous clay, lustrous orange-brown slip outside with clear turning marks, worn. Inside reserved. Slight horizontal grooves on external wall. Max dim 4.2. Est. Ø 16.0 shown in drawing is very approximate.

12. *UNGUENTARIA*

I. Introduction

Unguentaria, made to contain perfumed oils, and perhaps other substances, were used in houses, sanctuaries and above all in burials. They first appeared in Apulian contexts in the 3rd quarter of the C4 BC, and quickly became widespread, replacing *lekythoi* which disappeared by the end of the century; and they lasted well into the C1 BC when they gave place to *balsamaria* (which appear in the Tarentine necropolis in phase G, around the mid-C1 BC: Lippolis 1994, 260). Within this long period they underwent progressive morphological change, from globular with short necks and low feet, through ovoid and piriform with longer necks, and on to fusiform with long necks and stems and increasingly narrow bodies. The main line of development down to the C2 BC was analysed by L. Forti (1962). But there are numerous variations in detail, and it is now recognized that most *unguentaria* were locally made, and were often cheap and rather ill-formed pieces. Each major centre is likely to have had its own workshops producing these pieces, and not necessarily following morphological innovations made in other places. Even the length of the stem may not be indicative since *unguentaria* with short and long stems are sometimes found in the same tomb, as e.g. in Tomb 2 in the Metapontine necropolis at Casa Ricotta (Lo Porto 1966, 188, fig. 39). The series of *unguentaria* published for Heraclea (Pianu 1990), the Metapontine Chora (Scarano 1982, 20-21; Elliott 1998, 686-688), and Taranto (Lippolis 1994, 256-260) were largely independent of each other.

There is as yet no definitive typological series for Gravina. Prag and Broughton published 18 pieces in *Gravina II*, 155-156, nos 1080-1097, but most of these are fragments which leave the complete form uncertain. Some large pieces from pit F202 of the early C1 BC were published by J.W. Hayes (1994, 224-226). Three examples of fusiform *unguentaria*, two of them complete, came from a *grotticella* tomb on Botromagno (*Gravina (PBSR) II*, 129 nos. 10-11), which must now be dated to the C2 rather than the C3 BC (as published). They are however unusual. At Gravina the *unguentarium* seems not to have had the status of standard component of burials that it had in the Italiote cities. None were found in the *grotticella* tombs reported by Ciancio (1997, 267-277), or R. Whitehouse *et al.* (2000, 185-195), or in *Gravina I*.

The comparanda cited below are therefore drawn from Gravina if there is a suitable example, but also from the other series, especially from the Tarentine necropolis. Two pieces (Nos.972, 978) have already been published by A.M. Small & C.M. Small (2010), q.v. for fuller description and comparanda.

Virginia Anderson-Stojanović (1987) drew attention to the fact that many of the fusiform *unguentaria* found in burials at Stobi were unslipped, and so porous that they could not have retained liquids for any length of time. Both water and oil seeped through two well-made examples within eight hours. She concluded that such *unguentaria* must either have been used rapidly in the funeral ritual, or have had a purely symbolic function. Some of our *unguentaria* listed in the catalogue below were slipped inside (Nos.968, 971, 973, 974, 981) and are likely to have been intended to hold their liquid contents for a considerable time. They might have been used either in the household or at burials. Others, however, including Nos.966, 975, 976 and 978 were unslipped and were probably intended for use in burials.

II. Catalogue

1. Rims		
966	223 E35N25	Fig.22.P4223. Rim frag, with thickened rim and short concave neck; inner edge of rim bevelled. Pinkish-brown clay; no slip. Ø 3.5. The short neck and rounded rim are characteristic of Forti's type 1 in vogue in the western Mediterranean from the C5 to C3 BC, and attested in Apulia in the late C4 and early C3 BC (Forti 1962, 147 and note 18). The neck, however, is unusually short, suggesting that the piece should be dated relatively early in the series. The nearest equivalents in the Chora of Metaponto with thicker rim and slightly longer neck have been dated to the last quarter of the C4 (Elliott 1998, 686-687, Group i).

967	136	Fig.22. P86. Hard pinkish-brown clay, fairly lustrous thick black slip. Ø 3.3. Cf. Lippolis 1994, 256-260 with fig. on p. 259 for examples from the Tarentine necropolis in phases D and E (Forti type 4 or 5) ca. 225–125 BC; Hayes 1994, 225 fig.15 no 160 from pit F202 on Botromagno, early C1 BC.
2. Body sherds The following pieces all come from fusiform *unguentaria* current between the late C3 and mid-C1 BC.		
968	813 D1	Fig.22. P7710. Neck and shoulder-spring, large. Hard medium brown clay. Matt dark brown slip inside though also clear turning marks. Narrow groove outside at junction of neck and shoulder. Ø at base of sherd ca. 6.5. Cf. Hayes 1994 Fig.15.156 from Pit F202 on Botromagno, early C1 BC.
969	810 E1	Fig.22. P7156. Neck and shoulder. Hard fired pinkish light brown clay; slightly lustrous thick black slip on exterior. Max. Ø of sherd ca. 4.0, internal Ø of neck 0.8, pres. ht. 2.4. The profile is closest to those of phase D (ca. 225–175 BC) in the necropolis at Taranto: Lippolis 1994, 259 fig.194.
970	407	Fig.22. P8168. Upper part of body. Hard-fired orange brown clay with smooth outer surface; some oblique sponge marks out. Fairly glossy black slip in band on outside. Max. Ø near bottom of sherd ca. 6.0 (but still expanding). From a slender fusiform type, current at Gravina in period VIIIa (late C2 and first half C1 BC): cf. *Gravina II*, 256 and fig.47 no. 1088 (banded); Hayes 1994, 225-226 and fig.15 no. 163, ca. 80–70 BC.
971	903	Fig.22. P8175. Neck frag. Hard-fired medium brown clay, smoothed externally; slightly lustrous uneven brownish-black slip inside. Ø 3.5; pres. ht. 2.5. From a large *unguentarium* with tall neck, as found in the Tarentine necropolis in phases C and D, ca. 275–175 BC (Lippolis 1994, 259 fig.194), and in Gravina in period VIIIa (late C2 and first half C1 BC): cf. Gravina III, 256 and fig.47 nos. 187, 188; Hayes 1994, 225 fig.15 nos. 155, 161 from pit F202 on Botromagno, ca. 80–70 BC.
972	223 E46N43	Fig.22. P7080. Ws. A.Small & C.Small 2010, no. 74. From a slender fusiform type, as found in the Tarentine necropolis in phase F, ca. 125–75 BC. (Lippolis 1994, 259 fig.194), and on Botromagno in pit F202, ca. 80–70 BC (Hayes 1994, 225-226 and fig.15 nos. 158, 163.
973	813 D7	Fig.22. P7700. Stem. Hard fired pinkish-brown clay with a little mica. Thin orange-brown slightly lustrous slip outside, badly worn. Rough turning marks inside with black-brown thick slip. Broken off just above foot. Max. Ø 6.0, Ø of stem 2.5, pres. ht. 7.0. Cf. Hayes 1994, 225-226 and fig.15 no. 163 from pit F202 on Botromagno, ca. 80–70 BC.
3. Feet and stems		
3a. With convex lower belly rising directly from the foot		
974	229	Fig.22. P495. Base and lower wall of a large *unguentarium.* Base tall, only slightly flared, with bevelled edge. Finely granular buff clay with abundant fine mica. Outside quite well smoothed, with occasional drips of dull brown slip; inside has prominent turning-marks and a crudely formed nipple at centre and is slipped all over. Ø base 3.9. The profile of the lower body of the pot is characteristic of Forti 1962, Type III dated 330–275 BC; cf. also *Chora Metaponto III,* 415 no. 267), with other comparanda from Taranto and Heraclea. But the large size of our piece, and high base ring with the near-vertical edge suggest a later date, perhaps late C2/C1 BC.
975	145-9 Ar.147	Fig.22. P172. Soft pale brown clay. No traces of slip, perhaps eroded off. Ø base 3.7; pres. ht. 6.0. Forti 1962 149-150 tav. VI.2, type III, beginning at the end of the C4 BC. Cf. Pianu 2002, 413 Fig.62 *unguentari tipo 5* from Heraclea end C4/ beginning C3 BC (with refs). The type is found in the Tarentine necropolis in Phase C (275–225 BC): Lippolis 1994, 259 fig.194.
3b. With lower belly tapering		
976	303	Fig.22. P719. Base. Hard pinkish-brown clay, no slip. Ø base 2.3. Cf. Lippolis 1994, 259 fig.194 for examples from Tarentine necropolis in phases E (175–125 BC) and F (125–75 BC) (Forti 1962, type 5).
3c. With concave transition from belly to foot The shape is well attested in the Tarentine necropolis in phases D, E and F, ca. 225–75 BC: Lippolis 1994, 259 Fig.194. Cf. also *Monte Sannace*, 192 and tav 339, where the shape was common (though not in precisely dated contexts).		
977	415	Fig.22. P1036. Base. Pale greyish-brown clay, rather soft. Thin matt black slip, much worn, on outside above moulded base (may formerly have covered outside of base as well). The hollow of the belly goes right down into the base. Ø base 4.6. Cf. Lippolis 1994, 257 from the Tarentine necropolis, Phase D (225–175 BC).
978	223 E22N30	Fig.22. P4212. Stem, lacking edge of foot. Unslipped. A.Small & C.Small no. 75. Late C3–early C1 BC.
979	813 E10	Fig.22. P1867. Base of fusiform *unguentarium*. Flaring base, not separately articulated. Finely granular buff to cream clay with some dark specks, not visibly micaceous. Ø base 2.3. Cf. Lippolis 1994, 259 fig.194 for examples from Tarentine necropolis in phases E (175–125 BC) and F (125–75 BC) (Forti 1962, type 5).

3d. With belly separated from foot by a vertical stem High stems are seen in the Heraclea series first in type 11 ca. 270–200 BC: Pianu 1990, 230. They are attested at Gravina in the *grotticella* tomb S7 of the C2 BC (*Gravina (PBSR) II*, 138 Fig.18.11), and in the settlement in Period VII, early C2 BC, (*Gravina II,* 1093) and Period VIIIa, late C2/ early C1 BC (*Gravina II*, 1091).		
980	223 E35N22	Fig.22. P8170. Frag. of stem with beginning of turn of base. Hard orange-brown clay fired pale brown on outer surface; some horizontal brush marks. Ø 2.5, pres. ht. 2.7. Cf. Hayes 1994, 225-226 and fig.15 no. 157 from pit F202 on Botromagno, ca. 80–70 BC.
981	407	Fig.22. P1032. Lower stem and offset base. Rather soft buff coloured clay. No slip on outside but traces of black slip in interior. Ø base 4.2, pres. ht. 5.2. Close parallel in *Gravina II*, no. 1090, period VIIIa (late C2–mid-C1 BC). Cf. Lippolis 1994, 259 fig 194 for examples from phase F (125–75 BC) in the Tarentine necropolis.
982	303 G8	Fig.22. P720. Tall stem merging into base. Pinkish-brown clay hard fired. Ø base 4.2, pres. ht. 5.2. Cf. Lippolis 1994, 259 fig.194 for a comparable piece in the Tarentine necropolis, phase E (175–125 BC).

13. HELLENISTIC RELIEF-DECORATED BOWLS

by Philip Kenrick

I. Introduction

The 'leading' producers in the Mediterranean world of relief bowls in the Hellenistic period were based in Attica (Rotroff 1982) and near Ephesus in Asia Minor (so-called 'Ionian' bowls: Laumonier 1977). There were many other productions, but nearly all of them are derivatives, in one way or another, of these two major classes which were widely exported. The most comprehensive study hitherto of the finds from Italy (whether imported or locally produced) is by P. Puppo (1995), generally reviewed favourably by another scholar who has for many years worked on the relationship between bowls found in Greece and those found in Italy (see Siebert 1997). The absence of relief bowls from levels preceding the destruction of 211 BC at Morgantina in Sicily is regarded as an important indicator that they did not reach the western Mediterranean before the C2 BC (Puppo 1995, 115).

The central Italian products (including those signed by Lapius, Popilius and Quintius) are generally unslipped, and in profile they have strongly accentuated, out-curving ('cavetto') rims (Puppo 1995, 31-88). Puppo suggests an over-all chronological range of 180–50/30 BC (1995, 32). In the south of Italy, a class labelled 'Tarentine' has been identified which has rims closer to the Attic model (vertical and slightly out-curving); these vessels have a slip, typically lead-grey in colour (Puppo 1995, 89-106). In recent years, 'definitive' evidence of production has been reported from Taranto, in terms of a dump of pottery which included two moulds and 'oggetti di lavorazione' (Lippolis 1996, 476). Production has also been postulated at Metaponto (F.D'Andria 1976, 541 note 9) and Heraclea (Giardino 2005, 419 and pl. 39,1: 'alcune matrici') where moulds for the production of relief-decorated bowls have been found.

The British excavations on Botromagno (Gravina) yielded a number of pieces (M.-O. Jentel in *Gravina II,* 60-65 with fig. 26 and pls. 13-14, nos. 554-599), some attributed to the Ionian class and many probably belonging to the 'Tarentine' class. The Basentello Survey yielded only a few fragments, as follows.

II. Catalogue

1. Bowls		
983	813 E2	Fig.22. P1869. Offset vertical lip, forming a narrow lid-seating; upper edge only of relief decoration; no identifiable motif preserved. Fine, hard grey clay, finely vesicular, with sparse fine quartz (and other?) inclusions; semi-lustrous grey slip, pale on inside, darker on outside. Ø ca. 14.0. Lip approximates to Jentel, *Gravina II*, 62 f., nos. 570 and 577: possibly 'Tarentine'.
984	UTM 617914/ 4518536	Fig.22. P1773. Out-turned rim of hemispherical bowl. Standard grey clay, semi-lustrous darker slip. Two horizontal grooves below rim outside, beginning of oblique groove at bottom of sherd. Ø ca. 14.0. Found at F3 ca. 900m S of F2 (S.Staso). Shape close to Jentel, *Gravina II*, no. 599, from a context of late C2/ early C1 BC. Presumably 'Tarentine'. The piece was found outside the Survey Area in a small Late Hellenistic site.
985	813 C3	Pl.23. P1862. Tiny frag. of wall of hemispherical relief bowl with imbricate pattern of leaves (or stylized pine-cones?). Fine orange clay, dull orange slip; prominent turning-marks on inside. Max. dim. 2.4. Imbricate patterns of leaves are common on both the Attic and Ionian classes of relief bowl (see Rotroff 1982, esp. 16 and pl. 94; Laumonier 1977), but on neither does one find the level of stylization seen here, with parallel oblique hatched lines across the whole leaf. The fabric resembles that defined as RRS1 at Vagnari (Kenrick in *Vagnari*, p. 374): a local product, C2 BC?

2. Other relief decorated vessel		
986	134	Pl.23. P232. Sherd of large vessel, possibly closed (prominent turning-marks on inside). Traces of orange-red slip outside only. Relief decoration of vine leaves and grapes, applied or moulded. Perhaps part of a flagon. Max. dim. 4.6; est. Ø body 26.

14. THIN-WALLED WARE – UNSLIPPED

I. Introduction

Thin-walled (TW) pottery was produced first in Central Italy early in the C2 BC, and was widely exported from there over the W. Mediterranean. By the middle of the century it had begun to be imitated in numerous local centres, including, probably Taranto. The earliest examples were unslipped, but might have barbotine decoration. In the Augustan period they were frequently slipped with a glossy finish. Production in Central Italy declined by the middle of the C1 AD, but TW pottery continued to be produced at various workshops in the Po Valley until at least the middle of the C2 AD (Hempel 2001, 115-116; Ricci 1985, 343-353; Marabini Moevs 1973, 229-233), and related wares were still circulating in the western provinces into the C3 AD.

Unslipped TW pottery appears on Botromagno in Period VIIIA, late C2–mid-C1 BC (Cotton in *Gravina II,* 161-162), but is almost entirely lacking in our survey material. The single instance is a relatively early example in a fine sandy fabric. For slipped TW pottery of the imperial period, see Section 15, Kenrick's RR7 fabric.

II. Catalogue

Thin-walled coarse		
987	813 C2	Fig.22. P1883.Sandy 2, red. Part of tall beaker with spreading foot. Red clay, typical inclusions; no slip but carefully smoothed on outside. Ø base 3.5. Cf. Hayes 1994, fig.9 no.74 from the pit group F202 on Botromagno, ca. 80–70 BC. This form with slightly spreading foot is attested in the Tarentine necropolis at the beginning of Phase F (late C2 BC): Hempel 2001, Taf 16.

15. ROMAN FINE WARES

by Philip Kenrick

I. Introduction

The Roman fine wares from the Basentello survey comprise a typical range of wares, both locally made and imported from greater or lesser distances. It is not particularly easy to compare what was found here (or in the Vagnari excavation) with finds from other parts of Puglia, since the previous publications in the area are of extremely variable quality, in terms of both the extent to which pottery has been published and the extent to which different wares have been competently recognized and reported. The long-term excavations at Ordona to the NW represent a notable exception in this regard, and a useful yardstick.

II. Catalogue

A. Terra Sigillata

This is a category which, it has to be admitted, has come to be defined by convention rather than by any coherent set of criteria. Listed under this heading are instances of Italian productions of early Roman fine red slip ware, made either in Tuscany (principally at Arezzo and Pisa) or elsewhere in Italy within the same stylistic and technical tradition. With regard to productions of similar character but more distantly related (geographically and/or technically), only Eastern Sigillata B from Tralles in Asia Minor has been identified amongst the survey material. Five fabrics were defined, as follows.

TS1. Very fine pink clay with no readily detectable inclusions; surfaces smoothed to the point that turning-marks are virtually undetectable; slip red-brown and of medium lustre, though lustre and wear may be affected by the history of the vessel. (Typically from Arezzo or Pisa.)

The presence of Arretine products in Puglia calls for no special explanation. Amongst the potters' stamps recorded from Apulia in *OCK* (see the database, Sources of supply to Italia, Apulia), while the sources are very diverse and the origins of nearly a quarter are wholly uncertain, the largest single source of identified material (20.7%) is Arezzo. It is also notable that, while Puteolan products are well represented (8.7%), those of Pisa, further up the Tyrrhenian coast, reach the Adriatic in significantly smaller quantity (5.2%).

TS2. A slightly less fine clay (more granular? more vesicular?) with a slightly mottled pink and white appearance. Surface finish is less smooth than for TS1, presumably because of the more granular character of the clay. Potting also less good, with turning-marks generally apparent. Slip generally even and of low to medium lustre. Colour as TS1. From the Po Valley?
Examination of the distribution of potters' stamps for the various Adriatic provinces of the Roman empire in *OCK* shows an increasing dominance of Po Valley products as one proceeds towards the head of the Adriatic. A value of 10.5% for the known representation of Po Valley potters in Apulia indicates that these products are certainly to be expected in the survey area. Most readily identifiable are fragments of mould-made Sarius-cups.
TS3. Not easily distinguishable from TS2, but the clay has a warmer colour ('orange-pink') and is prominently micaceous. Surface finish and slip as TS2. Typical of the workshop of *P. Crepereius* and *Nothus* somewhere in the vicinity of Venosa (See *OCK*, p. 35). The comparative figure in the OCK database for the recorded output of stamped vessels from this workhop in Apulia is 6.5%. They are therefore certainly to be expected in the survey area, if they can be identified.
TS4. Finely granular orange or pale orange-buff clay with some fine mica and sometimes a few black specks. The slip varies between orange and red and typically has a high gloss. (The fact that the slip is often dull on the inside of the foot suggests that the gloss was obtained by careful polishing before firing, rather than by sintering as a result of firing.) This Campanian production, first defined (though without knowledge of its source) as 'Tripolitanian' Sigillata in Kenrick 1985, 283-302 and subsequently identified with 'Produzione A della Baia di Napoli' (Soricelli 1987) has since been given a number of names, most recently 'Campanian Orange Sigillata' (Kenrick 1996, 43) or 'Vesuvian Sigillata.'(see McKenzie-Clark 2012).
Rare in the survey area (and hitherto barely recognized on other sites in the region), but certainly present.
TS5. Highly micaceous orange-red clay, often flaky, with a waxy orange-red or red slip. Eastern Sigillata B2 (see Hayes 1985, 49-70).
This fabric, from Tralles in Asia Minor, has been widely recorded on sites around the Adriatic. Without any attempt to be representative, the following publications constitute a few pointers. At the head of the Adriatic, see Maselli Scotti 1987 for Aquileia and Trieste; in the Marche, Mercando 1974, 155 fig. 9.3a and 306 fig. 219.136a belong to this ware; in Puglia, at Monte Sannace, the ware was certainly present but was not recognized – see Rossi in *Monte Sannace* where pl. 320.6 certainly belongs to this ware, and probably also pl. 320.5. (Indeed, the attribution of the items illustrated in pl. 320 to the 1st century BC certainly underestimates the terminal date of the evidence by around 200 years: apart from the ESB, there are undoubtedly – in pl. 320. 7 and 14, and possibly 9, 10, 12, 13 – examples of African RS ware of the 2nd century AD. This error is perpetuated in Ciancio & Amatulli 2012, 59.) In the excavations beneath the cortile of the Vescovado at Brindisi a wide variety of imported fine wares was recorded, which included examples of this ware (R.D'Andria 1997; Id. 2012). Across the Adriatic in Albania, Eastern Sigillata B has been widely recorded: see Shehi 2010, 73-113. Finally, in the Vagnari excavation (up to 2009) four examples were recorded, including A.Small & C.Small 2007, 195 and fig. 39, P771.
For the first three fabrics, the typology referred to is that in *Consp.* For the last, the standard typology is that of Hayes 1985.

I. TS1: high-quality terra sigillata, mostly from Arezzo or Pisa
NOTE: in the following list alone, items from Site 229 are listed first, since this site has yielded an exceptionally high proportion of this ware.

988	229 1016	Pl.23. P2029. Wall-frag. of mould-made decorated chalice, showing the lower part of a standing figure. Augustan–mid-C1 AD.
989	229 Ar.5	Fig.23. P500. Base frag of decorated chalice? Ø foot 9.0. Augustan/ C1 AD.
990	229 Ar.4	Fig.23. P494. Rim of cup; smooth dull reddish gloss. Possibly *Consp*. 8. Early Augustan?
991	229 1190	No illus. P2002. Rim-frag. of plate. *Consp*. 18.2. Mid-Augustan.
992	229 Ar.6	Fig.23. P481. Vertical rim of plate, *Consp.* 18 or 19. Ø 23.0. Late C1 BC/ early C1 AD. A similar rim from Site 124 (P198).
993	229 Ar.5	Fig.23. P7737. Part of cup with rouletting on upper part of wall, bounded below by a projecting flange. Max. Ø ca. 9. *Consp.* 33.2. Late Augustan/ Tiberian.
994	229 Ar.1	Fig.23. P477. Part of cup with restricted wall and out-turned rim; fine rouletted decoration on wall. Ø 11.2. *Consp*. 32.1. 2nd quarter C1 AD.
995	229 Ar.8	Pl.23. P508. Tiny rim-frag. of *Consp.* 20 plate with applied female mask. Such masks are common as applied motifs. The fullest treatment known to me is in Schindler-Kaudelka *et al.* 2001, 72-73, type M. This example is perhaps closest to M32 (though not identical). 30–80 AD.
996	229 Ar.6	Fig.23. P480. Rim of dish. Ø 20.0 *Consp.* 3.2. 2nd half C1 AD.
997	229 Ar.2	Fig.23. P507. Rim of lid? Ø ca. 19. Lids in ITS are attested but not common (see *Consp*. 54). If the angle has been misjudged, however, this could be a late dish, Consp. 3.2. C1 AD?
998	229 Ar.B	Fig.23. P511. Foot of large platter, approximately *Consp*. B1.12. 25–75 AD.
999	229 Ar.5	Fig.23. P7736. Foot of large platter, approximately *Consp*. B1.12. (Suggested thickness immediately outside line of foot seems improbable.) 25–75 AD.
1000	229 1146	Pl.23. P2024. Centre of plate with stamp, VILLINA *in planta pedis*. OCK type 2431.2, Sex. Villius Natalis, probably of Arezzo. This stamp has been recorded at Interamna Lirenas, Syracuse and Alexandria. 15-40 AD?

1001	229 Ar.4	Pl.23. P493. Frag. of cup or plate, probably this fabric. C[...] *in planta pedis*. 15 AD onwards.
1002	229 1145	No illus. P2015. Small sherd from centre of platter with edge of central stamp, shape and character uncertain (not rectangular or *planta pedis*). C1 AD.
1003	124 C1	Fig.23. P44. Triangular rim above vertical wall. Ø ca. 15. Either the rim of a carinated cylindrical cup, *Consp*. 27, or possibly the rim of a decorated chalice, *Consp*. R9.3. In either case the date is probably 2nd quarter C1 AD.
1004	906	Fig.23. P2012. Part of platter with square-cut, fairly low ring-foot. Broad band of rouletting between double grooves above line of foot. Very clean, hard, pink clay with brilliant red-brown slip. Resting-surface and inside of foot unslipped. *Consp*. B1.5. Augustan.
1005	120	Fig.23. P84. Rim of *Consp.* 20.4 dish, dullish slip. Ø 17–18. 30–80 AD.
1006	372 M6	No illus. P878. Tiny frag. of plate with vertical rim and applied festoon. *Consp*. 20.4. 30–80 AD. 2 other rims of this form from this site (square O5)
1007	145-9 Ar.145	No illus. P147. Base of platter, *Consp.* B1.9 (?); broad band of rouletting on floor. C1 AD.
1008	124 D1	No illus. P1268. Sherd from outer floor of a large platter. Augustan/ C1 AD
1009	124 B2	No illus. P45. Foot of dish *Consp*. B2.7. Mid-C1 AD?
1010	335	No illus. P780. Est Ø of base 10. Frag. from floor of plate. Augustan/ C1 AD.
1011	120 H12	No illus. P259. Wall-sherd of carinated cup, *Consp*. 26 or 27. 1st half C1 AD.
1012	372 N6	Pl.23. P877. Part of cup with curving floor and central stamp. Pinkish-brown clay, good semi-lustrous slip. OAEI or the like. OCK type 3.5, interpreted as "A EPOI", but this is not very convincing. A potter of central Italy. 10 BC–10 AD.
2. TS2: less fine terra sigillata, possibly from the Po Valley		
1013	229 1189	Pl.23. P2006. Wall-frag. of curving cup (Sarius-cup?) with vegetal decoration. Fine mottled pink clay with some very fine mica (?); barely lustrous red-brown slip, turning-marks on inside. *Consp*. R13. For typical vegetal decorative schemes, see Schindler-Kaudelka 1980, pls. 44.3 with 117 and 60.136 with 119. Augustan?
1014	229	No illus. P786. Part of upper body and handle of a SARIVS-type bowl. Looped strap handle bearing 4 grooves. Smooth light red clay; dull red slip, semi glossy on outside. Po Valley product? *Consp*. R13. Augustan.
1015	124 D1	Pl.23. P66. Sherd of vessel with relief decoration (leaf swag?). Rather dark mottled clay (almost like La Graufesenque) with red slip of low lustre; not visibly micaceous. Possibly a Sarius-cup, *Consp*. R13. Augustan?
1016	145-9 Ar.145	Fig.23. P146. Rim-frag. of plate. Ø ca. 15. Pale buff clay, micaceous, with worn, uneven and barely lustrous red slip. This fabric? *Consp*. 4. First three quarters C1 AD?
1017	120	Fig.23. P59. Rim of hemispherical cup. Ø ca. 7. Mottled pinkish-brown clay, thick reddish-brown slightly glossy slip. *Consp*. 37. 2nd and 3rd quarters C1 AD.
1018	120	Fig.23. P83. Base of hemispherical cup. Pale orange clay with slightly uneven red-brown slip. Ø of foot 5.0. *Consp*. B3.13. C1 AD.
1019	120	No illus. P257. Frag. of hemispherical cup. Late Augustan/ C1 AD.
3. TS3: possibly produced in Puglia		
1020	335 A3	No illus. P814. Rim-frag. of platter, *Consp*. 12.3 (? worn). Est. Ø 24. Micaceous orange-pink clay; dull but even slip. This fabric? 15–1 BC?
1021	703 F0	Fig.23. P1763. Low square-cut foot of dish or plate. Ø foot ca. 9. Moderately micaceous orange clay, very worn dull red slip. Close to RRS2 in appearance (see below), but smoother finish. C1 AD?
4. TS4: Campanian Orange Sigillata		
1022	906 C3	Fig.23. P2019. Plate with sloping wall and chamfered rim; convex moulding on inside of lip. Est. Ø 37 (very approximate). Kenrick 1985, 289 Form B404; McKenzie-Clark 2012, 57 Form P2.15. 1st quarter C1 AD?
1023	124 D1	Fig.23. P68. Square-cut ring-foot of platter with flat floor. Est. Ø of foot 17.5. Typical Campanian fabric. Fine Arretine-style rouletted band above foot. Cf. Kenrick 1985, 293 Form B415.2. 1st quarter C1 AD?
1024	145-9 Ar.145 K08	No illus. P143. Frag. of foot of small dish. Orange clay, only faint traces of slip, possibly this fabric. C1 AD?
5. TS5: Eastern Sigillata B2		
1025	229 Ar.6	Fig.23. P482. Part of deep dish with flat rim. Est. Ø 28. Hayes 1975, Form 76. 1st half C2 AD. Another frag. from Site 229 (P7734, base).

1026	372 O5	Fig.23. P1269. Part of bowl with steep wall, broad everted rim and inwardly hooked lip. Micaceous orange clay, soapy, flaking orange-red slip (definitely ESB2). Hayes 1985, Form 79, a rare form, but for a parallel from Trieste see Maselli Scotti 1987, 214 pl. 3.7 (caption transposed with pl. 4!). Late C1/ early C2 AD?
1027	229	No illus. P8123. Frag. of Hayes 1985, Form 60. Another tiny body-sherd of Eastern Sigillata B2 from Site 214 (P409). Flavian/ C2 AD.

B. African Red Slip Ware

The primary source of reference is Hayes 1972; where no other authority is cited, the dates are those proposed in that publication. Revisions of great utility are to be found in Pröttel 1996 and Bonifay 2004. The various fabric sub-divisions (where noted) approximate to those in widespread use.

ARS-A The sandy orange fabric with a thick, semi-lustrous slip that is characteristic of early forms from northern Tunisia. See Pröttel 1996, 25 and refs. there cited.

ARS-A/D Also a sandy fabric, but with a thicker, bright orange slip all over, originating in central Tunisia. (See Bonifay 2004, 50 with refs.) Rare amongst the survey material.

ARS-C A more refined clay, generally a darker red than the preceding, with carefully smoothed surfaces and a barely lustrous slip covering the whole of the inside, but only part of the outside. From central Tunisia, primarily Sidi Marzouk Tounsi. (See Bonifay 2004, 50 with refs.)

ARS-C5 A fine pinkish fabric, often splintery, and with a thin semi-lustrous slip on the inside and over the rim; characteristic of the distinctive Hayes Forms 82, 84, 85. Central Tunisian (see Bonifay 2004, 165).

ARS-D A somewhat heterogeneous group of various fabrics, which are coming only slowly to be more precisely distinguished and subdivided. This was not attempted for the survey material; nonetheless, as a broad group, they comprise the typical, heavy forms of the 4th to 7th centuries AD and originate in general terms from northern Tunisia (particularly from El Mahrine, Oudhna and Sidi Khalifa). See Bonifay 2004, 48.

ARS-CkA Vessels for cooking, in a fabric close to ARS-A, but usually only partially slipped, and with a rim blackened by reduction in the kiln. See Bonifay 2004, 211.

A number of useful maps showing the recorded distribution of fabrics A, A/D, C and D in Apulia has been published by Rizzitelli in *Ordona X*, 273-276, tavv. 322, 323, 324, 326. This picture is enlarged by several papers in Fioriello 2012, notably R.D'Andria on Brindisi (139-154), V.Melissano & G.Mastronuzzi on Vaste (155-177) and C.Politto on Lecce and Rudiae (179-198).

1. ARS-A: Northern Tunisia, C1-3 AD

1028	813	No illus. P1859. Rim-frag. of dish, Hayes Form 3A or B. See Bonifay 2004, 156: 75–150 AD.
1029	124 C1	Fig.24. P46. Rolled rim of bowl, Hayes Form 5C (?), with thick gloss. Est. Ø 26. C2 AD?
1030	124 D3	No illus. P197. Rim-frag. of dish, Hayes Form 3C. C2 AD?
1031	124 D3	No illus. P196. Rim of dish, Hayes Form 6. See Pröttel 1996, 26: C2–mid-C3 AD.
1032	372	No illus. P8016. Frag. of bowl, Hayes Form 7A. Flavian–early C2 AD.
1033	135	Fig.24. P109. Rim of bowl, Hayes Form 8A. Est. Ø 22. See Bonifay 2004, 156: Mainly 2nd half C2 AD. Other frags recorded from Sites 124 (P210), 135 (P108), 229 (P499, 501), 335 (P8019), 353 (P769), 372 (P8023, P8024, P8027, P8028), 906 (P8044).
1034	531	Fig.24. P8034. Rim of bowl, Hayes Form 8B. Est. Ø ca. 23. See Bonifay 2004, 156: C3 AD. Other frags recorded from Sites 335 (P8018), 372 (P8025).
1035	spor.	Fig.24. P1842. Rim of bowl, Hayes Form 9A. Est. Ø ca. 20. See Pröttel 1996, 26: C2 AD. From UTM 611250/4521490 Another rim noted from Site 114 (P58).
1036	124 D1	Fig.24. P67. Rim of bowl, Hayes Form 9B. Est. Ø 21. See Hayes 1980, 515: Later C2 or 1st quarter C3 AD. Other frags noted from Sites 114 (P8000), 124 (P8004), 372 (P8031).
1037	139	Fig.24. P117. Rim of bowl, Hayes Form 14B. Est. Ø 20. See Bonifay 2004, 157-159: C3 AD (1st half?). Other frags from Sites 124 (P161), 704 (P1782, P1784), 906 (P7177). and spor. (P8041) at 611911/4520738.
1038	229 Ar.8	Fig.24. P7733. Rim of bowl, Hayes Form 15. Est. Ø 21. See Bonifay 2004, 157-159: later C3 and C4 AD.
1039	722	Fig.24. P8118. Rim of bowl, Hayes Form 16. Est. Ø 14. See Bonifay 2004, 157-159: end C2–beginning C3 AD. 2 further rims (listed as P8040) from the same site.
1040	124 AA2	No illus. P8001. Rim-frag. of bowl, Hayes Form 17. See Bonifay 2004, 157-159: C3 AD.

1041	124	No illus. P160 etc. Frag. of Hayes Form 27. Others noted from Site 124 (P8003), 145-9 (P8012), 906 (P8045). See Pröttel 1996, 28 and Bonifay 2004, 159: end C2–mid-C3 AD.
1042	124	No illus. P203 etc. Unclassified frag. in this fabric. Others were noted from Sites 124 (P8005), 229 (P478), 607 (P1419), 704 (P1785), 906 (P7175).
2. ARS-A/D: Central Tunisian, C3 AD		
1043	704 A2	Fig.24. P1781. Rim-sherd of dish, Hayes Form 31. Est. Ø ca. 30. Slip not very bright but surely this form/ fabric. See Pröttel 1996, 30: mainly 1st half C3 AD.
1044	372	No illus. P8026. Rim, perhaps Hayes Form 17. Another frag. in this fabric noted from Site 704 (P1790: frag. of foot).
3. ARS-C: Central Tunisian, mainly C3 and C4 AD		
1045	347-9 Ar.349	No illus. P8020. Frag. of bowl, Hayes Form 45. AD 230+. Another frag. from this site, area 366 (P8022).
1046	229 Ar.4	Fig.24. P490. Rim of dish, Hayes Form 50A. Est. Ø ca. 25. AD 230+
1047	139	Fig.24. P118. Rim of dish, Hayes Form 50 A/B (?). Est. Ø 30. Clean but rather soft orange-red clay; presumably slipped but surface worn. C4 AD. Similar frags from Sites 530 (P8036), 625 (P8037), 710 (P1809).
1048	229 Ar.6	Fig.24. P484. Base frag. of dish, Hayes Form 50A. From AD 230+.
1049	229	Fig.24. P792. Edge of flat base and shallow rounded lower wall of dish, Hayes Form 50B or similar. Slight external angle marks edge of base; a flanking groove at base of wall. ca. 350–400 AD.
1050	145-9 Ar.147	No illus. P177 etc. Other frags of Hayes Form 50 or similar from Sites 145-9 (P8009, P8011), 213 (P354, P8014), 366 (P8021), 372 (P8029), 710 (P8042).
1051	531	Fig.24. P8035. Rim-frag. of bowl, Hayes Form 52. Ø uncertain. C4 AD.
1052	710	No illus. P1833. Rim-frag. of bowl with internal groove, Hayes Form 53. 350–450 AD.
4. ARS-C5: Central Tunisian		
1053	139	No illus. P188,189. 2 sherds from a large bowl (or bowls) in this fabric.
5. ARS-D: Tunisian productions of the C4 to C7AD		
1054	810 D4	Fig.24. P1847. Rim of dish, Hayes Form 50B. Est. Ø ca. 32. Pröttel 1996, 33: ca. 330–400 AD. Other examples from Sites 139 (P268), 718 (P8043).
1055	810	Fig.24. P1848. Frag. of dish, probably Hayes Form 61C as defined by Bonifay. Est. Ø ca. 30. See Bonifay 2004, 170: middle to 2nd half C5 AD. A second tiny rim-frag. (P1849) from the same site.
1056	145-9 Ar.147	No illus. P8010. Rim of dish, Form 61, noted by Hayes (no further details). C5 AD.
1057	213 A	Fig.24. P406, Part of flat-based dish with impressed palm-fronds, Hayes Type 1a, style A(i-ii). See Pröttel 1996, 63: ca. 350–450 AD.
1058	139	No illus. P190 etc. Wall/ base-frags from C4/ C5 dishes also noted from Sites 201 (P315) 213 (P365), 321 (P741) and spor. (P705) 61386/4516494.
1059	F2 M18	Fig.24. P1907. Broad hooked rim of dish/ bowl Hayes Form 67 or 68. Est. Ø ca. 30. Red clay with abundant fine colourless quartz; dull, cherry red slip, lightly burnished. African? See Pröttel 1996, 46; Bonifay 2004, 171: ca. 350–450 AD.
1060	718	Fig.24. P1823. Rim-frag. of bowl, badly battered, Hayes Form 68. Ø uncertain. Pröttel 1996, 40: mid C4–mid-C5 AD.
1061	213 C	No illus. P8015. Frag. of bowl, Form 73, noted by J. W. Hayes (no further details). See Pröttel 1996, 48: ca. 400–460 AD.
1062	349 C2	Fig.24. P854. Rim of dish or bowl, est. Ø ca. 32, recorded by Hayes as Form 93B in Oudhna fabric, though this form is not listed amongst the Oudhna output in Bonifay 2004, 55 and the profile does not really conform to the indicated form. It seems more likely to belong to the output of el Mahrine: See Mackensen 1993, 335-339, Form 18.2. ca. 450–550 AD.
1063	347-9 Ar.366	Fig.24. P836. Base of dish or bowl in fairly clean red clay with very smooth surfaces, thin orange-red slip inside and out. Cf. Hayes Form 99: C5/C6 AD.

1064	347-9 Ar.349 D3	Fig.24. P851. Rim of dish, Hayes Form 104A2. Est. Ø 36. See Bonifay 2004, 183: 2nd quarter and mid-C6 AD. A battered frag., perhaps this form/ fabric from Site 134 (P225).
6. ARS-CkA: North Tunisian cooking ware		
1065	124	Fig.24. P20. Rim of casserole, Hayes Form 23B. Est. Ø 14. See Bonifay 2004, 211: probably 1st half C2 AD.
1066	704 AA0	Fig.24. P1779. Body-sherd of casserole of this form. Other frags of this casserole form from Sites 124 (P8002), 145-9 (P8007), 372 (P8022, P8033), 704 (P1780), 719 (P7187, P8039), 906 (P8046). Flavian–end C4 AD.

C. ***Regional red slip ware***

This designation was used to group together wares which belong typologically to the traditions of ITS and/or ARS, but which were not recognized as belonging to any of the widely traded wares of the Mediterranean. It was therefore assumed that they were products of more local origin, belonging either to southern Italy in general or possibly to the Adriatic coast of the Balkan peninsula (Albania or northern Greece). The designation has already been used in previous publications of material from Vagnari (A.Small & C.Small 2007, 162; Kenrick 2011; Kenrick 2014a; Kenrick 2014b). The subdivisions relevant to the survey material which have been applied (where possible) within this category are the following.

RRS1. Clean, finely granular orange-pink clay, micaceous, not unlike that of the Venosa sigillata (TS3). Dull but adherent blotchy red slip. Multiple rouletting. Hard fired.

RRS2. Finely granular buff to orange clay, rather soft-fired, with moderate to abundant very fine mica, also sparse fine white sand and earthy red specks. Dull red slip, usually worn and evanescent. Multiple rouletting. Occasional large white lumps (of lime or calcite?).

This is possibly only a variant of RRS1, from the same source, which I have suggested elsewhere (Kenrick 2014a, 139-142; Kenrick 2014b, 405-406) to be comparatively nearby, since the clay seems to correspond to that used also in plain and cooking wares at Vagnari, and to fabrics recorded 20 km away at Masseria Ciccotti (Fracchia & Hayes 2005, 150-152, 'slipped common wares'), while it does not correspond to related wares at Ordona.

RRS4. Fine clay, mica sparse or absent, fired buff to orange-red. Moderate tiny white specks are visible when the clay is fired orange or red. Dull slip, shades of red or brown.

RRS7. Essentially thin-walled ware. Very clean and hard clay, fired orange or grey (possibly the same as RRS3); uneven, barely lustrous slip, fired brown to black and crazed where thick.

NOTE: this is deliberately placed here amongst the Roman red-slipped wares, even though the dominant colour is grey! Possibly a North Italian fabric: see Maioli 1973, though the shapes recorded in the Basentello Valley survey do not find ready parallels amongst the material illustrated by Maioli.

[In addition to the pieces catalogued, 18 thin-walled sherds were recorded from the surface survey of Site 229 – Eds.]
The number of items which have been assigned to individual fabrics is small, and until there is a considerably larger body of data (preferably from stratified contexts) it will be difficult to give a coherent account of their relationships and chronology. There may be representatives of wares produced in Epirus/ Illyria (Shehi 2010, 124-130 and 223-253) though the wares recorded in the survey are likely to extend much later than the chronological range of Shehi's study (down to the C2 AD). Another possible source is the Peloponnese (Hayes 2008, 113-114), but I am not currently confident of being able to identify products from either of these sources. The material is therefore presented below as a single list, arranged typologically and without regard to source or chronology.

1067	145-9 Ar.145 K12	Fig.25. P151. Rim of dish or bowl in grey-brown clay with much fine crystalline quartz (?) and brown specks; thin orange-red slip on inside only. Ø uncertain. An imitation of Hayes form 50 in ARS ware? C3/ C4 AD?
1068	223 E57N26	Fig.25. P4991. Carinated bowl, slightly out-turned rim. Exact angle uncertain. Edge of rim damaged (Ø uncertain). Medium brown clay, slightly lustrous brown slip inside and on top of rim. None remaining outside. Presumably related to early Roman terra sigillata: for a Corinthian example see Hayes 2008, 282 and fig. 55, no. 1728, C1 AD.
1069	124	Fig.25. P21. Base of plate in RRS4. Orange clay with fine sparkles, possibly mica, slightly vesicular; thin but lustrous orange-red slip on outside only. Est Ø of base 9.5. This fabric? Possibly TS4 (Campanian) but the potting looks too uneven.
1070	229 Ar.5	Fig.25. P7735. Base of dish. Ø foot 8.0. Orange micaceous clay with moderately lustrous orange-brown slip all over. The profile is typical of ITS in the 2nd half C1 AD (cf. *Consp.* B2.6).
1071	229 Ar.8	Fig.25. P7732. Foot of platter. Ø foot 10.8. Pale orange, slightly micaceous, gritty clay with uneven slightly lustrous orange-brown slip, all over foot on side and in tondo. Cf. *Consp.* B1.12 in ITS: C1 AD.

1072	820 B1	Fig.25. P7176. Part of dish with low ring-foot, Ø 14.0. Reddish slightly sandy clay, minute white and blackish grits, slightly lustrous orange-brown slip all over, underside of foot damaged. Cf. *Vagnari*, 213 P1264 from the Vagnari excavation, in a layer dated to the C5/ C6 AD. A similar base from Site 710 (P8038).
1073	124 B1	Fig.25. P40. Thin-walled rim of bowl in RRS1, pale orange clay with red-orange slip: band of rouletting below rim. Est. Ø 15.0. C1BC/ C1AD?
1074	335 A3	Fig.25. P815. Hemispherical cup with chamfered rim in RRS1; groove below lip on outside. Buff clay with very fine mica; traces of red slip inside and out. Ø very approximately 10.
1075	229 1190	Fig.25. P2005. Small dish or bowl with vertical wall and internally thickened rim in RRS2. Ø ca. 15. Cf. *Vagnari*,174, table 5.20 and fig. 5.50 in RRS1. C2 AD and related to Hayes Form 14 in African RS ware (as No.1038)?
1076	813 C2	Fig.25. P1885. Small frag. of steep-sided cup with chamfered rim in RRS2. Ø ca. 13. Finely granular buff clay containing some very fine mica and sparse medium quartz and lime; dull red-brown slip, 'spotty' through having worn or flaked off over rough inclusions. This very simple form may occur spontaneously at any period: note examples attributed to the C1 BC in black-slipped and 'grey glaze' wares from Gravina (*cit.* 1992, 104 and fig. 33 no. 813; 146 and fig. 43 no.1026).
1077	229	Fig.25. P788. Open rounded cup in RRS7 with triangular rim (flat sloping top). Ø 9.2. Clean buff ware with black slip all over. Cf. *Vagnari*, 106, table 4.12 and fig. 4.27 P986 in RRS2, from a context dated between the late C1 and mid-C3 AD; also P983 in RRS4 from the same context.
1078	303 A	Pl.23. P711. Body-sherd of thin-walled beaker or bowl in RRS7 with an area of multiple rouletting on the outside, bounded by a horizontal groove. Fine, hard, grey to brown clay with barely lustrous grey/ brown/ black slip; prominent turning-marks on inside. For examples of thin-walled vessels with multiple rouletting from the Vagnari excavation, cf. A.Small & C.Small 2007, 170 and figs. 16, 18 P1033 in RRS2; *ibid.*, 204 and fig. 46 P767 in RRS2; *Vagnari*, 97, table 4.10 and fig. 4.17 P889; 110, table 4.14 and fig. 4.33 P698. Note also many examples of such rouletting on a range of forms in a context of the late C2 AD at Masseria Ciccotti, in Fracchia & Hayes 2005, nos.12-50. All are generally consistent with production in the C2 AD. Similar small frags of beakers or bowls recorded from Sites 124 (P65) and 372 (P874).
1079	906 A4	Pl.23. P2047. Small frag. of beaker or bowl in RRS7 with multiple bands of rouletting on wall. Fine grey clay, even, semi-lustrous black slip. Finely smoothed on outside, turning-marks on inside. Max. dim. 3.0. th. 0.4.
1080	813 C1	Fig.25. P1853. Part of dish or bowl with curving body and thickened, incurved rim (related to Hayes 61 in ARS-D). Ø ca. 20, but very uncertain. Hard, finely granular red clay with moderate fine white specks of lime (?); thin, dull red slip. C4–C5 AD?
1081	214	Fig.25. P347. Part of shallow curving cup with short down-turned rim in RRS2. Ø ca. 14. Soft, finely granular orange clay containing moderate very fine mica; traces of dull orange slip.
1082	F2 K16	Fig.25. P1896. Bowl in RRS4 with steep wall and incurved rim, slightly hooked on the outside, bifurcated at the lip. Max. Ø 19.0. Finely granular buff clay, occasional specks of mica, dull brown slip on inside and possibly over rim (a couple of patches or drips). This is possibly an example of LRPW: cf. *Vagnari*, 178, table 5.25 and fig. 5.54 P713; 274, table 6.18 and fig. 6.51 P643 in RRS2, both of the C5 or later. See also Nos.1115-1116 here.
1083	124	Fig.25. P22. Everted rim of bowl in RRS7. Angle of rim uncertain (wall assumed to have been more or less vertical). Ø uncertain. Fine grey-brown clay with thin, dull grey slip.
1084	813 C3	Fig.25. P2081. Part of bowl with vertical wall and everted down-turned rim, grooved on top at lip. Ø ca. 16. Red clay with abundant very fine sand, mostly quartz or quartzite; a little very fine mica; barely lustrous red slip all over.
1085	229 Ar.D	Fig.25. P479. Hemispherical bowl with pronounced flange on wall. Ø 15.2. Orangey red clay with dull red slip. Presumably a regional version of *Consp.* 34 in ITS: (mid) C1 AD or later?
1086	229 Ar.8	Fig.25. P7731. Small hemispherical cup with vertical flanged rim. Ø at rim 9.0. Pale orange clay with moderately lustrous pale orange-brown slip inside and out. Worn. No mica. Cf. No.1085.
1087	124 D1	Fig.25. P199. Base of conical cup with rounded ring-foot. Ø 5.4. Dull orange clay, red slip all over. C1 AD?
1088	124 A2	Fig.25. P200. Base of hemispherical cup with ring-foot in RRS2. Ø foot ca. 6. Orange clay with mixed inclusions and smooth but dull orange-brown slip.
1089	F2 L18	Fig.25. P1928. Part of globular bowl or beaker with short everted rim. Ø 13.0. Finely granular buff to orange clay with occasional fine rounded brown and black inclusions (mica sparse); thin, dull brown wash on outside and over rim (? barely visible). RRS2? Cf. A.Small & C.Small 2007, 178 with figs. 24, 25 P705, an approximately similar beaker in RRS2 (late C2/ C3 AD).

1090	704 AA01	Fig.25. P1758. Body-sherd of beaker or cup with horizontal groove and a band of barbotine dots in RRS2. Max. Ø ca. 10. Pale orange clay with mica; thin matt orange slip – this fabric? For beakers of similar shape but with broad areas of rouletting on the wall, see No.1078 above and the parallels cited there; this example (with barbotine dots rather than rouletting) is closer in style to an example from Vagnari in RRS7: *Vagnari*, 110, table 4.14 and fig. 4.33 P694. That might suggest a date in the C1 or C2 AD. It is difficult, however, to ignore the similarity of this small frag. to a piece from a context of the 1st half C1 BC from Gravina: see *Gravina II*, 161 and fig. 52, no. 1146. The cited frag. is unslipped, but others from the same context do have a surface coating.
1091	145-9 Area 147, D6	Fig.25. P218. Part of beaker with thickened, everted rim in RRS4. Ø 5.5. Finely granular buff clay with mixed inclusions; thin, dull brown slip on outside and over top of rim.
1092	139	Fig.25. P114. Part of beaker or bowl with flat base in RRS2. Ø 5.0. Red clay with mixed inclusions, mostly quartz, and dull brown slip inside and out. Similar base in the same fabric from Site 704 (P1836).
1093	905	Fig.25. P2009. Frag. of shallow conical lid (?); feather-rouletting on upper surface. Ø ca. 15. Finely granular orange clay with a little very fine mica; thin surface wash of the same colour. Could be C5 ARS, but perhaps more likely to be earlier regional slipped ware. C2/C5 AD? (Other context material favours C2.)
1094	120	Pl.23. P70. Frag. of lid (?) in RRS7, convex but shallow, with multiple rouletting on outside. Very fine pale grey clay with thin, dull, dark grey slip. Cf. No.1078 and discussion.
1095	372 L4	Fig.25. P873. Part of lid rim in RRS4. Ø ca. 18. Orange-buff clay, moderate inclusions, mostly lime, non-micaceous; dull brown slip.

16. LATE ROMAN PAINTED WARE

I. Introduction

by Alastair Small and Carola Small

Name and general description of the ware

The class of pottery considered in this part of the catalogue was called Late Roman Painted Common Ware by Joann Freed (1982, 1983, 1985). It is generally known in Italian as *Ceramica comune dipinta* (Annese 2000, Leone 2000) or, more precisely, as *ceramica comune dipinta tardo antica* (Di Giuseppe 2008, 335; Fracchia 2008, 300), although in common parlance it is frequently called Calle ware/*ceramica di Calle* after the name of the site where it was first identified. We shortened the description to Late Roman Painted Ware (LRPW) in the Vagnari volume (*cit.)* but the term is not wholly satisfactory as a designator for this class of pottery because, although production of the ware had begun before the end of the Roman Empire in the West, it occurred mainly in the late 5th and 6th centuries, and continued well into the 7th (see below). It lasted therefore throughout the period conventionally called Late Antique, and for the first part of the Lombard period of the Early Middle Ages. This is not, however, the place to try to impose a new term, so we continue here to refer to it as LRPW.

The ware was produced in a limited number of characteristic shapes, generally in an orange-brown compact fine fabric, only moderately hard (so that it can be easily scratched with a thumb nail), and painted with broad areas of reddish-brown slip, sometimes fired to dark brown/ black. Big shapes, especially deep bowls and storage jars, were ornamented with large decorated rims and flanges, and the surfaces were enlivened with groups of wavy lines or narrow horizontal grooves. Smaller shapes, especially dishes, were decorated only with the reddish slip.

The fabric and production centres

None of the pieces was analysed scientifically, but close visual inspection suggests that, in spite of differences of colour tone and degree of hardness which are likely to result from variable firing conditions, the ware is remarkably uniform. Most of the pieces have the same fine compact clay, with at least some mica. In many cases the clay has been well purified so that there are no inclusions visible to the naked eye, but a number have minute grits, mostly white, but also grey and brown. Such variations do not necessarily indicate that they come from a different source. In a few cases, however, there are more conspicuous inclusions which suggest that a piece was produced by a less competent potter, and perhaps came from a different area, e.g. No.1178, which has more conspicuous white grits and No.1131 with a few minute white and brown inclusions and one angular grey one up to 2mm. No.1146 which showed no mica, and contained some black inclusions up to 3mm in length is likely to come from a volcanic region. Some other pieces show only a few specks of mica and some none at all. That may suggest that they too come from a different source, but it would be unwise to draw any firm conclusion without confirmation by archaeometric analysis.

The potting technique

The pots show considerable skill on the part of the potters, both in the preparation of the clay, and in the throwing of the pot, which was done on a fairly fast-turning wheel. (For a fuller discussion of the technique see esp. Di Giuseppe 1998, 735). Few pots show signs of sagging, and the heavy rims and flanges of the large vessels (Forms 42 and 43) have generally been modelled

without distorting the walls from which they spring. The decoration was applied rapidly to the larger pots, especially multiple wavy lines impressed with a comb-toothed instrument on the rims and upper walls while the surfaces were still soft. The lower walls of large pots were sometimes finished while the wheel was still turning with a coarse brush that left numerous narrow and shallow horizontal grooves on the pot wall (as in Nos.1099, 1154, 1191, 1192, 1193). On the more ornate rims, zones of wavy lines or rouletted grid patterns are punctuated by added "buttons" of clay. The slip, consisting of a more dilute fine clay with a high ferrous content, turns to various shades ranging from orange to black in firing depending on the management of the kiln. It was generally applied rapidly and rather haphazardly with a brush or sponge to the most conspicuous parts of the pot, leaving large reserved areas with irregular edges. The wet slip frequently dripped down the wall of the pot into the reserved areas. In the case of the larger pots the rims and shoulders were decorated in this way. Smaller pots, especially bowls, might be dipped directly in the slip and then inverted so that the inside was completely slipped while much of the outside was left reserved except for dribbles of slip which had run down the walls. The pots were generally fired in a reducing atmosphere, and at a temperature around 850–900 degrees centigrade (Leone 2000, 396 fn. 27). The resulting fabric was only medium-hard with the result that the surfaces were easily abraded, and in our field survey material which has been turned over and over again by the plough, there are sometimes only a few traces of coloured slip left, generally in the impressed grooves. It is sometimes impossible to know whether a pot was painted with slip or not.

The difficulty is compounded by the fact that many of the forms of the ware were also produced in plain ware, probably by the same potters. In some publications no distinction is made in the typology of painted and unpainted pots, except that the presence or absence of coloured slip may be noted in the individual descriptions (e.g. Salvatore 1991, 271-275, "ceramica comune"). That policy is not followed here, since some shapes were made only in plain wares, and to separate out those which might have been painted from those which certainly were not would involve some arbitrary decisions. In fact only 2 pots in our plain series can be regarded as close equivalents of LRPW types (compare the Nos.1142, 1106 in LRPW with Nos.1239 and 1234 in plain ware). Some potters occasionally replicated LRPW shapes in plain ware or even in cookpot fabric, as in the case of the large funnel with in-turned ridged rim (Form 53). No.1324 in cookpot fabric was probably of this shape and may be compared with No.1111 below.

The range of shapes

The commonest shapes found in the survey are the deep bowls with flanged rims (Form 42) and the large and deep storage jars or perhaps basins (Form 43), with 22 and 23 instances respectively. Next come table amphorae and flagons (impossible to distinguish if only the handle or a small portion of the rim is preserved) with 19 instances, and miscellaneous dishes with 15. There are 5 funnels, 3 miscellaneous jars, 1 globular pot with vertical handle, 1 carinated bowl with offset rim, and 1 lid. The figures give the impression that production of the ware concentrated on half a dozen shapes, of which the most important were Forms 42 and 43. This impression is likely to be skewed to some extend by the fact that most, if not all, of the sherds come from fields which have been deep-ploughed for about forty years, so that the pieces which have survived the process of continuous attrition best are generally large thick sherds such as the fragments of heavy rims found on these forms, and the amphora and jug handles shown on Pl.25. Finer pots like the dishes and funnels may well be under-represented. Nevertheless, the great importance of deep jars and amphorae in the LRPW repertoire is confirmed by their frequency on excavated sites.

The function of the shapes

The bold decoration of many of the largest pots, especially the deep basins and jars (Forms 42 and 43) shows that they were intended for show. It is likely, therefore, that they were used for meals in which a large number of people participated. Helga di Giuseppe has argued that they must have contained largely liquid foods, perhaps gruels based on pulses, which would have been prepared in the lidded cookpots typical of this period, and then transferred into these large containers (Di Giuseppe 1998, 738). But it is unlikely that the food was always served wet because, if that had been the case, it would have had to be transferred again into smaller dishes to be consumed. Such dishes exist, but they are not numerous, either in LRPW or in plain ware. There may have been more suitable pots in other materials (such as wood) that have not survived, but it is surely more probable that the large serving vessels contained food that could be eaten with the fingers, perhaps with the help of trenchers of bread, as was a normal custom in the Central Middle Ages. The spouts found on many of the large vessels of Form 42 were perhaps intended for pouring off liquids so that the remaining food could be consumed in this way.

Another characteristic LRPW shape is the funnel (Form 53) particularly well represented on Site 408. Such pots were presumably intended to be used in pouring liquids into narrow-mouthed containers, such as the table amphorae or flagons. A complete example (restored in a drawing) of a funnel from San Giovanni di Ruoti (hereafter SGR) would have fitted comfortably into the mouth of either shape (SGR P3383, to be published in a forthcoming volume on the artifacts from the site). It seems likely, therefore that the funnels were used to fill table amphorae or flagons with wine poured from a larger container such as a transport amphora or wine-sack.

Drinking vessels were probably not made in this ware. Two of the dishes published here (Nos.1098 and 1099) are just about small enough in diameter to have been used for that purpose, but their thick rims must have made them uncomfortable for drinking from. It is more likely, therefore, that they were used to hold liquid or semi-liquid foods. The preferred material for drinking vessels was probably glass (as Nos.2011-2015) or metal.

In general, these dinner furnishings must imply that a drastic change in dining customs took place around the middle of the C5 AD, requiring the development of a new kind of table ware. These large heavy pots must have been placed on strong tables, and the diners who used them must have sat at the tables. I have argued elsewhere that this must have been the practice at SGR,

where the room best suited for dining is a long and relatively narrow room that could have accommodated a long table and benches, but would not have been well adapted for a Late Roman *stibadium*. The custom of dining at tables had never entirely disappeared from the Roman world: it was always the practice of the lower classes (Hermansen 1981, 22, 44), and it was the normal custom of the Germanic peoples who continued to use it when they invaded Italy, as. for instance, did the Gothic king, Totila, who refused to recline when dining with Sabinus bishop of Canusium, but sat at his right hand (mentioned in Chap. XI.2.iii.d).

Comparanda and distribution

The distribution pattern of LRPW has been well studied by Di Giuseppe (1998, esp. map p. 747, fig. 10). It circulated widely over South Italy from Campania to Calabria (as far as Sibari) and the Salentine peninsula (as far as Egnazia), but it is particularly well attested in North and Central Apulia and in Central and Eastern Basilicata, especially in inland areas. Our material from the Basentello valley therefore comes from near the centre of the distribution circle. It is becoming increasingly clear, however, that although the LRPW shares common characteristics across this area (the techniques of production and decorative style) and the principal shapes may be found in all places where the ware is well represented, there are numerous minor differences in the material. The LRPW used at Vagnari and in the Basentello valley has generic similarities to that found, for instance, at Ordona, Calle and SGR, but it is surprisingly difficult to find close comparanda at any of these sites. This suggests that LRPW was produced by potters who worked within a shared tradition but who were not subject to the kind of strict control that must have been exercised in workshops producing pottery on a large scale with a substantial labour force, like those that had made the much more standardized *terra sigillata* wares of an earlier period, or the red-slipped pottery imported from North Africa. It is likely, therefore, that there were various workshops supplying limited areas, and occasionally selling their products further afield (cf. Leone 2000, 398; Leone & Turchiano 2002, 881). The general areas supplied from different production centres in North Apulia are gradually becoming clear (see Gliozzo *et al.* 2012) although the only workshop that has been reliably identified is at Calle near Tricarico in Basilicata (Salvatore 1983, Di Giuseppe 1998). Several other workshops have been suggested (but not proved) in the Bradano valley, at S. Gilio near Oppido Lucano (Di Giuseppe 2008), Trigneto and La Marmora (Fracchia 2005, 140-141; Fracchia & Gualtieri 1998, 326); another seems to have supplied Grumentum: Di Giuseppe 1998, 748. Analyses show that the LRPW from SGR came from a different source from the one that supplied Metaponto, but neither is known (Freed 1982, 184-185).

The pattern of distribution, therefore, suggests that there were many kilns supplying local or sub-regional markets in Apulia and Basilicata. This would explain not only why it is difficult to find exact matches between LRPW from different sites, but also why certain types of LRPW are found in much greater frequency on some sites than on others.

Origins and Chronology

The production of red-slipped pottery in South Italy in the early and middle empire needs more study. Philip Kenrick (A.Small & C.Small 2007, 162; *Vagnari*, 374-375 s.v. "Regional Red Slip ware") has recently drawn attention to the use of local or regional red-slipped wares at Vagnari throughout the imperial period, and a kiln which apparently produced imitations of ARS-C ware was excavated near the abbey of the Trinity at Venosa (Gianfrotta 1991, 43). It is likely, therefore, that the earliest LRPW originates as a development of this tradition. Among the characteristic products in LRPW there is a range of dishes which imitate ARS and Phocaean forms datable between the end of the C4 and beginning of the C6 AD (Di Giuseppe 1998, 739; 2008, 330-334).

The development of the ware over time can be traced through the stratified contexts in the Late Antique villa at SGR. It shows that some forms (table amphorae, flagons, some dishes imitating types in ARS) appeared first shortly before 400 AD, but that fully evolved LRPW, including most notably the deep bowls with elaborate rims and flanges (Forms 42 and 43), only began to be produced after ca. 460 AD. The ware continued in use well into the C7 AD (Small 2005). This chronological structure is confirmed at Vagnari, where only the earliest types have been found in contexts of the early C5 AD (*Vagnari*, 128-129), at Faragola where fully developed types were found associated with Early Medieval huts datable, probably, to the C7 (Volpe & Turchiano 2012, 476, fig. 27; Turchiano 2010, 661 fig. 4; Scrima & Turchiano, 2012) and at Grumento (Cirelli *et al.* 2013, 140).

The distribution of the ware in the survey area and more generally in South Italy is discussed in Chap. XI.

The typology

In the following catalogue the pieces are organized where possible according to the typology of LRPW from SGR established by Joann Freed in her doctoral thesis and revised by John Hayes and Alastair Small for publication in the forthcoming volume on the pottery from the site. Specific pieces from SGR cited for comparison will all be published in that volume.

II. Catalogue

by Pasquale Favia and Alastair Small

1. Dish with slightly in-turned rounded rim SGR Form 20. This is a rare type at SGR where it is represented by a single piece from an occupation layer of Period 3B (late C5–mid-C7 AD).		
1096	134	Fig.26. P98. Soft drab brown clay, matt dark reddish-brown paint inside only. Ø ca. 18.0. Another frag. found in square AG8 of the same site.

2. Small hemispherical or segmental bowl with ridges on exterior and flat base SGR Form 23. This is a long-lasting form at SGR where it appears first in Period 2 (2nd half C4 BC). It is not attested in Period 3A, but it is likely to have continued in use since it reappears in several middens of Period 3B (ca. 460–650 AD), including the latest (Midden 6), and in the destruction layer of the end of that period. It occurs in various minor variants.		
1097	823	Fig.26. P1932. Rim and much of wall. Buff clay, moderate v. fine mica, traces of orange-red paint on inside and on rim. 2 shallow grooves on outside below rim. Ø ca. 16.0. Cf. esp. SG P6603 from midden 2 of Period 3B (late C5–mid-C7 AD).
2a. Variants		
1098	324	Fig.26. P754. Rounded rim with rounded moulding below on outside, separated by 2 horizontal grooves. Matt reddish-brown slip on interior surface. Ø 14.0.
1099	306	Fig.26. P727. Rounded rim with rounded moulding below, separated by groove; shallow horizontal ridges on wall below. Clay greyish-brown in core, drab brown at surface, slightly micaceous. Matt reddish-brown paint preserved inside and in groove outside. Ø 14.0.
1100	905	Fig.26. P7171. Rim, thickened and slightly offset; slight groove below rim, convex curve towards bowl. Pale orange-brown clay with white grits, no obvious mica. Matt dark brown slip on inside and top of rim, worn off outside except for slight traces in groove below rim. Ø 18.0.
1101	229	Fig.26. P2017. Rim with 3 pronounced horizontal ridges (finger impressions) on outer surface. Orange-brown slightly micaceous clay. Red brown slip out and in, slightly burnished inside, worn outside at edge of ridges. Ø ca. 24.0.
1102	124	Fig.26. P179. Rounded rim with groove and rounded moulding below. Traces of rouletted decoration below moulding at bottom of sherd. Hard yellowish-brown micaceous clay, fired orange-brown inside. Matt reddish-brown paint in groove of rim and on outer wall of pot below moulding. Ø ca. 23.0.
1103	235	Fig.26. P561. Rim of jug or small bowl. Rather soft light brown clay with a few specks of mica. A few traces of orange-brown matt paint remaining in the horizontal grooves below the rim. Ø 14.0
3. Dishes and shallow bowls with near vertical rim above a small offset or flange. Close to SGR Form 28, though the rim is more triangular in section than on most examples of the form. At SGR, they are stratified in contexts of Period 3B (ca. 460–650 AD).		
1104	408	Fig.26. P7198. Pale pinkish-brown clay, pale brown surface out, matt reddish-brown slip over interior and ext of rim, dribbles down wall below rim. Ø ca. 17.0, ht. 3.9.
1105	213 C	Fig.26. P388. Low dish with projecting triangular rim. Grey micaceous clay, dark grey matt slip outside, perhaps worn off inside, discoloured by burning. Ø ca. 20.0. Cf. *SGR IV,* SGP7180 from Midden 9 of Period 3B.
4. Dish with shallow wall and high upright overhanging rim *SGR IV,* Form 31, stratified in contexts of Period 3B (ca. 460–650 AD). This is primarily a C6 AD form, probably copying ARS of Hayes (1972) Form 99 or 103. Cf. Leone in *Ordona* X, 401 and 405 tav. IV, type 10 from the Posta Crusta villa, Late Antique phase.		
1106	134	Fig.26. P77. Hard yellowish-brown clay – pinkish-brown in break; matt grey-black paint on inside, possible paint on external surface. Ø 20.0, pres. ht. 4.2. Cf. Di Giuseppe 1998, 739 fig. 4 no. 10 from the kiln site at Calle; Annese in *Ordona X,* 301 and tav. VI from the Late Antique *Domus* B.
1107	335	Fig.26. P779. Rim of large bowl/ basin. Orange-brown micaceous clay, dark grey in core. Remnants of red slip on internal and external surfaces. Ø ca. 39.0.
1108	134	Fig.26. P227. Hard fired grey clay; purple brown slip inside only. Ø ca. 25.0.
1109	408	Fig.26. P7199. Soft orange fabric with sparse minute black and white specks, some tiny air holes and traces of matt dark brown slip on outer wall and edge of rim, worn off elsewhere. Triple wavy line combed decoration on either side below rim. Max. Ø ca. 35.0.
5. Carinated bowl with oblique rim The piece has no equivalent in the SGR corpus.		
1110	408	Fig.26. P2389. Rim and upper wall; rim thickened and slightly out-turned. Wall thickened at carination 4cm below rim. Drab greyish-brown clay with no mica, uneven matt greyish-brown slip outside and in. Ø 26.0. Cf. *Vagnari*, 163 fig. 5.32 P1175 from layer 204 associated with the destruction of the Late Antique building A.
6. Large funnels with in-turned ridged rim SGR Form 53. The form is well attested at SGR where it appears first in a context of Period 3A (ca. 400–460 AD – 1 example) and is commonest in Period 3B (ca. 460–650 AD). It is well attested at Faragola in the settlement of the C7 AD constructed in the remains of the Late Antique building: Volpe & Turchiano 2012, 475-476, fig. 27 nos. 15 and 16.		

1111	347-9 Ar.349	Fig.27. P860. Pinkish-brown rather soft clay with a few specks of mica. Matt reddish-brown paint outside and in. 4 horizontal grooves below projecting rim. Ø ca. 25.0. Cf. No.1324 in cookpot fabric.
1112	408	Fig.27. P7201. In-turned rim thickened on exterior. Groove on outside of rim. Three-fold combed wavy line below rim and matt black-brown paint in and out much worn. Orange-brown micaceous clay, a few small white inclusions. Ø ca. 25.0.
1113	408	Fig.27. P2388. Rim in-turned from pronounced carination. 2 lightly moulded horizontal ribs on exterior. Dull brown micaceous clay, worn matt dark grey slip on outside and in. Max. Ø (at carination) 28.0.
1114	408	Fig.27. P8101.Rim. Rather soft drab brown clay with some mica and a few minute inclusions. 2 low parallel ribs round shoulder, traces of matt grey-brown paint in the shallow furrows between the ribs. Ø 31.0.
1115	408	Fig.27. P7196. Orange fabric, core slightly brighter, covered in matt brown slip much corroded. Small white specks. 3 shallow grooves ca. 3mm wide on outside. Small potting lump on inside. Ø ca. 22.0.
1116	213	Fig.27. P408. Rim, slightly in-turned, probably of a funnel. Slight groove at inner edge of lip. Finely granular orange clay containing a little mica; thin, dull orange slip all over. Ø ca. 22.0.
7. Globular pot with vertical handle(s)		
1117	134	Fig.27. P75. Rim in-turned and thickened. Hard pinkish-brown micaceous clay; matt dark brown paint unevenly over outer surface and dribbled down inside near edge of sherd. Perhaps from a two-handled vessel. Ø 32.0. A rare shape, found also at S. Gilio near Oppido Lucano: Di Giuseppe 2008, 336 fig. 42 no 30 (with no handle preserved on the sherd). I know of no other example of the shape in LRPW, but the rim form resembles that of a class of cooking ware pots well attested in Sicily in the late C8 and C9 AD: cf. Arcifa 2010, 120 fig. 17 from Rocchicella (Mineo). If the analogy is valid, this must be among the latest pieces of painted ware in the survey area.
8. Deep bowl with in-turned rim, bent back to form external flange SGR Form 42. One of the commonest forms in the ware. The comparanda show that these bowls are likely to have had a tubular spout set close to rim, but it is not preserved on any of our fragments. At SGR the form appears first in the top of Midden 1, late in Period 3A (ca. 400–460 AD). It is well represented in all the middens of Period 3B (ca. 460–650 AD) and in the destruction layers at the end of the period (*SGR IV)*. At Vagnari the form is associated with the later phases of the Late Antique buildings A and B, and with the Early Medieval hut constructed over the remains of it: *Vagnari*, 162 fig. 5.32; 183 and 185 fig. 5.65; 211 fig. 5.105. Deep bowls of this type are attested at Calle di Tricarico, with much variation in the treatment of the flange and in the angle of the pot wall: Di Giuseppe 1998, 740 fig. 5. Cf. also Annese 2000, 304-305 and tav. VII, *tipo 7, bacini*, from the Late Antique *Domus* B at Ordona; Leone in *Ordona* X, 400 and 404 tav. III from the Late Antique phase of the villa at Posta Crusta; Di Giuseppe 2008, 336 fig. 42 no 11 from the Roman villa at San Gilio near Oppido Lucano.		
1118	134 AK8	Fig.27. P101. Spouted bowl with in-turned rim, bent back to form external flange. Greyish-brown micaceous clay, yellowish on upper surface of rim; discoloured by burning. 2 groups of parallel wavy impressed lines on rim. Traces of matt dark brown slip adhering in grooves. Rim w. 4.5, Ø uncertain. Cf. Ciminale, Favia, Giuliani 1994, tav. CLI no. 11206 from Belmonte.
1119	342	Fig.27. P2380. Spouted bowl with in-turned rim, bent back to form external flange. Rim with wide internal flange from large open bowl. Orange-brown micaceous clay with small white inclusions. Pale brown surface inside, exterior badly worn. All traces of paint from top of rim have been lost. W. of rim 3.0, Ø and exact angle uncertain.
1120	347-9 Ar.349	Fig.27. P7193. Tip of rim. Orange-brown slightly micaceous fabric with numerous small black and some white grits. 2 grooves in top of rim, traces of matt reddish-brown slip inside and in grooves on top. Ø ca. 24.0.
1121	347-9	Fig.27. P845. Tip of rim. Hard fabric, grey in core, purplish-brown on ext. surface. Int. Ø ca. 26.0.
1122	823	Fig.27 P1934. Rim with 2 wavy combed bands between grooves. Finely granular buff clay, sparse v. fine mica; traces of dull orange slip. Int. Ø ca. 40.0. Cf. *Vagnari*, 163 fig. 5.32 P1174 from layer 204 associated with the destruction of the Late Antique building A.
1123	388/424	Fig.27. P1107. Spouted bowl with in-turned rim, bent back to form external flange. No trace of spout on frag. Fairly hard drab brown clay with some mica. Dark brown paint inside, and in under-hang or rim. Perhaps worn off the upper surface of rim. 5 parallel horizontal grooves on rim. Int. Ø ca. 24.0.
1124	408	Fig.27. P7202. 2 grooves in top of rim and remains of comb impressed 2-wavy lines on flange. Hard fired greenish-grey clay (over-fire) and traces of black paint in grooves and wavy lines. Int. Ø ca. 14.0 min.

1125	134	Fig.27. Pl.24. P95. Rim with parallel wavy impressed lines. Int. Ø ca. 40.0.
1126	823	Fig.27, Pl.24. P7165. Rim. Reddish-brown clay with some very fine mica, fired pinkish-brown at surface. Decorated on upper surface with (from inside to out) row of oblique grooves limited by linear groove repeated 3 times, band of double wavy line, and another row of oblique grooves limited by linear groove. Slight traces of matt reddish-brown paint surviving in some of the deeper grooves and in the impressed wavy lines. From a very large basin, but the sherd is too narrow to allow Ø to be calculated. Rim w. 6.5.
8a. F42 variant with shorter, steeper rim		
1127	370	Fig.27. P866. Orange-brown clay with a little mica. Thickened rim with 3 horizontal mouldings and large circular knob. Matt red-brown paint inside and out. Rim w. 3.5, pres. ht. 5.8, Ø uncertain.
8b. F42 variant with no mouldings on top of rim, and spring of a vertical strap handle, presumably opposite the (missing) spout		
1128	223 Area 225	Fig.27. P588. Rather soft light brown clay with mixed inclusions, slightly micaceous; thin matt reddish-brown paint. Ø ca. 16.0; max. lg. 5.0.
8c. F42 rims		
1129	134	Pl.24. P82. Pale yellowish clay with a little mica; drab surface, discoloured by burning. Undulating parallel incised lines on large extended rim, above rows of ribs subdivided into rectangles by transverse grooves. Traces of dark grey slip on upper side or rim. W. rim 4.0. The motif of subdivided ribs is found on rims of this form at SGR in Midden 4 of Period 3B (*SGR IV,* SGP3123).
1129a	516	Pl.24. P1249. Red-brown slip all over outside; a few traces on the inside wall towards the bottom. 2 incised lines near outer edge of rim; combed three-fold wavy line in centre; 2 parallel incised lines near inner edge. Max. dim. 6.3.
1130	408	Pl.24 Light orange-brown clay. Matt dark red slip, unevenly preserved, inside and out. Two-fold parallel wavy lines incised on top of rim between mouldings. Rim w. 4.2.
1131	306	Pl.24 P728. Impressed decoration of at least six-fold wavy lines flanked by 2 grooves on outer side of flange and 2 parallel grooves on inner edge of rim flange. Fairly hard orange- brown clay with a few minute white and brown inclusions, 1 angular grey one up to 2mm, a few specks of mica. Matt reddish-brown paint, largely worn off. Rim w. 4.8.
1132	306	Pl.24. P731. Pale yellowish-grey clay, with little mica; greyer in core; discoloured by burning. Matt dark reddish-brown clip unevenly preserved inside and out. Stepped upper surface of rim with parallel incised grooves on upper step and parallel wavy lines on lower step. Wall-turn on under side below wavy lines. Rim w. 4.0.
1133	408	Pl.24. P1147. Light orange-brown clay. Matt dark red slip, unevenly preserved, inside and out. Two-fold parallel wavy lines incised on top of rim between mouldings, Rim w. 4.8.
1134	408	Pl.24. P2390. 3 horizontal furrows on rim and button. Pale pinkish-brown clay with some minute brown and white inclusions and a very little mica. Faint traces of matt grey slip on upper surface. Broken off immediately below rim. Ø ca. 42.0.
1135	134 AG9	Pl.24. P106. Stepped rim with 2 sets of parallel incised grooves. Pale yellowish-brown micaceous clay, reddish in core; discoloured by burning. Traces of matt brown paint on upper surface of rim. Rim w. ca. 4.0.
1136	408	Pl.24. P8099. Inner edge of rim/ flange missing. One disc and part of another, 2cm Ø, attached to top of rim, with five-fold impressed wavy line between them. Fairly soft drab brown clay with a few minute inclusions and some mica. Matt brown paint unevenly preserved on top of rim. Ø ca. 40.0, pres. w. rim 3.0.
1137	408	Pl.24. P8098. From an exceptionally large vessel. Fairly soft orange-brown clay, a few specks of mica, a few minute brown inclusions. 5 parallel grooves on outside of rim/ flange. Matt greyish-brown paint surviving on outside shoulder below rim. Max. preserved. lg 8.0, w. rim/ flange 3.4, int. Ø ca. 42.0.
1138	408	Pl.24. P8097. Fairly soft drab brown clay with a few minute inclusions, and some specks of mica. Single wavy impressed line on top of flange. 2 shallow furrows separated by a groove on top of rim part and a step down from rim to flange. Matt greyish-brown paint over top of rim and flange and on shoulder below rim. Inside unpainted. Pres. lg. 7.0, w. of rim and flange 4.5, int. Ø ca. 29.0.
1139	356	Pl.24. P829. Rather soft pinkish-brown micaceous clay. Faint traces of reddish-brown matt paint on upper part of rim and on shoulder. Max. dim. 6.5. Probably this form.

9. Large wide-mouthed jars with projecting rim

SGR Form 43. The form is a fairly deep jar with a relatively small flat base; a heavy rolled horizontal rim may project slightly into the interior of the pot. This is the most common form in the ware at SGR, where it appears first in Upper Midden 1, in the mid-C5 AD. It is common in all the middens of Period 3B (ca. 460–650 AD), including the latest, Midden 6, and in destruction contexts at the end of Period 3. For a reconstructed shape (with base missing) see *SGR I*, 396 fig. 116 no. 161. Other examples from SGR (awaiting publication) had 2 horizontal strap handles attached below the neck, as No.1153 must also have done although only one is preserved on the sherd. This handle form was probably normal on these pots.

The form corresponds to Annese's type 9 in her publication of the pottery from the Late Antique *Domus* B at Ordona: *cit., X*, 305 and 308 tav VIII; also to Leone's type 1 in the material from the Late Antique phase of the villa at Posta Crusta : *Ordona X*, 399 and 404 tav. III. Basins of medium depth with this form of rim and coloured slip over impressed wavy-line decoration have been found in contexts of the end C6/ beginning of the C7 in the episcopal complex at S. Pietro in Canosa: Turchiano 2010, 667 nos. 1 and 2. At Vagnari, the form is associated with the Early Medieval hut constructed over the remains of the Late Antique building B: *Vagnari*, 206 fig. 5.108 P1183 from layer 234; p. 211 fig. 5.113, P1276, P1269 from layer 206.

1140	324	Fig.28. Pl.24. P753. Hard pinkish-brown micaceous clay, fired reddish towards upper edge of sherd. Five-fold wavy lines incised on rim surface. Traces of red paint on underside of rim. Ø ca. 38.0.
1141	370	Fig.28. P867. Pale orange-brown slightly micaceous clay. Rim thickened on outer edge. Traces of incised wavy lines on shoulder; incised pattern of oblique and horizontal lines impressed on rim. Ø ca. 27.0.
1142	347-9 Ar.348	Fig.28. P2368. Fairly soft orange micaceous clay, some small white lime inclusions, dull brown on outer surface. Paint gone from outer surface except for a small area on top of rim and small area inside. Badly battered. Ø ca. 40.0.
1143	408	Fig.28. P2391. Light brown slightly micaceous clay, hard fired. Faint traces of greyish-brown slip survive on upper side of rim and outside lower rim. Ø ca. 30.0.
1144	235	Fig.28. P560. With steep wall and heavy hammer-head rim. Horizontal ribbing on outside of wall and on top of rim; also inscribed wavy line on top of rim. Finely granular orange clay, fairly micaceous, with dull red slip on inside and top of rim, probably not on outside. Ø ca. 24.0. Angle approx.
1145	134	Fig.28. P219. Orange micaceous clay with small brown and white inclusions, traces of matt reddish-brown slip inside, worn off elsewhere. Outer edge of rim damaged. Ø 30.0.
1146	347-9 Ar. 349 C1	Fig.28. P7191. Pale yellowish-grey clay, not micaceous, sparse black grits up to 3mm. Ø 38.0, ht. 2.8. Cf. SG P6485 from a destruction layer of the end of Period 3B, ca. 650 AD; *Vagnari*, 206 fig. 5.105 P1183 from layer 234, associated with the Early Medieval hut constructed over the remains of the Late Antique building B; Ciminale, Favia, Giuliani 1994, tav CLIII, no. inv 11209 from Belmonte.
1147	347-9 Ar. 349	Fig.28. P850. Buff micaceous clay. Traces of matt reddish-brown paint on inside below rim. Light grooves on rim and just below it. Ø ca. 36.0. Cf. Di Giuseppe 2008, 336 fig. 42 no 10 from the villa at San Gilio near Oppido Lucano.
1148	337	Fig.28. P781. Thickened rim, projecting; globular belly; shallow groove in centre of top of rim. Slightly micaceous reddish-brown clay, orange at surface, dusty. Traces of matt reddish-brown slip in groove at top, and in cleft between rim and shoulder. Exact angle uncertain. Ø 18.0; Rim w. 2.2. Cf. *SGR IV*, SGP1470 from an occupation layer of Period 3B, ca. 460–650 AD; Cirelli *et al.* 2013, fig. 8.2 from Grumento, Late Antique context.
1149	347-9 Ar. 349	Fig.28. P7192. Light pinkish-grey clay with some minute black, white and brown inclusions. Drab dark grey-brown slip on top of rim and irregularly inside rim and on inner wall of bowl. Outside seems to have been reserved. Ø 22.5, ht. 2.3. Cf. *SGR IV*, SGP2500 from Midden 2 of Period 3B, ca. 460–650 AD.
9a. F43 rims		
1150	134	Pl.24. P97. Hard drab brown clay, slightly micaceous, with some minute brown inclusions (not standard LRPW fabric); discoloured by field-burning, damaged and worn. 2 bands of wavy three-line combing on top of rim. Faint traces of matt brown slip. Ext. Ø of rim ca. 35.0, pres. ht. 3.9, max. dim. of sherd 9.5. 2 others similar from the same site.
1151	213	Pl.24. P355. Dull orange-brown clay with some mica; matt reddish-brown paint on top of rim and outer and inner walls. Groups of 3 and 2 undulating lines lightly incised in wet clay on outer and inner sides of rim. Int. Ø ca. 42.0.
1152	521	Pl.24. P1248. Rim nearly horizontal with rounded internal profile. Traces of orange-red painting on rim and internal wall. Double row of shallow pyramidal motifs impressed in low relief on rim. Ø ca. 24.0, w. 8.7, pres. ht. 3.5. From scatter E of Vagnari.
1153	347-9 Ar. 348 AA3	Pl.24. P841. Orange-brown micaceous clay. Traces of incised oblique marks on upper surface, badly worn; some slight traces of matt orange-brown slip remaining. Spring of a horizontal handle at edge of sherd. Pres. ht. 4.0.

10. Form 43 variants: other deep bowls/ basins with thickened rims		
1154	134	Fig.28. P226. With slightly convex wall and rim thickened inside and out. Orange-brown micaceous clay, yellowish in core. Traces of incised parallel wavy lines on rim, series of horizontal ridges below rim separated by shallow grooves. Thin traces of matt brown slip on top of rim. Ø. 27.0.
1155	306	Fig.28. P729. Similar to No.1154. Orange-brown micaceous clay. Slight ridge below rim outside. Thin traces of matt reddish-brown slip on outer surface below rim. Ø 22.0.
1156	213	Fig.29. P348. Light orange-brown clay with a little mica. Matt red brown paint on top of rim, outside wall, and in small splashes inside. Ø ca. 30.0.
1157	222	Fig.29. P538. With heavy rim projecting outwards and rolled back inside. Soft pinkish-brown clay, thin matt black-brown slip over top of rim and inside. Irregular. Ø ca. 33.0.
1158	222	Fig.29. P539. With concave wall and rim thickened on interior. Soft light orange-brown micaceous clay; possible traces of thin matt darker orange-brown paint on top of rim. Angle approx. Max. Ø ca. 28.0.
1159	408	Fig.29. P7197. Rim T-shaped with 3 grooves ca. 3mm wide on top. Soft orange clay, a little mica, a few black, brown and white specks. Was covered in dark brown matt slip now preserved only in grooves and a few blotches inside. 1 groove on outside ca. 4mm wide and ca. 7mm below rim. Ø 31.0.
11. Globular jars/ bowls with projecting rims A similar, though narrower, shape was found in the Late Antique farmhouse at Posta Crusta near Ordona: Leone 2000, 402 and 406 tav. 406 17.2-3 (*olle tipo 17*).		
1160	423	Fig.29. P1126. Fairly hard orange-brown clay (not micaceous). Paint entirely worn off except for a strip of semi lustrous reddish-brown on inner lip of rim. Int. Ø 27.0.
1160a	223 E34N23	Fig.29. P4906. Slightly micaceous orange-brown clay with micaceous white slip on exterior surface. Brown/ reddish brown paint, brown on top of rim and red-brown inside; shoulder unpainted. Rim broken off short of edge. Ø 19.0.
1161	408	Fig.29. P2386. Soft pale greenish-grey clay, thin matt dark grey paint adhering to upper surface of rim and below rim in band 1.0cm wide terminating at faint carination. Badly battered. Ø perhaps ca 30.0. Close to *SGR IV,* SGP2044 from a destruction layer of Period 3D (ca. 650 AD).
12. Bowl with inclined shoulder and offset rim SGR Form 45. The form was carinated, and the piece would have turned sharply in towards the base a little below the bottom of the sherd. The shape is well attested at SGR where it appears first in the upper part of Midden 1, late in Period 3A (ca. 400–460 AD), but was most popular in Period 3B (ca. 460–650 AD). Some of the examples there were equipped with a small tubular spout rising steeply from the shoulder, and it is possible that all the pieces were of this type.		
1162	134	Fig.29. P103. Greyish-brown micaceous clay, discoloured by burning. 2 parallel grooves on rim; lightly incised wavy lines on shoulder. Traces of matt dark brownish-black slip outside and on top of rim. Ø 18.0. Cf. *SGR IV,* SGP5039 (from topsoil).
13. Miscellaneous jar rims The following fragments are too small or too badly damaged to be assigned to specific forms.		
1163	134	Fig.29. P73. Orange-brown micaceous clay. Projecting rim with 7 shallow horizontal parallel grooves on upper surface. Slight traces of matt dark brown paint inside and out. Ø ca. 17.0.
1164	408	Fig.29. P2385. Soft orange micaceous clay, 4 parallel ribs along rim. Reddish-brown matt paint on rim above and below and for about 4mm below rim, much worn, mainly adhering in troughs between ribs. Ø ca. 16.0.
1165	388/424	Fig.29. P868. Fairly hard light orange-brown clay with small brown and white inclusions. Harder than usual for LRPW fabric. Very sparse mica. Matt reddish-brown slip inside and down outside of rim where preserved in 2 shallow grooves. No trace of slip surviving below rim on outside. Ø 20.0.
1166	823	Fig.29. P7166. Fairly soft orange micaceous clay; matt reddish-brown slip inside and out, worn. Ø 18.0, pres. ht. 2.2. Cf. Di Giuseppe 1998, fig. 9.3 from Calle.
14. Lid? A rare shape in LRPW		
1167	223 E32N20	Fig.29, Pl.24. P4781. Rim and steeply sloping wall. Fairly hard pinkish-grey slightly micaceous clay with pale brown surface; shallow combed grooves inside. Matt black paint much worn over tip of rim and grooved surface inside, and in a splodge on upper side. Max. dim. 4.8, Ø uncertain.

15. Base		
1168	134	Pl.24. P99. Base of closed shape with numerous shallow concentric grooves on underside. Rather soft greyish-brown clay with a little mica. Traces of matt black-brown paint over grooves. Discoloured by field-burning. Ø 9.0. Cf. Nos.1167, 1193 for other examples of LRPW sherds with surfaces with multiple shallow grooves over-painted in matt brown-black slip.
16. Table amphorae and jugs/ flagons with broad strap handles The two shapes are broadly similar except that the flagons had only one handle. With small fragments such as those illustrated here, it is usually impossible to know to which shape a piece belonged. Both shapes were very common at SGR (Forms 1 and 2). In addition to the 4 rim sherds in this sub-section, most if not all of the strap handles in sub-section 17 must have come from vessels of one or other of these types. Note that the drawn pieces lack the mouldings and receding neck found on most of the examples from SGR. Amphorae in LRPW came into use at SGR before the end of Period 2 (ca. 350–400 AD) and remained popular throughout the whole of Period 3 (down to ca. 650 AD).		
1169	408	Fig.29. P2392. Drab brown clay, no mica, matt dark grey slip unevenly applied inside and out. Ø 11.0.
1170	213	Fig.29. P391. Finely granular buff clay with moderate white specks and a little fine mica, fired cream at surface. Possible trace of a brown-painted stripe across top of handle. Ø ca. 13.0.
1171	408	Pl.24. P8105. Rim and upper handle attachment. Undifferentiated rim with 5 pock mark impressions on top in preserved area. Thick handle, sub triangular in section, attached immediately below rim. Light brown slightly micaceous clay with a few minute inclusions, reddish-brown matt paint surviving in places on top of handle and in pock marks. No trace of paint inside. Int. Ø 7.5, max. lg. 6.5, w. handle at break 4.8, max. th. handle 2.5.
1172	408	Pl.24. P8106. Rim and handle stub. Rather soft drab brown micaceous clay with a few small grey, brown and white inclusions; traces of matt black-brown paint round rim and edge of handle and in a splash on the wall. Int. Ø 8.5, pres. ht. 4.3, w. handle at break 4.0.
17. Handles		
17a. Rounded vertical strap handles with rows of paint blobs on the exterior; from amphorae or flagons		
1173	204	Pl.25. P320. Handle and neck spring. Not ribbed. Fairly hard dull brown clay with some mica and small white inclusions. Matt dark brown thin paint in splodges on outside of handle. W. 4.2, max. th. 1.3. Cf. No, 1174
1174	207	Pl.25. P340. Handle and neck spring. Not ribbed. Rather soft greyish-brown clay with a few specks of mica. Matt dark brown thin paint in splodges on outside of handle and on underside below neck join. W. 5.0; th. 1.8. Cf. No.1173
17b. Thick vertical strap handles with two ribs separated by shallow indentations		
1175	222	Pl.25. P541. Soft orange micaceous clay, paler surface, matt reddish-brown paint thinly preserved on centre of outside. W. 4.0, max. th.1.3.
1176	342	Pl.25. P783. Dull brown clay with pale pink surface, rather soft (can be scratched with thumbnail); broad stripe of matt brownish paint with irregular edge covering most of exterior. W. 4.5, max. th. 1.5
17c. Thick vertical strap handles with three parallel ribs separated by grooves of varying thickness		
1177	809	Pl.25. P7161. With prominent central rib flanked by shallow grooves and slight ribs at edges. Fairly soft orange-brown slightly micaceous fabric, lighter at surface; reddish-brown matt paint surviving in grooves along handle and across it near spring. Underside unpainted. W. 3.4, pres. lg. 7.6. max. th. at break 1.4.
1178	213	Pl.25. P356. Ribs of uneven thickness. Drab brown clay with paler surface; small but conspicuous white gritty inclusions. Matt brown paint on outside. W. at mid-height 3.3, max. th. 1.2.
1179	820	Pl.25. P7162. Micaceous light brown fabric with some small inclusions, matt red paint over handle, best preserved in grooves, also on inside of attachment to wall of pot. W. 3.5 spreading slightly towards spring, max. th. at break 1.5.
1180	408	Pl.25. P8104. Strong curve towards presumed rim. Fairly hard drab greenish-grey clay with a few minute brown inclusions and a little mica; rather dusty surface. Traces of matt blackish-brown paint remaining in the shallow grooves between the ribs and spilling over one edge to underside. Max. dim. (chord) 10.5, w. 3.6, max. th. 1.2.
1181	408	Pl.25. P8102. Orange micaceous clay with a few small grey inclusions; matt reddish-brown paint preserved in grooves. Pres. lg. 5.4, w. 4.5, max. th.1.3. Another similar piece, P8103, also comes from Site 408.

1182	229	Pl.25. P4898. Handle curved through 90 degrees. Hard reddish-brown clay with drab brown surface, traces of thin matt dark brown paint on outside especially between ribs. W. 3.7, lg. 6.7, wd. 4.0. Possibly LRPW though fabric is not typical (no mica, and harder fired).
17d. Ribbed strap handles with dimples at base of handle The same treatment was applied to a horizontal ribbed strap handle of a large jar of Form 43, P0515, from SGR, found in an occupation layer of Period 3B, ca. 460–650 AD (*SGR IV*).		
1183	408	Pl.25. P8096. Ribbed strap handle with lower handle-spring and part of wall of open shape. 2 parallel rounded ribs down centre of handle with shallow grooves flanking them; 2 rows of 3 impressed dots (made by small fingers?) one above the other at lower handle root separated by a ridge. Fairly soft orange-brown micaceous clay with scattered grey and white inclusions and matt red-brown paint preserved in grooves between ribs of handle outside and over most of interior. Max. dim. 8.5, w. of handle 4.4, max. th. of handle 1.4, th. of wall of pot 1.0.
1184	235	Pl.25. P562. Wall sherd of Form 43 with spring of a strap handle set obliquely. Orange-brown micaceous clay with small (mostly very small) black and some brown inclusions. 2 ovoid dimples ca. 3mm deep 1.3 long at base of handle. Traces of matt reddish-brown paint on handle, and 3 splashes of orange-brown paint inside. Max. lg. 5.7. For the dimples, cf. Ciminale, Favia & Giuliani 1994, tav. CLVII, no. 11284 from Belmonte.
1185	408	Pl.25. P8107. Frag. of ribbed handle with a large dimple at end probably near junction with neck. Drab brown clay, rather dusty, with a few small grey and brown inclusions. Traces of dark brown slip in groove flanking central rib. W. 4.4, pres. lg. 2.7, max. th. 1.5.
17e. Vertical handle with impressed chevron motifs		
1186	408	Pl.25. P8100. Frag. (centre to edge) of a vertical handle with broad rib on one side, decorated with impressed chevron motifs. Fairly hard drab brown clay, with some minute whitish inclusions; possible traces of matt dark brown paint. Pres. lg. 3.7, max. th.1.3. Not certainly LRPW
17f. Rope handles, from jugs or table amphorae, with twisted ribbing Twisted "rope" handles are common at SGR in Period 3B (late C–mid-C7 AD).		
1187	823	Fig.29. P1967. Dull brown clay. Matt reddish-brown slip, worn. Pres. ht. 5.9. Cf. No.1169.
1188	134	Pl.25. P102. Drab greyish-brown clay (burnt). Traces of dark-brown paint in the grooves. Pres. ht. 4.8, th. 0.2.
18. Wall sherds Numerous wall sherds of LRPW were found on the survey. The following have been selected for their more distinctive features.		
1189	408	Pl.25. P8110. 3 parallel grooves at top of sherd, three-fold wavy line below. Drab greyish-brown micaceous clay, rather soft; traces of matt grey brown in grooves. Max. lg. 6.6, th. 0.6.
1190	408	Pl.25. P8109. Edge of base and lower wall of closed shape. Drab greyish-brown clay, parallel rows of vertical chain motif applied in relief running up outside from base. Traces of matt greyish-brown paint surviving inside chain motif. Max. lg. 4.4, th. at top 0.55. Not certainly LRPW.
18a. Wall sherds with horizontal combing. All from large closed shapes.		
1191	134	Pl.25. P74. Light horizontal ridging largely covered with an oblique stripe of red slip, with thin drip marks below. Max. dim. 7.4.
1192	347-9 Ar. 348	Pl.25. P821. Hard brown clay. Fine horizontal ridging on exterior, coated in matt brown slip. Max. dim. 2.8, th. 0.9.
1193	347-9 Ar. 348	Pl.25. P837. Hard brownish clay. Fine horizontal ridging on ext. Matt dark brown slip at top of sherd running down in uneven trail. Max. dim. 7.5.

17. THE PLAIN WARES

I. Introduction

The plain wares present more problems for the analysis of the field survey than any other category of material, since they cover the whole of the period from the invention of *figulina* pottery of purified clay in the Neolithic period down to the present day, and they could be used for almost any purpose except for cooking (for which pots were made from specially selected or prepared gritty clay to prevent them from cracking when placed over a fire). There is therefore potentially a vast range of shapes to be classified and dated. They are often difficult to date, since many of the simplest forms had a long duration, or might be re-invented centuries after they had gone out of use. In order to make this material manageable, I have assumed that if a plain-ware shape can be dated by comparanda to a period which suits other significant groups of material on a site, then it is not necessary to look for further parallels which might suggest a different date. It will be possible for others to do so, if they wish, from the evidence published here.

The Neolithic *figulina* wares are dealt with separately in section 2 of this catalogue. The tradition of *figulina* pottery was effectively interrupted in the Bronze Age and began again in the transitional period between the Bronze and Iron Ages. This section of the catalogue therefore begins with the hand-made pottery of the FBA/EIA. The use of a properly rotating potter's wheel came in gradually around the middle of the C6 BC (as it did also in the matt-painted geometric wares), and thereafter there is a continuously evolving pottery sequence. In the pre-Roman Peucetian period, potters might produce either painted or plain wares – making the same shapes of pots with or without painted decoration (normally simple bands). Presumably the painted versions were more expensive and were used for more important purposes (such as burial rituals, or dining). Table-wares (cups, dishes, bowls, jugs and amphorae) were more likely to be painted; other pots used in the kitchen (especially the larger bowls such as the hooked-rimmed series and the smaller *pithoi* with turned-back rims), were more rarely decorated; the *mortaria* never so. Presumably the painted decoration would not have stood up to the wear and tear. The largest shapes of all, the large-rimmed *pithoi*, basins and *louteria*, were sometimes decorated with rouletted or stamped motifs in relief on the rims. There can have been no reason for this practice other than a love of ornament, though the olive frond on No.1312 may hint at the contents of the vessel.

Similarly, there is considerable overlap between black-gloss and plain ware shapes, to such an extent that it is often possible to date a plain ware pot by its black-gloss equivalent. The correspondence is, however, limited to a small part of the black-gloss repertoire, mainly one-handled cups and dishes. There is some overlap, too, with cookpots, especially in lidded jars.

The plain wares of the Roman imperial period are less well attested in the catalogue, reflecting the reduced number of settlements occupied at that time. There are, however, some correspondences with the regional red-slipped wares, which suggest that some potters continued to make pots at two value-levels, slipped and unslipped, and this practice continued into Late Antiquity when the Late Roman Painted Ware predominated, but pots of the same type might also be made without the coloured coating. It is sometimes impossible to tell whether a piece of LRPW type with no trace of paint was originally plain, or was painted but the paint has worn off (as Nos.1220, 1239, 1240, 1249). In at least one case (No.1276) a plain fragment may come from the lower, unpainted, part of a painted pot.

Although several potters' kilns have been identified on and around Botromagno, there are no accumulations of wasters which might make it possible to identify the production of these kilns. Nevertheless, there can be no doubt that most of the plain ware pottery found in our Survey Area was produced locally, or at least within a few days' walking distance from the sites where the pieces were found. This is suggested by the fact that the closest parallels are nearly all within eastern Lucania and Central Apulia.

Since the pieces from the survey have no chronological context (other than what can be inferred from the general assemblage from each site) they are listed here in an approximately typological order. A consequence of this is that items which may be quite different in date may appear next to each other in the catalogue, but since in many cases the date of a piece is uncertain, any attempt to arrange them all in a supposed chronological order would be invalid.

II. Catalogue

A. Plain hand-made		
1. Bowls with convex sides and undifferentiated rims		
1194	223 E52N25	Fig.30. P4948. Rim. Hard greyish-brown fabric with a little mica and black and brown grits up to 1mm. Thickened rim, slightly rounded on top. Wall of rather uneven thickness, oblique sponge marks inside. Probably handmade. Ø 23.0. For the shape cf. No.1195.

1195	223 E31N31	Fig.30. P4474. Rim. Reddish-brown clay with some mica, pale yellowish-brown surface. Impressed star of 9 radiating lines on outer surface. Ø uncertain but large; max. dim. 6.8, th. at break 1.2. The simple shape can be matched in many periods, but in hand-made ware is likely to antedate the introduction of the fast potter's wheel in the course of the C6. It occurs at Parco S. Stefano, Gravina in an EIA context: *Gravina (PBSR) III (1)*, 124 fig. 21 nos.158 and 163. The star, with varying numbers of rays, is a universal symbol of good omen with varying layer of esoteric meaning depending on the cultural context. It was widely used in Central Apulia from at least the C6 to the C1 BC to decorate artifacts. It was painted in black on the rims of some West Peucetian bichrome pots of the late C7/ C6 BC (De Juliis 1995, tav. LIV nos.24, 25), and could be used as a filling motif in a row of birds on the shoulder of a globular urn (as *Monte Sannace*, tav. 222 no.2). It was stamped on the rim of our *dolium* No.1870, and it appears on numerous loomweights in the C4–C1 BC: cf. No.1952 with comparanda. Its use on No.1195 suggests that the vessel may have been used in some religious ritual.
1196	629	Fig.30. P1528. Rim. Rather soft pinkish-brown clay; several small holes in outside surface. Ø 6.0, pres. ht. 4.5. Another shape not precisely datable, but compatible with an EIA date for site 629: cf. *Gravina (PBSR) III (1)*, 124 fig. 21 no.163 from Parco S. Stefano, Gravina (probably Period Gravina I, EIA).
1197	407. Iazzo	Fig.30. P7200. Bowl or lid with convex wall and near vertical rim. Handmade shape but some roughly even marks suggest a slow wheel. Drab brown clay with pale yellowish-brown surface out and in. Ø ca. 22.0, ht. 5.7. Cf. *Gravina (PBSR) III (1)*, 124 fig. 21, 158 from Parco S. Stefano, Gravina (Period Gravina I, EIA).
2. Bowls with steep slightly convex sides and walls thickened on interior at base of rim		
1198	223 E58N22	Fig.30. P4997. Rim. Micaceous orange-brown clay with small black grits, numerous little air-holes in surface, grey in core. Walls even but probably hand-made. Ø 26.0 (if regular), pres.ht. 4.7. Cf. *Gravina (PBSR) III (1)*, 124 fig. 21.161 from Parco S. Stefano, Gravina, probably of phase I (EIA). P4878 – another of this shape from 223, E39N28
1199	223 E39N22	Fig.30. P566. Rim. Drab greyish-brown clay, brown slip, some turning marks just below rim inside and out. Crudely finished, very roughly wiped in different directions inside. Beginning of ?horizontal handle-spring outside. Ø ca.28.0, pres. ht. 5.5. Probably EIA, as *Gravina (PBSR) III (1)*, 129, fig. 25.191 in impasto from Parco S. Stefano, Gravina of phase I.
2a. As above, but with more oblique wall		
1200	401	Fig.30. P890. Rim. Drab brown clay. Rim damaged so exact angle and Ø uncertain, lg. of sherd 3.0, max. th. 1.0. EIA?
1201	629	Fig.30. P1514. Rim. Hard fired, evenly finished, orange-brown clay. Ø uncertain; max. w. 3.5. EIA?
3. Deep bowl with straight tapering wall and undifferentiated rim		
1202	724.	Fig.30. P1989. Hard fired; pale orange-brown clay out, turning greyish in. Ø. ca. 25.0. The simple form is not precisely datable, but the fabric suggests a date in the EIA when the shape was current in impasto: cf. No.262, and e.g. Colelli & Jacobsen 2013, tav. 81 no.352 from Timpone della Motta.
4. Small bowl with straight oblique wall		
1203	422	Fig.30. P1086. Lip or rim slightly out-turned. Rather soft pale brown clay. Ø 12.0. Bowls with oblique walls of varying sizes are well attested in hand-made plain ware at Gravina: *Gravina (PBSR) III (1)*, fig. 21, nos.159, 164, 165, probably all EIA. It is also found in the impasto repertoire: cf. e.g. Colelli & Jacobsen 2013, tav. 28 no.97, tav. 57 no.219, tav 76 no.317 from Timpone della Motta; Ciriello *et al.* 2012, 319 fig. 11 nos.36, 40, from Monteserico, all EIA.
5. Basin with elliptical rim		
1204	145-9 Ar. 148	Pl.26. P245. Large frag. rim-to-base, of a shallow elliptical basin. Hand-made. Hard pinkish-brown clay with pale cream slip except on underside. Max. dim. (chord of rim) ca. 15.0, ht. 7.4.
6. Bowl handles		
1205	223 E50N20	Pl.26. P4918. Flange handle with short "horn" projections with hole for suspension. Hard fired pinkish-grey clay with black and white grit inclusions – some mica and some shell. Light brown exterior. Concave external surface. Sherd slopes slightly on opposite side towards rim. Max. dim. 9.5, th. 1.7. For a much more complete example of the type, a bowl with tapering slightly convex walls, see *Gravina (PBSR) III (1)*, 124 fig. 21 no.164 from Parco S. Stefano, Gravina, of Period I (EIA). It was probably used as a ladle or scoop (*attingitoio*). The handle had 2 holes for suspension. Cf. also Quondam 2012, 152 fig. 2.2 from Francavilla Marittima, in geom mono ware, with discussion of the type, which is well attested in the Sibaritide, on p. 151. C8 BC.

1206	629	Pl.26. P1596. Part of transverse handle with horned appendage. Pale pinkish-brown slightly micaceous clay with fine sandy texture and a few minute white inclusions. Max. dim. 5.9. Handle ovoid in cross-section, ca. 2.6 × 1.5. Cf. *Monte Sannace,* 89 and tav 119 no.2 from phase I on the acropolis, end C9–C7 BC. Ciancio holds that the appendage on this piece was at the apex. On ours, however, it appears to gave been set at an angle, as in some impasto examples: cf. *Gravina (PBSR) II,* 115 and 133 fig. 13 S22.2 from a pit grave of the end C7/ early C6 BC on Botromagno.
7. Carinated bowl with arched lug on slightly in-turned rim		
1207	629	Fig.30. P1527. Rim rising to left end of sherd; arched lug below protruding max. 2mm. Soft greenish clay, pink in core. Ø uncertain, pres. ht. 3.2. Cf. in impasto, *Gravina (PBSR) III (1)*, 129 fig. 25.185 from Parco S. Stefano, Gravina of phase I (EIA).
8. Bowl with broad horizontal rim		
1208	223 E56N22	Pl.26. P4974. Very crudely shaped rim and upper wall of shallow dish or pan. Broad rim 2.7 wide, sloping slightly inwards, and pierced by a hole (0.7 × 0.8) for suspension. Rim diameter changes so that pot was oval shaped (a *pitale*/ chamber pot?). Greenish-grey clay lighter in core and surfaces, some small white inclusions. Inner surface levels out towards tondo at bottom of sherd. Distorted/ discoloured by fire, possibly a waster. Max. Ø 32.0.
9. Small mug with globular belly and short vertical rim		
1209	712	Fig.30. P8063. Vertical rim, convex shoulder. Light brown clay grey in core, small white and brown inclusions, a little mica, probably hand finished. Ø 10.0. The form is unusual in plain ware, but is occasionally found in geom mono: cf. Albertazzi 1991 from the Fossa greca n.1 at Incoronata, fig. 65, late C8/ 1st half C7 BC. The shape probably had a single vertical handle rising slightly above the rim as in "Oenotrian" pottery in the Sibaritide in the C8 BC. Cf. e.g. Kleibrink & Barresi 2012, 229 figs 7, 9a and 9b, from Francavilla Marittima.
10. Pithos with steep sides and short off-set rim – an impasto shape		
1210	715 E8	Fig.30. P1988. Pale yellowish-brown clay. Ø. ca. 26.0 max., pres. ht. 2.8. The relatively steep angles of the rim and wall suggest that the frag. comes from a large bowl of a type current in the Gravina area in the EIA: cf. *Gravina (PBSR) III (1)*, 93 fig. 15 no.13 in geom mono (rather smaller).
11. Situla with straight sides and arched lug handle		
1211	223 Ar.228	Pl.26. P526. Pale greyish-brown clay. Ø ca. 25.0. A plain-ware version of an impasto type. Cf. e.g. Colelli & Jacobsen 2013, 75 tav. 2 no.8 from Timpone della Motta, Francavilla Marittima, EIA (with handle set slightly lower).
12. Pillar handle		
1212	431	Pl.26. P1139. Drab brown slightly micaceous clay. Probably originally geom mono but no traces of paint remaining. Handle root below bulge for insertion into pot wall. Pres. ht. 5.4, max. Ø of top 2.7. An unpainted version of a handle type common in geom mono of the C8 and early C7 BC: cf. No.441.
13. Base		
1213	407 D5	Fig.30. P8112. Base of handmade plain large pot. Pinkish-brown clay with light brown surface, fairly hard fired. Some white ?shell inclusions up to 2mm and some small rounded grey ones up to 1mm. A few specks of mica. Very roughly finished outside, edges of base rounded. Ø of base 10.5, pres. ht 5.8.
14. Wall sherd		
1214	223 E34N22	Pl.26. P542. Sharply convex sherd showing arched cordon below shoulder bend with hole pierced through it (but not through the pot wall) on the left side. Drab brown clay. Hand-made. Max. dim. 6.0.
B. Plain wheel-made		
1. Miniature cup		
1215	223 E14N27	Fig.31. P4120. Rim, base and handle-spring of miniature one-handled cup. Pinkish-brown clay. Wheel-made but unevenly finished. Spring of a horizontal handle immediately below rim which is slightly in-turned; base slightly off-set. Ø ca. 6.0. Such small one-handled cups were used as votives in both Greek and especially indigenous settlements, principally in Lucania, but also in Apulia, remaining practically unchanged from the end of the C6 to the end of the C3 BC. Cf. e.g. Lo Porto 1981, 307 nos.114-129 from the sanctuary in the contrada Crucinia at Metaponto, end C6 and first decades C5 BC; Mastronuzzi 2013, 105 and fig. 70 no.198 from votive deposit 3a in the Messapian sanctuary at Monte Papalucio near Oria, ca. 470 BC; *Roccagloriosa I,* 129 and figs. 119, 121, nos.V101-108, from the votive deposit of C4 BC. For another miniature one-handler, in WMP, from this site, see No.573.

2. Bowls/ dishes		
2a. Cups or small bowls with incurving rim		
1216	223 E47N26	Fig.31. P4818. Rim and wall of bowl or more probably one-handled cup. Pinkish-brown clay, fairly hard fired, slightly micaceous, minute black specks on outside only (?residues of slip). Scar on outer rim at left edge of sherd, possibly from a handle-spring. Ø 10.0, ht.3.7. Cf. *Gravina II* cat.1160; *Pomarico Vecchio I,* tav.75 no.130. The type was common in S. Italy from the mid-C6 to the end C4. Another from this site P4684.
1217	223 E45N18	Fig.31. P4887. Hard grey fabric with thick orange slip inside and over rim, numerous brown grits up to 2mm in slip, some white in core. Internal rim Ø 20.0. The strongly in-turned rim is characteristic of earlier EIA pottery (cf. No.375), but such a date is unlikely since the piece appears to have been made on a fast wheel (though this may be a false impression from a small sherd). It should perhaps be seen as a bowl with in-turned rim of the Late Hellenistic/ Early Imperial period: cf. Manacorda & Pallecchi (eds) 2012, 251 no.147a (but rather less in-turned) from Giancola, with discussion of the type.
1218	134	Fig.31. P234. Dish or lid with in-turned rim. Drab greyish-brown clay. Ø 14.0 The simple shape appears at various times. It might be compared with No.574 in WMP and is close to *Gravina II,* cat.1166, 1167 (earliest contexts associated with the fortification wall, late C4 BC); but since the great majority of the material from this site is Late Antique, it is better matched with examples of that period. Cf. Ciampoltrini *et al.* 2010, 328 fig. 9.22, from the Serchio valley near Lucca, late C4/ early C5 AD; De Carolis & Soricelli 2005, 521, fig 5 nos.4, 5 from Pompeii, Via Lepanto in cookpot fabric (turn C4/C5 AD); also *SGR IV,* SGP0797) in Late Roman Painted Ware (Form 21) from a context of Period 3B (late C5–mid-C7 AD).
2b. Bowl with slightly in-turned thickened rim marked with radial impressed notches or grooves		
1219	408	Fig.31. P1138. Rim of bowl or perhaps lid. Drab brown clay. Row of finger-impressed notches in rim top. Ø 25.0. This type of bowl with notched decoration impressed unevenly in the rim is attested in Ravenna and the surrounding area in the Early Medieval period: cf. Cirelli 2015, 18-19 nos.9, 11 from the territory of Ravenna, C7–C8 AD; Cavalazzi & Fabri 2010 from Classe C5–C7 AD (rim more rounded); Siena *et al.* 1998, 669-670 and fig.2.13 and 14, from Castellana, Colle di Guido di Pianella in the territory of Pescara, probably C6/ beginning C7 AD.
2c. Small dish with thickened triangular rim and straight tapering wall		
1220	201	Fig.31. P316. Thickened rim, out-turned and flat on top. Softish pink clay, surface slip worn off. Ø 8.0. Cf. Annese in *Ordona X*, 307 tav. VII no.5.2 from the Late Antique *Domus B*, in LRPW (mid-C4–beginning C6); *SGR IV,* SGP1597 (larger) from phase P3B/O (ca. 460–650 AD).
2d. Large dishes/ bowls with out-turned rims		
1221	818	Fig.31. P1914. With thickened projecting rim and slightly carinated wall; groove on top towards inner edge. Plain buff clay, moderate very fine mica, occasional red earthy specks. Surfaces well-smoothed. Ø ca. 25.0. Cf. Bianco in *Pomarico Vecchio I*, tav. 82 no.181, in cookpot fabric, (surface find, but ante-dating the end of the site in late C3); *Gravina II*, no.1223 from a context of period VIIIa, late C2/C1 BC.
1222	223 E39N32	Fig.31. P4607. With horizontal rim and a small vertical rib around its inner edge, perhaps for lid. Pale yellowish-grey clay. Ø ca. 22.0. Dishes of this form were common on Botromagno in WMP ware. Some examples have slightly down-turned rims, but 2 (*Gravina II*, nos.151-158) are comparable to this piece, both found in contexts with a *tpq* of the middle of the C3 BC. Alternatively, and perhaps better, the piece can be seen as a lid frag. comparable to No.592 in WMP ware, but with narrower rim and smaller resting ledge. Cf. Cavallo 2014d, 282, Lids FF PCW 36, from the Fattoria Fabrizio, before ca. 300 BC. A related form was used for some *mortaria*: cf. No.1288.
1223	407 B6	Fig.31. P2337. With rounded horizontal rim and inner lip. Hard greenish-grey clay. Ø ca. 39.0. Close to *Civita di Tricarico*, no.788, from a context of Phase III (late C3 BC) with *mortarium* spout.
1224	127	Fig.31. P4343. With out- and slightly down-turned rim and inner lip. Soft pale buff clay, perhaps eroded black-gloss. Pres. ht. 1.3, w. of rim 1.8, Ø uncertain. This form of rim is common on BG dishes of the C3 BC. See esp. *Civita di Tricarico*, fig.2 29, "assiettes à bord pendant arrondi" (nos.373-400), and lengthy discussion of the type on pp. 418-421: it appears in the last quarter of the C3 and is current for much of the C2 BC.
2e. S-profile bowl		
1225	813 E10	Fig.31. P1870. Rim and wall of bowl with low bulging belly, short neck, and out-turned near-horizontal rim. Buff clay. Ø max. 26.0. Cf. *Gravina II*, cat.1221 from a context of Phase VIIIa (late C2/C1 BC).

3. *Lekanai*

The *lekane*, a deep broad-rimmed bowl, was a standard item of kitchen equipment used for holding liquids, and especially for preparing food. *Lekanai* are found in large numbers on many sites. They were very numerous in the Athenian Agora (*Agora* XII, 211), and more than 300 were recorded on sites in the Metapontine chora (Vittoria in *Chora Metaponto III,* 366). The form appears at Heraclea in the late C5 BC (Hänsel 1973, 451fig. 31 no.3) and continued to be used in South Italy down to at least the middle of the C2, and possibly into the C1 BC. *Lekanai* may sometimes have been used in place of *mortaria*, leading to a conflation of the typology of the two shapes: one *lekane* found at Pomarico Vecchio had a strip of "pastry edge" moulding, typical of *mortaria*, around the rim (*cit.,* I, tav. 70 no.93), and the classification of No.1288 is equally ambiguous. It has been treated in this catalogue as a *mortarium* but might equally be listed as a *lekane*. No.1229 classed below as a *lekane*, has a ridge running around the inner edge of the rim that is more characteristic of *mortaria*.

Already in the C6 two distinctive forms of *lekane* had evolved: a carinated form with steep shoulder, sharply tapering belly below the carination, and more-or-less horizontal out-turned rim; and a form with continuous tapering or slightly convex wall and broad horizontal or slightly down-turned rim. Both types usually had 2 horizontal handles and a low ring base, and both were normally painted with bands, as their Attic prototypes had been. At Gravina carinated and un-carinated types are both well represented (*Gravina II*, figs 8 and 9), but the forms were not standardized, and there are numerous minor variations. There were also some unpainted *lekanai* (exemplified by those listed here) which show rather more standardization and may therefore have been produced in a more specialized workshop. They are regularly of the un-carinated type. All the pieces listed here have broad horizontal or slightly inclined rims which terminate in an overhang. One had vertical transverse handles (No.1227), but there is no evidence for the handle form on the others. The type is attested at Monte Papalucio near Oria in period 3, ca. 490–470 BC (Mastronuzzi 2013, fig. 105.368) and was current in and around our survey area from at least the late C5 to the C3. It probably continued into the C2, but it seems to have come to an end before the 2nd quarter of the C1 BC since it is not represented in the pit group of that period on Botromagno (Small *et al.* 1994).

Two of the pieces listed here have concentric grooves around the top of the rim. This is a feature attested on *lekanai* at Sybaris (Stombi) found with material predominantly of the C6 BC, but with some pieces extending down to the C4 BC (*Sibari II,* 329 no.516 figs. 328, 378), and in Valesio in the C4 BC: Yntema 2001, 263 Form M55, esp. no.465.

3a. Carinated lekane

1226	234	Fig.31. P571. *Lekane* with body curving sharply at mid-wall and tapering flat rim, ribbed on top. Rather soft orange to buff clay, moderate mica, buff at surface. Ø 30.0. The shape is much more common in wheel-made painted ware: cf. Vittoria in *Chora Metaponto III,* 363 no.31 and 365 no.38, with painted bands and without ribbing; and see her discussion of the type which is current on many S Italian sites. She dates the form from mid-C6–C4, but it continues at least into the C3. Cf. for the ribbed top, Marchegiani in *Pomarico Vecchio 1*, tav. 56 no.4 from a context of mid–2nd half C3 BC; also *Gravina II,* fig. 8 no.180 of period Gravina VI, C4/C3 BC.

3b. With concave rim rising to the outer edge and vertical transverse handle

1227	407 A4	Fig.31. Pl.27. P1079. Hard pinkish-brown slightly micaceous clay with paler surface some black and white inclusions. Rim turned out and down. Stump of vertical transverse staff handle spring on rim. Ø ca. 40.0. The handle type follows a Corinthian model of the late C5 BC: cf. Pease 1937, fig. 33, C.35.393. For a similar piece see Deodato in *Pomarico Vecchio 1,* tav. 69 no.90 from a context of the 2nd half C3 BC.

3c. With flat or slightly concave rims down-turned at the end

The rims may be horizontal or slightly inclined in either direction. There is no evidence for a handle on any of these sherds

3c-1. with relatively short rims. Cf. Tréziny 1989, 63 and fig. 41 nos.203-207 from contexts at Caulonia of the C5 BC.

1228	223 E49N26	Fig.31. P4843. Flat top with 8 parallel grooves ca. 1mm wide. Pinkish-brown dirty clay with some large white probably shell inclusions and a few large air-holes; pale yellowish-brown micaceous slip. Ø ca. 34.0, ht 2.0. Cf. *Gravina (PBSR) III (2),* 126 fig. 52 no.289 from Gravina Parco S. Stefano, floor of House 2, late C4 or early C3 BC; *Gravina II,* no.1207, unstratified (both without grooves).
1229	813 C10	Fig.31. P7707. Slight ridge at beginning of inside of rim. Hard fired drab light brown clay with pale greyish-brown surface. Ø 32.0. Cf. No.1228.

3c-2. with wider rims. Tréziny (1989, 63) dates comparable pieces at Caulonia to the C4 BC.

1230	415	Fig.31. P1094. Bowl rim in buff clay with paler surface. Ø ca. 30.0 (v. approx.). Cf. *Gravina II,* cat.1206 (unstratified); Hänsel 1973, fig. 31 nos.2, 3, from Heraclea (Policoro) Trench 1 stratum 3 "appartenente all'epoca di Heraclea", with italiote, red-figure and Gnathian pottery; *Cozzo Presepe,* fig. 136 no.380 (unstratifed but before the end of the site in the late C3 BC).

1231	223 E36N25	Fig.31. P4421. Brown clay, grey in core. Bobble of clay on top of rim, probably a handle-spring. Ø ca. 46.0. For other examples with upward tilted rim and vertical or near vertical lip, cf. Cavallo 2014d, 269, FF PCW 08 from the Fattoria Fabrizio, C5–C4 BC; *Sibari V*, 220 no.174 and fig. 218, with horizontal staff handle below the rim, from Sybaris Stombi, taglio XI with mixed classical and hellenistic material.; *Cozzo Presepe*, fig. 136 no.379, from a context of the mid-C3 BC; *Gravina II,* cat.1205 (not securely stratified); Olcese 2003, 105-106 and tav. XL.5, *bacino/ mortarium tipo 15a*, from Rome and vicinity, Late Republican to C3+ AD.
1232	223 E27 N34.	Fig.31. P7102. Pale yellowish grey clay with uneven surface. Rim inclined slightly downwards towards exterior. 5 concentric grooves of varying thickness on top of rim. Ø ca. 44.0. Cf. *Sibari II,* 329 no.516 figs. 328, 378, in a context of C6–C4 BC, with rim rather more down-turned.
3d. Bowl with oblique rim		
1233	223 E33N19	Fig.32. P7107. Clay pinkish-brown in core, cream on surface (?slip). Ø ca. 19.0, max. th. 0.6. Imitation of a Greek-type cup such as No.443. C6 BC.
3e. Bowl with rim rolled back and overhanging		
1234	114	Fig.32. P251. Softish orange clay; white and brown inclusions (up to 3mm), no original surface. Ø uncertain (small sherd), pres. ht. 3.4. The rim form can be paralleled many times. Cf. e.g. *Cozzo Presepe*, 367 fig. 136 no.386 from Site A, Phase IIIB, ca. 600–550 BC; Rinaldi in *Torre di Satriano I*, 238 no.102, in a layer of ca. 250–?190 BC; Cotton in *Gravina II,* cat.1507 from Botromagno (sporadic); Tang (ed.) 2007, fig. 100 AA-19 from Pontecagnano, context of C2–mid-C1 BC; Cotton 1979, fig. 49 no.3 from the Posto villa at Francolise, Period I (end C2 –ca. 30 BC). It recurs in Late Antiquity, as on the LRPW pieces Nos.1106 and 1108. Without more of the shape it is impossible to date the piece precisely.
3f. Bowls with overhanging rim Also in wheel-made painted: cf. No.610.		
1235	813 D1	Fig.32. P7716. Rim of bowl or perhaps lid with overhanging triangular rim and steeply tapering wall. Light brown clay, rather soft, pale grey-brown on outer surface, no inclusions or mica. Impressed groove below overhang of rim. Ø ca. 22.0. Cf. *Gravina II*, nos.1176 and 1177 with remarks by M.A.Cotton. The form appears on Botromagno first in the C3 (period Gravina VII), but is most plentiful after ca. 150 BC (Gravina VIII). Broadly similar bowls are attested at Gravina in the pit group F202 of ca. 80–70 BC: Hayes 1994, 224 and fig. 11 cat.106, and at Ordona in a deposit dated ca. 30–15 BC: De Boe & Vanderhoeven 1979, 121 no.76 and fig. 30. A shallower version of the form might be used as a lid: cf. No.1260.
1236	223 E19N32	Fig.32. P4162. Rim triangular in section with slight overhang; stick impressed wavy line on outside of rim. Drab brown clay with several air holes, roughly finished inside and out, slightly micaceous, some minute white grits. Ø ca. 30.0. The shape appears to be influenced by ARS Form 61 (most of the C4 and 1st half of the C5 AD). The stick-impressed wavy line, however, suggests a rather later date. It is a common motif in the regional pottery of the C5/C6 AD (e.g. on frag. of a large storage pot No.1901), and continues well into the Lombard period in various parts of Italy. Cf. e.g. Vaccaro 2015, 221 fig. 6 nos 18, 20 (C8–C10 AD) from a kiln site at Roccastrada in SW Tuscany: bowls with rims triangular in section, decorated externally with wavy lines. But a Hellenistic date cannot be excluded. Cf. Tang (ed.) 2007, 296 fig. 99 nos.AA-14 and AA16, *mortaria* with broadly similar rim forms from Pontecagnano, 2nd half C4 BC; and *ibid*. 299 fig. 102 AA-30 for similar wavy line decoration on a *dolium* of the same period.
4. Storage pots		
4a. Large globular pots with tapering rims folded back over shoulder The following two pots are smaller versions of the large *pithoi* in use in the pre-Roman period, found throughout Apulia (cf. esp. No.1863). Similar pots were also made in wheel-made painted ware (cf. No.661).		
1237	223 E14N26	Fig.32. P4122. Light brown clay with some mica. Ø 18.0.
1238	229 Ar. 1	Fig.32. P475. Fine, hard, orange to buff clay; dull grey-brown slip inside and out, but apparently not on top or outer edge of rim. Ø 15.0.
4b. Large pots with squared rim folded back over shoulder The following pieces bear some resemblance to Nos.1237, 1238, but the rim is thicker and more rectangular in section, and the wall was steeper. They are best regarded as a Late Antique form, corresponding to Form 43 in LRPW (cf. Nos.1140, 1142, 1148).		
1239	821	Fig.32. P2063. Fine buff clay with few visible inclusions. Ø 27.0. Broadly similar rim forms are found in LRPW (variants of SGR Form 43), and this piece is probably best considered a plain-ware version of that Late Antique form. Cf. *SGR IV,* SGP713 from Midden 3 or Period 3B, C6/ early C7 AD); Leone in *Ordona* X, 405 tav. IV no.5.2 in LRPW from the Late Antique farm at Posta Crusta.

1240	145 – 9 Ar. 147	Fig.32. P174. Frag. of large jar with folded-back rim and convex wall. Rather soft micaceous orange clay. Exact angle of rim uncertain. Ø at edge of rim ca. 24.0; max. dim. 3.4 (along bottom of rim). The shape recurs in LRPW at SGR in Midden 3, late C5–C7 AD: *SGR IV,* SGP713.
4c. Large pots with out-turned rims and concave necks		
1241	629	Fig.32. P1599. Dark orange-brown micaceous clay with paler surface, abundant very fine mica, fired buff at surface. Part of vertical handle attached to rim (one of a pair?). Ø ca. 39.0. Cf. *Gravina II,* no.1584, probably in context in Period Gravina VI, C4/C3 BC.
1242	223 E53N22	Fig.32. P4957. Hard fired greyish-brown clay, dull brown surface out and in. Very fine grits and a little mica. Ø ca. 28.0. Cf. No.1241. But too little is preserved of the shape for it to be classified reliably.
1243	819/822	Fig.32. P1966. Rather soft pale buff ware. Ø 20.0. The shape was current from at least the C4 to the C1 BC. Cf. e.g. Casagrande 2002, 409, fig. 58 *olle tipo 4*, from Heraclea, in a stratigraphic context of 375–270 BC (with comparanda); *Gravina II,* no.1270, in contexts of Periods VII and VIII (C3/C2–C1 BC), also Hayes 1994, no.113 from Gravina, ca. 75 BC (with jug handle). The same shape is found in cookpot ware: cf. No.1366.
4d. Globular pots with offset rims indented inside to hold a lid They were presumably used for storing food etc.		
1244	417	Fig.32. P1033. Rather soft buff clay containing very sparse very fine mica. Ø 19.0. Cf. (in cookpot fabric) *Civita di Tricarico I,* fig. 323 no.827 from a context of Phase IIB, ca. 250 BC; Hayes 1994 Fig.10, no.81 from Botromagno, ca. 75 BC (but without bevelled edge to rim). A similar form appears later in Latium: cf. Olcese 2003, tav. XXVII.6, *brocca tipo 4* (narrower), Late Republican to Late Antonine.
1245	813 C1	Fig.32. P1854. Fine buff clay, fired cream at surface, trace of worn red slip on top surface only. Ø ca. 29.0. The type is attested in plain ware at Pomarico Vecchio in the 3rd quarter of the C4 BC: Bianco in *Pomarico Vecchio I*, 183 and tav. 76 no.137 (with other comparanda of the C4 BC). It is still found at Gravina in Period VIIIa, mid-C2/C1 BC (rather smaller): *Gravina II,* nos.1295, 1296.
1246	906 C3	Fig.32. P7181. Rim of plain jar, strongly out-turned at oblique angle with narrow groove inside just below tip of rim; slightly concave inner surface. Hard pale pinkish-brown clay. Ø 15.0. Close to Hayes 1994, Fig.10, no.81 from pit F202 on Botromagno, ca. 75 BC.
4e. As above, but with rim triangular in section, not indented inside		
1247	134	Fig.32. P231. Greyish-brown clay (burnt). Ø 14.0. The rim form has a long run, from the Late Hellenistic period to Late Antiquity: cf. e.g. Pietropaolo 1999, 426-427, no.8 from Siponto, C2–C1 BC (cookpot) with refs; Olcese 2011-2012, 361 tav. 3.LIII no.7 from Pompeii, Porta di Stabia, 1st half C1 AD; Annese in *Ordona X*, 334 tav. XX no.18.3 from the Late Antique *Domus B* in cooking ware (C4/C5 AD). A Late Antique date suits the other material from this site best.
4f. Large ovoid pot with thickened rim out-turned at a steep angle		
1248	213 C	Fig.32. P392. Hard orange micaceous clay. Ø 33.0. Possibly Late Antique: cf. an equally large storage pot with simple obliquely set (but more pointed) rim from SGR Midden 1A of Period 3A (ca. 400–430 AD), *SGR IV,* SGP3041.
5. Globular jar/ mug with vertical rim		
1249	223 E31N18	Fig.32. P4762. Worn brown micaceous clay. Ø 11.0; max. Ø 16.0. Probably from a Late Antique one-handled mug: cf. *SGR IV,* SGP6859 in plain ware from a destruction layer of Period 1 (after ca. 220 AD), and SGP3607 (from a destruction layer of Period 3B, C6/C7 AD) in LRPW; Turchiano in *Ordona X*, 364 tav IX no.17.4 from the fill of the cistern associated with the Late Antique *Domus B*, mid-C5 AD (in cooking pot ware). The type continues into the Middle Ages: cf. Ricci 1998, 358 fig. 5 no.7 from the Crypta Balbi, Rome, late C7 AD; Patterson 2001, fig.10.66 from San Vincenzo, phase 5C, mid–late C9 AD.
6. Jar with bulbous rim, distinct neck and rounded shoulder		
1250	223 E44N37	Fig.32. P4295. Hard reddish-brown clay. Ø 15.0. Cf. No.1357 in cooking ware, also from Site 223, and the discussion there, with suggested date in the C4/C3 BC. But the same rim form recurs in plain ware of the Late Republican period: cf. Cabrera Carratalá *et al.* 1999, 136 *olle e pentole* CP 110041, fig. 18 from the so-called villa of Pliny the Younger at San Giustino.

7. Table amphorae, flagons, and jugs with rounded mouths, off-set rims and high necks Round-mouthed forms of jug generally replaced 3-lobed forms in the C4 BC: Bats 1988, 55.		
1251	124 B1	Fig.33. P54. Frag. of vessel with near vertical wall and thickened rim out-turned at a sharp angle. Greyish-brown clay. Drab greyish-brown slip inside and out. Ø 12.0. Probably from a flagon: cf. Annese *et al.* in *Ordona X*, 256 nos.13.3, 15.1 (the latter with grooves below the rim) from the early–mid-imperial House A; or perhaps from a one-handled beaker: cf. *Vagnari*, 175 fig.5.50 P5656, of Period 4B, late C4/ early C5 AD. A date in the early or middle imperial period suits the main body of material from this site.
1252	813 D6	Fig.33. P7702. Out-turned rim with seating for lid. Pale yellowish-brown clay with some small dark brown grits. Ø 14.0. Perhaps from a jug: cf. Yntema 2001, Form M23 no.439, from a context of the later C2/ early C1 BC at Valesio. But the seating for a lid is more appropriate for a jar: cf. *Civita di Tricarico I*, no.868, before ca. 200 BC. Cf. also Olcese 2003, tav. XXIV.2, *brocca tipo 1*, C4–C1 BC "con prevelenza in età medio repubblicana" in Latium.
1253	Spor.	Fig.33. P2060. Frag. of wide-mouthed jar/ jug with thickened rounded rim. Rather soft pinkish-buff clay, fired buff at the surface. Occasional red earthy inclusions (iron ore?). Ø 13.0. The piece was found on the slope above the Pentecchia di Chimiento some 200m down from Site 819. This is a plain-ware version of No.635 in WMP ware, ca. mid-C5 BC.
1254	120 Row 1	Fig.33. P262. Rim of jug or amphora, thickened and carinated. Light brown clay with minute white and brown inclusions. Ø ca. 14.0. Cf. Yntema 2001, 251 and 254, Form 24, household amphora/ jug, from contexts of the later C2 and early C1 BC; Cotton in *Gravina II*, no.1280 from Botromagno, "wide-mouthed jug", from contexts of Period Gravina VIII, later C2–mid-C1 BC.
1255	707	Fig.33. P7741. Very sandy orange-brown fabric with numerous white and some black inclusions: including one black rectangular glossy. Rim vertical and offset from neck by 2 horizontal indentations. Ø uncertain, pres. ht. 2.2. The rim form is typical of table amphorae in LRPW of the late C5–C7 AD, and this piece is probably an unpainted version of the same type (*SGR IV,* SGP3695, amphoretta from a destruction layer of Period 3B, ca. mid-C7 AD).
8. Lids		
8a. Knob and surrounding wall		
1256	229	Fig.33. P485. Part of shallow conical lid with solid central knob. Fine, hard pink clay with a little fine mica, fired buff at surface; irregular traces inside and out of a thin red wash. Ø knob 3.1. Cf. *Gravina II*, cat.1334, probably in context in Period VIIIa, late C2 and much of C1 BC.
8b. Lid ws		
1257	223 E13N38	Fig.33. P551. Frag of convex lid. Plain cream ware. 5 shallow parallel impressed grooves ca. 0.2 wide on upper side. Max. dim. 4.1. Angle and Ø shown in drawing are approximate. Probably Hellenistic. I have no exact parallel but cf. the bowl form published by Cotton in *Gravina II*, no.1177 with zone of horizontal grooves on the exterior wall, in a similar cream ware, not reliably stratified.
8c. With simple undifferentiated rim		
1258	139	Fig.33. P2089. Diameter and angle rather uncertain. Orange-brown clay with moderate quartz and dark (iron ore?) inclusions; traces of orange-brown slip; inside surface seems to be roughly burnished. Ø ca. 30.0. This simple rim type can hardly be dated precisely. Cf. e.g. *Gravina II,* cat.1344 from a context of Phase VIIIa (late C2 and C1 BC); Turchiano in *Ordona X*, 366 tav XI no.24.1 from the cistern connected with the Late Antique house, filled in ca. mid-C5.
8d. With un-thickened down-turned rim		
1259	813 C2	Fig.33. P7701. Drab light brown clay with paler surface, fairly hard fired. Upper part slightly curved turning steeply down to rim. Ø. 17.0. Cf. Hayes 1994, fig. 9 no.66 for an example in local/ RRS ware from the pit group F202 on Botromagno, datable ca. 75 BC ±15.
8e. With projecting triangular rim The following three pieces, all from the predominantly Late Hellenistic site 813, are shallow variants of the form of bowl with triangular rim (cf. No.1235) which are likely to have served as lids. They are arranged here in decreasing order of the extent of undercut of the flange of the rim.		

1260	813 G2	Fig.33. P7704. Continuous slight convex curve on wall above rim. Pale brown very micaceous clay. Another similar (smaller) P7719, from same site. Ø 20.0.
1261	813 D10	Fig.33. P7721. Rim of lid. Orange-brown micaceous fabric, pale brown surface out. Shallow groove near tip of rim. Ø ca. 20.0.
1262	813 C5	Fig.33. P7720. Lid rim, sub-triangular. Rather soft greyish-brown clay with a little mica. Ø ca. 18.0. Cf. *Gravina II,* cat.1341 of Period VIIIa (late C2/C1 BC (with the thickened rim terminating in a narrow lip).
8f. Lid or dish with angled T-shaped rim		
1263	145-9 Ar.145 K09	Fig.33. P133. Finely granular pale red clay with moderate very fine mica and sparse very fine white and earthy red specks. Ø ca. 30.0. Probably from a lid, as Olcese 2011-2012, 361, tav. 3.LIII no.8 from Pompeii, Porta di Stabia, between beginning and 2nd quarter C1 AD. Cf. also *SGR IV*, SGP3157, Period 3A M1A (1st half C5 AD) and SGP3766. Period P3B M7 (ca. 460–650 AD). The shape is also found in coarse ware of the Byzantine period in a context of the C11 AD in Bari: S.Airò in Nuzzo *et al.* 2012, 100 and fig. 13.12.
9. Colanders Sieves and strainers were widely used, no doubt for many purposes. One of the most important is likely to have been to separate curds from whey in cheese-making. In the BA this was done with impasto milk-boilers equipped with funnel-shaped sieves (Section 3.27 above). These continued in use in the IA, and are attested in our field survey by an example from Site 223 (No.311). The shape of No.1264 listed below suggests that it served the same purpose. It is not in cookpot fabric, but this may not have been thought necessary since it would not have come into direct contact with the fire. The other pieces with re-constructable shapes are quite different: No.1272 is from a tall heavy jar with perforations only in the base. It may be compared with Ward-Perkins & Claridge 1976, no.296, pottery strainer from Pompeii, which the authors suggest was used for straining curd cheese. The others are bowl-shaped colanders which may also have been used for this purpose: similar pots found on Roman sites (especially on military forts) in Roman Britain have frequently been identified as cheese-strainers: Cool 2006, 95-96. A variety of utensils (baskets or sieves) could be used for this purpose, as Columella (*De re rustica* VIII.3) indicates: *cum concrevit liquor, in fiscellas aut in calathos vel formas transferendus est*. If this interpretation is correct, it would imply that the Roman technique of cheese-making, which involved straining and drying the curds before pressing them, was already in use well before the Roman conquest, since our fragments come from sites which were occupied in the Peucetian period. The same can be said of a comparable group of strainers from the Lucanian settlement at Pomarico Vecchio (Deodato in *cit.,* I, tavv. 71-72, nos.102-104). An alternative possibility is that these bowl-shaped pots with perforated walls were used as spacers to separate pots being fired in a kiln. The holes would have allowed the hot air to circulate below the pot next above it in the stack. That appears to have been the case at Taranto where such pots (with additional large apertures in place of the base) were found in the waste deposit associated with kilns of the C5–C4 BC (Dell'Aglio 1996a, 68-69 (illus) nos.4, 6, 8). There is also a fragment of a colander in sandy cooking ware: cf. No.1405.		
1264	223 E34N31	Fig.33, Pl.27. P4538. Rim and wall of tubular shaped pot, perforated with numerous holes. Light greyish-brown clay. Ø ca. 16.0. Probably the funnel of a milk boiler for cheese-making. Cf. No.311 in impasto (with refs.).
1265	629 N	Pl.27. P8153. Reddish-brown micaceous clay; some minute black and brown inclusions. 2 holes in centre of sherd, and part of 7 others round edge. Max. lg. 3.0, th. 0.9.
1266	229	Fig.33. P503. Frag. of a colander. Plain smooth yellowy buff clay. Brush? combed inside. Ø 22.0 (v. approx). Cf. Deodato in *Pomarico Vecchio I*, tav. 71 no.102 (slightly steeper), surface find but ante-dating the destruction of the site in the late C3 BC.
1267	223 E53N18	Pl.27. P4953. Frag. from the floor of a colander in greenish-brown clay, some white grits. Pierced by 2 oval holes ca. 0.8 × 0.6cm with traces of 5 others. Max. dim. 8.2.
1268	407 SE spur	Pl.27. P1049. Ws with 7 holes, 3 complete. Hard pinkish-brown micaceous clay, light grey in core, fired darker brown outside. Max. dim. 12.5, th. 1.0.
1269	223 E28N21	Pl.27. P4653. Ws. Reddish-brown clay with pale grey-brown surface, some small white grits. Pierced by 3 holes 1.5cm apart set on an oblique line. Est. Ø 16.0, th. at bottom of sherd 0.7.
10. Flower-pots For other flower-pots from this area, see *Gravina II,* no.1592, period Gravina VIIIa (late C2/ 1st half C1 BC); *Gravina (PBSR) III (2),* 128-129 and fig. 52 no.301 from Parco S. Stefano, floor of House 2, last half of C4 BC (both these treated as perforated *pithos* bases); *Vagnari*, 65 fig.2.19 from the surface collection (with hole in side wall near bottom). Most of the Pompeian flower-pots described by Jashemski (1979, 238-240) had 3 or 4 holes in the sides as well as in the bottom, and were embedded in the earth. They had base diameters ranging from 5.0 to 7.0cm and were less than 16.0cm high. Messineo (1984) publishes groups of similar pots from the villa of Livia and the Esquiline in Rome, and suggests that they were used for air layering (following Lafaye in Daremberg & Saglio, s.v. *Topiarius*), and that the pots were deliberately cracked when the new shoots were transplanted to allow the roots to break the pot open as they grew. Macaulay Lewis (2006, 210) notes that forms of flower-pots varied greatly		

from one region and part of the empire to another, and this is confirmed by the fact that the Apulian pieces from the survey area do not match the typology of the Roman and Pompeian pots, and vary among themselves. The pot from Vagnari is shaped like a bowl but it too may have been used for propagation by air layering since it had at least one hole in the pot wall as well a single hole in the base. The three pieces listed below all had multiple holes in the base. No.1270 is of a suitable size to be used for air layering, but this cannot be proved since there are no lateral holes in the preserved fragment. The remaining two pieces are roughly finished inside, strongly suggesting that they were used for potting plants, but they belong to much larger pots and can hardly have been used for air layering, though they could have been intended for cultivating plants above ground, especially if they were intended for sale. Pliny (*NH* XII.16) refers to the practice of transporting exotic Assyrian apples in earthenware pots with breathing holes for the roots, but there is little or no evidence for cultivation of plants in pots for domestic enjoyment. Macaulay Lewis (2006, 207-208) states that there is no archaeological evidence for flower-pots before the late C1 BC, but she ignores the examples from Botromagno cited above. The two pieces found on Site 223 (San Felice) listed below are also likely to have been used in the pre-Roman period. There is not yet an adequate data-set for South Italy to fit these pieces into a serial typology.

1270	223 E28N19	Fig.33. P4654. Base of a small flower-pot. Hard pinkish-brown clay, base slightly offset. Pierced by several holes, of which one survives complete and part of 2 others – probably no more. Ø base 3.2. The small pot might have been used for air layering.
1271	372 L4	Fig.33. P871. Base of large flower-pot with holes in bottom. Thick, heavy vessel with flat base and steep wall in finely granular plain buff clay. A number of holes ca. 15mm square punched through the bottom (2 in sherd). Ø base ca. 15.0. For the shape, cf. Messineo 1985, 154, fig. 131 from a settlement of the Late Republic at Monte S. Michele ca. 12km N of Rome The large dimensions of our pot suggest that it was used as a planter for a shrub.
1272	223 E52N23	Pl.27. P4946. Base and lower wall. Pinkish-brown clay with pale brown surface. Wall of uneven thickness. 5 holes and part of 4 others in preserved part of pot. Ht. 8.5, max. th. at base 1.5.
11. Inscribed fragments		
1273	223 E29N18	Pl.27. P4731. Reddish-brown micaceous clay, brown outside surface. Lightly incised C (or U) motif – probably *sigma*.
1274	223 E25N23	Pl.27. P4260. Base frag. with graffito on underside. Pale buff clay. Part of 2 intersecting curved lines, probably of *chi*, incised while clay still wet; edge of another incised letter at corner of sherd. Max. dim. 3.4.
12. Bases		
1275	407 B5	Fig.33. P8113. Plain wheel-made ring base from closed shape. Very hard fired pinkish-brown clay. Ø base 11.4, pres. ht. 4.5. cf. Cotton in *Gravina II*, nos.1282 (Period Gravina VI: C4/C3 BC), and 1286 (Period VIIIa: late C2–mid-C1 BC) from Botromagno. The form is also found in painted ware: cf. Marcheggiani in *Pomarico Vecchio I,* tav 63 no.51a, ?C4 BC (with banded decoration).
1276	213	Pl.27. P366. Base and lower wall. Pale pinkish-brown clay, paler surface, horizontal combed markings on outside and on under side of base. Ø base 9.0. Probably from the lower undecorated part of a LRPW closed shape. Cf. No.1168 in LRPW.
13. Wall sherds		
1277	124	Pl.27. P31. Frag. of large bowl with band of feather-rouletting on outside of wall. Fine buff clay. Ø 32.0. Cf. Fracchia & Hayes 2005, 163 no.27 from the villa at the Masseria Cicotti, Oppido Lucano, late C2 AD (but before ca. AD 180).
1278	223 E24N29	Pl.27. P4092. With combed wavy line with 4 grooves unevenly impressed in upper part of sherd. Dull brown clay with a conspicuous white quartz inclusion. Perhaps LRPW but no coloured slip remains on sherd. Max. lg. 3.0, th. 0.5. The piece must be contemporary with LRPW examples in the same technique, ca. 450–650 AD.

14. *Mortaria* and other large kitchen bowls

These large and relatively shallow bowls with broad bases and strong wide rims were an essential part of the equipment of any household. They came in various sizes. Small ones might be used for pounding or grinding cosmetics or medicaments; medium sized ones might be used for breaking down hard food substances like grains of emmer wheat or chick-peas which were not suitable for milling, and large ones could be used for kneading dough for bread, as Cato describes – *De Agri Cultura,* 74. The basic shape was modified to suit the principal function required. Many were equipped with a broad spout attached to the rim for pouring out the contents (as No.1283), and some had lug handles protruding from the rim's edge (as No.1287), or finger-impressed "pastry-edge" mouldings (as Nos.1280, 1289), by which the *mortarium* could be held firm with one hand while the contents were pounded with a pestle held in the other (as No.1287). Some *mortaria* had neither spout nor lug, and others had both. Some had angular grits inserted in the inside wall to assist grinding (as Nos.1282, 1293-1295). There were several types of rims. The typology of *mortaria* is therefore rather complex and fluid.

14a. Bowl with heavy rim, square in section and grooved on top		
1279	410	Fig.34. P1031. Rim scored with 2 concentric grooves on upper surface Drab brown clay with paler surface. Ø ca. 32.0. Cf. *Cozzo Presepe,* 367 fig. 136 no.381 Phase CPAIV ca. 550–480 BC; *Gravina II,* cat.1195 of Phase Gravina VIIIa (late C2–mid-C1 BC, perhaps redeposited); Vittoria in *Chora Metaponto III*, 403 no.208 from the Chora of Metaponto (surface material). Cf. also the much larger basin No.1305.
14b. Bowls with heavy rounded rim, and a narrow groove on the wall below it. The type corresponds to Conti's (1989, 295-296) type H1 from Locri. It is the standard "Corinthian" type of *mortarium*, developed in Corinth in the C5 and widely exported. It was in general use in South Italy from at least the end of the C5 to the middle of the C3. Most examples had lug handles with ribbed edges, and a spout projecting from the rim. In the C4 the ribbed lugs are reduced to a short zone of "pastry" edge moulding on the edge of the rim, as on No.1280. These heavy *mortaria* were mould-made: see the remarks by Cavallo (2014c, 292) on examples from the Fattoria Fabrizio in the Metapontino. A nearly complete example was found in the recent excavations on San Felice, *Saggio B,* in an abandonment layer (ca. end C4 BC): Sanvito in *PSF*, 138 and 140, tav. IV.33.		
1280	223 E33N15	Fig.34. P4779. From a very large *mortarium*. Pastry edge decoration on part of rim with a 9.5 strip of pastry edge (complete) but lacks spout. Hard yellowish-brown clay. Groove 0.5 wide and ca. 0.2 deep on outside wall. Max. dim. 46.0, ht 3.7. Cf. Tréziny 1989, fig. 43 no.251 from Caulonia, C4/C3 BC; *Pomarico Vecchio I,* tav. 66 no.69 from an abandonment context (US 138) of the 3rd quarter of the C3 BC; *Gravina (PBSR) III (2)*, 129 fig. 53 no.290 from Site A below Botromagno, before the end of the C4 BC; *Gravina II,* no.1510 from Botromagno, in a context of period VIIIa (late C2–C1 BC, perhaps re-deposited). For other very large *mortaria* of this type, cf. Vittoria in *Chora Metaponto III,* 395 no.171 (44.0cm) and 396 no.173 (59.0cm), from the Chora of Metaponto, with further comparanda. They suggest that very large *mortaria* were a Metapontine specialty.
1281	423 swathe 9	Fig.34. P1117. Rim and upper wall. Finely granular buff clay without visible inclusions. Ø 36.0. A smaller variant of the type of No.1280, probably of similar date. Close to *Gravina II,* cat.1510, perhaps re-deposited in contexts of Gravina VIIIa (late C2/C1 BC).
1282	407 SW slope	Fig.34, Pl.27. P8114. Rim and upper wall. Very drab greyish-brown clay, hard fired with some darker greyish-brown inclusions. Dense scatter of small angular grits up to 3mm inserted in surface on lower edge of sherd. Max. Ø 28.0. The practice of adding grit to the inside of a *mortarium* was fairly common: cf. *Gravina (PBSR) III (2),*129 fig. 53 no.292 from floor of House 2 at Parco S. Stefano below Botromagno, last half C4 BC; *Gravina II,* no.1511 (from Botromagno, general scatter), and nos.1293-1295.
14c. Mortarium spout Probably from a *mortarium* of Conti's type H1 (see above, 14b)		
1283	223 E49N29	Pl.27. P4709.From a very large *mortarium*. Drab brown clay (burnt). Max. lg. 6.5, max. w. 6.5, w. of channel 2.5. Cf. Deodato in *Pomarico Vecchio I*, 177 and tav. 67 nos.75-76. She notes that the type is found on Lucanian sites in the C4. At Pomarico, however, one piece comes from an abandonment layer (of the late C3 BC). On Botromagno, *mortaria* with similar spouts are found in contexts of Periods Gravina VI (C4/C3 BC) and especially VIIIa (late C2–mid-C1 BC): Cotton in *Gravina II* nos.1513-1516, 1522-1523 (with shorter spouts). At both Pomarico Vecchio and Botromagno the *mortaria* with spouts have thin convex walls and wide and relatively deep bellies. See on No.1280 for large *mortaria* in the Metapontine area.
14d. Heavy base, probably of mortarium		
1284	214 B	Fig.34. P7195. Hard grey fabric with numerous small black and red inclusions, much encrusted – re-used as building material. Groove in bottom 3mm wide and ca. 2mm deep, partially filled with mortar. Ø base 17.0.
14e. Shallow mortaria These three shallow bowls have heavy walls and bases to ensure stability. The fact that one of them (No.1287) has a lug handle with parallel vertical grooves normally found on *mortaria* suggests that these pieces also served that purpose.		
1285	223 E58N19	Fig.34. P4994. Pale yellowish clay, rather soft. Ø. ca. 38.0.
1286	223 E29N30	Fig.34. P4824. Hard fired pinkish-brown clay, pale grey surface. Some white inclusions up to 1.5mm and numerous smaller black ones. Ø ca. 38.0.
1287	223 E42N31	Pl.27. P4783. Pale yellowish-grey clay, rather soft. Deep circular groove on underside near edge; projecting lug with vertical ribbing. Max. Ø ca. 32.0, pres. w. of lug 5.2. Cf. *Monte Sannace*, 71 and tav. 272.1 mid-C4/C3 BC; for the lug: *Sibari III*, 197 no.5 and fig. 255 no.797 with comparanda of the end C4 BC. Another similar (P4933) also from Site 223 (E51N26).

14f. Mortaria with slightly rounded down-turned rim and ?spout		
The bulbous excrescence on the rim possibly formed one edge of a spout, but is better interpreted as a residual lug handle, comparable to that on No.1291. *Mortaria* with down-turned rims, both with and without spouts were widespread in S. Italy from the end of the C5 to the end of the C4 BC, with some continuity into the C2: cf. Vittoria in *Chora Metaponto III,* 398 no.183 from the Chora of Metaponto, with comparanda; Masiello in *Rutigliano*, 319 tav 1 Tomb 12, ca. 340–330 BC.		
1288	134 AR9	Fig.34. P2087. Hard greenish-grey clay with paler surface. Ø ca. 36.0.
14g. Mortarium with relatively deep bowl and thin horizontal rim with small vertical ridge around inner edge, and "pastry edge" moulding on part of outer edge		
The type derives from the *mortarium* with raised inner edge and gently down-curving flange which had appeared at Olynthus before 348 BC and is well attested in the Vari house in Attica in the late C4 BC (Jones *et al*. 1973, 387 fig. 10). In S. Italy it appears to replace the *mortarium* with heavy rounded rim in the course of the C3 BC and is widespread in the C2/C1 BC. Examples from the cargo of a ship, wrecked off the coast at Gallipoli around the middle of the C1 AD, show the late evolution of the type, with heavier rim and squatter raised edge: Dell'Anna 2014, 403 figs 3-4 (with grits on inner surface).		
1289	417	Fig.34. P1037. Clean light brown clay fired reddish on outside. Ø ca. 23.0. Cf. *Gravina II*, 1200, 1237, 1515, 1519 (first in Gravina VII, C3 and early C2; also in Gravina VIIIa, late C2 and C1 BC); *Civita di Tricarico I*, fig. 320 no.781 (stratigraphic date not given, but before the end of the site ca. 200 BC).
14h. As 14g, but with drooping rim.		
There is no evidence for "pastry edge" moulding on the sherd.		
1290	813 D2	Fig.34. P7705. Rim of bowl with flange projecting 1.7cm below rim. Slight curvature on inside wall. Flat top of rim. Pinkish-brown clay with pale brown surface. Some white grits (shell?), some small brown grits and a little mica. Ø at flange ca. 29.0. Cf. *Gravina II,* cat.1203 attested in period Gravina VIIIa, late C2/C1 BC; Yntema 2001, 268, Form 57, no.490, basin with flanged rim, from a context of the 1st half C2 BC, *Civita di Tricarico I,* no.800, ca. 200 BC (?).
14i. Mortaria with squat, stumpy bowl and T-shaped rim, sloping obliquely outwards		
On this piece, the lug handles of type 2 are reduced to residual vertical grooves flanked by a bulbous excrescence.		
1291	407 B0	Fig.34. P1083. complete shape except for spout (about a quarter of the pot preserved). Hard dark reddish-brown clay. Thickened rim unevenly finished. Projecting knob on rim; row of vertical incisions on one side of knob. Max. Ø 28.0. A rather crude, presumably local, piece.
14j. Mortarium or heavy bowl with horizontal T-shaped rim; concentric and radial grooves on the rim		
1292	388/424 swathe 4	Fig.34. P1108. Flat-based bowl with steep curving wall and thickened rim. 3 shallow grooves on top of rim, overlaid by regular striations at right-angles; fine horizontal combing on outside of wall. Finely granular buff clay, no obvious inclusions. Ø ca. 18.0. The grooved treatment of the rim and the horizontal combing on the wall suggest a Late Antique date, in conformity with other material from this site.
14k. Mortarium bases and lower wall sherds with stone chips in the tondo		
For the practice of inserting small stony grits into the surface of the bowl to facilitate grinding, see on No.1282. The following pieces differ in the way the grits were arranged, and in the form of the base, which may be flat (as on Nos.1294,1295) or supported on a ring (as No.1293). Cf. Olcese 2003, tav. XXXVIII.1, *bacino/ mortarium* tipo 8, Middle and Late Republican, in Latium.		
1293	223 E32N22	Pl.27. P4625. Ring base. Hard orange-brown clay, pale surface out. Interior studded with white, grey, dark brown and black gritty pebbles up to 5mm, and with holes where the pebbles have been lost. Ø base 10.5, pres. ht. 3.5.
1294	372 M5	Pl.27. P865. Frag. from bottom of a flat-based *mortarium*. Underside roughly finished. 2 rows of concentric impressed dots would have held angular stone chips to assist grinding. The wall of the pot begins to curve upwards outside the circle of concentric dots. Max. dim. ca. 6.0; th. 2.2. The practice of adding grit to the inside of a *mortarium* was fairly common (cf. *Gravina II,* no.1511 (a general scatter), but the organization of the grits in 2 concentric rings around the tondo is unusual. Cf., however, Macias I Solé 1998, 810, fig. 1, "Cerámica mediados del s. V", second row, left, from Tarraco, C5–C7 AD (with apparently 3 concentric rings).
1295	223 E22N29	Pl.27. P4086. Hard fired drab brown clay. Deep pock marks, ca. 0.8 long and 0.4 wide, irregularly arranged on the surface of the tondo, would have held stony grits. Max. dim. 7.0.
15. Large shallow basin with fluted wall		
The following piece is too badly damaged for certainty, but the row of ovoid fluting below the rim suggests that the frag. comes from a large shallow basin comparable to *Roccagloriosa I*, 271 no.293, C4/C3 BC.		

1296	145-9 Area 147 D6	Fig.34. P260. Rim frag. with rounded top and beginning of steep wall. Grey clay with pink/ brown inclusions, white surface, evenly fired with no evidence of firing cracks, but a few small holes. Projecting moulding on underside of rim near junction with wall, decorated with a row of ovoid thumb-impressed indentations. Ø uncertain, but very large – ca. 70.0–80.0, pres. lg. 11.5. Another (P191) from same site probably from same pot.
16. Bell-shaped basin		
1297	126	Fig.34. P4344. Rim and part of wall. Rather soft reddish-brown clay, pale yellow surface out. Ø 30.0. An unusual piece, perhaps a plain ware version of a late classical bell-krater with the rim form of a BG one-handled cup (cf. No.790). Late C4 BC?
17. Miscellaneous deep large bowls with thickened rims		
17a. Deep bowl/ basin in sandy fabric with grooves in outer surface The following piece is in the same fabric as the tiles Nos.2193-2198, and the *dolium* No.1920, q.v. for a discussion of the problem of classifying these sherds.		
1298	627 - O	Fig.34. P1600. Drab greyish-brown micaceous clay, fired orange towards surfaces with numerous dark brown and black grits up to 2mm. Horizontal groove ca. 0.3 wide and 0.2 deep intersected by 5 oblique grooves of same width but slightly shallower, 0.7-1.5 apart. Ø ca. 42.0. Max. dim. 8.0.
17b. Large hemispherical bowl with heavy projecting rim and steep wall		
1299	821	Fig.35. P1919. Fine buff clay, slightly vesicular, very sparse mica, fired cream at surface. Ø 21.0. Cf. Arthur 1994, 182 fig. 80 no.11.1 from Carminiello ai Mannesi, Naples, phase VII (end C5 and 1st third C6 AD).
17c. Large bowl with T-shaped rim decorated with rouletted pattern in relief The rouletted decoration on the rim of this piece suggests that it was used for a ceremonial purpose, perhaps as a basin for washing the feet of guests. It would have been more portable than the *louteria* of sub-section 19.		
1300	407 D5	Fig.35. Pl.28. P2121. Hard dark reddish-brown clay with brown surface. Lightly rouletted lotus and palmette frieze on rim. Inner Ø ca. 40.0. Cf. *Gravina II*, fig. 58 no.1227 for a bowl of the same shape with a different rouletted pattern (olive frond and crested wave frieze) from contexts of period Gravina VII, C3/ early C2 BC (re-deposited?). For a looser version of the lotus and palmette motif, cf. Scarfì 1962, 129 fig. 122; 176, fig. 161, *pithoi* from Monte Sannace. The proportions of the palmettes are likely to be inspired by the palmette friezes on Protoitaliote vases which were prized in Botromagno/ Silvium in the late C5 BC. Cf. esp. Ciancio 1997, 95 fig. 121, and 182 no.124, volute-krater, name vase of the Gravina Painter. Suggested date: early C4 BC.
17d. Bowls/ basins with T-shaped rims		
1301	234	Fig.35. P572. Rim nearly flat on top, tilted slightly inwards and projecting out and in; near-vertical wall (slightly convex) with 2 shallow thin grooves at 2.3 and 2.8cm from top. Soft orange-brown clay with dusty surface. Ht. 4.8, Ø ca. 39.00. The shape is a variant of Form 43 in Late Roman Painted Ware – cf. No.1158.
1302	813 F5	Fig.35. P8145. Bowl with rounded wall and thickened rim projecting in and out. Rather soft micaceous greenish-grey clay. Ø ca. 26.0. The form appears to be a variant of the wide bowl with convex wall and T-shaped rim attested on several S. Italian sites in the C4/C3 BC: cf. Cotton in *Gravina II*, no.1193 of Period Gravina VI (C4/C3 BC); Yntema 2001, 94 no.145 from Valesio; *Civita di Tricarico I* from no.762 – all with less rounded walls.
18. Large deep basins Basins of various types with heavy rims, in 4 cases (Nos.1303, 1304, 1307, 1308) decorated. There are few published drawings of this class of pottery.		
1303	407 A4	Fig.35. Pl.28. P2076. Frag. with projecting horizontal rim and lug handles supported on 2 vertical columns: part of one handle only survives, with both columns damaged. Worn pattern in light relief on top of lug with (from inside to out) row of curls (producing effect of crested wave/ running dog), row of boxed squares alternating with swastikas, another row of curls, and row of egg and dart. All these impressions seem to have been made with individual stamps. Hard fired reddish-brown clay with paler surface. Outer edge of lug is almost completely lost. Pres. ht. 10.0, w. rim 4.6; th. wall 1.8. The decorative pattern with rouletted row of boxed squares alternating with swastikas fringed with a row of ovules can be seen also on the rim of a *louterion* from Reggio Calabria: Jozzo 1981, 160 and tav. XXXVIII.4, in which the boxed squares contain rosettes. They may have done so also on our piece, but the surface is so worn that it is impossible to be sure. Jozzo dates this form of the motifs (originally late archaic) to the mid-C5 BC. For the shape and row of ovules, cf. also Scarfì 1962, 101 figs. 84 and 85 from the acropolis of Monte Sannace (with rouletted ivy trail). For the ovules, cf. also No.1569 (basin). C4/C3 BC.

1304	223 E49N27	Pl.28. P4685. Rim and upper wall. Reddish-brown clay with some black, white and light brown sub-angular inclusions, pale brown surface, micaceous. Rim thickened and out-turned, flat on top with 7 impressed circles on upper surface. Side of basin near vertical. Turning marks visible on outer surface. Deep groove on exterior incised after firing and probably recent. Ø not calculable but very large. Max. dim. 6.5, max. th. 1.5.
19. *Louteria*/ small basins *Louteria*, shallow wash-basins supported on pedestals, were used throughout the Classical and early Hellenistic world. The standard type was fixed by the end of the C6 and was used with little variation throughout the Greek world, including Magna Graecia (Jozzo 1981; Peluso 1992), whence it spread to the indigenous communities. *Louteria* were used not just for washing but also for ritual lustrations both in sanctuaries and in domestic cult (Carter & Lanza Catti 2014, 117, 120, 128-129), and this may also have been the case in indigenous Italic contexts. Their importance in domestic life might be emphasized by added decoration: The base of the pedestal might be stepped and decorated with grooves (as on Nos.1313-1314) or with stamped and rouletted motifs (as No.1314a). The shaft on which the basin rested might rise only a few cm above the step (as in a complete example from Civita di Tricarico: *cit.*, no.1252), or it might be tall and fluted. The rim of the basin might also be embellished with rouletted or stamped motifs (as Nos.1306, 1307, 1311, 1312). Relief-decorated *louteria* are attested as early as the 2nd half C6 at Oria, and later examples, of the C4 and C3 BC, are recorded at Locri Epizefiri (Peluso 1992, I, 260-261 and II, tav. LXXX nos.256, 257, ? early C3 BC), Fratte (Serritella *et al.* 2009, 154-156), Montegiordano (Luppino 1981), Civita di Tricarico (*cit.*, 268-269 and fig. 230), and Monte Sannace (Rossi in *cit.*, 196). At Valesio the type continued into the C2/C1 BC: Yntema 2001, 271. A vase by the Amykos painter found on Botromagno shows a woman washing at a *louterion*: Ciancio 1997, 204-205 and figs. 132-133.		
19a. Basins		
1305	813 B2	Fig.35. P8155. Basin with projecting horizontal rim and steeply curved wall. Hard pinkish-brown clay. yellowish on surface; scatter of small angular grey inclusions up to 1mm (same fabric as *dolium* No.1903 from this site). Ø 47.0. Close to *Cozzo Presepe* fig. 142 no.424 (unstratified, but ante-dating the destruction of the site in the mid-C3 BC).
1306	223 E40N29	Fig.35. Pl.28. P4619. Basin with heavy horizontal rim, rounded on underside. Brick red clay some white ?shell grits up to 2mm with cream slip. Rouletted motif with 4 spiral palmettes linked by a 4 pointed star, ca. 1mm deep on upper surface of rim. Ext Ø ca. 56.0. Cf. Scarfì 1962, 80, fig. 69, *pithos* rim from Monte Sannace, a close parallel. The curlicues turning into a triangular frame for the loose palmettes are also found on protoitaliote red-figure, especially in the handle-zone of kraters, as on the volute-krater of the Gravina painter cited above (see No.1300): cf. Ciancio 1997, 99, fig. 128 from Botromagno. The motif remains current in Apulian red-figure of the ornate style throughout most of the C4 BC. Cf. e.g. Mayo 1982, 179, fig. 73, volute-krater close to the Painter of Berlin F 3383, 330–300 BC.
1307	627	Fig.35. Pl.28. P1569. Basin with oblique wall and vertical flat-topped rim decorated in relief. Drab brown clay with paler surface, much worn. Motifs in low relief on top and outer edge: on side, row of rosettes; on top: frieze of tongues inside frame. Both motifs were probably made with single stamps rather than rolled. Only a small part of the oblique wall below the rim is preserved. W. of top 3.3; max. w. of preserved part of outer edge 3.2, exact Ø unascertainable. Rows of rosettes are a feature of Apulian red-figure of the ornate style: cf. e.g. Pontrandolfo 2009, 127 by the workshop of the Lycurgus Painter, 360–340 BC; Mayo 1982, 176 no.71 by the Baltimore Painter, ca. 320–310 BC, combined with a row of *ovolo*. For other deep basins with relief decoration, cf. Roubis 1996, 251-252 no.19 from Difesa S. Biagio (with rouletted crested wave on top); Serritella *et al.* 2009, 154-157 from Fratte (2nd half C4 BC); Rossi in *Monte Sannace*, 196 (4 basin rims of various types with impressed palmettes, ivy trains and running dog); *Ordona II,* pl. XIII a-b, with frieze of griffins; *Civita di Tricarico*, no.1254 with geometric motif from a context of the end C3 BC; Yntema 2001, 271 no.480, with rouletted ivy trail, from Valesio in a context of late C2/ early C1 BC.
1308	229 C	Fig.35. P489. Basin with projecting horizontal rim and low curving wall. Light brown clay, hard fired, some small white inclusions. Impressed wavy line on rim, 3 impressed circles on inside and beginning of another below. Horizontal grooves irregularly spaced on outer edge of rim. Approx Ø 44.0, th. of wall 2.0. A *louterion* from Fratte, of different shape, is similarly decorated on the interior with impressed circles: Serritella *et al.* 2009, 154 fig. 67, from a context of the 1st half C4 BC.
1309	804	Fig.35. P2064. Small frag. of a shallow basin (for washing, or perhaps for food preparation), with slightly raised rim, marked off by a groove beneath on the outside. Buff clay. Ø uncertain, pres. ht. 2.2. The piece follows an Attic prototype of the mid-C5 BC: cf. Sparkes & Talcott 1970, fig. 16 no.1869, ca. 450–420 BC, *louterion*, with similar "lightly collared rim"; Tang (ed.) 2007, 296 fig. 99 AA-11 from Pontecagnano from an Early Hellenistic layer, considered a vessel for the preparation of food; Vittoria in *Chora Metaponto III,* 397 no.179 from the Chora (with 3 grooves), recorded as a *mortarium*; surface find.

1310	801	Fig.35. P2056. Basin with thick horizontal rim with horizontal ribbing formed by 5 horizontal grooves on sloping outer face. Pinkish-brown clay with abundant fine sand: shiny black (volcanic) grains, also rounded quartz, limestone (rare) and iron ore (?). Ø > 60.0. For the type, cf. 2 frags. from the sanctuary at Pantanello published by K. Swift (*Chora VII,* 857-859, PZ Lou 01 and 02). They were found in later (Hellenistic) contexts which held redeposited material from the Archaic and C4 sanctuary and Swift argues that they imitate Corinthian prototypes and represent the main locally produced *louterion* type in the Late Archaic period and C5 BC. The date is supported by 2 large frags. with similar rim profiles found in the sanctuary of Monte Papalucio near Oria in contexts dated ca. 575–550 and 490–470 BC (Mastronuzzi 2013, 120 fig. 79 no.256; 155 fig. 108 no.371). But the type lasted into the C4 BC: cf. *Pomarico Vecchio I.1*, tav 100 no.21 and *I.2*, 251, note 21 with further comparanda by C.Maturo.
1311	223 E42N23	Pl.28. P4497. Internal edge of rim missing. Coarse reddish-brown micaceous clay with many small white and some reddish-brown and black-brown inclusions, and 1 large black pebble (6mm). Thin pale yellowish-brown slip. Rouletted palmette motif as No.1306, but probably not from the same pot since found ca. 75m distant.
1312	223 E18N20	Pl.28. P4157. Frag. of a large *louterion*/ basin rim. Hard fired reddish-brown clay, some white inclusions and light brown surface. Rouletted pattern of olive frond on top of rim. Ø ca. 96.0. The rouletted olive frond was a popular motif on the rims of large vessels in in Lucania and Apulia in the C4/C3 BC. Cf. Lissi Caronna 1990-1991, 271 and figs 95 and 99, no.65 (with florets between leaves) on a *pithos* from Oppido Lucano, House D with material of the last half C4 and early C3 BC; Serritella *et al.* 2009, 158 fig. 71, from Fratte, 2nd half C4 BC; Vittoria in *Chora Metaponto III,* 410 no.240 from the Chora (surface find); *Gravina II*, fig. 59 no.1227, olive frond and running-dog frieze, from the fill of a chamber tomb of Period Gravina VII, C3/ early C2 BC (re-deposited?). A frag. of a cylindrical stamp showing an olive frond between 2 bands of running dog was found on Monte Sannace in a context of phase III, C4–C1 BC (Rossi 1989, 197 and tav. 355.3). It is said to be inscribed KITTAI, but the drawing shows CITTA between 2 of the leaves, and]TAI on the edge of the cylinder.
19b. Pedestals and base		
1313	223 E20N25	Fig.35. P4008. Frag. of pedestal, probably of a *louterion*. 3 concentric grooves on step between base and stem. Ø ca. 36.5. For other stepped pedestals from *louteria* with concentric grooves on the step (mostly fragmentary), cf. Cavallo 2014b, 290, FF Lou 20 from the Fattoria Fabrizio in the Chora of Metaponto, 400–300 BC; *Roccagloriosa I*, 305-306 fig.2 01 no.561, C4/C3 BC; Yntema 2001, 274 no.487 from Valesio in a context of the late C3/ 1st half C2 BC (but with suggested date of C4/C3 BC); Maturo in *Pomarico Vecchio I*, tav 100 no.23 (unstratified, but before the end of the settlement in the late C3 BC). Note esp. *Civita di Tricarico*, no.1252 (surface layer): the form of the base is complete and shows that the basin (missing) rested directly on the shaft which rose only 8.0cm above the step of the pedestal.
1314	223 E21N26	Fig.35. P4335. Frag, of pedestal, probably of a *louterion.* Rather soft pale yellowish-brown clay. Ø uncertain. Cf. No.1313.
1314a	229	Pl.28. P1377. Frag. of a *louterion* base and beginning of shaft of pedestal. Hard reddish clay with numerous small white and brown inclusions; thin pale pinkish slip, worn. Rouletted frieze round bottom of shaft with repeated pattern of 2 palmettes alternately inverted and an ivy leaf; row of stamped concentric circles round top of base, and another on outer edge. Beginning of another moulding at bottom of sherd. Ø ca. 36.0. Found by Sig. A.Florido of Gravina. Cf. Frag. of a *louterion* base from Stombi, Sybaris with a similar row of impressed concentric circle on the upper edge: *Sibari IV*, 145 no. 412, and 158 fig. 147.11525 in coarse reddish-brown clay. For the palmette frieze, cf. *Monte Sannace* tav. 229.1 (*pithos* rim). Probably late C4 BC.

18. COOKING POTS

I. Introduction

The ware

This section is concerned with the class of hard-fired and relatively thin-walled pots made of clay tempered with fine-grained sand, turned on a fast wheel, and fired at a temperature of 600–800ºC (cf. Gliozzo *et al.* 2005a, 28, 2005b, 58). The sand served to increase the resistance of the pot to thermal shock, and so to prevent the pot from cracking when it was set on a brasier or suspended over a fire. Generally the sand was derived from a separate source, and was carefully sifted before being added to the clay, but if there were suitable deposits of sandy clay available locally, they might be used without the addition of further grit.

The technique was devised for pots used in cooking, but many pots made in this way show no signs of fire-darkening, and must have been used for other purposes, such as food storage (cf. Yntema 2001, 279, 305). They include some jugs and other forms which were probably made in this ware because the greater porosity of the fabric would help to keep liquid contents cool.

The development of the cookpot shapes in our Survey Area

The range of cookpot shapes was very small (as it still is). There were three principal types corresponding to the main cooking functions for which pots were required. Shallow open dishes were used for frying or poaching (but only in the Roman period); lidded vessels were used for stewing, and open pots were used for boiling water and milk, or for anything that required stirring.

The earliest shape in regular use in South Italy was the *chytra*, a globular pot with wide mouth, outward curving rim and single vertical handle extending from rim to shoulder, which marks a complete break with the impasto tradition of hand-made cooking wares of the BA/EIA. The development of the shape in the Athenian agora has recently been clarified by S. Rotroff (2015). The earliest pieces, going back to the C8/C7 BC are imports from Aegina, and it was not until the middle of the C6 that Athenian potters made their own imitations of them. At first they were coil-built, but by the C5 the potters were producing thinner, wheel-made pieces, which they continued to do down to the end of the C1 BC. The shape was adopted in South Italy at much the same time as in Athens. One of the earliest examples is a (? hand-made) *chytra* from Incoronata, datable before ca. 630 BC (Quercia 2015, 205, Pizzo 1992, 97 no.1, figs. 154, 198), and others have been found in burials of the early Archaic phase (ca. 700–630 BC) at Siris (Quercia 2015, 206 and fig. 18.3). A piece from Cozzo Presepe, found in a context of Phase IIIb on Site A, can be dated shortly before the middle of the C6 (*cit.*, 375 no.440). On Peucetian sites *chytrai* appear first (on present evidence) in tombs of the late C7/ early C6 at Santo Mola near Gioia del Colle (De Juliis 1995, tavv. LXIV.B, LXXIII.B). These early pieces were perhaps hand-made, but one found in a tomb group on Botromagno dated to the 2nd quarter of the C5 BC was turned on a fast wheel (R.Whitehouse *et al.* 2000, 123-125, 150-151). In the C5 and C4 it was common to deposit a *chytra* in a burial. Those found in tombs usually show no signs of burning, and so had not been used for a funerary feast. More probably they held dry foodstuffs for use by the dead in the after-life as an accompaniment to the wine which was provided in a krater or krater-like pot, or (increasingly as time went on) in an amphora – as has been suggested in the case of *chytra*i found in burials of the Hellenistic period in Cyprus (Winther-Jacobsen 2015, 94).

Some of the fragments of *chytrai* listed in the catalogue below also show no signs of burning, and it is probable that they too were used as storage vessels, though probably in the house rather than in tombs. It has been argued by A.Quercia (2015, 207-209) that the indigenous communities of central South Italy resisted Greek modes of cuisine until the Lucanian phase of the C4 BC. It seems unlikely, however, that *chytrai* would have been deposited in tombs of the C5 (as on Botromagno) and not used for household cooking at the time. The degree of reception may have varied from one region to another. Quercia notes that at Satriano in the Basento valley, where there was an important Oenotrian sanctuary, impasto pottery continued to be used in the C6/C5 BC, whereas the Messapians who frequented the sanctuary of the same period at Castello di Alceste in Salento cooked the sacrificial meat in Greek-type *chytra*i (Notarstefano 2012, 69).

Already in the C5 BC a related type of *chytra* was developed in which the belly of the pot was separated from the rim by a distinct neck, which must have made the pot easier to handle (Nos.1466-1371). Examples were found on Sites 223, 229 and 607, all of which were occupied at least partly in the pre-Roman period.

Alongside the *chytrai* there were other closely related vesssels which reflect the indigenous Italic tradition of the *olla*, more ovoid in form and with flat bases. The two forms tend to merge, and there are numerous variants of the shape represented in the catalogue, differing in the configuration of the rim and neck. Most are represented by small rim sherds which cannot be classified neatly or dated precisely on typological grounds. Some have comparanda in more than one period, but Nos.1345-1349 were all found on sites which were occupied mainly in the pre-Roman period (Sites 223, 347-9, 712, 813), and some (e.g. No.1347) may go back to the C6 BC.

Many cookpots had recessed ledges in the rim to hold a lid. They are of several types. The largest are deeper globular pots, probably with rounded bases (Nos.1334-1339). The shape, sometimes identified with the Greek *caccabe*, appeared in Athens in the 2nd half of the C6 (Bats 1988, 47-48), and is attested at Castello di Alceste in Salento before the end of the century (Notarstefano 2012, 145 fig. 2.14). Pots of this type were being made in the *kerameikos* at Metaponto in the 1st half of the C4 BC (Quercia 2015, 207 fig. 18.4), and they are well attested on Apulian and Lucanian sites in the C4. They could be used for making stews or cooking vegetables.

There were also wider and shallower lidded vessels with rounded or straight walls, which can be identified with greater certainty with the Greek *lopas,* used for simmering and for cooking with sauces (Bats 1988, 48, 67). The shape was introduced in Athens before ca. 425 BC (Rotroff 2015, 185) and lasted there into the Roman period. *Lopades* with both rounded and straight walls were being made by potters in Metaponto in the 1st half of the C4 BC (Quercia 2004, 184), and both types are widespread on South Italian sites of the C4 and C3 BC. Our catalogue includes both rounded-walled (as Nos.1340-1342) and straight-walled (as Nos.1333 and 1334) types. No complete shapes were found but the comparanda show that that the walls of both types might either have joined a rounded base at a carination or risen directly out of a flat base. The catalogued examples come from Sites 134, 223, 355 and 813, all of which were occupied mainly or partly in the LIA or Hellenistic period. The *lopades* disappear before the end of the C1 BC.

Except for some flat-bottomed *lopades,* these fragments of Greek-type cookpots in use in the pre-Roman settlements belonged to forms which probably had rounded bases and were intended to be set either on a bronze tripod cooking ring, like that found in a tomb of the early C4 BC on Botromagno (Ciancio 1997, 191-192), or in the embers of a fire. They could not be placed directly on a table. In this they differed from the flat-bottomed pots of the Romano-Campanian cookpot repertoire which could be placed on a brasier or on the hearth floor, or used in an oven, and which could be set down on a table for serving. Some of the rim types found in our Survey Area on sites which were occupied at least in part in the last two centuries BC, have comparanda which show that they were probably fragments of flat-bottomed pots. They include the cooking dishes with bifid rims, Nos.1319-1321 from Sites 124, 229 and 906, and some of the deeper casseroles (Nos.1360-1363) from Sites 124 and 813.

Another new shape introduced from Greece into South Italy before the end of the C4 BC is the *clibanus* or baking lid, Nos.1380-1391, which is attested on Sites 120,124, 223, 229, 302, 303, 347-9, 372, 407. 530, 531, 703, 704, probably 716, and 906, though some pieces may belong to later phases on these sites. Also new in this period is the tripod vessel, attested in our survey collection by a single foot (No.1379). It was perhaps used as a stand to hold hot pots removed from the fire, as M.A. Cotton suggested in her publication of the pieces from the Posto villa at Francolise (1979, 175 re nos.7-8). The type continued in use throughout the Imperial period, and the precise date of our piece is uncertain.

There are fewer forms typical of the Early and Middle Empire attested in the survey data, a consequence, no doubt, of the drastic decline in the number of sites occupied in this period. Some of the older forms must have continued in use, but there were also a few new ones including the open-mouthed cookpot with broad horizontal projecting rim, and near-vertical sides, to which the small rim fragment No.1372 found on Site 905 most probably belongs, as does the pot with T-rim No.1374 from Site 906. These pots with broad rims to support a lid can be identified with the Roman *caccabus* (Bats 1988, 69), which took the place of the earlier Greek-type *caccabe*, and fulfilled the same functions. It was widespread in Rome and Campania.

The forms most commonly found on Late Antique sites are wide-mouthed vessels differing only slightly in form from the earlier *chytrai*, with or without a seating for a lid. They include No.1356 with undercut rim from Site 134 and No.1359 with near vertical rim having only a slight indent for the lid from Site 342. No.1364 with near-horizontal indented rim from the multi-period Site 905 has comparanda that place it in this period. The jugs or flagons Nos.1376 and 1377 also belong here, as probably does at least one of the *clibani* (No.1391) and the lid No.1403. Many of the Late Antique forms continue into the Early Medieval period, when there are one or two new types, including, probably, the bowl with out-turned notched rim No.1328.

Fabrics

No scientific petrological analysis was carried out on any of our pieces, but it is clear from macroscopic observation (with the use of a magnifying glass) that several distinct fabrics are represented in the catalogue. Three in particular were distinguished by Philip Kenrick who classified much of this material between 2002 and 2006, in accordance with the system which he had worked out for the pottery from Vagnari (in *Vagnari*, 376). They are as follows:

Sandy 1. Hard fired, compact, red or reddish brown but sometimes grey in core, and sandy in texture with minute white and brown gritty inclusions and some mica. The grits appear to be sifted geological sand but may also include small fragments of shell. The largest pieces may reach 2mm. 18 instances.

Sandy 2. Colour and texture as Sandy 1, but with moderate quantities of very fine mica; moderate fine or medium quartz, iron-ore and limestone. 3 instances.

Sandy 3. Hard fired, compact, reddish brown or orange-brown with minute white inclusions. 9 instances.

These fabrics are generally fired red, which is the predominant colour throughout the catalogue, even for pieces that must be of Late Antique date, in spite of the fact that in other parts of South Italy, e.g. at San Giovanni di Ruoti, cookpot fabrics of that period are mainly grey. There are a few exceptions: No.1322 in Sandy 1, No.1398 in Sandy 2, No.1392 (unclassified), and No.1320 (Campanian?), all of which were fired grey. The first three are likely to be Late Antique.

Some of the catalogued pieces on the survey were not recorded by Kenrick, and others did not fit his classification. In these cases, fuller fabric descriptions are given in the catalogue.

Production and distribution

The manufacture of cookpots required a high degree of skill, and it might seem likely, therefore, that they would be traded over significant distances; but in general imported cookpots seem to have been relatively rare in our Survey Area. Two pieces in the

catalogue were imported from North Africa (Nos.1065 and 1066), but they were evidently much less in demand than the fine-ware red-slipped pieces from the same area. Kenrick (2014) has established that a small group of pots found at Vagnari were imported from the Balkans, but none were found on the survey. A few pieces with apparently volcanic glassy inclusions are likely to have been made in Campania (Nos.1320, 1356, 1394; perhaps also No.1323), and some other exceptional pieces may also be imports (e.g. No.1393), though in the present state of the evidence it is not possible to say where they came from.

The principal sandy fabrics are likely to be local or regional. Quartz particles were an important component of cooking wares (Olcese 2003, 24 ff), and were abundant in the sandy deposits of the Central Murge (cf. Muntoni 2003, 36-38) and the Fossa Bradanica.

Metaponto, at the South end of the Fossa might seem an obvious source for some of the cookpots, especially in the pre-Roman period, and several of our pieces can be compared with some of the published examples from the dump of the early C4 BC in the *kerameikos* of the city (Quercia 2004), but most of the fabric descriptions of those from the Pantanello cemetery in the Chora of Metaponto (Toxey & Carter 1998, 726-728) do not correspond well to ours. It is likely that from the C4 onwards there were numerous workshops producing cookpots in Apulia and Basilicata, though little is known about them until the Late Antique period. The workshop of the late C5 or C6 AD at Calle which produced large amounts of LRPW also made cookpots, mostly two-handled lidded jars (*ollae*) of varying proportions (Di Giuseppe 1998, 744 fig. 9). Another workshop excavated at San Giusto near Lucera also produced both cookpots and LRPW ware in the Late Antique period (Gliozzo *et al.* 2005, Turchiano 2010, 657-658). The cookpots were mostly wide-mouthed globular *ollae* with offset rims which had a slight recess for the lid and two short vertical handles, typical of the period. At Egnazia, a kiln excavated in the productive quarter to the south of the Via Traiana was being used to fire cookpots at the time of its collapse. Again, they were predominantly *ollae*, but there were also casseroles, frying pans, jugs and lids.

Raffaella Cassano and her colleagues (2010) have emphasized the local nature of the production of the workshop at Egnazia, and the lack of standardization of the pot forms, and this is born out by other studies of the typology and fabric of cookpots of the Late Antique period on other sites in Apulia and Basilicata, including Buccino (Rinaldi 2007). Maria Turchiano (2010) has argued that there were workshops producing cookpots in most of the important centres in Apulia, and that there were several levels of distribution of their wares, depending on the volume and quality of the production. In some cases, pots may have been made on the site, but most are likely to have been produced in one or other of the main settlements of the region and distributed within that general area. More rarely pots may have been imported from adjacent regions, and exceptionally high-quality pieces were acquired from overseas. Such a theory of production and distribution suits our survey data well. Some of our survey pieces show generic similarities with published examples from the production centres mentioned above, but there are few close parallels, and it is likely therefore that the workshops which supplied our Survey Area were much more local. Philip Kenrick's observations on the fabrics suggest that there was one principal centre of production, not yet identified, which made the pots in the Sandy 1 fabric (the most abundant in our data), but that pots in the other fabrics were acquired from elsewhere in the region, apart from the small number of pieces imported from Campania and North Africa.

Comparanda and dating

The variety of fabrics implies that in all periods there were several production centres supplying the settlements in the Basentello valley, and it is likely that most of them were located in the Fossa Bradanica, or in adjacent areas with comparable geology. This conforms to recent studies which show that there were numerous production centres in South Italy (cf. Turchiano 2010, 657–660; Santoro 2007, 367) making pots which might vary considerably in form from those made elsewhere in the peninsula. With this in mind, I have looked for comparanda for the cookpots listed in the catalogue primarily in reports of excavations of sites in Apulia and Lucania. But although there was a strong regional tradition of cookpot production within this broad area, there were significant differences between the products of workshops at a more local level. It is frequently difficult, for example, to find an exact match between cookpot fragments found on Late Antique sites in the Basentello valley and pots in use at the same time at San Giovanni di Ruoti, although there are general similarities between them.

Many of the shapes developed very slowly or not at all in the long period in which these Greco-Roman cookpot fabrics were in use. It is therefore sometimes impossible to date a piece at all accurately by comparison with others from datable contexts, especially if the fragment is small and leaves doubt about the exact form of the complete pot. The dates suggested by the comparanda in the catalogue therefore indicate possibilities rather than certainties, and must be used with caution if they are needed to date a site where a piece was found. As with the other classes of material, I have assumed that a date which suits the majority of the material from a site is likely to be right, and I have not wasted time and publication space in looking for other possibilities. There are, however, several instances where the date assigned to a piece of cookpot on typological grounds is the best evidence for the date of a site, or requires the date range of the occupation to be extended. Thus No.1384 suggests that activity on Site 722 continued into Late Antiquity; No.1354 shows that Site 910 began to be occupied in Late Antiquity; and Nos.1328 and 1374 provide evidence for at least frequentation of Sites 114 and 906 in Late Antiquity. No.1329 implies that the rather amorphous Site 430 lasted into the Early Medieval period.

II. Catalogue

1. Dishes

The following pieces are probably all frags. of open flat-bottomed vessels with low slightly convex walls that could have been used for frying, poaching etc. They replace the impasto types of Nos.301-306 (Impasto section 25). Cookpots of this kind, but with straight sides (classified as "griddles"), were in use in the Athenian Agora in the C5 BC: Sparkes & Talcott 1970, 375, and in Etruria and Latium in the C3 BC (Bats 1988, 69), but the shape appears to have been rare in cookpot fabric in South Italy until the beginning of the Roman Imperial period. 2 examples are reported in *Cozzo Presepe* 379 fig. 149 no.487 (in contexts of the late C4 and early C3 BC), and in *Gravina II* no.1394 (probably Late Hellenistic but not securely stratified); but none are recorded from the Metapontine *Chora* (Gabrieli in *Chora Metaponto III* 2; Blotti in *Chora Metaponto V*, 299), and there are none listed in *Pomarico Vecchio I, Civita di Tricarico* I (*cit.)*, or *Roccagloriosa I.* They are attested, however, in the Posto villa at Francolise in the early principate: Cotton 1979, 152-153 and fig. 45. The examples listed below all come from sites which were inhabited (on the evidence of other sherds) at some point in the Roman Imperial or Late Antique period.

1a. With convex wall and undifferentiated rim

1315	211	Fig.36. P337. Medium brown sandy coarse ware rim of an open bowl or lid with much mica and numerous small white specs. Ø ca. 32.0. A simple form, not closely datable. Cf. Fracchia & Hayes 2005, 171, tab. 11 no.121 from the villa at the Masseria Ciccotti, ca. 180 AD; *SGR I*, no.69 of Period 2C (late C4 AD), red burnished inside; Annese in *Ordona X*, 321, tav. XVI no.2.2 from the Late Antique *Domus* B, C4/C5 AD; Airò 2015, 141 fig. 14 no.8 from Bari, area of S. Nicola, Late Antique.

1b. With convex wall and slightly thickened rim

The rims were thickened and have a slight indentation to support a lid. As No.1316 shows, the full shape had a low wall and broad flat base, derived from the "Pompeian red ware" form of the C1/C2 AD (as noted by Fracchia & Hayes (2005, 157 re no.120). Although more precise comparanda are indicated for some of these pieces, they can only be dated broadly between the C1 and C5 AD.

1316	372	Fig.36. P1271. Part of dish with flat base, steep curving wall and internally rolled rim. Grey to red clay with moderate very fine mica; moderate fine or medium inclusions, including quartz, iron-ore and limestone. Ø 27.0. Cf. Fracchia & Hayes 2005, 172, tab. 12 no.122 from the villa at the Masseria Ciccotti, ca. 180 AD; *SGR I*, 56 and fig 33 no.27, Period I destruction, after ca. 220 AD; Albarella *et al.* 1993, fig.13, 73a from San Giacomo degli Schiavoni, early C5 AD.
1317	134	Fig.36. P104. 3 narrow ridges on outside wall. Hard reddish-brown clay with some mica. Ø 22.0. The form occurs at San Giovanni di Ruoti in Phases I (*SGR IV,* SGP495, C1/C2 AD) and 3B (SGP3148, Midden 4, late C5–mid-C7 AD). Cf. also Arthur (ed.) 1994, 223 fig. 103 nos.1.1, 1.2 and p. 224 tipo 1 from Carminiello ai Mannesi, Naples (Phases VIC, VIIIA – mid-C5, C8 AD).

1c. With convex walls and bifid rims (i.e. with a groove in the upper surface to take a lid). the bifid rim was essentially a Roman type developed in the 3rd quarter C2 BC (Rotroff 2015, 187). Olcese (2003, 86 and tav XV.1 *tegami tipo 3*) dates the type in Rome and the surrounding area to the Late Republic and the C1 AD, but it was still in use at Settefinestre in the Late Antonine period (see No.1320).

1318	120	Fig.36. P61. Bifid rim of large dish. Sandy 1, red. Ø ca. 36.0. The form occurs at San Giovanni di Ruoti in Phase 1, infill, early C3 AD (*SGR I,* SGP3673, with thicker rim).
1319	906	Fig.36. P7182. Light red sandy micaceous fabric. Rim slightly thickened with shallow indentation/ groove in tip. Ø 17.0. Cf. Olcese 2011-2012, 344, tav. 3.XLIV no.14 from Cuma, with similar narrow groove in tip of rim (mid-C1 BC–C2 AD); Fracchia & Hayes 2005, 172, tab. 12 no.124 from the villa at the Masseria Ciccotti, ca. 180 AD; *Vagnari*, 101 fig.4.21 P944, late C2 AD.
1320	124 C2	Fig.36. P51. Grey clay with moderate clear and glassy black inclusions, also occasional flecks of golden mica, Campanian fabric. Ø 21.0. Cf. Papi 1985, 94 and tav. 24 no. 4 from Settefinestre in Period II C2, Late Antonine.
1321	229	Fig.36. P785. Rounded sloping wall; thickened rim, bevelled on exterior and grooved on top, with slight lip at outer edge. Light brown clay (broad pale grey core) Fine specks (grey-black, a little gold mica and lime).

1d. With rim thickened externally

1322	145–9 Ar.145 K12	Fig.36. P152. Sandy 1, grey. Ø 30.0. Cf. *Vagnari*, 177 fig. 5.52, P719/720 in a context of Period 4B (C5 AD).

1e. With short rim, triangular in section, in-turned at an oblique angle

1323	145–9 Ar.145	Fig.36. P252. Unslipped (though breaks are very worn and surfaces may also be lost). Orange clay with moderate fine to medium muscovite mica, moderate ill-sorted angular quartzite (calcite?), some glassy black specks and some earthy brown ones. Max. Ø ca. 30.0. Cf. Albarella *et al.* 1993, 185 fig. 13 no.74a from S. Giacomo degli Schiavoni, early C5 AD; De Carolis & Soricelli, 521, fig. 5 no.6 from Pompeii, Via Lepanto, C4/C5 AD.

2. Funnel The form is more familiar in LRPW: cf. Nos.1112-1117.		
1324	823	Fig.36. P1931. Funnel rim, in-turned, with 4 broad grooves on upper surface. Orange-buff clay, with numerous white, grey and brown inclusions, and some mica; unslipped. Max. Ø ca. 30.0. This is essentially a LRPW shape (Form 53) reproduced in cooking ware. Cf. Nos.1111–1116 in LRPW; also *SGR, IV.* SGP6988 from Midden 7 of Period 3B (ca. 460–650 AD).
3. Flanged bowl		
1325	229 Area 1	Fig.36. P473. Bowl (or lid). Projecting cordon or lug handle (drawn as cordon) with finger impressions. Hard fired reddish-brown fabric, some mica, some small black inclusions; groove in top of rim. Ø ca. 16.0; ht. 1.8. Cf. *Gravina II*, fig. 84 no.1525, "mortaria with rims lacking spouts" in plain ware, of period VIIIa, late C2 and 1st half C1 BC. But the piece could be later: cf. Ciampoltrini *et al.*2010, 328 fig. 9.12 from Volcascio (Castelnuovo di Garfagnana) end C4/ beginning C5 AD.
4. Bowls with out-turned rims		
4a. With walls tapering steeply towards base		
1326	813 D10	Fig.36. P7728. Rim of bowl, straight and tilted slightly downwards with 3 shallow grooves on flat top. Slightly convex wall. Sandy 1, red. Ø ca. 18.0. Bowls with out-turned grooved rims are rare in cookpot fabrics, but are common in Apulia in black- and grey-gloss wares of the C2 BC. See Yntema 2001, 171, Form K23 in BG and 219 Form L14 in GG from Valesio. This piece is probably of similar date. Cf. No.921 in GG, also from Site 813.
1327	223 E50N38	Fig.36. P4271. Thickened rim, projecting outside and merging inside with wall; body slightly convex. Reddish sandy micaceous cookpot fabric. Ø 16.0; w. 1.1. Probably Hellenistic: broadly similar bowls in cookpot fabric occur at Botromagno in contexts of period VI (C4/C3) and VIIIa (late C2/C1), as *Gravina II*, nos.1387 and 1386. The piece was perhaps intended as a lid, comparable to *Civita di Tricarico I*, *coperchi a campanna* nos.1003-1005 (first in phase IIB ca. 250 BC) intended to fit flanged cookpots such as the casserole No.1340. A Late Antique date is also possible, however: cf. Grosseti *et al.* 2010, 586 fig. 6.10 from the Late Antique/ Early Medieval site at Piana di San Martino (Piacenza).
4b. With concave profile below rim and impressed notches on upper surface		
1328	114	Fig.36. P111. Small frag. of bowl or perhaps jar rim. Drab reddish-brown clay with numerous small (up to 1.8mm) dark brown inclusions, a few white specks, and a very little mica. Impressed slashes around outer and inner edges of rim. Ø ca. 22.0. Not certainly identified, but probably Early Medieval. Cf. the notched rim of No.1220 in plain ware. The form is fairly close to that of 2 pieces of plain ware from San Giovanni di Ruoti, both decorated with radial stabbed comb-impressions on the rim: *SGR IV,* SGP1554 from Period 3B destruction, ca. early C7 AD, and SGP1989, unstratified) But the comparison is not exact, and the other material from this site is earlier.
4c. Small bowl/dish with short overhanging rim		
1329	430	Fig.36. P1093. Pale orange sandy micaceous fabric with numerous small black and white inclusions. Ø ca. 9.5. The classification of this piece is problematic. For size and shape it might be seen as a coarse-ware version of a black-gloss one-handled cup with short out-turned rim: cf. e.g. Prag in *Gravina II,* no.852 from Botromagno; *Civita di Tricarico I*, no.299; Palmentola in *Rutigliano*, 503 tav. 42 e. The type is normally dated to the last half C4/ early C3 BC, though many of the examples from Gravina were found (all redeposited?) in contexts of the late C2 to mid-C1 BC. But rather larger bowls of these proportions (including the overhanging rim) are found in cooking pot fabric at Ferento in S Lazio between the C4 and C6 AD (De Minicis et al. 2015, 512, tav.8 no.11). The form continues to be used for cookpots throughout the Late Antique period, e.g. in the Carminiello ai Mannesi complex at Naples, phase VIII, end C6–C7 AD (Carsana 1994, fig. 110, 18.2), and at San Giovanni di Ruoti in a destruction context of the end of Period 3D, ca. mid-C7 BC (*SGR IV,* SGP1226).
4d. With horizontal rim and bulging convex wall		
1330	712	Fig.36. P8061. Horizontal rim, out-turned from convex wall. Sandy 1, red, with a piece of shell ca 2mm. Ø 20.0. Probably from a large carinated bowl, a shape that was in vogue for most of the Roman Imperial period: cf. Cotton & Métraux 1985, 225 fig. 56 no.26 from the San Rocco villa at Francolise, period II/IIA, ca. 30 BC–200 AD; Annese, De Felice & Turchiano in *Ordona X*, 262, tav. V nos.52, 5.3 from the *Domus* A, early C3 AD; Annese in *Ordona X*, 323 tav XVIII nos.9.13, 9.15 from the *Domus* B, C4/C5 AD.

5. Deep bowl / basin with thickened grooved rim		
1331	906 A4	Fig.37. P7183. Rim thickened on outer edge, flat on top with 3 slight grooves to hold a lid. Sandy red fabric, grey in core with conspicuous grits including 1 brown stone ca. 2.5mm; slightly micaceous. Ø ca. 24.0. For the grooving on the rim, cf. No.1280 in plain ware, with the parallels cited there (last half C6 and early C5 BC, and perhaps late C2 and 1st half C1 BC); but the wall of this piece is much steeper, and it may be different in date. Classification uncertain.
6. Small carinated form with triangular rim		
1332	423 swathe 3	Fig.37. P1124. Rim and shoulder of carinated open shape. Sandy 1, reddish brown out, grey in core. Ø and exact angle of drawing uncertain. Pres. ht. 2.8. Perhaps from a small casserole: Cf. *Roccagloriosa I*, 264 fig. 185 no.238 (with rather larger rim less sharply demarcated) – early C3 BC.
7. Casseroles This section groups together pots with a ledge inside the rim to hold a lid, and includes both shallow casseroles (Greek *lopades*), and deeper pots with narrower mouths and globular bellies (Greek *caccabai*). In the case of some small rim sherds the form of the body is uncertain, the piece might belong to either type.		
7a. With near-vertical walls merging gradually into the rim There are no complete shapes, but the comparanda indicate that the bases of these relatively shallow vessels might be either rounded, in which case they joined the wall at a carination, or flat. They usually had 2 transverse handles attached to the wall below the rim (as on No.1340 of type 7-c), though examples with 1 or 2 oblique transverse handles are also found. The shape corresponds to the Greek *lopas* which was introduced in Athens in before ca. 425 BC (Rotroff 2015, 185) and lasted there into the Roman period. *Lopades* were being made by potters in Metaponto in the 1st half C4 BC (Quercia 2004, 184).		
1333	813 C10	Fig.37. P7706. Rim and upper wall. Hard dark reddish-brown sandy fabric with some small white inclusions. Outer side near vertical. Ø ca. 25.0. Cf. Alessio 1988, 391 and tav. LXXXII.10c, from Taranto, Contrada Lupoli Tomb 2, 2nd half C4 BC (with flat base); Lippolis (ed.) 1994, 266, fig. 200 from Taranto necropolis, phase E, 175–125 BC (with rounded base); Hayes 1994, fig. 14 no.149 from pit F202 on Botromagno, ca. 80–70 BC (probably rounded); *Gravina II*, no.1367 (? carinated, rounded). The type occurs in numerous contexts on Botromagno from Phase VI (C4/ C3) to VIIIA (mid-C2–mid-C1 BC).
1334	223 Ar.226	Fig.37. P432. Hard fired sandy red with innumerable very fine black specks and a little mica. Ø 23.0, ht. 3.3. Cf. Ciancio 1997, p. 211, no.243 (with lid) from Tomb 2-1994 on Botromagno, with material of the late C5 BC (carinated with rounded base and single transverse handle). Other rims of this type occur at Parco S. Stefano, Gravina, in contexts of the late C4 BC (*Gravina (PBSR) III (2)*), 130-131, fig. 54 nos.304-305), and on Botromagno in phases VI (C4/C3 BC) and VII (C3/ early C2 BC): *Gravina II*, nos.1366-1368. The form is found on numerous Apulian and Lucanian sites of the C4 and C3, see.e.g. Rossi in *Monte Sannace*,189 and tav. 331 no.2, from Phase III, 2nd half C4 BC–C1 AD; Lissi Caronna 1983, fig. 123 no.15 from Oppido Lucano, House B, last half C4/ beginning C3 BC; *Roccagloriosa I*, 264 fig. 185 nos.237, 246) It is well attested at Metaponto: see e.g. Quercia 2004, 184, Fig. 4, C2a, from the *kerameikos* (1st half C4 BC); Gabrieli in *Chora Metaponto III,* 448, nos.19-21, from sites in the Chora; Toxey & Carter *in Chora Metaponto I,* 730 from Tomb 192 in the necropolis at Pantanello, dated by context to 305–275 BC. Some examples of the shape from Minturno have a flat base: Kirsopp Lake 1934-1935, 105 pls. XVI-XVII; Olcese 2003, 85 and tav XIV.3 *tegami tipo 1*; mid-C3 BC.
7b. With relatively narrow mouth and wall bulging outwards below the rim Deeper globular pots, probably with rounded bases, with an offset in the rim for a lid. The shape can be identified with the Greek *caccabe* which appears in Athens in the 2nd half C6 (Bats 1988, 47-48). It is attested at Castello di Alceste in Salento before the end of the C6 BC (Notarstefano 2012, 145 fig. 2.14). Pots of this type were being made in the *kerameikos* at Metaponto in the 1st half C4 BC (Quercia 2015, 207 fig. 18.4).		
1335	223 Ar.226	Fig.37. P433. Hard fired sandy red with innumerable very fine black specks and a little mica. Ø 16.0. The relatively narrow mouth shows that the piece belongs to a *caccabe*. The sherd has broken just short of the turn into the globular belly – cf. No.1336.
1336	223 E22N32	Fig.37. P4210. Sandy 3. Almost straight side with beginning of outward turn at bottom of sherd. Ø ca. 19.0.
1337	223 Ar.226	Fig.37. P434. Hard fired sandy red micaceous fabric with innumerable very fine black specks and white inclusions up to 1mm. Rim damaged. Ø 30.0, ht 2.7. This is an exceptionally large example of the type, perhaps to be considered a *lopas* (section 7a). For the shape, cf. Casagrande 2002, 399 fig. 48 *tipo 9* from Heraclea with comparanda, 2nd half C4BC; *Cozzo Presepe*, 376 fig. 146 nos.452, 454, 455, all in contexts of the C3 BC; *Gravina II,* no. 1366, from contexts of Gravina VI (C4/C3 BC), VIIIa (late C2/C1 BC).
1338	223 E32N29	Fig.37. P4844. Hard sandy reddish grey fabric with some mica and numerous small white specks. Ø ca. 19.0, ht 3.5. Cf. *Civita di Tricarico I,* fig. 322 nos.809 and 810, ca. mid-C3 BC.

1339	223 E18N27	Fig.37. P4024. Orange sandy fabric. Ø ca. 14.0. Cf. Ciancio 1997, 196, no.183 "lopas con coperchio" from Botromagno Tomb 2, 1967, associated with material ranging in date from end C5 to beginning C3 BC; Bianco in *Pomarico Vecchio*, tav. 79 no.165 from (late C4–mid-C3 BC); Conti 1989, tav. XXXVI no.302, p. 268 type A3b from Locri Epizefiri in strata datable between C5 and end C3 BC; *Roccagloriosa I*, fig. 185 no.235, ?2nd half C4 BC. The form is attested in the Metapontino, both in the necropolis at Pantantello (Toxey & Carter 1998, 728 CD18 from a context of 400–350 BC) and at Sant'Angelo Vecchio in a votive deposit of the end C4 –1st half C3 BC (Di Tursi 2016, 390 SAV CkW 46).
7c. Wide bodied, with convex upper walls, out-turned rims, and two horizontal grip-handles attached tightly to the side and rim of the pot. More complete examples from excavated sites show that the wall turned at a carination or (more usually in the territory of Gravina) in a sharp curve into a rounded base. Yntema (2001, 287-290, Form N03) dates the form at Valesio from the 2nd/ 3rd quarter C3 to within the 3rd quarter C2 BC but the shape is found in the *kerameikos* at Metaponto already in the 1st quarter C4 BC (Quercia 2004, 186, C3, C4) and on, in a tomb of the C4 BC: cf. Andriani & Laricchia 2007, p. 91. It is still found at Gravina in Period VIII, late C2/C1 BC. The form originates much earlier in Athens: cf. Sparkes & Talcott 1970, fig. 18 and pl. 94, no.1947 (with spout), ca. 520–490 BC.		
1340	223 E50N38	Fig.37, Pl.29. P4270. Edge of flange is missing. Dark grey sandy fabric. Ø ca. 23.0. The type is attested in House 6 at Parco S. Stefano, Gravina, last half C4 BC (*Gravina (PBSR) III (2)*, 131 fig. 54 no.303), and in various other Apulian and Lucanian pre-Roman sites, including Cozzo Presepe in phases A V (C5/C4) and E3 (early C3 BC) (*Cozzo Presepe* 377 fig. 147 no.473), and Roccagloriosa (*Roccagloriosa I,* fig. 185 no.239, ?2nd half C4 BC). It is also found in the necropolis of Taranto at the end of the C4/ beginning C3 BC (Alessio 1988, 436 and tav. XCII. no.34.12h, and again in phase C, 275–225 BC (Lippolis (ed.) 1994, 266, fig. 200) and in the Chora of Metaponto (*cit*., *III,* 446 no.12).
1341	223 E30N19	Fig.37. P7118. Hard fired orange-brown sandy fabric. A fine piece. Ø ca. 15.0. Cf. No.1340.
1342	355 E4	Fig.37. P817. Grey clay, fired orange at surface, with sparse but large inclusions. Ø 23.0. Cf. *Cozzo Presepe*, 377 fig 147 no.471 from site E phase 4, C3 BC; *Gravina II,* no.1381 from phase VIIIa (late C2/ C1 BC).
7d. With globular body and small rounded rim with concave ledge for lid on inside		
1343	134 CC4	Fig.37. P221. Sandy 3. Ø uncertain; pres. ht. 4.8. Cf. *Vagnari*, 92 fig. 4.11 P873 from layer 146, C2 AD. But the rim form continues into Late Antiquity (or was revived then): cf. Leone in *Ordona X*, 420 tav. XV no.21.4 from the Late Antique farm at Posta Crusta; Cavalazzi & Fabri 2010, 632 fig. 6,6 from Classe, C5–C7 AD. It is still found in an Early Medieval context (C8/C9 AD) at Piscina degli Zingari near Terlilzzi in Apulia: Campese *et al.* 2018, fig. 16: *olle*, groups 2 and 3.
8. Globular casserole with offset thickened rim without seating for lid, and with attached transverse handle with impressed finger marks		
1344	229 1191	Fig.37. P2000. Sandy 1, red. Inside roughly finished, wet smoothed outside. Ø ca. 34.0. Cf. *Ordona VI*, 119 fig. 29 no.68 from a deposit of the late C1 BC.
9. Deep pots with narrower mouth, out-turned rims, and no seating for lid These were standard cookpots, used for boiling water and other liquids. The pieces collected here have a mixed pedigree. Those with relatively steep rims and spreading shoulders such as Nos.1345, 1351, can be classified as *chytrai* of Greek type, which had globular bodies, off-set rims, rounded bases and a vertical handle attached at the rim and shoulder. Others with shorter rims and more steeply inclined shoulders such as No.1352 are better seen as *ollae* of Italic origin which had more ovoid bodies and flat bottoms, and generally no handles (see the discussion of the form in plain ware by De Juliis 1992, 94-95). On some of our sherds not enough of the shoulder is preserved for the classification to be certain, and in any case the two traditions were not clearly distinct. By the end of the Republican period, they had been subsumed into the Roman version of the *olla*, which had a broad ovoid body, a near-horizontal rim and two vertical handles attached at the rim and above the widest girth. The type continued with very little change throughout the Roman Imperial period and into Late Antiquity (cf. Nos.1350, 1353, 1355). In the latest examples the rims tend to thicken towards the edge and to be undercut.		
9a. Chytrai with globular body, slightly out-turned rim, and one or two vertical staff handles attached to rim and shoulder This type of pot occurs at Kaulonia in contexts ranging from the C6 – C3, but especially in the earliest layers (C6–C5 BC): Tréziny 1989, fig. 56 esp. no.368, and pp. 81, 83. It was frequently deposited in tombs of the C4 BC, in Metaponto (cf. Lo Porto 1966, fig. 77 no.5 from tomb 49 dated ca. 340–330 BC), in Taranto in phases D and E2, later C3–mid-C2 BC (Hempel 2001, 237, taf. 6), and in indigenous sites in the interior: e.g. Andriani & Laricchia 2007 pp. 84 and 143 from tombs of the C4 on Botromagno, Gravina.; Laurenzana 2016, 72 and tav. 7 no 168 from Monte Irsi in tombs 18 (1st half–mid-C4 BC) and 21 (end C4–beginning C3 BC).		
1345	712 H3	Fig.38. P8062. Sandy 1, red. Rim and vertical handle-spring. Ø ca. 16.0. Probably C4 BC (as above); but a later date cannot be excluded: cf. Fracchia & Hayes 2005, 166 tsb. 6 no.62 from the villa at the Masseria Ciccotti, ca. AD 180 (with rim slightly in-dented on inside); Cirelli *et al.* 2013, 141 fig. 9 from Grumento, C7 AD.
1346	347-9 Ar.349	Fig.38. P7194. Rim slightly thickened and rounded; vertical handle-spring attached at rim. Sandy 1, red, with gritty inclusions up to 4mm. Ø 18.0. Cf. Ciancio 1997, p. 192 no.162, *chytra* from Tomb 1-1967 on Botromagno, mid-C5/C4 BC.

9b. With outward-curving rim and two attached transverse handles		
1347	223 E45N43	Fig.38. P7039. Hard reddish-brown sandy fabric. Rim and part of attached handle. Ø 17.0. The rim profile is found on *chytrai* from the archaic (C6 BC) layers at Castello di Alceste in Salento (Notarstefano 2012, 145 fig. 2. 1-6. The handle is similar to that on type 7c (No.1340).
9c. With strongly out-turned rims		
1348	813 D7	Fig.38. P7723. Rim out-turned thickened, with vertical external facet. Slight groove inside near tip of rim. No signs of burning. Sandy 3, red. Ø 18.0. The rim form perhaps derives from the *olla* of the Roman/ Latin tradition, found in Etruria and Rome already in the C5 BC (Dyson 1976, 17, Class 2 pots; cf. Bats 1988, 65-66, fig. 12.5, 6). It is found at Gravina and in Eastern Lucania in the C4 BC: cf. *Gravina II,* no.1408, period Gravina VI, C4/C3 BC; Bianco in *Pomarico Vecchio*, 86 tav 78 no.154 – unstratified, but before the end of the site in late C3 BC. Cf. also Rinaldi in *Torre di Satriano*, 234 tav. 23 no.51 *olla con corto labbro svasato con orlo a sezione quadrata*, from US 342, before 100 AD. A much later date is also possible (cf. Turchiano 2010, 665 no.5 from a kiln of the end C5/ beginning C6 AD at San Giusto), but is unlikely on this site. Cf. also No.1353.
1349	813 D1	Fig.38. P7727. Rim out-turned at an oblique angle. Sandy reddish fabric, micaceous, burnt dark grey outside. Groove inside near edge of rim. Ø ca. 16.0. Cf. *Gravina II,* no.1408 from a context of Phase VI, C4–C3 BC; Casagrande 2002, 406 fig. 55 *tegami tipo 11*, from Heraclea, with stratigraphic date of ca. 275–270 BC. Cf. also *Vagnari*, 107 fig. 4.27 P982 from a layer (107) which continued material ranging from the late C1 to the mid-C3 AD, and p. 95 fig. 4.13 P879 from a layer (135) of the C2 AD. Since much of the datable material from the site dates to the C4/C3 BC and little to the Roman period, the earlier comparanda are likely to be more valid.
1350	145-9 Ar.145 H10	Fig.38. P8070. Frag of cookpot jar rim, out-turned, thickening towards edge. Broken off at turn to body of pot. Sandy 2, red. Ø 17.0 (very approx.); w. rim 2.6. Probably from a cookpot with steeply sloping wall: cf. e.g. Annese *et al.* in *Ordona X*, 264 tav. VII no.12.1, *olla con orlo estroflesso*, from the Early/ Mid-Imperial *Domus* A, with discussion of the type by M. Turchiano on p. 260: it was widespread in the Mediterranean from the C2 to C5 AD with little morphological change. The complete pot would have had two vertical handles attached immediately below the rim.
9d. With steep, tapering rims		
1351	145-9 Ar.147	Fig.38. P215. Rim out-turned with slightly convex upper surface; straight shoulder at 40° from vertical. Sandy red fabric, burned grey in places. Minute white inclusions and some mica. Ø ca. 17.0. The simple rim and shoulder form has a long duration. It may have originated as a wheel-made version of the "biconical" pithoi with out-turned rims of the Early and Middle Iron Age (as No.270), though it is not possible as yet to demonstrate continuity between them. The form is attested in some cookpots of C4/C3 BC, continuing perhaps into the C3/C2 BC in S Italy, e.g. on Botromagno (*Gravina II,* no.1414, of Periods VI, VII and VIIIa, no.1415 of Period VIIIa), at Ascoli Satriano (Fabbri *et al.* 2000-2001, 73 tav. II.12, 2nd quarter C4 BC), and at Locri Epizefiri in a stratum dated to the 2nd half C3 BC (Conti 1989, 272 no.310 "*olle*" type B5). But it is also found in the Mid-Imperial period, e.g. at Ordona in the early C3 AD (Annese et al in *Ordona X*, 261 tav 7 type 13), and it occurs at Vagnari in several contexts between the C3 and beginning of the C5 AD: (*Vagnari,* 105 fig. 4.26 P994; 266 fig. 6.44, P3014; 273 fig. 6.51 P3010). Certainty is impossible, but a date in the Hellenistic period would suit the associated material on this site best.
1352	223 E32N19	Fig.38. P7121. Dark greyish brown fabric with small white grits. Ø ca. 15.0. The piece may be compared with several jars (Italian *olle*) with short off-set rims and steeply inclined shoulders found in the assemblage of the late C4/ early C3 BC from the Tomba del Vaso dei Niobidi at Arpi: De Juliis 1992, 22-23, nos. 24-27 and 94-95. The Arpi pieces are in plain ware, but much of the plain ware in the tomb is made imitating cookpot shapes. For a similar pot in a tomb group with mixed material of the C5 and C4 from Botromagno, see Stazio 1968, 277-278, tav. XVIII.2, 2nd row from bottom, on right. The form was still current in Period Gravina VIII (late C2/C1 BC): *Gravina II,* fig. 75 no.1417.
9e. With out-turned thickened rim		
1353	223 E20N30	Fig.38. P4006. Rim out-turned, with thickened projecting lip. Beginning of shoulder turn at bottom of sherd. Hard fired dark greyish brown clay with numerous large (up to 2mm) grits, mostly black, some off white, and some mica. Inner surface slightly smoothed, outer surface rough. Ø ca. 21.0. The rim form is typical of the Roman *olla* (Bats 1988, 65-66, fig. 12.1; Olcese 2003, 79-80, tav. VII. 4, 5, *olla tipo* 2) which was in use in Rome and Latium already in the C4/C3 BC, and continued much later. It occurs at Cosa, in the capitolium fill of the late C3/ early C2 BC, in the forum gate deposit of ca. 200 BC, in the refuse pit 16IV of the mid-C2 BC, and in the Deposit V-D of the early C1 BC (Dyson 1976, 25 and fig. 2 no.CF19; 43 and fig. 8 no.FG21; 55 and fig. 13 nos.16IV27-28; 72 and fig. 20 nos.V-D 23-27). In South Italy it is found at Sipontum after the foundation of the Roman colony (cf. Pietropaolo 1999, 427 no.13, ?C2 BC–C1 AD) and at San Giovanni di Ruoti, in Period 1/O C1– early C3 AD (*SGR IV,* SGP313). Cf. also Semeraro in *Otranto II*, fig. 4.3 no.330, found in a context of phase V (late C11–C12 AD) but considered residual Late Roman. Coarse ware jars with broadly similar expanding rims are attested in cistern fill of the early C5 AD at S. Giacomo degli Schiavoni (Albarella *et al.* 1993, 188 fig. 14 nos.84c, 88). A Late Roman/ Late Antique date therefore also seems possible. Without indication of the body of the pot a more precise classification cannot be given.

9f. With undercut rims triangular in section		
1354	910 M4	Fig.38. P2052. Undercut rim, triangular in section, near vertical on outer face. Sandy 3, red. Ø ca. 15.0. The form has a long duration: cf. Michaelides & Wilkinson 1992, 74 fig. 4.4 no.6 from Otranto, Tomb 1, 1st half C1 AD; Annese in *Ordona X*, 325 tav. XX no.22.4, from *Domus* B, C4/C5 AD; Soren & Soren 1998, fig. 234 no.235 from Lugnano in Teverina, in a context of phase V, C5 AD. Broadly similar pieces continue well into the Middle Ages: cf. Airò 2015a, 142 and fig. 14.2 SAC 48/2 from Bari, area of S. Nicola with comparanda of the C4–C7 AD; Carsana 1994, 236 and fig. 113 no. 36.2 from Naples, Carminiello ai Mannesi from a context of Phase VIIIB, C8 AD; H.Patterson 2001, 307 and fig. 10.14 p. 265 from San Vincenzo al Volturno in a context of Phase 6 (C10–C11 AD) (? residual). These pieces are less undercut than ours, but the context, associated with combed tiles but no LRPW would favour a date in the late C7/C8 AD.
1355	821	Fig.38. P2061. Dull reddish brown sandy fabric, numerous black and white grits, very hard fired. Ø 26.0; pres. ht. 2.3. The undercut, hooked, rim is common in the Late Antique period, esp. in cooking wares: It is found at San Giovanni di Ruoti in occupation layers of Period 2 (*SGR IV,* SGP6818, 2nd half C4 AD), and 3 (SGP1487, late C5-mid-C7 AD); also at Vagnari in the later C5/C6 AD (cooking ware): V*agnari*, 210 fig. 5.111 P1282. Cf. also Cocchiaro *et al.* 2005, 430 fig. 23.10 from Brindisi Giancola, in a context of end C4/ beginning C6 AD; Airò 2015a, 141 fig. 14 no.2 from Bari, area of S. Nicola, US22, Late Antique, with other comparanda of C4–C7 AD.
1356	134 AD3	Fig.38. P93. Rim, triangular in section, and offset. Hard greyish brown micaceous fabric with some minute white and glassy black inclusions. Campanian? Ø ca. 16.0, max. dim. 3.3. Perhaps from a lid.; but cf. No.1355, and No.1247 in plain ware, also from this site, and comparanda cited there. Probably Late Antique.
9g. With near vertical rim, triangular in section, projecting on outside		
1357	223 E43N25	Fig.38. P4462. Out-turned rim, sub-triangular in section with rounded edges, and slightly undercut. Greyish fabric with orange surface out and in, innumerable minute black, white and brown grits. Ø ca. 18.0. Cf. a large globular cookpot with broadly similar but more rounded rim from Monte Sannace: Ciancio 2017, 31, fig, top left, 'ceramiche in uso domestico, IV–III sec. a.C'. Cf. also No.1250 in plain ware.
1358	303 H8	Fig.38. P4350. Small triangular rim, projecting externally. Sandy 1, reddish turning grey in core. Ø uncertain; pres. ht. 1.9. Perhaps from a jar (*olla*). Cf. various *ollae* with more-or-less triangular rims from Civita di Tricarico: (*cit.*, 615 fig, 326). ?C3 BC. But the piece may be Late Antique: cf. No.1357. The sherd is too small for certainty.
10. Deep pots with narrower mouth, out-turned rims, and seating for lid Similar to the above, section 9, but the provision for a lid would have made them more suitable for stewing and cooking vegetables etc.		
10a. With near vertical rims and slight off-set for lid		
1359	342	Fig.38. P2381. Rim with slight flange. Sandy 3, red. Ø ca. 12.0, estimated from a very small sherd. Cf. Semeraro in *Otranto*, fig. 4.3 no.329, from a context of phase VI (C13 AD) but considered a residual piece dating (p. 66) between the C4 and C6 AD; Siena & Terrigni 2010, 636, 640 fig.2.57 from Colle di Guido (Pescara). They suggest that the short vertical rims are characteristic of the period after the end C6 AD (but before the end of the site in the early decades C7).
1360	813 C10	Fig.38. P7724. Rim near vertical with slight ledge for lid, turning into steeply sloping shoulder. Sandy 3, red. Ø ca.15.0. Cf. *Gravina II,* no.1446 from a context of Gravina VIIIa (last part C2–1st part C1 BC).
10b. With out-turned rims and slight ledge for lid		
1361	813 C2	Fig.38. P7730. Sandy orange-brown micaceous clay with small orange brown and a few black specks. Ø ca. 12.0. Cf. *Ordona VI,* 119 fig. 29 no.58 from a deposit of the late C1 BC (with two vertical strap handles).
1362	124	Fig.38. P25. Sandy red, well-smoothed. Ø 14.0. Cf. Nos.1361, 1363; *Gravina II,* no.1447, Period Gravina VIIIa (late C2/C1 BC). But the rim form can also be Late Antique: cf. Di Giuseppe 1998, 744 fig. 9.2 from the kiln at Calle.
1363	124 C2	Fig.38. P49. Small rim, out-turned and thickened. Sandy red fabric with numerous small white inclusions, and 1 (limestone) 5mm. Ø 14.0. Cf. Nos.1361, 1362. The rim form is attested on Botromagno in periods Gravina VI (C4/C3 BC) and VIIIa (late C2/C1 BC): *Gravina II,* no.1438. Cf. also *Ordona VI,* nos.58-61 from a deposit of the late C1 BC.
1364	905 B4	Fig.38. P7173. Short rim, nearly horizontal. Grey in core, orange at surface; numerous white and brown grits. Ø 11.0. Close to jar with straight sides from late antique context associated with *Domus* B at Ordona: Annese in *Ordona X,* 324, tav. XIX 12.1 and 12.2.

10c. With thickened triangular rim and distinct ledge for lid		
1365	607 2	Fig.38. P1414. Rim sub-triangular in section with slight inset for lid. Sandy 1, fired grey in core. Ø ca. 21.0. Cf. *Civita di Tricarico I*, 611 fig. 322 no.816, from a surface layer, but earlier than the abandonment of the site ca. 200 BC (a close parallel); also (less close, with inner ledge set lower) Bianco in *Pomarico Vecchio 1*, tav. 80 no.169 in context of the last half C3 BC.
11. Pots with out-turned rim and distinct neck The frags. listed here are all likely to have come from cookpots with with distinct necks, globular bodies and a single vertical handle. The neck was probably intended to make them easier to handle. The shape begins as a variant form of the *chytra*. Pots of this type were often deposited in tombs in Apulia from early in the C5 to the end of the C4 (see esp. Masiello 2006, 336-339). Several examples were found in the recent excavations on San Felice, associated with a building of the C5 BC in Saggio A: Cossalter in *PSF* 78, tav. II.9-12. Some *chytrai* of this type were made in the *kerameikos* at Metaponto where the shape is attested in a dump of the 1st half C4 BC (Quercia 2015, 207 fig. 18.4). The shape continued into the Roman Empire and is common at Vagnari between the end of the C1 and beginning of the C3 AD, both in settlement contexts (*Vagnari* 98 fig. 4.17 P933; 101 fig. 4.21 P789, P958) and in burials (publication pending), and it is still found at San Giovanni di Ruoti in Period 3B, late C5–mid-C7 AD, (*SGR IV,* SGP1672, SGP6912). There were subtle changes in proportions over time. In the Peucetian period the forms are generally more rounded, and the rim, neck, shoulder and base are usually merged in sinuous curves, whereas in the Roman period they are generally taller in proportion and more clearly articulated with more ovoid bodies; but exceptions can be found in both periods, and without more complete pieces certainty is not possible. The pieces listed here, however, all come from Site 223 which was occupied mainly in the Peucetian period, and most of them have "Peucetian" profiles. The exception is No.1368 in which the neck is clearly set off from the body. Its profile might be Late Antique, but it also has analogies in pre-Roman settlements, and its fabric is typical of Peucetian cookpots. It is most likely, therefore, that all these pieces are pre-Roman Peucetian.		
11a. With downward curving rim		
1366	223 E46N27	Fig.39. P4664. Sandy red cookpot fabric. Ext. Ø 15.0. The shape was popular on Botromagno where it was sometimes deposited in tombs: cf. Andriani & Laricchia 2007, from Tomb 20, said there to date to C6/C5 BC, but with a black gloss olpe type 2 of the late C5/C4 BC. Cf. *Gravina II,* no.1450 (several examples: the earliest in Period Gravina VI, C4/C3 BC; those of period VIIIa dated late C2/ mid-C1 BC are possibly residual). The same shape was found in the recent excavations on San Felice, *Saggio B*: Santovito in *PSF*, 140, tav. IV.32. Some pots of this kind were produced in Metaponto: cf. Quercia 2004, 179, fig. 2, A1b,e from the *kerameikos*, 1st quarter C4 BC. Pots of similar shape were in use in Rome and the surrounding area considerably later: cf. Olcese 2003, 74 and tav I.1 *pentole tipo* 1, Augustan – Trajanic.
1367	223 E49N27	Fig.39. P4564. With tapering neck and slightly down-turned rim forming a continuous curve into the neck. Sandy red fabric, with no traces of burning. Ø 14.0. Close to Notarstefano 2012, 145 fig. 2.12 from Castello di Alceste in Salento, last half C6 BC. Cf. also Blotti 2014, 313 FF CkW 21, from the Fattoria Fabrizio in the Metapontino occupied mainly in 2nd half C4 BC; *Gravina II,* no.1462 (with rim even more down-turned) of Period Gravina VI, C4/C3 BC.
1368	223 E26N34	Fig.39. P4289. With lip of rim down turned, and conical neck. Well fired slightly micaceous orange sandy ware. Ø 16.0. Cf. Conti 1989, tav. XXXVI no.298 from Locri Epizefiri, with discussion of the type which is attested at Locri from the C5 to the end C3 BC; *Roccagloriosa I*, fig. 186 no.249 ?mid-C4 BC; Di Tursi 2016, 385 SAV CkW 35 from Sant'Angelo Vecchio in the Chora of Metaponto, end C4–1st half C3 BC; *Cozzo Presepe*, 374 fig. 145 no.443 in contexts of the 1st half C3; *Civita di Tricarico I*, no.908, 908 in a context of phase IIB, mid-C3 BC; Bianco in *Pomarico Vecchio I*, tav, 78 no.160 in layers associated with abandonment of the site, late C3 BC. For a similar form in a Late Antique context: Leone in *Ordona X,* tav. XV no.19.1 from the farm at Posta Crusta; Mangiatordi in Cassano *et al.* 2007, 90, fig. 100b, row 1, = Cassano *et al.* 2010, fig. 11.5, from the S kiln at Egnazia, C6 AD.
1369	223 E54N28	Fig.39. P4964. Sandy 1, red. Est. Ø ca. 10.0 (damaged); max. th. at break 0.3; ht. ca. 1.3. Cf. Gabrieli 2011, 453 no.40 "Necked jar" from the Chora of Metaponto (3 examples) with comparanda ranging loosely from the C6 to C2, but predominantly of C4 BC; also Liseno 2013, fig. 19, bottom row, second from right, from a tomb at Conversano of the 3rd quarter C4 BC.
11b. With short horizontal rim and near vertical neck		
1370	229	Fig.39. P794. Rim and neck, with beginning of junction with a rounded/ sloping shoulder. Hard fired sandy red ware with minute white and grey inclusions. Ø 14.0. Cf. Papi 1985, 96 tav. 24.15 from Settefinestre in Periods II A1 and II C2 (Trajanic/ Hadrianic and Late Antonine)
1371	607	Fig.39. P2399. Sandy 1, red. Ø ca. 18.0. Cf. Quercia 2004, 179, fig. 2, A2 from the *kerameikos* at Metaponto, 1st quarter C4 BC; Roubis & Aino 2013, 163 no 31 from Difesa S. Biagio with suggested date 2nd half C4/C3 BC (restored with two vertical strap handles).

12. Open-mouthed pots with broad horizontal projecting rims The complete shape had near vertical sides and rounded bottom below a distinct carination. These are the standard saucepans of the Early – Mid-Imperial period. The form (generally identified with the Roman *caccabus*) was introduced in the late C1 BC. Dyson (1976, 115) notes that they became especially popular at Cosa in the Claudian period, to some extent displacing the narrower-mouthed cooking jars (*ollae*), and there are numerous examples from Pompeii. It is the form of cookpot most frequently mentioned by Apicius (Bats 1988, 69). It continued in use into the Late Antique period.		
1372	905	Fig.39. P2401. Tip of rim missing. Sandy 1, red. Badly damaged. Int. Ø ca. 18.0. Cf. *Vagnari*, 98 fig.4.17 P935 (C2 AD), with discussion.
1373	145-9 Ar.147 D4	Fig.39. P216. With tip of rim down-turned. Sandy reddish fabric with numerous small black and white inclusions and some mica. Traces of matt reddish-brown slip inside – worn off elsewhere. Ø ca. 16.0. A variant of No.1372. Cf. Olcese 2011-2012, 43 tav. 1.XIII no.41 from Scandicci (Firenze) ca. 20 BC–AD 20; Long *et al.* 2009, Fig.19, 85-98 and text p.591 from Arles, an Italian import of C1– mid-C2 AD. Cf. Olcese 2003, 76 and tav IV.2, *pentole tipo 4* from the Roman area, C1–mid-C2 AD. Similar rim forms occur in the repertoire of Late Antique cookpots from Grumentum: Cirelli *et al.* 2013, 139 fig. 5.1-2, C6 AD.
13. Pot with near vertical sides and oblique T-shaped rim (*caccabus*)		
1374	906	Fig.39. P7184. T-shaped rim of large open vessel with thin wall. 2 shallow narrow ridges on top of rim, presumably to help hold the lid. Sandy 3, red. Ext. Ø 15.0. The pot should be restored with two vertical handles set below the rim: cf. *Vagnari,* 262, fig. 6.37 P1038 associated with kiln 4 in Trench 22, C2 AD, with discussion there of the type, current from early C1–early C3 AD.
14. Large globular pot with vertical rim		
1375	407	Fig.39. P2227. Hard orange sandy fabric with numerous white and brown grits, dark brown on surface. Nearly vertical rim turning into oblique shoulder. Clear horizontal turning marks on outside and inside of rim which was possibly made separately and added. Ø 29.0; th. at bottom of sherd 0.9. Cf. Liseno 2013, 335 fig 9, bottom row, third from right, from a tomb at Conversano of the last half C4 BC, with two vertical handles attached at rim and shoulder.
15. Jug or flagon rims, round, with concave neck		
1376	134	Fig.39. P228. Sandy 3, red. Ø 9.0. The shape is common in LRPW but is occasionally found in cookpot ware in the Late Antique period: cf. *Vagnari,* 210, fig. 5.111, P1272 of Period 5 (C6 and ?early C7 AD); Turchiano in *Ordona X*, 366, tav. XI nos.22.2, 23.3 from the cistern in *Domus* B, infilled in mid-C5 AD.
1377	531	Fig.39. P8117. Thin hard reddish sandy fabric, a few white inclusions up to 0.5mm and some mica, shows burning on outside. Ø 14.0; pres. ht 1.9. From either a jar or wide-mouthed jug. For the profile, cf. Arthur 1994, 209 fig. 128 from Naples, Carminiello complex, phase VII (end C5 and 1st third C6 AD), with thicker rim. Close to Gandolfi 1998, 262 fig 7 no.11 from Albenga, mid-C5/C6 AD. The thin fabric of this piece looks forward to the coarse ware jars of the full Middle Ages: cf. Nos.2155-2157 below.
16. Handle		
1378	813 F5	Pl.29. P7725. Horizontal staff handle, round in section. Sandy red ware with numerous white, grey and black inclusions. Ø handle 1.6, pres. lg. 5.3. From a *lopas.* Cf. Nos.1340, 1344.
17. Foot of tripod bowl		
1379	229 Area 10	Fig.39. P505. Sandy brown fabric, fairly smooth surface, lightly burnished. Clean break. Max. ht. 7.5. Tripod cookpots were in use throughout the Late Hellenistic and Roman Imperial periods, and into Late Antiquity: cf. e.g. Bertoldi 2011, 106-107, *tegami*, types 1 and 2 from Ponte di Nona, 2nd half C2 BC, citing comparanda ranging between the last decades of the C3 BC and 1st half C1 BC; Cotton and Métraux 1985, 221, fig. 54 nos.5 and 7 from the San Rocco villa at Francolise (Early Imperial); Fracchia & Hayes 2005, no.111 from the Masseria Ciccotti villa ca.180 AD (more tapered); Albarella *et al.* 1993, fig.13 no.77 (complete tripod bowl reconstructed), from San Giacomo degli Schiavoni, early C5 AD. Without more of the shape, our piece cannot be dated more precisely.
18. *Clibani* For the shape, see Cubberley *et al.* 1988; Cubberley 1995. Only 1 *clibanus* frag. (No.1389) was found on Site 223 (San Felice) which was largely abandoned around the end of the C4 BC, and none are reported from the Fattoria Fabrizio where occupation ended around the same time (Lanza Catti & Swift 2014). Cubberley dates the introduction of the vessel type in Italy to the late C2 BC, but it was in use in Campania in the mid-C3 BC (Olcese 2003, 25) and was current in South Italy by the late C3 BC (e.g. *Civita di Tricarico I,* figs. 31-32, nos.972-990). It continued in use into the Middle Ages (Cubberley 1995, 60-61). Bertoldi (2011, 108-109) publishes more-or-less complete examples of two types from Ponte di Nona, both datable to the 2nd half C2 BC, one with a horizontal strap handle, the other with a knob handle at the apex. The tops were regularly marked with impressed patterns, usually of slashed or gouged marks, intended to hold hot ashes. The marks are often symmetrically arranged with varying degrees of precision.		

1380	120	Fig.40. P62. Flange and part of top. Impressed leaf (olive?) and part of another on upper surface. Sandy 1, red. Ø flange 23.0. For another *clibanus* with impressed olive frond, cf. *Civita di Tricarico I,* fig 332 no.981, from a destruction layer of phase IV, ca. 200 BC.
1381	124	Fig.40. P23. Flange of a small *clibanus*. Pinkish red clay with some small black inclusions and a little mica. Ø flange 24.0.
1382	906	Fig.40. P7178. *Clibanus* frag. with small, near vertical, flange. Rough fairly hard clay, dark grey in core, reddish brown on surface, small inclusions. Ø ca. 24.0.
1383	303 House A	Pl.29. P712. Part of *clibanus* top, flange and wall (no intact edges). Row of impressed pockmarks round edge of top, with beginnings of another. Sandy 1, red. Max. dim. ca. 7.4. For the row of impressed circles, cf. *Civita di Tricarico I,* fig. 331 no.978 in a layer of phase IV, ca. 200 BC (more loosely arranged).
1384	229 Area 4	Pl.29. P496. *Clibanus* top. Sandy red ware with small black (some shiny) and white grits, light grey in core. 2 concentric rows of small impressed ovals and beginning of a third. Shallow thin groove between the 2 more complete rows. Max. dim. 5.5, th. 0.8. The rows of impressed ovals are a common feature on *clibani* from San Giovanni di Ruoti, especially in contexts of the destruction and infill at the end of Period I (early C3 AD): *SGR IV,* SGP1283, SGP3646. Cf. also Cubberley *et al.* 1988, 105 fig. 2 no.9 from the villa at Matrice, Deposit 3, 1st half C5 AD.
1385	229	Pl.29. P791. Thickish, convex. 5 rows of stabbed impressions preserved, rather large and crowded. Brown slightly rough textured fabric with sparse reddish haematite grits, mere traces of lime and mica. Max. dim. 6.1, th. 0.8 – 1.0. Cf. No.1384.
1386	530 Sq 2	Pl.29. P1293. Small frag. of top with cogged rectangular impressions. Orange-brown clay with much fine rounded quartz sand and sparse fine silvery mica fired grey brown on outside. Max. dim. 3.8, th. 0.4 – 0.5. Cf. Fracchia & Hayes 2005, 171 no.113 from a deposit in the villa at the Masseria Ciccotti datable to the late C2/ early C3 AD.
1387	145-9 Ar.145	Pl.29. P141. Small frag. of top with band of coarse rouletted impressions on upper surface (3 preserved). Hard pinkish-brown clay with moderate mixed inclusions. Max. dim. 6.0. Date as No.1386?
1388	124 A2	Pl.29. P39. Frag. of top with break at edge of sherd where flange has broken off; 5 shallow oblique slashes on top. Sandy 1, red. Max. dim. 7.0, th. 1.0. For the oblique slashes, cf. Cubberley *et al.* 1988, 104 fig. 1 no.2 from the villa at Matrice, Deposit 1, late C2 AD.
1389	223 Ar.226	Pl.29. P435. Small frag. of top with part of a circular groove and 1 elongated slash. Sandy reddish cooking ware, hard fired. Max. dim. 3.5, th. 0.6. Cf. *Monte Irsi*, pl. XXIV no.183 of Phase A VI, mainly C1–mid-C2 AD.
1390	906 A4	Pl.29. P7185. Part of top and flange. Hard pinkish brown sandy fabric with numerous small brown and black grits and some mica. Concentric shallow combing on top and part of an oblique slash. Max. dim. 5.5. pres. ht. ca. 2.3. The concentric combing suggests a Late Antique date.
1391	531	Pl.29. P8116. Frag. of top with residual flange and beginning of wall (0.5cm) below it. Fairly soft orange slightly sandy clay; turning ridges on underside. Shallow incised wavy lines on upper surface and series of small nicks around edge of flange. Max. dim. 8.0, th. at top, at bottom 1.0. For the nicks around the rim, cf. Siena 1998, 671 fig. 5 no.10 from the Val Pescara, Late Antique, apparently in a similar fabric. The lightly incised wavy lines also suggest a Late Antique or Early Medieval date.

19. Lids

Numerous frags. of lids for covering the stew-pots and casseroles were found in the Survey Area, but only a few examples were large enough to be worth drawing. They were mostly of low conical shape with high knob and simple undifferentiated rim normal on these pots throughout the duration of the ware, though some had an upward or downward turning lip. Some low rounded vessels may have been used either as lids or dishes, and may have been intended to serve either function (e.g. Nos.1315, 1325, 1400).

19a. Lid tops with knobs

1392	302	Fig.40. P714. Part of steep conical lid with central knob terminating in a projecting flange. Sandy grey clay, brownish at surface. Max. Ø knob 3.0, pres. ht. 2.8. This type of lid knob had a long life: cf. e.g. *Civita di Tricarico I,* fig 334 no.1020 (before ca. 200 BC); Turchiano in *Ordona X,* 366 tav. XI no.27.2 from the fill of the cistern associated with House B (Late Antique/ Early Medieval).

1393	229	Fig.40. P784. Shallow conical lid with heavy solid wheel-turned knob. Hard red fabric with numerous minute white and grey inclusions; wet-smoothed outside; fired yellowish on exterior. Max. Ø knob 4.2. For the large well-turned knob with flat top and slightly convex edge, widest at the point of contact with the wall of the lid, cf. De Stefano 2008, 88 tav XII no.48.6 from Ordona (in plain ware; several examples listed, including 1 from Layer 487, levelling of mid-C1 AD).
19b. Lid rims		
1394	722 A1	Fig.40. P1841. Hard dark orange-brown fabric. Micaceous, small black (shiny) and white grits. Campanian. Ø ca. 34.0. Cf. Carsana 1994, p.234 and fig. 111 type 28 from Carminiello ai Mannesi, Naples, with discussion. The rim form appears to imitate African casseroles of Hayes (1972) Form 23. It is well attested in Naples from the end of the C4 to middle of the C5, and more rarely into the beginning of the C6 AD.
1395	124 C2	Fig.40. P158. Sandy 2, red. Discoloured at 1 edge by field burning. Ø 38.0.
1396	223 Ar.226	Fig.40. P445. Flaring lid rim, thickened inside. Hard fired slightly micaceous gritty reddish clay with numerous small black (up to 2mm) and white inclusions. Outer edge of rim damaged. Ø ca. 18.5, ht. 2.3, max. dim. of sherd 3.7. Close to (but a little steeper than) *Civita di Tricarico I,* fig. 333 no.996.
1397	145-9 Ar.145 H10	Fig.40. P134. Frag. of flat lid with chamfered edge, broken short of the knob. Sandy 1, red, unslipped. Ø ca. 7.0. Classification uncertain. The form resembles that of an amphora stopper of the Late Republican or Early Imperial period (cf. Disantarosa 2011, 400 fig. 6 no.19 from Vagnari, unstratified; Cotton in *Gravina II*, no.1559 from Botromagno, unstratified but ante-dating the end of the settlement in the early C1 AD); but the fabric is standard for cooking ware. For a similar lid in plain ware: Michaelides & Wilkinson (eds), I, 72-73 fig 4.3, no.8 from tomb 5, early C1 AD.
1398	124 C2	Fig.40. P52. Lid rim (for a casserole) with out-turned lip. Sandy 2, grey. Ø ca 23.0. The form has a long history. It is attested by numerous examples at Valesio in contexts of the 1st half – mid-C2 BC and with slightly thickened rim in the C1 AD (Yntema 2001, 301 and 306, form N06b); and it was still in use in the C4/C5 AD in *Domus* B at Ordona (Annese in *Ordona X*, 327, tav, XXII no.29.3).
1399	124	Fig.40. P24. Lid rim, rolled back at the edge. Sandy 1, red. Ø ca. 38.0. Lids with rims rolled back at the edge were widespread in cookpot fabrics from at least the beginning of the C1 BC to Late Antiquity. Cf. e.g. Cotton & Métraux 1985, 238 fig 61 no.13 from the San Rocco villa at Francolise, period I/IA, 100/ 90–30 BC; Cotton 1979, fig. 54 no.5 from the villa at Posto, Francolise, period II ca. 30 BC–mid-C1 AD (steeper); *Vagnari*, 105, fig. 4.26 P992 in a floor context of Period 3C (mid-C3–mid-C4 AD) containing material ranging from the C1 to mid-C3 AD; *SGR I,* 335 fig. 54 no. 62 in a context of Period 2, AD 350–400; Turchiano in *Ordona X*, 366 tav. XI no.25.1 from the fill of the cistern assoc. with House B filled in ca. mid-C5; Cirelli *et al.* 2013, 139 fig. 6.4 from Grumentum, C6 AD.
19c. Misc. small rim fragments		
1400	303 H8	Fig.40. P4351. Rim of lid or perhaps dish. Sandy orange red clay with brown and some white grits, some mica, turns grey in core. Pres. ht. 1.9. The simple shape can hardly be pinned down precisely. It appears in black gloss around the middle of the C3 BC: cf. e.g. *Civita di Tricarico I,* no.414 in a context of phase IIB (ca. 250 BC), with discussion of the type on p. 426. It recurs in plain ware in Ordona in the late C1 BC: *Ordona VI*, 123 fig. 31 no.78 (drawn as a bowl), and is found in Midden 9 of Period 3B (C6 or early C7 AD) at San Giovanni di Ruoti (*SGR IV,* SGP7242).
1401	145-9 Ar.147 D4	Fig.40. P214. Hard fired sandy red with innumerable very fine black specks and a little mica. Ø uncertain. Lg. of sherd 2.0. This is the commonest of all forms of lid rim, found throughout the period of cookpot ware.
1402	905	Fig.40. P2400. Rim with out-turned lip. Sandy 1, red. Damaged at edge. Ø and exact angle uncertain. Pres. ht. ca. 1.8. Close to *Civita di Tricarico I,* fig. 334 no.1003 (unstratified, but antedating the destruction of the site ca. 200 BC). But cookpot lids with out-turned lips occur throughout the Roman period: cf. e.g. Cotton 1979, 171 fig. 54 no.4 from the Posto villa at Francolise, attested there in periods I-II, ca. 80 BC–160 AD; Volpe *et al.* 1998, 730 fig. 7 no.13 from the Late Antique villa at Agnuli near Mattinata.
1403	342	Fig.40. P2382. Lid with thickened rim and oblique exterior facet. Sandy 3, red, fired grey-brown on top. Exact angle and Ø uncertain, max. lg. 2.5. A simple rim form that cannot be dated precisely. Cf. e.g. *Civita di Tricarico I,* fig 335 no.1040 (before ca. 200 BC); Olcese 2011-2012, 107 tav. 1.XXXIII no.93 from Chiusi, 2nd half C2–beginning C1 BC; Annese *et al.* 2000, 164 tav. VII no.18.1 from Ordona, *Domus* A, C3 AD; *Vagnari* 208, fig. 5.107 P1255 (last part C5/C6 AD); Cirelli *et al.* 2013, 139 fig. 6.3 from Grumentum, C6 AD; cf. Di Giuseppe 1998, 744 fig. 9.2 from the kiln at Calle (Late Antique).

19d. Imitation of African black-top cooking lid		
1404	607 14	Fig.40. P2393. Lid rim. Dark sandy red micaceous fabric with small white grits, fired dark purple-grey on outside. Ø ca. 25.0. Local/ regional imitation of Hayes (1972) Form 196, current from mid-C2 to beginning C5 AD. Cf. Lapadula in *Chora Metaponto IV*, 145 no. 5.1.1 from the Roman farmhouse at San Biagio, mid-C3 AD.
20. Colander / sieve / milk boiler Most frags. of these vessels found in the survey were in impasto (Nos.309-311) or plain wares (Nos.1264-1269).		
1405	223 E49N35	Pl.29. P7042. Bottom of a sieve. Hard fired drab brown clay, gently curved and thicker towards base. 2 holes ca. 0.9 in Ø and remains of 7 others. Max. dim. 7.0 th.1.2-1.9.
21. Brushed wall-sherds The following two pieces are finished externally by light brushing, leaving groups of shallow parallel marks some of which are off-horizontal. They must have been brushed off the wheel. They should perhaps be dated in the Late Antique period when cookpots were frequently finished with horizontal striations (cf. the remark by Kenrick in *Vagnari*, 212, note following P1272), made with either a brush or a comb.		
1406	223 E47N43	Pl.29. P7092. Hard fired greyish brown fabric with small brown inclusions and some mica, turning orange-brown inside. Max. dim. 4.6.
1407	223 E33N18	Pl.29. P4860. Dark reddish-brown fabric with some black and brown inclusions and a little mica, turning grey towards core. Max. dim. 3.3, th. 0.8.

19. THE AMPHORAE

by Giacomo Disantarosa

I. Introduction

During the Survey in the Basentello valley, carried out between 1996 and 2008, 491 amphora sherds with a total weight of 27,983g were found. The total is slightly higher than that given in the preliminary discussion by the writer in *Beyond Vagnari* which did not take account of 25 fragments deposited at the *Centro Operativo* at Gravina. Sherds from the systematic collection from Vagnari (Site 361) (C. Small 2011, 69; Disantarosa 2011) and those from the collection carried out between 2002 and 2004 at Santo Staso (Site F2), on the southern slopes of the hill of Botromagno (Disantarosa 2010a, 497-500, fig. 76, tav. LXIV.a-b) have not been included.

Seven "Productions" could be identified in classifying the sherds on the basis of the analyis of the fabrics, including one "unidentified" group. 44 fragments were classified as belonging to the production of Magna Graecia/ Sicily, 242 as "Italic", 1 as Punic-Sicilian; 4 as Baetican; 100 as "African", 85 as from the Eastern Aegean and 15 as from the unidentified group. The grounds for the classification are indicated in the Table below. A *Table of fabrics* was created in order to support this classification and to make it possible to find the characteristic data for individual instances. Each fabric type is identified by the code *AVdB* (*Anfore della Valle del Basentello*) followed by a number. The colours are identified by Munsell code numbers (Munsell 2000). The numbers used in the second column of the Table refer to those in the following *scheda campioni impasti* (Parise Badoni & Ruggeri Giove 1984, 51-52).

In the Catalogue, the Forms and types within each production including the "Unidentified Group" are organized in chronological order. The individual fragments are listed firstly under the macro-grouping of the production, and secondly under the name of the form, followed by an indication of the dating. The P-number given for each entry is the number by which the piece is identified in the excavation records. In some cases two P-numbers are given. This is the result of a misunderstanding during the course of study which led to a second P-number being assigned. In such cases, the lower P-number is the one written on the sherd. The type is described on the basis of the state of conservation and of the quantitative data (number/weight). Wall sherds (ws) which could not be assigned to a type are listed together at the end of each Form. This allows additional information to be given, where possible, concerning the morphology of the amphora to which they belong (e.g. neck fragment), and in all cases the fabric and the quantitative data.

The systematic analysis of this classification will be found in the Appendix. It uses comparanda from other sites, principally in the regions of Puglia and Basilicata, to support the chronology and to provide a more detailed picture of the modes of production and circulation. This involves a reconstruction firstly of the maritime routes employed and of the coastal settlements with which they were linked, and secondly of the use of amphorae in the hinterland and their distribution by various routes including major road arteries, minor roads and probably rivers and streams.

FABRIC		SLIP		INCLUSIONS	
Colour	**1**	Colour	**7**	Type or colour	**12**
Surface colour	**2**	Brilliance	**8**	Frequency	**13**
Fracture	**3**	Degree of homogeneity	**9**	Size	**14**
Touch sensation	**4**	Consistency	**10**	Form	**15**
Hardness	**5**	Degree of adhesion	**11**	Distribution	**16**
Consistency	**6**				

Table 19-1. Explanation of numbers used in the Table of Amphora Fabrics.

AVdB 1	**1**: 10YR 6/4 (light yellowish brown); **2**: 10YR 8/4 (very pale brown); **3**: clear; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: sparkling, white, black; **13**: medium, low, low; **14**: small; **15**: irregular; **16**: uneven.
AVdB 2	**1**: 10YR 7/4; **2**: 10YR 7/6; **3**: clear; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: sparkling, white; **13**: medium, low; **14**: small; **15**: irregular; **16**: uneven.
AVdB 3	**1**: 2.5YR 5/8 (red); **2**: 2.5Y 8/4 (pink); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **7**: 2.5Y 8/4 (pale yellow); **8**: opaque; **9**: homogeneous; **10**: compact; **11**: bonded; **12**: yellow, white; **13**: medium; **14**: small; 15: irregular; **16**: uneven.
AVdB 4	**1**: 2.5YR 5/8 (red); **2**: 10YR 8/3 (pink); **3**: irregular; **4**: rough or grainy; **5**: tender; **6**: some air holes; **7**: 10YR 8/3 (very pale brown); **8**: opaque; **9**: uneven; **10**: diluted; **11**: bonded; **12**: grey, white, black; **13**: medium, low, low; **14**: medium; **15**: irregular; **16**: uneven.
AVdB 5	**1**: 2.5YR 5/8 (red); **2**: 5YR 6/8 (reddish yellow); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: black, white, sparkling; **13**: high, low, low; **14**: medium; **15**: irregular; **16**: uneven.
AVdB 6	**1**: 5YR 5/8 (yellowish red); **2**: 5YR 8/4 (pink); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **7**: 5YR 8/4 (pink); **8**: opaque; **9**: homogeneous; **10**: thin; **11**: bonded; **12**: sparkling, white, red; **13**: low; **14**: very small; **15**: irregular; **16**: uneven.
AVdB 7	**1**: 5YR 5/6 (yellowish red); **2**: 10YR 7/6 (yellow); **3**: irregular; **4**: rough or grainy; **5**: soft; **6**: some air holes **7**: 10YR 7/6 (yellow); **8**: opaque; **9**: uneven; **10**: diluted; **11**: bonded; **12**: white, grey, sparkling; **13**: low, medium, high; **14**: medium; **15**: irregular; **16**: uneven.
AVdB 8	**1**: 5YR 5/6 (yellowish red); **2**: 5YR 6/1 (grey); **3**: irregular; **4**: rough or grainy; **5**: soft; **6**: porous; **7**: 5YR 6/1 (grey); **8**: opaque; **9**: uneven; **10**: diluted; **11**: bonded; **12**: sparkling, grey, yellow; **13**: low, low, medium; **14**: medium; **15**: irregular; **16**: uneven.
AVdB 9	**1**: 10YR 4/1 (dark grey), 5YR 5/8 (yellowish red); **2**: 10YR 4/1 (dark grey); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: sparkling, black, white; **13**: medium, low, low; **14**: small; **15**: irregular; **16**: uneven.
AVdB 10	**1**: 2.5Y 6/2 (light brownish grey); **2**: 2.5Y 8/2 (pale yellow); **3**: irregular; **4**: rough or grainy; **5**: soft; **6**: porous; **7**: 2.5Y 8/2 (pale yellow); **8**: opaque; **9**: uneven; **10**: diluted; **11**: bonded; **12**: sparkling, grey; **13**: high, medium; **14**: small; **15**: irregular; **16**: uneven.
AVdB 11	**1**: 2.5Y 4/1 (dark grey), 2.5Y 5/2 (greyish brown); **2**: 5YR 6/6 (reddish yellow); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: black, white, sparkling; **13**: medium, low, medium; **14**: large, medium, very small; **15**: irregular; **16**: uneven.
AVdB 12	**1**: 2.5YR 5/8 (red); **2**: 7.5YR 8/4 (pink); **3**: clear; **4**: rough or grainy; **5**: hard; **6**: compact; **7**: 7.5YR 8/4 (pink); **8**: opaque; **9**: homogeneous; **10**: compact; **11**: bonded; **12**: white, sparkling, red; **13**: high, medium, low; **14**: medium; **15**: irregular; **16**: uneven.
AVdB 13	**1**: 10YR 7/4 (very pale brown); **2**: 10YR 8/4 (very pale brown); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: grey, sparkling; **13**: low, medium; **14**: very small; **15**: irregular; **16**: uneven.
AVdB 14	**1**: 10YR 5/1 (grey); **2**: 10YR 6/8 (brownish yellow); **3**: irregular; **4**: rough or grainy; **5**: soft; **6**: porous; **12**: black, white, sparkling; **13**: low, medium, medium; **14**: small; **15**: irregular; **16**: uneven.
AVdB 15	**1**: 7.5YR 6/6 (reddish yellow); **2**: 10YR 8/4 (very pale brown); **3**: clear; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: white, grey, sparkling; **13**: high, low, low; **14**: medium, small; **15**: irregular; **16**: uneven.
AVdB 16	**1**: 2.5Y 7/2 (pale red); **2**: 10YR 8/2 (very pale brown); **3**: clear; **4**: rough or grainy; **5**: soft; **6**: compact; **12**: greys; **13**: medium; **14**: very small; **15**: irregular; **16**: uneven.
AVdB 17	**1**: 2.5YR 5/8 (red); **2**: 2.5YR 5/8 (red); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: porous; **7**: 2.5YR 5/8 (red); **8**: opaque; **9**: uneven; **10**: thin; **11**: bonded; **12**: yellow, grey, sparkling; **13**: high, low, low; **14**: large, small; **15**: irregular; **16**: uneven.
AVdB 18	**1**: 5YR 7/8 (reddish yellow); **2**: 2.5Y 8/2 (pale yellow); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **7**: 2.5Y 8/2 (pale yellow); **8**: opaque; **9**: homogeneous; **10**: compact; **11**: bonded; **12**: yellow, white, red, grey; **13**: medium, low, low, low; **14**: small, large; **15**: irregular; **16**: uneven.

AVdB 19	**1**: 5YR 5/6 (yellowish red); **2**: 5YR 5/6 (yellowish red); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: white, black, sparkling; **13**: medium, low, low; **14**: medium; **15**: irregular; **16**: uneven.
AVdB 20	**1**: 7.5YR 7/4 (pink); **2**: 7.5YR 8/4 (pink); **3**: irregular; **4**: rough or grainy; **5**: soft; **6**: porous; **12**: grey, sparkling, white; **13**: low, high, low; **14**: medium; **15**: irregular; **16**: uneven.
AVdB 21	**1**: 2.5YR 5/6 (red); **2**: 10YR 7/2 (light grey); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **7**: 10YR 7/2 (light grey); **8**: opaque; **9**: uneven; **10**: thick; **11**: non-adherent; **12**: black, sparkling, yellow; **13**: high, high, medium; **14**: medium; **15**: irregular; **16**: uneven.
AVdB 22	**1**: 5YR 6/6 (reddish yellow); **2**: 7.5YR 6/6 (reddish yellow); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: white, sparkling; **13**: medium, low; **14**: small; **15**: irregular; **16**: uneven.
AVdB 23	**1**: 5YR 5/8 (yellowish red); **2**: 5YR 6/6 (reddish yellow); **3**: clear; **4**: smooth; **5**: soft; **6**: compact; **12**: sparkling, black, white; **13**: low, medium, low; **14**: very small; **15**: irregular; **16**: uneven.
AVdB 24	**1**: 10YR 7/3 (very pale brown); 2.5YR 6/6 (light red); **2**: 10YR 7/4 (very pale brown); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: some air holes; **12**: white, grey; **13**: medium, low; **14**: large; **15**: irregular; **16**: uneven.
AVdB 25	**1**: 2.5YR 6/6 (light red); **2**: 7.5YR 7/2 (pinkish grey); **3**: clear; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: white, yellow; **13**: low, low; **14**: medium; **15**: irregular; **16**: uneven.
AVdB 26	**1**: 10YR 6/6 (brownish brown); **2**: 10YR 8/4 (very pale brown); **3**: irregular; **4**: rough or grainy; **5**: soft; **6**: some air holes; **12**: sparkling, black, white, brown; **13**: medium, high, low, low; **14**: medium; **15**: irregular; **16**: uneven.
AVdB 27	**1**: 7.5YR 6/8 (reddish yellow); **2**: 10YR 8/6 (yellow); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **7**: 10YR 8/6 (yellow); **8**: opaque; **9**: homogeneous; **10**: compact; **11**: bonded; **12**: yellow, white; **13**: medium, low; **14**: medium; **15**: irregular; **16**: uneven.
AVdB 28	**1**: 10YR 8/4 (very pale brown); **2**: 10YR 8/3 (very pale brown); **3**: clear; **4**: smooth; **5**: hard; **6**: compact; **12**:white, grey; **13**: low, low; **14**: small; **15**: irregular; **16**: uneven.
AVdB 29	**1**: 7.5YR 7/4 (pink); **2**: 10YR 7/4 (very pale brown); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: calcite, mica, chamotte, chestnut; **13**: low, medium, low, medium; **14**: medium; **15**: irregular; **16**: uneven.
AVdB 30	**1**: 7.5YR 7/6 (reddish yellow); **2**: 7.5YR 7/4 (pink); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: sparkling, white; **13**: medium, low; **14**: small; **15**: irregular; **16**: uneven.
AVdB 31	**1**: 7.5YR 6/8 (reddish yellow); **2**: 7.5YR 6/6 (reddish yellow); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: yellow, white; **13**: medium, medium; **14**: small; **15**: irregular; **16**: uneven.
AVdB 32	**1**: 7.5 YR 7/4 (pink); **2**: 7.5 YR 7/4 (pink); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: some air holes; **7**: 7.5 YR 7/4 (pink); **8**: opaque; **9**: homogeneous; **10**: compact; **11**: bonded; **12**: white, grey, yellow; **13**: medium, low, low; **14**: small; **15**: irregular; **16**: uneven.
AVdB 33	**1**: 5YR 6/6 (reddish yellow); **2**: 7.5YR 7/6 (reddish yellow); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: some air holes; **7**: 7.5YR 7/6 (reddish yellow); **8**: opaque; **9**: homogeneous; **10**: compact; **11**: bonded; **12**: white, yellow; **13**: medium, medium; **14**: small; **15**: irregular; **16**: uneven.
AVdB 34	**1**: 5YR 7/4 (pink); **2**: 7.5YR 8/2 (pinkish white); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **7**: 7.5YR 8/2 (pinkish white); **8**: opaque; **9**: homogeneous; **10**: compact; **11**: bonded; **12**: white, red, grey, black; **13**: low, medium, low, low; **14**: small; **15**: irregular; **16**: uneven.
AVdB 35	**1**: 5YR 5/6 (yellowish red); **2**: 5YR 6/6 (reddish yellow); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: sparkling, black, white, red, grey; **13**: high, medium, low, medium, low; **14**: small, small, large, medium; **15**: irregular; **16**: uneven.
AVdB 36	**1**: 5YR 6/4 (light reddish brown); **2**: 5YR 8/3 (pink); **3**: clear; **4**: smooth; **5**: soft; **6**: some air holes; **7**: 5YR 8/3 (pink); **8**: opaque; **9**: homogeneous; **10**: diluted; **11**: bonded; **12**: white, yellow; **13**: low, low; **14**: medium; **15**: irregular; **16**: uneven.
AVdB 37	**1**: 10YR 8/4 (very pale brown); **2**: 10YR 8/6 (yellow); **3**: clear; **4**: smooth; **5**: hard; **6**: compact; **12**: white, red; **13**: low, low; **14**: small, small; **15**: irregular; **16**: uneven.
AVdB 38	**1**: 10YR 7/4 (very pale brown); **2**: 10YR 7/4 (very pale brown); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: some air holes; **12**: grey, white, sparkling; **13**: low, low, medium; **14**: small, small, very small; **15**: irregular; **16**: uneven .
AVdB 39	**1**: 10YR 7/3 (very pale brown); **2**: 10YR 6/3 (pale brown); **3**: clear; **4**: smooth; **5**: hard; **6**: compact; **12**: grey, white; **13**: low, medium; **14**: small, small; **15**: irregular; **16**: uneven.
AVdB 40	**1**: 2.5YR 7/8 (light red); **2**: 2.5YR 7/2 (pale red); **3**: irregular; **4**: rough or grainy; **5**: soft; **6**: compact; **7**: 2.5YR 7/2 (pale red); **8**: opaque; **9**: uneven; **10**: thin; **11**: bonded; **12**: yellow, white, grey; **13**: low, low, medium; **14**: small, small, small; **15**: irregular; **16**: uneven.
AVdB 41	**1**: 10YR 7/3 (very pale brown); **2**: 10YR 7/3 (very pale brown); **3**: irregular; **4**: rough or grainy; **5**: soft; **6**: some air holes; **12**: white, sparkling; **13**: medium, low; **14**: small, small; **15**: irregular; **16**: uneven.

AVdB 42	**1**: 5YR 5/4 (reddish brown); **2**: 5YR 5/4 (reddish brown); **3**: clear; **4**: smooth; **5**: soft; **6**: some air holes; **12**: chamotte; **13**: low; **14**: small; **15**: irregular; **16**: uneven.
AVdB 43	**1**: 5Y 8/2 (pale yellow), 10YR 6/1 (grey); **2**: 5Y 7/2 (light grey); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: grey, white; **13**: low, low; **14**: small, small; **15**: irregular; **16**: uneven.
AVdB 44	**1**: 7.5YR 5/6 (strong brown); **2**: 7.5YR 6/6 (reddish yellow); **3**: flakes; **4**: rough or grainy; **5**: soft; **6**: some air holes; **12**: yellow, white; **13**: low, low; **14**: very small, very small; **15**: irregular; **16**: uneven.
AVdB 45	**1**: 2.5YR 5/3 (reddish brown); **2**: 2.5YR 7/2 (pale red); **3**: irregular; **4**: dusty; **5**: soft; **6**: crumbly; **7**: 2.5YR 7/2 (pale red); **8**: opaque; **9**: uneven; **10**: diluted; **11**: bonded; **12**: white, sparkling; **13**: low, high; **14**: very small, very small; **15**: irregular; **16**: uneven.
AVdB 46	**1**: 10R 7/4 (pale red); **2**: 2.5Y 8/2 (pale yellow); **3**: irregular; **4**: dusty; **5**: soft; **6**: porous; **7**: 2.5Y 8/2 (pale yellow); **8**: opaque; **9**: uneven; **10**: thin; **11**: bonded; **12**: white, grey, sparkling; **13**: medium, low, medium; **14**: small, very small, very small; **15**: irregular; **16**: uneven.
AVdB 47	**1**: 2.5YR 7/8 (light red); **2**: 2.5YR 6/6 (light red); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: yellow, white; **13**: low, medium; **14**: small, small; **15**: irregular; **16**: uneven.
AVdB 48	**1**: 2.5YR 5/8 (red); **2**: 2.5Y 8/4 (pale yellow); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **7**: 2.5Y 8/4 (pale yellow); **8**: opaque; **9**: homogeneous; **10**: compact; **11**: bonded; **12**: white, yellow, grey, black; **13**: medium, medium, low, low; **14**: medium, medium, small, large; **15**: irregular; **16**: uneven.
AVdB 49	**1**: 10YR 8/4 (very pale brown); **2**: 10YR 8/4 (very pale brown); **3**: clear; **4**: smooth; **5**: very hard; **6**: compact; **12**: grey, red; **13**: low, low; **14**: very small, small; **15**: irregular; **16**: uneven.
AVdB 50	**1**: 7.5YR 6/6 (reddish yellow); **2**: 7.5YR 6/6 (reddish yellow); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: black, white, chamotte; **13**: high, low, medium; **14**: large, small, medium; **15**: irregular; **16**: uneven.
AVdB 51	**1**: 2.5YR 6/6 (light red); **2**: 2.5Y 8/3 (pale yellow); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: some air holes; **7**: 2.5Y 8/3 (pale yellow); **8**: opaque; **9**: homogeneous; **10**: compact; **11**: bonded; **12**: sparkling, white; **13**: medium, low; **14**: very small, small; **15**: irregular; **16**: uneven.
AVdB 52	**1**: 10YR 6/6 (brownish yellow); **2**: 10YR 7/4 (very pale brown); **3**: irregular; **4**: rough or grainy; **5**: soft; **6**: compact; **12**: white, red; **13**: medium, low; **14**: medium, small; **15**: irregular; **16**: uneven.
AVdB 53	**1**: 10YR 7/4 (very pale brown); **2**: 10YR 7/4 (very pale brown); **3**: irregular; **4**: rough or grainy; **5**: very hard; **6**: compact; **12**: white, grey; **13**: medium, low; **14**: small, very small; **15**: irregular; **16**: uneven.
AVdB 54	**1**: 2.5YR 4/6 (red); **2**: 2.5YR 4/6 (red); **3**: clear; **4**: rough or grainy; **5**: soft; **6**: compact; **12**: sparkling, white; **13**: high, medium; **14**: very small, small; **15**: irregular; **16**: uneven.
AVdB 55	**1**: 10YR 6/3 (pale brown); **2**: 10YR 6/3 (pale brown); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: some air holes; **12**: white, sparkling; **13**: medium, low; **14**: small, very small; **15**: irregular; **16**: uneven.
AVdB 56	**1**: 2.5Y 6/8 (olive yellow); **2**: 2.5Y 6/6 (olive yellow); **3**: irregular; **4**: dusty; **5**: very soft; **6**: porous; **12**: grey, black, white, sparkling; **13**: medium, low, low, medium; **14**: medium, small, very small, very small; **15**: irregular; **16**: uneven.
AVdB 57	**1**: 10YR 7/4 (very pale brown); **2**: 10YR 7/4 (very pale brown); **3**: clear; **4**: dusty; **5**: soft; **6**: some air holes; **12**: white, black, grey; **13**: medium, low, low; **14**: small, small, very small; **15**: irregular; **16**: uneven.
AVdB 58	**1**: 7.5YR 8/4 (pink); **2**: 7.5YR 8/4 (pink); **3**: irregular; **4**: rough or grainy; **5**: hard; **6**: compact; **12**: white, sparkling; **13**: medium, low; **14**: medium, very small; **15**: irregular; **16**: uneven.
AVdB 59	**1**: 2.5YR 5/8 (red); **2**: 7.5YR 8/4 (pink); **3**: irregular; **4**: rough or grainy; **5**: soft; **6**: crumbly; **7**: 7.5YR 8/4 (pink); **8**: opaque; **9**: uneven; **10**: diluted; **11**: bonded; **12**: white, yellow, sparkling; **13**: high, medium, low; **14**: medium, small, small; **15**: irregular; **16**: uneven.
AVdB 60	**1**: 10YR 7/3 (very pale brown); **2**: 10YR 7/3 (very pale brown); **3**: irregular; **4**: rough or grainy; **5**: soft; **6**: compact; **12**: white, sparkling; **13**: medium, low; **14**: small, small; **15**: irregular; **16**: uneven.

Table 19-2. Characteristics of the amphora fabrics identified from our Survey Area.

II. Catalogue

1. Production of Magna Graecia / Sicily		
1a. Forme 1α. 1st quarter C6–early C5 BC.		
1408	223 E53N18	Fig.41. P4952. Tp.1. Rim thickened, flattened at the top and defined internally by a shallow indentation; set inclined slightly outwards on a cylindrical neck. AVdB41. 46g.
1409	223 E34N30	Fig.41. P7132. Tp.2. Rim with thickened section set inclined slightly outwards; marked off from the neck by an indentation. AVdB41. 47g.
1410	223 E60N19	Not illus. P7443. Ws. AVdB41. 51g.
1b. Forme 2. Late C6–early C5 BC.		
1411	223 E43N28	Fig.41. P7615. Tp.1. Rim trapezoidal in section, with top inclined inwards, slightly concave; set at a slight angle to the cylindrical neck; marked off externally by two grooves flanking a pendent cordon. AVdB53. 45g.
1c. Forme 5. C5–1st half C4 BC.		
1412	223	Fig.41. P619. Tp.1. Rim with echinus band defined above by a short sloping surface and internally by a recess in the profile; set slightly everted in relation to the truncated conical neck. Finger impressions at handle-spring at junction between rim and neck. AVdB32. 58g.
1413	223 E32N19	Fig.41. P4400. Tp.2. Quarter round rim ending in a point, slightly concave at top; with outer edge slightly inclined towards the cylindrical neck. Barely perceptible collar on exterior of neck below attachment to rim. Traces of finger impressions on handle-spring at junction between rim and neck. AVdB49. 51g.
1414	223 Area 228	Fig.41. P7304. Tp.3. Everted rim, trapezoidal in section with outer edge inclined towards neck, defined by a slight ridge. AVdB32. 65g.
1415	214	Not illus. P374. Ws. AVdB32. 28g.
1d. Vandermersch III / Greco-Italic III. 1st half C4–early decades C3 BC.		
1416	223	Fig.41. P617. Tp.1. Trapezoidal rim with upper edge sloping slightly downwards; set everted from cylindrical neck. Slight horizontal groove at junction between rim and neck. AVdB38. 65g.
1417	223 E41N21	Not illus. P7207. Tp.1. Rim. AVdB38. 62g.
1418	223	Not illus. P7233. Tp.1. Rim. AVdB38. 39g.
1419	223 E18N26	Fig.41. P7208. Tp.2. Trapezoidal rim with slight concentric grooves in upper surface towards interior; set obliquely to cylindrical neck. Horizontal groove at junction between rim and neck. AVdB38. 20g.
1420	223 E36N25	Fig.41. P4624. Tp.3. Rim triangular in section with rounded lip sloping slightly downwards; slightly concave internal profile. Slight horizontal groove at junction between rim and neck. AVdB39. 43g.
1421	223 Area 228	Fig.41. P7303. Tp.4. Rim triangular in section with rounded lip sloping slightly downward; slight groove on lower surface. Set at a slight angle to truncated conical neck. AVdB39. 9g.
1422	223 E21N27	Fig.41. Tp.5. P7562. Handle elliptical in section, tapering at one edge and flattened at the other. Profile straight with a hint of curvature at top. AVdB29. 141g.
1423	223 E13N23	Not illus. P7563. Tp.5. Handle. AVdB29. 68g.
1424	223 E19N27	Not illus. P7564. Tp.5. Handle. AVdB29. 65g.
1425	813 D3	Fig.41. P7408 (P2184). Tp.6. Handle elliptical in section, slightly swollen in centre; set perpendicular to lower attachment on inclined shoulder. Profile rises straight from the bottom and curves at level of upper attachment. AVdB29. 140g.
1426	214	Not illus. P344. Tp.6. Handle. AVdB29. 137g.
1427	223	Not illus. P7206. Tp.6. Handle. AVdB29. 42g.
1428	223 E22N25	Not illus. P7607. Tp.6. Handle. AVdB29. 174g.
1429	347-9 Area 347	Fig.41. P7327. Tp.7. Handle elliptical in section, thickened at centre, set perpendicular to shoulder with elbow profile. AVdB29. 151g.
1430	223 E42N31	Not illus. P7605. Tp.7. Handle. AVdB29. 88g.

1e. Vandermersch IV-V. 1st half C4–2nd quarter C3 BC.		
1431	223 E57N18	Fig.41. Pl.30. P7441. Tp.1. Handle ovoid in section with edge tapering to a tip. Set perpendicular to cylindrical neck at upper junction. Profile curvilinear An ovoid cartouche (ht.1.4cm) containing Greek letters KA [---] in relief is imprinted slightly obliquely at the bend. AVdB39. 55g.
1f. Vandermersch V / Greco-Italic Va. Last decades C4–2nd quarter C3 BC		
1432	351	Fig.41. P8088. Tp.1. Rim triangular in section, set sloping downwards, defined by a groove immediately above handle attachment on cylindrical neck. Handle pseudo-round in section set at upper part of neck, sloping slightly upward. AVdB55. 89g.
1433	417	Fig.41. P2104. Tp.2. Rim triangular in section with slightly concave upper surface and curved lower one, set horizontally in relation to the neck and slightly inclined downwards; it is inserted into the cylindrical neck by means of a short inclined facet. AVdB55. 28g.
1g. Vandermersch IV–V or V–VI. C4–C3 BC.		
1434	372	Fig.41. Pl.30. P7347 (P2170). Tp.1. Handle kidney-shaped in section thickened at centre on inner side. Finger impression at lower handle-spring on shoulder, made when handle was attached to body of pot before firing. AVdB55. 108g.
1435	223 Area 245	Not illus. P657. Tp.1. Handle. AVdB55. 64g.
1h. Vandermersch / Greco-Italic. C4–3/early C2 BC.		
1436	223 E50N21	Fig.41. P4925. Tp.1. Handle ovoid in section set sloping upwards from upper handle-sping on cylindrical neck. Profile curvilinear. AVdB29. 76g.
1437	223 E44N38	Not illus. P76 04. Tp.1. Handle. AVdB29. 72g.
1438	223 E35N29	Not illus. P7611. Tp.1. Handle. AVdB29. 57g.
1439	223 E60N22	Fig.41. Pl.30. P7442. Tp.2. Handle elliptical in section set perpendicularly at upper handle-spring. Profile curvilinear. Three parallel notches made *ante cocturam* at one edge; a large white inclusion at the other (ht. 0.6). AVdB29. 109g.
1440	223 E40N17	Not illus. P7613. Tp.2. Handle. AVdB29. 55g.
1441	223 E28N32	Fig.41. P7608. Tp.2.1. Handle elliptical in section with straight profile, expanding at lower attachment and tapering to a point. AVdB29. 142g.
1442	223 E49N36	Not illus. P7610. Tp.2.1. Handle. AVdB29. 42g.
1443	335	Fig.41. P7316 (P2160). Tp.3. Handle elliptical, slightly flattened and asymmetrical in section. Straight profile starting from lower attachment, and set perpendicular to shoulder; curvilinear at upper attachment. AVdB29. 144g.
1444	201	Not illus. P319. Tp.3. Handle. AVdB29. 38g.
1445	223 E54N24	Fig.41. P7444. Tp.4. Handle elliptical in section. Striaght profile; set vertically at lower attachment. AVdB29. 31g.
1446	223 E41N38	Fig.41. P7606. Tp.5. Handle elliptical in section. Straight profile.. central swelling on external face; longitudinal groove on inner face near tapered edge. AVdB29. 47g.
1447	223 E23N22	Fig.41. P7609. Tp.6. Handle elliptical in section; edges asymmetrical, one rounded the other tapering with slight groove. Profile curvilinear at upper attachment, set obliquely to neck. AVdB29. 59g.
1448	826	Fig.41. P8051. Tp.7. Handle elliptical in section. Straight profile. AVdB29. 78g.
1i. Vandermersch V / Greco-Italic Vc. Last quarter/end C3 BC		
1449	813 E3	Fig.41. P7398 (P2185). Tp.1. Pendant rim, triangular in section, with small ridge on underside; set at an angle to truncated conical neck. AVdB55. 61g.
1j. Bertucchi Type 5-Py Type 9 similis. C3–2 BC		
1450	223 E57N21	Fig.41. P4977. Tp.1. Rim with convex band pointed at tip; upper surface inclined inwards; marked off from cylindrical neck by a groove. AVdB60. 42g.
1k. Vandermersch VI / Greco-Italic VIb. Early decades/mid-C2 BC		
1451	813 G2	Fig.41. P7400 (P2188). Tp.1. Banded rim triangular in section, set slightly everted from truncated conical neck. AVdB28. 105g.

2. Punic-Sicilian production		
2a. "Tubulare" amphora – "Maña C variant" (?). C2–mid-C1 BC.		
1452	Spor. B	Fig.41. P7335 (P2165). Tp.1. Banded rim with rounded top; slight recess on inner side; set obliquely to truncated conical neck. AVdB25. 40g. Findspot UTM 608800/4516700.
3. Italic production		
3a. Greco-Italic/Lamboglia 2. Early decades C2 BC.		
1453	813 D10	Fig.42. P7397 (P2190). Tp.1. Banded rim triangular in section, slightly inturned; lower edge of rim slightly pointed. Neck truncated-conical slightly concave inside. AVdB28. 75g.
3b. Lamboglia 2. C2–C1 BC.		
1454	906 AA1	Fig.42. P7420 (P2194). Tp.1. Prominent banded rim with slight ledge on interior, set slightly obliquely to truncated conical neck. AVdB28. 139g.
1455	717	Fig.42. P8048. Tp.2. Handle elliptical in section, set perpendicular to top of cylindrical neck. Profile slightly curvilinear. AVdB28. 268g.
1456	813 G2	Fig.42. P7402 (P2187). Tp.3. Thickened handle elliptical in section, curved towards upper attachment and straight below. AVdB28. 327g.
1457	813E2	Not illus. P7394. Tp.3. Handle. AVdB28. 301g.
1458	813 E5	Not illus. P7391. Tp.3. Handle. AVdB28. 180g
1459	906 A4	Not illus. P7423. Tp.3. Handle. AVdB28. 215g.
1460	906 B1	Not illus. P7424. Tp.3. Handle. AVdB28. 127g.
1461	906 D3	Not illus. P7419. Tp.3. Handle. AVdB28. 77g.
1462	204	Fig.42. P341. Tp.4. Handle elliptical in section. Profile straight below elbow, bend towards upper attachment. AVdB28. 182g.
1463	229	Not illus. P7429. Ws. AVdB28. 97g.
1464	362	Not illus. P7454. Ws. AVdB28. 58g.
1465	362	Not illus. P8043. Neck. AVdB28. 569g.
1466	906	Not illus. P7422. Neck. AVdB28. 260g.
1467	223 E18N30	Not illus. P4051 Neck. AVdB28. 152g.
1468	223 E22N31	Not illus. P7509. Neck. AVdB28. 207g.
1469	223 E23N20	Non illus. P7583. Ws. AVdB28. 101g.
1470	223 E23N20	Not illus. P7584. Ws. AVdB28. 98g.
1471	223 E49N23	Not illus. P7585. Neck. AVdB28. 119g.
1472	223 E48N27	Not illus. P7586. Ws. AVdB28. 243g.
3c. Brindisina Apani V/Giancola 5. C2–C1 BC.		
1473	335	Fig.42. P7319 (P2161). Tp.1. Small rounded rounded cylindrical toe. Lower wall set obliquely. AVdB58. 94g.
3d. Brindisina? C2–C1 BC.		
1474	229	Fig.42. Pl.30. P488. Inclined shoulder frag. with slightly curvilinear profile. Part of a *titulus pictus* preserved: *C*(*aius*) + [---]. AVdB2. 34g.
3e. Dressel 2-4. C1 BC–C1 AD.		
1475	509	Fig.42. P7375. Tp.1. Bifid staff handle, each part round in section. Profile straight, set slightly obliquely to cylindrical neck and sloping a little downwards. AVdB21. 41g.
1476	703 H1	Fig.42. P8056. Tp.1.1. Bifid staff handle, each part round in section. Profile straight, inclined slightly outwards from lower attachment on shoulder. AVdB16. 65g.
1477	335	Fig.42. P7318 (P1476). Tp.2. Bifid staff handle, each part round in section. Profile slightly curvilinear; set perpendicular to neck. AVdB23. 40g.
1478	229	Not illus. P7230. Tp.2. Handle. AVdB23. 113g.
1479	372 K6	Fig.42. P7348 (P2168). Tp.3. Bifid staff handle, each part round in section, Profile straight. AVdB23. 84g.
1480	372 N4	Non illus. P7352. Tp.3. Handle. AVdB23. 32g.

1481	Spor. G	Fig.42. P7238 (P2122). Tp.4. Bifid staff handle, each part round in section. Profile straight. AVdB16. 35g. Findspot UTM 616683/4503860.
1482	335 C6	Not illus. P7321 (P2162). Tp.4. Handle. AVdB16. 44g.
1483	509	Not illus. P7374. Tp.4. Handle. AVdB16. 122g.
1484	703 H2	Fig.42. P8053. Tp.4.1. Bifid staff handle, each part round in section, Profile straight, slightly tapered towards bottom. AVdB16. 105g.
1485	303 E6	Not illus. P7311. Ws. AVdB21. 42g.
1486	703 F1	Not illus. P7376. Ws. AVdB21. 15g.
1487	813 E5	Not illus. P7393. Ws. AVdB21. 29g.
3f. Flat-bottomed amhorae. C1–C3 AD (?).		
1488	124	Fig.42. P7258 (P2124). Tp.1. Handle elliptical in section with parallel longitudinal grooves and ridges. Straight profile. AVdB1. 42g.
1489	229	Not illus. P631. Tp.1. Handle. AVdB2. 21g.
1490	372	Not illus. P7359. Tp.1. Handle. AVdB2. 62g.
1491	372	Not illus. P7351. Tp.1. Handle. AVdB2. 44g.
1492	124	Fig.42. P7255 (P2125). Tp.2. Handle elliptical in section with longitudinal grooves separated by 2 ridges on the exterior. Profile curvilinear. AVdB2. 32g.
1493	134	Not illus. P7265. Tp.2. Handle. AVdB2. 28g.
1494	Spor. F	Not illus. P7324. Tp.2. Handle. AVdB2. 44g. Discovered UTM 614250/4511750.
1495	229	Fig.42. Pl.30. P7435. Tp.3. Handle flattened elliptical in section with 2 longitudinal grooves and 3 barely perceptible ribs on exterior. Profile straight, expanding at lower attachment and becoming curvilinear towards top. Oblique groove incised *ante cocturam* across central rib, probably during manufacture. AVdB2. 97g.
3g. Agorà M 254. C1–C4/5 AD.		
1496	372	Fig.42. P7360. Tp.1. Handle elliptical in section with 2 longitudinal grooves and central rib on outer side; groove on inner side near edge. Profile curvilinear. AVdB19. 30g.
3h. Keay LII. (End C3)/C4–C5 AD.		
1497	372	Fig.42. P7358 (P2168). Tp.1. Handle round in section set obliquely to cylindrical neck at upper attachment. Profile curvilinear. AVdB19. 120g.
3i. Otranto Type 2. (Gruppo 5). Mid-C11–C12 AD		
1498	372	Fig.42. P7350. Tp.1. Handle elliptical in section with central rib on exterior. Profile slightly curvilinear. AVdB59. 108g.
1499	124	Not illus. P7257. Tp.1. Handle. AVdB59. 50g.
3j. Unidentified		
1500	229	Fig.42. P7433. Tp.1. Short projecting angular rim ending in a small protruding lip, flattened at top and slightly inclined inwards. Cylindrical neck. AVdB2. 46g.
1501	229	Fig.42. P7436. Tp.2. Handle elliptical in section with barely perceptible grooves and ribs, set inclined slightly upwards at upper attachment. Cylindrical neck. AVdB1. 116g.
1502	372	Fig.42. P7357. Tp.3. Handle elliptical in section set perpendicular to cylindrical neck; beginning of an elbow profile at upper attachment. AVdB1. 102g.
1503-1514. Tp.3. Handles not illustrated from the following sites: **134** [P7266 (46g), P7269 (48g). AVdB2]; **223** [P1505 (60g). AVdB1]; **372** [P1507 (44g), P1508 (40g). AVdB2]; **424** [P1509 (24g). AVdB2]; **418** [P1510 (62g). AVdB2]; **813** [P1511 (203g), P1512 (129 g). AVdB28]; **905** [P1514 (63g). AVdB1].		
1515	355	Fig.42. P7336 (P2166). Tp.4. Handle elliptical in section with barely perceptible longitudinal rib in centre and elbow profile, set perpendicular to shoulder. AVdB2. 60g.
1516	372 N6	Fig.43. P7349. Tp.5.1. Handle elliptical in section with 3 longitudinal grooves separated by 2 ribs. Profile straight above lower attachment and curving above. AVdB2. 110g.
1517	813	Not illus. P7392. Tp.5.1. Handle. AVdB2. 57g.
1518	229	Fig.43. P7434. Tp.5.2. Handle ovoid in section with grooves and longitudinal ribs with flattened ends. Profile straight above lower attachment and curving above; set vertically on inclined shoulder. AVdB2. 105g.

1519	509	Fig.43. P7373 (P2176). Tp.6. Handle elliptical in section with central longitudinal depression on exterior; tapering at lower attachment. Profile straight below, starting to curve towards upper attachment. AVdB2. 131g.
1520	424	Not illus. P7368. Tp.6. Handle. AVdB2. 131g.
1521	813 C10	Fig.43. P7395 (P2183). Tp.7. Handle elliptical in section thickened in centre on exterior; set slightly obliquely to inclined shoulder. Profile starting to curve. AVdB28. 255g.
1522	813 E10	Fig.43. P7404 (P2189). Tp.8. Handle elliptical in section sligntly compressed at both edges. Profile straight below, starting to curve above. AVdB28. 110g.
1523	145-9 Area 145	Fig.43. P7279 (P2127). Tp.9. Handle elliptical in section with central longitudinal groove and rising profile; set obliquely to neck. AVdB15. 56g.
1524	401	Fig.43. P7451. Tp.10. Handle elliptical in section set slightly obliquely to inclined shoulder at lower attachment. Profile curvilinear. AVdB2. 115g.
1525	223 E42N26	Fig.43. P7614. Tp.11. Ribbon handle set obliquely to inclined shoulder at lower attachment. Profile curvilinear. AVdB26. 65g.
1526	229	Fig.43. Pl.30. P7438. Ws from inclined shoulder. Profile slightly inclined. Two grooves forming part of a *post cocturam* graffito inscription incised from top to bottom. AVdB2. 30g.
1527 - 1655. Wall sherds from the following sites: **114** AvdB1 No.1529 (50g), AVdB2 Nos.1527-8 (56g, 34g), **120** AvdB1, 1531-3 (44g, 24g, 28g), AVdB2 1530 (22g), 1534 (60g); **124** AvdB1 1538 (7fr/200g), AVdB2 1535-1537, (56g, 9fr/186g, 2fr/112g); **134** AVdB2 1539-40 (3fr/220g, 30g); **137** AvdB1 1541 (20g); **145-9** AvdB1 1545-6 (2fr/50g, 52g), AVdB2 1542-4 (58g, 56g, neck/114), 1547 (24g); **207** AvdB1 1548 (56g); **211** AVdB2 1555 (46g); **213** AvdB1 1549 (16g), AvdB2 1561-2 (22g, 47g); **214** AvdB1 1551-2 (36g, 52g), 1563 (12g), AVdB2 1550 (38g); **223** AvdB1 1556-7 (19g, 22g), 1559 (34g), 1631 (38g), 1633-4 (244g, 67g), 1638-9 (98g, 57g), 1641-2 (38g, 49g), 1571 (73g), 1605-6 (neck/72g, neck/97g), 1608 (130g), 1610 (57g), 1612-4 (56, neck/45g, 35g), 1616-8 (27g, 53g, 24g), 1622 (49g), 1625-7 (75g, 13g, 21g), 1645-6 (30g, 63g), 1649-53 (37g, 22g, 57g, 49g, 22g), 1655 (51g), AvdB2 1560 (34g), 1564 (22g), 1629-30 (28g, 53g), 1632 (62g), 1635-7 (23g, 102g, 119g), 1640 (30g), 1628 (27g), 1604 (neck/39g), 1607 (89g), 1609 (67g), 1611 (neck/53g), 1615 (20g), 1619-21 (25g, 24g, 31g), 1623-4 (7g, 23g), 1643-4 (30g, 38g), 1647 (66g), 1654 (43g), AvdB15 1648 (52g); **229** AvdB1 1565-6 (20g, 46g) 1569 (48g), AVdB2 1553-4 (30g, 52g), 1558 (60g), 1567-8 (16g, 25g), 1570 (neck/58g); **303** AVdB15 1574 (18g); **335** AvdB1 1575 (56g), 1587 (20g), AvdB2 1576 (42g); **347-9** AvdB1 1581 (144g), AVdB2 1573 (36g), 1577-80, (114g, 28g, neck/46g+44g, 48g), 1583 (134g); **355** AVdB2 1582 (2 fr/75g); **370** AVdB2 1584 (30g); **372** AVdB2 1585 (12 fr neck/162+352g); **407** AVdB2 1595 (neck/240g); **423** AVdB2 1588 (186g); **424** AVdB2 1586 (44g), 1588 (186g), 1590 (49g); **712** AvdB1 1591 (46g), AvdB2 1593 (48g); **717** AVdB2 1594 (neck/82g); **722** AvdB1 1592 (31g); **813** AvdB1 1598 (204g), 1600 (58g), AVdB2 1596-7 (23g, neck/51g), 1599 (59g), 1601 (139g); **826** AvdB1 1602 (107g); **906** AvdB2 1603 (146g); **Sporadic A** AVdB1 1572 (19g). In three cases (Nos.1573 and 1640 from site 347-9 and No.1586 from site 424), the green colour tone (Munsell 5Y 7/4) of the fabric can be interpreted as a firing defect and probable production indicator. The fragments from site 347-9 do not join but since they share the same macroscopic characteristics in fabric, they probably belong to the same vessel.		
4. Gallic production (?)		
4.a. Gallica 11. C1 AD.		
1656	145-9 Area 145	Fig.43. P7280 (P2128). Tp.1. Rim everted and triangular in section, set perpendicular to cylindrical neck; defined on exterior by a series of slight parallel grooves. AVdB13. 16g.
5. Baetican productiion		
5.a. Dressel 28. Late C1 BC– mid-C2 AD.		
1657	229	Fig.43. P7437. Tp.1. Rim everted, with double moulding; set on cylindrical neck. Handle elliptical in section with longitudinal depressions between ribs, of which the central one is larger; set perpendicular to cylindrical neck at upper attachment. AVdB43.12g (rim), 50g (handle).
1658	223 E20N26	Not illus. P7567. Ws. AVdB43. 123g.
1659	223 E34N23	Not illus. P7601 Ws. AVdB43. 33g.
6. African production		
6a. Dressel 2-4/Schöne Mau XXXV. Early C1–C2 AD.		
1660	906 A4A	Fig.43. P7417 (P2193). Tp.1. Bifid staff handle set vertically, curving towards top. Surface whitened. AVdB31. 29g.
6b. Ostia XXIII. Late C1–early C2 AD.		
1661	223 E55N16	Fig.43. P616. Tp.1. Cylindrical toe expanding at bottom, hollow inside, with parallel horizontal grooves close to junction with bottom; barely perceptible swelling inside. Surface whitened. AVdB48. 59g.

6c. Tripolitana II. Late C1–mid-C4 AD.		
1662	813 E4	Fig.43. P7388. Tp.1. Handle elliptical in section, set obliquely to shoulder. Profile curvilinear. AVdB9. 34g.
6d. Tripolitana III. Late C3–early C4 AD.		
1663	229	Fig.43. P632. Tp.1. Rim triangular in section with moulded band, everted and sloping slightly downward; set slightly obliquely to cylindrical neck. AVdB8. 78g.
1664	509	Fig.43. P7371 (P2173). Tp.1. Handle elliptical in section thickened at centre. Profile straight below, becoming curved towards top. Surface whitened. AVdB8. 101g.
1665	124	Not illus. P7250. Ws. AVdB9. 54g.
1666	126	Not illus. P7263. Ws. AVdB9. 18g.
1667	145-9	Not illus. P7290. Ws. AVdB9. 22g. From Area 147.
1668	145-9	Pl.30. P7298 (P271). Ws. AVdB9. 54g. From Area 148.
1669	223	Not illus. P639. Ws. AVdB9. 33g. From square E55N16.
1670	303	Not illus. P7306. Ws. AVdB9. 14g.
1671	347-9	Not illus. P7329. 2 Ws. AVdB9. 44g. From Area 348 B.
1672	905	Not illus. P7414. Ws. AVdB8. 63g.
6e. Africana II B "pseudo-tripolitaine". C3 AD (?).		
1673	223 E38N21	Fig.43. P463. Tp.1. Banded rim with external "S" profile, perpendicular to cylindrical neck. Surface whitened. AVdB47. 22g.
6f. Africana II C 2. Late C3–1st half C4 AD.		
1674	114	Fig.43. P7239 (P2123). Tp.1. Rim with thickened band, taperimg at top slightly undercut at attachment to truncated conical neck. Surface whitened. AVdB3. 50g.
6g. Dressel 30-Keay I A. C3–C4 AD.		
1675	509	Fig.43. P7370 (P2172). Tp.1. Handle elliptical in section with longitudinal groove on exterior and edges slightly curved upwards, set slightly obliquely to neck. Surface whitened. AVdB27. 9g.
1676	F1	Fig.43. P8054. Tp.2. Handle elliptical in section with longitudinal groove on exterior Profile curvilinear. Surface whitened. AVdB27. 81g.
1677	213	Not illus. P384. AVdB27. 15g.
6h. Africana III. B-C. C4–1st C5 AD.		
1678	213 C	Fig.43. P377. Tp.1. Carrot-shaped toe with truncated conical profile. Walls slope obliquely towards tip. Traces of vertical burnishing at junction between the bottom of walls and tip. Surface whitened. AVdB17. 319g.
6i. Contenitori cilindrici di Medie Dimensioni. C4–C5 AD.		
1679	124	Not illus. P7251. Ws. AVdB12. 30g.
1680	145-9	Not illus. P7286. Ws. AVdB12. 26g. From Area 147.
1681	145-9	Not illus. P7297. Ws. AVdB12. 42g. From Area 148.
1682	337	Not illus. P7323. Ws. AVdB12. 18g.
1683	223	Not illus. P7440. Ws. AVdB12. 66g.
6j. Spatheion 1 C. 1st half/ mid-C5 AD.		
1684	211	Fig.43. P333. Tp.1. Rim with rounded overhanging band, set slightly oblique to truncated conical neck. AVdB17. 38g.
6k. Spatheion 1. 1st half/ mid-C5 AD.		
1685	819	Fig.43. Pl.30. P7410 (P2191). Tp.1. Carrot-shaped toe with rounded dent in inside bottom below sloping walls. AVdB12. 253g.
1686	213	Not illus. P376. Tp.1. Toe. AVdB17. 119g.
1687	145-9	Fig.43. Pl.30. P7284 (P2149). Tp.2. Solid truncated conical toe. AVdB12. 132g. From Area 146.
1688	810	Fig.43. P7378 (P2175). Tp.3. Grip-handle elliptical in section. Profile vertical and bulging AVdB17. 37g.
1689	810 D	Fig.43. P7379 (P2174). Tp.4. Handle elliptical in section thickened externally at centre. Profile straight. AVdB18. 28g.

1690	223 E49N38	Fig.43. P7572. Tp.5. Handle elliptical in section set on shoulder, inclined obliquely at lower attachment. Profile curvilinear. AVdB17. 40g.
6l. Spatheion 2 A. 2nd half C5 AD.		
1691	145-9 Area 146	Fig.43. P7285. Tp.1. Solid carrot-shaped conical toe. Spiral markings visible on exterior caused by turning on wheel. Tip expanded. AVdB17. 134g.
6m. Spatheion 3. 2nd half C7 AD.		
1692	212	Fig.43, Pl.30. P2117. Tp.1. Rim, ttriangular in section with overhanging convex profile. Indent below lip above attachment to truncated conical neck. Handles were set at upper part of neck. AVdB57. tp 1. 77g.
1693	810	Fig.44. P7377 (P2181). Tp.2. Grip handle, flattened elliptical in section curving downward from upper attachment and set vertically in relation to the inclined shoulder. AVdB17. 39g.
1694	810	Not illus. P7382. Tp.2. Handle. AVdB17. 56g.
1695	810	Not illus. P7383. Tp.2. Handle. AVdB17. 45g.
1696	810	Not illus. P7386. Tp.2. Handle. AVdB17. 57g.
6n. Unidentified spatheion. C5–C6 AD.		
1697	145-9	Not illus. P7283 (P2150). Ws. AVdB17. 20g. From Area 146.
1698	145-9	Not illus. P7287. Ws. AVdB17. 18g. From Area 147.
1699	145-9	Not illus. P7299. Ws. AVdB17. 25g. From Area 148.
1700	213 B	Not illus. P350. Ws. AVdB17. 10g.
1701	Spor. C	Not illus. P7325. Ws. AVdB17. 42g. Findspot UTM 612300/4514500.
1702	372	Not illus. P7344. Ws. AVdB17. 16g.
1703	810	Not illus. P7380. Ws. AVdB17. 12g.
1704	810	Not illus. P7381. Ws. AVdB17. 33g.
1705	810	Not illus. P7384. Ws. AVdB17. 49g.
1706	820	Not illus. P7411. Ws. AVdB17. 10g.
6o. Amphores de tradition punique du golfe d'Hammamet. Mid-C3/C4–C7 AD.		
1707	223 E40N42	Fig.44. Pl.30. P7616. Tp.1. Truncated conical toe, hollow internally above solid clay tip and tapering externally towards rounded bottom. AVdB40. 137g.
1708	223 E45N37	Fig.44. Pl.30. P4307. Ws from truncated conical with slightly undulating external surface. Inscription incised *ante cocturam* in centre of sherd consisting of two linked letters, the first drawn from top to bottom and the second from right to left: an *S* crossed by an oblique rectilinear mark. AVdB40. 36g.
6p. Keay LXI D. Late C6–1st half C7 AD.		
1709	145-9 Area 147	Fig.44. P7289 (P2151). Tp.1. Banded rim marked off from truncated conical neck by a slight groove. AVdB18. 26g.
6q. Contenitori Cilindrici di Grandi Dimensioni. C6–C7 AD.		
1710	145-9	Not illus. P7282. Ws. AVdB18. 30g. From Area 146.
1711	145-9	Not illus. P7288. Neck. AVdB18. 28g. From Area 147.
1712	145-9	Not illus. P7291. Ws. AVdB18. 16g. From Area 147.
1713	145-9	Not illus. P7461 (P2153). Ws. AVdB18. 50g. From Area 147.
1714	213 C	Not illus. P379. Ws. AVdB17. 42g.
1715	372	Not illus. P7345. Ws. AVdB18. 14g.
1716	712 G4	Not illus. P8052. Ws. AVdB18. 17g.
1717	810	Not illus. P7385 (P2174). Ws. AVdB18. 20g.
1718	905 C1	Not illus. P7413. Ws. AVdB18. 15g.
1719	906 A4	Not illus. P7416. Ws. AVdB18. 19g.
6r. Unidentified.		
1720	223 E43N38	Fig.44. Pl.30. P7571. Tp.1. Handle elliptical in section with tapered edges and barely perceptible longitudinal grooves; set perpendicularly at upper attachment. Profile curvilinear. An anepigraphic *ante cocturam* stamp (a circle?) at junction to neck. AVdB8. 153g.

1721-1757. Ws from the following sites: **124** AVdB8 P7249 (18g); **145-9** AVdB8 1722 (14g); **213** AVdB17 1724-1726 (8g, 14g, 3g), 1729-30 (14g, 13g); **214** AVdB17 1723 (15g), 1727 (3g); **229** AVdB8 1733 (25g), AVdB17 1731 (15g), 1734 (neck/22g); **509** AVdB17 1737 (54g.); **813** AVdB17 1736 (7g); **Sporadic**: **J** AVdB17 1728 (6g), **H** 1732 (neck/18g).		
7. Eastern Aegean production.		
7a. Corinthian A-A' Early C5–C4 BC.		
1758	223 E46N47	Fig.44. P7568. Tp.1. Handle round in section, set obliquely, with curvilinear profile forming a "hump" at upper attachment. AVdB50. 65g.
1759	223 E47N35	Not illus. P7530. Neck. 34g.
1760	223 E20N26	Not illus. P7531. Ws. AVdB50. 8g.
7b. Chiot "Straight neck series". Chios Type P (?). Late C5–C4 BC.		
1761	223 E45N26	Fig.44. Pl.30. P4764. Tp.1. Knobbed toe with concave central profile, expanding outwards at top. AVdB54. 103g.
7c. Corinthian A'. C3 BC.		
1762	223 E17N30	Fig.44. Pl.30. P4032. Tp.1. Rim triangular in section inclined downwards, flattened at upper handle attachment and offset from cylindrical neck. Handle rounded in section. AVdB50. 178g.
7d. Rhodian. Last decades C3–C1 BC.		
1763	906 A3	Fig.44. Pl.30. P7418 (P2192). Tp.1. Staff handle, round in section and slightly curved, taperining towards towards upper curvature. Flattened internal profile. 2 joining frags. AVdB30. 268g.
1764	223 E23N35	Not illus. P7558. Tp.1. Ws. AVdB30. 19g.
1765	223 E47N38	Fig.44. P7510. Tp.2. Handle round in section, set perpendicularly at lower attachment on inclined shoulder. AVdB42. 132g.
1766	223 E45N37	Not illus. P7511. Ws. AVdB30. 36g.
1767	223 E23N34	Not illus. P7512. Ws. AVdB30. 8g.
1768	223 E45N37	Not illus. P7513. Ws. AVdB30. 10g.
1769	223 E21N35	Not illus. P7541. Ws. AVdB30. 32g.
1770	223 E41N28	Not illus. P7595. Ws. AVdB30. 30g.
1771	223 E29N31	Not illus. P7599. Ws. AVdB30. 34g.
7e. Rhodian "Amphorette". C2 BC.		
1772	303	Fig.44. P7309 (P707). Tp.1. Small solid cylindrical toe, rounded at bottom with a small depression in inside centre. Lower wall set obliquely to tip. AVdB1. 50g.
7f. Knidian. Late C2 BC.		
1773	303	Fig.44. Pl.30. P7307 (P706). Tp.1. Handle elliptical in section tapering slightly at edges. Profile curvilinear and set obliquely to neck which is convex in profile. At curve in handle, on upper surface, an *ante cocturam* stamp in a rectangular cartouche with rounded corners, subdivided internally by a median line in relief. Several Greek letters retrograde also in relief arranged on two rows separated by a *thyrsus*: [Ε]ΠΙ ΕΥΦΡ[---?] / *thyrsus* / ΛΥΣ(ΙΑ). AVdB22. 182g.
7g. Antico Romano Cretese 3 (?). C1–C3 AD.		
1774	223 E18N32	Fig.44. P4911. Tp.1. Truncated conical toe ending in a slightly compressed disc. Profile rather curved at bottom. Hollow inside with thickness of walls increasing towards bottom with a small lump of clay projecting in the centre. AVdB51. 116g.
7h. Kingsholm 117 similis. C1/2–1st half C3 AD.		
1775	223 E53N18	Fig.44. P471. Tp.1. Truncated conical toe slightly expanding and then tapering towards bottom. Walls set obliquely, with parallel ribbing on exterior. AVdB46. 107g.

7i. Dressel 24-Knossos 15. C2–C3 AD.		
1776	145-9 Area 147 D6	Fig.44. Pl.30. P7293 (P217). Tp.1. Cylindrical toe with expanding knob at tip. Stepped moulding in centre of solid cylinder which is marked off from tip by a slight groove. AVdB7. 84g.
7j. Late Roman Amphora 1. C5–C7 AD.		
1777	114	Fig.44. P7240. Tp.1. Handle elliptical in section with slight longitudinal grooves. Straight profile curving at top. AVdB4. 60g.
1778	347-9 Area 348	Not illus. P7330 (P2164). Tp.1. Handle. AVdB4. 44g.
1779	509	Not illus. P7372 (P2180). Tp.1. Handle. AVdB4. 83g.
1780	223 E24N29	Not illus. P7524 Ws. Handle. AVdB4. 26g.
1781	223 E22N23	Not illus. P7525. Ws. AVdB4. 21g.
1782	223 E43N30	Not illus. P7600. Ws. AVdB4. 50g.
7k. Late Roman Amphora 2B. Mid-C6–late C6/ early C7 AD.		
1783	347-9 Area 349	Fig.44. P847. Tp.1. Thickened rim with a rounded upper band and indentation inside to hold lid. AVdB33. 24g.
7l. Late Roman Amphora 2. C5–C6 AD.		
1784	204	Not illus. P385. Ws. AVdB24. 4g.
1785	223	Not illus. P620. Ws. AVdB24. 32g. From the square E55N16.
1786	347-9	Not illus. P7455. Ws. AVdB24. 20g. From Area 349.
1787	347-9	Not illus. P7331. Ws. AVdB24. 14g. From Area 348.
1788	347-9	Not illus. P7339. Ws. AVdB33. 10g. From Area 366.
1789	370	Not illus. P7341. Ws. AVdB33. 14g.
1790	370	Not illus. P7342. Ws. AVdB24. 28g.
1791	223	Not illus. P7529. Ws. AVdB33. 9g.
1792	223	Not illus. P7559. Ws. AVdB24. 8g.
7m. Late Roman Amphora 4 B2. 2nd half C6–C7 AD.		
1793	223 E49N39	Fig.44. P4912 (P7133). Tp.1. Handle ovoid in section with lower edges inclined towards top. Shallow longitudinal grooves between parallel ribs on upper surface. Central bulge on lower profile. Curvilinear profile at handle-spring on shoulder. Slightly tapering cylindrical body. AVdB52. 129g.
7n. Late Roman Amphora 4. C4–C7 AD.		
1794	223 E26N18	Not illus. P7147. Ws. AVdB44. 5g.
7o. Unidentified Aegean-Eastern production		
1795	223 Area 245	Fig.44. Pl.30. P664. Tp.1. Rim triangular in section, flattened on top; exterior moulding applied in a second phase. Series of oblique and parallel grooves in lower part of internal surface made *ante cocturam*. Rim set slightly everted from cylindrical neck with junction marked externally by a barely perceptible swelling. AVdB36. 70g.
1796	223 E48N30	Fig.44. P7617. Tp.2. Prominent collar rim thickened at centre, defined below by shallow parallel grooves above attachment to cylindrical neck. AVdB11. 22g.
1797	223 E22N32	Fig.44. P7515. Tp.3. Hollow truncated conical toe with rounded bottom. AVdB45. 8g.
1798	335 C6	Fig.44. P7314 (P2159). Tp.4. Handle elliptical in section with one edge flattened and the other rounded. Profile curvilinear. AVdB6. 46g.
1799	401/9 Area 401 L25	Fig.44. P7453. Tp.5. Handle rounded / elliptcial in section. Profile curvilinear. Set on (truncated conical?) neck, inclined slightly upwards at upper attachment. Surfaces eroded, possibly indicating re-use of the piece. AVdB6. 117g.
1800	813 C1	Fig.44. Pl.30. P7389 (P2182). Tp.5. Handle elliptical in section. Profile rectilinear at upper attachment, with elbow bend indented on lower profile where compressed by the potter. AVdB14. 60g.

1801	367	Fig.44. P7452. Tp.5.2. Handle elliptical in section. Profile curvilinear with oblique indentation on lower profile where compressed by the potter. AVdB19. 45g.
1802	302 A12	Fig.44. P7305 (P715). Tp.6. Ribbon handle, flattened elliptical in section with slight indentation in centre. Profile curvilinear. AVdB20. 64g.
1803	229	Fig.44. P7432. Tp.7. Handle flattened ovoid in section with straight profile; set vertically on inclined shoulder. AVdB6. 55g.
1804	214	Fig.44. P370. Tp.8. Handle elliptical in section, slightly flattened at both edges. Profile begins straight at lower attachment and curves at level of upper one. AVdB20. 99g.
1805-1831. Ws from the following sites: **124** AvdB6 Nos. 1805 (neck/48g), 1807 (24g), AvdB7 1806 (36g); **134** AVdB11 1808 (36g); **145-9** AVdB6 1809 (18g), AVdB7 1813 (96g), AVdB14 1810-11 (14g, 20g), AVdB19 1812 (44g); **211** AVdB20 1814 (10g); **213** AVdB6 1815 (8g); **229** AVdB11 1821 (32g), AVdB19 1817 (43g), AVdB20 1820 (34g); **303** AVdB20 1822 (45g); **306** AVdB19 1823 (26g); **335** AVdB20 1825 (18g); **372** AVdB11 1826 (14g); **424** AVdB20 1827 (20g); **703** AVdB6 1829 (28g), AVdB20 1831 (38g); **704** AVdB7 1830 (115g); **Sporadic**: AVdB11 **D** 1824 (34g); **E** 1828 (20g).		
8. ***Unidentified production***		
1842	703	Fig.44. P7450. Tp.1. Ws from wall of truncated conical body onto which wall of toe has been grafted. AVdB56. 112g.
1843	223 E53N18	Fig.44. P7210. Tp.2. Handle elliptical in section with slight swelling in centre, tapering at edges. AVdB35. 64g.
1844	223 E39N31	Fig.44. P7612. Tp.3. Handle elliptical in section, uneven where compressed at edges. profile. straight. AVdB10. 50g.
Ws from the following sites: **124** AVdB10 1845 (23g); **134** AVdB10 (20g); **139** AVdB10 1847 (28g); **145-9** AVdB10 1848 (68g); **223** AVdB10 1854, 1856 (28g, 42g), AVdB26 1853 (31g); **229** AVdB5 1849 (46g); **335** AVdB10 1850 (32g), AVdB26 1851 (126g); **906** AVdB10 1852 (44g).		

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20. *PITHOI/ DOLIA, GLIRARIA* AND *PUTEALIA*

I. Introduction

The Greek term *pithos* and the Latin term *dolium* are used without any clear distinction of meaning by many modern authorities to refer to these vessels. In this Catalogue I have used "*pithoi*" to refer to shapes which are most characteristic of the pre-Roman period (Types 1 and 2), and "*dolia*" for those which are predominantly Roman (Types 3-6), but there is much overlap, with some pre-Roman types continuing well into the Roman period.

Large *pithos/dolium* fragments may take a long time to be broken down by the plough. The thickest pieces, the rims and bases, are particularly resistant, and if the rims are not too badly damaged, they can provide much information about the size and probable capacity and function of the vessels. In many cases, however, the edges are so battered that it is impossible to calculate the original diameter reliably. All the diameters given in this section of the Catalogue must therefore be regarded as at best approximations.

Pithoi of the Final Bronze Age/ Iron Age.

Generally the storage jars used in our Survey Area (and elsewhere in Apulia and Basilicata) before the C6 BC were hand-made of impasto. There is, however, one fragment of a wheel-made *pithos* of purified clay from San Felice (No.1867) which belongs to a class of cordoned "*dolia*" produced in several specialized workshops in (modern) Calabria and perhaps elsewhere on the Ionian coastline of South Italy in the FBA and EIA which had a limited distribution over a wide area. It is discussed more fully in the Catalogue below.

Dolia of the Peucetian and Roman periods

The main section of the Catalogue comprises several types of large storage jars in use on sites in the Basentello valley between the C6 BC and the C6 AD. All (with the minor exception of No.1920) were made of more or less purified clay, generally in the same fabric that was used at the time for making tiles. They are distinguished from the storage jars of Cat. 17 by their much greater size. The pieces listed here, mostly rims, belonged to jars that were so large that they could not have been carried easily when full, and they were usually set in semi-permanent or permanent positions in the kitchens or courtyards of houses, or in working spaces outside them.

Dolia types defined in the Catalogue, and site chronology

The *dolia* from the Survey Area are classified here in four types, primarily on the basis of their rim profiles. **Type 1** consists of globular or ovoid vessels in which the rim is strengthened by folding the clay back onto the shoulder so that it ends at a distinct ledge. Some were of considerable size, with diameters of ca. 30cm. The ledge could have served to hold a tie for a cloth cover in place (Leone 2014). The type is essentially indigenous Apulian. In **Types 2-6**, the rims are much thicker and were evidently intended to support lids. **Type 2** has rims which are roughly triangular in section, more or less flat on top, with the external edge sloping sharply inwards to the pot wall. The type begins in the pre-Roman period, overlapping with Type 1, and continues into the C2/C1 BC, and possibly into the Imperial period. *Dolia* of **Type 3** have rims which are sub-rectangular or trapezoidal in section. They too begin in the pre-Roman period but continue through the Late Republic and Imperial period into Late Antiquity. Those of **Type 4** with thick rounded rims also begin in the pre-Roman period and last into the Early/ Middle Empire. *Dolia* of **Type 5,** with thick rims rounded on top, projecting externally to a point, are the largest pieces collected on the survey. The type begins in the pre-Roman period, but the exceptionally large pieces are likely to be Roman imperial. The remaining groups do not fit easily into this line of development. The two *dolia* of **Type 6** with near vertical rims and those of **Type 7**, decorated with classical Greek/ Hellenistic impressed motifs, are pre-Roman. Those of **Type 8**, ovoid with only slightly thickened rims, belong to a Late Antique type which marks a break with the previous tradition.

Capacity of dolia

In South Italy generally, *dolia* tended to grow in size between the C4 BC and the Late Imperial period. Whereas those found in the Casa dei *Pithoi* of the 2nd half of the C4 BC at Vaglio are estimated to have contained between 370 and 550 litres (Greco 1991, 70), the large *dolia* found in the House of the Menander at Pompeii may have contained 700 litres (Stefani (ed.) 2003, 117). This appears to have been a standard size, found also in the largest *dolium* in the Villa Regina at Boscoreale (De Caro 1995, 66: 712 litres), and in a *dolium* in the Roman farmhouse of the C2–C4 AD at San Biagio in the Chora of Metaponto: Lapadula in *Chora Metaponto IV*, 157-158). The largest *dolia*, such as those found in the Roman villa at Agnuli Mattinata (Volpe 1988d, 71), and in the Early Imperial phase of Pliny's villa at San Giustino in the Tiber valley (Braconi, &. Uroz Sàez (eds.) 1999, 33) could hold around 1,000 litres. The *dolium* rims found in our survey area reflect this tendency, with the largest *dolia* with the thickest rims coming from sites of the Imperial period (especially Area 147 on Site 145-9). The increase in size no doubt reflects the increasing technical skill of the potters, but it also suggests that there was a need to increase capacity to supply a growing market for wine and oil.

The uses of dolia

Dolia might be used for many purposes, domestic, agricultural and industrial. Some were used to store water, like those in the amphora works at Giancola near Brindisi (Manacorda & Pallecchi 2012, 51-52); others might contain cereals like those in the

Casa dei *Pithoi* (Greco 1991, 60-64, 70), or fruits, nuts and medicinal plants as at the Villa Vesuvio outside Pompeii (Ciaraldi 2008). Others again were used in oil presses to hold the oil after it had been separated from the *amurca* in a settling tank. They were kept above ground and had to be small enough to be manipulated (Rossiter 1981, 359-260). Above all, *dolia* were used in wine making, to hold the fermenting must. In large installations, they were usually set into the ground to prevent them from shattering if the fermentation was strong (Varro, *Res Rusticae* I.13.6; White 1970, 427), and to maintain the contents at an even temperature. This was the normal practice in the Vesuvian villas (Mau 1899, 361-366; Stefani (ed.) 2003, 78-127; De Caro 1995), many of which had rows of *dolia* sunk into the ground to just below the rims in a yard enclosed by a wall but open to the sky. They may have been protected from the sun by canvas awnings as they appear to have been in the *cella vinaria* at Villa Magna (Fentress & Maiuro 2011, 347). But in some situations they might be kept in covered spaces, as in the large vineyard at Pompei II.v where there were two rows of *dolia* inside a shed (Jashemski 1979, fig. 333), and probably, in the *cella vinaria* of the Early Imperial period in the villa at San Giusto near Lucera (Volpe 1998, 54-56). The determining factor was probably whether the space occupied by the *dolia*, which might be very large, could be roofed economically. If so, then it was worth constructing a roof to prevent the *dolia* from cracking in a frost, and to protect the wine from bad weather – as Pliny indicates (*NH* 14.133).

The distribution of dolia in the survey area

All *dolium* fragments were weighed on each of the sites surveyed. The map shows the distribution of all sites which yielded *dolium* fragments, with the size of the dot graded within five bands according to the weight of *dolium* fragments registered on it. The details may be found in the Table of Sites.

The great majority of sites produced only small amounts of *dolium*: in 29 cases, less than 1kg, and in 26 cases between 1 and 4.9 kg. On these sites it is unlikely that the *dolia* served any economic purpose beyond the needs of the household(s) on the settlement.

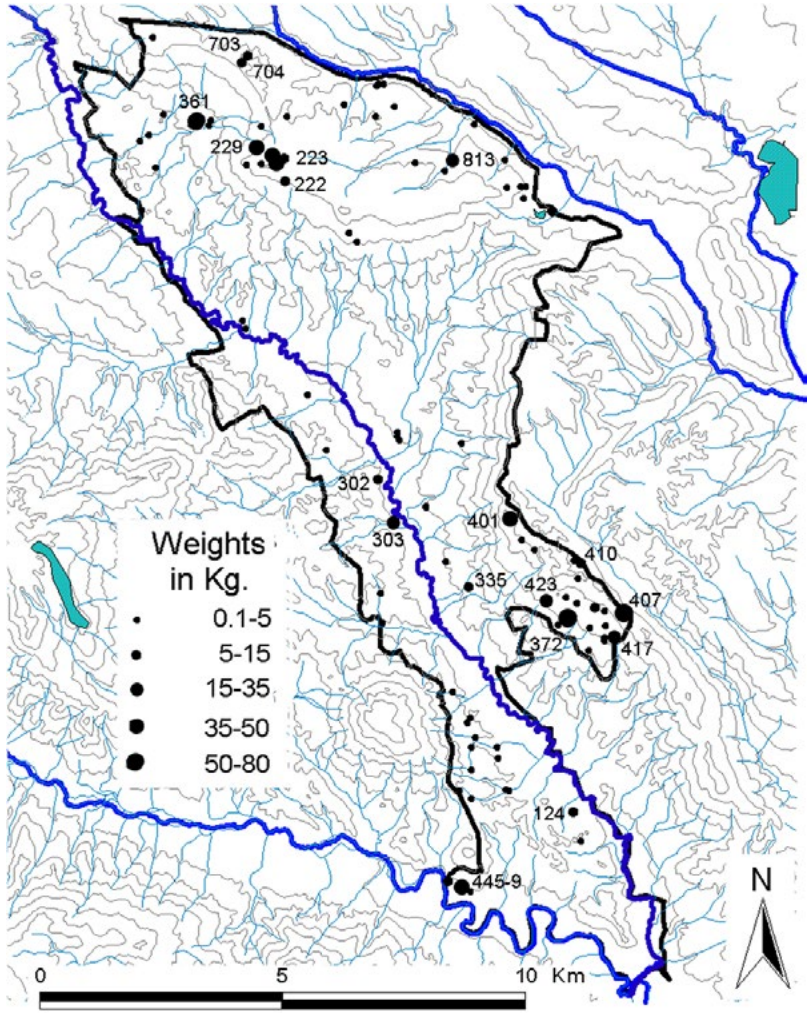
Only 20 sites yielded 5kg or more of *dolium* fragments. The figure takes no account of the size or density of the settlements, and to assess whether or not the weight count might signify that they had some commercial or industrial purpose rather than being simply parts of household equipment, it is necessary to factor in some other element by which their function may be evaluated. We have chosen to compare the weights of the *dolia* with the combined weights of all roof tiles found on each of these sites on the assumption that a high proportion of *dolium* to tile fragments is likely to indicate that there were unusually large concentrations of *dolia* on a site. If the proportion of *dolium* to tile weights is significantly higher than the average, then it may be supposed that at least part of the site was being used for the storage of agricultural produce beyond the household level – unless there is some special factor distorting the statistic. The average proportion of *dolium* to tile weights for all sites on which more than 5kg *dolium* was found, including Vagnari is 1:33.3. The Table below lists all sites on which the ratio is higher than that average. Four sites with over 5 kg of *dolium* are not included since the proportion of *dolium* to tile found on them is less than average: Sites 627 (1:42.9); 704 (1:49); 223 (1:97).

It is immediately obvious from the table that there are two sites with significantly higher proportions of *dolia* to tiles than the others: Sites 410 and 222. On Site 410 the *dolium* fragments actually outweigh the fragments of tile. But there is a distorting factor involved, because these are both Late Antique/ Early Medieval sites, and it is probable that many of the buildings of the period were roofed with thatch (see Chap. XI.iv.b). It is also possible that Site 222, just below the SW scarp of San Felice was established to serve the revived settlement there in the Late Antique period.

The next 7 sites in order of decreasing ratio of weights are Sites 423, 145-9, 302, 372, 411, 417, and 407. Of these (Sites 302, 411, 417, 407, and 401/9) 5 are predominantly pre-Roman LIA sites – including both long established hill-top settlements (Sites 401-9 and 407) and smaller new foundations, farmhouses or even field huts (Sites 302, 411, 417). Their presence so high in the Table suggests that the occupants were already storing agricultural produce for commercial purposes in the pre-Roman period. There are also two small sites (Sites 303 and 423) which might be either LIA or Roman Republican in date. The plot of finds in the survey grid on Site 423 suggests that it may have had a small *dolium* yard, open or partially open to the sky.

Of the next three sites in this group Sites 372 and 703 are most probably Early Imperial, although Site 703 may go back to the Late Republican period. On Site 703 the distribution plot suggests that there were two discrete *dolium* yards, conceivably used for storing different produce. Site 372 has been interpreted as a Roman villa and the presence of a large quantity of *dolium* on it is not surprising. The *dolium*, however, was distributed widely across the site: there is little evidence of a separate *dolium* yard though there was evidently a need for storage. Site 145-9 had a significant LIA settlement but the *dolia* were overwhelmingly on the areas where there was evidence of Roman Imperial occupation. The distribution of the *dolium* fragments shown on the survey grid (see the entry in the List of Sites) strongly supports the argument that there were at least 2, and probably 3 *dolium* yards there (notably on Area 146 with 17kg of *dolium* and a proportion to tile of 1:1.2 and Area 147 with 35.5kg of *dolium* and a proportion to tile of 1:3.3). The rim fragments, mostly of type 6, are among the biggest found in the survey (Nos.1887, 1906, 1907, 1909). On these three sites, the evidence of the *dolia* suggests that there was commercial production, probably of wine. We may compare the evidence for wine production at Vagnari (see below).

The remaining sites in the sequence shown in the Table have significantly lower ratios of *dolium* to tile weights and most must be considered as more doubtful instances of commercial storage of agricultural produce. Sites 303 and 906 were both very small. Site 401/9 was the Iron Age hill site of Crocevelina which barely survived into the late C2 BC, and on Site 813 of the LIA or Roman Republican period the *dolia*, though comparatively plentiful, were not concentrated. Three sites, however, are likely to have had commercial *dolium* yards. On the Roman villa Site 229 the recovery of *dolium* was only partial but there was evidence of at least 2 *dolium* yards on the periphery of the site. Some of the *dolia* on Site 335 of the Republican to Early Imperial period have mortar attached to the rims indicting that they were set in the floor of a *dolium* yard. The Republican/ Imperial Site 703 was much smaller but there was a marked concentration of *dolium* sherds which suggests that there was a yard there.



Map 20-1. Distribution of *dolia* across our Survey Area. Dots graded by the weight in kg of dolium sherds collected. The Site numbers of Sites with less than 5 kg of *dolium* frags are not shown. The weights in kg of dolium fragments from each site are listed here in brackets: 114 (2.2), 124 (6.4), 126 (1.2), 127 (0.5), 135 (0.1), 136 (0.3), 137 (0.4), 140 (1.0), 141 (0.2), 145-9 (62.0), 204 (1.0), 213 (0.5), 214 (0.4), 222 (14.0), 223 (83.5), 229 (39), 302 (7.0), 303 (17.5), 306 (0.2), 318/20 (2.0), 319/21 (0.2), 329 (2.5), 332 (2.0), 335 (9.5), 351 (1.5), 355 (1.0), 361 (59.4), 365 (0.6), 371 (3.0), 401/9 (5.5), 403/4 (0.2), 372 (80.0), 406 (0.2), 410 (15.0), 411 (8.0), 413 (1.0), 415 (3.0), 416 (1.0), 417 (17.0), 419 (0.5), 420 (5.0), 422 (3.5), 423 (26.5), 515 (1.0), 516 (0.2), 517 (0.5), 605 (2.0), 606 (0.3), 607 (0.7), 625 (2.0), 627 (20.0), 629 (1.0), 630 (1.0), 704 (6), 707 (1.0), 710 (0.4), 712 (0.1), 715 (2.0), 716 (0.1), 717 (3.0), 718 (0.3), 722 (0.3), 803 (0.3), 804 (0.1), 809 (0.3), 813 (24.0) 815 (2.0), 818 (0.6), 819 (3.0), 820 (3.0), 826 (0.2), 905 (0.2), 906 (5.0), 910 (0.5). [73 sites].

Site	Tile kg	Dol kg	Ratio of *dolium*	Approx. Site date
410	4	15	1:0.26	Late Ant
222	24	14.0	1:1.7	Late Ant/ Early Med
423	115	26.5	1:4.3	LIA/Rep
145-9	408.7	62	1:6.6	Multi esp. Early/Mid Imp
302	46.5	7	1:6.6	LIA
372	586	80	1:7.3	Early/Mid imp
411	62	8	1:7.75	LIA
417	150	17	1:8.8	MIA/LIA
407	540	59	1:9.2	EIA/MIA
703	236	17	1:13.9	Rep/Early Imp
401/9	81	5.5	1:14.7	EIA–LIA
303	333	17.5	1:19	LIA/Rep
335	195	9.5	1:20.6	Rep/Early/ Mid Imp
813	605	24.6	1:25.2	LIA, Rep/Early Imperial
229	997	39	1:25.6	Early/Mid Imp
906	128.5	5	1:25.8	Early/ Mid Impl
124	186	6.4	1:29	C2 BC/C3 AD. Late Antique

Table 20-1. Ratio of dolium to tile on sites on which it is higher than average.

Vagnari does not appear in the table: the ratio of *dolium* sherds to tiles in the survey over the whole site was low, partly because on a very large site (417 10×10m squares were surveyed) the *dolium* fragments were restricted to only 67, nearly all in the northern part of the site. There were enough fragments on those squares, however, to indicate the presence of at least 2 probable *dolium* yards in this area, and subsequent excavation by the team directed by Maureen Carroll in 2015 and 2016 in the more northerly of these concentrations has uncovered the bases of at least 6 *dolia* set in the floor (Carroll 2016; Carroll & Prowse 2016; Carroll forthcoming in her Archaeopress volume). They are interpreted by Carroll as evidence for commercial wine production. Even so, the proportion of *dolium* sherds to tile (1:132). is not large for a site of this size. The wine production is likely to have been limited to these 2 areas.

Chronological conclusions

On many sites, thin scatters of *dolium* fragments coincide with denser scatters of tile. This pattern of distribution occurs especially on sites that were occupied principally in the pre-Roman period, and it is likely to reflect the domestic use of these storage pots as the larders of the inhabitants (see e.g. the distribution on Site 223 – Plan in *PSF*, 13 fig.7). In a few cases, however, the concentration of *dolium* fragments and/or the number of *dolia* represented by different rims suggests that there was storage of agricultural surplus, and possibly the commercial production of wine even before the onset of full romanization in the C2 and C1 BC. Commercial production intensified in the Late Hellenistic period. In the Early Empire the concentration of *dolia* on a few sites, and the great size of these containers, provides good evidence for the commercial production of wine on large estates – as can be seen most obviously on Site 145-9. The evidence falls off in Late Antiquity. By and large *dolium* sherds on the later sites were few if they appeared at all, and the *dolia* typical of this period are much smaller than their predecessors of the Early and Middle Empire (Nos.1915-1917). There are a few exceptional instances, notably Sites 222 and 410, where *dolia* continued to be used, probably in settlements of thatched buildings, but for the most part it seems that the *coloni* who occupied these relatively small sites were not involved in the commercial production of wine and oil. It is surely significant that the largest Late Antique/ Early Medieval settlement other than Vagnari (Site 134) produced less than 1 kg of *dolium* fragments, and even these may have been derived from the earlier and smaller LIA settlement on the site.

Only 18 sites yielded fragments with sufficient shape to warrant special recording.

II. The Catalogue

A. Pithoi and Dolia

1. Cordoned *dolium*

Large wheel-made *dolia* decorated on the wall with spaced cordons are attested in various parts of South Italy between the LBA and EIA, with the main concentration in the FBA. They were made in several parts which were assembled on the wheel, and the purpose of the cordons was to mask and reinforce the junctions (in the case of our No.1857 below, the junction between the rim and shoulder of the pot). They are best known from Broglio di Trebisacce (Tenaglia 1994, Peroni 1994, 856), but similar *dolia* were used on numerous other sites in South Italy (Levi & Jones 1999, 108-109; Lentjes 2016, 136-137). At Broglio di Trebisacce they occur in a variety of forms, though most of them share the same flat rim thickened externally. One was proved by analysis to have contained olive oil, but Peroni and Tenaglia have suggested that the variety of forms may indicate that others had different contents, such as, most obviously, wine. A few of the *dolia* from Broglio were reconstructible. They are so large (the largest measures ca. 1.44 high and 1.2 in external diameter, and could have held 5,000 litres) that it would have been impossible to transport them full of oil or wine. Peroni has therefore argued that they are evidence for the production of olive oil (and therefore of the cultivation of olives) *in loco*.

The *dolia* of Broglio di Trebisacce were inspired by Mycenean prototypes but the great majority were produced locally or at some other centre in the Sibaritide (Levi & Jones 1999). Some were made in impasto fabrics with added sand, but many more were made of purified clay. Our piece forms part of a more easterly group found mainly on sites on the Apulian coast from Torre Castelluccia on the Gulf of Taranto to the Grotta Manaccora in the Gargano. The remains of numerous cordoned *dolia* were found in the excavations Rocavecchia including 4 found in one very large hut perhaps used for storage (Guglielmino 1999), and 2 others found in the remains of a hut of phase V which has been radiocarbon dated to 1191–903 BC at 95.4.0% probability (Pagliara *et al.* 2007, 315, 356-357). Others have been recorded inland at several settlements in Basilicata including Matera and Timmari in the Fossa Bradanica; and numerous *dolia* in this ware, but without cordons have been found in EIA contexts at Incoronata (Cossalter & De Faveri 2012, 78-79). Petrographic analyses of samples from sites in the Gulf of Taranto indicate that there was at least one centre of production in this area (Levi & Jones 1999, 111-113), and other analyses confirm that the *dolia* found at Rocavecchia were locally made. Guglielmino has suggested that they may have been made by highly skilled itinerant artisans. Given the great size of these containers and the difficult of transporting them it is probable that that was the normal practice.

1857	223 E48N25	Fig.7. Pl.29. P4668. Ws of large storage jar with projecting cordon, triangular in section. Light brown moderately micaceous clay, rather grey in core; some minute brown inclusions. Fairly hard. Some turning marks inside. Max. dim. 7.5; max. th. 1.9, ext. Ø at cordon ca. 30.0. The angle shown in the drawing is approximate. Cf. Tenaglia 1994, 360 and 354 tav. 64 no. 1 from Broglio di Trebisacce. From shoulder of a large globular *pithos* with oblique neck and cordon triangular in section, measuring ca. 23.5cm in diameter at the cordon. Tenaglia classifies the fabric (*argilla di tipo polveroso, più o meno compatta, (quasi) senza inclusi, colore rosato o rosa-arancio, per lo più ingubbiata*) as belonging to her argilla A1 which is typical of the LBA pieces, and in her table of contexts (fig. 129 on p. 369) she assigns its context (Sector D West layer S) to an intermediate moment between LBA and FBA. The fabric, however, is different from that of our piece.
2. *Pithoi* with globular bodies and rims folded back onto the shoulder. These were the normal storage pots in use in Central Apulia and Basilicata from early in the C6 BC to the end of the Hellenistic period. An early example of the type was deposited in Tomb 103 at Braida di Vaglio in the late C6 (Bottini & Setari 1992, fig. 27), 2 others in tomb 35 at Baragiano around the end of the century (Russo & Di Giuseppe (eds) 2008, 516 figs. 5, 6), and another in a tomb of the first half of the C5 BC at Minervino Murge (Lo Porto 1999, 88 and pl. Xa tomb MS no.1). A notable group of them from C5 BC contexts was found in the *Casa dei Dolii* at Jazzo Fornasiello near Spinazzola (Leone 2014), and others were associated with a house of the C5 on San Felice, Saggio A: Cossalter, *PSF*, 104 tav. XIII nos. 64-66. Others are reported from contexts of the C5/C4 BC at Ordona (Mertens 1995, 78 and fig. 48 p. 79), and of the C4/ early C3 BC at Ascoli Satriano (Fabbri *et al.* 2000–2001, 45. *pithoi* type 2). The type is attested at Pomarico Vecchio – unstratified but antedating the abandonment of the site in the late C3 BC: Deodato in *Pomarico Vecchio I*, 1, 178 (with comparanda) and *II*, tav. 68 no.82. It was found on Botromagno, Gravina, in contexts of the late C2/C1 BC (see No.1864), and it recurs in the Posto villa at Francolise (Cotton 1979, 172 and 189 fig 63 no.1 – unstratified, but associated with the villa built between the end of the C2 BC and 80 BC). A version of the type with more rounded profile was produced in the kilns at Giancola near Brindisi probably in the C1 BC: M. Firmati in Manacorda & Pallecchi (eds) 2012, 182 and tav. XXII, type D (redeposited in a recent context). The examples listed here were found on sites 223, 229, 329, 407 and 417, all occupied wholly or in part in the pre-Roman period.		
1858	223	Fig.45. P2237. Hard sandy grey fabric, some mica. Ø at lip 18.0. Cf. No.665 (WMP).
1859	223 E57N26	Fig.45. P4990. Hard pinkish-brown clay, grey in core, drab brown outer surface. Slight rill on top of rim. Ø at lip 18.0
1860	223 E21N25	Fig.45. P544. Drab grey-brown clay, small brown inclusions. Ø at lip 14.0. For a much larger example of the same shape, see *Monte Sannace,* 133-134, tav. 291, phase IIb, found below the foundations of a building of the 2nd half C6–C4. Other smaller fragments of the same form were found inside the building.
1861	223 E37N31	Fig.45. P4858. Reddish-brown clay with light brown surface. Ø at lip 21.0.
1862	329	Fig.45. P2410. Orange clay with some small brown inclusions. Ø at lip 15.0.
1863	223 E48N40	Fig.45. P4284. Hard reddish-brown clay with pale brown surface out. Ø at lip 38.0. Another similar. Ø at E42N24 lip 26.0. 3 similar pieces with rim Ø 30.0–35.0 found on this site in squares E44N33, E43N34 and E50N36; another smaller from E13N25.
1864	223 E49N28	Fig.45. P7019. Hard reddish-brown clay, no slip. Horizontal in drawing is approximate – sherd too damaged for certainty. Ø uncertain. W. of rim 10.5.
1865	407 C6	Fig.45. P2235. Hard reddish-brown clay, pale brown slip. Ø at lip 30.0. Another similar from this site, grid C6 (P7150).
1866	223 E38N19	Fig.45. P4866. Large. Hard grey brown clay, slightly reddish core, light brown surface inside. Ø uncertain. W. of rim along sherd 14.0.
1867	407 D6	Fig.45. P1085. With rim nearly horizontal and bevelled at outer edge. Hard reddish-brown clay with paler surface. Ø at lip ca. 30.0. Another example from Site 417 (P2098) Ø at lip ca. 30.0).
1868	229	Fig.45, P1337. With thickened oblong rim, approximating to Type 4 below. Reddish clay, yellowish surface. The form of the rim is close to *Gravina II*, cat. 1577 found in the fill of a Late Hellenistic cistern.

3. *Dolia* with thickened rims, triangular in section, and spreading shoulders.
The rim is usually blunted or rounded at the tip. The broad rim helped to support a lid. The type appears to have been introduced in South Italy in the C4 BC. Cf. e.g. Greco 1991, Fig.137, nos.1 and 3 from the Casa dei *Pithoi* at Serra di Vaglio; *Cozzo Presepe*, 372 Fig.142 no.431 from Site B, phase V (500/480–ca. 300 BC); Serritella *et al.* 2009, 76 fig. 41.d, (with rounded tip) from Fratte, C3 BC; *Civita di Tricarico I*, fig. 342 no.1238, C3 BC; Roubis & Pignataro 2016, 156 fig. 3 from Difesa San Biagio, C3 BC (restored and practically complete); *Gravina II*, fig. 88, cat. 1570, 1574, late C2/C1 BC. Some *dolia* of this type were produced in the kilns at Giancola in the late C1 BC: Manacorda & Pallecchi (eds.) 2012, tav. XXII. The rim type continued to be used on large *dolia* in the imperial period, e.g. at Settefinestre in the C1 AD (Celuzza 1985, tav. 11 no.2), in the villa at Vittimose near Buccino (Dyson 1983, fig. 85, ?C1 AD), and in the farmhouse at San Biagio near Metaponto (*Chora Metaponto IV*, 160 no. 2.2.2, C2–C4 AD. It was still current in Late Antiquity, e.g at San Giovanni di Ruoti (*SGR IV* SGP3683 from a destruction layer of Period 2, ca. 400 AD; and SGP7263 from a destruction layer of Period 3A, ca. 460 AD).
Most of the pieces in this group come from Sites 223 (San Felice) and 407 where they may have been contemporary, at least in part, with those of Type 1; others from Sites 351, 401 and 417 (also largely pre-Roman), Site 229 which began in the C4/C3 and continued into Late Antiquity, and Site 819 which was occupied in the C4/C3 BC and again in Late Antiquity. Another, No.1886 comes from Site 813 which dates predominantly to the C2 BC, though it began earlier and continued later. Another still, No.1885 was found on Site 906 which did not begin until the C2/C1 BC. It probably appears again in Late Antiquity on the poorly dated Site 815, and perhaps on Sites 229 and 819.

1869	124 B1	Fig.45. P236. Brownish-pink clay, with grey intrusions. Evenly fired, no firing crack. Ø ca. 35.0.
1870	223 E50N23	Fig.45. P4730. Reddish-brown clay with some mica, pale yellowish-brown surface. Star with 11 rays impressed on upper surface of rim. Ø 27.0. The oblique outward-projecting rim perhaps shows the influence of the traditional Iron Age *pithos*, and the correspondence in fabric and star motif with the hand-made plain bowl rim No.1195 suggests that it is not far removed from Iron Age pottery tradition. Perhaps late C6/C5 BC.
1871	223 Ar.245	Fig.45. P661. Thickened triangular rim, globular body. Hard drab brown clay fired pinkish towards interior, pale brown surface out. Numerous small to minute black/brown and white inclusions. Ø not ascertainable; th. of rim 4.5. Cf. *Civita di Tricarico I*, no.1243; *Civita di Tricarico II*, 110 fig, 98c (with rouletted rim) – from destruction layer of the Maison des Moules, built around the 2nd quarter C3 BC and destroyed ca. 200 BC.
1872	229	Fig.45, Pl.29. P512. Rim with stamp-impressed swastika-meander on upper surface, 3.3cm on complete side. Hard reddish-brown clay, finger-impressed groove below rim. Ø uncertain; pres. ht. 7.5. For the motif, cf. *Gravina II*, no.1552 (deep basin rim) from the field survey on Botromagno.
1873	223 E37N31	Fig.45. P4784. Pinkish-grey clay, pale grey surface, many small black grits, a few larger (2.0mm) white ones. Ø 35.0.
1874	223 E43N42	Fig.45. P7076. Pinkish-brown hard fired clay, some small black inclusions, pale cream slip inside and out. Ø 35.0–40.0 (uneven).
1875	815	Fig.45. P1964. Hard pinkish-brown clay with cream surface on outer side. Impressed comma on outside of rim. Ø uncertain. Pres. ht. 11.5.
1876	819	Fig.45. P1965. Finely granular greenish-cream clay. Ø ca. 50.0 (v. approx.).
1877	223 E24N22	Fig.45. P4341. Reddish-brown clay. Ø 29.0.
1878	223 E42N36	Fig.45. P4286. Pale pinkish-brown clay turning yellowish-brown towards upper surface of rim, hard fired. Ø 47.0.
1879	417	Fig.46. P2100. Buff clay with abundant fine brown angular inclusions and barely any mica. Ø 60.0 +.
1880	407 C2	Fig.46. P1134. Drab greyish-brown clay. Ø 70.0. Cf. *Gravina II* cat. 1320 (redeposited).
1881	229	Fig.46. P4353. Hard pinkish-brown clay, some brown and white inclusions, up to 3mm. Ø uncertain; th. rim 7.8.
1882	351	Fig.46. P773. Finely granular pink clay with few visible inclusions; possible cream wash at surface. Well smoothed. Ø 36.0. Cf. M. Firmati in Manacorda & Pallecchi (eds) 2012, 183 tav. XXII A3 from Giancola, Period IIIA (ca. last third C1 BC).
1883	223 Ar.245	Fig.46. P660. Hard pinkish-brown clay turning to light brown on exterior, Numerous minute black and esp. white inclusions. Inner edge of rim missing except at one corner of sherd. Same fabric as No.1904. Ø 31.0.
1884	401 L21	Fig.46. P1090. Pinkish-brown clay with some small white inclusions. Pale brown surface out. Ø 33.0.

1885	906 AA1	Fig.46. P7179. Hard pinkish-brown clay greyish in core, much lime on surface (from setting in floor?). Ø 30.0.
1886	813	Fig.46. P8147. Edge of rim missing. Very hard reddish-brown clay with angular white, grey and brown inclusions up to 4mm; no obvious mica. Int. Ø. 26.0.
1887	145-9 Ar. 147 D6	Fig.46. P209. Pinkish-grey clay with brown, black, pink inclusions. Better fired at top than bottom. Many small holes. Ø uncertain. Max. th. rim 11.0. *Dolia* with heavy triangular rims similar to this were being produced in the kilns at Giancola near Brindisi in the late C1 BC: M. Firmati in Manacorda & Pallecchi (eds) 2012, 182 and tav. XXII, type B3 of their Period IIIA. Most of the rims of *dolia* in the *dolium* yard in the villa at Vittimose near Buccino were of this type: Dyson 1983, fig. 85 (?C1 AD).
1888	145-9 Ar. 145 H10	Fig.46. P138. Large, with undercut collar. Pink clay with a very few white inclusions, covered with white. Even firing – no visible firing cracks and only a few small holes. Traces of mortar on upper surface. Ø ca. 58.0.. Cf. Celuzza 1985, tav. 11 no.2 from Settefinestre, C1 AD; Moltó Poveda 1999, 170 fig. 2 from the villa later owned by the younger Pliny at San Giustino in the Upper Tiber valley, early C1 AD.
1889	223 E20N18	Fig.46. P4177. With undercut collar and inward sloping rim. Hard fired pinkish-orange clay in core and white on outside.
4. *Dolia* of various sizes with horizontal out-turned rims, sub-rectangular or trapezoidal in section. In most examples the rim emerges from the wall with a concave neck. For the type, see Vittoria in *Chora Metaponto III,* 407-408, esp. no.226, with comparanda. It appears to have been introduced in the C5 BC and is attested in various S. Italian sites in the C4 and C3. Several examples were found in contexts of the C3 at Locri (Peluso 1992, tav. LXXIX, nos.249, 250, 253). It was less popular than the triangular type (Type 2), but it too has a long run, being found on at least one of the *dolia* in the *dolium* yard of ?C1 AD in the villa at Vittimose (Dyson 1983, fig. 853), in the farmhouse at San Biagio near Metaponto in the late C1–C2 AD (*Chora Metaponto IV*, 160 nos. 1.1.1 and 1.2.1), and at San Giovanni di Ruoti in contexts of the build-up and occupation of Period 3 after ca. 460 AD (*SGR IV,* SGP7146, SGP7102). The pieces in this group were found on Sites 223, 371, 401, 407, 417 and 813, all predominantly pre-Roman, and on Site 124 which dates mainly to the Late Republic and Early/ Middle imperial period but has evidence also of earlier use.		
1890	401 L27	Fig.46. P2387. Hard pinkish-brown clay with numerous small sandy grits, black, brown and white. Ø 38.0. Cf. Peluso 1992, tav. LXXIX no.249, ?C3 BC from Locri Epizefiri; Dyson 1983, fig. 853, from the *dolium* yard in the villa at Vittimose near Buccino (?C1 AD).
1891	407 D6	Fig.46. P1084. Hard reddish-brown clay, pale brown surface. Ø 38.0. Cf. Bergamini 2004, fig. 32 no.240 from Scoppietto in Umbria, Roman imperial, redeposited.
1892	223 E36N21	Fig.46. P4354. Drab greyish-brown clay fired darker inside. Ø 28.0.
1893	407 A4	Fig.46.P2233. Pinkish-brown clay, pale brown surface out. Ø 60.0.
1894	223 E21N21	Fig.46. P4334. Reddish-brown clay, some large white inclusions. Ø 37.0.
1895	223 E50N38	Fig.46. P4285. Hard pinkish-brown clay, paler on surface. Ø 40.0.
1896	223 E29N20	Fig.47. P4431. Hard grey fabric, fired pink on surface, some large white ?shell inclusions up to 3mm. Ø 41.0. Cf. Fabbri *et al.* 2000–2001, 45. *pithoi* type 2, and p.78 tav. VII.72 from Ascoli Satriano, Collina del Serpente (? before end C4 BC).
1897	124 B2	Fig.47. P244. Dark brown clay, with white and grey intrusions. Evenly fired, no firing crack. Ø 39.0.
1898	223 E49N40	Fig.47. P7013. Hard grey clay with some small dark grey pebbly inclusions, cream slip out and in. Broken short of neck. Ø 49.0.
1899	417	Fig.47. P2099. Large, sharply everted, flat-topped rim, slightly hooked beneath. Hard pinkish-brown clay with innumerable brown, grey and some white inclusions up to 1mm, slightly micaceous. Ø 45.0 (very approx.).
1900	124	Fig.47. P144. Pink clay showing white, black brown and red inclusions, many small holes; white slip on exterior. Evenly fired, no firing cracks. Ø 47.0.
1901	223 E61N18	Fig.47. P7029. Small *dolium*. Pinkish-brown clay with numerous brown and black grits, paler surface. Ø 24.0.
1902	371	Fig.47. P1722. Ø 64.0.

1903	813 G2	Fig.47. P8148. Oblong, with outer edge folded back to shoulder leaving a gap where broken away. Hard pinkish-brown clay, yellowish on surface; scatter of small angular grey inclusions up to 1mm (same fabric as basin rim No.1304. Ø 46.0).
5. *Dolia* with thick rims, flat on top and rounded at the edge These were found on both Site 223 (pre-Roman or Late Ant.) and Site 145-9 (LIA, Roman, Late Ant.). The form was long-lasting, as the comparanda listed below indicate.		
1904	223 Ar.245	Fig.47. P659. Thickened triangular rim, flat top, concave neck, globular body. Hard pinkish-brown clay, pale brown at surface. Numerous black and white inclusions. Ø 31.0. Cf. Olcese 2011–2012, 562, tav. 3.III no.2 from the wreck at Santa Marinella – Capo Linaro, end C1 BC/ beginning C1 AD; Rice 2016, 143 fig. 5.86 from the Severan barracks in the Villa Magna.
1905	223 E35N35	Fig.47, Pl.29. P4419. Rim, broken off before the shoulder turn. Hard pinkish-brown slightly micaceous clay with pale surface. Circular O (Ø 3.4cm, depth 3mm) impressed on upper surface of rim. Ø 42.0. Cf. *Civita di Tricarico II*, 110, fig, 98c for the rim of a *dolium* of rather different shape but with similar O impressed on the upper surface of the rim from destruction layer of the Maison des Moules, built around the 2nd quarter C3 BC and destroyed ca. 200 BC. The O probably represents the Greek *omicron*, used as the numeral for 70, indicating the capacity of the *dolium*. Whether it was followed by another numeral is uncertain, both in our case and in that at Civita di Tricarico, so 70 indicates a minimum capacity. Greek numerals were widely used by the Oscan communities in Lucania before the period of Romanization. They mostly follow the acrophonic system used in Athens and many other parts of Greece in the classical period, and seen in the sanctuary at Macchia di Rossano (McDonald 2015, 120). A fragment of a large (undated) *pithos* found at Torre Santa Sabina in Messapia was inscribed on the neck with the letters]ΔΠ I I I I indicating the capacity of the container calculated in amphorae on the acrophonic system (Δ = 10, Π = 5, IIII = 4 = total 19) (Johnson 1984, 49 note 33; Ferrandini Troisi 2015, 66-67). There was, however, no standard practice, either in the unit of measurement used, or in the position of the inscription on the vessel (rim or shoulder); and if this interpretation is correct, this piece indicates that the alphabetical system was also used in Central Apulia and Lucania. It was developed in Ionia and began to spread throughout the Greek world in the course of the C3 BC displacing the acrophonic numerals. If the Lucanians used Greek measures of capacity, as the Samnites did at Pompeii (notably in the *tabula mensoria* of the city in which some of the terms used for the measures given in Oscan have clear Greek equivalents, as *kúíníks* for *choinix*: Crawford *et al.* 2011, vol. II, 662-664) then the unit of capacity was perhaps the Greek *chous*. Since this varied from one city to another within a range of minimum 2.5 and maximum 4.0 litres (*OCD2 s.v. Measures*) the capacity of the *dolium* would have been between 175 and 280 litres. For other units of capacity used in S Italy we may compare the measurements in Roman numerals incised after the onset of intensive romanization on several much larger *dolia* at the Vittimosa villa near Buccino, datable to the C2 or early C1 BC. These give the capacity of the jars in *urnae* equal to between ca. 774 and 952 litres (Dyson 1983, 33-34). Cf. also those in the courtyard of the Villa Regina at Boscoreale, which were in *urnae* ranging from ca. 216 – 712 litres (De Caro 1995, 66). Cato (*de ag.* CIV, cxii) measures the capacity of *dolia* in *amphorae* (one of at least 65 *amphorae*, and another of 50 *amphorae*), but his *dolia* of the mid-C2 BC are likely to have been much larger than ours.
1906	145-9 Ar.147 D6	Fig.47. P204. Rim, projecting inside and out, broken off before the shoulder turn. Pinkish clay with small white inclusions, unevenly fired, with many small air-holes, white on outside surface. Ø 51.0. Another similar P205 Ø 70 from this site.
6. Large *dolia* with thick rims rounded on top, projecting externally to a point This rim form is found on one of the two types of *dolia* used in the *cella vinaria* of the *villa rustica* in the area of Villa Regina at Boscoreale, described as owl-beaked (*a becco di civetta*) and of local manufacture (De Caro 1995, 67-68 and tav. 8B). The villa was built in the late C2 BC, but the *cella vinaria* in its final form is later, perhaps late C1 BC or Early Imperial. The rim form, however, may go back earlier, because a small example of the type (No.1910) was found on our survey on Site 223 which was largely abandoned ca. 300 BC and not reoccupied until Late Antiquity. The 2 much larger examples from Site 145-9 (Nos.1907, 1909) are associated with Roman Imperial/ Late Antique material, but the comparison with the *dolia* at Boscoreale suggests that they are most likely to be Early Imperial. No.1908 is a sporadic piece that cannot be dated by associated material.		
1907	145-9 Ar.147 D6	Fig.47. P242. An exceptionally large and heavy rim. Pinkish-brown clay with many small white inclusions. Mortar adhering to outer surface indicates that it was sunk into a floor. Ø 60.0. Another large rim fragment from the same part of the site (P207) probably comes from the same pot.
1908	spor	Fig.47. P2085. Very large. Ø rim. 66.0. From UTM 606100/ 4521200, ca. 1.75km W of Masseria Vagnari.
1909	145-9 Ar.147 D6	Fig.47. P206. Rim only. Greyish-pink clay with white, dark red and black inclusions, white surface (slip?). Many small air holes. Angle uncertain.

1910	223 Ar.245	Fig.47. P658. Small *dolium*. Rather soft drab-brown fabric paler brown on surface and pinkish in core; some minute brown and black inclusions. Ø 33.0.
7. *Dolia* or basins with near vertical rims No.1911 shows the beginnings of a spreading shoulder and probably comes from a globular *dolium*. The shape of No.1912 below the rim is less certain.		
1911	223 E32N30	Fig.48. P7015. Hard reddish-brown clay, cream slip in and out. Ø 40.0 (very approx – edge damaged).
1912	223 E36N34	Fig.48. P4112. Hard reddish-brown micaceous fabric. Broken off immediately below rim at shoulder turn. Inside uneven and outside damaged. Ø 39.0.
8. *Pithoi* with relief-decoration. The 2 sherds listed here belong to large globular pots, but differ in the form of the rim. Both are decorated with rouletted motifs similar to those more commonly applied to basin rims in the C4 and C3 BC, as on Nos.1306, 1307, 1311, 1312. They were found on Sites 223 (San Felice, mainly pre-Roman) and F2 (C4–C1 BC).		
1913	223 E49N25	Fig.48, Pl.29. P4681. Rim and shoulder. Brown slightly micaceous clay. 6 shallow concentric grooves below the rim made by the fingers on the rotating wheel, and part of rouletted tongue pattern in a horizontal panel below them. Top of rim damaged but probably flat, with possible traces of impressed ivy leaf decoration. Trace of groove on outer edge of rim. Ø 36.0. Riccardi interprets a similar fragment, but lacking the rim, as coming from the base of a small terracotta column: *Monte Sannace*, 73 and tav. 283.3, with similar horizontal grooves and more complete tongue pattern, from phase III, C4–C1 BC.
1914	F2	Fig.48, Pl.29. P2226. Small frag. of *pithos* with oblique neck and horizontal rim supported on arched lug handle: right part of arch and central part of rim only preserved. Rouletted pattern of vine leaves on top of rim. Worn. Hard pinkish clay, pale at surface. Ø uncertain. Pres. w. of rim 7.5. The pattern must have been made by a roll-stamp similar, but not identical, to *Gravina II,* no.1820 (re-deposited).
9. Late Antique/ Early Medieval *dolia* Large ovoid storage pots with slightly thickened rim, bevelled on the inner edge. Cf. *Vagnari,* 273 fig. 6.51 P615, shortly before 400 AD. The form is found in contexts of Period 3A (first half C5 AD) at San Giovanni di Ruoti (*SGR IV,* SGP6068 P3A/D; SGP3041, P3A/M1A – a partial parallel). The shape is attested in cooking-pot fabric at Milan in (probably) the C10–C11 AD (Lusuardi Siena *et a*l. 2004, 67 and fig.1 no.1). Only 3 examples of the type were found – on Sites 213 occupied in Late Antiquity/ Early Middle Ages and 223 (pre-Roman and Late Antique/ Early Medieval)		
1915	223 E21N26	Fig.48. P576. Frag. of large ovoid pot with steeply inclined shoulder and near-vertical rim. Hard reddish clay with small white shell inclusions. Ø 16.0.
1916	223 E61N18	Fig.48. P7031. Hard fired brick red clay. Ø 16.0. Shape as No.1915.
1917	213	Pl.29. P364. Wall sherd of a large vessel, perhaps a *dolium*. Orange-brown clay, rather greyer in core. Impressed arc, probably part of an undulating line. Max. dim. 6.0; th. 1.5. Impressed wavy lines are a common motif on large pots in the Late Antique period, as on the *dolium* from Vagnari noted above. Cf. also Arthur 1994, fig. 89 nos.67.2, 67 (large deep vessels with out-turned rim) from Carminiello ai Mannesi, Naples where this type of decoration appears first in Phase IV (C2–C4 AD). It appears also on some pots from the deposit of ca. 430–440 AD in the Schola Praeconum at Rome (D.Whitehouse 1982, fig. 5 nos.55, 56). These simple impressed wavy lines seem to anticipate the combed wavy lines of LRPW of ca. mid-C5–mid-C7 AD.
10. *Pithos* and *Dolium* lids The round lids represented by No.1918 were probably intended to fit the *pithoi* of Type 1 above, and are likely to be of similar date. The lid knob No.1919 is evidently a fragment of a flat lid which would have fitted *dolia* of types 3-6, and is probably early imperial, as the *comparandum* suggests.		
1918	223 E13N28	Fig.48. P549. *Pithos* lid. Plain orange-yellow clay (yellow buff surfaces, reddish core); 2 incised bands and wavy line on upper surface; scraped tile-like bottom. Ø 37.0.
1918a	625 V	Pl.29. P2339. Frag. from near rim of a *dolium* or basin lid with convex surface. Hard fired brown clay with mica; some small white inclusions. Row of stamped tongues between impressed bands. Exterior wet-smoothed before stamping; interior surface rougher. Pres. ht. 3.2; th. 1.4.

1919	214	Fig.48. P345. *Dolium* lid knob. Hard reddish-brown clay with small brown and some glassy black and brown grits (presumed volcanic). Max. dim. 8.0, th. of wall 1.3; knob projects 3.5cm. Ø of knob 5.4. Cf. Bergamini 2004, fig. 32 no.241 from Scoppietto in Umbria, probably Roman imperial. *Dolium* lids with large knobs are also found in earlier contexts: cf. *Cozzo Presepe*, 373, Fig.143 no.433 (unstratified, but before ca. 250 BC), with 2 mouldings on the top.

11. Wall sherds

11a. Wall sherd with incised grooves

The piece listed here is one of a number of sherds in a drab brown hard-fired coarse gritty fabric, with external surface decorated with patterns of horizontal, vertical and oblique grooves. Both classification and date are somewhat problematic. Some which are flat or curved in one direction only were certainly tiles, either *tegulae* or *imbrices*, and these are listed under Tiles, section B2 below; but No.1920 is curved in both directions and must come either from a *pithos*/ *dolium* or from a bowl/ basin as No.1297. A few small pieces listed as tiles under Cat. 32B2a, Nos.2194-2197 below, may also be from *pithoi*. The date has to be derived from comparanda, but there are discrepancies in the published information. Similar pieces classified as *pithoi*/ *dolia* have been found in a context at Sybaris said to be of the C6 BC (*Sibari* I, 48 and fig. 42, no.140a,b,c, fig. 75 no.177 and fig 75 from Parco del Cavallo, stratum e; for the date: p. 71); but others have been found at Pontecagnano (M. von Merhren in Pontecagnano, 109 and 298 fig 101) and Cozzo Presepe (372, fig, 142 no.436) in Early Hellenistic layers. The fabric (whether of *pith*oi or tiles) is attested in our field survey only on Sites 223 and 627. Site 223 (San Felice) was occupied from ca. 1000–ca. 300 BC, but Site 627 on the Serra del Corvo was probably not inhabited until the C5 and abandoned in the C3. A date around the end of the C4 BC is therefore more suitable for these pieces.

1920	627 B	Pl.29. P1567. Drab greyish-brown micaceous clay, fired orange towards surfaces with numerous dark brown and black grits up to 5mm and some small white inclusions. Upper surface has 2 shallow parallel grooves and traces of a third ca. 0.5mm deep and 1.2mm wide and ca 2.2cm apart. One is cut at right angles by another which stops short of the next one. Traces of another at 45 degrees

11b. Wall sherd with brushed markings

The following piece has lightly impressed marks made by a three-pointed brush or similar instrument on part of the surface before firing and arranged to alternate. The marks are therefore likely to be intentional.

1921	223 E45N30	Pl.29. P7014. Hard pinkish-brown clay, cream slip out. Brush-marks impressed in slip before firing at right edge of sherd forming a feather pattern, and another in centre of sherd, damaged. Max. dim. 17.0, th. 3.0. Another similar (P4951) from E52N22

B. Glirarium – dormouse pot

Gliraria – pots in which dormice were fattened for eating – were large, lidded pots with ledges, either parallel or spiralling, along which the dormice could run, attached to the inside wall. The wall was pierced at intervals with narrow ventilation holes (as on our piece) and had a wider aperture below the rim through which the animals could be supplied with food and water without the lid being raised. They are referred to by several literary sources, including Varro (*Res Rusticae* III.15) who gives a clear description of them, and Pliny (*Naturalis Historia* VIII. 224, cf. 221) who attributed their invention to Quintus Fulvius Lippinus who developed his *vivarium* near Tarquinia some time around the middle of the C1 BC. That chronology suits the archaeological evidence, such as it is. *Gliraria* have only rarely been reported from archaeological sites. Carpaneto & Cristaldi (1994) list 15, including 1 in Slovenia and 14 in Italy. Most of the Italian examples come from Montesarchio in the province of Benevento (unpublished) and Pompeii. The authors divide them into 3 types: cylindrical (with 5 instances), bucket-shaped (1) and globular (5). Our rim fragment falls within their globular group, which is essentially a small *dolium* with the requisite features added (cf. our *dolia* Nos.1889, 1904). This kind of *glirarium* is attested at Pompeii (cf. Annecchino 1982, 763-765; Stefani (ed.) 2003, 46, and near Rome, Lissi Caronna 1986, 12, 15 and fig. 8, mid-C1 AD). *Gliraria* have also been identified by Paul Roberts at San Giovanni di Ruoti where 7 fragments were found in contexts ranging from Period 1 (C1–early C3 AD) to Period 3B (mid-C5–mid-C7 AD). They include a rim fragment from a destruction layer at the end of Period 3B (*SGR IV* SGP6035) which is broadly similar to our piece, but has steeper shoulders resembling the Pompeian example cited by Stefani. It would seem that the design of this class of *glir*aria changed little over the first six centuries AD.

1922	223 E61N18	Fig.48. P7027. Pinkish-grey highly micaceous clay with numerous black and brown volcanic inclusions, paler pink surface out and in. Hole Ø 0.6cm pierced in shoulder (one only preserved on sherd). Ø rim 24.0.

C. Putealia/ Well heads

The following three items are rim- and upper-wall fragments of large terracotta cylinders with thickened rims which were used as well heads, or stacked one above another as well linings. They are a common feature of Greek water-engineering from the archaic period onwards, and are found in most of the Italiote Greek cities: see Sconfienza 1996. Our pieces come from sites occupied in the pre-Roman period.

1923	407 SE spur	Fig.48. P2234. With vertical wall and spreading T-shaped rim. Drab greyish-brown clay. Ø 70.0. Cf. Sconfienza 1996, 21, fig. 11 from Metaponto, C4 BC.
1923a	801 M3	Fig.48. P2058. As no.1923. Pinkish-brown clay with abundant fine sand: shiny black (volcanic) grains, also rounded quartz, limestone (rare) and iron ore (?). Pres. ht. 6.5, Ø uncertain. Same fabric as basin No.1309 also from this site.
1924	801 M3	Fig.48. P2059. With vertical wall and triangular rim, hooked on the inside. Fine buff clay with some very fine mica. Ø 44.0.

21. LAMPS

I. Introduction

A. The distribution and use of lamps

by Alastair Small and Carola Small

Pre-Roman lamps

The earliest oil lamps used in the region were wheel-made Attic BG imports which began to arrive in the Greek cities early in the C5. They gave rise to local imitations, but their usage did not become widespread until the middle of the C4 BC (see esp. Masiello 1992 (South Italy), 1994, 337-340 (Taranto)). Even then it was uneven, especially in the countryside. In the Chora of Metaponto only 42 out of 595 of the sites identified by the survey team from the University of Texas at Austin produced lamp fragments, and of these most had only 1 (Conoci & Vittoria in *Chora Metaponto III*, 425-6 and fig.10). None are reported from the excavations in the farmhouse at Ponte Fabrizio (*Chora Metaponto V*, 71), and only a few fragments belonging to two BG lamps from Sant'Angelo Vecchio, found in a pottery deposit of the C5/C4 BC (Conoci in *Chora Metaponto VI*, 225-6, 251). The excavations in the Sanctuary at Pantanello yielded 38 lamp fragments mainly of the late C4 and early C3 BC, but Emanuela Conoci comments that the relatively small number from such an extensive excavation suggests that lamps were not common on such sites (*Chora Metaponto VII*, 911).

In the interior, the pattern of usage inside the indigenous settlements was equally uneven. Lamps were relatively numerous at Pomarico Vecchio where 91 fragments were found, all datable before the end of the site in late C3. The 30 published pieces all fall between ca 350 and 225 BC (Petitti in *Pomarico Vecchio 1,* 147-153). Lamps appear to have been rather less common on the acropolis of Monte Sannace: Only the first of 11 lamps from the extensive excavations of 1978–1983 published by Rossi (*cit.,* 192-194) belongs to this period, but Laricchia, Liseno and Palmentola list 41 BG pieces from the recent excavations (in Ciancio & Palmentola (eds.) 2019, 382-383). At Torre di Satriano no lamps of this period were found in the Lucanian sanctuary: those from the site published by S. De Vincenzo (*cit.,* 348-354) are all types of the late C2 or C1 BC. Lamps were relatively rare at Civita di Tricarico, destroyed around the end of the C3 BC (*cit.,* 448). Further north, at Ordona, only 1 lamp of the period was found in the excavations of 1962–1971 (Delplace 1974, 14).

Lamps were sometimes deposited in burials on indigenous sites in Central Apulia and E. Lucania in the late C5 and C4 BC, but again the pattern is uneven. Lo Porto (1991, *passim*) lists 19 BG and 5 plain ware lamps found in graves of the last third of the C4 excavated at Timmari in Lucania, but in Peucetia they were not regular components of the funerary assemblages of most communities. A few were found at Monte Sannace (Scarfì 1961, 212, tomb 17 no. 7; 221, tomb 18 no. 2), 9 or so at Rutigliano (Masiello in *cit.,* 557-559); and 7 at Ceglie Peuceta (Marin *et al.* 1982).

Nearer to our Survey Area, on Botromagno, lamps of the mid-C5 and mid-C3 were found in 5 burials excavated in the Accurso necropolis (Andriani & Laricchia 2007, 29-30) and 2 others in the excavations of 1974 and 1994 (Ciancio 1997, 198 no. 190, and 211 no. 244). To these can be added 9 lamps found in the excavations in the settlement in the late 1960s which can be dated to the C5–C3 BC (Prag in *Gravina II*, 209-210, Types I and II). On Monte Irsi at least three lamps of the period were found in the Canadian excavations (Rossiter in *cit.*, nos. 321-323).

From inside our Survey Area, only one catalogued piece can be securely dated to the C4/C3 BC: No.1925 from Site 223 (San Felice), but to this can be added 3 uncatalogued BG fragments, probably of the same date. The Superintendency's excavations on the site appear to have produced no lamps. One lamp sherd from Site 813 (which began probably in the C4 BC and lasted into the C1 AD) may also be of the C4/ C3 BC.

The scanty distribution of lamp fragments in the survey area must be interpreted in the light of the very uneven distribution of lamps in the surrounding region. It would seem that the use of lamps was not yet widespread anywhere in the region, but that it was most common in settlements of medium to large size near to the coast (and inland as far as Pomarico Vecchio) where the environmental conditions were particularly well suited to olive cultivation (see Chap. VII). It is difficult, however, to reconcile this idea with the scarcity of lamps in the Chora of Metaponto – unless the pattern of lamp usage was conditioned by social custom rather than by the availability of olive oil. In pre-modern societies the timetable of rural life had to be adjusted to the hours of sunlight, and peasants living in the countryside may have been reluctant to adopt oil lamps for ordinary household use.

Later Hellenistic/ Roman Republican lamps

During the last half of the C3 BC the use of oil lamps became much more widespread in Italy (Masiello 1992), but the types in use changed. After the Roman victory in the Pyrrhic War, the early Hellenistic lamps of the previous period were gradually ousted by new types originating in Latium and Campania, especially lamps of the so-called "Esquiline" type with either biconical or cylindrical bodies (Fioriello 2012). They were made in various centres in Apulia, at first generally in black-gloss, and later (after the middle of the C2 BC) in grey-gloss. In the late C2 they began to give way to mould-made types which were inspired by originals from the Aegean and Asia Minor but were mostly made in regional workshops in Apulia: at first types with radial ribbing, then the so-called *Warzenlampen* decorated with closely spaced raised pimples on the shoulder. Other types with relief decoration in the discus emerged in of the Late Republic.

There are few detailed studies of lamps from settlements of this period anywhere near our survey area, but those that there are generally show an enormous increase in the usage of lamps (cf. Masiello 1992). At Ordona, where only 1 lamp could be dated to the previous period, Delplace recorded 156 Hellenistic lamps and another 47 Roman Republican ones of the C1 BC. On Botromagno where there had been 9 in the previous period there were 86 catalogued fragments of Hellenistic or Roman Republican type (Prag, *cit.,* Types III-V). Most were found in contexts of the Late Hellenistic settlement of the mid-C2–mid-C1 BC. At Monte Irsi the increase was much smaller, from 3 of the C5–C3 to 9 of Hellenistic type, but the principal excavated building of the period was a cattle stall of the late C2/ early C1 BC where it is unlikely that lamps would have been used. The greatly increased usage seen on many sites is to be connected with the commercialization of the production of olive oil which was linked with the development of villa-based agriculture after the end of the Hannibalic War (See Chap. VIII).

The evidence for an increase in lamp usage in our Survey Area is slighter. Only 7 Late Hellenistic wheel-made lamps (Type 1b in the Catalogue) were found: 2 on Site 303 (Nos 1926 and 1928), and 5 on Site 813 (including No.1927): see Table 21-1. In addition, two fragments of GG lamps were found at Vagnari and three others of different types are reported from the recent excavation by the Superintendency of a Late Hellenistic site at Recupa di Scardinale (List of Sites 213x: Melillo 2017, 208 tav. II.17). 16 other sites of the period produced no lamps.

Roman imperial lamps

The predominant types in the Early Imperial period were so-called volute lamps with curving flanges projecting from the shoulders. They were mass produced in specialist workshops and widely distributed in Italy and beyond. In the Middle Empire they gave place to new forms. Round mouthed lamps decorated with numerous globules (*lucerne a perline*) became popular in South Italy (Fabbricotti 1974). They were probably produced in several Apulian centres. There was also an increasing proportion of imports from overseas, especially round-mouthed lamps with relief decoration made in North Africa – which as usual were imitated in local workshops in Apulia. They began a long series of African lamps and local imitations which continued into the Christian period.

Mould made lamps of the imperial period are common finds in excavations of urban sites and rural villas. At Ordona they account for the great majority of the 492 recorded by Delplace (1974). But in small rural sites they were less common. Only 8 were found in the excavation of the Roman farm at San Biagio in the former Chora of Metaponto although occupation of the site lasted from the beginning of the 2nd to the beginning of the C4 AD (*Chora Metaponto IV*, 124-125). There was a similar disparity in our Survey Area. Using the data available from the excavations at Vagnari of 2000–2010, and those from the excavations of the villa on San Felice, and those from our field survey, De Stefano (in *Beyond Vagnari*, 144) has calculated that out of a total of 546 fragments, 70% came from the excavations in the villa (nearly all of the imperial period), 11% from the excavation in the *vicus* at Vagnari, 6% from the cemetery at Vagnari, and only 8% from the survey. The disparity between the figures from the villa and the *vicus* suggests that the usage of lamps depended on the socio-economic state of the inhabitants and the nature of the activities taking place there. The villa, as we envisage it, was primarily the residence of an imperial administrator, although it also has some productive sectors. Vagnari was a village of lower social status with industrial functions.

As Table 21-1 shows, the distribution of the moulded lamp fragments from the survey area can be related both to the status of the sites, and to the period of occupation. If we set aside Site 223 on which were lamps of the Hellenistic and Medieval periods and only one mould-made piece of the C1–C2 AD (No.1936), the two sites which yielded most lamp fragments were both villas, Sites 229 with 19 pieces found in the survey (over and above those from the excavation), and Site 372 with 13. They are followed by Site 124, a small villa or large farmhouse. Only four other sites produced mould-made lamps, one on each site: Sites 114 and 703, both probably small farmhouses, and Site 145-9 which we have interpreted as a small *vicus* with *horrea.* In short two thirds of the 20 or so sites which revealed some evidence of frequentation in the Mid Imperial period had no lamps. Most were very small but 9 (Sites 135, 139, 335, 607, 704, 707, 810, 905, 906) were clearly dwellings/ farmhouses and the absence of lamps on them is significant.

The lamp fragment on Site 223 (the plateau of San Felice) is problematic since there is little other evidence for occupation on the hill-top at this time. The presence of the lamp can best be explained by the assumption that it derives from the villa on Site 229, either as "manuring scatter", or perhaps as a grave good (see the discussion in the Site Table). With this exception, the evidence again shows a correlation between the status of a site and the number of lamps found on it. These data relate to sites of the C1–C2 AD. When the villas came to an end in the C3 AD, and the imperial estate centred on Vagnari was carved up into small farms, the usage of lamps ceased altogether throughout the Survey Area except in the *vicus* at Vagnari where the excavations produced some 60 Late Roman Lamps, of which 36% were imports from North Africa (including *Vagnari* 162, fig. 5.32 P1177, 185 fig. 6.56 P1596, 187 fig. 5.69 P891) and 43% were local or regional imitations of African types (including *Vagnari*, 147 fig. 5.7 P55, 187 fig. 5.70 P892, 209 fig. 5.109, P1182, 211 fig. 5.114 P1190; De Stefano in *Beyond Vagnari*, 147). The absence of Late Roman / Late Antique lamps is particularly surprising on Site 134, a small *vicus* on the right bank of the Basentello, which extended over 5900 m***2***.

A number of questions need to be answered in any attempt to explain the scarcity of lamps in the survey area. Availability of olive oil cannot have been a factor. As Disantarosa's study of the amphorae from the Survey Area shows, there was no time when imported amphorae did not reach the area between the C6 BC and the C7 AD. There is, however, a clear correlation between the size and quality of the sites site and the presence/ absence of lamps, which is valid in all periods. It might suggest that the inhabitants of small sites were always too poor to buy imported oil (cf. Foxhall 2007, 92). But there are today olive groves growing at Vagnari and on the slopes of San Felice, and there can be little doubt that olives could be cultivated in the area in Roman times. Did the inhabitants of the small rural sites not plant olive groves or were olives used only as a comestible? Or were they so poor that all the land they cultivated had to be used for subsistence farming? Or were they always adjusted to a routine or rural life which made the use of oil lamps an unnecessary frill?

Site	frags	No.	Main occupation of site	Function of site
114	1	**1937**	C2 BC–C3 AD	Small farmhbouse
124	7	**1930 1931 1934**	C2 BC–C3 AD. Late Antique	Small villa/large farmhouse
145-9	1	**1935**	C4/C3 BC, Early–Late Imperial	*Vicus* with *horrea*
223	28*	1925 **1936** 1939 1939a 1940	EIA/ LIA, Early Medieval, C12–C14/C15AD	Large IA/ smaller Medieval settlement
229	19	**1929 1932**	Early–Mid Imperial	Villa
303	2	1926 1928	Hellenistic/ Republican	Farmhouse or group of houses
335	1	-	Republican/ Early–Late Imperial	Farmhouse
372	13	**1938**	Early–Mid imperial	Villa
703	1	**1933**	Republican–Early Imperial	Farmhouse
710	1	-	Mid Imperial	Farmhouse
813	5	1927	LIA, Republican–Early Imperial	Large farmhouse and ancillary buildings

Table 21-1. Distribution of the 79 lamp fragments found in the Survey Area. Moulded pieces are shown in bold font.

*The figure for Site 223 comprises 4 fragments of the C4 (including No.1925), 17 medieval (including Nos.1939-1940) and 7 undatable pieces. A further 11 lamps dated to the C13 AD were found in a series of trenches excavated by the Superintendency before the construction of Wind-turbine 31 (*PSF*,168-170 and tav. IX).

B. The Hellenistic and Roman Pottery Lamps

by Jeremy Rossiter

Introduction

Thirteen of the pre-Medieval lamp fragments were sufficiently well preserved to be worth cataloguing here. They can be separated into three distinct groups. The earliest pieces are 4 fragments of wheel-made black-gloss lamps of Hellenistic date. Three of these came from sites which yielded much Hellenistic material: two (Nos.1926, 1928) from Site 303, and one (No.1927) from Site 813. The earliest piece (No.1925) came from Site 223 (San Felice) which came to an end (or at least was greatly reduced in size) ca. 300 BC. The remaining 9 pieces are all fragments of mould-made Roman lamps of Early Imperial date (late C1 BC–C2 AD) and are catalogued here according to Bailey's typology (Bailey 1980). Most are too small to allow precise classification but can be placed securely within one or more of Bailey's types. Five are from volute lamps of Bailey Type A (late C1 BC–C1 AD) and 4 from round-nozzled lamps of Bailey Types O and P (C1BC–C2 AD). The latter are subdivided here into two groups depending on whether or not they are slipped.

Only 3 of the fragments preserved any trace of decoration. In two cases (Nos.1930, 1936) the discuses were decorated with rosettes; a third fragment (No.1934) shows what may be the wing of a bird. For the most part, however, the lamps from the survey are too fragmentary to allow comparison with more complete lamps from other South Italian sites and museums. Nevertheless, it is clear that the types of Hellenistic and Early Imperial lamps represented in the survey material are the same types as found at other sites in the region such as Ordona (Delplace in *Ordona IV*), Botromagno (Prag in *Gravina II)* and Ruoti (Rossiter in *SGR II*). At these sites, most of the lamps in use were local Lucanian or Apulian products: none of the fragments found on the Survey can be securely identified as belonging to an imported lamp.

II. Catalogue

1. Wheel-made lamps		
1a. Early Hellenistic, C4–C3 BC		
1925	223 E34 N18	Fig.49. P4545. Frag. giving part of discus from filling hole to shoulder Hard pinkish-brown clay and lustrous black slip outside and in. Ø of filling hole 3.25cm, max. w. 1.1, th. 0.3 The inward sloping discus and the ridge around the filling-hole are typical of Apulian regional lamps of the late C4 century BC, extending, perhaps, into the beginning of the C3: cf. Bailey1975, 324, 329-339 and pls. 128 and 129, esp. no. Q697.

1b. Late Hellenistic, C2–C1 BC		
1926	303 E8	Fig.49. P721. Body of a wheel-made lamp, nozzle and handle missing. Pale grey-buff clay, grey-black slip. Late Republican. Max. ht. 3.3, Ø 3, Ø body 4.9, Ø base 3.5. Cf. Prag in *Gravina II*, Type III; Melillo 2017, 208 tav. II.17, and 209 *tipo 2*, in grey-gloss from the late Hellenistic site of Recupa di Scardinale below San Felice.
1927	813 D1	No illus. P8134. Body of a wheel-made BG lamp. Cf. Prag in *Gravina II,* no.1654 Type IIIa (Gravina).
1928	303 H9	Fig.49. P2091. Base fragment. Fine reddish-brown clay, orange-buff on surface with numerous small white inclusions, barely lustrous black slip on outside only. Max. ht. 1.2. Cf. Prag in *Gravina II,* nos. 1653-1654 (Type IIIa); Cocchiaro & Andreassi 1988, 115 no.127 from Brindisi, Necropoli di via Cappuccini Tomb 204, 2***nd*** half C2–beginning C1 BC. But the type begins earlier – cf. Petitti in *Pomarico Veccchio I*, 1997, p.149, nos.12 and 13, C4/C3 BC.
2. Mould-Made Lamps		
2a. Bailey Type A (late C1 BC–C1 AD)		
1929	229	Pl.31. P2018. Part of a voluted nozzle. GG. Grey-buff clay, traces of darker grey slip. Max. lg. 3.7. Cf. *Gravina II,* no. 1674, period Gravina VIIIa (late C2/C1 BC).
1930	124 C2	Pl.31. P50. Part of a voluted nozzle. Buff clay, dark brown slip. impressed dec. of small inverted triangles on nozzle [volute?]; part of two petals of rosette on discus. Max. lg. 2.8. Loeschke 1919, shoulder Form IIb. Cf. Bailey 1980, Q857.
1931	124	No illus. P8065. Ws from shoulder. Brown slip. Loeschke 1919, Type I [JWH].
1932	229 1144	Pl.31. P2025. Nozzle and discus fragment. Pale orange-brown clay, darker orange-brown slip. Voluted nozzle. Discus: indistinct decoration. Frag. from edge of discus and beginning of nozzle of a globule lamp: 'a perline', Fabbricotti 1974, type II. Fairly hard light orange-brown clay; thin darker orange-brown slip (not lustrous). Two grooves round edge of discus. Air-hole and two globules on discus at edge of sherd. Max. lg. 3.5.
1933	703	Fig.49. P1976. Shoulder fragment. Grey clay, darker grey slip. Loeschke 1919, shoulder Form Iib. Max. lg. 4.5. Cf. Keith in Cotton & Metraux 1985, fig. 14.6, frag of a volute lamp from the San Rocco villa at Francolise, Augustan in buff clay with remains of a dull black slip; Broneer 1930, 176, fig. 103, 453, C1 AD; Deneauve 1969, pl. IV, mid-C1 AD.
2b. Bailey Types O and P, C1–C2 AD, slipped		
1934	124. B2	Pl.31. P42. Discus fragment. Orange clay and slip. Discus: indistinct decoration, possibly a bird's wing. Max. lg. 3.0 Cf. Bailey 1980, Q1250 (Jupiter and eagle), Q1304 (Leda and swan).
1935	145-9 Ar.145	Fig.49. P145. Handle and shoulder fragment. Orange clay with some small white (limestone) inclusions and a little mica, residual brown slip. Loop handle with two lines scored over top. Max. lg. 2.5 Loeschke 1919, shoulder Form VIIb.
2c. Bailey Types O and P, C1–C2 AD, unslipped		
1936	223 E24N16	Fig.49. P4253. Shoulder with wall and handle-spring of lamp. Hard pinkish brown clay, some white inclusions. Beginnings of handle attachment at edge of sherd
1937	114	Pl.31. P84a. Shoulder and discus fragment. Buff clay. Discus: rosette. Max. lg. 2.7. Loeschke 1919, shoulder Form VIIb. Cf. Bailey 1980, Q1202
1938	372 O2	No illus. P7745, Handle with ws. Loeschke 1919, shoulder form VIII

III. Lucerne medievali di Pasquale Favia e Vincenzo Valenzano

Introduzione

I frammenti relativi alle ceramiche per l'illuminazione testimoniano l'uso di piccole lucerne a fondo piatto, vasca schiacciata e becchi a mandorla. Esse sono caratterizzate da impasti abbastanza depurati dalle coloriture che virano dal crema a beige. Non sono stati rinvenuti esemplari con strati di rivestimento vetroso. Le lucerne sembrano rientrare nella tipologia produttiva bassomedievale del sud Italia, influenzata da patrimoni manifatturieri di ambito islamico, sia di siciliana che nord africana. Il quadro cronologico di riferimento sembra essere quello del XIII–inizi XIV secolo d. C.

Bibliografia

Nanna, Melillo & Sanvito in PSF 168-171; Guadagnino & Pezzini 2014, 337-350; Laganara 2011, 85-140; H.Patterson & R.Whitehouse in *Otranto II,* 179-182; Cotter 1985, 39-48.

Catalogo

1939	223 E16N24	Pl.31. P4060. Frammento della parte apicale di un becco a mandorla, relativo ad una lucerna. Impasto color crema/rosato chiaro e depurato. Assenza di rivestimento. 4,6 × 1,9cm.
1939a	223 E22N28	Pl.31. P4323. Frammento di becco a mandorla, relativo ad una lucerna. Impasto color crema chiaro e depurato. Assenza di rivestimento e tracce di combustione all'apice del becco. 4,1 × 2,8cm.
1940	223 E16N28	Pl.31. P4014. Frammento di becco a mandorla, con lieve deformazione da impressione digitale, relativo ad una lucerna. Impasto color crema chiaro e depurato. Assenza di rivestimento e tracce di combustione all'apice del becco. 2,3 × 1,3cm.

22. LOOMWEIGHTS AND SPINDLE WHORLS

I. Introduction

Loomweights are known from sites in South Italy from before the end of the Neolithic period (Robb 2007, 301), and, with spindle whorls, are a feature of the Eneolithic Laterza culture (Cipolloni Sampò 1999, 86). They are less well documented in South Italy for the BA but there were possibly some on BA sites on the Adriatic coast of Apulia (Wilkens 1998, 232). A truncated pyramidal loomweight is recorded from the FBA/ EIA contexts at Broglio di Trebisacce (Buffa 1994, tav. 206 12). A perforated disc trimmed down from a piece of impasto pottery found by Vinson on site V41 of the Older Surveys was interpreted by him, surely rightly, as a Bronze Age loomweight (Pl.56 No.96), while a smaller purpose-made perforated disc found by him on the BA site V39 might be either a small loomweight or a large spindle-whorl (Pl.56 No.95). On our Survey, however, none were found on any of the Neolithic or Bronze Age sites, and the few sites of the FBA/ EIA which did not continue after ca. 700 BC produced no loomweights (Sites 622, 625, 629). This could be attributed to the haphazard nature of surface finds, were it not for the fact that no loomweights were reported from the excavation of the EIA huts at Parco S. Stefano (*Gravina (PBSR) III (1),* 48-132); or from that on the hill of Botromagno (R. Whitehouse *et al.* 2000, 11-43). It is possible, therefore, that down to the middle of the C8 BC, the warp threads of looms in this area were kept taut by some other means, perhaps by wooden pegs.

Loomweights in the Survey Area

In the course of the survey 167 loomweights were recorded from 31 sites including the surface at Vagnari (Map 22-1). They were distributed as shown in the Table 22-1 below.

Loomweights for which there are meaningful data are listed individually in Table 22-1. The total number for each site is given in column 2. As the Table shows, loomweights were used on many of our MIA and LIA sites, but especially on San Felice where 98 examples, rather more than half of the total for the whole Survey, were found on the main area of the site and on the outlying settlements of the same date on the plateau (Areas 225, 226, 245). Of the 58 typable examples listed from San Felice, 30 have oblong and 23 square bases. Some of them (e.g. Nos.1975 (Site 223), 1980 (Site 347-9), 2000 (Site 229)) have slightly flaring sides possibly because they were made with overly wet clay and slumped after being formed. Most have flat tops, often with a stamped or incised motif, but a few are rounded on top and appear roughly bell-shaped (e.g. No.1984) There was no marked concentration of weights to indicate a workshop, the densest accumulation being one of 9 weights over 600 m^2 towards the middle of Site 223. Rather, the pattern suggests that weaving was an intensive cottage industry.

The recent dig by the Superintendency at the E end of San Felice produced 2 groups of loomweights in contexts of the late C4–beginning of the C3, one in *Saggio* A of about 10 weights (*PSF* fig.33), the other of 8 in *Saggio* B (*ibid*., 38 and tav.IV, 34). All but 1 are truncated pyramidal but the shapes in *Saggio* B vary considerably from quite slender oblong to square, and from markedly flaring to fairly straight-sided. One is conical. The fact that they were found together suggests that the shape was not important to the owner of the loom. Neither the weights nor the measurements from either area are published but it is clear that those from *Saggio* B at least conform to the norms found on our survey, ranging in height from about 6 to 9cm (see below).

The next largest pre-Roman collection in the Survey Area was of 9 on Site 627 which was occupied from the C6/C5 to the C4/C3 BC. They are of 2 types: 4 are small and narrow pieces with oblong bases (4.0–5.5 high), and 2 are larger (7.5–8.0 high) with square

Site	No. of wts.	Cat. no.	shape	Wt	Ht.	Date
114	5	2001	sq.	-	8.4	**E.Hel, L.Hel, E.Imp, M.Imp, L.Ant**
		1958	sq.	235	8.0	
		1971	frag.	107	9.0	
			-	275	-	
			-	295	11.5	
126	1	1983	obl.	110	6.7	**LIA**
134	1	80	sq.	150	8.2	**LIA**, E.Hel? **L.Ant, E.Med**
145-9	4		obl.	170	7.2	MIA?, **LIA,** E.Hel. **E.Imp–L.Ant.,** E. Med
			obl.	150	6.3	
			sq.	250	8.2	
		1952	obl.	174	7.0	
204	1		con.	-	-	**L.Ant**
223	98		obl.	60	4.2	**eo. FBA, EIA, MIA, LIA, E.Hel, L.Hel, M.Imp, L.Ant, E.Med, Med**
			sq.	225	8.0	
			sq.	60	4.6	
			obl.	100	6.5	
			obl.	130	10	
			obl.	76	5.7	
			obl.	70	5.9	
			obl.	240	8.2	
			sq.	47	4.6	
			obl.	110	7.2	
			obl.	42	4.5	
			?sq.	110	6.4	
			sq.	110	7.5	
			obl.	100	7.2	
			obl.	69	5.7	
			sq.	227	8.8	
			obl.	60	5.5	
			obl.	60	4.8	
			bell	73	7.0	
			?sq.	130	7.1	
			bell	270	10.4	
			sq.	137	7.5	
			obl.	180	8.	
			bell	-	5.5	
		1941	obl.	40	5	
		1942	sq.	120	9.4	
		1943	sq.	180	8.8	
		1945	obl.	80	6.1	
		1946	obl.	-	7.9	
		1947	sq.	124	7.3	
		1948	obl.	100	7.5	
		1955	obl.	-	7.5	
		1956	sq.	142	7.4	
		1957	obl.	110	9.0	
		1959	sq.	300	10.0	
		1962	sq.	-	-	
		1963	obl.	60	5.3	
		1965	sq.	110	6.4	
		1966	obl.	90	6.0	
		1967	obl.	100	6.7	
		1968	sq.	-	7.9	
		1969	obl.	125	7.2	

Site	No. of wts.	Cat. no.	shape	Wt	Ht.	Date
233		1970	?sq.	-	-	
		1972	?sq.	260	9.9	
		1973	?sq.	95	7.4	
		1976	sq.	340	11.5	
		1978	obl.	100	6.5	
		1979	obl.	330	10.5	
		1981	?sq.	130	7.4	
		1982	sq.	120	7.5	
		1986	obl.	165	8.0	
		1987	sq.	80	5.2	
		1989	obl.	185	8.0	
		1992	obl.	70	6.0	
		1993	obl.	100	7.7	
		1994	obl.	-	-	
		1999	con..	300	10.4	
		1999b	con..	118	-	
229	4	-	obl.	110	7.0	MIA, **LIA**, **L.Hel–M.Imp**, L.Imp, **L.Ant**.
		-	obl.	220	8.5	
		1988	sq.	182	9.0	
		2000	sq.	150	8.0	
302	1	1990	obl.	225	9.5	Neo, **LIA, E.Hel,** L.Hel
303	5	-	-	130	8.4	**LIA, E. Hel, L.Hel**
		-	sq.	300	9.0	
		-	obl.	280	9.2	
		1995	bell	170	7.8	
319/21	1	-	-	255	9.0	**Neo,** LIA, L.Imp
335	3	1977	sq.	174	10.0	**E.Hel –M.Imp,** L.Ant.
		1998	disc.			
		-	-	235	-	
347-9	1	1980	obl.	290	9.4	**Neo – BA, EIA – LIA, M.Imp –E.Med**
351	1	1991	?sq.	325	6.5	**LIA**
361 Vag.	11*	-	-	240	10.7	**LIA, L.Hel – E.Med**
		-	sq.	144	7.2	
		-	sq.	173	8.3	
371	1	-	-	-	-	**LIA**
372	2	-	-	205	9.2	**LIA – L.Ant**
407	3	-	-	-	4.0	**FBA –L.Hel**
		1953	sq.	35	5.5	
		1954	sq.	55	6.5	
417	2	-	-	-	-	**LIA, E.Hel**
419	2	-	sq.	230	9.3	**LIA, E.Hel**
423	2	-	-	116	7.0	EIA, **LIA,** L.Hel.
		-	-	160	6.0	
607	1	-	-	-	-	**LIA, E.Imp, M.Imp.**
627	9	-	obl.	55	5.5	**BA? MIA, LIA**
		-	sq.	102	7.5	
		-	?sq.	-	8.0	
		-	obl.	35	4.0	
		-	obl.	50	5.3	
		-	obl.	42	4.5	
		1944	obl.	38	5.2	

Site	No. of wts.	Cat. no.	shape	Wt	Ht.	Date
631	1	-	obl.	60	5.8	Neo, spor
715	1	1985	obl.	100	7.0	**FBA, EIA, E.Hel, M.Imp**
717	1	1950	sq.	200	10	**LIA, L.Hel**
813	5	-	sq.	295	10.5	**BA, LIA, E.Hel –E.Imp**
		-	sq.	-	8.7	
		1949	sq.	230+	7.2+	
		1960	sq.	165	8.8	
		1984	bell	-	9.6	
823	1	-	-	-	-	**L.Ant**
906	1	1951	?sq.	-	8	**L.Hel –M.Imp**

Table 22-1. Sites and typeable loomweights from our Survey Area. *Loomweights on Vagnari are from the surface survey only. Abbreviations: bell: bell-shaped with rounded top; con.: conical; disc.: discoidal; frag.: fragmentary; obl.: truncated pyramidal with oblong base; sq.: truncated pyramidal with square base.

bases. 5 had oval impressions made with engraved rings or seal-stones. There were 5 rather degraded loomweights on the small LIA site 303 and 5 on Site 813 occupied from the LIA to the Early Imperial period – a surprisingly small number for a reasonably substantial site. 25 other sites, fairly widely distributed over the whole area, produced 3 or fewer loomweights each. Of these, the majority had pottery of the LIA (most obviously BG), though a few also produced earlier material (see Table 22-1). Site 407 on Serra Meschina, one of the largest IA sites after San Felice, measuring 1.3 hectares, yielded only 3 loomweights. Site 401 at Crocevelina which was even larger (5 hectares) produced none. Loomweights on Crocevelina may have been missed in sherding if the looms were located outside the sampled areas, which amounted to less than 10% of the surface area of the settlement, but their absence on Site 407 is surprising. It suggests that there must have been some concentration of weaving elsewhere in the area, presumably on San Felice.

Occupation on San Felice came to an end around 300 BC. Weaving continued, however, to be an important industry on Botromagno, where it reached a new peak in the revived settlement of the late C2 and C1 BC (A. Small in *Beyond Vagnari,* 58-59) when textiles must have been produced on a commercial scale. The truncated pyramidal form continued to be the most widely used there, as it was in the settlement of the same period on Monte Irsi (*cit.*, 203-204). It is reasonable, therefore, to suppose that loomweights of the same type found on other sites in our Survey Area which were occupied in this period were also used at this time, but that cannot be proved from survey evidence, since nearly all the sites had already been occupied in the LIA. They include Sites 303, 335, 423, 717, and 813. In all these cases the numbers involved are too small to suggest commercial production.

Some loomweights were found on sites which were occupied mainly in the Roman imperial period, including Vagnari, and Sites 114 (5 loomweights), 372 (2) and 906 (1), and they therefore have a bearing on the vexed question of whether the vertical loom continued in use in this area after the introduction of the horizontal two-beam loom, supposedly in the Late Republic (Lipkin 2012; Quercia & Foxhall 2012, 377; A. Small in *Beyond Vagnari,* 63). In effect they make it clear that it did. The number on Vagnari is surprisingly small (11 on the survey and only 7 in the excavations up to 2010), ruling out the possibility that there was a commercial weaving industry on the site unless the textiles were woven on two-beam looms. There were more loomweights at the San Felice villa where 34 were recovered in the excavations, mainly in contexts of Phase II, the last half of the C1 and beginning of the C2 AD (McCallum & vanderLeest 2014, 130), and a further 5 were found on the survey of the site. They show that there was a small-scale weaving industry in the villa still using a vertical loom in the Early Imperial period, which would have been adequate for supplying local needs, but not for commercial production (see Chap. IX).

No loomweights came from sites primarily datable to the Late Imperial period or later. Presumably the two-beam loom had now replaced the vertical loom, even for domestic weaving. As for commercial weaving, it is difficult to imagine that any of our Late Antique sites, with the possible (but unlikely) exception of Site 134 could have supported any serious commercial industry.

Forms and fabric of loomweights

We found no loomweights made in impasto. Most were hand-made of purified clay, and kiln fired, the quality of firing becoming perceptibly better as time went on, as was the case throughout Italy (Gleba 2008, 134; Lipkin 2012, 65). The level of craftsmanship varied greatly. A few, such as No.1965, are more or less symmetrical with carefully trimmed sides, but most are uneven, and some are clumsily shaped. Such pieces are likely to have been made locally by inexpert hands, perhaps by the would-be user, who may have taken the shaped weights to a professional potter to be fired in a kiln. No.2001 (Site 114) is an obvious waster, which confirms that, on this site at least, some weights were locally made.

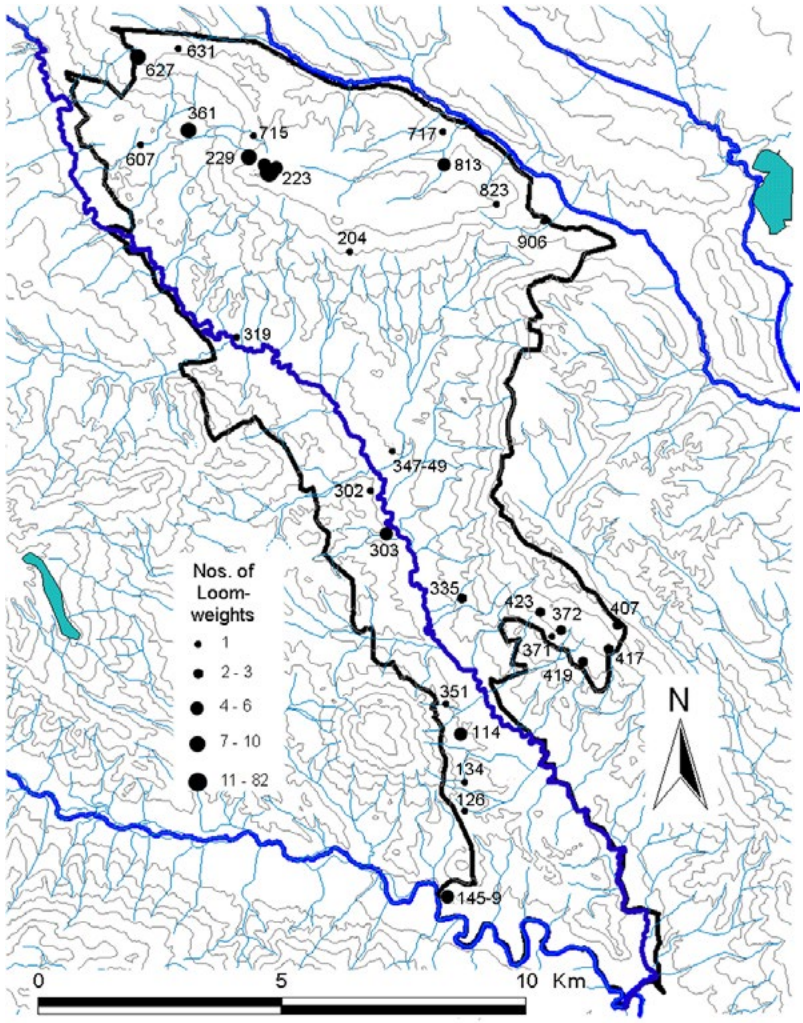
Most of our loomweights were of the *truncated pyramidal* form typical of the Iron Age (Gleba 2008, 128 and 131; Quercia & Foxhall 2012, 367-379, esp. 370). The slope of the sides varied. In most cases it was not very marked, but in some it was more steeply angled (e.g. No.1965), and in others, mostly thin pieces, it was nearly vertical (e.g. No.1991). The loomweights varied in thickness according to the shape of the base. In 46 cases the base was oblong, with longer and shorter sides, while in at least 36, and possibly as many as 45 cases it was roughly square. (There is some uncertainty in the case of damaged pieces). Five of the oblong

weights were so rounded on the top as to be almost bell shaped (No.1984). These differences in shape may relate to the number and thickness of the threads attached to each weight (see below) but since weights of differing shapes were found in the same groups in the Superintendency's excavation on San Felice, this is doubtful.

In the Roman period loomweights tended to be more nearly straight sided and were more often made in a mould (Lipkin 2012, 48), though the distinction is not clear-cut: there were some Hellenistic mould-made weights (Gleba 2008, 134) and it is obvious that not all Roman weights were straight sided or even roughly so. It may be noted, however, that at least 1 weight which was rectangular in section was found at Vagnari and there are a few others with almost vertical sides from other sites with Roman material, including No.1958, another, uncatalogued, from Site 114, and 1 from Site 145-9. They are too much damaged to enable us to judge whether they were mould-made.

Only 4 conical loomweights were found on the Survey, 3 of them from San Felice (Site 223) including 2 large pieces (Nos.1999, 1999b) and 1 much broken. To these can be added 1 found on the excavation (*PSF* tav. IV, 34, no.3). The fourth from the survey was on Site 204 which was predominantly Late Antique but showed signs of earlier frequentation. Such weights were common in Greece from the C7 to the C1 BC. They reached Southern Italy in the C6 BC (Gleba 2008, 129 and 131-2), but their distribution is uneven. They were common at Locri Epizefiri, but were generally rarer in Apulia and Lucania, although 2 were found at Roccagloriosa (*cit.,* nos. 498-499), 2 in the excavations at Pomarico Vecchio (Sartoris in *Pomarico Vecchio I*, 228, note 12), 1 at Monte Irsi (*cit.*, no. 344), and in the survey of the *Chora* of Metaponto (Foxhall 2011, 540). Eighteen, however, were found in the excavations on Botromagno (*Gravina II*, 224-225, nos. 1785-1892), all from contexts of Gravina VIIIa (late C2–C1 BC) or VIIIb (topsoil and unstratified). They may have become more common in the vicinity of the Survey Area in the Late Hellenistic period, after the abandonment of San Felice.

Discoidal loom weights were equally rare in the Survey Area where only 3 certain examples were found, No.1998 from the Roman site 335, and 2 from the Roman imperial Site 229. Disc weights were most popular in Taranto (L'Erario 2012) and in the *Chora* of Metaponto, where they were introduced in the C4 BC (Quercia & Foxhall 2012, 372; Gleba 2008, 132; Foxhall 2011, 541 and 549-553), and in Heraclea (Meo 2015). Numerous examples were found at Cozzo Presepe near the edge of the *Chora,* where they must be dated before the middle of the C3 BC (Morel 1970, 105, figs. 29-31; du Plat Taylor in *Cozzo Presepe*, 382, fig. 151). Outside the territories of the Greek cities, they were much rarer. Three are reported from Roccagloriosa in contexts connected with the



Map 22-1. Sites with loomweights in our Survey Area,

fortification wall of the C4 BC (*cit.,* 295 nos. 500-502), 2 on Monte Irsi in the phases BVII and A1, the late C2 BC (*cit.*, fig. 37 nos. 352-353) and 6 at Gravina in period VIIIa, late C2–C1 BC, or VIIIb, unstratified (*Gravina II,* nos. 1803-1806). Only 1 certain example is listed in the records of the older surveys in the Fossa Bradanica, found on Site A16, a large site S and a little W of Gravina which was founded in the EIA and lasted into at least the C4/C3 BC. In the Italiote Greek cities the disc weights were often decorated, but our examples are not, except for a pebble which seems to have been deliberately pushed into the clay before firing on No.1998.

Three other weights (not on Table 22-1) were anomalous in shape. No.1996 from the Late Roman/ Late Antique site 139 is roughly circular and crudely made by boring a hole through a clipped tile. It was probably not a loomweight. Another, very similar (not catalogued), was found on San Felice. A third (No.1997) also from Site 139 is triangular and was also cut from a tile but more carefully made.

Two very large truncated pyramidal weights from San Felice (Site 223), both badly damaged, are exceptional for their size. One, in its present very fragmentary condition, weighs 1150g and must have been nearly 20cm high since its preserved height to the suspension hole is 16.2cm; the other of which only the top is preserved seems to have been originally about 16cm high and in its broken state weighs some 600g. They are too heavy to have been used as loomweights.

Weights and heights of truncated pyramidal loomweights

A significant number of small loomweights, less then 5.5cm high, 2 of them weighing less than 40g, was found on Sites 223, 407, 417 and 627. They are exceptional on the Survey and on other comparison sites (see below) and must surely be dated to the MIA or LIA when occupation coincided on all 4 sites, and most probably to the MIA since they do not appear on sites where occupation began in the LIA. The type is attested elsewhere in S Italy already at the end of the EIA, though examples of this period are normally in impasto - e.g. at Timpone della Motta where a group of small loomweights was found in a weaving area connected with a late EIA hut (Kleibrink 2006, figs. 49.9a and b), and at Incoronata in the late C8 or early C7 BC (*I Greci sul Basento*, 72-73, nos. 9a-9d). The weight of our smallest examples was about half that of the standard truncated-pyramidal loomweights of the later Iron Age. They must have been used differently, probably attached to fewer warp threads, and suspended more closely together. They were presumably intended for weaving finer wool.

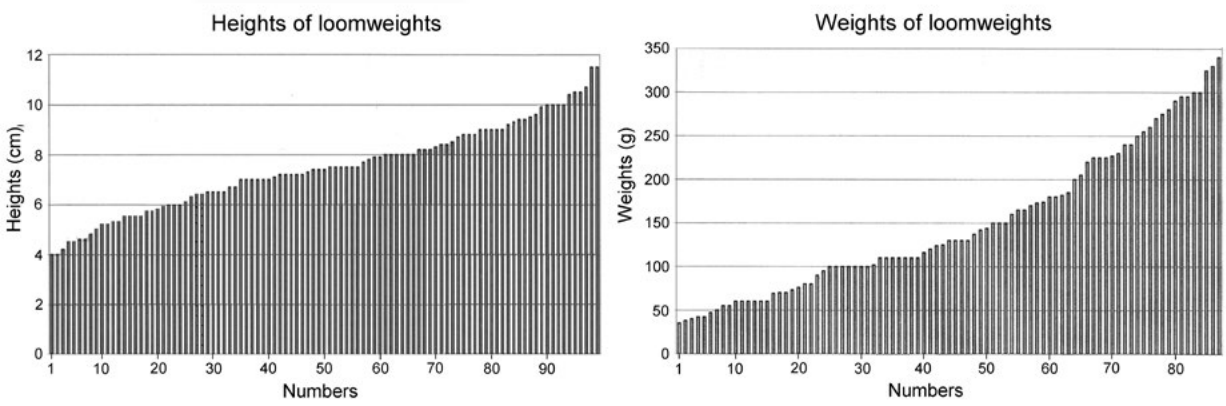
The diagrams below (Graph 22-1) show the variations in height, and weight of all loomweights found on the survey that were sufficiently preserved to be worth including. 87 were weighed and 99 measured. Excluding the ultra-large weights discussed above which were probably not intended for use on a loom, the heights ranged from 4 to 11cm and the weights from 35 to 340g. The average weight was 150g and the average height 7.4cm. The weights are generally approximate and probably a little low, since nearly all the loomweights were at least slightly chipped. The heights are more easily measured, but there is no straightforward correlation between height and weight since some loomweights were narrower than others. Nevertheless, the figures give some idea of the range of loomweights across the Survey and allow some comparisons to be made with loomweights from a few other S Italian sites where the evidence has been adequately published. This may give some insight into the quality of weaving in the areas concerned.

A close comparison can be made with weights from Botromagno, based on the information recorded by V. Wilson (Tatton-Brown) in *Gravina II*, although the weights there have been rounded to the nearest 50g. In the sample of 99 weights, 59 (60%) weighed 100g or less, 19 (19%) weighed between 101 and 200g, 17 (17%) between 250 and 300g, and only 1 over 300g. The average weight was 130g, rather less than the average of 150g for our whole survey, but almost identical with that of 129.9g for the 49 loomweights for which reasonably accurate weights could be obtained on the IA site of San Felice. Since the weights from Botromagno date mostly to the late C2/C1 BC, whereas those on San Felice must be rather earlier (before ca. 300 BC), there can have been no significant change in the weight-function of loomweights in the Late Hellenistic period. The higher average for the whole survey is presumably to be explained by heavier weights on our Roman sites.

On the other hand, the average weight of 150g for the whole survey is considerably lighter than in the *Chora* of Metaponto, where the fully preserved truncated pyramidal examples averaged 497g (Foxhall 2011, 540); and our loomweights are generally lighter than in the lower Po valley where the examples of the Roman period recorded by M. Calzolari (2012, 451) weighed over 400g, and in many cases considerably more.

On other sites the only available indication of size is the height rather than the weight. At Roccagloriosa, 20 published examples of truncated pyramidal weights show a range from 4.0 to 10.2cm, with an average height of 7.3cm, very similar to ours (*Roccagloriosa I*, 292-295). Loomweights on some other sites are larger. At Civita di Tricarico clusters of loomweights were found in the House of the Monolith in contexts of the last half of the C3 BC (Pallud 2008, esp. fig. 284 on p. 528). They are therefore at least half a century later than the loomweights from San Felice. Some 88 heights are given. There were fewer small loomweights than in our Survey Area (only 4 under 6cm) and fewer large ones (only 2 over 10cm), but the average height is markedly larger (8.1cm as opposed to 7.4 in our survey or 7.2 on San Felice alone). At Oppido Lucano exceptionally large numbers of truncated pyramidal loomweights were found, some 111 of which have been published with their heights. On average they were a little higher than ours at 7.6cm. They can mostly be dated to the C4–C3 BC though a few were earlier, including 8 found in tombs which tended to be larger (8.5cm high on average). Five measured only 5cm (none measured less) and 5 more than 10cm but the great majority were between 5.5 and 10cm.

In summary the loomweights from our survey area are rather lighter on average than in most other South Italian sites where the evidence of height and or weight has been recorded.



Graph 22-1 showing numbers of loomweights by height (left) and weight (right)

Uses of loomweights

That the primary use of these weights was for weaving is a well-established fact that needs no further proof (see most recently Quercia & Foxhall 2012). In some contexts, particularly in tombs and sanctuaries, they may have had a symbolic or ritual value (discussed by Di Giuseppe (1995) and Lo Monaco (2005)). Sanctuaries with numerous votives are practically unknown in Peucetia, but objects of ritual significance such as *thymiateria* were sometimes used in houses or deposited in tombs (see discussion in Chap. VII). The practice of depositing a single loomweight in burials is attested at various sites in the region, including Botromagno (*Gravina II* no.104 from a tomb of the 1st half of the C6 BC; Ciancio 1997, 214 nos. 255 and 257 from a tomb of the end C5 BC on Botromagno). De Juliis lists 14 loomweights from burials at Rutigliano (*cit.*, 610), and Lissi Caronna (1980, 134, 140, 145, 227) reports examples from 3 tombs of the C7 to C5 BC at Oppido Lucano, and a surprising 4 from a tomb of the C4 BC. But it was not a widespread practice, and there can be no doubt that the great majority of our weights originated in settlement contexts and were used on domestic looms, as they certainly were on Botromagno (Wilson in *Gravina II*, 218-226; Santoriello 2000, 125).

It is probable that the relatively light loomweights of our area were used for weaving finer wool. Heavy weights were needed for coarse cloth made of thick thread to maintain enough tension on the warp, while for fine cloth, lighter weights were needed since there was a risk of breaking the thinner thread. The number of threads attached to the weight was also significant – the greater the number of threads, the heavier the weight needed to maintain the tension. Apulian sheep were famous for the fine quality of their wool (Wuilleumier 1939, 216-217). Strabo (VI.3.9) remarks on the quality of the wool of North Apulian sheep which was softer but less glossy than that of the Tarentine breed, and it seems likely that the Peucetians were also producing wool of high quality even if they were not yet (in the C4 BC) selling it on the Tarentine market. John Watson's analysis in *Gravina II* of the bone remains from Botromagno, confirms that sheep must have been raised there primarily for their wool, at least from the C5/C4 BC, though more comparative material is needed before it is possible to distinguish between breeds. The fact that the weights used at Metaponto were on average so much heavier suggests that the Metapontines raised a different breed which produced a coarser wool, or that they attached more threads to their loomweights than most of the neighbouring peoples.

In addition to the need for different weights of loomweights for different qualities of cloth, other considerations were the width of the weight, since this partly determined the spacing of the warp threads, and its shape (Mårtensson *et al.* 2007, 2009): flat sided weights touching each other would be less likely to twist as they dangled, but their tops had to be narrower than their bases, at least on the sides away from the suspension hole, to allow space to attach several threads at once – hence the preference for pyramidal weights. On our survey the smaller and lighter loomweights are often rectangular in horizontal section with oblong bases, and pierced through the narrow side (Nos 1941, 1945, 1948). When suspended they would have occupied less space on the loom for their weight than the larger, square-based types, and so are likely to have been preferred for weaving the finest textiles. The correlation between the size of loomweights and their shape is by no means exact but some 75% of the smaller ones (under 7cm) were oblong while about 60% of those 7cm or over were square.

Loomweights that differ significantly in size or shape probably came from different sets. Nevertheless, the loomweights from the dig on San Felice showed a fair degree of variation so some diversity must have been acceptable. Normally on the vertical loom two rows of loomweights were used, each weight having a number of threads attached to it. Experiments recently undertaken in Denmark implied that 22 loomweights per loom and 14 threads per loomweight were about optimal. (For a full report on the technicalities of weaving with a vertical loom using loomweights see Mårtensson *et al.* 2007). Several larger groups have, however, been found (Gleba 2008, 133).

A vertical loom might require several sets of loomweights, with each set having a different weight range. That at least is suggested by a group of 23 weights found on the floor of House 2 of the C4/ early C3 BC on Botromagno which consisted of 5 sets weighing ca. 50, 75, 100 (the most numerous), 125, and 225g (Wilson in *Gravina (PBSR) III (2)*, 132-137. She counted 31 loomweights and 6 sets but included weights from other parts of the site in the calculation). Presumably each weight supported threads with a different

function (colour?) on the loom. Several other sets have been identified in the excavations on Botromagno (*Gravina II*, 226 nos. 1816-1818; Santoriello 2000, 125), indicating the presence of other looms.

Since most weights were hand-made they inevitably showed some variation even if they came from the same set. Given the nature of survey material, it would be surprising to find groups of weights broadly similar in size, weight and form in close proximity to one another which might come from the same set, and on San Felice, where loomweights were most abundant, there are no very convincing "pairs", let alone sets. The few loomweights of similar sizes come from widely separated squares. It is possible, however, that the 4 from site 627 mentioned above, which are approximately the same (very small) size, may represent parts of a set.

Markings and inscriptions

68 of our loomweights, constituting over 46% of the total found, were decorated in some way – a surprisingly high proportion: only about 18% of the 731 loomweights examined by Lipkin in Central Italy were marked (Lipkin 2012, 52). The impressions were made with finger-rings (section 1a), *fibulae* and tweezers (4), reeds, sticks and other devices, and they show an array of motifs ranging from classical figurative designs fashionable in the last half of the C4 to rosettes, stars and simple dots. Two pieces are marked with the outline of a foot (*planta pedis*), a universal symbol of ownership (section 1b), and 4 weights have inscriptions, discussed in section 1e. 2 weights from San Felice have the same motif, a dotted diagonal cross, on a flat top. Otherwise, the markings on each of our decorated loomweights are unique.

Some of these devices indicate female roles. The *fibulae* were used by women to fasten their tunics, with at least one at each shoulder, and several at the level of the arms if the tunic had sleeves. That at least was the case both among the Italiote Greeks (Lippolis 1984, 336), and in Peucetia where some types of *fibulae* (perhaps all types) appear only in female burials (Natali 2006, 581 re *fibulae* of her type 2 at Rutigliano). But more study is needed of dress in these communities. The *fibula*-impressed loomweights are all likely to date to before the end of the C4 BC, by which time buttons had replaced *fibulae* as dress-fasteners, at least among Greek women. It is conceivable that they lasted into the C3 among the indigenous peoples (see note on No.1956 below), although the types that can be identified from the impressions show no development beyond the middle of the C4 BC.

The seals and engraved finger-rings used to make the figured impressions, are also likely to have belonged to women, to judge by the rather small number of pieces found in context in burials, which are nearly always female (cf. Guzzo 1993, 29-49, *passim*). The shapes of the impressions and style of the motifs match Tarentine types of the C4 and C3 BC, and some have iconographic parallels in S Italian red-figure vases of the late C4 BC (see below). 2 with bull's heads were more probably inspired by motifs on coins (Nos.1946 and 1949 – the latter with a ΠΑΥ monogram neatly stamped between the horns).

Some of the pieces with less distinctive and therefore less datable motifs have comparanda elsewhere, notably at Oppido Lucano, Pomarico Vecchio and Monte Sannace, where they can be dated broadly to the 2nd half of the C4 or early C3 BC. A few pieces can be matched at Gravina where the practice of embellishing loomweights appears to have continued in period VIIIa (late C2/C1 BC), but these layers contained much re-deposited material so these comparisons must be assessed with care.

The 4 inscribed loomweights all display letters in the Greek alphabet. No.1962 has a single alpha. No.1959 has a short sequence of letters which appears to be meaningless unless it had some magical significance. No.1961 found near Monte Irsi just outside the survey area has a longer inscription, perhaps an Oscan woman's name. On No.1949 the monogram ΠΑΥ is likely to represent the first syllable of a Greek name, but the presentation of it is unique. Its significance is discussed below and in Chap. VIII.

The significance of the markings

The significance of the markings has been, and continues to be, much debated. The most comprehensive explanation so far proposed was put forward by P. Mingazzini (1974) who argued that the inscriptions and stamped and incised motifs all had the same function: they were *marche di fabbrica* which guaranteed the quality of the cloth produced in the workshop owned by the possessor of the loomweight, who was identified by the inscription on the loomweight or by the motif impressed on it by a seal or finger-ring. Since only a small proportion of loomweights is decorated or inscribed, Mingazzini held that only one loomweight in a set would be so marked, and that it was attached to warp threads at one end of the loom, as the last in a series of weights. When the weaving was finished the loomweight was detached and transferred to the woven fabric so that it might be a guarantee to the purchaser of the quality of the cloth as well as acting as a control on the output of the weaver and the quality of her (or his) work. The simpler marks such as the crosses or circles stamped or incised on some loomweights were used, according to Mingazzini, to identify the textiles woven by illiterate workers, some of them perhaps slaves, who were employed in the workshops, and who could be held accountable for any flaws in the products. The theory implies that already in the late C4 BC the textile industry was organized on a commercial scale, in which well-to-do individuals owned workshops and sold their products to discriminating customers. These could have been middle-men who sold the textiles on elsewhere, perhaps in the market at Tarentum. The theory suits what is known from literary evidence (chiefly the epigrams of Leonidas of Tarentum) of the organization of the weaving industry in Tarentum in the C3 BC (discussed in Chap. VIII). The theory is attractive, but even if it is valid for some loomweights in some places at some time, it is not necessary to suppose that it can account for all instances.

In fact, the inscriptions suggest that there may have been a variety of reasons for marking loomweights. In her study of Messapic inscriptions on loomweights from Apulia, Simona Marchesini (1995) lists 63 instances, including 6 pieces from Gravina (though she omits the examples from the British School's excavations on Botromagno), and classifies them hypothetically under 7

headings. Five are trade marks (*marche di fabbrica*), represented only by doubtful instances including some names and some single or double letters. They might be explained in Mingazzini's terms. Seven are simple names given either in full or in abbreviated form (5 of them male, held to be producers, and 2 female, held to be owners of the loomweights). Two are names of divinities. Four are dedicatory formulae. The largest group consists of 29 letters or symbols classified as relating to the modes of production. Seventeen are of uncertain meaning.

It is normally supposed that single letters (like the *alpha* on our No.1962) are abbreviations of names, but an alternative interpretation has been proposed by F. Ferrandini Troisi (1986, 1992) who has argued that single letters and pairs of letters are more likely to relate to the modes of production, and that they probably served to mark the position of the weight in a series of 30 or so used in a vertical loom. In her view this would have been especially desirable if the weaver was using different coloured threads since it would enable her (or him) to locate the position of the weight to which the coloured threads had been assigned more easily. As so often with loomweights, it is an interesting argument that lacks conclusive proof.

Many of the inscriptions, whether in Greek, Oscan or Messapic, are names. A small proportion are names of divinities and are likely to imply that the loomweight was dedicated in a sanctuary or household shrine; but most are of human beings. They can hardly refer to the potter who made them, or to the owner of the kiln in which they were fired, if only because it seems unlikely that a potter would want to claim responsibility for making such low-grade objects. They are most likely to indicate the owner of the loomweights, as must the signet impressions, and possibly other stamped and incised motifs. The context in which they were used is not easily established. The majority of the names are female, and the signet impressions probably also imply female ownership (as we have seen), so it is reasonable to assume that they identify female weavers. But Marchesini's assumption that male names record producers (i.e. owners of workshops or commercial middle-men) can be challenged. Ulrike Roth (2011) has drawn attention to the fact that Oscan inscriptions on loomweights datable between the end of the C4 and the end of the C2 BC record at least as many male names as female, and that the inscriptions offer no grounds for distinguishing between their roles. It is equally difficult to see that there is a good reason to differentiate between the gender roles of the males and females recorded on the Messapic loomweights. If there is a distinction to be made, it is more likely to be period-dependent. The signet impressions which we have taken to indicate female ownership are mostly of C4 type, whereas a majority of the inscribed names date between the C3 and C1 BC. It is possible, therefore, that more males were employed in weaving in the Hellenistic period when the weaving industry became more highly organized, and production for commercial purposes was controlled by powerful middlemen (though if Mingazzini is right, this process had already begun before the end of the C4 BC). This is discussed more fully in Chap. VIII where it is argued that the monogram ΠΑΥ inscribed over the bull's head on our loomweight No.1949 is likely to be the symbol of such an entrepreneur.

These are all tentative explanations. There can be no absolute certainty about the function of marks on loomweights, and it is no doubt wrong to look for a single explanation. But whatever their practical function, L. Foxhall (2011) is surely right in arguing that the marks demonstrate the personal character of these objects and emphasize the weaver's pride in her or his craft (so too Quercia & Foxhall (2012)). Stamped loomweights may even have been considered heirlooms, and passed on to later generations, as Foxhall has suggested in the case of some of the pieces from the Metapontine Chora.

II. Catalogue

In the following section 60 loomweights are listed, most of them with some sort of mark or decoration on them although 6 are included at the end for their slightly unusual shape. A further 107 were not included, 14 of which had blurred decoration. All the loomweights listed except Nos.1996 – 1999b are of the truncated pyramidal form. Where relevant these are designated obl. (oblong) or sq (square).

A. Loomweights

1. Truncated-pyramidal weights

1a. With signet ring or seal impressions

Nine loomweights are decorated with figurative representations, motifs impressed from a metal matrix on a finger-ring or (less probably) from an engraved seal-stone normally worn on a ring. Such stamps occur frequently on loomweights in South Italy. Carrabba (1989, 111-113 and figs. 59-68) has published a notable group from Monte Serico, including 1 piece in which the edge of the ring and bezel was impressed in 1 side of the loomweight below the impression made from the bezel (*ibid.* fig. 50a and b). Other sites close to our area where large numbers of loomweights with ring or seal impressions have been found include Oppido Lucano where at least 56 are reported (Lissi Caronna 1972, 1980, 1983, 1990–1991), Civita di Tricarico (de Cazanove 2008, 534-536 and fig. 341) with 25 oval stamps, Monte Sannace (*cit.*, 198 and tavv. 286-7, 356, 362 – numerous examples) and Gravina where 5 were recorded in *Gravina (PBSR) III (2)*, 132-136, and another 17 in *Gravina II*, 223. Similar impressed motifs were common on the disc loomweights in use in the Metapontine plain (Foxhall 2011, 545-546), but apparently less so at Taranto. A notable group found in early excavations of Roman buildings at Venosa are probably redeposited in these contexts (*Museo Venosa* 128-134). They are likely, however, to date after the foundation of the Latin colony in 291 BC, unless they derive from the poorly attested Samnite settlement that preceded the colony.

From the detailed study of Tarentine finger-rings by A. Alessio (1984) it is possible to recognize the types and chronological range of the rings that were used to make these impressions. The art of engraving the bezels of rings began in the city in the C6 BC, reached its greatest height there in the 2nd half C4 BC, and thereafter declined progressively until it came to an end in the C1 BC. It is probable that all our impressions derive from rings of Alessio's 2nd group, *anelli interamente in metallo, con castone liscio, inciso o a rilievo*, which were popular throughout the C4 and ceased to be made ca. 250 BC. The great majority were in gold or silver, though bronze (sometimes gilded) was also used. The engraved rings found in a few graves at Rutigliano are in bronze, imitating Tarentine types in precious metals, although they are found in rich tombs (Natali 2006, 596-598). Some of the rings used to make the impressions on our loomweights, especially the less clear ones, may also have been in bronze.
The earliest typologically are likely to be the almond-shaped impressions, Nos.1941–1944, which correspond to Alessio's Type VI: *Anello in oro a castone ovale appuntito e profilo ricurvo* or VIa (in silver), or to her Type VII: *Anello in argento a castone appuntitto e piatto, inciso*, or VIIa (in gold). Type VI, with curved bezel, was developed in the C5 BC and was still in vogue in the mid-C4; Type VII, with flat bezel was current in the last half of the C4. It is difficult to tell whether our impressions were made with a curved- or flat-surfaced bezel, but the fact that the image on our No.1942 is most crisp towards the middle may suggest that it was made with a ring of Type VI; perhaps also Nos.1941, 1943 and 1944 in which 1 end of the impression is clearer than the other.
The remaining impressions of more elliptical form all correspond to Alessio's Type VIII: *Anello in oro a castone ellitico piatto, inciso*, or VIIIa (in silver) which developed out of the almond-shaped Type VII, still within the last half of the C4, and continued into the C3, becoming gradually rounder. Our pieces Nos.1945–1948 are all likely to fall within the C4, with the narrowest, No.1946, being perhaps the earliest. No.1948 is unusual in having the image impressed in negative from a bezel decorated in relief, a form attested on a few examples published by Alessio (1984, nos. 192, 212). The possibility that some of the elliptical impressions were made from an engraved stone or glass-paste bezel cannot be ruled out, especially in the case of No.1943 in which a slight channel surrounding the image may correspond to a metal frame holding the bezel in place, broadly comparable to Alessio's Type XVIa, *anello in oro con pietra incisa inserita in un castone circolare piatto dai margini del castone lisci*, but not round. At Taranto such rings date after the beginning of the C3 BC. There is a fine example from a burial on the C2 BC from Metaponto, with a sitting bull approached by a bee: Lo Porto 1966, 188-189, figs 42.2, 45.

In addition to these pieces with more-or-less identifiable motifs, 2 other loomweights from Site 627, have a blurred oval seal on top, a further 2 on Site 627 (small) have seal impressions on the side, 1 from 223 has a small depression on top, and 1 from Site 813 an impression of a finger ring with a round bezel on the side (P1884).

1a-1. Almond-shaped impressions, in relief (corresponding to Alessio's Types VI and VII)

1941	223 E46N29	Pl.32. P4798. Obl. Pale yellow-brown clay, pale buff surface; numerous black inclusions, some up to 2mm. Leaf-shaped impression ca. 1.1×0.8 on side at right angles to long dimension of weight, showing a figure (charioteer) driving 2 horses. Ht. 5.0, base 2.9×3.2, top 1.5×1.8, wt. 40g. The charioteer illustrates the process of modification of complex images to fit the field of the bezel, which was typical of Tarentine finger-rings of the C4 BC (Alessio 1984, 255). The horses seen in three-quarter view, are characteristic of late Apulian vase painting (as, e.g. on an oinochoe of the Wind Group datable shortly before the end of the C4: Trendall 1989, fig. 267; *RVAp* II, 933 no. 28/128, pl. 367.1). The *biga* is hardly represented – if at all: it is difficult to be sure from the blurred impression, and the charioteer has been moved rather incongruously behind the horses. He towers above them, with his right arm turned downwards apparently to whip the flank of the trace horse. He probably held something over his left shoulder but the indications of it (above the ears of the horses) are too indistinct to be sure. Whatever the case, the motif owes much to representations of the rape of Persephone of the late C4 BC, seen, for example, in late Apulian RF, e.g. on a *lekythos* by the Underworld Painter, ca. 350–340 in Virginia Museum: K. Hamma in Mayo (ed.) 1982, 129-132, no. 50.
1942	223 E46N29	Pl.32. P4773. sq. Steep sides. Much battered. Reddish-brown slightly micaceous clay, numerous brown and a few white inclusions and air holes. Worn signet impression (w. 0. 8) on top showing a man with bare legs, probably facing r, with a mantel over his r shoulder, and roughly formed vertical object beside him on the r (Herakles with club?). Pres. ht. 9.4, base missing, top 2.8×2.8, wt. 120g. Cf. Alessio 1984, 277 no. 176, Herakles resting on his club on a scarab ring from a Tarentine tomb of the late C4 BC.
1943	223 Ar.226	Pl.32. P448. sq. Pale yellowish-brown clay. Slight chip at base. Oval seal impression on top 1.5×1.0, worn, showing Scylla facing right. Ht. 8.8, base 4.5×4.5, top 2.2×2.2, wt. 180g. In spite of the worn condition of the impression, especially in the upper part, the tail is clearly defined, and there are traces of a dog springing from her waist, and of her head turned downwards and to the right, with streaming hair; probably also of her bent left arm. The motif was popular in W Greece, e.g. on the reverse of a tetradrachm of Acragas, 420-415 BC (Franke & Hirmer 1964, no. 175), and on a Paestan RF krater by Asteas in the J. Paul Getty Museum: Jentoft-Nilsen 1983, 140 figs. 1, 3, ca. 325 BC. For an earlier version of the theme, see Boardman 2001, pl. 453, Early Classical–ca. 480–450 BC.
1944	627 Z	Pl.32. P1721. obl. narrow. Drab brown clay, damaged at 3 corners. Leaf-shaped impression on side ca.1.8×1.0 showing a seated woman/ goddess facing r, draped, with hair projecting behind. Ht. 5.2, base 2.0 ×3.1, top 1.4×2.0, wt. 38g. The seated female figure facing right with her *himation* covering her legs, is a common theme on Tarentine finger rings of the second half of the C4 (Alessio 1984, 257). She normally holds an object (e.g. a bird, or an Eros) in her right hand, but the image on our piece is too blurred to press the interpretation further. The disproportionately large head is characteristic of images of women on a group of Western Greek finger-rings dated by Boardman (2001, 227; cf. 229, fig. 240) to the later years of the C5 or early years of the C4 BC.

***1a-2. Elliptical impressions** in relief* (corresponding to Alessio's Type VIII)		
1945	223 E39N30	Pl.32. P4645. obl. Almost complete but damaged at base. Grey-brown clay smoothed lighter on surface. Air holes and numerous brown and white grits, some large incl. 1 pebble 8mm across. Oval ring impression on top 1.6×1.2 showing a centaur with a wine sack. Ht. 6.1, base 3.0×ca. 4.4, top 2.0×2.4, wt. 80g. The motif of the centaur rearing up derives ultimately from the Parthenon metopes. It appears again, without the wine sack, on an almond shaped seal from Oppido Lucano: Lissi Caronna 1980, 220, fig. 133 (C4/ early C3 BC).
1946	223 Ar. 225	Pl.32. P529. obl. Broken vertically but not far from edge. Greyish-brown micaceous clay with some white shell inclusions. Oval seal impression on top 1.1×0.8, 0.1-0.2 deep, with image of a bull's head, garlanded. Ht. 7.9, base >2.5×3.2, top 2.0×2.3, wt. 76g. Similar bulls' heads recur on seal impressions on 2 loomweights from Monte Serico (Carrabba 1989, 111, MS-106-107, figs. 57 (with garlands) and 58), also on 2 from *Monte Sannace*, (*cit.*, 198, tavv. 286.7 and 362 no. 12 of phase III, mid-C4–C1 BC). A bull's head with garlands hanging from the horns appears on diobols of Rubi (Ruvo) minted ca. 325–275 BC: *HNItaly2*, nos. 811 (with the letters PY between the horns) and 812. Cf. also No.1949.
1947	223 Ar. 226	Pl.32. P450. sq. Almost complete. Orange-brown micaceous clay. Oval seal impression, upside-down, on 1 side 1.2×1.0, showing a kilted figure on horseback perhaps trampling down an enemy. Ht. 7.3, base 3.7×3.9, top 2.2×2.3, wt. 124g. The mounted figure on a rearing horse is derived, at some remove from the Parthenon frieze, and appears frequently on later Apulian RF, e.g. on the neck of a volute-krater by the Baltimore painter in the Jatta Museum in Ruvo, datable in the 3rd quarter C4 BC: Sichtermann 1966, 124 K73.
1a-3. As 1-b, but with the image impressed from a bezel decorated in relief		
1948	223 Ar. 245	Pl.32. P667. obl. Slight break on 1 side of weight. Pinkish-brown clay with some white shell inclusions. Oval seal impression 1.7×1.1 on 1 side showing Helios frontal with radiate crown in chariot drawn by 2 horses. Ht. 7.5, base 3.3×4.4, top 1.5×1.9, wt. 100g. For similar seal impressions, see Lissi Carona 1980, 220 pl. 133.h; 1983, 332 no. 7 and figs. 125, 128.7, from Oppido Lucano (C4/ early C3 BC); *Museo Venosa* 129, f.1 from the Roman bath complex, and f.2 from *Domus* A in Venusia (presumably redeposited in these contexts). This is a simplified version of Helios in a 4-horse chariot, a popular motif in Late Apulian red figure vases of the ornate style, as. in the tondo of a phiale by a painter of the Stuttgart Group from the Varrese Hypogeum in Canosa ca. 325–300 BC: *RVAp* II, 979 no. 216; Cassano 1992, 294-295 no. 121. The motif recurs on a circular loomweight from Metaponto: Quercia & Foxhall 2012, 372 fig. 4b.
1a-4. As 1-b, but larger		
1949	813 C1	Pl.32. P1852. sq. Hard reddish-brown clay, cream surface out. Top broken off above suspension hole, and bottom damaged. Large impression 2.3×1.7, 0.25 deep, showing a bull's head, with a horn on viewer's right and an antler on left above ears. Between the horn and the antler, a monogram ΠΑΥ (or ΑΠΥ). Ht. 7.2, base 4.5×4.5, wt. 230g. For the bull's head cf. No.1946. The fact that he has both a horn and an antler suggests that this is a mythological creature undergoing a metamorphosis, and recalls Ovid's brief account of a young bull transformed into a stag by Liber/ Dionysus to conceal his son's theft in the woods of Mount Ida (*Metamorphoses* VII, 359-360). The monogram might be resolved as either ΠΑΥ or ΑΠΥ, most probably ΠΑΥ which is the initial syllable of many Greek personal names, e.g. *Pauson* recorded on a lost lead tablet from a hypogeum at Tarentum: Ferrandini Troisi 2015, 96-97. C. Santoro (1982, 216, *P* 1,7) publishes an otherwise undecorated truncated pyramidal loomweight with the inscription ΠΑ, said to have come from Botromagno, in Bari Museum. The piece has no context, and it is impossible to say whether or not it refers to the same individual. A discoidal loomweight from a context of the C3–C2 BC at Heraclea published by Meo (2015, 233 C180) is stamped with 3 separate letters interpreted as ΠΛΥ (?). But the second letter has a short diagonal bar which suggests that it is better read as alpha, in which case the text would be ΠΑΥ. Again there is no need to suppose that it refers to the same person as our piece. For the significance of No.1949, see Chap. VIII.
1b. With impressed or incised planta pedis *Planta pedis* stamps are a common feature of discoidal loomweights used in Metaponto and its territory in the C4/C3 BC: cf. Liseno 2004, tav. XXXI.g from the Favale votive deposit at Metaponto; Foxhall in *Chora Metaponto III,* 550 no. 20, 552 no. 30 from sites in the *Chora* of Metaponto; Foxhall 2018, 1030 from the sanctuary at Pantanello (12 examples). Quercia & Foxhall (2012, 371-372) argue that *planta pedis* impressions are found only at Metaponto among the Greek cities of S. Italy. The use of the motif on our truncated pyramidal loomweight(s) is likely therefore to be influenced by the Metapontine practice. For another example, see *Monte Sannace,* 198 and tav. 286.4 from phase III, C4–C1 BC.		
1950	717	Pl.32. P1819. sq. Reddish-brown clay with cream surface out; damaged at the top and edges. Two impressed oval stamps ca. 1.2 long with sole of a right foot (*planta pedis)*. Ht. 10.0, top 1.7×1.7, base 4.8×4.8, wt. 200g.

1951	906 A3	Pl.32. P2011. obl. Base with rounded corners. Broken on 1 side and on part of base. Pale pinkish-brown clay. Lightly incised line on 1 side possibly the outline of a foot; 3 fainter incised slightly curved lines on adjoining side. Ht. 8.0, base 2.25×3.0, wt. 140g.
1c. With stamped rosette or star motif Loomweights were frequently stamped with rosettes or stars, either on 1 or both of the main facets, or on the top. The 2 motifs seem to have been regarded as interchangeable, with stars of crudely incised lines taking the place of stamped rosettes. Loomweights decorated with impressed rosettes are common throughout South Italy in the last 4 centuries BC (e.g. *Monte Sannace*, tav. 359.2, 4 and 6; *Museo Venosa* 131 and tav. X, f.13 and f.15 from Venosa; Lissi Caronna 1980, fig. 134.5 and 4, 1983, fig. 129.13, fig. 195 *vano* 1,9, *vano* 2, 5, *vano* 3, 14 and 15 from Oppido Lucano; *Pomarico Vecchio I,* 2, tav. 91.9, tav. 93.1; *Gravina (PBSR) III (2),* 133 fig. 56, 2,3,4 from Gravina Botromagno, Wilson in *Gravina II*, 221 – 5 rosettes and 11 crudely incised stars) but unusual elsewhere. These impressions were made with a ring such as De Iuliis 1984, 291, no. 212, in gold, from a Tarentine tomb of the 3rd quarter C4 BC. The star was used on various other utilitarian ceramic objects, as on the plain ware bowl No.1195 and *dolium* No.1870.		
1952	145-9 Ar. 147 E4	Pl.33. P193. obl. Drab grey clay, crudely shaped. Two impressed rosettes Ø 1.7 on each of the broader sides, separated by a narrower badly formed motif, (palmette?). Ht. 7.0, base 4.1×5.4, top 2.7×3.2, wt. 174g. Cf. esp. M*onte Sannace,* tav. 359. 4 no. 4 – a close parallel made using a similar ring; also Carrabba 1989, fig. 22 from Monte Serico.
1953	407 A4	Pl.33. P1078. sq. Unusually small. Damaged at bottom but nearly complete. Pale yellowish-brown clay. Stamped with 3 rosettes, 1 above the other,on each side and a rosette on top. Pres. ht. 5.5, base (broken) 2.4×2.4, top 1.5×1.7, wt. 35g.
1954	407	Pl.33. P1068. sq. From a young adult female burial disturbed by clandestine diggers. Slender. Pale yellowish-grey micaceous clay with scatter of minute angular grey inclusions. Incised star motif on each side of intersecting lines, some with "V"s in the interstices – a variant of the rosette motif. Ht. 6.6, base 2.8×3.0, top 1.2×1.5, wt. 55g. Cf. Lissi Carona 1980, 220 fig.134, 4; 1983, fig. 129.13 from Oppido Lucano; Naso *et al.* 1998, tav XLIII.2 from Botromagno.
1955	223 E28N24	Pl.33. P4802. sq. Long narrow. Pinkish-brown clay. Damaged half way up. Star of intersecting lines crudely incised on top. Ht. 7.5, base 3.0×3.4, wt. 70g. For rosettes in this position, cf. Lissi Caronna 1980, 220, fig. 134.4-5; 330 fig. 125.5, 14, and 333 fig. 129.13 from Oppido Lucano. They perhaps indicate the multiplicity of threads by which the loomweight was suspended.
1d. With fibula and tweezer impressions. Fibula impressions are common on loomweights, e.g. at Gravina, Parco San Stefano (Wilson in *Gravina (PBSR) III (2),* 133-134) and on Botromagno (*Gravina II,* 222-3 and fig.101), at Monte Serico (Carrabba 1989, 93, MS-15), Oppido Lucano (Lissi Carona 1980, 1983; 1993, figs. 105.1, 108, 32-25, 246.35). In S. Italy they appear more on the inland native settlements than in the Greek cities (Quercia & Foxhall 2012, 373). Tweezers appear on lomweights from *Monte Irsi* (*cit.,* no. 348), Monte Serico (Carrabba 1989, 103 MS-72, 73, figs. 34, 35 (described as *fibule "a pinsa"*), *Pomarico Vecchio I*, tav. 92.18; in combination with a *fibula* at Civita di Tricarico (*cit., I*, 534 and fig.340) and more doubtfully at Oppido Lucano (Lissi Caronna 1990–1991, 280 fig. 105.11). It is sometimes assumed that the tweezers were women's toilet apparatus (Quercia & Foxhall 2012, 370), but they could equally well have been implements for manipulating the woollen threads, for example in passing them through the eye of a loomweight.		
1956	223 E22N34	Pl.33. P4206. sq. Almost intact – slight damage to 1 side of top. Hard greenish clay (overfired). One impressed line across top at right angles to pierced hole. Clear impression of a *fibula* on 1 side and another of the same *fibula* less clear on the other (max. lg. 0.8). Ht. 7.4, base 3.8×3.8, top 2.1×?, wt. 142g. Cf. Lissi Carona 1980, 220 fig. 134.2; 1983, 330 fig. 125.1 and 9, photo fig. 28.1 from Oppido Lucano, last half C4/ early C3 BC; *Gravina II*, no. 1754, period VIIIa, late C2/C1 BC (redeposited?); The *fibula* used in the impression was of a type made in 2 parts, a semicircular bow with square upright catch-plate and protruding knob (normally upright but in this case bent backwards towards the bow), and a pin with up-turned finial and a socket below it through which the bow passed. The end of the bow was then coiled to secure the pin in place. The type is discussed by E. Macnamara in *Gravina II*, 222-223. It was popular in S Italy in the late C4, perhaps continuing into the C3 BC. There is a particularly good example in silver from a hoard at Oppido Lucano found with coins that give a terminal date for the deposit in the late C4/ early C3 BC (Lissi Caronna 1980, 248 fig. 184).
1957	223 E42N32	Pl.33. P4750. sq. Pinkish-brown clay with some white inclusions, fairly steeply angled sides, flat top. Fibula impression on 1 side. Ht. 9.0, base 3.8×4.4, top 1.2×1.5, wt. 100g. The *fibula* was of the same type as No.1956. Cf. also *Monte Irsi* no. 347.
1958	114	Pl.33. P110. obl. Damaged at the edges, and broken at the top across the suspension hole, orange-red fabric. Impression of tweezers (top missing). Edges rounded towards base. Pres. ht. 8, wt. 235g. Cf. *Monte Irsi,* fig. 37, no.346; *Pomarico Vecchio I*, 2, 100-101, no.18 (2 examples).
1959	223 E35N22	Pl.33. P582. sq. Complete. Impression probably of tweezers, lg. ca. 4.2 on 1 side. Ht. 10.0, base 6.0×6.0, top 2.1×2.5, wt. 300g.

1e. With inscriptions See also No.1949 in section 1a-4 above		
1960	813 G3	Pl.33. P1866. sq. Hard fired reddish-brown clay, pinker surface, some small white grits. Inscribed before firing near the bottom on 1 side ΖΛΛΛ. Ht. 8.8, base 4.0×4.0, top ca. 2.0×2.5, wt. 225g. The letters are the same in Greek, Oscan or Messapic, but are unintelligible in any language. The fact that another loomweight from the vicinity, *Gravina II*, no. 1743 (of Period VIIIa, late C2/C1 BC) is decorated over the whole of 1 side with V or Λ motifs suggests that the symbol may have had some magical significance.
1961	spor.	Pl.33. P2405. sq. Hard reddish-brown clay. Chipped on top right corner of inscription side. Inscription down 1 side roughly incised before firing. Ht. 6.3, base 3.9, top 1.5. The loomweight was found by Sig. M. Calia on a site near Irsina, on the Lucanian side of the Basentello, and was published by him in a local history of Irsina: Calia 1998, 184. The photograph, republished here, was kindly supplied by him. We are grateful to Professor Paolo Poccetti for the following notes on the inscription, based on the photograph: The letters are in the Greek alphabet. Line 1: the reading APA (*ara*) is clear. Interlineation: a mark in the form of "D" can be read, for which I see no explanation except as a variant of P (*rho*). Since it is placed under the letter P of line 1, it was perhaps a correction, adding another letter. In that case the sequence of letters would read APPA (*arra*). Line 2: the reading ΑΣΚ (*ask*) seems clear. But there may have been a preceding letter in the damaged area at the left margin. Line 3: The first, damaged, letter at the left margin is problematic since the traces of it do not allow us to identify it with certainty with any letter of the Greek alphabet. A vowel seems to be excluded. The two visible traces could be either Γ (gamma) or Λ (lambda) but in either case their form and dimension are unusual. The second letter might be read as either E or Σ, but in combination with the following letters I and A, the reading EIA is preferable given the impossible cluster of consonants ΓΣΙΑ (*gsia*) or ΛΣΙΑ (*lsia*) that would otherwise result. The complete line would then read either ΛΕΙΑ (*leia*) or ΓΕΙΑ (*geia*). Of these the reading ΛΕΙΑ seems preferable, especially since, taken together with ΑΣΚ in Line 2, it would allow the possibility of reading ASKLEIA (*askleia*), a sequence which is phonetically plausible. The nature of the object and the ending of the last line (- EIA) make it probable that we are dealing with a female name, Greek or non-Greek. But in either case there is no other evidence. The double name APPA ASKLEIA (*Arra Askleia*) implies more likely a non-Greek name: women in the Oscan world could have two names which is not the case in Greek circles. For the first name I suggest that AP(P)A could be the feminine form of the Oscan name ARRIES (attested in Lucania) and the Latin one ARRIUS. The second name, ASKLEIA, might be the feminine of a Greek name ASKLES or ASKLOUS. In that case we would have a woman with two names, one Oscan, the other Greek. But it is perhaps also possible that the two names refer to different people.
1962	223 E38N26	Pl.33. P4792. Top third only, including hole; graffito on top incised after firing – probably an *alpha*. Pinkish-brown clay, some white inclusions and a little mica, smooth lighter surface. Pres. ht. 2.5, top 1.3×1.5, wt. 20g. Single letter inscriptions on loomweights are common in South Italy, as for example at Monte Sannace where Δ, Π and Ω appear on published loomweights, either incised before (?) firing or (as in the case of 1 of the Δs), stamped (Rossi 1989, 198 and tav 357, 1-4). Alpha is said to occur as well but is not illustrated). The letters Π, Σ, B, T, Δ, V and perhaps R occur on loomweights from Monte Serico: Carrabba 1989. Single letters stamped or incised on loomweights have been variously interpreted as initial letters of personal names, or as marks indicating the position of a weight on a loom (see Introduction).
1f. With reed impressions Circles made from reed impressions appear sparsely in S. Italy, but are attested at Monte Serico (Carrabba 1988) and at Castiglione near Conversano: Caprio in Ciancio & l'Abbate 2013, 474-475, figs 32.19 and 34. 2. They appear on our survey only on Site 223 (San Felice) on exceptionally narrow, unusually flaring weights, in 2 cases on the sides and in 3, more lightly impressed, on the top.		
1963	223 E35N20	Pl.33. P4793. obl. Slight curve on wider sides. Most of top and one corner of base broken off. Grey-brown fairly hard fabric, fairly large (up to 2mm) black and white inclusions. 2 sides decorated with a vertical row of circular reed imprints flanked by others; another on the top, damaged. Ht. 5.3, base 3.0×4.2, top ca. 0.8×1.5, wt. 60g. cf. Carrabba 1988, fig. 29 from Monte Serico; Caprio in Ciancio & l'Abbate 2013, 474 pl. 32.19 and pl. 34. 2, C6–C5 BC.
1964	223 E50N21	Pl.33. P4927. obl. Narrow, broken short of base. On 1 side 2 impressed circles, 1 0.5 deep, the other 0.2 deep. On the other side 3 impressed circles irregularly spaced about 0.3 deep. On top one circle Ø 0.4, 0.2 deep. Hard pinkish-brown fabric. Pres. ht. 4.5, top ca. 1.0×1.4. Cf. Caprio in Norba-Conversano 474, fig 32.19 (photo fig. 34. 2), C6–C5 BC.
1965	223 E34N22	Pl.34. P4748. sq. Almost complete though worn. Three reed stamps on top. Pinkish-brown clay, some white inclusions. Ht. 6.4, base 4.4×4.4, top 1.4×1.8, wt. 110g.

1966	223 E34N22	Pl.34. P4774. obl. 1 circular reed imprint on top. Dark grey micaceous clay with numerous black and white inclusions, a few up to 1.5mm, smooth and pinky brown on surface. Broken vertically. Ht. 6.0, base ca.5.0×?, top 1.3×2.2, wt. 90g.
1967	223 E47N26	Pl.34. P4769. obl. Two and a half circular reed marks on top. Very faint impression of a *fibula* with raised terminal knob on side. Dark grey clay in core fired reddish-brown on surface; some mica. Ht. 6.7, base, 3.0×4.6, top 1.3×2.0, wt. 100g.
1g. With impressed circles Made with a simple ring. The motif is not uncommon, being found e.g. at Satrianum (Holloway 1970, 23-5, no. 326); at Oppido Lucano (Lissi Caronna 1983, 301 fig. 90.2-3); on Botromagno (*Gravina II*, 221); in the *Chora* of Metaponto, on a round weight (Foxhall 2011, 552 nos. 32, 33).		
1968	223 E29N19	Pl.34. P4776. sq. Circular impression on side. Part of base and up to nearly half of 1 side and top missing. Reddish-brown fairly hard fired slightly micaceous clay with some black and a few white (up to 1mm) inclusions. Ht. ca. 7.9, base 4.9×4.9, top ca. 2.3×2.3 but much damaged, wt. 150g.
1969	223 E51N23	Pl.34. P4930. obl. Complete except for large chip on 1 corner, damaged on 1 side. 2 impressed rings, 1 (Ø ca. 1.4) on each narrow side. Ht.7.2, base 4.2×4.5, top 1.6×2.6, wt. 125g.
1970	223 E13N28	Pl.34. P548. obl. Badly broken. Reddish-brown clay fired pale brown on 2 surfaces. Impressed ring Ø 1.7 and 0.1 deep on top and on 1 side. Pres. ht. 7.0, top 2.8×3.2, wt. 120g.
1971	114 B1	Not illus. P85. Large fragment (approx. half) of loomweight with impressed circle (Ø. 1.7) on 1 side. Buff orange fabric. Ht. 9.0, wt. 107g.
1h. With grooves or cross on top The motif was common further north – Lipkin, (2012, 52) reports 63 from her sample in Latium – but rather less so in S. Italy, though there are parallels at Oppido Lucano (Lissi Caronna 1983, fig. 125, *vano* 3.11), *Pomarico Vecchio* (cit., *I.* tav. 91.13), *Civita di Tricarico* (2008, fig. 341 nos. 1179, 1180, 1182, 1185), Venosa (*Museo Venosa,* 131 and tav. X, f.12), *Monte Sannace* (tav. 359.1) and Botromagno (*Gravina II*, fig. 100 no. 1734). Several loomweights found in the recent excavations on San Felice have the same motif: Santovito in *PSF*, 140, tav. IV.34.		
1972	223 E42N24	Pl.34. P4772. obl. Most of base broken off and much of top. Single incised line across top 4mm deep and 6mm wide. Ht. 9.9, base est. 5.2×5.8, top ca. 3.0×3.3, wt. 260g.
1973	223 E14N28	Pl.34. P586. obl. Broken. Impressed line on top. Pinkish-brown clay, paler surface. Ht. 7.4, top 2.0×2.5, wt. 95g.
1974	223 E40N30	Pl.34. P4797. obl. Sides fairly steeply angled. Single incised line on top, ca. 4mm wide. Reddish-brown clay, many air holes some white inclusions, numerous minute black specks. Base broken off. Pres. ht. 6.0, top 1.3×1.5, wt. 60g.
1975	223 Ar. 245	Pl.34. P565. sq. Very rounded with flared sides, (probably slumped in kiln), impressed cross on top. Reddish-brown clay with some white shell inclusions fired paler brown on surface. Ht. 7.0, top 3.0×3.3, base 6.3×6.3, wt. 140g.
1976	223 Ar. 245	Pl.34. P669. obl. Heavily impressed cross on top. Slightly broken at base, Pale greenish-grey clay. Ht. 11.5, base 4.8×5.8, top 3.5×3.5, wt. 340g.
1977	335 A3	Pl.34. P8075. sq. Roughly square and fairly straight sided. Base largely or wholly missing. Cross incised on top. Ht. ca 9.8, base est. 4.8×4.8, top 2.2×2.8, wt. 585g.
1978	223 E38N30	Pl.34. P4803. obl., Pinkish-brown clay, paler on surface, cross incised on top ca. 2mm deep and 2.5 wide, top slightly rounded off. Ht. 6.5, base 3.4×3.9, top ca 2.0×3.0, wt. 100g.
1979	223 E22N29	Pl.35. P4768. obl. Incised cross on top ca. 2mm deep and 4 across. One line of a diagonal cross more lightly incised across it. Part of base broken. Pinkish-brown clay with numerous white (up to 1.5mm) and tiny black inclusions. Ht. 10.5, top 2.9×3.8, base 5.5×ca. 5.8, wt. 330g.
1980	347-9 Ar.347 M2	Pl.35. P828. Crudely shaped: sides expand unevenly towards base. cross (width of arms ca. 5mm) deeply (0.4 deep) impressed on top. Hard drab greyish-brown fabric. Ht. ca. 9.4, base 5.4×5.6, top ca. 3.5×3.7, wt. 290g.
1i. With dotted motifs (crosses and circles) Rows of dots were used to decorate loomweights on 4 sites. Two (Nos.1983, 1984) had dotted circles on the side. Three, including 2 from San Felice (Nos.1981, 1982) with dotted crosses on the top, have parallels at Oppido and Pomarico Vecchio (Lissi Caronna 1983, fig. 140.10, *Pomarico Vecchio I,* 2, tav. 92.23).		
1981	223 E29N21	Pl.35. P4800. sq. Dotted cross on top. slightly damaged. Reddish-brown fairly soft slightly micaceous clay, some black and white inclusions. Ht. 7.4, base 4.4×4.6, top 1.6×1.9, wt. 130g.
1982	223 E34N16	Pl.35. sq. P4770. Dotted cross on top, base cracked and broken. Pinkish-brown micaceous clay with black and white inclusions, smooth surface. Ht. 7.5, base much damaged ca. 4.2×4.0, top ca. 2.0×2.2, wt. 120g.

1983	126	Pl.35. P63. obl. Nearly complete. Decorated with a sinuous line of impressed dots (a string of beads?). Pinkish-brown clay with paler surface. Ht. 6.7; base ca. 3.2×4.0, top ca. 2.0×?, wt. 110g.
1984	813	Pl.35. P1865. sq. Somewhat bell-shaped with rounded top and corners of base. Pinkish-brown clay. Rounded edges. Marked on 1 side with a pricked circle. Large suspension hole, Ø 1.0. Ht. 9.6, base ca. 4.0×>4.0, top ca. 2.2×>2.2, wt. 165g.
1j. With incised cross on side		
1j-1. Diagonal cross		
1985	715 C5	Pl.35. P1821. obl. Complete. Diagonal cross inscribed on the whole of on 1 side. Ht. 7.0, base 3.0×4.5, top 2.0×2.8, wt. 100g. Cf. Kleibrink 2006, 151 fig. 49.9a from Timpone della Motta, late C8 BC; Lissi Carona 1980, 234 fig. 155 c, 1983, 338 fig. 135.9 from Oppido Lucano, in contexts of the late C4/ early C3 BC.
1j-2. With Vertical crosses		
1986	223 E59N23	Pl.35. P7008. obl. Cross roughly incised on 1 side. Pale yellowish-grey clay, broken at 1 side on top. Ht. 8.0, base 3.3×5.0, top 2.3×?, wt. 165g.
1987	223 E61N28	Pl.35. P4943. Gritty brown micaceous clay with numerous small white grits. Neatly incised cross on front and back. Ht. 5.2, base 3.5×3.7, top 1.0×1.3, wt. 80g.
1*k. With incised diagonal cross on top.* Diagonal crosses on the tops of loomweights are not uncommon in S. Italy, e.g. at Oppido Lucano, late C4/ early C3 BC (Lissi Caronna 1983, 330 fig. 125.10).		
1988	229	Pl.35. P1378. sq. Diagonal cross on top abraded off on 1 side. Pinkish-brown clay with numerous white grits. Ht. 9.0, base 3.5×3.8, top ca. 2.1×2.9, wt. 182g. Another (P2001) on this site; others on Sites 351 and 355 and 2 in the surface collection at Vagnari.
1989	223 Ar.226	Pl.35. P447. obl. Clay reddish-brown, impressed rough diagonal cross on top. Ht. 8.0, base 4.0×5.5, top ca. 2.0×4.0, wt. 185g.
1l. Single examples of various decorative features		
1990	302 B2	Pl.36. P703. obl. Impression of a Laconian type key with ring, shaft and ward of 4 teeth. Plain, hard greenish-cream clay damaged on 1 side and at base. Ht. 9.5, base 4.5×6.0, top 1.0×2.8, wt. 225g. For Laconian type keys, see Robinson 1941, 505-510 and pl. CVLXV. They were in use in Greece before the destruction of Olynthus in 348 BC. For similar key impressions on loomweights, cf. Carrabba 1989, 107-108, MS-84-89, figs. 40-45 from Monte Serico; *Museo Venosa*, 131 and tav. X, f.14 from Venosa. The small size of the key indicates that it was used for opening some little item such as a jewellery or toilet box. Cf. 3 iron keys found at Monte Sannace dated to end C4/ beginning C3: *cit.*, 199 and tav. 365.1.
1991	351	Pl.36. P8076. sq. Uneven, with sloping top and bottom. Almost complete. Hard fired pale brown clay. Stamped quatrefoil on top. Ht. 6.2 to 6.5, base 3.5×3.7, top 2.3×2.5, wt. 325g.
1992	223 E54N18	Pl.36. P4960. obl. Long, narrow and barely tapering. Cone shaped pimple 0,8 across and 0.2 high towards the top. Drab brown, slightly micaceous clay, hard fired. Ht. 6.0, base 2.7×5.0, top 1.3×2.2, wt. 70g.
1993	223 E59N24	Pl.36. P7022. obl. Drab brown clay, medium brown surface. Impressed mark (an ivy leaf or a cock have been suggested) on broad side, Damaged at 1 corner. Ht. 7.7, base max. 3.0×4.0, top 1.7×2.3, wt. 260g.
1994	223 E44N40	Pl.36. P4302. obl. Base somewhat damaged, piercing hole in short side. Very small cockleshell pressed into foot. Grey-brown fairly hard clay, some small black grits. Ht. to piercing hole 3.3, base ca. 3.4×4.3, top 1.7×3.0, wt. 78g.
1995	303 G9	Pl.36. P8079. sq. Almost complete. Fairly hard pinkish-brown clay. Lozenge shaped stamp on top. Ht. 7.0, base 4.5×4.9, top ca. 2.0×2.4.
2. Weights made from tile fragments, roughly shaped and pierced with a suspension hole These pieces are probably not loomweights. They cannot be precisely dated: both were from Site 139 on which there was material of every period from the C5 BC to Late Antique, except for Early Imperial.		
1996	139	Pl.36. P113. Ceramic weight, made from a cut-down tegula. Hard-fired, reddish-brown clay with paler surface. Irregular rectangle. ca. 9.0×11.0, th. 2.4, wt. 300g.
1997	139	Pl.36. P115. Weight re-cut from a narrow tile. Hard reddish-brown clay with some mica. Pres. ht. 7.9, max. w. 5.7, max. th. 1.8, wt. 185g.
3. Disc-shaped loomweight See the discussion of the type in the Introduction. Discoid loomweights were common in the Italiote cities from the C4–C1 BC but were much less frequently used in the indigenous sites in the interior. The following piece comes from a site which was occupied principally in the Late Republic and Early – Middle Empire.		

1998	335 A3	Pl.36. P8074. Hard fired pinkish-brown clay, some white and brown inclusions, a little mica, roughly circular mould-formed weight with 2 suspension holes ca. 5.0 apart and 1-2 from edge. A small pebble has been pushed into the surface on one side. Ø 8.5, th. 2.8, wt. 750g.
4. Truncated conical weights See the discussion of the type in the Introduction.		
1999	223 E55N16	Pl.36. P417. Tapering weight, approximately circular in cross-section. Top broken but hole present. Plain buff clay. Pres. ht. 10.4, Ø max. ca. 5.6, min. 4.2, wt. 300g.
1999b	223 E49N21	Pl.36. P4919. Broken on top above suspension hole and below just short of base, much of 1 side missing. Pinkish-brown fabric, numerous white grits, off-centre suspension hole. Pres. ht. 6.7, Ø 5.9, wt. 118g.
5. Mis-shapen and misfired loomweights		
2000	229	Pl.36. P506. Pale greyish-brown clay. Flared sagging loomweight, base crudely finished and damaged. Ht. 8.0, bottom 5.0×6.0, top 2.0×2.0, wt. 150g.
2001	114	Pl.36. P8072. Truncated pyramidal loomweight waster, about 80% complete (damaged in 2 areas). Hard fired pale greenish-grey clay. No original markings. Ht. 8.4, base 5.5×5.5, top ca. 2.5×3.0.
B. Spindle Whorls Very few spindle whorls were found on the survey but there were 3 (1 only half preserved) on San Felice. All were from the west end of the site and were probably medieval.		
2002	223 E23N26	Pl.36 P4226. Rounded, biconical. Ht. 2.7, Ø max. 3.8, Ø hole 1.2. Cf. Laganara 2011, 168 esp. 3 and 10; Cotton *et al.* 1971, fig.5 22. Cotton, writing when medieval techniques of textile production in this area were little known, believed the whorl to be Hellenistic but it came from layer 2 on Monte Irsi in which the material was almost all medieval.
2003	223 E20N17	Pl.36. P4172. Biconical, slightly facetted. Ht. 2.1, Ø max. 3.4, Ø hole 0.9. Comparanda as 2002.

23. GLASS VESSELS AND BEADS

I. Introduction

A. Glass Vessels

Fragments deemed to be of ancient or medieval glass were recovered on only 8 sites (Sites 124, 134, 223 (including areas 225, 226), 229, 347-9, 372, and F2). Of these, 12 were fragments of vessels with enough shape to be worth cataloguing here. There were also three glass-paste beads.

The earliest piece, No.2004, is a fragment of a fine mould-made drinking-bowl in blue glass datable typologically between the end C3 and the end C2 BC, and made somewhere in the Levant. It comes from Site 124 which began in the C4 BC and continued to be occupied into Late Antiquity. The piece suggests that the owner of the site in the period after the Hannibalic war was a person of some social standing.

Several fragments are datable to the Imperial period. The mould-made bowl with down-turned rim (No.2006) and the blown-glass bowls (Nos.2007, 2008) all come from Site 229, the villa on the shoulder of San Felice. No.2009, the rim of a balsamary of Early Imperial type, comes from Site 223, the plateau of San Felice, above the site of the villa. Although it was intensively occupied in the pre-Roman period, and again in Late Antiquity, there is little to show that Site 223 was much frequented in the Early Empire. Balsamaries were funerary vessels, and the piece suggests that the W end of the plateau above the villa was used for burials of the dead from Site 229. Another fragment of a mould-made bowl (No.2005) came from Site 372 which was probably also a villa.

The flaring rim No.2012 is more problematic. It might be from a bowl of the C1/C2 AD or from a stemmed goblet the C5–C7 AD but, given that it was found on the plateau of San Felice (Site 223), the latter date is more probable. Five other pieces, all fragments of stemmed goblets, can also be dated to Late Antiquity or the Early Middle Ages. Three of them, two rims (Nos.2010, 2011), and a base (No.2014) which is typologically the latest of these pieces, also come from the plateau of San Felice; two other bases (Nos.2013, 2015) come from Sites 134 and 349, both of which were reoccupied in Late Antiquity after a period of abandonment.

B. Glass beads

Three glass-paste beads were also found, all of them on San Felice. Two of them, Nos.2016 and 2017, are datable in the C4 BC, and so belong to the Peucetian settlement; No.2018 is of a very simple type, not precisely datable, but it comes from the area where the Medieval village overlies the Peucetian settlement and is likely to be Medieval.

II. Catalogue

A. Glass vessels		
1. Mould-made bowls/ dishes		
2004	124 D2	Fig.49. P154. Rim of hemispherical bowl with convex wall and slight carination. Blue glass. Incised groove inside below rim. Ø 18.0. Hemispherical bowls were popular in S Italy in the Hellenistic period. Earlier examples, such as those found in the *Tomba degli ori* at Canosa of the C3/ beginning C2 BC (De Juliis 1984, 449 nos. 42-44) and in the *Ipogeo dei vasi canosini* at Ascoli Satriano "in epoca postannibalica" (Anzivino 2012, 293 no. 9.17) were probably imported from Alexandria; but the slightly carinated hemispherical form of this piece and the single internal groove below the rim show that it is a later product of an Italian (Roman?) workshop of the late C1 BC or early C1 AD. See the discussion by H.E.M Cool (2016, 96-101) and cf. her no. 16 (smaller) from Insula VI.1 in Pompeii.
2005	372 N6	Fig.49. P876. Deep bowl with out-turned rim. Dark green glass. Ø ca. 11.5. Isings 1957, Form 20, early–mid-C1 AD.
2006	229	Fig.49. P509. Shallow dish with down-turned rim. Good quality light-blue-green glass, neatly fire-polished. Est Ø 20.0. Cf. Foy 2010, 383 no. 718, *assiette à marli et rebord pendant*; also 385 no. 724, *assiette ou coupe à marli et rebord pendant*, both types dated C2/C3 AD; Rütti 1991, 38, *Schalen mit Kragenrand*, Claudian/ Neronian to mid-C3 AD. Cf. also Roffia 1977, 280 and tav. 155.9 from Luni, layers VI.D (2nd half C4 AD), and VIII.1.B (mid-C3–C4 AD) – but she notes that some examples of the type are dated from mid-C1–C2 AD.
2. Blown vessels		
2a. Bowls with folded rims		
2007	229	Fig.49. P510. Bowl rim. good quality blue-green. Ø 12.6. Isings 1957, Form 41a, "bowl with straight sides" – but the fold of the rim is tighter, 2nd half C1 AD. Cf. Roffia 1973, 469 no. 16 and tav. 81.10, from Luni, with further comparanda of C1 AD, esp. 2nd half; Sternini 1989, tav. 2.9 from Rome, C5 AD.
2008	229	Fig.49. P502. Moderately transparent turquoise glass with iridescent patina. Wall incurves towards rim; rim folded back. Ø 9.5. Isings 1957, Form 41a or Form 44, Tiberian to Flavian. Cf. Chiaramonte Treré 1973, 726 no. 3 and tav.215.1 from Luni, in a loosely dated context (K20) of C2 BC–C2 AD.
2b. Glass perfume bottle or balsamary (unguentarium)		
2009	223 E16 N24	Fig.49. P4059. Rim, greenish yellow tint, rolled back to create bevelled outer edge. Ø. 2.9. Probably from a balsamary of Isings 1957, 40-43, Form 26 or 28b, C1 continuing into C2 AD. Balsamaries and perfume bottles with rims of this type were frequently deposited in burials of the Early Imperial period. Cf. e.g. D'Amicis 1988, 134-135 and tav. CCVIII nos. 13.3a (bottle) 13.5a (balsamary) from burials of the 1st half C1 AD in Taranto.
2c. Open vessel with flaring fire-rounded rim		
2010	223 E25 N30	Fig.49. P4262. Flaring rim. Good quality. Translucent, slight yellowish tint, iridescence on surface. Ø ca. 13.0, th. 0.8mm at bottom of sherd, 1.2mm at rim. The frag. is small and the diameter and angle shown in the drawing are approximate. Without more of the shape the piece cannot be classified with certainty. Perhaps from a dish: cf. Cool 2016, 138 and fig. 5.13 no. 262 from Insula VI.1 in Pompeii, Augustan/ Tiberian; *SGR I* no. 33 of Period 1/O, C1/C2 AD; Miraglia 1994, fig.144 no.3 from Carminiello ai Mannesi, Naples phase IVB, 2nd half C2 AD; Calvi 1968, 155 cat. 330 and tav. N no. 7 from Aquileia, end C3/ early C4 AD; Stevenson 2001, 245 no. 364 and fig. 7.116 from San Vincenzo al Volturno, rim type 3, uncertain date. But it could also be from a stemmed goblet with flaring rim. The form is well attested at San Giovanni di Ruoti throughout Period 3 (ca. 400–650 AD): cf. *SGR IV,* SGSF10452 of Period 3A, SGSF360, SGSF3254b (Period 3B). A similar piece from the *castrum* of San Niceto in Calabria is interpreted by Coscarella (2003, 154 and tav. II.6) as a frag. of a *bicchiere con bugne* of late C12–C14 AD.
2d. Open vessels with vertical fire-rounded rims The first two pieces most probably come from stemmed goblets of Isings 1957, Form 111, said to be C4–C7 AD, but in fact continuing well into the Lombard period (below, section **2e**). The possibility that they come from lamp-glasses cannot, however, be ruled out: cf. Stevenson 2001, Illustrations 227 fig. 7.7, and text p. 214 from San Vincenzo al Volturno, probably C8/C9 AD.		
2011	223 E17 N25	Fig.49. P4080. Rim, rolled inwards, colourless, semi-translucent. Ø 7.0, min. th. 0.1. Cf. Rupp 2005, vol I, 32-33 and Taf. 37 Grab 21 no. 13, Taf. 68 Grab 49 no. 14, stemmed goblets from the Lombard cemetery at Nocera Umbra.

2012	223 E26 N35	Fig.49. P4110. Rolled rim. Transparent slightly iridescent glass. Ø 8.0, th. at bottom 0.05. Cf. D'Angela 1988, 136-137, tav LXIII.26 (complete) from Piano di Carpino, with discussion of the type. The form is also found in Late Antique/ Early Medieval contexts at Ordona (Giuliani & Turchiano 2003, 153 tav. XII.3), and San Giovanni di Ruoti (esp. *SGR IV* SF10406 of Period 3A (ca. 400–460 AD) and *SGR IV SF631* from a destruction layer of Period 3B (ca. mid-C7 AD)). It appears in Lombard burials at Nocera Umbra (Rupp 2005, Taf 68 no. 13 from Grab 49), and it was still being produced on Torcello in the C8/C9 AD (cf. Tabaczyńska 1977, figs 112.8 and 127.29).
2e. Bases of stemmed goblets The following disc bases come from stemmed goblets of Isings' (1957) Form 111, a Mediterranean form found at Karanis already in the C4 AD (Harden 1936, 167) and attested in Rome in the fill of the *mithraeum* below S. Prisca destroyed around the end of the C4 AD. The form remained popular in Italy well into the Lombard period, being attested in the cemeteries of Nocera Umbra and Castel Trosino in the C6 and C7 AD. It appears at San Giovanni di Ruoti first in a destruction context at the end of Period 2 ca. 400 AD (one example) and is especially common there in the midden layers of Period 3B, ca. 460–650 AD (*SGR IV*). The form lasts well into the Middle Ages. It is attested at San Vincenzo al Volturno in the monastic phase of C8/C9 AD (Stevenson 2001, 231-234 and ill. 227 fig. 7.66-69). A variant of the form with rolled-back base rim was still circulating in Puglia in the C11/C12 AD (see on No.2014).		
2013	134	Fig.49. P156. Amber-green glass. Ø 3.5. Cf. Rupp 2005, vol I, 32-33 and Taf. 37, Grab 21 no. 13, stemmed goblet from the Lombard cemetery at Nocera Umbra.
2014	223 W end	Fig.49. P2112. Slightly thickened rolled-back base rim. Semi-translucent, slightly green glass. Ø. 6.0. For the low spreading form of the foot with rim folded underneath to form a ring cf. SF3381 from San Giovanni di Ruoti Midden 6 datable around the mid-C7 AD (*SGR IV)*. It recurs at Torcello in a context of the C8/C9 AD (Tabaczyńska 1977a, 131 fig. 113.12), at Bari in contexts of the C10/C11 AD (Pellegrino 2015, 90-92 and fig. 3 no. 10) and at Otranto in Phase V, late C11–C12 AD (Giannotta 1992, 229 fig. 8.3.70).
2015	349 D3	Fig.49. P852. Greyish, almost colourless. Fairly neat base-fold. Ø base 3.8. Cf. Crogiez 2003, 462, 201 from Malvito in Calabria, ca. C6–C7 AD; Andronico 2003, 73-74 and tav XXIV no. 177 from Reggio Calabria, dated (typologically?) end C5–C8 AD.
B. Glass beads		
2016	223 E23 N27	Pl.31. P4228. Cobalt blue glass bead, iridescent, surface pitted with numerous small air-holes; thin ovoid form, pierced with string-hole Ø 0.15, slightly off centre; cracked on one side. lg. 1.1, max. w. 0.8, max. th. 0.4. Such simple glass beads are practically undatable. On this site, however, the piece is likely to date before the end of the C4 BC when glass beads of various colours were in vogue, usually strung on a necklace. Cf. Liseno 2012, 174 fig. 1.14 from Tomb 8, burial A at Ascoli Satriano, Valle Castagna, late C5/ early C4 BC, in translucent pale blue glass; Natali in *Rutigliano*, 606 tav. 65c from tomb 11, 1st half C4 BC, in "Egyptian blue" glass.
2017	223 E30 N19	Pl.31. P4356. Eye bead in lapis blue and white glass paste, round in vertical view, squat cylindrical in side view, with three incised circles on the circumference, filled with white (now largely lost), surrounding blue centres. Ø 1.0. max. th. 0. 55, Ø of hole 0.4. Such beads were initially produced in the E Mediterranean and were widely exported to Sicily, Italy and further W (Uberti 1988, esp. p. 483). They were popular in S Italy in the C4 and C3 BC, usually used with other beads in necklaces, as at Forentum/ Lavello in Tomb 598 (no. 11) of the 1st half C4 BC (Bottini & Fresa 1991, 35 and tav 109), and in Tomb 53 (nos. 19 and 20) of the mid-C4 BC (Osanna 1988, 68, 254 and tav. 44.4, *vaghi di collana, tipo 2.1*); also in the Ipogeo dei Profumi at Ascoli Satriano of the late C4 BC (Rückl 2012, 247 no. 5.119). Cf. also Lissi Caronna 1980, 245 fig. 180 from Oppido Lucano, late C4/ early C3 BC. But the type continued much later: cf. Roffia 1977, 288-289 and tav. 158.22 from Luni, layer II.D, before 40–50 AD, with reference to another in a layer of 2nd half C1 AD. They are found at Pompeii (e.g. Cool 2016, fig. 2.10 nos. 67-69), and in Early Medieval burials in the necropoleis of Pinguente in Istria: Torcellan 1986, tav. 36 no. 10, sporadic from Bresaz; *eadem*, 81-82 no. 78 and tav. 37.3 in a necklace from Meizza (general context C6–C8 AD).
2018	223 E22 N23	Pl.31. P4049. Bead, cylindrical of iridescent opaque bluish purple glass paste. Lg. 1.3, max. Ø. 1.2, Ø of hole 0.4, wt 3g. Cylindrical beads such as this were strung on necklaces. They were made both in opaque and translucent glass and varied considerably in proportions. They were in vogue throughout the imperial period, and well into the Early Middle Ages. Cf. Guido 1978, 94 (examples from Britain and Frankish Gaul); *eadem,* 1999, 39-39 for cylindrical beads in England and Continental Europe in the C5/C6 AD. For examples of the period in Puglia, cf. e.g. D'Andria, Mastronuzzi & Melissano 2006, 299 no. 50 and fig. 46, cylindrical and ovoid beads of varying lengths strung on a necklace from a tomb of the 1st half C6 in the palaeochristian cemetery at Vaste in Salento. They remained popular in Italy in the Lombard period: cf. e.g. various cylindrical examples strung with others of various shapes on necklaces deposited in female burials at Nocera Umbra: Rupp 2005, esp. taf. 93, Grab 78; and in the necropolis at Pinguente/ Meizza in Istria: Torcellan 1986, 69 and tav. 37 no. 6, necklace in Tomb 77 (last quarter C6–C8 AD).

24. METAL OBJECTS INCLUDING COINS

Catalogue

1. Metal objects		
2019	813 B10	Pl.31. P8192. Frag. of a small bronze strigil showing lower part of handle and upper part of blade. Shallow grooves on either side of the handle front. Pres. ht. 4.6; w. of handle at break 1.1. The piece may be compared with a bronze strigil from Tomb F115 on Botromagno, dated to the 3rd quarter of the C4 BC, which has similar incurving sides and two shallow grooves on either side of the upper part of the handle front (Macnamara in *Gravina* II, 49 and fig. 65 no. 19). In our piece, however, the handle merges smoothly with the blade, whereas in the piece from Botromagno the join is marked by an offset. In this respect our strigil conforms to type B3 in the detailed typology of strigils from the necropoleis in the Chora of Metaponto compiled by M. Prohászka in *Chora Metaponto I,* 797-804), in which the join between handle and blade is formed by a simple rising curve without marked ridge on the front side, and the front of the handle has concave sides forming a pronounced waist as on our piece. But the decorative grooves on either side of the handle front found in our piece and on the strigil from Botgromagno are not found in any of Prohászka's types. Her type B3 was found in two graves: Pantanello T151 dated ca, 460–440 BC and Saldone T7 dated 440–430 BC. Strigils, either of bronze or iron, began to be deposited in tombs in South Italy in the course of the C5 BC, both in the Greek *poleis* of Magna Graecia and in the indigenous settlements of the interior, but they did not become widespread until well into the C4 BC. But there is no consistent pattern. In the Chora of Metaponto the earliest strigils are of bronze, and they were frequently deposited in tombs of the last half C5 with a few in the early C4. The later strigils are of iron. At Taranto strigils were rarely deposited in burials before the middle of the C4 BC, although iron strigils were found in two athletes' tombs of the C5 (D'Amicis *et al.* 1997, 230 Tomb 43.1; 240, Tomb 48.3). At Heraclea iron strigils were common in tombs of the C4 and C3 BC (Pianu 1990, 235). The pattern varied also in the indigenous settlements in the interior. At Rutigliano strigils, mostly of bronze, were commonly deposited in tombs of the C5 and C4 BC (Tarditi 2006, 569-571). At Monte Sannace iron strigils were deposited in tombs of the C4 and early C3 BC (Scarfì 1961, Tombs 3.32, 7.36, 17.6; 18.7). At Gravina, three strigils are reported from tombs of the C4: two of bronze including the one from Tomb F115 mentioned above and another from Padre Eterno tomb 10 (Ciancio 2004, 28, 32), and one of iron from Botromagno tomb 2 1967 (Ciancio 1997, 204, no. 16). There are also 4 frags. of 3 iron strigils from the late Hellenistic settlement on Botromagno (Macnamara in *Gravina I*, 237 and fig. 107 nos. 1893-1895.
2020	813 D6	Pl.31. P8193. Frag. of iron nail with flat head and shaft, rectangular in cross section, much corroded. Pres. w. of head 2.2.; w. of shaft at junction with head ca. 1.0; pres. lg. 1.4. The nail falls within Macnamara's (1992) Type IIb class which is well represented on Botromagno, Period VIIIa (last half C2/ 1st half C1 BC): Macnamara in *Gravina*, 244-245.
2. Coins. Identifications and entries by Giuseppe Sarcinelli (No. 2021) and **Andrew Rich** (Nos.2022, 2023)		
2021	223 E21N35	Pl.31. P4047. AR. Max. Ø 1.06, wt. 0.77g. Obverse: Head of Athena l. wearing Attic helmet decorated with hippocamp. Reverse: Herakles naked standing front with head r., strangling lion; between legs, AP (in monogram); behind him, stag standing r. (partially off flan). Diobol of Tarentum. 275–before 212 BC (Libero Mangieri 2012, 95, no. 438); or ca.280–228 BC (*HN Italy**2***, 105, no. 1061).
2022	223 E24N33	Pl.31. P4048. AE. Max. Ø 1.2, wt. 1.0g. Obverse: Cross in centre within a linear circle. Legend: *durriba bi-madīnat* [*Ṣiqilliyyah hamā-hā Allāh*] (Struck at Palermo, May God protect her). Reverse**: [Q] VART/ TERCE/ NA [RI]I** in field. Quarter-tercenarius Type B of William II 1166–1189. Minted in Palermo. This coin is a new denomination attributed to the second coinage reform of William II. There is no documentation so far that indicates when this coinage reform occurred. This type (Type B) has a characteristic square **C** on the reverse and tends to have about 20% silver content, dwindling latterly to only 7% silver. (Grierson & Travaini 1998, 134-135, no. 424). Previously published in C. Small & A. Small 2007, 119.

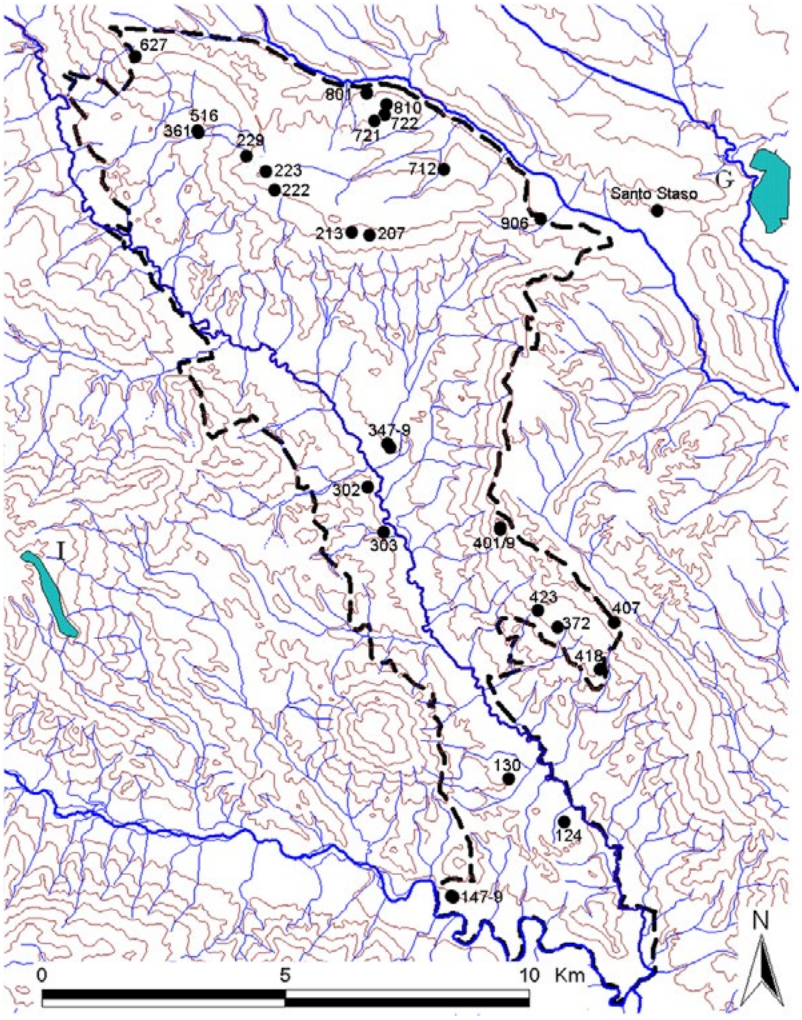
2023	223 E23N32	Pl.31. P4121. AU. Max. Ø 1.25, th. 0.05cm, wt. 1.01g. Obverse: In the centre, a pellet in a linear circle. Inner legend (Cufic script): *[Al-]malik Ghulyālim aI-* [*hādī bi-amr Allāh*] (The King William by the order of God.) Outer legend (Arabic): *durriba Masīna sanat* [ ] (Struck at Messina in the year...) Reverse*:* cross potent on shaft with pellet between **IC/ cross/ XC** **Ṇ I /cross/ [KA]** (Ιησούς Χριστός Νικά: Jesus Christ conquer) The *nu* and iota are worn and the *nu* is possibly reversed Two annulets above the cross. Legend: durriba Masina [ ] (Struck at Messina). Sicilian tari of William I. Minted in Messina. 1154 AD. A common coin type, minted in large quantities using the Fatimid standard of 1.05g. Minting of this type began in March 1154 following the death of Roger II on 25 February 1154. One coin has been found with the Hegira year of 549 which places the mintage at this time. (Grierson & Travaini 1998, 127-128). Cf.. Grierson & Travaini 1998, no. 282. Previously published in C. Small & A. Small 2007, 119.

25. MILLSTONES

I. Introduction

Pieces of lava millstone were found on 26 sites in the Survey Area including Santo Staso (F2). The great majority are small fragments without distinct shape, which can only be dated by the date of the site on which they were found. No fragments of querns or rubbers of any stone were found on the Neolithic sites in the Survey Area, and only one untypable fragment of a lava millstone (No.2033) was found on a BA site (Site 721). It is likely to have come from Monte Vulture, which is known to have been the source of lava used in the BA to make saddle-querns in Apulia (Lorenzoni *et al.* 2000b). Otherwise all the fragments come from sites which were occupied between the LIA and the Early Middle Ages.

The millstones were used primarily to grind grain and must have been located where people lived and agriculture was practised. The lacunae on the map, most obviously S of the plateau of San Felice, suggest that that area was primarily given over to forest and/or stock raising.



Map 25-1. Sites with millstone fragments (all periods) on our Survey Area.

In order to determine provenance of the millstones, an analysis by neutron activation of the most significant trace elements in 32 samples was carried out by Vito Volterra. It showed that the great majority were probably made of lava from Monte Vulture though in some cases lava from Etna is likely to have been used. Etna lava was also used for some millstones found on Botromagno (Volterra & Hancock 1994), and at Monte Sannace, Grumentum, Iesce, Heraclea, Egnazia and Metaponto (Lorenzoni *et al.* 2000). Three samples from our Survey Area remained unidentified. Volterra also analyzed 43 samples from the excavations and surface survey at Vagnari which showed that there too the majority of millstones sampled were made of lava from Monte Vulture, although the island of Nisyros in the SE Aegean was a possible source for at least two of the stones (*Vagnari,* 417-423). That too is not surprising since millstones made from Nisyros lava have been identified at several other Apulian sites, including Egnazia and Monte Sannace (Lorenzoni *et al.* 2000).

Twenty-nine of the millstone fragments coming from 12 sites were sufficiently well preserved to be classified by type. They illustrate the main phases in the development of milling technology from simple rubbers and grindstones (Types 1-3), through hopper-rubbers (Type 4) to rotary mills (Types 5-6).

All the stones listed except for No.2026 are in hard grey lava, but the quality and consistency of the material varies considerably. Most pieces fall into one or other of four groups distinguished by eye: (A) medium coarse, with innumerable small and some larger air holes, and no conspicuous inclusions (Nos.2024, 2027-2029, 2036); (B) in a much coarser lava with bigger air holes (Nos.2037, 2043, 2044, 2050, 2051, 2052); (C) in a finer grey lava flecked with black (Nos.2035, 2040, 2041, 2042, 2049, perhaps 2045, 2046); and (D) a more variable group in compact grey or greyish brown or purplish brown lava with scattered angular off-white inclusions (Nos. 2030, 2031, perhaps 2032). The differences between the groups suggest that at least four lava sources were used, though whether these were different volcanoes, or different exposures of the same volcano, has not been determined.

There is some correlation between these three broad groups of lava and the types of millstone, summarized in the following table.

It suggests that lava of groups A and D was used for simple grindstones of the earliest technological phase, for the rubbers that were used with them and (in the case of group A) for some hopper-rubbers of the next phase; that lava of group B was used for hopper-rubbers, and for large rotary mills turned by donkeys or slaves; and that lava of group C was also used for hopper-rubbers, and especially for rotary hand-mills. Since hopper-rubbers were in use from at least the C4–C2 BC, and overlapped in their initial phase with grindstones, and in their later phase with rotary mills, it seems probable that there was a change in the source of supply in the C3/C2 BC.

The rubbers and grindstones in volcanic lava conform to types which were in general use in South Italy throughout the Iron Age. They are particularly well attested on Greek sites in the Metapontine plain (d'Annibale 2015, with fuller refs), but are also found on indigenous sites, as at Serra di Vaglio (Greco 1991, 75 no. 77688 and fig. 175) and Roccagloriosa (*cit., I*, 83, 309 and fig. 202 no. 590). D'Annibale (2015, 371, fn. 13) reports that a preliminary analysis of volcanic grinding stones from the Metaponto field survey carried out by A. Marudino and N. Palumbo indicates that some of the volcanic material found on the farm sites in the *Chora* originates from the Aegean area. He suggests that in the archaic and classical period there was a standardized commercial enterprise in these stones operating in Magna Graecia, and that these Greek millstones were later supplanted by other types of volcanic grinding stones derived from Italian sources. That theory suits the data from our field survey reasonably well since, as we have seen, many of the grindstones of Types 1-3 are in a lava not used in the rotary mills of the Roman period.

The change to new lava sources is likely to be reflected in the analysis by instrumental neutron activation of samples of millstones from the Hellenistic villa on Botromagno carried out by V. Volterra & R.G.V. Hancock (1994) which has shown that Etna (9 samples) and Monte Vulture (8 samples) were both probable sources of the raw material. The villa was occupied in the last half of the C2 and first half of the C1 BC, with a renewed phase of occupation in the Augustan period, and we need not doubt that the sites in the Basentello valley of the C2/C1 BC were supplied by the same tradesmen who brought the millstones to Botromagno.

The find-spots of the millstone fragments are generally what might be expected of their type. The earliest piece is likely to be the rubber No.2033 found on the Bronze Age Site 721. The remaining stones of early type, including saddle querns, flat grinding stones (though some of these may have been used with hopper-rubbers) and simple rubbers of Types 1-3, were all found on sites inhabited in the Iron Age, except for the rubber No.2035 which came from Site 722, occupied in the Roman imperial period. It was a small and probably poor site where this simple

Lava group	Cat. no.	Mill type
A.	2024	Saddle quern
A.	2027	Flat grindstone
A.	2028	Flat grindstone
A.	2029	Flat grindstone
A.	2036	Hopper-rubber
B	2037	Hopper-rubber
B	2043	Rotary mill
B	2044	Rotary mill
B	2048	Rotary mill
B	2050	Donkey/slave mill
B	2051	Donkey/slave mill
B	2052	Donkey/slave mill
C	2035	Hopper-rubber
C	2040	Rotary mill
C	2041	Rotary mill
C	2042	Rotary mill
C	2049	Rotary mill
C?	2045	Rotary mill
C?	2046	Rotary mill
D	2030	Grinding stone
D	2031	Grinding stone
D?	2032	Rubber

Table 25-1. Mill types and lava types for selected millstones.

implement may still have been in use, perhaps for pounding hulled grains. The hopper-rubbers (Type 4), introduced in the C4 BC, were also found on sites occupied in whole or in part in the pre-Roman period. The rotary hand mills (Type 5), introduced in the course of the C3, and in use throughout the first half of the 1st millennium AD, were all found on sites active in the imperial period. Since there is a marked concentration of them on Site 139, it seems possible that there was a specialized milling operation and perhaps bakery on this site. Two fragments of donkey or slave-turned mills (Type 6), Nos.2051, 2052, were found on Site 347-9/ 366 possibly from the same mill. They must date to the Late Roman phase of occupation on the site.

II. Catalogue

1. Saddle querns Saddle querns were invented in the Neolithic period and remained in use until Hellenistic times. At Morgantina, and no doubt elsewhere, they overlapped with hopper-rubbers of type 4 below (White 1963, 204). They formed the lower grinding stone on which grains were ground with a rubber-stone held in the hand, and were made with a characteristic shallow saddle-shaped depression to facilitate this action. The undersides of our pieces are roughly finished, suggesting that they were set in the ground. The two pieces listed here both come from the pre-Roman site on San Felice.		
2024	223	Pl.37. P1038. Lava group A. Saddle quern in blackish-brown lava with innumerable small and some larger air holes. Upper surface scored by plough; otherwise intact. Underside roughly shaped. Max. lg. 42.5; max. w. 28.5.
2025	223 E59N26	Pl.37. P7032. Large frag. of saddle quern in fairly compact grey lava with numerous white specks and angular black glassy inclusions (up to 0.5cm). Concave upper surface. Outer edge and bottom roughly finished. Max. th. 4.5; wt.0.55 kg.
2. Flat grindstones From Neolithic onwards: grindstones, flat on top, with rounded sides and base (to be held in the lap or set in the ground): cf. a near complete example from the Neolithic site at Setteponti (Matera), found with a rubber of the same type as No.2028: Lo Porto 2006-2007, 367 and fig. 12 no. 75. The type is still found on IA sites, and in the early Greek settlement at Incoronata (1st two thirds C7 BC): Castoldi 2000, 48 figs. 50, 51. According to Moritz (1958, 36-37) Greek querns of the C4 BC (notably those from Olynthus) tend to have striated incised lines on the grinding surface intended to give the stones a better grip on the grain by keeping their pores free from clogging, and to enable the mill to cut rather than crush the grain at its first contact with the stones, thus keeping the bran in larger pieces. There are possible traces of such striations on the surface of No.2026, but the stone is so worn that certainty is impossible.		
2026	223 E38N24	Pl.37. P4578. Large part of a grinding-stone in hard coarse limestone. Two shallow and narrow scored lines intersect each other on the grinding surface obliquely to the main axis of the stone, and there are possible faint traces of others. They may be deliberate striations. Max. lg. ca. 27.0, max. w. 21.0; wt. 6.0 kg.
2027	229	Pl.37. P520. Lava Group A. Frag. in greyish brown lava, with innumerable small and some larger air holes (cf. No.2024). Ovoid with one flat and one rounded surface, the curved one slightly damaged. Max. lg. ca. 21.0, max. w. 18.0, max. ht. 6.5.
2028	229	Pl.37. P523. Lava Group A. Frag. in greyish brown lava, with innumerable small and some larger air holes (cf. No.2024); flat on upper surface, rounded lower surface, roughly finished. No complete side. Perhaps the lower grindstone of a hopper-rubber. Max. pres. dims. 18.0×23.0, max. ht. 12.0.
2029	223 E50N35	Pl.37. P7049. Lava Group A. Frag. with one good, but incomplete, edge in uniform grey lava, with innumerable small and some larger air holes (cf. No.2024). Max. lg. ca. 20.5, max. w. ca. 13.5; wt. 5.0kg.
2030	223 Ar.226	Pl.37. P4899. Lava Group D. Frag. with one good, but incomplete, edge. Compact dark greyish-brown lava with uneven air-holes and numerous white inclusions up to ca. 0.5cm. Max. pres. lg. (at edge) 20.0, max. pres. w. 12.0, th. at rim 5.2.
2031	407 C1	Pl.37. P8115. Lava Group D. Frag. with flat top and rounded sides and bottom. Compact grey lava with some white inclusions. Pres. lg. 6.7, pres. w. 4.5, th. ca. 5.8.
3. Rubbers Pieces of grindstone, narrow enough to be held in one hand, shaped for use with quernstones. Of the following pieces, No.2032 was found on Site 347-9 on Area 348 which was predominantly Neolithic, No.2033 on the Bronze Age site 721, and No.2034 on the Iron Age site of San Felice (Site 223). In all these cases the use of rubbers and quernstones might be expected. It is more surprising that No.2035 was found on Site 722 associated with Roman imperial material. Unless it is a stray from Site 721, 300 m to the SW on a downhill slope, it would suggest that rubbers continued in use (or were used again) in the Roman imperial period, perhaps for grinding or pounding hulled grains such as emmer and spelt which could not be ground easily in a rotary mill.		
2032	347-9 Ar.348	Pl.37. P8081. Rubber, one roughly flat surface with 2 rounded edges broken at top and bottom and along most of one edge. Lava group D? Very hard heavy purplish brown stone with innumerable white angular inclusions up to 4mm, and some smaller glassy black ones. Original w. 7.8, pres. lg. 11.9, pres. th. 4.4. Cf. a complete rubber from the Neolithic site at Setteponti (Matera), apparently in the same stone (classified by Lo Porto as a compact sandstone): Lo Porto 2006-2007, 367 and fig. 12 no. 74; Amendolagine *et al.* 2002, colour illus. p. 6.

2033	721	Pl.37. P8059. Frag. of a ?rubber with rather roughly finished convex upper surface and with flat smooth lower surface; tapering One edge preserved; broken just short of other edge. Hard grey lava with numerous not-glassy blackish inclusions and innumerable small white specks. Pres. lg. 21.0, max. pres. w. 13.0, ht. 4.5. The piece is considerably larger than the other rubbers and would have required the use of two hands. Another frag.t P8059a in the same lava, w, 6.0, lg. 3.5, was found on the same site. Cf. *Roccagloriosa I*, 83, 309 and fig. 202 no. 590, C4 BC.
2034	223 E26N19	Pl.37. P8095. Frag. of a rubber with roughly flat bottom and rounded top and sides. Hard compact lava with numerous small black angular inclusions, and small sparkles (mica?). No large air-holes. Max. w. 8.4, max. th. 3.5, pres. lg. 7.5. For a complete lava rubber of this type, see Lissi Caronna 1990-1991 from House D at Oppido Lucano, last half C4/ 1st quarter C3 BC (a large piece measuring 16×28cm). Cf. also G. Greco 1991, 75 no.77688 and fig. 175 from Serra di Vaglio, in grey lava, C4 BC.
2035	722	Pl.37. P8058. Frag. probably of a rubber in grey lava with numerous black and scattered small white inclusions. Max. lg. ca. 10.0, max. w. ca. 8.0, max. ht. ca. 5.0.
4. Hopper-rubbers For the type, see *Vagnari,* 424, with comparanda. Hopper-rubbers were introduced in S Italy in the C4 BC and continued in use into the C1 BC by which time they were out-dated by the introduction of rotary hand-mills. They are well attested on South Italian sites, see e.g. *Roccagloriosa I*, 309 and fig 202 no. 591, C4 BC; De Giorgi in *Pomarico Vecchio I*, tav. 96, mid C3 BC; *Gravina II,* no.1843 late C2 BC, and *Vagnari*, 425, P1348, surface find, with further refs. They were used in conjunction with large flat grinding stones.		
2036	124	Pl.37. P126. Lava group A. One corner of a hopper-rubber in grey lava with innumerable small and some larger and deeper air holes; mortise for handle, and narrow slot on vertical edge beneath. The wall of the hopper slopes obliquely from both sides towards the (missing) central slot. Max. pres. dims 23.0×15.0×7.5.
2037	303 E3	Pl.37. P1234. Lava group B. Large frag. in coarse grey lava with numerous large air-holes. The edges of the hopper wall are less clearly articulated than on No.2036. Max pres. dim. 26.5×25.0.
2038	347-9	not illus. P1724. Large frag.
2039	F2	Fig.50. P1892. Frag. in grey lava. Pres. lg. 14.5 along base, ht. 12.2. From Santo Staso.
5. Rotary hand mills For the type, see *Vagnari,* 424-425, with comparanda. They were probably introduced in S Italy in the C3 BC, and remained in use throughout the Roman period and later. In earlier examples the top of the lower stone (*meta*) is shaped as a low cone with a central socket to hold a spindle to which the upper stone (*catillus*) is attached by means of a metal catch-plate (rhynd) set into a socket in its upper surface (visible on No.2042). The top of the *catillus* is usually an inverted cone serving as a hopper, with a circular aperture, Ø ca. 11.0, in the bottom, through which the grain drops onto the *meta*. In later examples the top of the *meta* is less conical, and in the latest (Nos.2040. 2041) may be almost horizontal. There is usually a socket in the side or top of the *catillus* to hold a handle, but that is not preserved in any of the pieces listed here. The earliest piece is likely to be No.2047, found on Site 407 which was abandoned before the mid C2 BC. The remaining pieces come from sites which were occupied in whole or in part in the Roman Imperial or Late Antique periods.		
***5-a. Upper stones* (catilli)**		
2040	139	Fig.50. P119. Lava group C. Frag. of upper millstone in grey lava flecked with black. Triangular cross section with flat base and upper surface sloping towards a circular hole in centre. Stone has slight rim. Ø ca. 35.0, ht. of outer edge 7.23; wt. 2.5kg. Cf. *Vagnari,* 427 fig. 14 P7142 (unstratified); *SGR I*, 48 and 307 fig. 25 from a context of SG Period 3B (late C5–mid C7 AD); *SGR II,* no. 186 (topsoil).
2041	139	Fig.50. P125. Lava group C. Frag. (about one third) of upper millstone in dark grey lava flecked with black. Broken short of inner edge. Outer surface very rough. Flat base, slightly convex wall, straight inner surface tilted towards central slot. Ø ca. 40.0, Max. ht. 8.9; wt. 1.27kg. 3 other frags. of rotary mills and 2 of indeterminate form were found on this site.
2042	229	Pl.38. P518. Lava group C. Frag. of upper millstone in grey lava with numerous black inclusions. Upper surface steeply inclined towards centre; socket for rhynd 2.8cm wide at inner edge of piece. Ø ca. 29.0, ht. 10.0. The stone is encrusted with lime mortar showing that it was re-used as building material. Cf. *SGR I*, 48 and 307 fig. 25 from a context of SG Period 3B (late C5–mid C7 AD). For a complete example of the type, cf. V. Armignacco Alidori in Lissi Caronna 1990-1991, 483 fig. 256 b from an unidentified site in the Bradano valley.
2043	229	Pl.38. P517. Lava group C. Frag. of upper millstone in rather coarse grey lava with numerous large air-holes. Ø 30, ht. 8.5.

2044	229	Pl.38. P521. Lava group B. Frag. of collar of upper millstone with socket (Ø 2.0) for spindle. Rough greyish brown lava with numerous air-holes. Ø at top 5.0, pres. ht. 7.5. For this type of millstone, cf. *Vagnari,* 426, fig, 13, P7141.
2045	810	Fig.50. P1856. Lava group C?. Frag. triangular section with rectangular slot for the rhynd on upper surface; edge of central hole preserved. Fairly uniform compact grey lava, a few small scattered darker inclusions and many small air holes. Ø ca.34.0, ht. at edge 8.0, pres. w. of slot 5.0, est. Ø of central hole 10.5.
2046	810	Pl.38. P8060. Lava group C?. Another large frag. probably from the opposite side of the same mill as No.2045. Similar dimensions.
2047	407 A4	Not illus. P1052. Frag. with central hole.
***5-b. Lower stones* (metae).** Both pieces have been broken short of the central point. It is therefore impossible to say whether they would have been drilled through to hold the axel of a geared mill.		
2048	229	Pl.38. P519. Lava group B. Frag. of lower millstone in hard grey lava pitted with deep holes; some brown inclusions. Ø ca. 32.0, max. ht. 10.0.
2049	906 A2	Pl.38. P2010. Lava group C. Frag. of lower millstone, circular and with slightly conical upper surface. Hard grey lava with numerous glassy black inclusions and rather coarse texture. Ø ca. 25.0, ht. ca. 7.0.
6. Donkey or slave-turned mills For the type, see *Vagnari,* 124. It was in use from the time of the elder Cato (mid C2 BC) onwards throughout the Roman empire. These mills might be turned by a donkey or by slaves, depending on their size and weight.		
***6-a. Upper stones* (catilli)**		
2050	347-9 Ar. 347	Fig.50. Pl.38. P1226. Lava group B. Frag. in hard grey lava with numerous large air-holes. Shallow grooves ca. 9.0 wide at both edges of piece, perhaps to facilitate handling. Pres. ht. ca. 25.0, max. th. ca. 10.0.
2051	347-9 Ar.366	Pl.38. P1225. Lava group B. Frag. in hard grey lava with numerous large air-holes. Max. dim. 25.0. In the same stone as No.2051.
2052	229	Not illus. P515. B. Large frag. of donkey mill.

26. MARBLE OBJECTS

I. Introduction

Only three marble objects were recorded in the survey outside the site of Vagnari. Of these, No.2053, an Ionic volute which perhaps belonged to a marble krater, came from Site 372, which reached its greatest height in the first two centuries AD. It is appropriate to an owner of some social pretensions. The fragment of revetment in Numidian marble, No.2054, was found on Site 139 which was occupied both in the pre-Roman period and in the Later Roman empire. The piece must belong to the latter period when marble revetment and *opus sectile* were still fashionable in luxurious villas in Apulia, most obviously at Faragola (De Felice *et al*. 2009), as elsewhere in the empire. The fragment of a marble basin, No.2055, comes from the western end of San Felice, which was occupied in the pre-Roman period, and again after a long interval in the Early Middle Ages, but on a smaller scale. By the Central Middle Ages, it was the site of a village (Site 223 in List of Sites and see Chap. XII). The basin is most likely to have been used in the Medieval village, perhaps as a font.

II. Catalogue

2053	372 L4	Pl.38. P872. Frag. of a small Ionic volute in greyish white marble, broken off at the base of the volute. Most of the volute scroll is preserved, resting on a downward curving *taenia*. The frontal view is plain, with the spiral of the volute undercut. In the side view, the drum of the volute is framed by a vertical rib formed by the edge of the spiral, and divided down the middle by a second rib. The back side of the volute is damaged, presumably along the line of break. Max.dim. 9.4, w. 4.2. The volute must have formed part of a small-scale ionic capital perhaps from a marble volute-krater.
2054	139	Pl.38. P112. Small frag. of marble revetment; yellowish Numidian marble with purple veins, fine grained – *giallo antico*. No original edge. Max. dim. 5.0, th. 1.0.
2055	223 Ar.225	Pl.38. P530. Frag. of basin in grey marble. Grey matrix with white quartzite veins; numerous crystalline sparkles. Ø and exact angle uncertain, max. th. 3.2, pres. ht. ca. 5.5.

27. THE ARCHITECTURAL TERRACOTTAS

I. Introduction

Fragments of 16 architectural terracottas were found in our Survey. Two are gorgon's head plaques (or possible antefixes) of late archaic type, one found on Site 401 (No.2057) and the other on Site 627 (No.2056). Site 401 was (after San Felice) the second largest Peucetian site found in the study area; Site 627 was much smaller but unusually rich in artifacts. The remaining 13 pieces all come from San Felice (Site 223). Ten of these are fragments of palmette antefixes of late archaic type which must have decorated the eaves on the long sides of buildings; Nos.2068-2070 are part of horizontal simas, also of late archaic type. Both the gorgon's head terracottas and the palmette antefixes show strong influence from Metapontine or Tarentine examples, and the possibility cannot be ruled out that the best pieces (such as the *gorgoneion* No.2056) were imported from one or other of the Greek cities, or were made locally by artisans who came from them. Local production in indigenous Italic communities is attested at Oppido Lucano by the discovery of part of a mould for a palmette antefix of Metapontine type (Lissi Caronna 1983, 334 no. 13 and fig. 131.13).

Like the published equivalents cited in the catalogue, these are relatively small pieces, much smaller than would have been required on a Greek temple. Laviosa (1954, 220-221) suggested that the Tarentine antefixes may have come from funerary *naiskoi*, but that is unlikely to be the case with our pieces, since there is no evidence for built tombs standing above ground in the Peucetian culture. G. Greco (1991, 39-40) suggested that the numerous gorgon's head antefixes from Serra di Vaglio must have decorated the houses of the aristocratic élite, and the idea was adopted by I. Rainini (1991, 120-121, 132) in discussing the even more numerous gorgon's head antefixes from Lavello and the surrounding area. It has been amply confirmed by the excavation of the so-called *anaktoron* at Torre di Satriano which was lavishly decorated with terracottas of archaic Greek type, though with *akroteria* and cornice elements rather than with antefixes (Capozzoli 2009; Osanna 2009). This is likely to have been the case also in our Survey Area, and indeed in other Peucetian settlements, such as Botromagno and Monte Sannace where terracotta antefixes of archaic Greek type have been found.

The two plaques with gorgon's heads show the Tarentine/ Metapontine "horrid" type of *gorgoneion* which was widely imitated in indigenous communities in the interior. Most examples are roughly semicircular, matching the shape of the cover tile attached to them, but a minority of Tarentine pieces of the late archaic and classical periods are circular (Laviosa 1954, 218-219, cf. tav. LXXI.1, 5; LXXII.1-2). Some of those imitated at Lavello and Ordona (Maes 2000, 454-462) were of this type, and there are several others in the collection of the Museo Civico of Foggia, including two from Arpi (Mazzei 2010, illus. on p. 186). Laviosa noted that, on the circular examples in Taranto, the cover (or ridge) tile was normally attached centrally to the back of the plaque, which might suggest that they were *akroteria* attached at the ridge line above the pediments of the funerary shrines. Our piece No.2056 may also have been an *akroterion* if the damage on the back side is the result of a ridge tile having been broken off, but there are no indications of breakage in the case of No.2057. It seems more likely that both plaques were attached to the pediments of buildings at the level of the sima, like the circular *gorgoneia* that decorated the façade of the Temple D at Metaponto (D. Mertens in Adamesteanu *et al.* 1975, 36 and fig. 43), datable in the first half of the C5 BC.

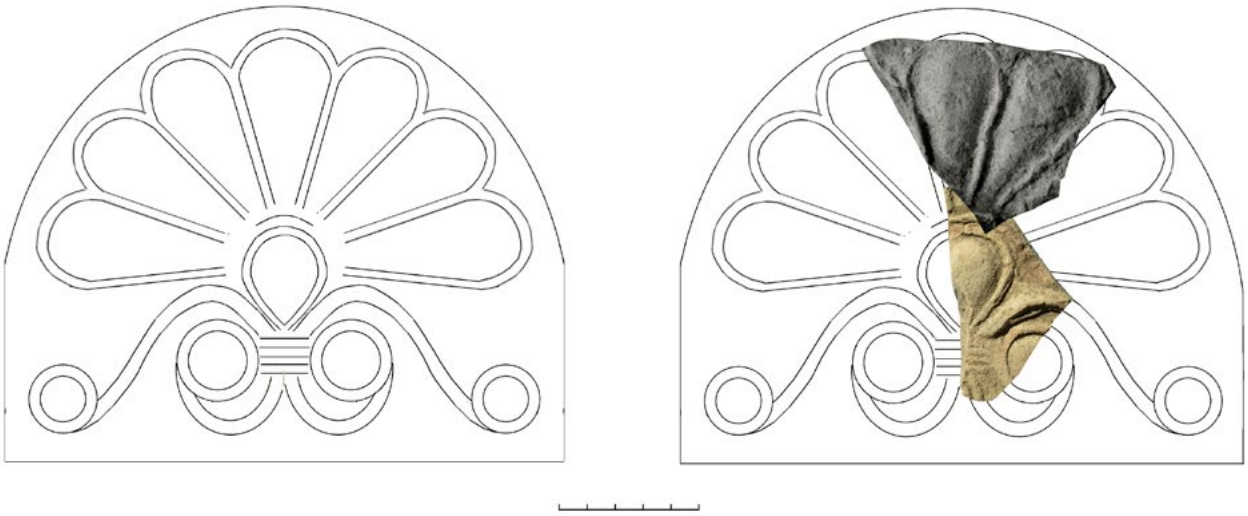
The Palmette antefixes require more extended comment in the light of much recent discussion of the type. Such antefixes, with scrolls emerging from the nucleus below the palmette were a specialty of Metaponto, and to a lesser degree of Taranto. Tempesta (2016, 434) has noted that they were very common on Late Archaic roofs at Metaponto, with 100 known casts or replicas, 85% of which come from the urban sanctuary, 10% from the extra-urban sanctuary at San Biagio, and the remaining 5% from the extra-urban Heraion of Tavole Palatine – an incomplete list which takes no account of examples from Pantanello and from indigenous sites in the interior. There are numerous variants of the type, and their place in the evolution of the motif is often unclear, since few pieces come from closely datable contexts. Among the earliest pieces is a small group of fragments from a destroyed shrine at Incoronata which are probably to be dated in the first half of the C6 BC (Rescigno 2012). They are of two types: (1) a semicircular palmette consisting of seven broad fleshy leaves arranged around a central roundel (*ibid.,* figs 7,8) and (2) a more elongated type with nine narrower leaves arranged around a roughly semicircular nucleus (*ibid*., figs 9, 10). Below the nucleus, two scrolls spiral outwards and terminate in roundels near the edge of the plaque. They are linked in the centre by an astragal, below which the inner ends of the scrolls are doubled back horizontally. On either side of the astragal, in the space left by the loops in the scrolls, are two eyes with pronounced angular corners and a prominent central roundel corresponding to the iris. The two types cannot be distinguished stratigraphically at Incoronata, but the second type appears to be more evolved, and may be rather later, datable, perhaps, around the middle of the C6. The same type is attested in a small fragment from Pantanello (Rescigno *et al*. 2018, 965, PZ RT 05, and (in a variant form) at Taranto (Laviosa 1954, 248 no. 49 and tav LXXVIII).

None of our pieces conforms to the first type at Incoronata, except perhaps for those fragments which preserve only parts of the leaves but they are better assigned to the more evolved type discussed in the next paragraph. The only pieces which might correspond to the second type are Nos.2058 and 2060 in which the lowest leaf of the palmette emerges in a similar way from a semi-circular nucleus with a curving scroll below it, but since both sherds are broken short of the space that would have been occupied by the eyes, this is completely uncertain, and they too can be assigned more economically to the evolved type with roundels.

The next stage in evolution is represented by an antefix from the Contrada Sansone at Metaponto published by Lo Porto (1966, 150, fig. 9.3) in which the inner ends of the scrolls emerging from below the astragal spiral upwards to enclose another pair of

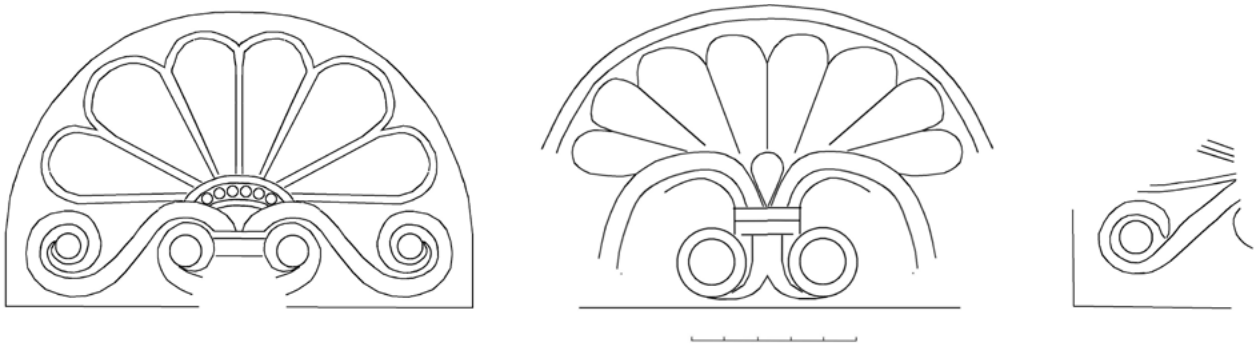
roundels in place of the eyes of the second type from Incoronata. The type was widely distributed in the Metapontine Chora and the hinterland. A fragment of a mould showing a roundel found at Sant'Angelo Vecchio in the Chora strongly suggests that some antefixes of this kind were made there, although no fired fragments were found in the excavations (Tempesta 2016, 441). The type (in several variants) is also attested at San Biagio in the Chora (Tempesta 2016, 433, fig. 29.2), and at Monte Sannace (Scarfí 1962, 117 fig. 105; Riccardi in *Monte Sannace,* 148-149 and tavv. 265-266), and at Botromagno (Broughton, Prag & Small in *Gravina II*, nos. 1618-1619). Fragments showing only the leaves found at Barrata in the Potentino, may also come from antefixes of this type (Mutino 2006, tav. XXXVIII no. 99828).

No two of the fragments from San Felice can be shown to have come from the same mould, but two pieces are sufficiently compatible to allow a complete antefix to be restored in the drawing (below and Fig. 50) with reasonable probability. No.2064 preserves much of the nucleus of the palmette. Below it is an astragal flanked by a roundel which would have been matched by another roundel on the opposite side. The astragal binds a scroll which emerges above it and below it curving to the right. Also emerging from the nucleus, at the top of the sherd, is a rib which would have defined one of the leaves of the palmette. There must have another balancing it on the right, but the surface of the sherd is damaged in this area, and no trace of it is left. The second sherd useful for the reconstruction is No.2060 which preserves most of two leaves of the palmette and part of a third. At the inner corner of the sherd can be seen part of the curved moulding which flanked the nucleus. The two pieces can be assembled as shown in the drawing which allows the palmette to be reconstructed with 7 leaves.



Drawing 27-1. a) Antefix reconstructed from fragments Nos.2060 and 2064 and b) the fragments superimposed on the reconstructed antefix.

Another fragment, No.2067 comes from a similar palmette. It shows part of a leaf, and of the left hand scroll with a roundel below it, but it adds little to the understanding of the overall design. The scrolls have been reconstructed on the analogy of the antefix from the Contrada Sansone at Metaponto cited above, and of another from Botromagno (*Gravina II*, pl. XVII no. 1618). They are very different in proportions, but on both the scrolls pass downwards through the astragal and then spiral upwards and outwards to enclose two roundels, one on each side. The other ends of the scrolls emerge from the tops of the astragals and turn outwards to touch the lowest leaves of the palmettes and then steeply downwards towards the corners of the antefixes. Another fragment from Botromagno (*ibid.*, no. 1619) is likely to provide the best model for the treatment of these corner scrolls.



Drawing 27-2. Comparanda for Palmette antefixes; left to right: types of Lo Porto 1966, fig. 9 from Metaponto (not to scale); *Gravina II*, nos. 1618 and 1619 from Botromagno.

This was not, however, the only scroll pattern used on the palmette antefixes of San Felice. No.2070 shows most of the lower leaf on the left side of the palmette, and below it part of a scroll which loops upwards and outwards around another roundel. The

design is incompatible with our proposed type since the roundel has been moved considerably to the left leaving it uncertain how it related to the (missing) nucleus.

Other fragments with leaves (Nos.2059, 2061, 2065) have no trace of the scrolls or central nucleus and so cannot be assigned with certainty to our reconstructed type; nor can two other fragments which only show parts of the leaves found in the Superintendency's excavations in *Saggio* A on San Felice (Cossalter in *PSF,* 67, 70-71 and figs 20, 21). Not all leaves follow the same model. Two fragments from our survey show significant variations in the treatment of the mouldings surrounding them. On No.2062 the ribs which border the leaves merge with another which links their tips so as to form a semicircular surround to the palmette; and on No.2063 the ribs which frame the outer edges of the leaves are accompanied by a second rib in parallel.

In her discussion of the Metapontine pieces Tempesta has noted that some of the antefixes were made using secondary (or even tertiary) moulds derived from casts from the primary (or secondary) moulds, in subsidiary workshops. The practice involved some loss of quality in the product and ca. 10% shrinkage in its size. It is difficult to assess where most of our pieces might come in such a production series, given the wear and tear to which they have been subjected by continuous ploughing of the site, but No.2064 has a degree of clarity that suggests that it must come early in a series, whereas No.2070 is so blurred that it must have been cast in a very worn and probably at least secondary mould. Some of our pieces show crude repairs which obscure the original design, most obvious in the patched inner moulding of the frame of No.2058 which overlaps the border of one of the leaves of the palmette.

The numerous variant types, and the relatively wide distribution of the fragments on the hill-top must imply that there was a significant number of buildings, probably at least five or six, embellished with palmette antefixes. All were on or near the top of the hill – these buildings must have been owned by the élite and intended for show (see Site 223 in List of Sites, Plan List-16 and discussion). How they should be dated is not exactly clear. Lara Cossalter has suggested that the two fragments found in the excavation of *Saggio* A on San Felice came from the roof of a building of the C5 BC, but in Metaponto and its Chora, the few antefixes of this kind from datable contexts are associated with buildings of the archaic phase. It is more likely, therefore, that they belonged to an earlier building (of the last half of the C6) concealed by the walls of the C5 as M.R. Depalo has suggested (*PSF*, 30 and fig. 10). Not all our variants need be of this date. Those with shorter more fleshy leaves reminiscent of the first type at Incoronata may be rather earlier (mid-C6 BC).

There are also three fragments of lateral simas, described below (Nos.2068-2070). They are too fragmentary to allow the overall design to be reconstructed.

II. Catalogue

1. Plaques with gorgon's head		
2056	627 R	Pl.39. P1613. Frag, of a circular *gorgoneion* showing the bottom left of the gorgon's face encircled by a guilloche pattern (perhaps representing stylized snakes). Drab brown clay, lighter brown at surface. Back side damaged showing no original surface. Max. pres. dim. 7.4; max. pres. th. 2.0. I know of no exact parallel, but the style is Late Archaic, late C6 or early C5 BC.
2057	401/9	Pl.39. P888. Frag, of a *gorgoneion* showing fringe of stylized snakes around the gorgon's head. Hard fired yellow buff clay, roughly finished on back. Ø ca. 17.0, th. at rim 1.4. The position of the snakes in relation to the face is not evident, and it is uncertain, therefore, whether the complete plaque was semicircular or circular. The type conforms (at least as far as the preserved part is concerned) to Rainini's *Gorgoni "orride" tipo 1* at Forentum/ Lavello, derived from Tarentine or Metapontine types of the late C6/ early C5 BC: Rainini 1991, tav. V fig. 17-N. 5. For other Gorgon's head antefixes or plaques with similar treatment of the hair cf. Riccardi in *Monte Sannace,* 147-148, tavv. 263.1, 264.1; Muraglia 2019, 95 fig. 6.h, also from Monte Sannace); Fabbri *et al.* 2000-2001, tav. VIII. 85 from Ascoli Satriano; *Gravina II*, nos. 1611-1614 from Botromagno.
2. Semicircular antefixes with palmette		
2058	223 E31N18	Pl.39. P4516. Pinkish-grey clay with numerous firing holes; reddish-brown slip on outer surface discoloured grey in places by burning. Attachment for tile broken off at rear. Rear side roughly finished. Outline of 2 leaves of palmette in relief, with leaf slightly elevated and rounded. Beginning of a broader rib (scroll) at bottom right of sherd. Max. dim. 10.0, th. ca. 1.8.
2059	223 E35N20	Pl.39. P4381. Broken at imbrex spring. Pale brown clay, similar surface. Part of 2 palmette leaves. Max. dim. 8, max. th. 1.7. Cf. Nos.2058, 2060.
2060	223 Ar. 245	Pl.39. Fig. 50. P594. Broken near edge with spring of imbrex. Back roughly finished. Hard pinkish-brown clay with some white grits. Most of 2 palmette leaves and part of a third. Max. dim. 9.0, th. 2.0. For analysis and discussion of this piece, see above.
2061	223 E30N19	Pl.39. P4382. Broken at imbrex spring but with part of edge preserved. Unevenly finished at back. Pale brown clay, similar surface. Part of palmette leaf and beginning of another. Max. dim. 4.5, th. ca. 1.5.

2062	223 E36N23	Pl.39. P4392. Frag. with beginning of imbrex spring. Pinkish-brown clay with pale brown surface out. Part of one palmette leaf and beginning of another. Max. dim. 6.9, max. th. 1.4.
2063	223 E23N35	Pl.39. P4220. Hard reddish-brown clay with numerous small air holes left by firing. Pale brown surface (perhaps a slip). Part of tile projecting behind. part of a palmette and surrounding fillet. Max. pres. w. 6.0, max. pres. ht. 5.2.
2064	223 E35N19	Pl.39. Fig.50. P4391. Pale pinkish-brown clay with pale brown surface. Max. dim. 8.0, max. th. 1.6. For analysis and discussion of this piece, see above.
2065	223 E33N17	Pl.39. P4465. Frag. with part of cover tile attached. Pale greyish-brown clay. Front of antefix badly damaged – 2 ribs, probably of palmette motif remain. Max. w. 4.8 (intact part 3.2), th. 1.6; tile projects 7.0 to rear.
2066	223 E32N17	Pl.39. P4496. Hard reddish-brown clay with some small white shell inclusions, light brown surface out, roughly finished on rear. Lowest leaf of a palmette (left side) and part of a spiral scroll. Max. dim. 6.5, th. 1.6-2.
2067	223 E28N23	Pl.39. P4375. Dull brown clay with similar surface. Base line and part of scroll. Max dim. 6.5, max. th. 1.5.
3. Lateral simas		
3a. With moulded decoration The 3 pieces listed here have parts of pendant scrolls with roundels comparable to those on the antefixes. They perhaps come from lateral simas with palmette and lotus friezes. Their poor quality suggests they are local products.		
2068	223 E33N19	Pl.39. P4380. Pale yellowish-brown clay, similar surface. Part of 2 scrolls. Max. pres. ht. 4.7, max. th.1.7.
2069	223 E32N22	Pl.39. P4362. Pale yellowish-brown clay, similar surface. Motif as No.2068 above, and probably from the same building. Small part (4-10mm) of upper (or lower) edge preserved, 2 thumb impressions on back of sherd. Max. dim. 5.7, th. 1.5-1.7.
2070	223 E43N40	Pl.39. P4315. No original edge. Pale yellowish clay. Back surface rough. Worn decoration in relief showing part of the calyx of a lotus terminating in a scroll, with (to the right) another scroll, probably of an adjacent palmette. Max. lg. 9.0, th. 1.8.
3b. With painted decoration The following enigmatic piece seems most likely to come from the upper part of a lateral sima.		
2070a	362	Fig.50. P858. Reddish-brown clay with numerous inclusions, pale brown surface on outer edge. Traces of thin lines in matt brown paint on outer edge radiating from 2 nodal points (palmettes?). Pres. ht. 4.2, th. at top 2.8. For the style of painting, cf. the Laconian tile No.2190 from San Felice. The present piece was found with a thin scatter of material of varying date and is unlikely to derive from a building on this site. It is more likely to be a stray piece dumped as "manuring scatter" from San Felice.

28. TERRACOTTA MODELLED OBJECTS

I. Introduction

No terracotta figurines with human (or divine) subjects were found in the field survey, but five small-scale terracotta three-dimensional representations are worth recording: four horses' legs and a small, crudely made model of a chariot.

Four terracotta objects, badly battered by repeated ploughing, are recognizable as hand-modelled horses' legs. Another, No.2075, can be identified as a terracotta chariot wheel. Although the scale of the chariot wheel is much smaller than that of the legs, and it comes from a different site, it might be thought that these pieces all come from terracotta models of chariots pulled by horses, a type of figurative composition well-known in Iron Age societies which is attested at several Peucetian sites. There is a particularly fine example from a tomb of the late C4 at Conversano which shows Nike in a two-wheeled racing chariot drawn by a single horse (Chieco Bianchi Martini 1964, 163 fig. 77; Ciancio in *Norba-Conversano.* 297 fig. 8). Several fragments of horses' legs and chariot wheels from Monte Sannace may come from similar pieces (*cit.,* tav.378.2, 380.2), as probably do two horses in the collection of the Fondazione Santomasi at Gravina (Turturo 2003, 13). But on two of our pieces (Nos.2071and 2072) there are traces of a wheel-made pot attached to the top of the leg. These two legs, and probably all four, must therefore have been supports for a vessel. Such pieces probably had a ritual function – in effect they were receptacles for offerings (*thymiateria*), like the very elaborate example found in a tomb on Botromagno datable to the C6 BC which had a bowl with lion's head *protomai* supported on a tall shaft arising out of a broad base which was in turn supported on three clawed (lions'?) feet (E. Herring in Whitehouse, Wilkins and Herring 2000, 159-164 and fig. 94, with discussion). They may also be compared with a small class of Daunian pots of several shapes supported on three or four legs with out-turned indeterminate feet published by Mayer (1914, Taf. 10 no. 9; Taf. 11 nos. 2 (from Ruvo), 4 (from Canosa), 11 (from Ordona), all undated by context). See also M.G.Liseno 2012, 176 no. 1.34 from a tomb of the end C5/ beginning C4 at Ascoli Satriano. Our pieces are different from these in that the legs are clearly equine. They should probably be considered a Peucetian equivalent, perhaps deposited for ritual purposes in tombs.

It remains probable that No.2075 comes from a model of a chariot.

II. Catalogue

1. Horses Legs		
2071	223 E42N23	Pl.40. P4905. Horse's leg, reddish brown clay with pale brown surface, white shell inclusions up to 0.4 long. Roughly modelled. Broken at point of juncture with pot with a small piece of internal surface of vessel remaining at top of sherd. Leg ends in projecting piece – probably horse's hoof with some horizontal modelling but broken short of base. No trace of fetlock. Ø 3.4 (at break), pres. ht. 7.5.
2072	223 E50N26	Pl.40. P4743. Horse's hoof and leg supporting a dish. Surface of bottom of dish at top of frag. Split vertically down the middle. Pinkish brown clay with light pale brown surface. Ht. to bottom of dish 9.3, max. ht. 10.8, max. th. of leg 4.6, of dish wall 1.1.
2073	223 E47N28	Pl.40. P4492. Horse's leg and hoof. Reddish brown clay, pale brown surface, uneven. Damaged on 2 sides. Traces of black-brown paint in vertical line down back of leg and over left edge of fetlock and back of hoof. Careful modelling round fetlock and edge of hoof. Small area of original surface on under side of hoof. Max. pres. ht. 6.5, max. dim. of hoof 3.8, max. dim. of leg at break 3.4.
2074	223 E50N35	Pl.40. P7050. Horse's leg and hoof, roughly modelled in the round, with central firing-hole. Hard pinkish brown clay with cream surface out. Badly battered by the plough, with much of surface lost. Pres. ht. 9.0, max. th. at "top" 2.5.
2. Fragment of a terracotta chariot		
2075	813 C10	Pl.40. P1876. Roughly cylindrical object, hand-made, broken at one end and expanding towards the other which is decorated in high relief (about 2mm) with a circle divided symmetrically by one vertical and two horizontal bars (damaged). Fine pinkish-buff clay, fired cream at surface. Ø of end ca. 6.0, pres. lg. 5.2. The circle subdivided in this way is reminiscent of chariot wheels seen on some Paestan tomb paintings of the C4 BC (e.g. Pontrandolfo & Rouveret 1992, 171.5, Andriuolo tomb 89, ca. 330/329 BC; 217.3. Lagnetto tomb III, 3rd quarter C4 BC), and (in the round) on frags. of miniature terracotta chariots from Monte Sannace (*cit.,* 46-61 and tav. 381 nos. 2-5, from tombs 6 and 8 of the late C4/ beginning C3 BC). These comparisons suggest that our piece shows approximately half of an axel with two wheels from a rather crude terracotta chariot, probably deposited in a tomb.

29. DAUB

I. Introduction

Daub – essentially a compound of field clay mixed with varying amounts of straw, chaff, dung, sand etc – was plastered over a framework of wattle attached to upright poles. The wattle and daub walls might rise directly from the ground or might stand on stone socles. This simple technique of construction was used in South Italy from the Early Neolithic period onwards. Daub is only preserved when it has been baked by fire, so the presence of daub on a site records the destruction of a hut, whether by accident or by hostile action. This must have been a common phenomenon because fragments of daub have been found on numerous Neolithic, Bronze Age, and Early Iron Age sites in South Italy. They include (the list is intended to be indicative and is certainly not complete):

Neolithic: Passo di Corvo and La Quercia (Trump 1987, 117-136 at 119, 130), La Panetteria (Jones 1987, 139, cf. 174), Rendina (Radi 1999, 38), Scamuso (Biancofiore & Coppola 1997), Pulo di Molfetta (Mosso 1910, 230-140), Murgia Timone (Lo Porto 1998a, 113), Penitenzeria (Robb 2007, 33).

Bronze Age: **EBA**: Tufariello (Nabers 1975); **LBA**: Egnazia (Biancofiore 1979, 168), San Francesco della Scarpa near Bari (Fornaro 1988, 127) and Santa Maria di Buon Consiglio near Bari (Radina 1988a, 135).

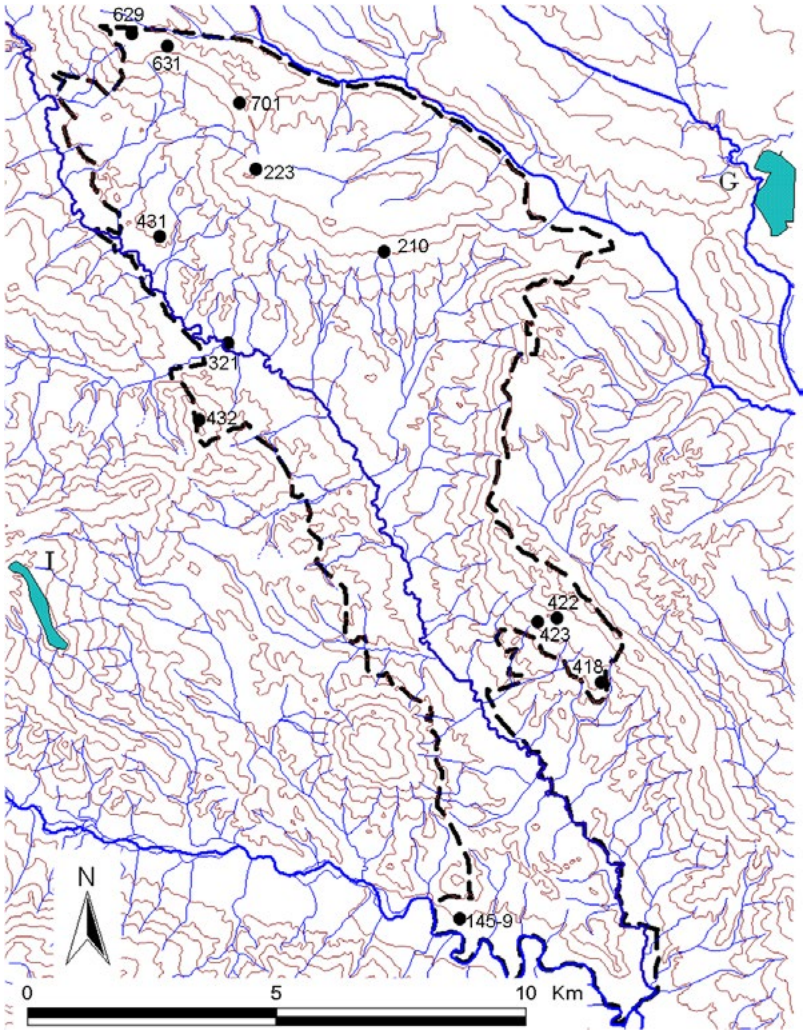
FBA/EIA: Termitito (De Siena 1996, 170-171).

EIA/IA: Cavallino: Pancrazzi 1979a, 120; Incoronata: Cossalter & De Faveri 2012, 120; Monte Sannace: Amatulli & Del Monte 2013, 201-202; L'Amastuola: Burgers & Crielaard 2011, 59 and fig. 3-17.

Closer to our Survey Area, daub has been reported on the Neolithic sites of Casa San Paolo (Vinson 1975, 59, 61), and Le Grottelline near Spinazzola (Colombo 2009, 70). The excavation of an EIA hut on Monte Serico also yielded concentrations of daub with impressions of wattle (Ciriello *et al.* 2012, 312).

Site	Main phase(s) of occupation
147-9	Neolithic
210	Neolithic
223	EIA–LIA, Medieval
319-321	Neolithic, Hellenistic
418	EIA, LIA/Hellenistic
422	EIA
423	EIA and Hellenistic
431	EIA
432	Neolithic
629	EIA
631	Neolithic
701	Neolithic

Table 29-1. Daub on sites in our Survey Area and the broad periods of those sites.



Map 29-1. Sites in our Survey Area on which daub was found.

Wattle and daub was not, however, the only material used for hut walls in the prehistoric period. According to S. Tinè (1983, 52-53), it was little used in the Neolithic village at Passo di Corvo where the hut walls were constructed either entirely of stone, or of wood on a stone socle. D. Trump (1987, 119, 130), however, reports some daub from the site. At Broglio di Trebisacce, the huts of the MBA had walls made mostly of stone and wood (Trucco 1994, 88-89, 93, with other examples), and at Francavilla Marittima, the apsidal long house of the EIA was built of timber, as were the rectangular structures that succeeded it (Kleibrink 2006, 112-113). Mud bricks were probably also used as building materials, but are difficult to identify, since concentrations of clay found on prehistoric sites are as likely to result from dissolved daub as from mud bricks.

The methods of constructing wattle and daub walls have not been much studied in South Italy. In the Neolithic settlement at La Favella in Calabria, the daub was plastered over the outside of a framework of split branches set vertically (Dumont & Russo 2009). At Broglio di Trebisacce, the wooden framework used in wattle and daub walls in the BA huts was constructed in three ways, which could be distinguished by the dimensions of the imprints of the materials used (Moffa 1998). In the first, attested only in the LBA, bunches of brushwood were woven vertically into a horizontal framework of narrow rods, leaving imprints ranging between 0.1 and 0.3cm in diameter from the brushwood and 0.4–0.6cm from the rods; in the second, used in all periods at Broglio, dense rows of vertical canes were woven into the horizontals, leaving imprints between 0.4 and 2.5cm in diameter; in the third, found only in the MBA, there was a more open framework of vertical sticks measuring between 2.5 and 5.2cm in diameter, woven into horizontal rods of similar thickness. According to A. Liseno (2007, 67-68), the second of these methods was the normal construction technique used in huts between the C8 and C5 BC. She notes that at Serra di Vaglio, Manfredonia-Cupola and Monte Sannace, the daub used in huts of this period was coated externally with a thin layer of red or white clay-based plaster for decorative effect. Burgers & Crielaard (2011, 58-59, fig. 3-17) illustrate various fragments of daub from the settlement of the end C8–end C7 BC at L'Amastuola, most of which have imprints of sticks measuring ca. 2.0cm in diameter.

Huts of wattle and daub began to give place to more solid masonry structures inspired by Greek models in the course of the C7 BC. This was a gradual process which happened earlier is some places than in others, and which lasted in some areas into the C5 BC (Liseno 2007, *passim*). On Botromagno, huts erected on a framework of posts were still in use in the C6 BC (*Gravina I*, 35, fig. 27).

Fragments of daub were recorded on 14 sites in the Older Surveys, all of them Neolithic, and on 12 sites in our Survey Area (see Map), 6 of which were occupied in the Neolithic period, and 6 in the Early Iron Age.

Most of the fragments were too small to reveal details of the type of wattle used, but two of the larger pieces were more informative. Both come from Neolithic sites. They match the second type in Moffa's classification, with rows of vertical canes woven into horizontal rods. No colour coating was observed on any of these pieces.

II. Catalogue

2076	321	Pl.41. P752. Lump of pale brown daub showing two roughly parallel wattle impressions ca. 1.0–2.0cm wide and ca. 2.0–3.0 apart. Max. dim. 8.5. Cf. Lo Porto 2006-2007, 367 and 368 fig. 12 no 79, Lump of daub from a hut in the Neolithic village at Setteponti near Matera, with rather larger wattle impressions similarly spaced.
2077	701	Pl.41. P8119. Pale pinkish-brown mass, showing wattle impression ca. 2.0cm wide. Max. dim. 13.5, max. th. 8.0.

30. INDUSTRIAL OBJECTS

I. Introduction

Kilns and wasters

Evidence of kilns for firing tiles or pottery was found on 20 sites in the Survey Area, not counting Vagnari, where the excavation revealed 6 ranging in date from the beginning of the principate to the late C4 AD (*Vagnari*, 231-277). The evidence, which is discussed more fully in the various entries in the List of Sites (V), is summarized in the table below. Some of it can be questioned. The category of "kiln remains" includes both a structure still in place (on Site 407), and fragments of lining of overfired clay. Some of these may come from ovens rather than kilns, so if the quantities are small and there are no ceramic or tile wasters to support the identification, the existence of a kiln on the site must be considered doubtful. This is the case on Sites 135, 139 and 140 on which the kiln waste collected weighed less than 110g. But wasters are mostly likely to be found if a kiln was overfired, so the absence of wasters need not prove that there was no kiln, and in some cases there may be good reason for thinking otherwise. On Site 134, for instance, there are considerable concentrations of kiln material in two distinct parts of the site which must represent the remains of at least two kilns. The identification of a waster is also open to question. On many of our sites

Site	Kiln frags	Tile Waster	Pot Waster	Spacers	Date of Site
114	*		*		**E.Hel, L.Hel, E.Imp, M.Imp,** L.Ant
126	2087				**LIA**
127	*		*		**E.Hel**
134	*				**LIA**, E.Hel?, **L.Ant, E.Med**
135	*				**M.Imp**
139	*				**LIA**, **M.Imp, L.Imp,** L.Ant
140	*				**EIA,** LIA
145-9	*	2083	*		MIA?, **LIA,** E.Hel, **E.Imp, M.Imp, L.Imp, L.Ant.** E.Med
223	*	2085a	*	2078 2079 2080	**Neo, FBA, EIA, MIA, LIA,** E.Hel, L.Hel, M.Imp, **L.Ant, E.Med, Med**
229	*				MIA, **LIA, L.Hel, E.Imp, M.Imp,** L.Imp, **L.Ant**
302	*				**Neo, LIA, E.Hel,** L.Hel
309		2084 2085			**E.Med**
336	*	*			**C17/C18 AD**
345	*	2081 2082			**C17 AD?**
351	2086				**LIA**
401		*			**FBA, EIA, MIA, LIA,** L.Hel
407	*	*			**FBA, EIA, MIA, LIA,** E.Hel, L.Hel
413	*	*			**LIA**
627		*	*		BA? **MIA, LIA.**
704		*			**M.Imp**

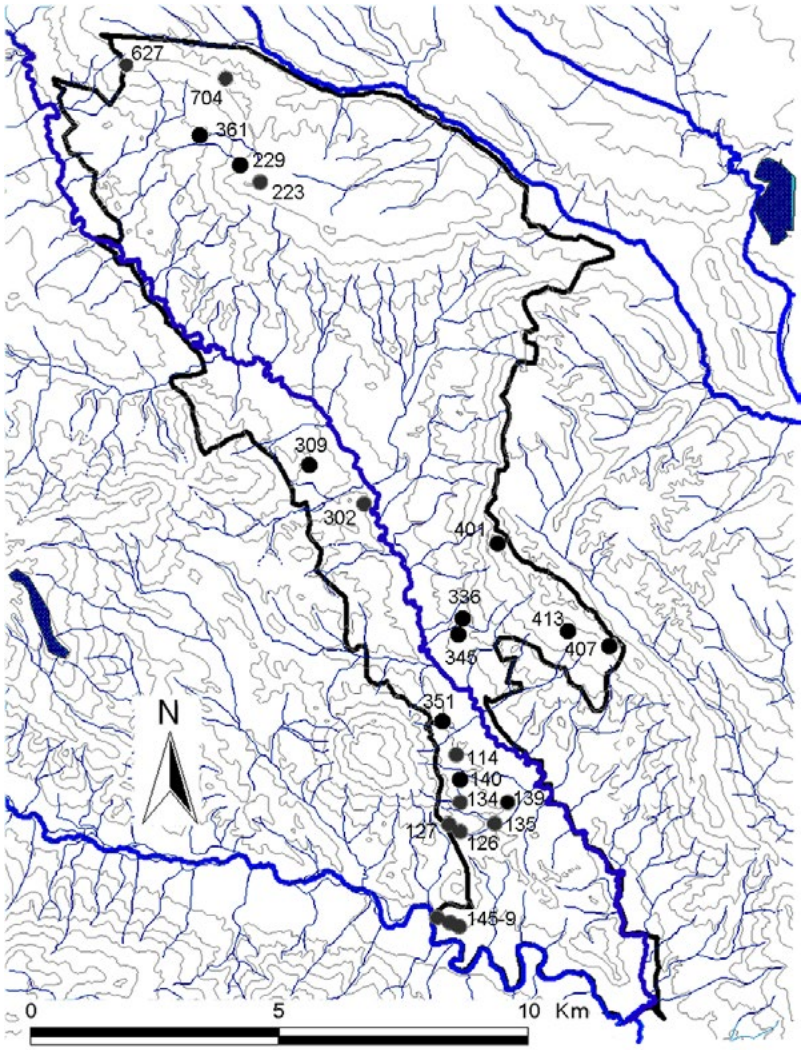
Table 30-1. Sites and kiln evidence with catalogue numbers. * = presence of uncatalogued pieces.

there were fragments of tiles overfired to a green colour, but rather than being wasters, they may be "seconds" – products which were still usable and (we may suppose) could be sold off cheaply, and which do not necessarily indicate the presence of a kiln on the site. We have not taken account of such pieces in compiling the table, which only lists tile or pottery wasters which have been seriously distorted in the firing process. They can be regarded as certain evidence of the presence of a kiln in the vicinity, as can the "firing supports" – fragments of distancers used to separate pots or other objects in a kiln to allow the hot gasses to circulate. The distinction made between pottery and tile wasters may be misleading. Although the largest kilns (like those of the imperial period at Vagnari) may have been used only for firing tiles, many kilns are likely to have been used for firing either tiles or pots, as occasion demanded, especially the smaller round- or horseshoe-shaped kilns of the LIA and Hellenistic periods. On Site 114 we found a loomweight waster which is likely to have been fired in such a kiln, probably in the Hellenistic rather than the Roman Imperial period. In the case of the pottery wasters it was never possible to identify specific types.

The last column in the Table gives the phases of occupation of each of the sites. In many cases there may be doubt as to the phase to which the kiln or kilns belonged, but there is no good evidence for any kiln before the Iron Age, and no site occupied only in the Early Iron Age produced any. The earliest identifiable kilns are likely to date from the Middle to Late Iron Age. All the main sites occupied at that time (Sites 223, 401, 407 and 627) produced some evidence of kilns (including the structure on Site 407), as did many of the subsidiary sites (Sites 126, 140, 302, 351, 413, and perhaps 134 and 145-9 which were occupied in more than one period).

There is a concentration of these smaller sites on the right bank of the Basentello, in the area below Monte Irsi, and it is probable that the pottery and tile kilns connected with the settlement on the hill-top were located there so that they could exploit the resources of alluvial clay, river water and (probably) wood.

Others of the same period were associated with settlements on the left bank of the river. The evidence suggests that there were three on Site 223 (San Felice), two to the N of the modern road and the third towards the E end of the site. All three were situated away from the main inhabited area. The kiln on Site 407 was also situated away from the main nucleus of the settlement, as, probably, was that on Site 302 where we have suggested that there was a working area S of the main dwelling. It is likely, therefore, that it was normal practice to locate a kiln away from the main centre of habitation, to limit the risk of fire, and to keep the smoke at a distance. Less can be said about Site 401 which was less intensively surveyed, but the kiln on Site 413 probably served the whole group of sites near the Fontana Fico.



Map 30-1. Sites with kiln evidence in our Survey Area.

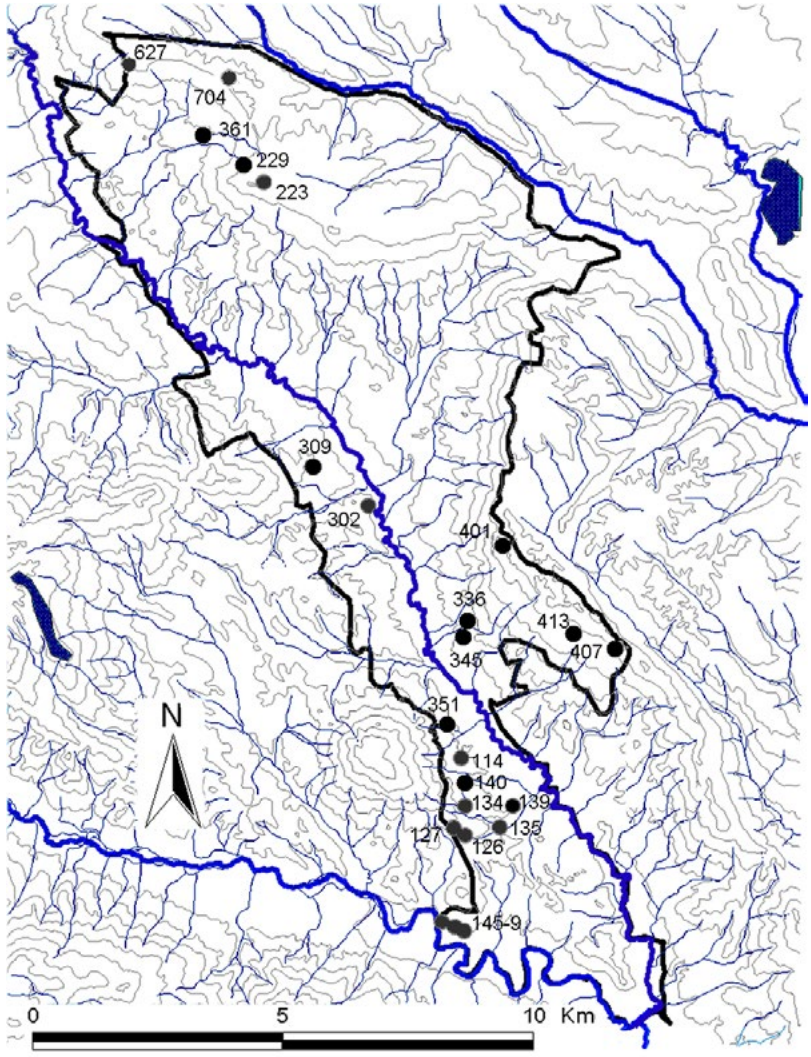
Apart from the kilns at Vagnari only a kiln on Site 135 can be reliably dated to the Roman Imperial period, though on Site 114, where traces of two or more kilns were found, at least one is likely to have been Roman imperial. Both sites were in the S of the Survey Area, far enough from Vagnari to have made a local kiln desirable. It is probable that there was also a kiln of the Roman period in the N of the Survey Area on Site 704 where there were *tegula* wasters although we found no kiln waste on the site. The kiln remains found on the surface of Site 229 (the Roman villa at San Felice) perhaps derive from the post-occupational lime kiln excavated by the Canadian team in 2007/2008, or from another pit-kiln of uncertain purpose of the same phase (McCallum, vanderLeest *et al.* 2011, 65-68).

In the Late Antique period more kilns appeared. One of the two on Site 134 perhaps dates to this time, as may another close to it on Site 139, although this site was also occupied in the Hellenistic period. Site 309 may have had a kiln though the evidence for iron working is clearer: It had a tile with slag

adhering to it, presumably from the bottom or lining of a smithing pit. Finally, there was an isolated brick kiln (Site 336), radio-carbon dated to the C17/C18 with a brick yard (Site 345) close to it. This falls outside the period of our study but it shows the suitability of the conditions (clays and fuel) for tile manufacture. Since it is well preserved, we have chosen to publish it as a kiln which pre-dates the Industrial Revolution

Slag

Slag from iron working appeared on 10 sites across the valley with another 3 in the extended area of the Older Surveys. None of these sites produced a great deal of slag – the most was just over 3 kg on Site 223 – and it seems probable that the forges were generally small and served the inhabitants of a limited area. It may be noted, however, that even at Vagnari where the amount of iron found in the excavation was considerable, there was not a great deal on the surface. In the area of the Older Surveys there may have been more extensive commercial iron working on Site V147 where Vinson found a 5 kg lump of iron slag. He noted that there were laterite deposits at the top of the pass where it was situated. The date of the site ranged from Neolithic to LIA.



Map 30-2. Sites in our Survey Area on which slag was found.

As in the case of the pottery and tile kilns, there is no certain evidence for iron working before the LIA in our Survey Area. There were then 5 sites with forges (Sites 223, 401, 407, 418, 419), all except San Felice on the hills above the left bank of the Basentello, in the general area of the Fontana Fico. There was perhaps also iron working on Site 145-9 on the right bank of the river, but since this is a multi-period site the slag is impossible to date reliably. It may equally have been Late Antique. There is other evidence for LIA forges in the area of the Older Surveys at Site V33 and Site V147, to which can be added San Mauro (SM). In the Roman imperial period iron was worked on Site 372, and at Vagnari, where the excavations revealed two forges, one of the Early, the other of the Late Empire (*Vagnari*, 279-285); and in the Late Antique period there were forges on 324 and 410. The latest evidence for iron working is the slag found on Site 309 (No.2088a) which can be dated to the Lombard period by its association with a small group of combed tiles (Nos.2240, 2241, 2257). The site was small, and it is unlikely that there was habitation on it. Since there was also a mass of vitrified clay (No.2084) it is possible that iron was smelted there. Except for the kiln of the C17/C18 on Site 336, this was the only site in the Survey Area which was exclusively industrial. It was perhaps worked from Site 306 and intended to serve the needs of the scattered Early Medieval population in the Basentello valley.

II. Catalogue

1. Spacers

Spacers were ceramic objects used to separate pots being fired in a kiln. They varied considerably in size and form, depending on the types of pots that they were required to separate. The shapes may also have varied over time. Numerous spacers in the form of rings or low cylinders, often with perforated walls, were found in waste deposit 1 of the *kerameikos* at Metaponto dated to the early C4 BC (D'Andria 1975, 413-418, figs. 58-60; Cracolici 2004), and various types including banana- or spool-shaped pieces, cones and perforated bowls have been reported from Taranto where they were used in the production of black-gloss pottery (Dell'Aglio 1996a, 68-71; 1996b, 325). The banana-shaped type recurs at Ordona in the C2/ early C1 BC (De Stefano 2008, 128-129 fig. 15), and the spool-shaped type in the amphora kilns at Giancola near Brindisi in the C1 BC, together with conical pieces (M. Firmati in Manacorda & Pallechi (eds) 2012, 174-180).

2078	223 E22N18	Pl.41. P4537. Hard greyish brown clay with some white shell inclusions, roughly finished. Internal Ø ca.17.0, w. at bottom 2.8, w. at top 1.5, ht 1.5. Cf. D'Andria 1975, fig. 58 no. 101 from waste deposit no. 1 in the *kerameikos* at Metaponto, associated with the production of red-figure, black-gloss, wheel-made painted and plain wares in the early C4 BC.
2079	223 E42N27	Pl.41. P4865. Large frag. of a cylindrical kiln-spacer with circular vents in the wall (two partly preserved on the sherd). Pinkish-brown clay, fired greenish brown at surface. Ø ca. 17cm, max. th. 20; ht to top of ring 2.2. Cf. D'Andria 1975, figs. 58-59 nos. 237-244 from waste deposit no. 1 in the *kerameikos* at Metaponto.
2080	223 E38N24	Pl.41. P4637. Part of a flat object with one finished side from which projects an appendage curving to point of break. Hard pinkish brown clay with yellowish surface, roughly finished. Pres. lg. 8.0; max. pres. th. 1.9. The function of the piece is uncertain. The flat form suggests that it was a stand of some sort on which objects were placed, perhaps a kiln spacer.
2. Tile wasters		
2081	345 F3	Pl.41. P8085. Mass of hard greenish vitrified grey clay with surfaces pockmarked with numerous small air-holes. Pres. lg. 10.0, pres. w. 4.0, th. 3.4. The site is assumed to be the brickyard for the kiln Site 336.
2082	345 G2	Pl.41. P8086. Green vitrified waster, probably from a collapsed pot or pots. Hard greenish grey clay with molten surfaces pockmarked with numerous small air-holes. Pres. lg. 10.0, pres. w. 4.0, th. 3.4. The site is assumed to be the brickyard for the kiln Site 336.
2083	147 - D4	Pl.41. P213. Almost formless mass of overfired clay. Hard yellow-green clay with, molten surface pockmarked with small air holes. wt. 464g. ca. 10.0 across.
2084	309	Pl.41. P8183. Shapeless mass of greenish vitrified clay. Max. dim. 12.5.
2085	223	Pl.41. P7137. *Tegula* waster. Greenish vitrified clay with numerous bubbles. Max. dim. 7.5.
3. Kiln waste		
2086	351	Pl.41. P8084. Lump of kiln lining. Hard brown clay with numerous traces of chaff/ straw ending in an uneven melted surface of green smooth vitrified material with numerous small air pockets. Max. dim. 6.5; th. 6.0.
2087	126	Pl.41. P8087. Lump of kiln lining. Very light. Soft, yellowish to pinkish brown with many small black grits and air-holes. Max. dim.7.5. 1 of 6 similarly sized lumps from this site.
4. Smithing waste		
2088	223 E37N16	Pl.41. P4752. Small lump of smithing slag. Hard dark greyish matrix turning to dark bluish grey and dark brown in places; some small grey pebbles; numerous air holes.
2088a	309	Pl.41. P1229. *Tegula* waster with slag adhering, Max. dim. ca. 15.0. The frag. must be from the lining of a smithing pit.

31. MEDIEVAL WARES

I. Early Medieval painted wares

by Alastair Small

Introduction

The following unglazed painted pieces come from two sites (Sites 134 and 223) both of which were occupied in the pre-Roman period and again in the Early Middle Ages. They were made on a fairly fast wheel, but painted off it, with stripes, uneven curving lines and in some cases with irregular dots in matt reddish paint. They do not conform to the normal standards of pre-Roman WMP pottery and are unlikely, therefore, to date from that phase of these sites. They have more in common with LRPW, but they differ from it in that they are painted with relatively narrow lines rather than in the broad expanses of reddish or drab grey-brown slip typical of that ware. In fact all five pieces are best seen as examples of Early Medieval painted wares which circulated in South Italy between the C7 and C11 or C12 AD. The chronology and characteristics of these wares have been greatly clarified by Paul Arthur in the light of dated contexts from his excavations in several Late Antique/ Early Medieval sites in the Salentine peninsula (see esp. Arthur 2004). The first two (Nos.2089 and 2090) resemble the "broad line" pottery originally defined by D.B. Whitehouse (1966, 1988): a rather miscellaneous ceramic group characterized by a cream, pink or reddish fabric, sometimes with a cream slip, and decorated with broad red or brown stripes, loosely arranged over the outer surface. Fragments of broad-band pottery painted in a simple style were found in two hut-pits (Grubenhauser) at Supersano in contexts dated by C-14 analyses to the mid-C7 AD (*ibid.* 316). This type of decoration continued in Salento down to the C11 (*ibid.* p. 318) and is well attested at Bari in contexts of the C10–C11 (Airò 2015a, 132-140). But some of the painted pottery shows more complex patterns. The curved line of our No.2090 probably formed part of a motif of looped lines seen on large jugs or two-handled flagons from contexts of the C10–C11 at Apigliano (Arthur 2004, 320 and fig. 7 nos. 19-20; Arthur & Leo Imperiale 2015, 39 and fig. 22.1-3) and Otranto (H. Patterson & D. Whitehouse 1992, 107-110 and figs 6.6 nos. 481-482 and 6.7 no.483). Two of our sherds are decorated with dots scattered on either side of rather narrower curving lines (Nos.2091 and 2092). They are likely to be of similar date since the patterns resemble those seen on the series of pots "con pallini o macchie" found at several sites in the Salentine peninsula, including Quattro Macine in contexts of the C8–C10 AD (*ibid.* 320 and fig. 7 nos. 17-18). Other sherds with dotted decoration have been found in contexts said to be of the C9–mid-C11 below the cathedral at Bari (Ciminale 2004, 310), and in excavations in the Piazza Bovio in Naples, again in contexts of the C8–C10 (Carsana 2009, 142-143 and figs 4.21-22 (bowls) and 23 (feeding vessel)). The fifth piece, No.2094, is difficult to classify without more of the pot to show how the decorative pattern extended beyond the limits of the sherd, but it seems to display the same mix of parallel broader and narrower bands curving in opposite directions away from a point of contact as is seen on some of the later painted pots at Otranto (cf. H. Patterson & D. Whitehouse 1992, figs 6.11 no. 519), and is probably to be dated to the C11 or C12 AD.

These Apulian wares are only a regional manifestation of a much broader class of painted pottery produced in various parts of the Italian peninsula in the Early Middle Ages which is gradually becoming better understood (various examples in Saguì ed., 1998, and Cirelli, Diosono & H. Patterson eds., 2015).

Nos.2090-2094 come from San Felice where there were only a few sherds of LRPW (of doubtful classification since they are not standard types). These fragments of painted wares help to fill the gap between the mid-C7 and the redevelopment of the settlement in the Norman period. They must be broadly contemporary with the combed tiles (Nos.2244, 2245, 2247-51) which are also datable to the Early Middle Ages.

Some additional comparanda from less well dated contexts are offered below.

Catalogue

1. With vertical stripes on the belly of the pot. C7–C11 AD.		
2089	**134**	Pl.42. P233. Ws. of closed shape. Hard-fired greyish brown clay. Group of 3 shallow horizontal grooves near top of sherd. Matt dark grey paint in a broad vertical sligntly curving stripe, and in thin oblique streaks irregularly across sherd. Discoloured by burning. Max. dim. 4.2. Cf. D'Angela 1988, 123-128 (with refs) and pl. XLV-XLVIII from Piano di Carpino (Foggia), "Brocchete a bande rosse"; Monte Sannace tav, 391.1. Mainly C6–C7 AD, but continuing into C9. The comparanda show that the piece belongs to a type of jug frequently deposited in Lombard period burials. It is also likely to be a funerary piece since it was found on Site 134, in the proximity of human bones from a burial disturbed by ploughing. It is the only piece of broad line pottery found on this site where the Late Antique/ Early Medieval occupation is attested mainly by numerous frags. of LRPW.
2090	**223 Ar.226**	Pl.42. P2239. Ws, hemispherical, from closed shape. Hard pinkish brown micaceous clay, thin matt brown paint in 2 thin irregular lines. Max. dim. 5, th. 0.8. Cf. Airò 2015, 134 fig. 9.3, 135 fig. 10 from Bari, area of San Nicola, C10/C11 AD.
2. With looped line on the belly of the pot. C10–C11 AD.		
2091	**223 E32N30**	Pl.42. P4559. Ws. Light brown clay with slightly micaceous cream slip, semi lustrous reddish brown paint. Curved line and horizontal band painted off the wheel. Max dim. 6.6, th. 0.5. Cf. Salvatore 1986, 137-138 fig. 12 no. 152154 from San Nicola dei Greci, Matera;

3. With thinner lines and scattered dots. C8–C10 AD		
2092	**223 E31N19**	Pl.42. P4717. Ws. Pale brown clay, purplish paint. Curved lines and dots. Max dim. 3.5, th. 0.4. Cf. D.Whitehouse 1966, 38 fig. 11a, "broad line" jug from Matera with looped stripes accompanied by spatters of large dots.
2093	**223 E25N26**	Pl.42. P4258. Ws. Pale cream clay, matt orange brown paint. Looped narrow line with several ovoid dots. Max. dim. 4.0, th. 0.35.
4. With thick and thinner curved lines curving in opposite directions. C11 or C12 AD		
2094	**223 E33N16**	Pl.42. P4698. Frag. of closed shape with slightly concave outer surface. Hard greyish brown clay, matt brownish red paint. Motif of thick and thin curved lines in opposed pairs (?). Max. dim. 3.4, th. 0.5-0.6.

II. La ceramica medievale

di Pasquale Favia e Vincenzo Valenzano

Introduzione

Il contributo dei manufatti vascolari in terracotta per la ricostruzione del paesaggio e dell'insediamento fra VIII e XIV secolo (P. Favia)

Le percentuali di ceramica medievale reperite nelle campagne di ricognizione archeologica nella valle del Basentello risultano relativamente contenute. Nel ventaglio dei ritrovamenti sono in particolare limitatissime le testimonianze ascrivibili al periodo fra l'VIII e il X secolo. Questo dato, naturalmente, va inquadrato e soppesato in relazione al fatto che per tale arco cronologico le conoscenze sulle ceramiche appulo-lucane sono ancora lacunose; a questa difficoltà si aggiungono le complicazioni legate all'ovvia assenza di contestualizzazione stratigrafica e alla notevole frammentarietà dei rinvenimenti.

Pur tenendo in particolare conto queste circostanze e dunque applicando specifiche cautele nella ricerca, tuttavia l'estrema pochezza di pezzi ceramici ipoteticamente attribuibili ai secoli centrali del Medioevo appare comunque elemento di un qualche valore statistico e di un certo significato; in altre parole, il quadro materiale prefigura una rarefazione, o comunque una riformulazione, del popolamento della valle del Basentello fra VIII e X sec.; questa situazione sembra del resto trovare eco stratigrafica negli stessi scavi di Vagnari, insediamento che cessa la sua vicenda abitativa fra Tardoantico e Altomedioevo con la conseguente trasformazione dell'area su cui insistevano le strutture residenziali e lavorative in spazio boschivo, senza segni di utilizzo agricolo. La selva e l'incolto dovevano dunque occupare larghe parti della fascia territoriale fra Puglia e Basilicata nello stesso Altomedioevo, mentre la frequentazione antropica si riconfigurò, articolandosi, con tutta probabilità, fra unità isolate e sparse nel territorio e casi, numericamente contenuti, di accentramento abitativo, in cui la componente rupestre assunse un peso non trascurabile (come nel caso dello stesso centro di Gravina).

I frammenti di terrecotte raccolte in ricognizione delineano un quadro dai contorni meno sfumati per il XII secolo e poi, più nettamente, per il XIII–XIV, sebbene, in contrappunto a quanto detto per la ceramica del periodo precedente, bisogni soppesare tale dato tenendo in considerazione la maggiore visibilità e riconoscibilità (oltre che, allo stato attuale, il più marcato approfondimento di studio) del materiale fittile appunto di XII–XV secolo rispetto ai secoli antecedenti. In ogni caso, i reperti offrono segno materiale dell'esistenza e dell'occupazione in tale arco temporale di alcuni poli insediativi nella valle del Basentello (Siti 223, 509, 811), tratteggiando dunque una nuova articolazione e una certa ramificazione del popolamento delle campagne murgiane bassomedievali; se i nuclei demici 509 e 811 si qualificano verosimilmente come piccoli stanziamenti rurali, la quantità e la distribuzione dei ritrovamenti ceramici configura il centro di San Felice come un abitato di maggior respiro.

Per quanto concerne le informazioni di più stretto registro ceramico, i pezzi recuperati nelle indagini sul campo permettono di ricostruire morfo-tipologie pienamente inserite nel panorama di produzioni e consumi archeologicamente noto per la Puglia centrale, con possibilità di confronti e riflessi anche su scala più vasta, allargate cioè all'intero Mezzogiorno (per i richiami bibliografici di tali confronti, si vedano *infra* le schede di catalogo).

Riguardo alle ceramiche comuni, prive di rivestimento vetroso, i resti fittili sono riferibili a brocche e ad anforette, mentre l'apprezzabile numero di anse a nastro scanalate, larghe sino a 8cm, prefigura l'esistenza di morfologie di contenitori più capienti, certamente funzionali ad assicurare riserve d'acqua e altresì potenzialmente utilizzabili per ospitare pure olio e vino o, inoltre, preparazioni in salamoia (di olive ed altro) e cibi solidi, come legumi, frutta, forse i cereali o i loro macinati (aldilà del deposito di più lungo periodo, cui servivano i silos ipogei). La diffusione di queste forme vascolari pare costituire risposta a un'accresciuta esigenza di immagazzinamento e conservazione degli alimenti, suggerendo, di riflesso, una dinamica di trasformazione negli assetti rurali e nell'economia della valle del Basentello, ovvero una tendenza alla riacquisizione di spazi destinati all'agricoltura integrata con la ripresa del commercio su media distanza. La gamma delle ceramiche comuni è completata da qualche esempio di tipo aperto, prevalentemente ciotole rispetto a bacini e catini; scarsa è altresì l'attestazione di pezzi su cui sia possibile verificare la stesura di pennellate o macchie di colore rosso. Nella classe da fuoco prevalgono olle e pentole di medie dimensioni, assimilabili alle tipologie più diffuse nella regione.

Quantitativamente contenuto, ma comunque significativo, risulta il gruppo dei frammenti fittili rivestiti da vernici vetrose recuperato in ricognizione; essi, peraltro, si concentrano sul sito di San Felice, a ulteriore conferma, sul piano materiale, di una particolare dimensione insediativa di tale centro nel distretto territoriale del Basentello nel Medioevo.

Le invetriate monocrome verdi, databili fra XII secolo inoltrato e XIII, tratteggiano innanzitutto una piena ripresa d'uso di forme aperte da mensa, in particolare ciotole. In questa classe si notano alcuni frammenti connotati da solcature circolari concentriche e altri corredati da cordoncini a rilievo; tali soluzioni decorative, pur nella loro semplicità, costituiscono ulteriore segno di un'ampia circolazione in Puglia di echi e influssi provenienti dai saperi artigianali di stampo arabo.

Nella serie delle terrecotte rivestite da vetrina monocroma (trasparente o di tono verde) si individua un piccolo gruppo di pezzi recanti una decorazione graffita su ingobbio; per quanto estremamente frammentari, i resti sono riconducibili a tipologie di orbita bizantina, prodotte fra XII e XIII secolo. L'esiguità dei reperti di questa categoria e la conseguente incompletezza nella ricostruzione degli ornati non consentono chiare classificazioni tipologiche, pur essendo evidenti i richiami alle famiglie delle *Sgraffito Ware* e *Incised-Sgraffito Ware* (e della stessa *Painted Sgraffito Ware*). La graffitura di un motivo "embricato", riscontrabile su alcuni pezzi, riecheggia soluzioni ampiamente adottate in area egea e orientale, in particolare utilizzate nelle produzioni della seconda metà del XII secolo (*Developed Style Sgraffito Ware)* mentre l'incisione sotto vetrina verde di strisce ondulate o a zigzag, rese a tratto largo, potrebbe forse trovare assonanze o affinità con la *Zeuxippus Ware* o la *Aegean Ware,* sempre collocabili in un orizzonte di XII–XIII secolo. Sino a poco tempo fa per la Puglia centrale si disponeva di riscontri materiali della presenza di ingobbiate graffite, chiaramente evocatrici, come si è detto, di scenari culturali bizantini, solo a Bari, ovvero nel principale centro urbano e portuale del comprensorio, mentre recentemente sono stati segnalati ritrovamenti di questi tipi pure a Gravina. La loro individuazione, per il tramite della ricognizione, in altri punti della Valle del Basentello (in particolare sul sito di San Felice) allarga dunque il raggio di penetrazione e diffusione di questi manufatti verso l'interno (oltre cioè i soli nuclei cittadini e costieri), tratteggiando più articolati itinerari di circolazione e commercializzazione; anche per i pezzi murgiani resta primaria la probabilità di un'origine egea, o comunque orientale, o, in alternativa, una produzione di area nord-adriatica (peraltro l'ampliamento dello spettro di attestazioni apule rende più ampio l'orizzonte di ricerca sui luoghi di fabbricazione, non escludendo, a livello di ipotesi, l'innesco di fenomeni imitativi).

Il piccolo gruppo di terrecotte invetriate e dipinte (documentato nel sito 811 e sul poggio di San Felice) rientra nel quadro generale delle produzioni delle classi della RMR e della protomaiolica, largamente diffuse in Puglia fra XIII e XIV secolo. Nella gamma degli ornati, soprattutto applicati sulle forme aperte (grid-iron, bande parallele in bicromia, appunto di vasta condivisione nella regione) si distingue una certa ripetuta presenza della decorazione a pallini bruni e verdi; essa, pur nella sua semplicità, si apre a riflessi e confronti sovraregionali, che guardano soprattutto alla Lucania più interna e alla Calabria. A San Felice, inoltre, è stato recuperato un frammento di *Bari-type*, classe già rinvenuta a Gravina, che ha un arco di produzione e utilizzo che si prolunga dal XIII sec. avanzato almeno fino al XV; esso consente dunque di acquisire (pur tenendo conto della singolarità del frammento) un'indicazione potenziale sull'arco di frequentazione del sito medesimo, ovvero sulla possibilità di una sua perpetuazione lungo tutto il Tardomedioevo.

In sintesi, i ritrovamenti di ceramiche medievali effettuati nel corso della ricognizione archeologica nella valle del Basentello, pur quantitativamente contenuti, hanno offerto indicazioni utili alla lettura di alcune dinamiche e trasformazioni del paesaggio murgiano medioevale, in particolare per l'arco cronologico fra XI e XIV sec.; le analisi morfo-tipologiche dei resti vascolari reperiti tramite survey hanno consentito, infatti, l'individuazione di alcuni poli demici, prefigurando così forme di popolamento delle campagne, sebbene non dense, legate ad un nuovo sfruttamento agricolo del territorio nel Bassomedioevo, affiancato agli utilizzi delle risorse silvopastorali.

Il quadro delle terrecotte, come già accennato, fa emergere, fra i siti identificati, il caso di San Felice quale entità di accentramento demico dotata di maggior spessore insediativo e, ipoteticamente, anche di un più ampio spettro cronologico di frequentazione. Il dato di superficie ha poi trovato un riflesso in alcuni saggi di scavo successivamente effettuati sullo stesso sito: lo stanziamento in località Piana San Felice si connota dunque come polo abitato in posizione geograficamente protetta e rilevante nel quadro della viabilità locale, funzionale all'organizzazione agropastorale murgiana bassomedievale. Anche questo episodio di più solida consistenza demica seguì peraltro la parabola della maggior parte dei siti rurali della valle del Basentello, i quali, all'indagine archeologica, infatti, non offrono indicatori di presenza antropica accentrata oltre l'inizio dell'età moderna, aggiungendosi all'ampia casistica di villaggi pugliesi spopolati a partire dal Tardomedioevo; in questo comprensorio, a tale destino di abbandono sfuggirono Gravina e Montepeloso-Irsina.

Catalogo (V. Valenzano)

1. Ceramica Comune Acroma

Le ceramiche comuni prive di un rivestimento vetroso o a smalto fanno riferimento a diverse tipologie morfologiche. Nella fattispecie si distinguono forme di tipo chiuso, come anfore, contenitori da dispensa e brocche per il servizio da mensa, e forme di tipo aperto come la ciotola. Tali suppellettili vengono realizzate in linea di massima tramite l'impiego di argille tendenzialmente depurate, con una coloritura post cottura che vira dal beige al crema, talora con inclusi vegetali; spesso è presente anche un sottile strato di ingobbio sulle pareti a vista, cosi come sembra attestato in altri episodi lo schiarimento chimico delle superfici. Sulla base dunque dell'analisi autoptica, queste classi vascolari, sembrano riflettere produzioni individuabili nel bacino manifatturiero locale o, più generalmente del sud Italia, fra XII e inizi XIV secolo.

Bibliografia

Airò 2015a; Busino 2016; Favia, 2012; Favia & Valenzano 2011; Favia & Valenzano 2016; Laganara 2004; Laganara & Piliego 2011; Valenzano, 2013; Valenzano 2018.

2095	223 Ar.225	Pl.42. P531. Frammento di ansa a nastro, con superficie a vista scanalata, relativo ad un contenitore da dispensa o a un'anfora da trasporto. Impasto crema semi depurato, con scarsi inclusi bianchi, visibili anche in superficie. Largh. 8; spess. 0,8. Sempre a San Felice si riscontrano altri frammenti tra cui P4088, 4104, 4657. Cf. Favia & Valenzano 2016, 141, fig. 10.
2096	509 sq. 2	Pl.42. P1338. Frammento di ansa a nastro, con superficie a vista lievemente scanalata, relativo ad una forma chiusa da dispensa o mensa. Impasto crema semidepurato. Largh. 6,8; spess. 0,7. A San Felice si annovera un frammento similare: P1339. Cf. Favia & Valenzano 2016, 141, fig. 10.
2097	223 E17N27	Pl.42. P4023. Frammento di orlo a sezione arrotondata, e bordo a fascia distinta, con inizio di collo cilindrico. Impasto malcotto di colore verdastro. Ø n.c.; spess. 0,3; alt. 2,7.
2098	223 E22N29	Pl.42. P4085. Frammento di orlo triangolare, collo ad andamento cilindrico, innesto di ansa a nastro, relativo a una brocca. Impasto crema depurato. Presenza di ingobbio chiaro all'esterno. Ø: 7,5; spess. 0,5; alt. 4,7; ansa: 4 (conservata) ×0,7. Cf. Valenzano 2018, 24, tav. 1 n. 3.
2099	223 E19N22	Pl.42. P4165. Frammento di orlo arrotondato, collo cilindrico, innesto di ansa a nastro poco sotto l'orlo, relativo a una forma chiusa da mensa o dispensa. Impasto rosato, semidepurato. Presenza di ingobbio chiaro sulla superfice esterna e sotto l'orlo all'interno. Ø n.c.; spess. 0,6; alt. 4,7; ansa: 4,7 (conservata) ×1.
2100	223 E25N18	Pl.42. Fig.51. P4267. Frammento di orlo piatto lievemente inclinato all'esterno, bordo modanato, collo cilindrico con innesto di ansa a nastro subito sotto l'orlo, relativo ad una brocca. Impasto crema depurato. Presenza di ingobbio su entrambe le pareti. Ø 10,2; spess. 0,6; alt. 4,7; ansa: 4,8 (conservata) ×0,7. Airò 2015, 134, fig. 9 n. 5.
2101	223 E24N18	Pl.42. P4326. Frammento di orlo piatto, collo svasato, ansa a nastro con scanalature verticali regolari subito sotto l'orlo, relativo ad un contenitore da dispensa. Impasto malcotto (beige/verdastro), con vacui a testimoniare inclusi vegetali. Ø 9; spess. 0,5; alt. 4,9; ansa 7,4×1. Busino 2016, 278, fig. 4 n. 138.
2102	811 B1	Pl.42. Fig.51. P1953. Frammento di orlo a sezione circolare ingrossato all'esterno, con vasta interna a sviluppo emisferico e alta carena esterna, sotto l'orlo, relativo a una ciotola. Impasto color crema depurato. Ø n.c.; spess. 0,7; alt. 3,5.
2103	223 E22N22	Fig.51. P4204. Frammento conservato per parte dell'orlo, fino alla spalla, con ansa a nastro largo, pertinente a una piccola brocca con ventre ovoidale o globulare. Bordo arrotondato leggermente ispessito all'esterno. Impasto marrone grigiastro abbastanza duro, uniformemente cotto. Ø cerchio 11,0; spess. ansa 1,0. È impossibile valutare, in base al frammento, se il bordo opposto al manico sia stato trilobato per formare un beccuccio, come ad es. gli esemplari di Siponto. Cf. Siponto Laganara 2011, 97 n. 6.

2. Invetriate Monocrome Verdi

Una delle categorie ceramiche medievali maggiormente documentate, nell'area della valle del Basentello, sembra essere quella delle ceramiche invetriate in monocromia verde. Le morfologie più attestate paiono riferirsi a forme di tipo aperto, per lo più ciotole di diverse dimensioni, con qualche esempio di tipo chiuso, come le bottiglie. Gli impasti argillosi utilizzati per forgiare tali ceramiche, sono tendenzialmente poco depurati, con la presenza di inclusi bianchi o brillanti, con una cromia che vira da color crema chiaro al rosato. Gli ingobbi, oltre che applicati sotto il rivestimento vetroso, frequentemente si estendono sulle pareti non ricoperte dallo stesso rivestimento. La vetrina, principalmente appunto in monocromia verde, spesso molto deteriorata, è stesa solo sulle pareti a vista (nelle forme chiuse all'interno è presente uno strato di vetrina trasparente, su alcuni esemplari non ben distribuita su tutto il corpo). Una buona parte delle invetriate rinvenute presenta anche decorazioni realizzate tramite tecnica dell'impressione, sul biscotto ancora crudo e sottovetrina. Particolarmente diffuso è il decoro a cerchi concentrici che delimita il cavetto delle forme aperte. Per l'identificazione dell'area produttiva di tale classe, in particolare per quanto riguarda le soluzioni con decorazioni impresse, si gravita in un ambito locale pugliese, in cui peraltro agirono fortemente stimoli culturali di derivazione araba. L'arco cronologico in cui si vengono a collocare queste ceramiche è tracciabile nel corso del XIII secolo.

Bibliografia

Airò 2015a; Arthur 2004; Bertelli 1995; Favia 2008; Laganara, Finzi & Petronella 2011; Fiorillo 2000; Fiorillo 2005; Lombardi 2011; Valenzano 2013; Valenzano 2020; D.Whitehouse 1988.

2104	148 G6	Fig.51. P240. Frammento di orlo dritto, ingrossato, relativo a una ciotola Argilla sabbiosa di colore arancio. All'interno e all'esterno, tracce di una sottile vetrina di colore verde pallido. Ø ca. 25.

2105	811 B1	Fig.51. P2062. Frammento di orlo, ispessito verso l'esterno, relativo a una ciotola, Argilla bruno-rossastra. Vetrina verde all'interno e all'esterno, con riflessi bianco-brillanti. Ø 14.0.
2106	223 E25N34	Pl.42. P4266. Frammento di spalla relativo a una forma chiusa da mensa. Ingobbio di colore giallo chiaro depurato. Presenza di tracce di vetrina, in monocromia verde, solo all'esterno, fortemente degradata. Decoro sulla parete a vista, con motivo a cordone pinzettato, realizzato su argilla cruda e sotto vetrina. 3×3,1; spess. 0,5. Cf. Laganara *et al.* 2011, 131, cat. n. 139.
2107	223 E24N17	Pl.42. P4154. Frammento di parete relativo a una forma chiusa da mensa. Impasto color crema. Vetrina in monocromia verde sulla parete a vista e trasparente all'interno. Sulla parete esterna è visibile un motivo a impressione, di tipo geometrico, realizzato su argilla cruda e sotto vetrina. Alt. 2,9; spess. 0,4.
2108	223 E23N19	Pl.42. P4219. Frammento di parete relativo a una forma chiusa da mensa. Impasto malcotto di colore verdastro. Vetrina in monocromia verde sulla parete a vista e trasparente all'interno. Sulla parete esterna è visibile un motivo a impressione di tipo geometrico, realizzato su argilla cruda e sottovetrina, con cordone in rilievo che corre verticalmente. Alt. 2,9; spess. 0,4. Cf. Laganara *et al.* 2011, 131, cat. n. 139.
2109	223 E24N29	Pl.42, Fig.51. P4093. Frammento di orlo rigonfio con parete a sviluppo emisferico, relativo ad una ciotola di grande dimensione. Impasto color crema depurato. Vetrina sulla parete a vista e presenza di ingobbio sull'esterno. Ø 20; spess. 0,6. Airò 2015a, 152, fig. 18 n. 28.
2110	223 E22N26	Pl.42, Fig.51. P4191. Frammento di orlo piatto, lievemente aggettante all'esterno con parete carenata, relativo a una ciotola. Impasto rosato, semidepurato. Vetrina in monocromia verde sulla parete interna, con evidente errore di cottura a riduzione della superficie e ingobbio sulla parete esterna. Ø 24; spess. 0,6; alt. 2,8. Valenzano 2020, 179, tav. 1 n. 7.
2111	223 E18N30	Pl.43, Fig.51. P4159. Frammento di orlo piatto, sagomato all'esterno, e inizio di corpo emisferico, relativo a un piccolo bacino. Impasto color crema con vacui e inclusi bianchi. Vetrina interna in monocromia verde con forte incrostazione delle superfici. Ø 27; spess. 0,8.
2112	223 E28N25	Pl.43. Fig.51. P7112. Frammento di orlo piatto, sagomato all'esterno, con parete emisferica, relativo ad un bacino. Impasto color crema depurato. Vetrina sulla parete a vista in monocromia verde e forte presenza di incrostazioni sulla superficie. Ø 38; spess. 0,6; alt. 3,6.
2113	223 E27N24	Pl.43. Fig.51. P7119. Frammento di orlo ingrossato, carena alta all'esterno e corpo emisferico all'interno, relativo a un piccolo bacino. Impasto crema depurato. Vetrina all'interno, ormai fortemente degradata. Ø 24; spess. 0,6.
2114	223 E28N25	Pl.43. P4555. Frammento di parete, con traccia del fondo ad anello, relative ad una forma aperta. Impasto color crema con inclusi brillanti e bianchi. Vetrina in monocromia verde all'interno e all'esterno strato di ingobbio. Ø n.c; spess. 0,5; alt. 1,7.
2115	223 E13N28	Pl.43. Fig.51. P550. Frammento di fondo con piede ad anello, relativo ad una forma aperta. Impasto color crema semidepurato. Vetrina verde all'interno. Presenza di decoro impresso su argilla cruda e sotto vetrina, con motivo a cerchi concentrici. Ø 11; spess. 1; alt. 3,5. Cf. Laganara *et al.* 2011, 126, cat. n. 123; Valenzano 2013, 284, tav.1 n. 3.
2116	509	Pl.43. P1360. Frammento di fondo con piede ad anello, relativo ad una forma aperta. Impasto color crema semidepurato. Vetrina verde all'interno fortemente degradata. Presenza di decoro impresso su argilla cruda e sotto vetrina, con motivo a cerchi concentrici. Ø 9; spess. 1,3; alt. 3,7. Cf. Laganara *et al.* 2011, 126, cat. n. 123; Valenzano 2013, 284, tav.1 n. 3.
2117	223 E14N27	Pl.43, Fig.51. P2120. Frammento di parete con traccia del fondo ad anello, relativo a una forma aperta. Impasto color crema semidepurato. Vetrina, in monocromia verde chiaro, sulla parete interna. Presenza di decoro impresso su argilla cruda e sotto vetrina, con motivo a cerchi concentrici, e impressioni involontarie all'interno del cavetto. Ø n.c; spess. 0,5; alt. 1,7. Cf. Laganara *et al.* 2011, 126, cat. n. 123; Valenzano 2013, 284, tav.1 n. 3.
2118	223 E20N34	Pl.43. P8120. Frammento di fondo con piede ad anello, relativo ad una forma aperta. Impasto color crema con tracce di inclusi vegetali e bianchi. Vetrina verde all'interno fortemente degradata e ingobbio all'esterno. Presenza di decoro, impresso su argilla cruda, sotto vetrina, con motivo a cerchi concentrici. Ø 11; spess. 1,1; alt. 3,3. Cf. Laganara *et al.* 2011, 126, cat. n. 123; Valenzano 2013, 284, tav.1 n. 3.
2119	223 E21N23	Pl.43. P4017. Frammento di fondo con piede ad anello, a profilo rettilineo, relativo ad una forma aperta. Impasto color rosa scuro con inclusi bianchi. Vetrina verde, quasi totalmente degradata, all'interno e ingobbio all'esterno. Presenza di decoro impresso su argilla cruda e sotto vetrina, con motivo a cerchi concentrici molto irregolari. Ø 10; spess. 1. Cf. Laganara *et al.* 2011, 126, cat. n. 123; Valenzano 2013, 284, tav.1 n. 3.

2120	223 E28N25	Pl.43. P4422. Frammento di fondo con piede ad anello, relativo ad una forma aperta. Impasto color crema semidepurato. Vetrina in monocromia verde chiaro sulla parete interna. Presenza di decoro impresso su argilla cruda e sotto vetrina, con motivo a cerchi concentrici. Ø 8; spess. 0,8; alt. 2,8. Cf. Laganara *et al.* 2011, 126, cat. n. 123; Valenzano 2013, 284, tav.1 n. 3.
2121	223 E18N20	Pl.43. P8121. Frammento di fondo con piede ad anello, relativo ad una forma aperta. Impasto color crema con inclusi bianchi. Vetrina in monocromia verde sulla parete interna. Ø 8,8; spess. 0,9; alt. 2,2.
2122	223 E25N31	Pl.43. P4063. Frammento di parete curvilineo relative ad una forma aperta da mensa. Impasto rosato semidepurato. Fortemente devetrificato; ingobbio anche sulla parete esterna. Decoro impresso su argilla cruda, di tipo geometrico. 3,5×2,6; spess. 0,8.
2123	223 E24N29	Pl.43. P4094. Frammento di fondo con piede ad anello, relativo ad una forma aperta da mensa. Impasto color crema semidepurato. Vetrina presente solo sulla parete interna, mentre all'esterno è visibile un ingobbio chiaro. Decoro realizzato con lieve impressione su argilla cruda e sotto vetrina. Motivo non definibile. Ø 7; spess. 0,7; alt. 2.
2124	223 E19N24	Pl.43. P4076. Frammento di orlo a punta distinto con bordo, corpo globulare, attacco di ansa a sezione ovale, relativo a una tazza. Impasto color crema con pochissimi e piccoli inclusi bianchi. Vetrina verde pallido all'interno, con colatura anche sulla parete esterna. Ø 9,5; spess. 0,4; alt. 4,9.

3. Ceramica graffita

Si rinvengono diverse tipologie di ceramiche con decorazione incisa e graffita su ingobbio e sottovetrina, secondo tecniche d larga diffusione in un orbita bizantina e in contesti egei in particolare; i frammenti, di dimensioni molto ridotte, consentono solo un'attribuzione o un'affinità ipotetica a specifiche versioni dei tipi delle *Sgraffito Ware* e della *Incised Sgraffito Ware* (si possono p. es. ipotizzare vicinanze con le *Developed Style Sgraffito Ware* (cat. nn 50-51); *Zeuxippus Ware* (53-54) e *Aegean Ware*. Si riscontrano esclusivamente forme di tipo aperto per la mensa. Lo stato fortemente frammentario del reperti non permette inoltre una ricostruzione totale degli schemi decorativi, realizzati su un ingobbio chiaro, sia a punta sottile che a stecca, sotto una vetrina incolore brillante o verde. L'arco cronologico di riferimento per queste ceramiche si aggira tra il XII e il XIII secolo d. C.

Bibliografia

Campese & Valenzano c.s.; Cassano, Laganara Fabiano & Pietrapaolo 2008, Favia 2008; Gelichi 1993, Laganara 2011; Lombardi 2011; Nanna *et al.* 2017; Morgan 1942; Valenzano 2018.

2125	223 E24N33	Pl.43. P4257. Frammento di fondo piatto su piede ad anello, con foro per la sospensione, relativo ad una forma aperta. Impasto color rosa con inclusi bianchi. Ingobbio sulla parete interna. Decoro inciso a punta sottile, con motivo non ricostruibile, campito da incisioni "a embrice". Ø 7; spess. 0,5; alt. 1,5.
2126	223 E26N33	Pl.43. P4291. Frammento di parete relativo ad una forma aperta. Impasto color crema con inclusi bianchi. Rivestimento sulla parete interna. Ingobbio sulla parete interna. Decoro inciso a punta sottile, con motivo non ricostruibile, campito da incisioni "a embrice". Leggerissima traccia di pittura verde. 2,5×2,6; spess. 0,7.
2127	223 E25N33	Pl.43. P4067. Frammento di parete relativo ad una forma aperta. Impasto color rosa semidepurato. Rivestimento solo sulla parete interna quasi totalmente devetrificato. Decoro di tipo geometrico, con fascia campita da spirali continue incise a punta sottile. 4,7×4,1; spess. 0,7. Campese, Valenzano c.s.; Laganara 2011, 129 n. 130; Nanna *et al.* 2017, 158, tav. V n. 20; Valenzano 2018, 93, tav. 29, n. 3.
2128	223 Ar.225	Pl.43. P554. Frammento di parete relativo ad una forma aperta. Impasto color crema e semidepurato. Ingobbio. Vetrina presente solo sulla parete interna in monocromia verde. Decoro inciso a stecca, probabilmente di tipo geometrico, con effetto di coloritura bruna all'interno del tratto. 3,1×3,3; spess. 0,7. Lombardi 2011, 277, fig. 7; Nanna *et al.* 2017, 158, tav. V nn. 25-26. Valenzano 2015, 139, fig. 3 n. 2.
2129	223 E23N31	Pl.43. P8122. Frammento di parete relativo ad una forma aperta. Impasto color crema scuro/rosato e depurato. Ingobbio vetrina presente solo sulla parete interna in monocromia verde. Decoro inciso a stecca, probabilmente di tipo geometrico, con effetto di coloritura bruna all'interno del tratto. 3×3,6; spess. 0,6. Lombardi 2011, 277, fig. 7 ; Nanna *et al.* 2017, 158, tav. V nn. 25-26. Valenzano 2015, 139, fig. 3 n. 2.

4. Ceramica Invetriata "RMR"

Le testimonianze relative alla classe delle RMR risultano essere abbastanza esigue, relative a pochi esemplari. Il corredo morfologico sembra costituito essenzialmente da forme di tipo aperto come la ciotola di medie dimensioni. Gli impasti argillosi utilizzati sono tendenzialmente poco depurati o semidepurati, con la presenza di inclusi bianchi o brillanti e con una cromia che varia da crema chiaro al beige. La vetrina, quasi sempre opaca e biancastra, è presente solo sulla parete interna delle forme aperte. Lo stato frammentario dei reperti impedisce la ricostruzione totale degli schemi decorativi sottovetrina, che ornavano le superfici a vista. Arco cronologico di riferimento pare essere quello della seconda metà del XIII secolo e l'area di produzione sembra gravitare sulla Puglia centro-meridionale.

Bibliografia

Dufournier, Flambard & Noyé 1986; D.Whitehouse 1982; D.Whitehouse 1984.

2130	223 E27N29	Pl.44. Fig.52. P4777. Frammento di orlo piatto leggermente aggettante all'esterno, relativo ad una ciotola. Impasto color crema, inclusi bianchi e brillanti. Strato di rivestimento all'interno, con colature accidentali all'esterno sotto l'orlo, ed evidenti errori di cottura. Decoro parzialmente visibile di tipo geometrico. Ø 24; spess. 0,6; alt. 2,7.
2131	223 E18N28	Pl.44. P4020. Frammento di parete relativo a una forma aperta. Impasto color rosa con inclusi bianchi e brillanti. Rivestimento all'interno e ingobbio all'esterno. Decoro a graticcio che riproduce una porzione di fiore globulare. 3,7×2,1; spess. 0,9.
2132	223 E14N28	Pl.44. Fig.52. n P587. Frammento di parete emisferica con tesa leggermente inclinata all'interno, relativo ad un piatto. Impasto color crema, semidepurato. Rivestimento solo all'interno e ingobbio sulla parete esterna. Decoro di tipo geometrico con linee rosse e brune. 4,1×5,2; spess. 0,6; alt. 3,3.
2133	223 E20N22	Pl.44. P4018. Frammento di parete relativo al cavetto di una forma aperta. Impasto rosato e depurato. Rivestimento presente sulla parete a vista. Decoro geometrico a linee rosse e brune. 3.8×3.6.

5. "RMR Bari type"

Si dispone di una singola testimonianza relativa alla classe della "Bari type"; si tratta di un frammento di piatto, con decoro in rosso sul fondo bianco.

Bibliografia

Ciriello & Marchetta 2013; Cotter & Whitehouse 1990; Lombardi 2011; Salvatore 1982; Salvatore 1979a, 253-257, tav. XLIX-LV bis.

2134	223 E24N24	Pl.44. P4236. Frammento di parete, con vasca carenata e tesa leggermente inclinata verso l'interno, relativo da un piatto. Impasto color crema con vacui e inclusi bianchi. Pezzo totalmente devetrificato e decoro in rosso con linee orizzontali e cerchi con pallini all'interno. 6,8×4,1; spess. 0,8.

6. Protomaiolica

I frammenti di protomaiolica, rinvenuti durante le raccolte di superficie, appartengono ad un gruppo eterogeneo dal punto di vista produttivo. Tranne per un frammento di forma chiusa con beccuccio versatoio, si tratta quasi totalmente di morfologie aperte come ciotole, piatti e bacini. Gli impasti argillosi utilizzati per le protomaioliche, con un colore che varia dal crema chiaro al rosato, sono tendenzialmente depurati. Lo strato di rivestimento (talora devetrificato o cavillato), principalmente di tonalità bianca, è steso solo sulle pareti a vista; nelle forme chiuse è spesso visibile uno strato trasparente all'interno. I gruppi decorativi appartengono principalmente a due tipi: gli ornati ottenuti tramite l'utilizzo di pigmenti bruno e verde e le monocromia brune su sfondo bianco. Come accennato, l'eterogeneità dei caratteri di frammenti smaltati non riconduce a un unico contesto produttivo, pur ipotizzando comunque una fattura apula; decori quali i pallini in bicromia verde e bruno rimandano comunque anche ad ambiti dauni, campani o calabresi. L'arco cronologico in cui si vengono a collocare queste ceramiche è quello di metà XIII– prima metà XIV secolo.

Bibliografia

Cuteri & Hyeraci 2013; Favia, Goffredo, & Valenzano 2012; Patitucci Uggeri 1993; Patitucci Uggeri 1997; Rotili 2011; D.Whitehouse 1978; D.Whitehouse1986.

2135	223 E21N24	Pl.44. P4091. Frammento di parete con cannello versatoio a sezione cilindrica, relativo a una brocca. Impasto color crema/giallo depurato. Strato di rivestimento monocromo all'esterno, patina lucida all'interno. Assenza di motivi decorativi. 4×5,1; lungh. cannello 1,9; spess. parete 0,5.
2136	223 Ar. 225	Pl.44. Fig.52. P532. Frammento di orlo piatto con porzione di vasca emisferica, relativo a una ciotola. Impasto color rosa/arancio depurato. Strato di rivestimento presente solo sulla parete interna e, sotto l'orlo, all'esterno. Decoro di tipo geometrico con linea verde sulla parete e motivi ad archetti in bruno sull'orlo. Ø 35; spess. 0,6; alt. 3,9.
2137	223 E19N30	Pl.44. Fig.52. P4055. Frammento di orlo piatto e ingrossato, con parete carenata, relativo ad una ciotola. Impasto color crema depurato. Rivestimento color verde brillante sulla parete interna, color verde pallido sull'orlo e sulla superficie esterna. Decoro in bruno, costituito da linee pseudo parallele. Ø n.c.; spess. 0,7; alt. 2,4.
2138	223 E23N29	Pl.44. P4217. Frammento di orlo piatto, con vasca carenata, relativo a una ciotola. Impasto color crema depurato, strato di rivestimento quasi totalmente devetrificato e presente solo sulla parete interna. Decoro di tipo geometrico in bruno e verde. Ø 18; spess. 0,7; alt. 2,7.
2139	811 B1	Pl.44. P1952. Frammento di orlo piatto, con bordo modanato e vasca carenata, relativo a una ciotola. Impasto color crema e depurato, smalto presente sulla parete interna e sotto l'orlo all'esterno. Decoro in bruno su sfondo bianco, costituito da linea orizzontale sotto l'orlo. Ø 15; spess. 0,5; alt. 4,1.
2140	223 E26N23	Pl.44. P4111. Frammento di parete, relativo a un piatto, Argilla bruno rossastra. Smalto giallo-bruno, visibile all'interno delle scanalature che percorrono la superficie della parete Ø 2.5; spess. 0,2.
2141	223 E18N22	Pl.44. P4033. Frammento di orlo a sezione arrotondata, distinto all'esterno, e parete continua e curvilinea all'interno, relativo ad una ciotola. Impasto color rosa e depurato. Rivestimento sulla parete interna. Decoro di tipo geometrico, in monocromia verde su sfondo bianco. Ø n.c.; spess. 0,4; alt. 2,6.

2142	223 E20N30	Pl.44. P4170. Frammento di orlo piatto aggettante all'esterno, con vasca emisferica, relativo a una ciotola di grandi dimensioni. Impasto color arancio e depurato. Rivestimento su parete interna e, sotto l'orlo, all'esterno. Decoro di tipo geometrico, costituito da linee oblique in bruno e verde. Ø 20; spess. 0,6; alt. 4,9.
2143	223 E24N21	Pl.44. Fig.52. P4090. Frammento di orlo piatto, distinto all'esterno, con vasca emisferica, relativo a un bacino. Impasto color rosa/arancio e depurato. Rivestimento sulla parete interna e, sotto l'orlo, all'esterno. Visibili errori di cottura del rivestimento. Decoro di tipo geometrico, con pallini in bruno e verde. Ø 28; spess. 0,8; alt. 3,4.
2144	223 E28N18	Pl.44. P4471. Frammento di orlo piatto sagomato all'esterno e parete rettilinea all'interno, relativo ad un bacino. Impasto color rosa, con inclusi bianchi. Rivestimento sulla parete interna e all'esterno sotto l'orlo. Decoro di tipo geometrico, costituito da linee in bruno. Ø 21; spess. 0,7; alt. 2,7.
2145	223 E23N29	Pl.44. P4218. Orlo a sezione appuntita e parete rettilinea, relativo a un piatto. Impasto color rosa e depurato. Rivestimento coprente sulla parete interna ed ingobbio all'esterno. Decoro di tipo geometrico, costituito da pallini in bruno e verde. Ø n.c.; spess. 0,5; alt. 2.
2146	223 E24N30	Pl.44. P4096. Frammento di tesa a sezione piatta e lievemente inclinata verso l'interno, relativo ad un piatto. Impasto color crema e depurato. Rivestimento degradato e quasi totalmente devetrificato. Decoro di tipo geometrico, costituito da linee verticali in bruno. Ø 22; spess. 0,6; alt. 1.
2147	223 E25N22	Pl.44. P4129. Frammento di fondo su piede ad anello relativo ad una forma aperta. Impasto color rosa con inclusi bianchi. Strato di rivestimento sulla parete interna e all'esterno strato di ingobbio. Decoro di tipo geometrico, con linee in verde. Ø 7; spess. 0,8.
2148	223 Area 225	Pl.44. P533. Frammento di parte relativo ad una forma aperta. Impasto color crema, semidepurato. Rivestimento solo sulla parete interna. Decoro di tipo geometrico, costituito da pallini irregolari in bruno e verde. 4,9×4; spess. 0,8.
2149	223 E20N30	Pl.44. P4169. Frammento di fondo umbonato, su piede ad anello, relativo ad una forma aperta. Impasto color crema, semidepurato. Rivestimento sulla parete interna e ingobbio su quella esterna. Decoro di tipo geometrico, costituito da linee curve in bruno e verde. Ø 7; spess. 0,8; alt. 2,1.
2150	223	Pl.44. P4359. Frammento di parete relativo a una forma aperta. Impasto color crema, semidepurato. Rivestimento presente sulla parete interna. Decoro di tipo geometrico, con spirale in bruno. 3,2×2; spess. 0,5.
2151	223 E29N28	Pl.44. P4478. Frammento di parete relativo a una forma aperta. Impasto color rosa con inclusi bianchi e vacui dovuti alla combustione di inclusi vegetali. Rivestimento solo sulla parete interna. Decoro di tipo geometrico, con linee in verde. 6,1×3,9; spess. 0,8.
7. Ceramica Comune da Fuoco Le ceramiche per la preparazione di pietanze e alimenti sono tutte relative alle forme della pentola e dell'olla di medie dimensioni. I rinvenimenti testimoniano l'utilizzo di terraglie a fondo piatto, adatte al contatto diretto o al riverbero con le fonti di calore (escludendo cioè l'uso della sospensione su fiamma, più diffusa tre le ceramiche da fuoco orientali). Le morfologie sono contraddistinte da anse a nastro complanari o impostate immediatamente al di sotto dell'orlo e da pareti molto sottili. Gli impasti, ricchi di inclusi di diversa natura, presentano una cromia che vira dal bruno scuro al marrone. Come per le ceramiche comuni, sulla base della semplice analisi ad occhio nudo dei frammenti, questi resti vascolari sembrano ascrivibili a produzioni individuabili nel bacino manifatturiero locale e, più generalmente, del sud Italia di XII–inizi XIV secolo d.C. ***Bibliografia*** Cassano, Laganara & Pietropaolo 2007; Laganara 2004; Laganara, Finzi & Petronella 2011; H.Patterson 2001; H.Patterson & D.Whitehouse 1992.		
2152	223 E20N24	Pl.44. P4010. Frammento di orlo a sezione arrotondata con ansa a nastro, relativo a una pentola. Impasto color bruno, ricco di inclusi. Ø n.c.; spess. parete 0,3; alt. 2; ansa 5,1×0,3.
2153	223 E24N27	Pl.44, Fig.52. P4244. Frammento di orlo a sezione arrotondata e bordo a nastro, relativo a un'olla o a una pentola. Impasto grigio, con inclusi brillanti. Ø 10; spess. 0,3; alt. 2,6.
2154	223 E21N27	Pl.44, Fig.52. P4188. Frammento di orlo a sezione arrotondata con bordo esterno a nastro, relativo a una pentola/olla. Impasto bruno, con inclusi bianchi e brillanti. Spess. 0,3; alt. 1,8.
Addenda (A. Small)		
2155	223 E22N24	Fig.52. P4199. Orlo arrotondato con bordo inclinato e breve collo svasato, riconducibile ad un'olla. Impasto duro, marrone/rossiccio, grigio in superficie. Orlo quasi verticale con carena al di sotto e collo quasi verticale. Ø 7–8,0, spess. alla rottura in basso 0,3.
2156	223 E22N28	Fig.52. P4322. Due frammenti distinti (entrambi hanno l'attacco per l'ansa) ma quasi certamente riconducibili alla stessa olla. Impasto grigio nel nucleo, con superficie bruno-rossastra brillante. Anse complanari sporgenti dal bordo e dalla spalla carenata. 1l frammento (b) mostra la parete concava sotto la carenatura. Ø interno del cerchio 9.0, spess. alla rottura inferiore 2.5.

2157	223 E19N30	Fig.52. P4054. Orlo di olla con profilo arrotondato e bordo dritto, con collo svasato. Impasto molto fine, marrone chiaro. Ø 8,0; spess. 2.5.
2158	223 E23N29	Fig.52. P4209. Orlo piatto, sporgente all'esterno, con bordo dritto e alto collo svasato, con attacco di ansa, riconducibile ad un'olla. L'ansa sotto il bordo è di tipo a nastro. Argilla marrone rosata, moderatamente dura, in superficie marrone più chiara. Leggermente micaceo con pochi e piccoli inclusioni bianchi. Ø interno 18,0; spess. 1.0 nella parte alta, altezza 3.5.
2159	223 E21N25	Fig.52. P4197. Bordo e attacco di ansa riconducibili a una brocca. Argilla verdastra pallida cotta in modo uniforme. Piccoli inclusioni bianchi, marroni e neri. Bordo ispessito obliquo e leggera carenatura al suo di sotto. L'ansa è visibile solo al suo innesto. Ø 11.0.
2160	223 E24N25	Fig.52. P4247. Orlo ingrossato, bordo dritto e assenza di collo, relativo a un contenitore. Impasto rosso sabbia, con alcuni piccoli inclusioni bianchi e uno più ampio, di 1,5mm. Ø 8,0; spess. alla rottura inferiore 0,25. Cf. H.Patterson 2001, fig. 10.56,57; H.Patterson & D.Whitehouse 1992, 98-99 e fig. 6.3 nn. 431,432.

III. Coarse ware with chaff impressions (*ceramica da fuoco vacuolata*) by Alastair Small

The following piece is in the same ware as the medieval roof tiles made with clay mixed with straw and chaff (*tegole vacuolate*) (Cat. 32.H)		
2161	223 AE5	Pl.44. P567. Ws from a pot with rounded wall and curved lug handle. Hand made. Markings on the inside indicate that it was coil built. Inner surface partly smoothed with a cloth or sponge; outer surface more roughly trimmed with a knife or spatula. Drab grey-brown fine sandy fabric with impressed marks from burnt chaff on outer surface. Horizontal arched lug projecting ca. 0.7. Max. dim. 9.5, th. at top 0.8. The piece is likely to have been broken just short of the rim. It can be compared with casseroles of types 2 and 3 from Naples, Carminiello ai Mannesi, discussed at length in Carsana 1994, 224-228 and figs. 104, 105, though the handles on these pieces are mounted rather higher. Both types are inspired by hand-made casseroles with burnished surfaces exported from Pantelleria in the C4 and C5; but the Neapolitan pieces are wheel-made, begin later and last longer, from the mid-C5–C7 AD. Our piece, however, appears to be more crudely finished than any of these. Moreover, the fabric resembles that of the medieval imbrex tiles also found on San Felice: Nos.2262-2267. Such tiles appear first in the C8 in Sicily, where they have been associated with the Islamic conquest (Arcifa 2010, 108). The most significant parallels, however, are with the class of *ceramica vacuolata,* found at Bari in contexts associated with the Byzantine *praetorium* of the C10 and C11, which was destroyed to make way for the construction of the church of San Nicola after the relics of the saint were brought to the city in 1087 AD (S.Airò in Nuzzo *et a*l. 2012, 100 and fig. 13. 6-7; Airò 2015a, 144-145, 2015b, 253). The Bari pieces were locally made of clay into which much vegetable filler had been worked, and consist predominantly of biconical broad-bellied pots with out-turned rims, of variable thickness, made on a slow wheel, and varying in colour from beige to grey depending on the firing conditions. Our piece matches this description except that it was hand-made and had curved lugs in place of the vertical strap handles of the published Bari pieces. It seems likely to be a local variant of the same period.

32. TILES

I. Introduction

Tiles are – or at least ought to be – an extremely important part of any field survey. They provide evidence for roofed buildings, and if properly plotted, can define the area of a settlement (with of course the usual provisos that the possibility of slope drift and casual scatter must be taken into account). Since the ways in which tiles were used changed over time, they can also provide broad chronological information; and the type of tiles used in a roof may also say something about the status and function of the buildings from which they came. It is therefore unfortunate that they are rarely properly recorded in reports of excavations and field surveys. In many publications of surveys in Italy tiles are listed (if at all) merely in generic terms – "*tegole*" / "*tiles*" etc, leaving it unclear whether they were of Laconian or Corinthian type. There is still no comprehensive study of the use of roof tiles in South Italy, although the lack of one has been noted by various scholars who have attempted to find comparanda from archaeological sites in the region (see e.g. Notario 1992, 319; Maturo 1997, 249; Quarta 2005, 54). The problem is compounded by the fact that there were strong regional and sub-regional variations in the standard measurements used for tiles, and different preferences for roofing systems. Fortunately, the tide appears to be turning, and the studies by Vincenzo Capozzoli (2005, 2009, 2012) of the tiles from Torre di Satriano, and by Carlo Rescigno and his colleagues of the roofing systems used at Pantanello and other sites in the Chora of Metaponto (Rescigno *et al.* 2016, 2018) mark considerable progress, at least for the pre-Roman period. For these reasons, we draw on a rather limited range of comparanda in this section, principally from Vagnari, Monte Irsi, Pomarico Vecchio, Pontecagnano, and San Giovanni di Ruoti, as well as Torre di Satriano and the Chora of Metaponto already mentioned, though some reference is also made to publications of tiles from central Italy, especially to Ö. Wikander's masterly study of the roofing systems of the archaic temples at Acquarossa in Etruria (Wikander 1986, 1993).

Roofing systems

Two types of roof tiles, generally known as Corinthian and Laconian were developed in Archaic Greece around the middle of the C7 BC (R. Martin, 1965, 65-81). In roofs of Corinthian type, large rectangular flat tiles with raised edges were laid side by side on the roof beams, with the gaps between them bridged by narrow cover tiles, angular (as Nos.2168-2170) or more frequently semicircular (as Nos.2171, 2172) in cross-section. They correspond to the Roman *tegulae* and *imbrices*. In the Laconian system tiles with a shallow curve were laid side by side with the concave side upwards to catch the rain, and gaps between them were bridged by more steeply curved cover tiles, similar to those used on Corinthian roofs. In both systems the open ends of the *imbrices* might be masked with terracotta antefixes where they met the roof line (see Section 27), and in both the ridge line was protected by curved or angular ridge tiles.

Corinthian tiles / tegulae

The shape, size and proportions of Corinthian tiles changed significantly – but not consistently – over time and place. Most of those used in tombs of the C5–early C3 BC at Pantanello fell within the range of 50-55cm wide × 80-83cm long (Carter in *Chora Metaponto I,* vol 1, 91, and 97 table 3.14) so that the proportion of width to length was approximately 2:3. It is likely that they conformed more-or-less to a standard established for tile production in Metapontum. A complete Corinthian-type tile (*tegula*) from a context of the late C2/ early C1 BC on Botromagno measured 56×78cm (*Gravina II*, no. 1627). It therefore slightly exceeded the norm at Pantanello in width, and fell a little below it in length, but is close enough to it to suggest that the tile-makers who supplied both places were aiming to follow the same Metapontine standard in making the boxes in which the tiles were cast. Absolute precision was impossible to obtain with the methods in use at the time, but if we allow for shrinkage of ca 12% during drying and firing of the tile (see Goulpeau 1988, 107), the unit is likely to have been a foot of ca. 30cm. An ideal *tegula* would then have measured 3 feet in length and 2 in breadth. In practice, of course, the measurements are unlikely to have been exact. But these measurements were not standardized in the Greek *poleis*. At Locri the commonest type of *tegula* in use between the mid-C4 and mid-C3 was slightly wider than the Metapontine type (57-58cm) and considerably longer (ca. 90cm), according to Notario (1992, 322-323, *tegula* type F). And there was no common standard in the Italic communities. At Torre di Satriano *tegulae* were significantly smaller, ranging in length from 69-71cm and in width from 48.5 to 54cm, suggesting that the proportion of length to width was intended to be 4:3 (Capozzoli 2005, 122-123). At Ordona a *tegula* associated with a kiln dated between the beginning of the C2 BC and Middle of the C1 BC measured 48×72cm (Mertens 1988, 52-53). The measurements might seem to conform to the same standard as those at Torre di Satriano, but the tile had not been fired, and so had not been reduced by shrinkage. At Monte Sannace, the only complete *tegula*, found associated with the Hellenistic house on the acropolis, was much smaller, measuring only 30×50cm (Muraglia 2019, 96). In short, the available evidence suggests that tile measurements in the pre-Roman period varied sub-regionally.

The *tegulae* of the imperial period were generally smaller than their Hellenistic predecessors, at least in the vicinity of our Survey Area. Those of the C2/C3 AD at Vagnari measured on average 45.7×65.9cm (*cit.,* 241, table 6.3). Those of the C5 AD at San Giovanni di Ruoti were roughly similar, measuring 45×65cm (*SGR I*, 129). The proportions are much the same as they had been at Metapontum in the pre-Roman period (ca. 2:3), but the unit of measurement is smaller. Allowing for 12% shrinkage, the casting boxes would have measured ca. 51×74cm. These figures cannot be multiples of the Roman foot of 29.6cm, but they approximate to 20 and 30 Roman inches of 2.47cm. They appear to represent a particularly South Italian standard different from those used in Rome and Pompeii (cf. Steinby 1984, 266; Adam 1999, 213). It is similar, however, to the standard used in the triumviral colony of Venusia where *tegulae* ranged in size from 43×65 to 50×70cm (Steinby & Sabbatini 1996, 278).

Laconian tiles

Laconian tiles, being narrower and generally thinner than tegulae were more easily broken, and are rarely found intact in settlement excavations. Some, were, however, used as grave covers in burials at Pantanello, and several of these were intact or could be reconstructed. A list of them published by J.C. Carter in *Chora Metaponto I,* vol 1, 91, shows that in the mid- to late C5 BC a complete Laconian tile might measure between 85 and 90cm in length and between 38 and 41cm in width (across the chord). The variation in width reflects the fact that the tiles were made slightly trapezoidal so that they could be fitted together with the narrower upper end of the lower tile overlapping the broader lower end of the tile placed immediately above it in the sequence.

More is known of Laconian tiles of the C4 and C3 BC from reconstructed examples found on a number of South Italian sites. The evidence is tabulated by F. Perugino in his study of the Laconian tiles from the farm at Ponte Fabrizio (*Chora Metaponto V,*354-355). They vary considerably in length and width, but the longest, from the Fattoria Fabrizio, was longer than any of those of the previous period, measuring 96cm in length and 38-41cm in width. Another from Cozzo Presepe was 93cm long. Most are more than 85cm long, but a few are much shorter, with the shortest, from Pomarico Vecchio, being 49cm long and 23.5cm wide. Many of the longer pieces come from the tile works of the Hellenistic period at Pantanello. A common feature of most of these tiles, not seen in their predecessors of the 5th century, is that the corners at the narrower upper end are trimmed at an angle to allow the cover tiles to lock into them and hold them in place. The same system is found on many of the Laconian tiles seen on LIA sites in our Survey Area (notably at San Felice), but on our pieces the cut-away on the corners is bigger and amounts nearly to a quarter-circle (Fig. 56 No.2167), as it did also on some Laconian tiles from buildings of the Hellenistic period at Monte Sannace (Molinari 2019, 599-600, fig. 3). According to Perugino the cover tiles used in the roof of the building at Ponte Fabrizio also had their corners trimmed at the narrow end, presumably to allow them to mesh more effectively with the cut-away corners of the Laconian tiles, but no such feature was seen in any of the cover tiles in our Survey Area. There was evidently a good deal of sub-regional variation in the production and use of these tiles.

The Middle and Late Iron Age

Both types of roof were copied in South Italy, not only in the Greek colonies but also in indigenous settlements in the hinterland, although the usage varied over time and place. At Locri only Corinthian type tiles were found in the excavation of the *casa dei leoni* of the mid-C4 to mid-C3 BC (Notario 1992); but both systems were used in Heraclea and Metaponto, and both are found in the sanctuary at Pantanello, and at other sites in the Chora of Metaponto from the Archaic down to the Hellenistic period (see esp. Rescigno *et al.* 2018, 987-1017). Not surprisingly, both Corinthian and Laconian tiles were used to cover the burials in the Pantanello necropolis (Carter in *Chora Metaponto I*, vol. 1, 90-103). On indigenous sites in the hinterland the Corinthian system is usually thought to have been more widespread, as it was also in Etruria (Wikander 1986, 1993). V. Distasi's map (2006b, 94, fig. 94) of the tile systems used on pre-Roman sites in Lucania shows Laconian tiles used on their own at Montescaglioso-San Biagio, the indigenous site closest to the Chora. In the next band of proximity to Metaponto, both Laconian and Corinthian tiles were used at Pomarico Vecchio and Civita di Tricarico. Beyond Civita di Tricarico his map shows only sites with Corinthian tiles (*tegulae*). That, however, is misleading since there is good evidence for the use of Laconian tiles deeper in the hinterland at Oppido Lucano (Lissi Caronna 1980, 221 fig. 136.B, illustrated together with *tegula* profiles), and in the *anaktoron* at Torre di Satriano (Capozzoli 2009, 127-128). According to Marchi and Sabbatini (1996, 275) *tegulae* were used in both Lucania and Daunia from the C5 BC onwards and appear to have been the only type used at Venosa in the pre-Roman period, but they also report the use of Laconian tiles at Banzi and Lavello. Corinthian tiles, however, were used at Lavello in the C5 in the *oikos gamma,* together with angular cover-tiles (Tagliente in Bottini & Fresa eds. 1991, 21). It would seem that there was much local variation. No one has yet compiled the data for Apulia systematically, but it is clear from scattered reports that both systems were used, although, on some sites and in some periods, one was preferred to the other. In Daunia, Laconian tiles were used at Ordona in the C4 and C3 BC (Mazzei 1996, 340-343) but between the beginning of the C2 BC and middle of the C1 BC there was a kiln there producing *tegulae* (Mertens 1988, 52-53). In Peucetia, Laconian tiles seem to have been preferred in the C6 and early C5. They were used in domestic buildings on the acropolis of Castiglione around the middle of the C5 (Ciancio 1996, 359-361), and at Monte Sannace in the archaic Building B-E on the acropolis (Muraglia 2019, 113-114). But in the C4 and C3 the Laconian system gave place to the Corinthian at Monte Sannace (*ibid*., esp. 95-96), as it appears to have done on Botromagno where the buildings of the C4 (Phase VI) were probably roofed with *tegulae* and *imbrices* (Small in *Gravina I*, 9).

The tiles from our Survey Area throw some light on this topic. In the late C6 or early C5 *tegulae* decorated with incised wavy lines on the top of the flange (as No.2193) and *imbrices* scored with intersecting lines (as Nos.2197, 2198) were used on Site 627, probably in conjunction with gorgon's head plaques (as No.2056). Similar *tegulae* and *imbrices* were used at this time on some buildings on Site 223 (San Felice: see Nos.2194, 2195, 2196), and perhaps on Site 401 where there was another gorgon's head plaque or antefix. But colour-slipped Laconian tiles were also used at San Felice in this period (as No.2192), and the distribution of Laconian tiles in general over the whole site suggests that most if not all the palmette antefixes were used in conjunction with them, as they were in Building B-E on Monte Sannace. Whether the selection of the Laconian rather than the Corinthian roofing system was determined by a difference in the function of the buildings, by practical considerations, or merely by the personal preference of whoever owned them it is impossible to say on present evidence.

Our Survey evidence makes it clear that Laconian tiles continued to be used in all the settlements of the LIA in our Survey Area, marking a significant difference from the practice on Monte Sannace and (probably) Botromagno. Large fragments of them were recorded specifically on 10 sites occupied in the LIA (Sites 126, 137, 145-9, 223 (many), 229, 302, 371, 407, 627, 801). Moreover, the analysis of the counts of tile weights on relevant sites in the Survey Area leaves no doubt that Laconian type tiles predominated

on them all. As we have explained in the section on the survey methodology (II.1.*3*) when each site was surveyed, the tiles were sorted into *tegulae*, curved tiles (Laconian and/or *imbrices*) and miscellaneous untypable fragments of tiles broken up by many years of ploughing. Laconian tiles were not normally separated from cover tiles/ *imbrices* since it is not easy to distinguish between them in the case of fragments that are too small to allow the degree of curvature to be estimated. But obvious examples of Laconian tiles were recorded, especially at San Felice where the quantity of material was very great and the repetitive nature of the tile assemblages allowed Laconian tiles to be distinguished more easily. There out of a total tile weight of 8107kg, 4661kg were classified as Laconian and only 17kg clearly *imbrices*. 1802kg could not be classified. The surprisingly low proportion of *imbrices* suggests that Laconian tiles were used as cover tiles at San Felice. The data relevant to sites of the MIA and LIA are assembled in Table 32-1.

It is immediately obvious from the Table that on almost all sites occupied primarily in the MIA and LIA, Laconian and curved cover tiles together represent a much higher percentage of the total tile weights than *tegulae*. No *tegulae* at all were found on eight of them. On only three of those in Groups 1 (the MIA) and 2 (the LIA) did the total weight of *tegulae* amount to more than 10kg, and even in these cases they are far outweighed by the Laconian tiles/ *imbrices*. Even on Site 627 where it is known that *tegulae* were being used in an élite building in the late C6 BC, there is still an absolute preponderance of *imbrices*, though it is less marked than in most other sites of this group. Some sites which were occupied in the LIA and continued into the Hellenistic period are listed in Group 3. Here too there is a general preponderance of Laconian tiles/ *imbrices* which indicates that *tegulae* were not in general use in our Survey Area in the Hellenistic period – as the data shown in Group 5, which incudes sites occupied only in the Hellenistic period, confirm. No *tegulae* at all were found on three of them, and on three others the proportion of *tegulae* to *imbrices* is low.

Group 4 includes LIA sites which were occupied also in the Roman imperial or Late Antique/ Early Medieval periods, and where the tile assemblages might be expected to contain a mixture of earlier and later types. It includes Site 223 (San Felice), the largest and most intensively studied of all our LIA sites, which was re-occupied in a limited way in Late Antiquity and again in the Later Middle Ages when a village was established at the W end of the site. In spite of this "contamination", 57.5% of the total tile weight is accounted for by the curved tiles, and only 10.4% by *tegulae* (the remainder includes *inter alia* the distinctive "chaffy tiles" of the Medieval village). The low ratio of *tegulae* to Laconian/ *imbrex* tiles which this implies reflects the predominance of the LIA material on the site. A similar factor accounts for the even lower ratio of *tegulae* to *imbrices* on Site 813 which reached its zenith in the Hellenistic period before roofs of *tegulae* and *imbrices* became the norm. But on other sites of this group the ratio of *tegulae* to *imbrices* is much higher reflecting the greater importance of the site in the imperial period. Vagnari (Site 361) is a conspicuous example. It is included in Group 4 since there was a small settlement there in the LIA, but it was submerged in the much larger *vicus* of the Roman imperial period. The predominance of the Roman material is reflected in the drastically altered proportions of the weights of the main classes of tile collected in our surface survey. Of the total of 7,542kg for all tile collected, 16% came from *imbrices* and 64.1% from *tegulae*. The ratio of 4kg of *tegulae* to 1kg of *imbrices* is likely to be typical of the Roman imperial period.

The Hellenistic period

Laconian tiles continued to be used in the first part of the Hellenistic period in our Survey Area. Specific examples were recorded on Sites 127 and 355 where occupation seems to have been limited to the C3 BC, and on Site 303 where it began in the C3 and lasted down to the C1 BC. The tile weights for the sites of this period listed in Group 5 of the table show that Laconian tiles or *imbrices* were still preferred to *tegulae* as roofing materials. The only site on which the preponderance is reversed is Site 903 which produced only *tegulae* and a fragment of an *unguentarium*. It must have been an *alla cappuccina* burial (or burials). It shows that *tegulae* were available at the time (the late C2/ early C1 BC), even if they were not normally used on roofs.

There are, however, no certain Laconian tiles recorded from sites occupied in the later part of this period, and the comparative evidence from Botromagno and Monte Irsi in the late C2 and early C1 BC suggest a rather different picture. On Botromagno some *tegulae* were used in the buildings of the last half of the C2 and first half of the C1 BC, but they may have been set in walls and floors rather than on roofs. They are best attested in the villa on Site CA where they were used upside down in the floor of one of the rooms of the principal building. Most of the structures of this period appear to have been roofed with *imbrices* only, which must have been laid in rows alternately inverted (*Gravina I*, 16). The same system was used at Monte Irsi in this period (Wightman in *Monte Irsi,* 208), and perhaps also at Monte Sannace where *imbrices* outnumbered *tegulae* in the Hellenistic layers (Scarfì 1962, 156). In effect, the broader and shallower tiles laid with their concave sides upwards in the Laconian system had shrunk to the dimensions of the more steeply curved cover tiles. How widespread this development was it is impossible to say without more published material for comparison. According to C. Rescigno, F. Perugino and N. Petrillo (in *Chora Metaponto VII*, 988) Laconian tiles were used in the tile factory at Pantanello between ca. 150 and 50 BC (*ibid.*, p. 996 PZ RT 83 and p. 997 PZ RT 86), but the only two published examples of the lower "pan tiles" from the site are small flat pieces indistinguishable from *tegulae*.

The Roman Imperial period

At the beginning of the imperial period, the building practices changed again with a general return to roofs of *tegulae* and *imbrices*. But, as we have seen, they were rather smaller than their counterparts of the pre-Roman period (see also below, Section A1a). The change is reflected in the relative weights of the tile types seen on most of the Sites of our Groups 4 and 6 which had been occupied in the LIA or Hellenistic periods and were still occupied (or were reoccupied) in the Imperial period. Vagnari and Site 813, which fall within Group 4, have already been mentioned. Site 114 in Group 6, where the *tegulae* were more than three times as heavy as the *imbrices*, is another example. On a few other sites which had been occupied previously in the LIA or

site	All tile kg	*Tegulae*		*Imbrices* and/or Laconian		Proportion of *tegulae* to *imbrices* by weight
		kg	% of all tile	kg	% of all tile	
Group 1. MIA sites where occupation ended before the LIA						
422	9.0	0.6	6.7%	8.4	93.3%	1:14
431	6.8	0	-	6.8	100%	-
Group 2. Sites occupied in the LIA, and not reoccupied. Those already occupied in the MIA are marked *						
126	2.0	0	-	0.8	40.0%	-
136	3.6	0.2	5.5%	0.7	19.4%	1:3.5
137	32.0	0	-	15.0	46.9%	-
234	107.0	37.0	34.6%	55.0	51.4%	1:1.49
351	62.0	12.5	20.2%	37.5	60.5%	1:3
371	19.0	4.0	21.1%	15.0	78.9%	1:3.75
411	62.0	1.0	1.6%	60.0	96.8%	1:60
413	31.0	2.0	6.5%	29.0	93.5%	1:14.5
417	150.5	0	-	150.5	100.0%	-
418	2.8	0	-	2.8	100.0%	-
420	8.0	0	-	8.0	100.0%	-
423	115.0	24.0	20.9%	65.0	56.5%	1:2.70
627*	858.0	228.0	26.6%	435.0	50.7%	1:1.91
711	8.5	0	-	8.5	100.0%	-
801	105.5	0	-	105.5	100.0%	-
804	1.4	0.2	14.3%	1.2	85.7%	1:6
826	8.5	0.5	5.9%	8.0	94.1%	1:16
Group 3. LIA sites occupied also in the Hellenistic period.						
302	46.5	1.0	2.2%	19.7	41.9%	1:19.65
401/9*	81.0	16.0	19.8%	66.0	81.5%	1:4.13
407*	540.0	46.0	8.5%	491.0	90.9%	1:10.67
415	14.3	1.25	8.8%	13.0	91.2%	1:10.4
419	126.0	1.0	0.8%	125.0	99.2%	1:125
717	3.0	1.0	33.3%	2.0	66.7%	1:2
Group 4. LIA sites occupied also in the Roman imperial and/or Late Antique period						
120	228.0	52.0	22.8%	63.0	27.6%	1:1.21
124	186.0	37.0	19.9%	23.0	12.7%	1:0.62
134	139.0	23.0	16.5%	25.0	18.0%	1:1.09
139	101.5	30.0	29.6%	21.5	21.2%	1:0.72
145-9*	408.7	103.3	25.2%	66.9	16.4%	1:0.65
214	227.0	92.0	40.5%	95.0	41.9%	1:1.03
223*	8107.0	842.0	10.4%	4661.0	57.5%	1:5.53
229	997.0	488.5	48.9%	259.5	26.0%	1:0.60
347-9*	255.0	87.0	34.1%	128.0	50.2%	1:1.47
361#	7542.0	4833.0	64.1%	1210.0	16.0%	1:0.25
372	586	240.0	41%	236	40.4%	1:0.98
607	140.0	19.0	13.6%	12.0	8.6%	1:0.63
810	11.0	3.3	29.5%	3.5	31.8%	1:1.08
813	605.0	63.0	10.4%	522.0	86.3%	1:8.29
Group 5. Sites occupied in the Hellenistic period						
123	5.5	0	-	5.5	100.0%	-
127	72.0	0	-	35.0	48.6%	-
141	1.5.0	0	-	1.0	66.7%	-
303	333.0	36.5	11.0%	211.0	63.4%	1:5.78
353	6.5	0.5	7.7%	3	46.2%	1:6
355	196.5	41.0	20.9%	135.0	68.7%	1:3.29
818	6.0	0.1	1.7%	5.9	98.3%	1:59
903	34.0	34.0	100.0%	0	0%	-
Group 6. Sites occupied in the Hellenistic and later periods						
114	70	50.0	71.4%	15	21.4%	1:0.3
335	195.5	101.0	51.7%	56	28.6%	1:2.67

site	All tile kg	*Tegulae*		*Imbrices* and/or Laconian		Proportion of *tegulae* to *imbrices* by weight
		kg	% of all tile	kg	% of all tile	
703	236.3	129.3	54.7%	73.7	31.2%	1:0.57
715	38.1	14.2	37.3%	17.0	44.6%	1:1.98
906	128.5	46.5	36.2%	54	43.0%	1:1.61

Table 32-1. Total weight of all tiles found on MIA, LIA and Hellenistic sites, with weights of *tegulae* and *imbrices*/ Laconian tiles, as absolute numbers and as percentages of the total weight of tiles for each site. Sites are grouped by their occupation history inferred from the other artifacts found on them. # The figures from Vagnari do not include tiles found in the excavations.

Group 7. Sites occupied for the first time in the imperial period						
site	All tile kg	*Tegulae*		*Imbrices* and/or Laconian		Ratio of *tegulae* to *imbrices* by weight
		kg	% of all tile	kg	% of all tile	
135	6.0	2.0	33.3%	0.0	-	-
213	121.0	17.0	14.0%	15.0	12.4%	1:0.88
332	25.5	4.1	16.1%	11.0	43.1%	1:2.68
430	3.0	2.0	67.0%	1.0	33.0%	1:0.50
530	8.0	5.4	76.5%	0.3	2.8%	1:0.60
531	0	-	-	-	-	-
606	2.0	0.8	40.0%	0.6	30.0%	1:0.75
624	25.0	12.5	50.0%	10.0	40.0%	1:0.80
625	95.0	49.0	51.6%	28.0	29.5%	1:0.57
704	293.5	196.0	66.8%	29.5	10.1%	1:0.15
707	21.2	12.5	59.0%	4.0	18.9%	1:0.32
710	7.5	5.0	66.7%	0.7	9.3%	1:0.14
714	20.0	12.0	60.0%	0.5	2.5%	1:0.04
718	3.0	2.0	67.0%	0.5	16.7%	1:0.25
719	38.8	29.5	76.0%	1.5	3.9%	1:0.05
722	38.8	31.0	79.9%	0.7	1.8%	1:0.02
820	50.0	27.0	54.0%	7.5	15.0%	1:0.28
905	46.0	24.0	52.2%	7.3	15.8%	1:0.30

Table 32-2. Total weight of all tiles found on sites first occupied in the Roman Imperial period.

Hellenistic period the preponderance is less emphatic, reflecting, presumably the relative extent of the earlier occupation. At Site 372 in Group 4, for instance, where a villa of the Early Imperial period was built over a Hellenistic settlement, 240kg of *tegulae* were found, and 236kg of *imbrices*, a ratio of 1:0.98.

Table 32-2 gives a clearer picture. On all but one of the Sites of this group (Group 7), the *tegulae* far outweighed the *imbrices*, and the exception, Site 332, must be disregarded since the *imbrex* tally may have been contaminated by fragments of tiles from a recent field hut, noted in the List of Sites. On the largest, Site 704, the ratio of *tegulae* to *imbrices* is 1: 0.15. But many of these sites were extremely small and yielded such low counts of tile weights that it may be questioned whether these had buildings roofed with *tegulae* and *imbrices* at all: 7 yielded less than 10kg of tile of all kinds, and 4 less than 5kg. In some cases where the ratio of *tegulae* to *imbrices* is out of proportion to normal roofing needs and the ceramic finds are few (as in the cases of Sites 714 and 719), it may be suspected that the tiles derive from *alla cappuccina* burials. But this explanation will not work for Site 722 where there were remains of *dolia* and millstones as well as small amounts of domestic pottery, or (most conspicuously) in the case of the Late Imperial Site 531 which yielded 15 sherds of domestic wares including 2 fragments of ARS, and no tile at all. It is best to conclude that most of these smaller sites had simple buildings with thatched roofs. The fragments of *tegulae* still found in these buildings may have been reused as building materials for stone socles.

The Late Antique period

Table 32-3 lists sites which can be said with reasonable certainty to have been occupied only or primarily in the Late Antique period (Group 8). Several different tendencies can be recognized in it. On those sites which yielded more than 20kg of tile of all kinds, the ratios of *tegulae* to *imbrices* range from 1:0.25 (Site 235) to 1:0.98 (Site 516). It is possible that on most of these there were buildings roofed with *tegulae* and *imbrices*, continuing the building tradition of the imperial period. The unexpectedly high counts of *tegulae* at the upper end of the ratios in this group may be accounted for by supposing that some of the *tegula* fragments had been used as building materials in wall construction, as was often done at Vagnari. The same hypothesis might be invoked to explain the much greater imbalance on Site 513 which produced 32kg of *tegulae* and only 0.3kg of *imbrices*. The tiny amount of *imbrex* rules out the possibility that any building here was roofed with *tegulae* and *imbrices*, and (unless all the *tegulae* derive from

Group 8. Sites occupied for the first time in the Late Antique period						
Site	All tile kg	*Tegulae*		*Imbrices*		Ratio of *tegulae* to *imbrices* by weight
		kg	% of all tile	kg	% of all tile	
204	14.5	4.0	27.6%	5.0	34.5%	1:1.25
207	1.7	0.3	17.6%	0.1	5.9%	1:0.33
211	4.8	1.0	20.8%	0.8	16.7%	1:0.80
212	-	-	-	-	-	-
222	24.0	8.0	33.4	6.0	25.0%	1:0.75
235	24.0	12.0	50.0%	3.0	12.5%	1:0.25
304	20.0	17.0	85.0%	0.5	2.5%	1:0.02
306	27.0	5.0	18.5%	4.5	16.7%	1:0.90
324	6.0	3.5	58.3%	1.0	16.7%	1:0.28
337	18.5	8.0	43.2%	5.5	29.7%	1:0.69
342	6.0	3.0	50.0%	2.5	41.7%	1:0.83
356	5.3	1.3	25.0%	2.2	41.5%	1:1.69
370	0.5	-	-	0.4	80.0%	-
374	1.5	-	-	-	-	-
408	8.0	3.1	38.8%	4.1	51.3%	1:1.32
410	4.0	2.5	62.5%	1.0	25.0%	1:0.40
424	80.0	32.0	40.0%	29.0	36.3%	1:0.91
513	34.0	32.0	94.1%	0.3	0.9%	-
514	5.0	2.5	50.0%	0.7	14.0%	1:0.28
516	24.0	20.5	85.4%	2.0	8.3%	1:0.98
517	8.0	5.0	62.5%	0.1	-	1:0.02
809	11.0	8.8	80.0%	2.5	22.7%	1:0.31
823	4.5	0.5	11.1%	4.0	88.9%	1:8.00

Table 32-3. Total weight of all tiles found on sites first occupied in the Late Antique period.

burials) it is likely to imply that, as on Site 531 of the Late Imperial period, the building was thatched and the *tegulae* were used in wall or floor construction. The same explanation is likely to account for the fact that on 15 of these sites the total tile count amounts to less than 15kg. They include 2 cases (Sites 304 and 517) on which the *tegulae* greatly outweigh the *imbrices*, and 4 in which the *imbrices* outweigh the *tegulae*. They too may have been used in wall construction.

One of the most important of the Late Antique sites, Site 134, appears in Table 32-1 (Group 4), since it had previously been occupied in the LIA. We have interpreted the Late Antique site as a *vicus* extending over roughly 4 hectares. The total tile count of 139kg is small for a site of this size, especially when compared with the tally of 1504 pottery fragments collected on it, and it is likely that the preponderance of *imbrices*/ Laconian tiles over *tegulae* found on it derives from the roofing system of the LIA, and that most of the Late Antique buildings were thatched.

The Early Medieval period: combed tiles

A significant innovation in the Early Middle Ages was the practice of combing the surfaces of tiles with groups of parallel lines lightly impressed before firing (see Section G below). The practice of decorating tiles in this way may have begun before the end of the Late Antique period, but they are assigned here to the Early Middle Ages for reasons discussed in Chapter XI, 4, iii. They are widespread in much of South Italy, but there is little information on how they were used. Some inferences can, however, be made from our survey material. The majority of the combed tiles are low-curved, comparable in this respect to the Laconian tiles of the pre-Roman period but thicker and heavier. They are combed on the convex surface only. There are also some *tegulae* combed on the upper flat surfaces or on the tops of their flanges. These combed marks on the flats of the *tegulae* would have been visible on a roof, but not the combing on the tops of the flanges which would have been hidden by cover tiles. That suggests that these tiles may not have been intended to be used on roofs. The curved tiles were presumably meant to be seen with the combed convex side uppermost. But the curvature on most of them is too low for them to have served as cover tiles bridging the gaps between *tegulae* since they would not have fitted easily over the *tegula* flanges. They could have been used in vertical rows alternately inverted.

Most of the combed tiles were found on sites that had been previously occupied, but four sites (Sites 309, 365, 819 and 910) on which they were found without identifiable earlier material may be new foundations of the Early Middle Ages, as may another (Site 803) which was only doubtfully occupied in the previous period. They are treated here as a distinct group (Group 9: Table 32-4).

Of these possibly new sites, Site 309 which produced 33kg of *tegulae*, no *imbrex* tiles, and 2.5kg of combed curved tiles can hardly have been a building with a tile roof. There was much slag in the area, and since some of it was found adhering to one of the *tegulae*, it is clear that this was an industrial site – a smithy or perhaps a foundry – where *tegulae* were used to line the fire-pit.

Group 9. Early Medieval: new sites with combed tiles							
Site	**All tile kg**	***Tegulae***		***Imbrices***		***Combed tiles***	
		kg	% of all tile	kg	% of all tile	kg	% of all tile
309	40	*33.0	82.5%	-	-	2.5	6.2%
365	57	27.5	48.2%	4.7	8.2%	6.3	11.0%
803?	25.0	0.1	0.4%	15	60.0%	0.3	1.2%
819	31.0	2.5	8.1%	27.5	88.7%	0.25	0.8%
910	38.5	12.5	32.5%	8.0	24.6%	15.0	39.0%

Table 32-4. Total weight of all tiles found on Sites with combed tiles not previously occupied. *Includes some combed *tegulae* recorded but not weighed separately, Site 365 may begin in the Late Antique period.

They may also have been set in the floor of the working area. Some of the *tegulae* as well as the curved tiles were combed. Site 365 produced more tile fragments than the others of this group (57kg). Nearly half of them (by weight) were of *tegulae*, but there were also significant amounts of *imbrices* (8.2%) and curved combed tiles (11%). There may well have been a small building on this site in the Early Medieval period. Similarly, the assemblage of *tegulae*, *imbrices* and curved combed tiles on Site 910 suggests that there may have been a small hut roofed with a mixture of all three tile types. Site 803 with 25kg of tile and Site 819 with 31kg may also have been small huts, but roofed only with *imbrices* since the *tegula* counts are extremely low. The varied nature of these tile assemblages and the low proportion of combed tiles in all of them suggest that the tiles used to roof the huts were not made to order. The *tegulae* and *imbrices* may have been cannibalized from derelict buildings, and supplemented when necessary by newer curved and combed tiles originally made to be used in other more important structures.

This argument is supported by the counts of combed tiles from sites of all periods in our Survey Area which are shown in Table 32-5. They occur on many earlier sites where there must have been limited re-occupation or frequentation in the Early Medieval period, but always in small quantities. They may have been used to supplement roof tiles reused from earlier buildings.

Site	**All tile kg**	***Combed tiles***		
		kg	% of all tile	
213	121.0	17.2	14.21%	Group 7
214	227.0	0.2	0.09%	Group 4
223	8107.0	18.0	0.22%	Group 4
235	24.0	3.0	12.50%	Group 8
304	20	2.5	12.50%	Group 8
306	27	6.5	24.07%	Group 8
309	40	2.5	6.25%	Group 9
332	23.5	0.2	0.85%	Group 7
337	18.5	3.0	16.21%	Group 8
342	6.0	0.1	1.67%	Group 8
347-9	255.0	2.0	0.78%	Group 4
361	7542.0	1.5	0.02%	Group 4
365	57.0	6.3	11.05%	Group 9
370	0.5	0.1	20.00%	Group 8
423	115.0	0.1	0.09%	Group 2
424	80.0	3.0	3.75%	Group 8
514	5.0	0.5	10.00%	Group 8
719	38.8	0.5	12.89%	Group 7
803	25.0	0.3	1.20%	Group 9
817	3.5	0.25	7.14%	-
819	31.0	0.25	0.80%	Group 9
910	38.5	15.0	38.96%	Group 9
F2	711	64.5	9.07%	-

Table 32-5. Counts of combed tiles, and proportion of combed tiles to all tiles on sites in our Survey Area.

This argument, however, presupposes that there were tile-works somewhere in the vicinity which produced combed tiles for more privileged buildings, and some evidence for this can be seen on the Site F2, Santo Staso, below Botromagno, which lay outside our Survey Area proper, but which was investigated as an adjunct to it. The material collected by Annelisa Di Zanni and her associates in the grid squares laid out there has not yet been fully classified, but the tile counts have been registered, and their distribution is shown in Plan List 55 (*tegulae* and *imbrices)* and Plan List 56 (combed tile). Our provisional count shows that 711kg of tile (of all kinds) were collected, of which 64.5kg (9.0%) were combed. This is the largest collection of combed tiles found

on our Survey. The site has a long history, so many of the tile fragments are likely to come from earlier buildings; but there is a nucleus of combed tiles which occupies a narrow strip in the centre of the site. There are no precise records of the location of the Early Christian building excavated there in 1971, but as a working hypothesis to be tested by further excavation, it may be suggested that the combed tiles derive from the same church building as the *formelle*, discussed under F2 at the end of the List of Sites and referred to in Chap. XI.2.iii.f. The idea that combed tiles were made primarily to roof church buildings (probably the most solid structures of the period) finds some support in the fact that fragments of them were also found associated with the palaeochristian church at Belmonte near Altamura, although the quantity of them is not recorded (see below, Section G).

It is probable, however, that many buildings of this period were wholly or partly thatched. There had always been some thatched buildings even in the Roman imperial period (Chap. IX.5.i; IX.5.ii, IX.5.iii.b) but the use of thatch for rural buildings became commoner in Late Antiquity (Chap. XI.6, iv.b), and there can be little doubt that it remained widespread in the Early Middle Ages.

In some cases where the counts of combed tiles are extremely low, it seems possible that they were used as grave covers for isolated burials, but this cannot be proved from the evidence at hand.

The Middle Ages

The roofing system changed again in the later Middle Ages. On the site of the Medieval village of San Felice there are numerous fragments of the *tegole vacuolate* described in the catalogue (Sub-section H): light-weight, rather badly formed *imbrex* tiles made with clay mixed with chaff. They are the only type of tile made in this fabric, and must have been used alternately inverted on the roofs – a return in effect to the system of the first two centuries BC.

For the production of tiles in kilns in the Survey Area, see Section 30.

II. Catalogue

A. The principal types

1. Corinthian tiles/ *tegulae*

1a. rectangular, with raised flanges: the standard type (see Figs 53-55)

The flanges of *tegulae* changed in proportions over time. In early examples, they are mostly thick and low, as in the tiles used in the *alla cappuccina* burials of the second half C5 and early C4 BC at Pantanello in which they are typically 4.0 thick and ca. 1.8cm high (Carter 1998, 91 and fig. 3.43). In the latest examples found in the Late Antique contexts at San Giovanni di Ruoti, the flanges are mostly narrow and high (Small in *SGR I*, 128-129 and 422 fig. 141). The extreme example, T12 has a flange ca. 2.2 thick and 4.0 high. There was not a consistent development from the one end of this range to the other, and tile profiles from a single site can vary considerably. In a study of the tiles from the Hellenistic contexts at Pontecagnano, for instance, a wide range of *tegula* profiles was found in contexts of the last 3 centuries BC (Damgaard Andersen & Tang 2007), although there are predominant types within the assemblage: of 507 *tegula* frags. classified by flange profile recorded there, nearly half belong to a type (designated Type I) characterized by their high rather steeply rounded internal edges, while a second type with more rectangular profiles is also well represented (Type IV).

In a site of long duration, such as Pontecagnano, the evidence is bound to be to some extent inconsistent, since it was normal practice to reuse earlier tiles in later buildings, and no doubt to patch earlier roofs with later replacements, as Wikander (1993, 155) notes in his study of the tiles from Acquarossa. Frags. of *tegulae* from earlier buildings might also be used in wall construction, as in many of the walls at Vagnari. But in any case, tile-production was not a highly skilled trade requiring close adherence to established standards, as I have noted in discussing the *tegulae* used at Vagnari in the Roman imperial period (*Vagnari*, 242). In spite of these difficulties, it is likely that there were at least tendencies in tile typology in our Survey Area which may have chronological or regional significance. To test this hypothesis, 90 *tegula* profiles from 63 sites and one find-spot are displayed in Figs.53-55, arranged in order of decreasing ratios of the width to the height of the flange, measured from the point at which the inner edge of the flange begins to rise from the flat surface of the *tegula*.

Group 1, T1-4, C5–C3 BC (Fig.53).

The series begins with low flat-topped flanges measuring a little more than 4.0cm thick (nos.T1-4). All of these come from sites which were occupied wholly or partly before the end of the C3 BC (Sites 134, 214, 223 and 627), and they correspond well in profile to the *tegulae* used in the *alla cappuccina* burials of the last half of the C5 and first half of the C4 BC in the Pantanello necropolis, also with those from the "Bottega del vasaio" at Oppido Lucano of the late C4 BC (Lissi Caronna 1980, fig. 136 nos.4, 5), and with Type II.1 *tegulae* at Pontecagnano which were found first in "Early Hellenistic" contexts of the 2nd half C4 or beginning C3 BC (Damgaard Andersen & Tang 2007, 268 fig. 70, esp. D22, Type II.1). They may also be compared with 3 pieces from Pomarico Vecchio (*cit.*, I.1. tav 97.4,6,7) datable before the end of the C3 BC, though these are more crudely made. A somewhat similar *tegula* flange, though undercut on the inner edge, comes from a pre-Roman context on Monte Irsi (*cit.*, fig. 40 no.381).

Group 2, T5-24, predominantly C4–C3 BC; also Early Medieval (Fig.53).
In the next group (nos.T5-24) the profiles are a little less bulky, but since most of the pieces come from sites which were occupied at least partly in the MIA (T9) or LIA, they should also represent types in use in the pre-Roman period. The chronological sequence is interrupted, however, by nos.T15 from the small Late Antique Site 211, and T11 and T22 which come from the Early Medieval Sites 304, and 337. But it must be remembered that the place of these pieces in the series is determined only on the basis of the ratio of the height of the flanges to the width, without taking account of their configuration; and it can be seen that these pieces are all stumpier than the others in the group, i.e. more nearly square in cross section. They must represent a Late Antique/ Early Medieval type, distinct from the high-flanged Late Antique pieces at the end of this whole series. Not all stumpy profiles in this part of the list are Early Medieval, however, as is shown by T24 which comes from the LIA/ Hellenistic site 303.
Group 3, T25-42, Hellenistic/ Early Imperial (Figs 53, 54).
The next group which can be identified in the sequence is nos.T25-42, most of which were found on sites which were occupied for at least part of their duration in the Hellenistic or Early Imperial period. Most have high, steeply curving flanges, comparable to the Type I class of *tegulae* found in Hellenistic contexts at Pontecagnano and seen on a tile produced in a kiln of the C1 AD at Vagnari (*cit.,* 242 fig. 6.6 P1202). T35 is an anomaly in this sequence, in that it was found on Site 235 which otherwise produced Late Antique material. It was presumably re-used. 2 pieces, T37 and T41 came from sites which produced no closely datable finds.
Group 4, T43-58, miscellaneous (Fig.54).
The profiles T43-58 form a rather miscellaneous group. Several well-rounded flanges which come from Site 223 are likely to date before the end of the C4 BC. T57 from Site 407 is probably of similar date, as may be T43 from Site 303, and T45 from the poorly dated Site 501. T49 from Site 124 and T55 from Site 229 may also be pre-Roman, though the main occupation phase on both sites is Roman imperial. T44 from Site 318 and T56 from Site 220 are more likely to date to the late Hellenistic than to the Late Antique phases of those sites. But some tiles in this group with steeper of more tapered flanges were found on sites which were occupied principally in the Late Antique/ Early Medieval period, including T47 from Site 365, and T52 from Site 222, or on sites which had a longer history of occupation that included a Late Antique phase, as T53 from Site 309. T54 with a steeply inclined but lower flange from Site 114 can hardly be dated from the site which was occupied in the Hellenistic period and again from the beginning of the Roman imperial period to Late Antiquity. T58 from the Late Antique/ Early Medieval Site 222 is close to T48 and T50 of Site 223 and so looks pre-Roman. It was perhaps reused in a later building.
Group 5, T59-82, Roman Imperial/ Late Antique (Figs 54-55).
Between nos.T59 and T82 there is a much greater number of pieces from sites of the Early or Middle Imperial period, extending into Late Antiquity: taller pieces, mostly with steeply curving profiles. The series is interrupted by one piece only from a pre-imperial site (no.T60 from Site 401). Since, however, Site 401 also produced a few unclassified pieces of RRS, it is possible, though far from certain, that it continued into the Early Empire.
Group 6, T83-90, Late Antique (Fig.55).
The remaining pieces with the tallest and narrowest flanges, nos.T83-90 all come from sites which were occupied wholly or in part in the Late Antique period.

Cut-aways

In most if not all cases, *tegulae* were fitted together on roofs by means of cut-aways: slots ca. 12cm, long cut away from the underside of each *tegula* at its lower end, of suitable shape and dimensions to match the flanges at the upper ends of the *tegula* below it. This made it possible for the *tegulae* to overlap in vertical rows. It was the normal means of fitting *tegulae* together in use in South Italy at least from the C6 BC (Rescigno *et al*. 2016, 493; 2018, 1001-1002). Several examples were found in our Survey Area on San Felice where they must be dated before ca. 300 BC (Fig. 56, T91-92 and T94). Another found on Site 214 can be dated by the profile of the tile flange to the LIA phase of the site (Fig. 56, T93). The system continued in use throughout the Roman imperial period: see *Vagnari*, 242-243 for examples from that site.

1b. Thick, flat tiles with oblique tapering flange

These tiles appear to be a variant form of *tegulae*. The recorded examples were all found on sites which were occupied, wholly or in part, between the C4 and the C1 BC.

2162	347-9 Ar.347 L3	Fig.56. P2145.
2163	124 - A1	Fig.56. P2130.
2164	303 - F8	Fig.56. P2141.
		Other tiles of this class, not illustrated, from Sites 303 (P2142) 306, 347 (P2143)

2. Laconian tiles (with low curvature)

Broad low-curved slightly tapering tiles used with the concave side upwards. The recorded examples were all found on sites occupied in whole or part before ca. 300 BC. Nos.2167 and 2220 show the curved cut-away at the upper corners intended to hold the cover tiles in place, as noted above. The system was introduced in the C4 BC.
For frags. of Laconian tiles with colour slipped surface, all from Site 223, see No.2192 below. For frags. with incised letters, see Nos.2218 from Site 627; 2219 from Site 145-9; 2220 from Site 223; 2221 from Site 401; 2222 (graffito) from Site 223; 2223 (stamped) from Site 223. For Laconian tiles with animal prints, Nos.2210 and 2214-6 from Site 223.

2165	223 E39N21	Fig.56. P2134.

2166	223 Ar.226	Fig.56. P2136.
2167	223 E47N36	Fig.56. P4107. End frag. with curved cut-away. Hard fired pinkish-brown clay: pale yellow brown surface. 2 good edges (part of long and short sides) and quarter circle cut out at corner. Rather uneven. Pres. lg. 17.8, pres. w. 16. Other similar frags. from E61N20 (P7033), E20N29 (P4056), E47N37 (2 incl. P7743), E62N61 (P7036). The illustrated piece and the last 2 pieces (from an adjacent square) are likely to come from the same building
3. *Imbrices* (cover tiles) Innumerable frags. of *imbrices* were found in the survey, but none gave complete shapes or even cross sections, so the angles show in the drawing are approximate.		
***3a. Angular* cover tiles** Angular cover tiles with 2 or 4 sides were common on roofs of Corinthian type in Greece in the Archaic period (R. Martin 1965, 72-78). In Magna Graecia, they are unevenly distributed both in time and place. In their recent study of the tiles from the sanctuary at Pantanello, C. Rescigno, F. Perugino and N. Petrillo discuss the available evidence (in *Chora Metaponto VII* vol 3, 1013-1015, BC3). The tile type appears early at Torre di Satriano where several examples were found in remains of the *anaktoron* of the C6–C5 (*cit.,* I, 128). Other examples from Roccagloriosa are thought to derive from a destroyed building and a drain of the C5 BC (*cit*., I.70); but most are rather later. A 2-sided and a 4-sided tile were found at Locri in an abandonment context of the mid-C3 (Notario 1992, 324). And 4-sided examples were found in the *oikos gamma* of the C4 BC at Lavello (Bottini & Fresa eds. 1991, 21, pl. CII), and at Pomarico Vecchio where they must date before the middle of the C3 BC (Maturo 1997, tav 98, 15 and 16). At Pantanello several were found associated with the sanctuary in contexts of the C5 or C4 BC (?), and others (redeposited?) in contexts of the succeeding farmhouse and tile factory. A single instance was found in the necropolis used in conjunction with Laconian tiles in place of the normal semi-circular *imbrices* to close a burial (T269) dated 475–275 BC (Carter 1998) 98, fig. 3.52, 323. In most other contexts they are associated with flat Corinthian type tiles. In all sites they form only a small proportion of the total tile finds. Rescigno suggests that this must be explained by one of two assumptions: either they were combined with Corinthian type tiles on buildings of modest dimensions, or they were used in the construction of channels or some such features, as they appear to have been at Roccagloriosa. A third possibility would be that they were used as ridge tiles on some buildings roofed with *tegulae* and *imbrices*. Our Survey evidence confirms that the type was rare (with 1 instance only on Site 347-9, and 4 from San Felice) but does not help to explain how they were used, although it should be noted that *tegulae* were also found on both sites.		
3a-1. With 2 facets These would have fitted over early *tegulae* with low flanges. Cf. R. Martin 1965, fig. 25.		
2168	145-9 Ar.145	Fig.57. P2131.
3a-2. With 4 facets Only 2 facets are preserved on these pieces, but they can be reconstructed with 4 on the analogy of similar tiles elsewhere. They were intended primarily for use on Corinthian type roofs, straddling the flanges of the *tegulae* (R. Martin 1965, figs 23-25). All the recorded pieces come from 2 sites which were occupied mainly before ca. 300 BC.		
2169	347-9 Ar.347 M1	Fig.57. P2144.
2170	223 E48N40	Fig.57. P8184.
		Other 4-facetted *imbrices* from Site 223 E18N29, E17N23, E25N21.
3b. Imbrices approximately semicircular in cross-section This is by far the commonest form of *imbrex*, found on sites of all periods. On our Survey it is the only type of *imbrex* found on sites of the Roman and Late Antique periods.		
3 b-1. Imbrices with simple rims		
2171	145-9 Ar.147 E7	Fig.57. P2132.
2172	124 - A1	Fig.57. P2129.
3 b-2 Curved imbrices with thickened rims Similar tiles found at Monte Irsi were associated by E.M. Wightman with the building of the Early Imperial period (*cit*., fig. 38 nos.361-363, from Site A). They were perhaps re-used there since our pieces come from sites which were principally occupied in the pre-Roman period.		
2173	407 C2	Fig.57. P1135.
2174	223 E41N18	Fig.57. P8185.

2175	223 E17N29	Fig.57. P8186.
2176	223 E19N28	Fig.57. P8187.
2177	223 Ar. 228	Fig.57. P2139.
3b-3 Imbrices with out-turned/ up-turned flanges along the edges All the pieces recorded on our Survey were found on sites occupied in whole or in part in the LIA except perhaps Site 422 (probably C6–C5 BC but the ceramic evidence is meagre). Similar tiles were found at Monte Irsi (*cit*., figs 38 no.367, 39 no.369) on Site A, associated with the building of the Late Republic/ Early Empire. They were perhaps reused from the pre-Roman site.		
2178	223 Ar.226	Fig.57. P2138.
2179	137	Fig.57. P8188.
2180	417	Fig.57. P1115.
2181	214	Fig.57. P2133.
2182	223	Fig.57. P8189.
2183	126	Fig.57. P2090.
		Others on Sites 126, 137 (P4348), 214, 223 (P4923, P2135, P2137, P665 with raised edge and 2 more), 355, 347-9 (2 incl. P2148), 407, 422, 627.
Ridge tile		
4a. Large, roughly semi-cylindrical, with a vertical flange along the apex. This kind of ridge tile is attested at Acquarossa in the late C7/ 1st half C6 BC: Wikander 1986, type IIB: see esp. p. 111 fig. 62 no.67 (his type IIC), p. 233 fig. 128 no.2; 249 fig. 139 nos.1, 6, 7 (his type IIB). For the chronology: Wikander 1993, 157-158. See also No.2197 (grooved).		
2184	223 E41N18	Pl.45. P7018. Inverted V-shaped frag., rounded on underside, with flange along the ridge. Hard-fired light reddish-brown clay. Lg. along ridge 10.0.
Skylight or chimney tiles (*keramides opaiai)* Tiles with a wide central aperture surmounted by a flange, were inserted into roofs to light spaces which had no adequate windows or to vent rooms where there were open hearths, or where braziers were used (R. Martin 1965, 98-99; Wikander 1983). They might be made to fit either Corinthian or Laconian type roofs, and the apertures might be round, oval, or (more rarely) rectangular with rounded corners. This kind of tile was already in use in Etruria in the C6 BC, notably at Acquarossa, where they have been studied in detail (Wikander 1986, 38-40, figs. 17, 18). None were recorded from the excavations on Botromagno, but they were widespread in Central and S. Italy by the C4 BC. In addition to those listed by Wikander (1983), 6 are recorded from Roccagloriosa, 2 with oval apertures, classified as "Tegole ad 'opaion'"and 4 "Tegole per camino" with round apertures. Several come from the destruction of the C4 BC buildings in Complex A (*Roccagloriosa I*, 76-77, 304 fig. 200 nos.551-552). 1 was recorded in the kitchen of the *maison du monolithe* at Civita di Tricarico in a layer of Phase IIB, ca. 250 BC (De Cazanove 2008, 114-115 fig. 85), 1 at the Difesa S. Biagio in a context of the C4/C3 BC (D'Andria & Roubis 1998 –1999, 152 fig. 21), 2 at Pomarico Vecchio (Maturo 1997, 250 and tav. 98 nos.8, 9) (both unstratified, but antedating the end of the site in the late C3 BC), and 2 at Pantanello, one of them in a context of the C4–C3 BC, and the other in a dump containing grey-gloss pottery of the last half C2 and 1st half C1 BC (Rescigno *et al.* in *Chora Metaponto VII* vol 3, 1016-1017). Another (undated) was found at Torre di Satriano (Capozzoli 2005, 128-129 and tav. II, with further refs). They continued in use into Late Antiquity/ the Early Middle Ages (as at San Giovanni di Ruoti: *SGR I*, 129 no.236 and fig. 143.a). The 4 pieces found in the survey all come from sites which were occupied wholly or in part in the Late Iron Age (esp. C4 BC). The first 3 listed here had oval apertures. No.2185 was designed to fit a Corinthian type roof, Nos.2185 and 2186 probably a Laconian one. The small frag. No.2188 is perhaps from a Corinthian piece.		
2185	214 B	Pl.45. P593. Hard greenish-grey micaceous clay with numerous small black grits. Rim of vent 1.7 wide at top, ca. 2.2 high. Pres. lg. 10.5.
2186	223 E41N24	Pl.45. P4446. Hard greenish-grey clay, over fired. A slight curvature in the sherd suggests that it was intended to fit a Laconian type roof. Max. dim. 9.0.
2187	223 E33N19	Pl.45. P7009. Hard reddish-brown clay, surface much encrusted with lime deposit. Max. dim. 11.0.
2188	407 - B5	Fig.56. P1059. Small frag. giving cross section of flange and rim of aperture. Tip of rim damaged. Hard buff clay. Pres. w. 12.5. Form of aperture uncertain.

B. Tiles with decoration, stamps or other impressed marks		
Painted tiles		
Tiles used in Greek buildings were sometimes painted, usually in dull browns and reds, but sometimes in white (R. Martin 1965, 65). Painted tiles of both Laconian and Corinthian types are known from Old Greece in the Archaic period (e.g. in the Heraion at Samos: Ohnesorg 1990). The idea was picked up in South Italy where painted tiles became widespread at an early stage. A small temple built in the first half of the C6 BC at Incoronata was roofed with red and brown painted Laconian tiles (Carter 2003, 381; Rescigno 2012, 12-13), and frags. of the tiles from the Archaic phase of the sanctuary at Pantanello show traces of black or red-brown colour (Rescigno *et al.* in *Chora VII* vol 3, 988). Painted tiles have also been reported in the excavations of buildings of the late C7 or C6 on several indigenous Apulian sites, including Cavallino (Pancrazzi 1979, 122-123, 288 figs 38-39) and Monte Sannace (Galeandro & Palmentola in *cit.,* 2013, 47). 2 frags. of painted *tegulae* found at Pontecagnano in contexts of the second half C4 BC suggest that the practice continued in South Italy into the Early Hellenistic period (Damgaard Andersen & Tang 2007, 47 and fig 71, D41, D42.), but the pieces are very small, and one suspects that they may have been residual. Ten frags. of painted tiles were found in our Survey. One of these, (No.2189, a Laconian tile) is painted with linear patterns. All the others were colour-slipped in reddish-brown on one or both surfaces. 1 (No.2190) is from a *tegula*; 2 (incl. No.2191) with pronounced curvature must be from an *imbrex*; 6 (incl. No.2192) with low curvature are from Laconian type tiles. The surface on the under-side was generally unpainted, and often left rough, but one of the Laconian type tiles (No.2192) was painted on both top and bottom.		
1a. Laconian tiles painted with red-brown stripes		
2189	223 E44N44	Pl.45. P7075. Frag. with part of one edge and rounded cut-away. Hard yellowish-grey clay (?overfired) with small black inclusions. 4 roughly painted stripes in matt brown paint across upper surface, preserved only at right edge of sherd. Max. dim. 9.0, th. 1.7. For the type, with quarter-round cut-away, see No.2184.
1b. Colour-slipped tiles		
1b-1. Colour slipped tegula		
2190	223 E42N17	Pl.45. P4836. Corner of *tegula* with part of flange and short edge. Hard pinkish-brown clay, thick purplish-brown slip covering exterior of flange and upper flat surface. Pres. lg. of flange 6.2, of front 2.5; ht. of flange 4.0; th. of base 1.7.
1b-2. Colour slipped imbrex		
2191	229	Pl.45. P4902. *Imbrex*, with inset for attachment for next in the line. Hard pinkish-brown clay, some small white grits, matt reddish-brown slip on convex surface. Max. dim. 6.5, th. 1.4. Another, from Site 223 E20N26 (P4052).
1b-3. Colour slipped Laconian tiles		
2192	223 E34N19	Pl.45. P4113. Slightly curved tile (Laconian). Pale yellowish-brown fabric. Some imprints of chaff on upper surface and some parallel smoothing marks or very light combing. Lower surface rough. Upper surface covered in matt reddish-brown slip, worn off in places. Both sides painted. Max. lg. 4.5; th. ca.1. Other colour slipped Laconian tiles, all from Site 223: E34N19 (P4627), E38N17 (P4543), E27N22 (P4448), E48N28 (P7017), E55N16 (P613), all painted on convex side only.
2. Grooved tiles in sandy red fabric The tiles listed here are made in a distinctive sandy red ware used on some Oenotrian/ Lucanian sites for large storage pots, and are decorated in the same way with grooves scored in the clay of the upper surface after it had hardened but before firing. The fabric is discussed in Section 15 above (re *pithos*/ *dolium* No.1920). Most of the pieces listed here, however, come from Laconian tiles, *tegulae* or ridge tiles. On the smaller curved pieces the possibility remains open that the frag. comes from a storage vessel, but without clear evidence for double curvature, they are classified here as tiles.		
2a. Tegulae with grooved impressions		
2193	627 T	Pl.45. P1618. Low *tegula* with wavy line incised on flat top of flange. Dark grey clay, many inclusions and air holes, red brown on surface. Ht. 3.0, max. lg. 12.3.
2194	223 E35N20	Pl.45. P4447. Flange. Sandy red fabric, greyish in core, many white, brown and black grits. Raised flange 2.7 wide. Incised zig-zag pattern beside flange, 0.4 wide and 0.2 - 0.3 deep, incised before firing. Max. lg. 7.5, th. 1.7.
2195	223 E43N29	Pl.45. P4464. Flat frag., probably of a *tegula*. Sandy dark brown clay with some white and brown grits. 4 parallel grooves on upper side 2mm wide. Max. dim. 6, th. 1.6.
2196	223 E38N19	Pl.45. P4457. Flat. Sandy reddish-brown clay with some small white inclusions, hard fired. Part of 3 parallel impressed grooves ca. 0.3 wide and 0.2 deep on upper surface. Max. dim. 4.5, th. 1.5.

2b. Imbrices with grooved impressions		
2197	627 P	Fig.57, Pl.45. P1582. Frag. of *imbrex* or perhaps ridge tile with 2 facets. Drab greyish-brown micaceous clay, fired orange towards surfaces with numerous dark brown and black grits up to 2mm. Several firing cracks through fabric. Underside roughly semicircular, with curve becoming more accentuated towards apex. Broken unevenly so that more of one facet is preserved than of the other. On the better preserved, part of 2 long grooves running obliquely across sherd, 4-5mm wide and 2mm deep and ca 3cm apart. Between each of these, one deep gash on same alignment. On less well-preserved side, beginning of another groove. Max. dim. 8.8; th. ca 1.7.
2198	627 D	Pl.45. P1566. Drab greyish-brown micaceous clay, fired orange towards surfaces with a white grit up to 3mm. Upper surface has 5 roughly parallel deeply incised lines leaving raised edges, max. 4mm wide and 3mm deep, 0.5-1.5cm apart; beginning of another groove at right angles to these at one edge of sherd; 2 other narrower grooves at 45***o*** partially intersecting the others. Max. dim. 2.5; max. th. 1.2.
2c. Other fragments of tiles with grooved decoration.		
		Not illus. Site 223: E37N19 (P4455), E38N19 (P4457), E35N22 (P4444), E40N20 (P4667), Site 627-P (P1586).
3. *Tegula* with impressed marks from a woven mat on the underside		
2199	223 E44N26	Pl.45. P4553. Pale yellowish-grey clay, some white inclusions. Brush markings on top and impressions of a woven rush mat on the underside. Pres. lg. 10.7, th. 2. The impressed marks suggest that the tile was laid out to dry overlapping the edge of a rush mat with raised border. The rushes form an undulating pattern, held together at intervals by cross-stitches.
4. *Tegulae* with finger-impressed arcs Such finger-impressed marks were common on Roman imperial *tegulae*, such as those produced in the kilns at Vagnari, where the number of arcs ranges from 1 to 4 in close parallel. The number of arcs perhaps indicated the worker who made the tile: see my remarks in *Vagnari*, 240-246. The practice of marking tiles in this way began early in the Imperial period and continued into Late Antiquity, being still found at San Giovanni di Ruoti in Period 3B (*SGR I*, 129).		
2200	704 A1	Pl.45. P1760. *Tegula* flange. Frag. with at least 3 finger-impressed arcs. Drab greyish-brown clay with some small brown pebble inclusions and small white ones, under surface damaged. cream at upper surface. Ht. of flange 3.8, th. 2.5.
2201	223 E22N27	Pl.45. P4336. Hard reddish-brown clay with numerous small white, grey and brown inclusions, and some larger grey and brown ones up to 4mm. 3 close-set finger impressions, and a 4th, lighter, nearly 1.0 apart. Max. dim. 10.0.
		Not illus. Other finger-impressed *tegulae* from Sites 147 (P0194); 223 E20N24 (P4013), E23N26 (P4337); 423; 513 - 3 (P1320). The tile used for the *tabula lusoria* (No.2076) also shows finger impressions.
5. *Tegula* with nail-hole In the Greek world, most roofs were constructed at an angle of less than ca. 30 degrees so that the tiles remained in place by force of gravity; but nails might be used to secure the tiles more firmly, especially along the eaves. Wikander (1993, 40-42) records 64 *tegulae* with nail holes from Acquarossa (late C7–mid-C6 BC). He notes that on the great Etruscan temples from the end of the C6 onwards, nail-holes became almost a rule in eaves-tiles. In the Etruscan examples the hole was usually strengthened by a raised collar, as is the case with our piece. In Apulia and Lucania *tegulae* with nail holes appear to be extremely rare. None were found in the excavations on Botromagno, or at Monte Irsi, or San Giovanni di Ruoti. The piece recorded here was found on the villa site on the N slope of San Felice.		
2202	229 - 5	Pl.45. P504. Hard reddish-brown clay with some white grits. Ring around hole projects 5mm from upper surface. Max. dim. 13.0, th. 2.5.
6. Tile with impressed circles		
2203	223 E18N25	Pl.46. P4150. Hard fired pink clay with large white shell inclusions emerging on surface. Air holes. 4 circles in a row on upper surface (not hobnails). Very roughly finished. Cf. No.1303 (basin) for impressed circles. Max. dim. 6.5, max. th. 1.5. Probably Medieval to judge by the fabric.
7. *Tegula* fragments with hobnail impressions The hobnail impressions on these 2 pieces seem to have been carefully made, suggesting that they were intended as signatures by the artisans who made them. Cf. a tile of the C1 BC from Pietrabbondante (Samnium) signed by a female slave with 4 imprints of the same hobnailed shoe and inscriptions in Oscan and Latin: Morel 1991, 195-198 and fig. 1 p. 196.		
2204	372 L6	Pl.46. P879. *Tegula* frag. with 5 small circular hobnail cavities. Hard reddish-brown clay; some air holes, light brown surface. Max. dim. 8.0; th. 2.8.

2205	114	Pl.46. P2088. *Tegula* frag. Part of flange flanked by 2 fingertip impressed shallow grooves and imprint of 11 hobnails of varying size (Ø 0.4 - 0.8). Hard fired reddish-brown clay, some small white and brown inclusions and some air holes. Max. dim. 12.0, th. 2.0.
8. Tegula fragments with thumb prints Thumb prints are a common feature of the tiles produced in the kilns at Vagnari. They were perhaps intended as thumb-holds enabling the tiler to pick up the *tegula* with one hand: *Vagnari*, 246. The pieces listed are all flat frags., probably of *tegulae*.		
2206	704 - A2	Pl.46. P1770. Hard pinkish-brown clay. Thumb print 3.2 long, 0.8 deep, 2.2 thick. Max. dim. 12.0.
2207	704 - A2	Pl.46. P1771. Hard pinkish-brown clay with light brown surface. Thumb print 3.0 long. Max. lg. 7.4, th. 2.0.
2208	712 - H5	Pl.46. P1837. Hard fired pale yellowish clay, some air holes. Thumb print ca. 2.8 long. Max. w. of sherd 3.8.
		Other frags. with thumb prints Site 223 E13N27 (P4123), Site 513.
9. Tiles with animal prints Animal prints are frequently found on Roman tiles, especially *tegulae*, which were left in the open to dry. Dog prints were the most common at Vagnari, though cat, sheep and goat prints were also found there: *Vagnari*, 248-249. The pieces from the survey include a cat, a sheep or goat, a probable dog and pig, and several unidentified creatures. All come from pre-Roman sites except for Nos.2211 and 2212 from the mid-Imperial Site 704.		
9a. Cat		
2209	223 E18N33	Pl.46. P4155. Laconian tile. Yellowish clay with a few white inclusions. Hard fired, some air holes in break. A small part of one edge is preserved. Lightly impressed cat print (3 pads) and part of another. Max. length of pad 0.7. Max. lg. of sherd 14.5, th. 2.0.
9b. Dog?		
2210	625 - Z	Pl.46. P1423. *Tegula*. Hard-fired dark greenish-grey (possibly a waster). Overlapping prints, perhaps of dog. Lg. of sherd 11.0, w. 12.0.
9c. Sheep / goat		
2211	704 - A2	Pl.46. P1769. *Tegula* waster. Hard fired greenish-brown clay with numerous small brown inclusions; some small horizontal air holes/ voids. 2 impressed prints ca. 3.0 long. Max. dim. 16.5, th. 2.3.
9d. Pig?		
2212	704 - A1	Pl.46. P1761. *Tegula frag.,* with one good edge. Light pinkish-brown clay. 2 pairs of piglet (?) prints, max. 3.5 long. Max. dim. of sherd 10.3, th. 2.3.
9e. Unidentified animal prints		
2213	223 E18N34	Pl.46. P4332. Slightly curved tile. Light reddish-brown clay, many dark brown inclusions, some air holes. One good edge. 2 animal prints. Lg. of largest print 2.1. Max. dim. of sherd 7.6.
2214	223 E60N72	Pl.46. P7003. Laconian tile. Hard pinkish-brown slightly micaceous clay with white inclusions. One prominent pair of prints up to 3mm deep, and several lighter scratches. Lg. of largest print 3.5. Max. dim. of sherd 9.0, th. 1.5.
2215	223 E33N23	Pl.46. P7126. Laconian tile. Pale yellowish-brown clay. One pair of well-marked prints and several less clearly formed. Lg. of largest print 1,8. Max. dim. of sherd 6.7.
10. Tiles exhibiting marine shells The following 2 pieces decorated with sea-shells both come from San Felice, and should be dated before ca. 300 BC.		
2216	223 E44N45	Pl.46. P7044. *Tegula*. Hard brick-red fabric, numerous white small shell inclusions, roughly finished top and bottom; impression made with a scallop shell (incomplete at break) on exterior of flange. Max. dim. 7, th. 1.7-1.9.
2217	223 E18N22	Pl.46. P4036. *Tegula*. Hard reddish-brown clay. Dark reddish-brown slip on upper surface, worn off towards one edge of sherd; remains of a cockle shell impressed in upper side near point of surface loss. Part of broad shallow groove at edge of sherd (below missing flange?). Lower surface lost. Max. dim. 10.5, max. pres. th. 2.4.
C. Inscribed tiles Inscribed tiles were rare finds on the field survey, but they are of exceptional importance for the social and economic history of the area. The exhaustive surface collection on San Felice did not produce a match for the frag. of a curved tile inscribed HPA[κλ/EIΔ[ας (i.e. Herakleidas) found on the site by a private individual which was published in Small 2006, with a suggested date in the late C4 or C3 BC. See, however, No.2223.		

1. Laconian tiles with letters impressed before firing The single letters of the first 3 items were perhaps abbreviations of the maker's name. Other Laconian tiles with single letters (*beta* and *sigma*) impressed or incised are reported from the "Farmhouse" of the early C3 BC at Pantanello: Rescigno *et al.* in *Chora Metaponto VII*, 992, 999. No.2221 has a frag. of a longer inscription. Since all 4 pieces are likely to be pre-Roman, the letters must be in the Greek. Oscan or Messapic alphabet. The *omicron* of No.2220, however, cannot be Oscan.		
2218	627 - P	Pl.46. P1585. Frag. of a Laconian tile with rounded corner. Drab medium brown clay. Lower surface marked by traces of ?straw. 2 impressions on upper surface: *Alpha* ca. 1.5 high incised before firing, and a nail (?). Max. lg. 5.8, th. 1.4.
2219	145-9 Ar.148 K6	Pl.46. P246. Frag. of a Laconian tile, with part of one short side preserved. Hard pinkish-brown clay. Impressed mark, probably cursive *Nu*, ca. 2.5 high and 0.2 – 0.3 deep, incised before firing. Max. dim. of sherd 9.0, th. 1.8.
2220	223 E61N20	Pl.46. P7033. End frag. of a Laconian tile with quarter-round cut-away. Yellowish-green clay, hard fired with some air cracks in break. Roughly circular mark Ø ca. 1.0 incised on lower surface before firing. Max. dim. of sherd 6.3, th. 1.3. The incised mark seems haphazard, but the analogies of Nos.2218 and 2219 with small incised letters suggests that it is a crudely formed *omicron.*
2221	401 L19	Pl.46. P1129. Flat frag., measuring 4.0×3.8×max. 0.9 thick. Pale buff yellowish-orange fabric; internal surface is more yellow. Part of an inscription on one surface with letters ca. 2.5mm deep, incised before firing: edge of a curved letter, followed by I and P. The eye of the P is slightly open. Sponge marks on other side. The piece can hardly be from the bottom of a pot since it is unlikely that a pot base would be inscribed while still wet. It is more likely, therefore, to be from a tile. The possibility that it is from a die used to stamp tiles or other objects can probably be ruled out since there is no indication of a grip on the side opposite the inscription, and the lettering of a die would be likely to be in mirror image (cf. a die from the site of San Canio near Montescaglioso used to stamp tiles: Roubis & Camia 2010 –2011, 116-122). The letters are likely to be Greek, given the date of other material from the site. If so, the curved letter at the left edge of the frag. may be *omicron* or *theta*, or perhaps *phi* with abnormally large "O", or rho. The second letter would be *iota* and the third *rho*.
2. Laconian tile with Graffito inscription		
2222	223 E60N25	Pl.46. P4944. Slightly curved tile, probably Laconian. Yellowish-brown clay, pink in core, creamy slip on upper surface, roughly finished on under side. 3 letters (max. 0.4 deep), probably part of a longer inscription, crudely scratched on upper surface before firing – Probably *omicron* and *chi*, the chi partially overlying an open *sigma* (?). Max. dim. 11.5, th. 1.8. Melillo (*PSF*, 201) refers (without illustration) to *coppi* (Laconian tiles or *imbrices*) with a graffito X on their upper surface found in the small settlement of the C2–C1 BC at Recupa di Scardinale, 2.5 km SE of San Felice. Given the difference in dates between the 2 sites, it is unlikely that the graffiti have the same meaning (? the Roman numeral 10).
3. Other Laconian tile stamp		
2223	223 Ar.245	Pl.47. P595. Laconian tile. Medium brown clay with paler surface. Part of stamped motif in relief in sunken frame on upper surface, broken at right edge. Pres. lg. of tile 13.5, th. 1.5; w. of stamp 3.5, depth 0.3. For a similar stamp on 2 *tegula* frags. from Pompeii, see Antonini 1985, 278 nos.27 A and B, tav. LX.28; Crawford *et al.* (eds) 2011, vol. II, 822 with suggested date ca. 150–100 BC. The Pompeian examples make it clear that the stamp should be read as H in relief inside a recessed frame of the same shape, but they leave it uncertain how the letter should be interpreted. In the Oscan alphabet of Pompeii it should represent *z* (as suggested by Antonini, *loc. cit.*), but the possibility that it is a Greek *eta* cannot be excluded since there was a significant Greek community in the city. In the cultural context of San Felice where the tile was found the letter must be read as *eta* in the Greek alphabet which was used in Lucanian Oscan as well as in Greek in the Italiote cities on the Ionian coast. It might then be the initial letter of the name of the artisan who made it, perhaps Herakleidas (HPA[κλ/EIΔ[ας) who stamped the tile from San Felice referred to at the beginning of this section. Alternatively, it may be an aspirate indicating 100 (*hekaton*) in the Greek acrophonic system of numerals used in Lucanian Oscan, as in a dedicatory inscription in the sanctuary at Macchia di Rossano (Crawford *et al.* (eds) 2011, vol. III, 1364-1365). The Pompeian piece is dated by Antonini to 150–100 BC, but our frag. from San Felice is unlikely to be later than the end C4/ beginning C3, so it may be suggested that the Pompeian tile was reused in a later context.
4. *Tegula* fragments with stamps of private individuals I have discussed all of these more fully in *Beyond Vagnari* pp. 73-78.		

2224	114 C2	Pl.47. P86. Hard reddish clay. Ht. of stamp 2.3 (complete); pres. w. 5.2, ht. of letters 2.0. Letters in relief ca. 1.7mm deep: Possibly SCIPI[- with CI in ligature. Upper part of P and I defective. A blob between I and P may be an interpunct dot, but more probably results from a flaw in the die, 2.5×3.5mm. See *Beyond Vagnari*, 75, where I have suggested that the text could be restored as SCIPI[onis] referring to a member of the Scipio family who was alive in the Late Republic or Early Principate.
2225	704 - AA1	Pl.47. P1783. Hard reddish-yellow clay. Height of frame 2.5; pres. w. of frame 7.7, Ht. of letters ca. 1.8. Letters in relief ca. 1.0mm deep: MPM'Ḍ[-. The stamp comes from the same die as P1376 from the villa on San Felice (Site 229): *Beyond Vagnari*, 73. The 2 frags. together give the full stamp. In the light of another tile from the villa stamped CN/ MAG[- (McCallum & vanderLeest 2014, 126), the full stamp can now be read as MPMAG.P with MA abbreviated as M'. There is a possible interpunct dot between the P and M. The final P is missing on this stamp. I intend to argue in a future article that the inscription should be expanded *M(uciae) <uxoris> P(ompei) Mag(ni) . P(roconsulis)*, and can be dated between 77 BC when Pompey was granted his first proconsulship, and 61 BC when he divorced Mucia.
2226	124 - C1	Pl.47. P53. Hard dull pinkish-brown clay with paler surface. Frame with double edge. Crisp stamped letters -]ENI in relief ca. 1mm deep. Original ht. of letters ca. 1.3; pres. dims. of frame (outer edge) 4.3×1.7. *Beyond Vagnari,* 73-74. The letter forms suggest an early imperial date.
2227	372 - N4	Pl.47. P859. Hard red brick-coloured fabric. Lightly impressed stamp, lime encrusted. Stamp, broken at left end and damaged at right end, reads ?]CAELID[?. Upper part only of C preserved; AE in ligature. Ht. of stamp 3.0. Ht. of letters 1.8cm. The narrow but neat letter forms suggest a later date than No.2226, perhaps C2 AD. For the name Caelidius, perhaps owner of the villa, see Ch. IX.14.i.b and *Beyond Vagnari*,74-75.
5. *Tegulae* stamped by the imperial slave Gratus For a full discussion of these tiles, and others found at Vagnari and in the environs of Gravina outside the Survey Area, see Small, Volterra & Hancock 2003. They provide essential information on the status of the *fundus* of Vagnari as an imperial property. The complete stamp read GRATI / CAESARIS: (tile) of Gratus (slave) of Caesar.		
2228	229	Pl.47. P513. Preserved part of stamp ..]ATI / ...]SARI[. (AR in ligature)
2229	707	Preserved part of stamp GR[... / CAES[.... (AE in ligature; only the bottom half of R and the S preserved)
2230	229	Pl.47. P1895. Preserved part of stamp G[...../ C[.....
D. Segmental tiles These were used to construct column drums, as at Vagnari where they were employed in the portico of the Late Antique building: *Vagnari*, 216 fig. 5.117. Both pieces come from the W end of San Felice where there was some occupation in the Late Antique/ Early Medieval period, as does another noted below (P4026). Many were found on the villa Site 229: McCallum, Vanderleest *et al.* 2011, 32, 99.		
2231	223 E19N26	Pl.47. P4043. Hard-fired reddish-clay encrusted with mortar traces on top, bottom and sides. Radius ca. 13.0, th. 4.5.
2232	223 E16N25	Pl.47. P4146. Hard-fired reddish-brown clay; some large white pebbly inclusions; several air holes. Point broken off. Original radius 15.0, th. 4.5.
		Not illus. Other segmental tiles from Sites 223, E16N27 (P4026, radius ca. 13.0, th. 4.3), 229 (many incl. P2029, radius 13.4, th. 2.8, P2021, radius 14.0, th. 4.0).
E. Round tiles Round tiles ca. 22.0 in diameter and a little less than 2.0 thick were frequently used to build up the *pilae* that supported the floors of rooms heated with a hypocaust. Several examples were found at Vagnari associated with kiln 3 of the C2 AD: *Vagnari*, 259-263 One fragmentary example only was recorded in the survey.		
2233	707	Fig. 56. P1777. Frag. with edge, approx. one eighth of the tile. Hard grey-green clay with moderate mixed inclusions. Edge battered. Original Ø 22.0, th. 1.7.
F. *Imbrices* with finger-impressed grooves		
Imbrices decorated with finger-tip impressed grooves are typically Late Roman/ Late Antique. One decorated with a series of squiggles was found in the fill of Kiln 6 at Vagnari, datable in the last half C4 or first half C5 AD (*Vagnari*, 269-277 and fig. 6.55) and another with close-set longitudinal grooves was found at San Giovanni di Ruoti in a context of Period 3 (after 400 AD): Small in *SGR I*, 130 and fig, 143. In Sicily they are attested between the C5 and C7 AD and have been seen as precursors of tiles with combed decoration: Arcifa 2010, 109.		

2234	223 E19N21	Pl.47. P4328. End of *imbrex* with close-set and deeply impressed finger-made grooves longitudinally along top of tile (5 visible on sherd). Hard reddish-brown clay, dull brown on surface; some small white shell inclusions. Pres. lg. 11.2.
2235	223 E17N29	Pl.47. P4003. Frag. with pronounced curvature, marked with close-set parallel finger impressions in straight lines (4 visible in whole or in part on the frag.). Pale brown clay. Pres. lg. 5.9.
2236	223 E12N23	Pl.47. P4105. Hard fired, drab brown clay. 3 parallel grooves ca 0.8 wide. Pres. lg. 2.5, th. 1.5. Another frag. in more yellowish clay with slightly wider grooves was found in the same square.
		No illus. Site 223 E11N26 P4116, E19N27 P4029.

G. Tiles with combed decoration

Decoration with shallow parallel grooves incised with a comb or other instrument with several teeth was a characteristic feature of pottery in the Late Antique/ Early Medieval period, regularly used on some forms of Late Roman Painted ware (Section 11 passim), and frequently on the regional plain wares (as Nos.1276, 1292) and cookpots (No.1390). The practice of decorating tiles with combed incisions made before firing may have begun rather later, and (to judge by the published evidence) varied in popularity from one region to another. It was particularly favoured in Sicily, where combed tiles superseded the finger impressed ones (as Nos.2234-2236 above) of the C5 and C6. Recent studies suggest that they were introduced there in the course of the C5/C6 and became most popular in the C7 AD (Arcifa 2010, 107-110; cf. Randazzo *et al* 2018, 221 and fig. 2 from the debris of a kiln overlying the Villa del Casale at Piazza Armerina, re-dated to the C6/C7 AD). In the C8 they gave way in Sicily to a lighter and coarser type of tile, made with a mixture of straw and clay which was widely used in later Medieval Italy (the *tegole vacuolate* exemplified by our Nos.2269-2274).

Combed tiles are also found in South Italy, but only in certain areas. A few frags. were encountered in the excavations at Vagnari associated with a badly preserved curvilinear hut erected over the remains of the Late Antique Building B (*Vagnari*, 178-179, fig. 5.56, 207 fig. 5.106); and 11 more were found in the surface collection on the site. Numerous frags. of combed tiles were also found in the surface survey of the site of Santo Staso below Botromagno where occupation continued from the Peucetian period into the Early Middle Ages. Others have been reported from Belmonte near Altamura associated with a church said to be of the late C5/C6 AD (Ciminale, Favia & Giuliani 1994, 415 and pl. CLXXVII.2), and from Salapia, apparently in a context transitional between Late Antiquity and the early Middle Ages (Geniola 1973, 569, fig. 15 g-i). *Coppi sdriati* and *tegole sdriate* have been reported, but not illustrated, from the palaeochristian church of San Leucio at Canosa: (Cassano *et al*. 1985, 513), from the località Donna Giuditta between Venosa and Canosa (Volpe 1990, 161 site 332), from the località Rasciatano ca. 9 km NE of Canosa in territory of Barletta (Volpe 1990, 171 site 362), and from several sites in the vicinity of Venosa (Sabbatini 2001, 19 site 12, 28-29 sites 71-72-73, 43 site 157). Another group of combed tiles from the excavations in the area of San Nicola in Bari has recently been published by Airò (2015a, 173 and fig. 25 1.4; 2015b, 254), but the contexts are not closely dated. A nearly complete tile is on display in the Museo Jatta at Ruvo, but without stated provenance. Combed tiles were not found in the excavations at San Giovanni di Ruoti although the site continued to be occupied down to the middle of the C7 AD. The evidence at present therefore suggests that combed tiles were in general used in Apulia south of Salapia in the Early Middle Ages but had a more limited use in Lucania.

Combed tiles were found on 15 sites in our Survey Area, on both sides of the Basentello river. They were decorated in several ways (Pls. 48, 49), which are classified here under different headings.

Combed *tegula* frags. were found on 5 sites (Sites 213, 223, 304, 309, 514, 803); but they were considerably outnumbered by curved decorated pieces. Some of these were imbrices, presumably used with the *tegulae*, but many more were low-curved pieces 2.0 or more thick which must have been used in place of *tegulae*, like the Laconian tiles of the pre-Roman period, probably alternately inverted, as Arcifa (2010, 110) has suggested in the case of the Sicilian combed tiles. They were found on 12 sites in the Survey Area (Sites 213, 223, 235, 306, 309, 337, 342, 347-9, 365, 424, 719, 910) and at Site F2 (Santo Staso).

1. *Tegula* fragments with undulating combed decoration made with a 3- or 4-toothed instrument

2237	304	Pl.48. P734. Edge frag. with combed 4-fold wavy lines on upper flat surface and along top of flange. Pres. lg. 22.0, th. 2.4, ht. of flange 4.5.
2238	304	Pl.48. P732. Flat frag. Reddish-brown clay, a few white shell (up to 2mm) and dark brown inclusions. Decoration of combed 4-fold wavy lines in fairly wide curves across tile. Max. dim. 11.5, th. 2.3.
2239	304	Pl.48. P733. Flat frag. Light brown clay. Some dark brown inclusions, some air holes. Decoration of deeply scored roughly made 4-fold wavy lines in tight curves. Max. dim. 9.2, th. 2.1 - 2.4.
2240	309	Pl.48. P1230. Flat frag. Pale grey-brown clay with a few small dark brown inclusions. Air holes. Surface almost white – slipped? Decoration of wide 3-fold wavy lines on top and edge of frag. Max. dim. ca. 14.0.
2241	309	Pl.48. P1233. Pale pinkish-brown clay, small brown and white gritty inclusions. Hard almost white surface. Lateral combing crossed by diagonal wavy combing. Max. dim. ca. 13.0.

2. *Tegula* fragments with linear combed decoration made with a multiple-toothed instrument

2242	213 - C	Pl.48. P405. Flange with deep combed ridges along top and inner edge. Orange clay. Pres. lg. c a. 9.0, th. 2.5, ht. of flange 2.2.

2243	803	Pl.48. P1957. Flat frag. with multiple combed lines on upper surface. Pale yellowish-brown clay with some air holes. Max. lg. 10.5, th. 2.5.
2244	223 E59N22	Pl.48. P7024. Hard-fired medium brown clay, underside flat. Raised cordon on upper surface with narrower lateral ribs (2 on each side preserved on sherd). Finely combed lines between ribs, parallel to the ribs or in chevron formation. Max. dim. 5.8, max. th. 2.2. The classification of this piece is uncertain. Perhaps modern.
3. *Imbrex* fragment with linear combed decoration combined with more widely spaced concentric arcs or undulating lines		
2245	223 E26N16	Pl.48. P4292. Tile. Hard pinkish-brown fabric, pale brown upper surface. 3 grooves ca. 2mm wide and 1mm deep incised on top of tile, flanked by 2 parallel curved grooves. Max. dim. 4.5, th. 1.4.
4. Slightly curved tile fragments completely covered on the upper surface with combed markings, especially longitudinally along the top of the sherd, intersected by other combed lines, mainly at the ends of the tile		
2246	213	Pl.48. P607. Hard reddish-brown clay, some small white inclusions, lighter surface. Decorated with combed markings at right angles. Max. dim.13.5, th. 2.4.
2247	223 Ar. 225	Pl.48. P535. Hard reddish-brown clay with large white shell inclusions, pale brown surface. Decorated with comb markings in 2 directions. Max. dim. 11.5, th. 2.0.
2248	223 E36N20	Pl.48. P4656. Slightly curved. Pale creamy grey clay. Oblique and horizontal combed markings on outer side. Max. dim. ca. 8.0, th. at bottom 0.8.
2249	223 E41N20	Pl.48. P4812. Hard reddish-brown clay, slightly micaceous, pale brown surface out. Combed horizontal and oblique lines. Max. dim. 8.5, th. 1.0.
2250	223 E11N27	Pl.48. P4102. Large frag. giving end of piece and rather more than half of profile. Hard pinkish-brown fabric with pale brown surface and criss-cross combed marks on upper surface. Large white inclusion (?shell) up to 4mm visible in break and on upper surface. Irregular finish-inside. Lg. at break 16.0, th. 2.3.
2251	223 E11N25	Pl.48. P4101. Hard light pinkish-brown fabric with some large white inclusions up to 4mm long. Narrow criss-cross combing. Max. lg. 8.2, th. 2.2.
2252	235	Pl.48. P557. Hard pinkish-brown clay with paler surface, worn. Decorated with combed impressions in 2 directions, some criss-crossing at right angles. Max. dim. 11.0, max. th. 2.2.
2253	235	Pl.48. P559. Hard pinkish-brown clay, drab brown on upper surface. Combed parallel longitudinal grooves on the upper surface, ca. 0.1-0.2 wide, 0.1 deep and 0.2-0.3 apart. The straight edge may be original. Traces of mortar adhering to upper surface. Max. pres. lg. 6.0, th. 1.8.
2254	306 - C3	Pl.48. P725. Combed markings at right angles to each other. Pale brown clay with many large (up to 3mm) brown inclusions and many air holes. Max. dim. ca. 4.8.
2255	306 - C3	Pl.48. P724. Light brown hard fired clay, many small brown inclusions, some large air holes, pale brown surface. Combed decoration with multiple lines, horizontal, vertical and oblique. Max. dim. ca. 4.7.
2256	306 - D2	Pl.48. P726. Reddish-brown clay with many white and some brown inclusions up to 2mm. Combed lines parallel to edge of sherd, others at slight angle, some crossed at right angles by others to form small squares, others with dots. Max. dim. ca. 4.9.
2257	309	Pl.49. P1232. Hard fired reddish-brown clay, large (3mm) white (shell) and some small brown inclusions. 2 sets of combing at right angles, then some squares made by combing in both directions. Max. dim. ca. 6.2.
2258	365 D6	Pl.49. P803. Coarse fabric, many inclusions and air holes. Combing in parallel lines at right angles to each other. Max. dim. 4.7.
2259	365 - D7	Pl.49. P798. Coarse fabric, many white and brown inclusions up to 2mm and air holes. Combing in parallel fairly wide lines, one direction only and beginnings of another motif. Slightly raised edge to tile, with notches. Max. dim. 3.3.
2260	365 E6	Pl.49. P805. Slightly curved tile. Coarse fabric, many white and brown inclusions up to 2mm and air holes. 2 sets of parallel combing lines at right angles and some randomly. Max. dim. 5.4.
2261	365	Pl.49. P832. Hard fired light yellow-brown clay, many air holes, many small inclusions, white and brown. Combed lines at various angles. Max. dim. 4.4.
2262	424	Pl.49. P870. Pale brown clay, cream surface, many dark brown small inclusions and a few large up to 3mm. Air holes. Combed parallel lines along edge of tile and others at right angles across it. Lg. along edge 4.5.

2263	719	Pl.49. P1840. Hard reddish-brown clay with some black inclusions (up to 1.5mm), small white specks, and mica. 2 sets of combed lines intersecting at right angles, forming crude squares, some with dots on them. Much abraded. Accidental hole 0.5×0.7mm and ca. 0.4 deep in outer surface. Max. dim. 8.5, th. 2.0.
2264	910	Pl.49. P2049. Hard fired light yellow-brown clay, many air holes, many small white inclusions. Combed, 1 set strongly, another weaker at right angles to it and another at an acute angle. Max. dim. 20, th. 2.0.
2265	F2 (S. Staso)	Pl.49. P1576. Pale greenish-clay. Combed impressions in both directions. Max. dim. 9.5, th. 1.7.
5. Slightly curved tile fragment with both straight and wavy combed lines		
2266	910 - L4	Pl.49. P2048. Hard fired reddish-brown clay with yellower surface. Some white and brown inclusions and air holes. Decorated with straight and steeply wavy lines. Max. dim. 3.6, th. 1.7.
6. *Imbrex* fragments with groups of curved combed lines		
2267	910	Pl.49.P2051. Shallow curved tile, one finished end. Hard fired greenish-yellow clay, some brown inclusions. Max. length 8, th. 1.0.
2268	910	Pl.49. P2050. Sharply curved, almost angular tile, hard fired greenish-yellow. Densely combed, 1 set straight with curved lines leading off it. Max. lg. 10.0, th. 1.5–1.8.
H. Tiles made with clay mixed with straw and chaff (*tegole vacuolate*) The practice of mixing the clay with straw or chaff in manufacturing tiles is attested in Sicily already in the C9 AD (Arcifa 2010, 109) and was common in the C13 (D'Angelo 1989). The aim was perhaps to reduce the weight of a roof so that it could be supported by slighter structures. *Tegole vacuolate* are said to be found in all buildings of the Arab-Norman period on the island (Pensabene & Sfameni eds, 2006, 166, re an example of the C11/C12 AD from the Medieval settlement overlying the Villa del Casale at Piazza Armerina). In Apulia some tiles of this type were used in buildings inside the Byzantine *praetorium* of the C10/C11 AD (S. Airò in Nuzzo *et al.* 2012, 97; also Airò 2015a, 173; 2015b, 254), and it seems probable that they were widely used also in South Italy in the Middle Ages, though more evidence is needed on this point. At San Felice, frags. of them were found thickly scattered throughout the area of the Medieval village (Site 223, Plan 13). They include the following pieces all of which show the characteristic nicks in the surface where straw or chaff protruding from the clay has burned off in the kiln. No frag. was sufficiently complete to give a whole cross section, but the larger pieces show a rather lower curvature than the classical *imbrex* (Fig.57).		
2269	223 E27N28	Fig.57. P8190.
2270	223 E25N21	Fig.57. P8191.
2271	223 E17N29	Pl.49. P4331. Edge frag. Medium brown sandy fabric with numerous white grey and brown gritty inclusions up to 4mm; air holes and chaff impressions; crudely finished on underside (illustrated). Pres. lg. 9.0.
2272	223 E17N24	Pl.49. P4149. Curved frag. with slightly up-turned edge. Hard fired clay with some shell inclusions, medium brown turning to yellowish-green ridge towards the edge. Numerous chaff impressions on surface. Max. dim. 11.9, max. th. 0.7.
2273	223 E47N43	Pl.49. P7095. Hard fired purplish-brown clay with a few brown pebbly inclusions up to 2mm, turning orange-brown on part of outer surface. Uneven thickness. Numerous straw impressions on surface. Max. dim. 8.6, max. th. 1.0.
2274	223 E27N28	Pl.49. P7116. Curved. Pinkish-brown clay with drab brown surface. A few small ?shell grits visible in break; numerous small air holes and surface niches. Some straw impressions. Under surface not smoothed. Pres. lg. 4.0, max. th. 2.4.

33. GAMES BOARDS (*TABULAE LUSORIAE*)

Two flat tile fragments marked with board games – *tabulae lusoriae* – were found on the survey (Nos.2275, 2276). They conform to well-known types of game boards, described e.g. by G. Montesano (1980) and M. Fittà (1997, 162-179).

No.2275 was marked for two games:

(a) The nearly complete square near the bottom of the fragment, subdivided by lines drawn between the mid-points of each side and between the corners, is the basis for the ancient game of *Three Men's Morris* (essentially Noughts and Crosses), attested in ancient Egypt, and still played in many parts of the world. It is a game for two players who take turns in placing a counter on the board with the aim of setting three counters in a row at three points of intersection – and of preventing the opponent from doing so (See e.g. Austin 1935, 79-80). The simple game is made more complicated by the addition of more subdivided squares, adding to the number of counters that must be set in a row – as is the case on this board on which part of a second square attached below the first can be seen. It seems likely that the complete board had four squares, and perhaps nine. This is one of the games described by Ovid in the *Ars Amatoria* III, 365-366. He recommends that girls should learn to play it but he does not give its Latin name which remains unknown.

(b) The incised lines in the upper two thirds of the fragment mark out the base for the game of *Nine Men's Morris* (or *The Mill*), with three concentric squares subdivided horizontally, vertically, and along the diagonals. The board has remained unchanged since Roman times. The game is played in much the same way as *Three Men's Morris*, by aligning counters at the points of intersection, but is more complex in that each player has nine counters, which he or she can move from one position to another along the lines on the board. When one of the players succeeds in setting three counters in a row (a "mill") he can remove one of his opponent's counters, and so forth until the winner is determined.

Both games are attested on *tabulae lusoriae* at numerous sites in Rome, and elsewhere in the empire, ranging in date from the Late Republic to the Middle or Late Empire. For another tile from Apulia incised with both games, see Cocchiaro & Andreassi (ed.) 1988, 174 no. 317 from Tomb 15 in the Necropolis of the Via Cappuccini in Brindisi found with a large number of game pieces. Most of the datable objects in the burial belong to the first half of the C1 AD.

The piece was found at location UTM 619462/4520070, in a ploughed field midway between Site 223 (San Felice) and Site 222, and ca. 300m from both. There are no remains of Roman settlement in the immediate vicinity, so we may perhaps imagine that the board was brought to the area by agricultural workers who wanted to amuse themselves with a board game when work in the fields stopped at midday. They are unlikely to have come from either Site 222 or 223 where there is little evidence for occupation in the period when the games were in vogue, but they may have been based either at Vagnari 1.5km away to the SE, or in the villa at Site 229, below the scarp of the plateau of San Felice and some 300m SW of the top.

No.2276 is a much cruder piece. The lightly incised criss-crossing lines suggest that it was scored as a chequerboard. Part of two edges survive, joining at a right angle, and within them 5 uneven incised lines running in one direction which intersect with 4 lines in the other. The squares defined by the intersections have sides of between 2 and 3cm. Assuming that the *tegula* was of roughly the same size as those used in the cemetery at Vagnari which measured on average 65.9cm long and 45.7cm wide (*Vagnari*, 242, Table 6.3) there would have been ample room on the surface of the tile for a standard chequer-board of 64 squares, 8 to each side. That was the norm for the *ludus latrunculorum*, the most popular Roman board game, which is referred to by numerous sources of the Late Republic and Early Empire, and is attested by archaeological finds in many parts of the empire (Montesano 1980, Schädler 1995). Most surviving examples are marked out on marble slabs, though chequer-boards scratched on tiles are not uncommon. The game was played with counters, and required a considerable degree of skill, but the precise details of the moves permitted are debated.

The piece was found at the W end of San Felice, in the area occupied by the pre-Roman Peucetian site, by scattered elements of a Late Antique/ Early Medieval settlement, and by the village of the Central Middle Ages. It cannot belong to the Peucetian settlement since there is no evidence to show that chequer-board games were in use in that period, and it is unlikely to date to the Central Middle Ages when *tegulae* were not used in this area. It might be argued that it belongs to the Late Antique settlement, but (as we have noted in the case of No.2275), there is no good evidence, either literary or archaeological to show that the *ludus latrunculorum* was still played at the time. (Such evidence as there is for Late Antique board games is for games of chance involving dice, with boards laid out with parallel lines: cf. Goncalves 2014). It is likely, therefore, that No.2276, like No.2275, is a stray piece, in this case coming probably from the Roman villa on Site 229.

Catalogue

1. *Tabulae Lusoriae*		
2275	UTM 619462/ 4520070	Pl.40. P418. Frag. of a flat tile, probably a *tegula*, marked for two board games (Three Mens' and Nine Mens' Morris). Hard fired reddish-brown clay with many white grits, paler surface, finger impression running obliquely across tile made before firing. Incised after firing with linear markings- rectangles and intersecting lines on upper surface. Under-surface more lightly incised with linear markings, perhaps from straw. Edges damaged by plough. Max. dim. 16.8, th. 2.5.
2276	223 E18N30	Pl.40. P4050. Tile frag. marked for the game of *latrunculi*. Hard fired brick red clay with much mica. Upper surface roughly scored after firing with shallow grooves, intersecting roughly at right angles: 5 in one direction and 4 in the other are partly preserved on the frag.. Some lime encrustation. Max. lg. 12.4, max. w. 9.5.

SECTION VI. THE OLDER SURVEYS

I. Introduction

1. Surveyors and survey methods

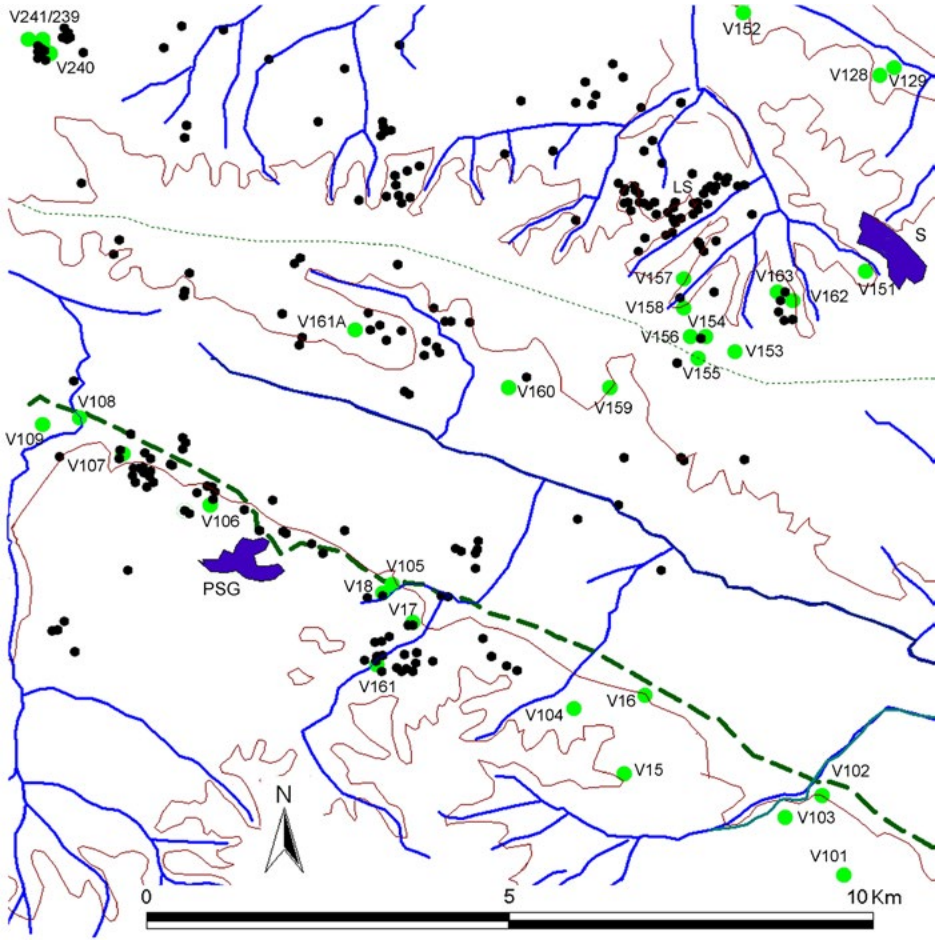
The following List is based on reports on the three surveys undertaken in the late 1960s and early 1970s in conjunction with the excavations of the British School at Rome on Botromagno, and loosely coordinated by Joan du Plat Taylor. The principal surveyors, Sterling Peter Vinson, Hugh Chapman and Dennis Aldridge worked independently of each other and followed different methodologies.

By far the largest area was covered by S. P. Vinson as part of his topographical study which was initially aimed at establishing the route of the Via Appia between Gravina and Venosa. He covered an immense area, much of it on his own. In the introduction to his unpublished text written in 1982 he writes: "The prime mover of this ... was the late Dr. John B. Ward-Perkins. When he first handed me a roll of maps in 1968 and told me to survey some 750 square kilometers of territory single-handed, he never doubted that the job would be finished, somehow, sooner or later. The original assignment was completed in 1975; the best tribute that I can offer to him is that I exceeded his instructions." For much of the time when he was working on this project Vinson lived at Gravina and drove out daily in his *cinquecento* to look for sites.

At first the main focus of his work was on the Roman period and the location of sites which might help to establish the route followed by the Via Appia, and it was this that determined the parameters of his survey, but he recorded sites of all periods, and especially of the Neolithic and Bronze Ages in which he had particular expertise. Inevitably given the scale of his project and the fact that for much of the time he was working on his own, his surveys were not intensive. The strengths and weaknesses of his work can be assessed in the light of the more recent publications by Maria Luisa Marchi and Giulio Sabbatini of a much more comprehensive



Photo OS-1. S.P. Vinson field-walking below Garagnone, ca.1967 (Photo AMS).

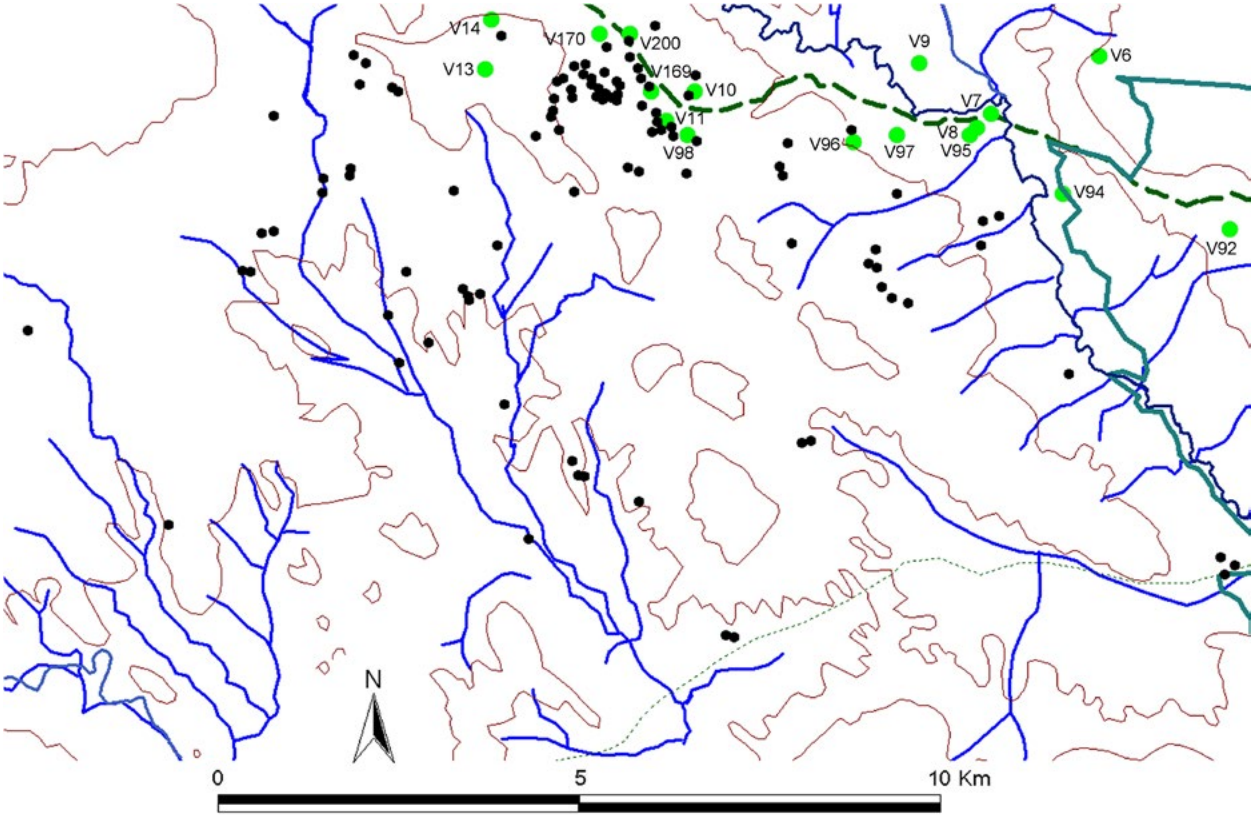


Map OS-1. NW part of Vinson's survey showing the overlap between his sites (large green dots, numbered) and those of Marchi (small black dots).
LS= La Santissima area. PSG=Palazzo San Gervasio, S=Spinazzola.

survey of the territory of Venusia where their study overlapped with Vinson's.[1] The area of overlap of most interest to us falls within the IGM maps at 1:25,000 of Palazzo San Gervasio (Fo. 188 IV N.O.), and Genzano (Fo. 188 IV S.O, N of the UTM 4528 northing) which mark the E limit of their survey. Our Map OS-1 shows Vinson's sites as large grey dots and Marchi's as smaller black dots. Since Marchi used the part of Vinson's work which he published in *PBSR* 1972 (which included his sites numbered 1-85), it is hardly surprising that most of Vinson's sites in this area were also found by Marchi.[2] On the other hand most of Vinson's sites with higher numbers found after the publication of that article and published for the first time here have no exact equivalent in Marchi's study.[3] In general, Marchi recorded many more sites than Vinson, distributed over a broader area. They included the important complex of Roman sites centred on the great *villa/ vicus* at La Santissima which Vinson did not reach. Her survey was also more specific in that areas identified as sites by Vinson are sometimes treated by Marchi as two or more distinct sites. In general Marchi's survey confirms the main features of the settlement pattern that emerge from Vinson's study, with sites grouped along the two main communication routes of the drove road and the Via Appia, but it adds more detail and extends over a much broader area. If we may extrapolate from this comparison to assess Vinson's discoveries in the area further to the E not reached by Marchi, we may suppose that he picked up the main features of the settlement pattern, but that in all periods the density of settlement is likely to have been greater.

Much the same can be said of the overlap between Vinson's survey and that carried out by Myles McCallum and his team in the vicinity of Monte Serico (see Map OS-2).[4] Their survey extended considerably further inland, but did not cover some of the ground to the north of the Via Appia investigated by Vinson. They recorded a much greater density of sites, but some are situated so close to each other that they are better regarded as subdivisions of the same larger site. In some cases it is possible to equate one of their sites with

[1] Marchi & Sabbatini 1996; Marchi 2010.
[2] E.g. site V15= M381; V16 probably = M832; V17 = M867.
[3] An exception: V107=M897.
[4] McCallum *et al.* 2013; McCallum & Hyatt 2014.



Map OS-2. Sites on the survey by McCallum and Hyatt showing the overlap near Monte Serico between their sites (small black dots) and those of Vinson (larger green dots).

one of Vinson's. Vinson's site V11 corresponds without doubt to their site A60, and his site V170 to their site B74; but other cases are more doubtful. V10 probably corresponds to their B67, and V200 may be the same as B73. V14 which Vinson reports as primarily Roman must have been on the edge of their big Iron Age site A19 where they mention Roman material. There is, however, no clear equivalent for Vinson's V169 (largely Neolithic), or V98 (BA), and certainly none for his V13.

The comparison with our own Survey is also instructive. Our Survey overlapped with Vinson's towards the N of our survey area. On his site V91, which corresponds to our Site 715, he found BA impasto, possible wheel-made painted, black-gloss and coarse ware sherds and some tile, all of which we also found; but we also collected some Roman material (African red slip and regional red slip). Similarly, at Vagnari (his Site V93, our Site 361), he recorded some prehistoric lithics, worn black-gloss, late African red slip, cookpot and other coarse wares, and some red-slipped sherds, but none of the grey gloss, or Italian terra sigillata or Late Roman Painted Ware (unless the red slipped sherds were such) which we found in our intensive survey in 10 × 10m squares. In both cases, therefore, the additional material found in our more recent and more intensive surveys adds considerably to what is known of the duration of these two sites. If we can generalize from these cases, we can say that the material Vinson recorded is good evidence for the existence, and up to a point the character, of a site in the period indicated by the finds. The absence of a particular class of material should not be taken as reliable evidence that a site was unoccupied at that time, but it may be significant if it conforms to a more general pattern.

Hugh Chapman and Albert Ammerman aimed at a full record of the sites in a relatively small area between Gravina and Altamura. Chapman recorded the method used as follows: "The area, which is bisected by the line of the Roman Via Appia, was closely examined, field by field, on foot during the two periods in 1969 and 1970 to locate archaeological sites of all periods. When a site was found, normally indicated by pottery scatter on the surface, a duplicated site record sheet of some 19 questions was completed. These questions gave the grid reference of the site, its approximate size, concentration, indication of date, local geology, present land use, etc. A selection of the pottery and other artifacts indicating the date range was removed from the site for more detailed study. Some 24 sites were discovered. The relatively limited area surveyed and the comparatively small number of sites located ensure that any interpretation of the evidence can only be tentative."

Dennis Aldridge carried out his survey of the Gravina river valley south of Gravina in four weeks in the summer of 1972 and six weeks at Easter in 1973. He

describes his methodology as follows: "The method used for locating sites was simply to walk over the fields, watching for tell-tale scatter of pottery or worked stone, or any other feature which might indicate an ancient site. Whenever possible, areas were revisited under different conditions, for example after deep-ploughing or after a heavy rainstorm. This often resulted in the discovery of sites in areas which had previously produced negative results..... Searching was concentrated on hills and slopes on the edge of the valley, where the soil would have been thin and easily cultivated, and where springs are most likely to be found. Places with natural defences and commanding views were carefully examined. The valley floor was not thoroughly explored as much alluvium has covered it since Roman times, and the chance of finding an undisturbed site there was slim. However, just to be sure, approximately every two kilometres, sweeps were made across the entire valley..... A sample of the pottery, worked stone, and any other portable artefact was collected or noted at each site. Characteristic shapes such as rims, bases, handles or lids were sought after, but wall sherds were also collected; on some sites every visible artefact was picked up".[5]

It was only rarely, however, that a total sherd collection was made on any of the three projects, and usually only a sample of the material was brought back for analysis, generally the more obviously diagnostic pieces. The data cannot therefore be used statistically: Vinson rarely gave counts of pottery classes, even of fine wares, and the others did not do so systematically. Moreover, all three surveys were undertaken when knowledge of some major classes of pottery was much less advanced than it is now. Neither Hayes' *Late Roman Pottery* (1972), nor Morel's *Céramique campanienne: les formes* (1981) which established standard typologies for African and Phocaean red slip (Hayes) and black-gloss pottery (Morel) had been published. The ceramic typologies of the pottery, including plain wares and cooking pots, from the excavations of the British School at Rome on Botromagno were still in their initial stages (they were eventually published in 1992 *Gravina II*), and little was known of Late Roman Painted Ware, although it was widespread in the region. Moreover, although on all three surveys the presence of tile on a site was noted, on none of them was any attempt made to quantity it. Occasionally *imbrices* and *tegulae* were distinguished but often they were not, and *tegulae*, when recorded, were normally assigned without further analysis to the Roman Imperial period. Amphorae are also a problem: on Vinson's earlier surveys they were noted, but the pieces were not weighed or counted or retained for study, and the wares and shapes were not identified. (Vinson later recognized that they could be useful: many more were retained from his Via Herculia survey). Under the circumstances it was not possible to analyse these surveys as we have our own. We have accordingly dealt with all three surveys together and considerably more briefly. We have used the evidence from them primarily to show what sites existed and where they were located in different periods in order to cast further light on the settlement history in the Fossa Bradanica and to enlarge the context for our own survey – and sometimes to point a contrast with it.

[5] Aldridge 1973, vi-vii.

2. Mapping the Old Surveys

The location of all the sites found on the Old Surveys with the contributions of the principal surveyors identified by different symbols can be seen in the Introduction (Map Intro-5). For their numbers see the full-scale map and table at the end of this Introduction. A series of other maps showing the location of sites occupied in each of the main periods used in this work can be found in the relevant chapters of the Interpretative Section. On these we have included a few sites published by other scholars (other than those reported by Marchi and by McCallum *et al.* mentioned above) which fall within the area and so need to be taken into account in discussing the distribution patterns. They include the Neolithic site at Le Grottelline near Poggiorsini, published by R. Lorenzi and M. Serradimigni in 2009, an MBA settlement and élite burial at Spinazzola[6], and the large multi-period site at the Masseria San Mauro included in the publication by R. Striccoli and C. Melodia (1996). This last site is particularly important. The Masseria is the property of the Fondazione Santomasi, and at the suggestion of the Fondazione we carried out a brief preliminary survey of the site before it was visited by Striccoli and Melodia, and collected some material recorded in the catalogue. Although it was near Vinson's site V52, we have treated it separately under the heading SM (San Mauro) because the sherds found on it were very different from those reported either by Vinson or by Striccoli and Melodia who may have worked over a different part of the site. They mention only BA and MIA pottery, whereas we found Iron Age, Hellenistic, Roman and Late Antique sherds but little BA material. A Latin inscription now in Spinazzola published by Marcella Chelotti is discussed in Chap. IX. It came originally from the Masseria Trimaglio SE of the town and we have mapped its findspot there.[7] We have also mapped the Masseria Macchitella, S of Gravina near the Pentecchia, where a Roman inscription reported by Marina Silvestrini was found.[8] It was not in its original position, but it is likely to have come from somewhere in the vicinity, and is important as a rare example of a Latin inscription on stone from the territory of modern Gravina.

[6] Canosa 2009; Venturo 2010, 52-54.
[7] Chelotti 2003, 167-168 no. 61.
[8] Silvestrini 1999a, 145-149; 2002, 121-129.

Finally, to make the distribution maps as complete as possible, we have added the sites from our own project to the period maps. We have not, however, given their site numbers which can be found easily on the more detailed maps of our own Survey Area. We have also, in most cases inserted modern centres of habitation to facilitate finding the sites. These are identified as A=Altamura, B=Banzi, G=Gravina, GZ=Genzano, I=Irsina, PSG=Palazzo San Gervasio, P= Poggiorsini and S=Spinazzola.

3. Problems of classification

Although many of the pieces collected on the Old Surveys have been located in the deposits and classified according to more recent published typologies, there remain many cases in which sherds listed by the surveyors have not been seen, either because they were not collected at the time or because they could not be identified in the deposits. If material has simply been listed as Neolithic, or Neolithic *figulina*, it cannot be attributed to a sub-phase of Neolithic. If a piece has been recorded simply as BA impasto, we have entered it as such in the table; but if it is described as highly burnished black, we have assumed that it is most likely to be FBA. Pieces listed simply as "impasto" without qualification we have registered only as "prehistoric" If a sherd is listed as geometric monochrome we have supposed that it is most likely to be EIA, although we are aware that potters in some regional workshops (particularly East Peucetian from the area around Bari) continued to decorate pots in monochrome black well into the 6th century – and that a small fragment with only black paint may come from a bichrome pot. As a result, the number of MIA sites is probably underestimated in relation to those of the EIA. Fragments of bichrome geometric pottery we have assumed date most probably to the late 7th or 6th century, although we know that on some coastal sites red paint was used alongside black already in the EIA. Pieces recorded simply as wheel-made painted pottery are most likely to be dated between the end of the 6th and beginning of the 3rd century BC and so we have listed them as of LIA date.

Black-gloss is more problematic. The ware was widespread throughout the region from the end of the 6th to the middle of the 2nd century BC when it was largely replaced by grey-gloss pottery in the SE part of the area covered by the Older Surveys. In the NW part, which most probably fell within the more fully Romanized territory of Venusia, black-gloss remained the norm until the beginning of the Augustan principate. The border between the areas of distribution of the two wares cannot be defined precisely but it approximated to a line drawn across the Basentello valley from modern Spinazzola. In cases where the only diagnostic material is unclassified sherds of black-gloss, we have dated sites to the NW of the line as "LIA? E.Hel? L.Hel?" to indicate that it might date to any of those periods. But to the SW of the line we have limited the possibilities to "LIA, E.Hel", so as not to dilute the evidence unnecessarily, even though the possibility that pieces may be Late Hellenistic cannot be entirely ruled out.

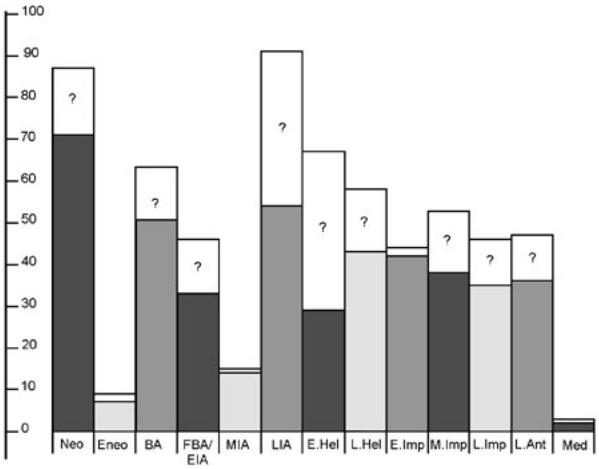
We have listed all Italian *terra sigillata* as Early Imperial, all early African red slip (where this could be distinguished by fabric or form) as Mid-Imperial (ca. 100–280 AD), and later ARS-D ware as Late Imperial or Late Antique Where a site has yielded only undifferentiated fragments of ARS we have classified it as "M.Imp? L.Imp? L.Ant?". We have treated all Late Roman Painted Ware as Late Antique, datable after the end of the Roman Empire in the West, although we know that the ware begins to develop earlier and continues well into the Early Medieval (Lombard) period. We have not attempted to identify specifically Early Medieval material since that cannot be done from the existing records, and combed tiles which we have taken to be particularly indicative in the analysis of our own survey data were not collected or recorded.

4. Changes in site occupancy

Table OS-1 (VI,*2*.4) collates the periods of occupancy of all the sites found on the Old Surveys according to the summaries of the data given in each entry in the List. The more reliable period designations are indicated with "x"; doubtful ones with "?". Sites with only a broad classification as "prehistoric" or "Roman" we have omitted from the Table. The final totals of sites occupied in each period are given at the end of each column. They must be used with great care because of the various problems of possible bias in the classification of the data discussed above.

In spite of the doubts that arise over the period classification of some sites, a comparison of the totals of the more securely dated ones is likely to give a reasonably reliable impression of the changes in site occupancy between one period and another in the Old Survey Area. As the histogram Graph OS-1 shows there were some drastic fluctuations. The record begins with 71 sites occupied in the Neolithic period, the highest figure in the whole series. Their distribution by phase within Neolithic is discussed in the Interpretative Section. Most of them fall within the Early and Middle Neolithic, a period of ca. 1200 years (6,000–4,800 BC), and the number occupied at any one time is likely to have been much smaller. By the end of the period the area weas virtually depopulated, and it remained so throughout the Eneolithic (ca. 3650–2350 BC) when only 7 sites (or 9 if doubtful instances are included) can be shown to have been frequented. In the Bronze Age the area was resettled, and the number of sites rose again to 51 (plus 12 doubtful cases), mostly datable in the MBA and LBA (ca. 1700–1200 BC). At least 16 of these (31%) occupy locations which had formerly been frequented in the Neolithic. The figure of 33 sites

(plus 13 more doubtful) inhabited in the Final Bronze Age and Early Iron Age (ca. 1200–750 BC) represents a decline in site numbers, but not necessarily a decrease in the population since the sites of this period tended to be larger than those of the full Bronze Age. It is more significant that only 5 of the BA sites (10% of the total for that period) show continuity of occupation into the FBA. There was therefore a drastic change in settlement pattern around the end of the 2nd and beginning of the 1st millennium BC. It coincided with changes in the material culture, including the development of new pottery types that characterize this transitional period to the EIA.



Graph OS-1 Histogram showing numbers of sites occupied on the Older Surveys in each of the main periods. "?" = period classification uncertain.

In the Middle Iron Age the number of occupied sites was reduced to 14, of which only 6 continued from the previous period. The decrease is probably exaggerated since all the monochrome geometric fragments for which there are no illustrations have been assigned to the EIA although some monochrome pottery continued to be produced in this period (as mentioned above); but certain examples of late monochrome pottery are rare in this area, and it is likely that this was another time of contraction, to be explained in part by a continuing process of consolidation of older settlements, as we have suggested in the Diachronic interpretation (Chap. VIII.6-7). Some new settlements continued, however, to be founded.

All but one of the MIA sites lasted into the Late Iron Age (the 5th– early 3rd centuries BC) when the number of reliably dated settlements soared to 54. The real figure was probably considerably higher since it takes no account of the 37 doubtful cases consisting mostly of sites which could only be dated broadly within the last half of the millennium by untyped fragments of black-gloss pottery. The evidence of the more datable BG sherds shows that in assessing the significance of these figures, a distinction must be made between the NW and SE parts of the area of the Older Surveys: in the SE part, which must have fallen mostly within the territory of Botromagno/ Silvium, the great majority of the typed pieces are datable to the 4th century BC, and they reinforce the evidence of other wares (especially Apulian red-figure and Gnathian) showing that numerous small rural settlements were founded there in the course of the century. It is most likely, therefore, that undated fragments of BG from the E part of the survey area are of similar date, and result from the policy of expansion into the open countryside which the city followed in the decades before the Roman conquest. But further to the NW, beyond Spinazzola, the chronology of BG is significantly different. The best evidence comes from the part of Marchi's survey which overlaps Vinson's. Within the area of the IGM map of Palazzo San Gervasio and the N section of the map of Genzano, 59 of Marchi's sites yielded BG sherds. Of these, 37 (57.6%) could only be dated within the broad spectrum of the ware. Six produced BG sherds which she assigned to Morel types datable before 300 BC (and so before the Roman conquest), and four had BG types which straddled the turn of the 4th/3rd centuries. Three which produced sherds datable early in the 3rd century, may result from the foundation of the Latin colony of Venusia in 291 BC., and eleven had BG sherds datable in the 2nd and 1st centuries BC, reflecting the reinforcement of the colony at the end of the Hannibalic War, and its re-foundation as a veteran colony under the triumvirs.[9] This suggests that some of Vinson's untyped BG sherds found to the W of Spinazzola are likely to date after ca. 300 BC, and may well have originated in the late 2nd and 1st centuries BC when grey-gloss pottery was dominating the market further down the valley to the SE.

This must be borne in mind in assessing the histogram for the Early Hellenistic period, in which the number of doubtful cases (38) far exceeds that of reliably dated ones (29). Some of these are likely to be Early Hellenistic, especially to the W of the Spinazzola line. In fact the histogram reflects two contradictory tendencies: the drastic decline in settlement in the SE part of the area which followed the Roman conquest, and the expansion of settlement after the foundation of Venusia in the NW part. Twenty of the better dated sites (69%) had previously been occupied in the LIA.

In the Late Hellenistic period the decline in the number of occupied sites was reversed, rising to 43 (with 15 doubtful). Only 12 of them (28%) can be shown to have been occupied in the previous period. This was therefore another time of drastic change in which existing sites were abandoned and new ones founded. Vinson's survey did not pick up the sites with late black-

[9] Marchi 2010, nos, 979, 991, 993, 998, 1000, 1001 (4th century BC); 866, 868, 1025, 1026 (turn of 4th/ 3rd century); 839, 986, 995 (3rd century); 839, 861, 875, 920, 925, 936, 953, 1001, 1004, 1026, 1029 (2nd/ 1st centuries BC). Sites of long duration appear in more than one of these groups.

gloss which Marchi noted in the territory of Venosa, so the rise is accounted for largely by the tally of grey-gloss sites in the SE part of the Older Survey Area where new forms of rural settlement developed in the period following the Hannibalic War. The salient factors, discussed in Chap. VIII, include the development of long-distance transhumance, the exploitation of slave labour and the creation of large estates based on villas.

In the Early Empire the number of occupied sites remains almost the same at 42 (with 2 doubtful instances). That might suggest that this was a relatively stable period in settlement development, but the idea is belied by the fact that only 18 (43%) of the sites show continuity of occupation from the previous period, or were re-occupied after a short interval. Old properties therefore continued to abandoned and new ones created. We argue in Chap. IX that the new foundations followed the restoration of peace after the chaotic conditions of the first two thirds of the 1st century BC which had led to the abandonment of many rural settlements.

In the Middle Empire the number of reliably dated sites fell slightly to 38 instances, but with a much larger number of doubtful ones (15), consisting of sites datable only broadly between the Middle Empire and Late Antiquity by untyped sherds of ARS. If some weight is given to them, it is unlikely that there was any decline at all in site occupancy, and the number may even have risen, as it did in our own Survey Area. Thereafter there is a slight downward trend in the Late Imperial period with 34 reliably dated sites, 19 of which (56%) continue from the previous period, plus11 doubtful ones. It rose again slightly in Late Antiquity, with 36 reliable cases of which 23 (64%) continue, plus 12 doubtful ones. This was therefore a relatively stable period, reflecting the fact that, after the reforms of Diocletian and Constantine, much of the rural population was tied to the land. The decline is modest when compared with trends in most other parts of Italy, but it contrasts with that in our own Survey Area where the number of occupied sites continued to rise, reaching a new maximum in Late Antiquity. The reasons for this are discussed in Chapters X-XI.

Needless to say the fluctuations in settlement numbers and densities are only part of a much larger picture of the rural economy. Changes in settlement patterns generally implied changes in land use which were often determined by external factors including external markets and the availability of transport. We have attempted to investigate some of these in Section III (Diachronic Interpretations).

5. The List entries

Most of the information in the OS (Older Surveys) List of Sites including the locations, site descriptions, and lists of material found on them, is derived from the unpublished information provided by Vinson and Chapman, and from Aldridge's MA thesis (with permission). The sites published by Vinson in his article on Ancient roads between Venosa and Gravina[10] have also been included, with some updated notes on the material. Site numbers preceded by an "A" in the catalogue were found by Aldridge, those with a "C" by Chapman and those with a "V" by Vinson. Their original lists of material on each site are given, introduced by the word *Found.* Wherever possible we have retained the authors' original wording although we have substituted some more recent terms for the sake of clarity. For example, *RP* (red polished) was used by Vinson for all "Hayes' Red Slipped Ware". We have substituted the term ARS on the assumption that most if not all these pieces are likely to have been North African products – as Hayes' own notes on the material he was able to see in 1984 confirm. We have also used the term LRPW for sherds of that ware where they could be identified. It should be noted that Vinson recorded no plain wares as such. They are included in his category of WMCW (wheel-made coarse ware). The stamped inscriptions on roof tiles and terra sigillata vessels found by Vinson were published by Steven E. Sidebotham who had worked with him as part of his team in 1978 and 1979. References to these pieces were included by Vinson in his text. Most of them were found on sites west of the Basentello watershed and do not concern us here, but references to four of the fragments of ITS can be found under Sites V93, V133, V137 and V218.

In many of the entries, the lists made by the original surveyors are followed by the word *Noted*, which introduces more recent identifications of the material deposited by the original surveyors in several stores of the Superintendencies and in the Fondazione Santomasi at Gravina. Most of these notes were made by John Hayes and Alastair Small in 1984 when the project of publishing the surveys was first mooted. Others were made later by Eufemia Iannetti who studied the Late Roman and Late Antique pottery from 16 sites in Puglia[11] stored in the Fondazione Santomasi and classified 71 sherds for a *tesi di specializzazione* at the University of Bari.[12] We are grateful to her for making her study available to us. Her identifications are noted in the catalogue with the prefix *Ian* in brackets followed by the number of the piece in her catalogue: e.g. "(Ian32)" found on Site C2.[13] Lucia Casavola kindly

[10] Vinson 1972.

[11] Sites C2 (1 sherd), C9 (1), C10 (1), C16 (11), V26 (1), V28 (1), V30 (1), V32 (1), V41 (1), V43 (10), V45 (1), V66 (1), V74 (9), V42 (7), V72 (5), V79 (2).

[12] *Ceramica imperiale e tardo-antica dalla raccolta di Vinson (1968–1972).* She developed the study futher in her doctoral thesis: Iannetti 2012.

[13] It should be noted that in her thesis she attributed the work of Aldridge and of Chapman and Ammerman to Vinson. She also catalogued pottery held at Taranto from a small dig undertaken, apparently in 1972, at the Villa Filippi on or close to Vinson's Site V68. The documentation on it at the Superintendency in Taranto was minimal and she assumed that it was dug by "Canadesi" directed by Vinson. He has confirmed that he did not in fact dig it nor was he

supplied identifications of amphorae for Sites V42, A14 and C16, the only sites within the area published here for which amphora sherds were collected.[14]

Entries have also been updated to take account of more recent work on a number of sites. We have noted the Neolithic excavation on site V2 (Botromagno) directed by F. Radina,[15] and the BA material found by Striccoli and Melodia at or near Vinson's sites V29 (Grotta del Forno), V78 (Masseria Filieri), V134 (località Cafieri) and San Mauro (SM in the *List of Sites on the Older Surveys*, Table OS-1).[16] Vinson's large Iron Age site V75 at the Jazzo Fornasiello is currently being excavated by a team from the University of Milan directed by Marina Castoldi and Claudia Lambrugo. Our entry on it includes a reference to their work. An excavation carried out in 2003 and 2004 in the IA settlement on Monte Serico, recently published by R. Ciriello, L. Cossalter and M. Sodo, is noted under site V14. An Early Lombard ring fibula in the Fondazione Santomasi published by C. D'Angela is said to have been found at the località Zingariello which can be identified with Vinson's site V87a (see also Site 907 in the List of Sites on our Survey – Section IV).[17]

At Site V161A Vinson noted an inscription (important for the history of sheep raising in the south) which was subsequently moved to Spinazzola. It was later published by Marcella Chelotti.[18] Since, however, Vinson's survey had not been published or widely circulated, its provenance was not accurately known. In a recent publication, Alastair Small summarizes the earlier work and clarifies its find-spot in the light of Vinson's evidence.[19] This too is noted under the Vinson site number.

In three cases, Sites A1, C5 and V32, we have added references to earlier publications.

6. Illustrations

Vinson published a selection of drawings from his earlier sites in his article of 1972. References to these are given as "fig" (in lower case). He published no photographs. We have therefore made a small selection of photographs of particularly interesting pieces, many of them taken by himself on a return visit in 2001 (Plates 50-56). Fig.58 shows a small number of unpublished drawings. A brief descriptive list of the illustrated pieces will be found following this List.

7. Abbreviations

For the period codes used in the following table, see the list of periods and phases at the end of the General Introduction to this book. Other abbreviations used in this section are as follows.

ABT	African black-top
amph	amphora
ApRF	Apulian red-figure
ARS	African red slip
BG	black-gloss
C1 (etc)	1st (etc) century
ckpot	cookpot
conc.	concentration
CP	Cozzo Presepe (+ catalogue number)
CW	coarse ware
dec.	decorated
dol	*dolium* or *dolia*
ESB2	Eastern sigillata B2
F	Form (+ form number)
GB	geometric bichrome
geom	geometric
GG	grey-gloss
GM	geometric monochrome
GN	Gnathian
HM	hand-made
imbr	*imbrex*
impr	impressed
incl.	including
IntB	Late Roman interior burnished cookpot
ITC	Ionian type cup
ITS	Italian terra sigillata
Lmb2	Lamboglia type 2 (amphora)
lmwt	loomweight
LR1	Late Roman 1 (amphora)
LRC	Late Roman C (Phocaean red slip)
LRPW	Late Roman Painted Ware (*ceramica di Calle*)
Mass.	masseria
Mo	Morel (1981) (+ série no.)
MI	*Monte Irsi* (+ catalogue no.)
prehist	prehistoric
probl.	probably
PRW	Pompeian red ware
RF	red-figure
RG	red-gloss
RS	red slip
SG	semi-glazed (BG partially dipped)
spor.	sporadic
spth	*spatheion* (amphora)
teg	*tegula*
TS	terra sigillata
TW	thin-walled

aware of the excavation. He is American, not Canadian, and the only dig in which he was involved was organized by the University Museum of Pennsylvania at Casa San Paolo (Vinson, 1974, 1975). A Canadian team directed by Alastair Small excavated on Monte Irsi in 1971 and 1972, but no Canadians working on that project were involved in any excavation at the Villa Filippi. Iannetti's publication makes it clear, however, that important Late Antique material emerged from the dig. We have therefore appended a brief summary of her information to Vinson's description of Site V68.

[14] Vinson collected others from his later survey along the line of the Via Herculia, not considered here.

[15] Radina 1981b, 1987a.

[16] Striccoli & Melodia 1995, 247-253.

[17] D'Angela 1994, 82.

[18] Chelotti 1983, 15-46. It has since been mentioned and discussed by several scholars (Silvestrini 2002, 127 n,2, Mangiatordi 2011, 154-5 n.4 and 220, Andriani 2013, 11-19).

[19] Small 2016, 375-383.

undec. undecorated
ung *unguentarium*
WM wheel-made
WMCW wheel-made coarse ware
WMP wheel made painted

Form numbers of ABT, ARS and LRC refer to Hayes' (1972) classification, and those of LRPW to that of J. Z. Freed in her Doctoral thesis (1982).

Abbreviations may be combined, e.g. AMPH:DR1 = amphora of type Dressel 1; GM:EIA = geometric monochrome of the Early Iron Age; TWxC1AD = Thin-walled, not typed, of the 1st century AD. ARS:F50EC4 = African red slip of Hayes form 50, and probably of the early 4th century; BG:Prg243 = black glaze comparable to Prag's no. 243

II. List of Sites on the Older Surveys

A001	617350/4515500, IGM F°188 II N.E. Torre Belmonte. On a high spur with commanding view in all directions. Perennial wells and a perennial spring at the Mass. Belmonte ca.400m SW. Very steep slopes on three sides, while the fourth opens on flat tableland to the SW. Remains of a rectangular tower still standing to ca.12 m); foundations of several associated buildings; vaulted roofs of two sunken rooms; a robbed out tomb built of squared stone slaábs situated in the woods on the lower part of the steep N slope of the promontory. Erosion. Deep ploughing. Thin scatter. Alt 442m. **Found:** Plain and glazed wares. Nardone (1935) discusses the architectural and documentary evidence for this site. **Date**. **Med** to C18.
A002	618150/4516000, IGM F°188 II N.E. Approx. 0.5km down NW slope of Torre Belmonte, on a narrow tongue of land sloping SE. Supported by old terrace wall of rough stones. The site is bounded on three sides by the T. Pentecchia di Chimienti and its tributaries, the presumed water sources, the nearest branch being ca.100m away. Heavy conc. Site ca.40x15m. Area 600m^2. Alt 300m. **Found**: Retouched flint blades, chert flake, reused flint core, flint or chert waster; many sherds incl. NeoImpr, red slipped, and La Quercia type wares. **Date Neo**.
A003	616250/4515590, IGM F°188 II N.E. San Donato. 1000m WNW of the campanile and ca.500m due N of Mass. San Donato. Near the E tip of a flat ridge of roughly triangular shape. Steep slopes on two sides, while the third opens onto the table land to the W. Olives and almonds on terraced slopes; grain in flat fields on top. Water available from a perennial well less than 200m SW, and a tiny stream, usually dry. Tombs have been reported in the general area of the site. Area ca. 50,000m^2. Alt 445m. **Found:** 82 sherds, mostly black or brown burnished impasto; 2 BG incl. rim cf. No.836 C4/early C3BC, 2 quern frags; tile. **Date BA**, **LIA.**
A004	622255/4517081, IGM F°188 II N.E. ca.250m. SE of Fontana Coluni. Artifacts were strewn over an area of ca.100 x 50m, but further exploration was impeded by standing corn. Many large unshaped stones were noticed. Area ca.5000m^2. Alt 425m. **Found**: 19 BAimpasto incl. bowl Fig.58. 111. **Date BA**.
A005	622245/4516681, IGM F°188 II N.E. ca.400m. S of Site 546, and ca.250m NE of the Chiesa di Coluni. Fontana Coluni 500m N. Numerous unshaped stones and many pieces of limestone cut into slabs. Area ca.400m^2. The post med sherds are probably scatter from the convent. Alt 425m. (See A4. Probl all one large LBA site). **Found:** Much LBAimpasto; some post-med frags. **Date BA** with post-med scatter.
A006	620455/4511981, IGM F°188 II S.E. Le Frondi valley. The site is located S of Mass. Pezza della Madonna, on ground sloping to the NE (ca.33%). The area of the site forms a black patch ca.100m^2 in the centre of a ploughed field of yellowish-brown soil. Nearest source of water is a well ca.500m downhill. A small, intermittent stream runs near the site. Many large flat stones were noted on the site. Alt 350m. **Found:** 70 sherds BAimpasto. **Date BA.**
A007	619550/4512400, IGM F°188 II N.E. Le Frondi valley. W of Mass. Pezzi della Madonna, not far below the ridge. 33% slope. Perennial spring ca.500m. downhill. Area ca.10000m^2. Alt 350m. **Found:** 110 sherds BAimpasto. **Date BA.**
A008	619025/4512950, IGM F°188 II N.E. WNW of Mass. Le Frondi, on a steep slope just below the ridge. Pozzo Marassano, a perennial spring, is ca.250m due N. Thin scatter, over an area ca.50m square. Area 2500m^2. Alt 425m. **Found:** IAimpasto, GG, WMCW; many tile frags and flat stones, hut daub. *Noted:* GG:MI127. **Date FBA/EIA, L.Hel.**
A009	619165/4513100, IGM F°188 II N.E. Le Frondi valley. Across a narrow cleft from Site 527, ca.100m. below the ridge, on a S-facing slope (30-45 degrees) of a small promontory. A perennial spring (Pozzo Marassano) is ca.150m W, with a stream running from the spring past the site. BA material on lower part of site; thin scatter of IA and med on upper part. Area ca.90000m^2. Alt 425m. (See also, A11, A13**). Found:** Worked stone, obsidian, 216 sherds incl. many MBA and LBA, incl. bowl Fig.58. 112, some EIA, and med; quern frags. **Date Neo, BA, EIA,** Med.
A010	619350/4513200, IGM F°188 II N.E. Le Frondi valley. On S-facing slope of a small spur, on a small terrace, ca.50m. below the ridge. Between 2 small streams. Perennial well 200m E. Finds strewn over 2500m^2 of the slope. Alt 425m. (See also A9). **Found**: 75 BAimpasto black and brown; spindle whorl. **Date BA**.
A011	619500/4513200, IGM F°188 II N.E. Le Frondi valley, only ca.100m from Site A10 and a short distance from Site A12 but seems a distinct site, as small hillocks intervene. In an olive grove, ca.50m below the ridge. Between 2 small streams. Perennial well 100m E. Many flat stones in the area. The nucleus of the site probably lies under the nearby wheat field. Site of uncertain size. Alt 425m. (See also A9). **Found:** 10 impasto, much ckpt, several WM plain frags. **Date** uncertain (prehistoric and ?Roman).
A012	619650/4513200, IGM F°188 II N.E. NW of Mass. Le Frondi on a flat terrace, ca.25m below the ridge. Perennial well ca.100m E of the site. Many flat stones noted. Area ca.2500m^2. Alt 380m. **Found**: 34 BA impasto. **Date BA**.

A013	620055/4513481, IGM F°188 II N.E. NW of Mass. Le Frondi, on an E-facing slope. Stream 200m S. Perennial well 350m SW. Artifacts were found in a dried-up water channel, washed from a nucleus under wheat fields. Alt 375m. (See also A9). **Found**: 30 sherds BA impasto; hut daub. **Date BA.**
A014	622155/4511481, IGM F°188 II S.E. Pizzo Mancino, narrow promontory jutting out into the flood plain of the Torrente Gravina. Close to perennial well. Site on S side of the spur, below a small hillock which forms its lower peak. The prehist finds are located to the E in an area of ca.500m^2, in a field sloping gently S, deep ploughed, eroded. Soil-slipped water-washed sherds down slope to almost 1km. The Hel./ Roman finds incl. much tile are located in a small olive grove on a natural terrace of land W of the prehist finds, within an area of ca.15×25m (375m^2). Alt 418m. **Found**: 10 NeoImpr: shell-rocker, fingertip, stick-impr, 1 Matera Scratched Ware; 200 EIA, 160 GM and GB; 15 BG and GG; 1 PRW, ARS; quern, teg, imb. *Noted:* GG:Mo2255, ARSx:C2, ARSx:C3EC4, ARS:F45, ARS:F50, ARSx:LC5, amph:Lmb2. **Date Neo, EIA, MIA, LIA,** E.Hel? **L.Hel, E.Imp, M.Imp, L.Imp, L.Ant.**
A015	625555/4512681, IGM F°189 III N.O. Serra La Stella 'A'. SW of the Riforma Fondaria of Serra La Stella, on a W facing slope of the river valley. No permanent spring in vicinity. It lies ca.25m below the lip of the ridge in a ploughed field, and 300m NW of the road which forms the border between the Provinces of Bari and Matera. A local landowner tells of clandestini finding two tombs near a water channel in the centre of the field. Alt 475m. **Found**: 25 BA or EIA impasto, 15 BG and GG, WMP, WMCW; Red wall plaster. *Noted:* 1 Overptd, BG:Mo2141 (early C3), BG:Mo2233f (mid C3). **Date** BA? FBA/EIA? **LIA, E.Hel, L.Hel.**
A016	626355/4511781, IGM F°189 III S.O. Serra La Stella 'B'. ca.1km SE of Serra La Stella, on Matera side of the provincial boundary. The site is located on flat ground at the edge of the valley ridge. No permanent spring in vicinity. The ancient settlement covered an area of ca.300×200m and was delimited along its N and E sides by dry stone walls, traces of which remain. On S side the site terminates at a track, and on the W it stops at a cliff edge. No traces of walls on the S or W, but there is a large pile of stones in the centre of the site (probl collected by the farmer to spare his plough). All finds are located within the walls, and the soil within their limits is black and relatively free of gravel. Outside of the walls, the soil is lighter in colour and full of gravel. Deep ploughed. Area 60,000m^2. Alt 425m. **Found**: A few BA or IA impasto, much EIA and MIA, GM and GB, some WMP and BG, Ckpt; 2 pyramidal lmwts, 1 disc lmwt, dol; quern frags, tile, flat stones, limestone slabs. **Date** BA? **FBA/EIA**, **MIA**, **LIA.**
A017	627555/4508800, IGM F°189 III S.O. Fontana dei Marroni 'A', located ca.3.5km NE of Matera, on a high slope overlooking the Gravina river valley to SW. To the S the river valley opens onto flatter ground. Site has steep slopes along two sides, flat stretches of tableland to N and E, and a natural gateway. Sherds found in an area of ca.500×300m, with wheat fields prohibiting further investigation. Nucleus seems immediately to surround spring. Features: paved road with upright stones forming its edge goes through the 'gateway', poss foundations of an ancient building. 10m S of building foundations were pithos tombs. Bulldozer activity upslope from the spring destroyed a sarcophagus tomb. Site in danger of being destroyed. Excavated by Ridola, not published but some artifacts on display in Museo Ridola, Matera. Area 150,000m^2. Alt 396m. **Found:** Neo obsidian blade; EIAimpasto (some), GM and GB (many); WMP and BG (many) incl. Fig.58. 116, 1 GN; 4 lmwts, building stones; tile, limestone block sarcophagus with slab lid. *Noted:* BG:Mo1523c1 (ca 280BC), BG:Mo2424a1 (320–270BC), BG:Mo4221a1 (stamped base, mid C4BC). **Date** Neo spor, **FBA/EIA**, **MIA**, **LIA, E.Hel.**
A018	628255/4508801, IGM F°189 III S.O. Fontana dei Marroni 'B'. 500m E of the Fontana dei Marroni on gently sloping ground near the edge of the hill and overlooking the Gravina River valley to SW. Area ca.50×60m (3000m^2). Alt 425m. **Found**: BA (hundreds) incl. several with impressed cordons. **Date BA.**
A019	627355/4509601, IGM F°189 III S.O. ca.500m. N of Mass. Zegarella, on the edge of the ridge. Very stony ground. Nearest permanent spring at Mass. Area ca.10×5m - 50m^2. Alt 425m. **Found:** WMP, Ckpt; tile, large flat stones. **Date LIA**.
A020	626505/4509281, IGM F°189 III S.O. On a flat tongue of land, ca.150m. below the ridge of Serra Brizzolina. No permanent water source in vicinity. Jazzo Dragone is ca.700m SW. Exploration impeded by wheat fields. Area ca.25×30m (750m^2). Light distribution. Alt 280m. **Found:** Neo (several) incl. 1 rocker; WMP; GG (several); tile. **Date Neo,** LIA, **L.Hel**.
A021	626655/4511081, IGM F°189 III S.O. In a field at the top of the ridge. No permanent water source in vicinity – nearest permanent spring 1 km to E. Alt 425m. **Found**: 3 blade frags, 4 flakes. **Date** Neo?
A022	624716/4511710, IGM F°189 III S.O. Located just S of the abandoned Lamio del Procino on a very steep slope. Spring 100m away. Alt 425m. **Found:** WM plain, RS incl. ITS frag with part of a frame for potter's stamp. **Date E.Imp.**
A024	623755/4513881, IGM F°189 III N.O. On the ridge, 50m E of Mass. Cortillo. No permanent spring in vicinity. The nucleus was not found, but probl lies in the wheat fields to the E. Alt 430m. **Found**: 15 impasto and plain. **Date** FBA/EIA?
A026	620955/4517281, IGM F°188 II N.E. On Monte Cucù, overlooking Gravina from about 2.5km SE. Cistern 300m S. Perennial well 450m E. Tile, limestone slabs and large stones conc in an area ca.30×15m indicate ruins, probably of a small farm building. Area 450m^2. Alt 430m. **Found**: 10 WMP, much Ckpt, 3 LRPW, ARS with stamps of Hayes Style E (ii) (*LRP* figs 41.u, 51.i), some lead-glazed frags; much tile, limestone slabs, large stones. **Date LIA**, **LImp, LAnt,** and later.
C001	623655/4519681, IGM F°188 III N.O. E. of Mass. Scaparel, near Via Appia, just off the road running from SS 96 to the Via Appia in an area of low hills and shallow valleys. It lies on relatively flat ground sloping off towards a shallow valley to S. Bedrock is limestone, not visible at the site, and soil is brown clay with some gravel. Agriculture (wheat, vegetables in valley, vines to E) and pasture (sheep). Well 100-150m to NW near the road at corner of the enclosure wall. 2 wells along S side of the valley to S. Site consists of 2 scatters: one 20m E of road in line with S wall of enclosure, ca.20m in diameter (Area 300m^2), the other 100m E of the road, 50m S of the enclosure, with no distinct shape (Area 500 m^2). Total Area 8/900m^2. Alt 414m. **Found:** 13 sherds, incl. mortarium with "pie crust", 2 Ckpt, 5 WMP, 1 ITS, 8 ARS, 2 LRPW, tile. *Noted:* ARS:C2/EC3 (7), ARS:F50. **Date** LIA**?, E.Imp**, **M.Imp, L.Imp**, **LAnt**.
C002	623955/4519781, IGM F°189 III N.O. S of V. Traetta Mosca, near Via Appia, 50m from corner of enclosure. The site is on flat platform with slopes off to W and S, near promontory. Brown-black ploughsoil, deep ploughed. Agriculture (wheat, vegetables, some vines). Water 50m away in valley to S. Alt 410m. **Found:** 5 sherds incl. ARS, tile. *Noted:* ARS:F50, LRPW (Ian32). **Date L.Imp**, **LAnt.**

C003	624055/4516181, IGM F°189 III N.O. To SW of Lago Rosa. Site is on a promontory facing SW with a ravine to the E. The main river valley is to the W, and there are low hills and valleys to the E. The soil is clay and the water source is near Lago Rosa, at the intersection of the road. Agriculture (wheat, some vegetables, some vines), ploughed. Alt 420m. **Found:** 5 sherds incl. ARS; daub. *Noted:* ARS:F8B, ARS:F17. **Date M.Imp (**C2AD).
C004	624255/4518981, IGM F°189 III N.O. Near Lamia La Confine, 30m N of Via Appia Antica. There is a small mound of field-stone just to the left of the site. Site is located on a very gradual slope coming down towards Via Appia Antica (to S). Relief along the Via Appia here is basically flat. There is a valley to the N and W, otherwise low hills. Scatter extends over 70m, nucleus probably 30-40m, having no clear shape. Bedrock is limestone, not visible at the site, and soil is modern ploughsoil, mostly clay. Water source possibly wells along valley to N. Agriculture mostly wheat, some vines on opposite side of the road and to E, vegetables in valleys of surrounding area. Open site – villa. Area 1000m^2. Alt 390m. **Found:** 54 sherds, lamp frags, amph; roof tile. *Noted:* 1 GG bowl Fig. 58. 119; 7 ITS incl. stamped base Fig.58. 122; Lamp:C1AD, ARS:F8A, ARS:F9A, ARS:F14. **Date L.Hel**, **E.Imp**, **M.Imp**.
C005	624555/4512781, IGM F°189 III N.O. Near Serra della Stella area, above Parco Pascione. Basically flat terrace slopes towards S. Ravine binds the site on E, steep gravel hill just to S. Good size hills to N, large valley to S. Scatter all along the terrace, about 200m long with artifacts in a band 60-90m wide due to the slope. Bedrock is limestone, not visible at the site, and the soil is yellow-brown clay on the terrace. There are natural springs. Agriculture (wheat, vegetables), pasture (sheep), and woods (thick stand of oak among other species in ravine). Tombs have been found in the area. Open site. Area 150,000m^2. Alt 400m**. Found**: flint blade; 45 MIA and LIA incl. ITC and Metapontine skyphos, 5 BG; 12 med? incl. 9 strap handles, lamp frag; pumice, worked stone stopper, sandstone frag; tile. Lo Porto: NSc ser IX–XVII-XVIII 006/7 393 and 397 refers to Neo frequentation here but lists only lithics. **Date Neo**, **MIA, LIA**, **Med**.
C006	624655/4517681, IGM F°189 III N.O. E of La Contessa, 100m. from a Roman villa. Small scatter of undetermined size and shape along the edge of slopes in a field above stream. Ploughed. Open site. Alt 390m. **Found**: 8 sherds; tile, one large blue grey stone with ground edge (does not seem to have been used as a tool). *Noted:* UNG (fusiform). **Date L.Hel**.
C007	624755/4517581, IGM F°189 III N.O. E of La Contessa. The site is 40-50m N of the road leading to Mass. Camastro, on brow of a W facing slope to the valley. The small valley just to the S of the site puts the site on something of a promontory. Slight grade of hilltop up towards the road, fairly steep slope to valley. Site is a scatter extending 80m along brow of slope to valley. Valley to the W and a main hill with a basically flat top runs from NW to SE through the area. Bedrock is limestone, not visible at the site, and soil is brownish clay. There are wells on the slope down to the valley to W. Agriculture (wheat, grass on valley bottom, some vines on slope). Walls on the slope down to the valley to W. Ploughed. Open site, villa? Alt 400m**. Found:** Sherds; tile. *Noted:* WMP, GG incl. bowl Fig.58. 118, GG:MI130; UNG:fusiform; 2 ITS, Thin-walled:Late, ARS:F7, ARS:F50B, ARS:F65; amph: Orientale (Ian25); LRPW:Early; IntB. **Date LIA**, **L.Hel**, **E.Imp, M.Imp, L.Imp, L.Ant.**
C008	625555/4516981, IGM F°189 III N.O. S of Cafurno, at first sharp bend in the road past the intersection first from left and then from right driving S. There are two small scatters ca.100m apart: (a) in a vineyard ca.40m W of road, (b) ca.25m E of a jog in the road in a deeply ploughed field. Site is on a flat hilltop sloping slightly off to each side, having a steeper slope to the E, with low hills and a valley running NW to SE on each side of the hill. Bedrock is limestone, not visible at the site, soil is gravel. Wells are located on the slope to W. Agriculture (wheat, vines with some olive trees). Open site. Alt 440m. **Found**: 8 BAimpasto. **Date BA.**
C009	626055/4515581, IGM F°189 III N.O. Near Tempa Rossa, on the edge of a slope of valley to E. Smaller run-off valley just S of the site puts it on a small promontory. The site is a scatter extending over ca.100m, of indeterminate shape, just to the S of a large pile of field stones. There is a valley to the E and the area is generally low hills. Bedrock is limestone, ploughed up in places in fields near the site, and the soil is brown to yellow clay. There is a modern well in the valley in front of the site, and a natural spring at Fontana La Scala. Site is in a wheat field, with the valley below wooded (oaks) and used for pasture (cattle, sheep). Ploughed. Open site, villa. Area 7900m^2. Alt 380m. **Found:** GG: ITS; 2 ARS; Glass rim; tile, pumice. *Noted:* GG:MI129, ITS stamped base Fig.58. 121; Glass: C1EC2, ARS:C2, ARS:F50, ABT:F96, **Date L.Hel**, **E.Imp, M.Imp, L.Imp.**
C010	626255/4515581, IGM F°189 III N.O. Tempa Bianca area. Site is at the edge of a slope just to N of where trees around the promontory stop, and continues to the vineyard just to the N. The hilltop slopes gradually to the W, with a steeper W facing slope down to the valley. The site is a fairly large scatter, ca.120m along the edge of the slopes and 80-100m deep (E-W) with sherds found all the way down the slope. Bedrock limestone, not visible at the site; soil brown-black clay with some gravel. A well ca.300m W, and a natural spring at Fontana La Scala. Agriculture (wheat, vineyards, vegetables), pasture (sheep, cattle), and woods (mostly oak in valley to SW). Open site. Area 105,000m^2. Alt 410m. **Found:** Hammerstone with evidence of pecking, arrowhead, retouched flint blade frag, 42 sherds, incl. 1 GG, 6 ITS, ARS, 5 Ckpt, 3 WM plain, amph; 1 rim brown glass; tile, pumice. *Noted:* ARS:F8B; 2 LRPW:(Ian37). **Date** Neo? **L.Hel**, **E.Imp**, **M.Imp, LAnt.**
C011	626555/4515681, IGM F°189 III N.O. N of Tempa Bianca area. Site is a light isolated scatter, ca.20-30m in diameter, no distinct shape, on the slope of a hill facing NE, on a rolling part of the hilltop area. Surrounded by low hills and valleys. Bedrock limestone, not visible at site; soil gravel mixed with clay. Wells in valley to E. Agriculture - wheat. Open site. Area 500m^2. Alt 370m. **Found**: 6 flints, 25 BAimpasto; 18 others incl. RS, LRPW, WM plain, coarse; 1 lava quern frag. *Noted:* ARS:F8B. **Date BA**, **M.Imp**, **LAnt**.
C012	626555/4516481, IGM F°189 III N.O. Near Cassalia. On a hilltop running NW to SE, cut by valleys on all sides with a number of good natural promontories. Site is a large scatter, 300×300m, on basically flat ground running off to shallow valley to NE, and having a depression running along the road to the SE. Roman and Hel. concentration near house. Bedrock limestone; the soil is brown clay with some gravel. Well in the shallow valley below the site and claims of a natural spring (no evidence). Agriculture (wheat, vegetables, cane), poplar trees. Deep ploughing. According to the farmer, an inscription was stolen from the site, perhaps that dedicated to Savonia Nevia found out of context at the Mass. Macchitella (see Chap. IX.4.ii). Open site. Area 90,000m^2. Alt 415m. **Found:** 84 sherds, incl. 52 EIAimpasto, 11 GM, 1 GN, 1 BG, 2 WMP, 3 ARS:C1/C2, 1 WMCW, 1 WM plain, 2 amph; tile, pumice, wall plaster. **Date FBA/EIA**, **LIA**, **M.Im**p.

C013	626555/4518881, IGM F°189 III N.O. Mass. S. Chiara, 300m N of Via Appia, at head of new quarry and in danger of being quarried away. The site is a scatter, 30×30m, with no real nucleus, facing SE on a gentle Murge slope. It continues S towards Via Appia in the next field. There is Murge to the N, E and W and a valley to the S. Possible features are four circular pits in an E-W line (30-40cms. in diameter by 15-20cms. deep) of ca. 2m. some 20m. E of road, possibly man-made, and many subterranean caves, which may have been adapted for use as animal shelters, etc. Bedrock limestone with a very thin scatter of stony soil. Water source uncertain. Pasture (sheep), quarrying. Open site. Area 900m^2. Alt 400m. **Found:** Neo: 13 lithics; 20 sherds incl. 1 with fingertip impressions; 2 later strap handles. **Date Neo**, and later spor.
C014	626655/4515281, IGM F°189 III N.O. On hilltop of Tempa Bianca, N of Fontana La Scala by a few hundred meters. The site is a scatter ca.200m. E-W by up to 100m N-S which covers most of a flat hilltop promontory facing S. Steep slope to S and W, less steep slope to E. Hilltop extends N for considerable distance. S of the site a series of somewhat higher hills covered with gravel. Low hills and valleys to the N, W and E. Bedrock limestone, not visible at the site; soil clay with a large amount of gravel which tends to bring up pottery when ploughed. Agriculture (wheat, vegetables, and cane in the valley), woods (mainly oak in valley to S and W), pasture (sheep, cattle in valley). Water source uncertain. Alt 410m. **Found**: 1 flint core; 38 EIAimpasto, 8 GMEIA. **Date FBA/EIA**.
C015	626855/4514681, IGM F°189 III N.O. Near Fontana La Scala. Site is 30m. E of thickly wooded ravine on lower part of upper slope. 30-40m below is an artificial pond built recently. The site is a scatter, extending for 30m, where the hill to S levels off to form a promontory. N facing slope. There is a valley to the N of the site, ravine to E, hill to N. The hills to the N are higher than those to the S. Bedrock limestone in a soft weathered form, partially visible due to deep ploughing. Slope soil is gravel and clay, with some white substratum brought up in places by ploughing. Natural springs. Agriculture (wheat), woods (oak, elm, etc) in ravine. Open site. Area 700m^2. Alt 400m. **Found**: 11 sherds, incl. ARS, WMCW, Ckpt; tile. *Noted:* ARS:EC2; IntB. **Date M.Imp.**
C016	627003/4518369, IGM F°189 III N.O. Mass. Cialledde. On Via Appia, but inside a bend of the modern road. Nucleus of the site is in 2 rectangular stone-walled sheep pens beside the easternmost farm building of Mass. Cialledde and in field immediately below this building. This barn is separated by ca.100m to the E of the main farm complex. Scatter spreads thinly uphill to NW behind farmhouse for ca.100m, but does not continue on top of hill, or on W of farmhouse, or much E of sheep pens, or onto modern Via Appia - gap of ca.100m. Nucleus may be obscured because of disturbance by sheep, and the rest of the area is rough pasture on the Murge. Site aspect is SE, on sloping side (and flat terrace) on N side of Via Appia valley. Fertile slopes and the heights of the S slope of the Via Appia valley are to the S. Bedrock is Murge limestone which is thinly covered with sandy soil. Natural vegetation is Murge. Sheep pens and an olive and almond grove along road. Alt 350m. **Found:** 74 sherds, incl. 11 WMP, 2 BG or GG, UNG, WMCW, Ckpt, ARS, 7 LRPW, amph; tile, dol, plaster. *Noted:* GG, ARS:C2EC3, ARS:F87, ABT:F196, LRC: (Ian26); LRPW:F2,F42 (Ian44,45,52); 3 LRPW (Ian29,33,40); amph:LR1, 2 amph:spth, Ckpt (Ian57, 59, 65, 69); 2 IntB. **Date LIA,** E.Hel? **L.Hel**, **M.Imp, L.Imp LAnt**.
C017	627655/4518481, IGM F°189 III N.O. Mass. Gramegna, off Via Appia in field (nearest farm). Site is an open scatter, 30x12m. in an irregular strip, on a rising slope of Murge above quarry, below the top of a hill in a peculiarly deep gully, recently ploughed. Well-defined section of brown-light soil. Bedrock, limestone on the surface. Site aspect is S, near the top of the valley side, looking across and down the valley. Surrounding countryside is Murge to N, E and W, and valley of T. Gravina di Matera, here coinciding with Via Appia to S. Water source possibly underground 50m to SW. Subterranean caverns to SW and NW in same field as site. Area 360m^2. Alt 379m. **Found:** 10 Neo. **Date Neo**.
C018	628155/4518281, IGM F°189 III N.O. Mass. Casiello (nearest farm on other side of Via Appia) ca.50m. N of Via Appia, running parallel to modern road along first contour up from road in a strip ca.400x50m. Site on very gentle slope, almost a terrace, facing S. Nucleus, or greater conc. of pottery, is at the E end, and the site fades out up the hill. Murge and semi-fertile hills to the N and W, valley and heights to S. Bedrock, limestone; soil, a rich dark loam. Well 50m. to E. Vegetation is Murge. Site is ploughed. Open scatter. Area 2000m^2. Alt 350m. **Found**: 16 EIAimpasto, 13 GMEIA, 6 WMP, 2 WM plain, 1 ARS; 1 dol rim, little tile. **Date EIA**, **LIA,** Mid/LRom imp scatter.
C019	629055/4515781, IGM F°189 III N.O. Mass. Pescano (nearest farm, now deserted). Site is on a low spur/hill formed by the confluence of two rivers. In a valley bottom between two heights, blocking valley areas to N and S. Site aspect is E. Considerable heights to NE and SW, valley bottoms to NW and SE. Bedrock is limestone, not visible at surface; soils, brown earth with scattering of breccia. River and well on either side equidistant at 150m. Agriculture on spur top (vineyards, tomatoes), bamboo and trees line the river course. Ploughed. The site is a scatter (disturbed by vineyard) with no real shape or nucleus, ca.200×150m. Area 30,000m^2. Alt 350m. **Found:** 25 sherds, incl. 2 BG, 2 ITS, 8 ARS, 6 Ckpt. *Noted:* ARS F8 (Ian8), ARS:F50, ARS:F53A, ARS:F91. **Date** LIA? E.Hel? **E.Imp**, **M.Imp, L.Imp, L.Ant**.
C020	629155/4515981, IGM F°189 III N.O. SW end of height Cimirutella-Lamandrella, on lowest spur near road. Site is on top of a mound, almost a spur, joined by a gentle slope to the heights of Lamandrella to NE. T. Gravina di Matera in gentle valley bottom 300m to SW. Site has a nucleus ca.50x50m. Bedrock is limestone, not visible at the site; soil is yellowish-brown clay (not too heavy). Well 100m to NW. Arable (wheat stubble); market gardens in valley; bamboo etc in river bottom; olives/vines on heights. Area 2500m^2. Alt 350m. **Found:** 71 sherds incl. 1 WMP, 6 BG, 6 GG, 1 Megarian type bowl, 10 ARS, 19 Ckpt, misc plain and CW; 2 amph handles; 2 tiles, 1 large tessera. *Noted:* GG:MI151, GG:MI150, GG:MI121, amph:Lmb2 (Ian22), ITS, ARS:F9A, ARS:F9B, ARS:F26, ARS:C2EC3, ARS:F50, ARS:F50Late, LRPW (Ian34,35). **Date LIA,** E.Hel? **L.Hel**, **E.Imp, M.Imp, L.Imp, LAnt**.
C021	629255/4518181, IGM F°189 III N.O. Mass. S. Antonio, on Via Appia to NW of disused Casa Cantoniera. Site is a kidney-shaped area behind the cantoniera, 100 x 50m. S facing aspect on the S slope of a slight ridge of Murge, parallel to, and ca.30m N of Via Appia. Subterranean caverns occur on the N limits of the site. The heights of Serra Porcaro (the name implies that pigs were once raised here) are to the SE, small valley and Murge to N and NE, and fertile heights to NW. Bedrock is limestone Murge; soil is brown in a thin strip parallel to Via Appia. Ploughsoil, Murge, grazing in area. Thin scatter with recent material from Casa Cantoniera. Area 5000m^2. Alt 380 m. **Found:** 41 sherds incl. 1 ITS, 10 ARS, 9 Ckpt, 1 mortarium; lava quern frag, tile. *Noted:* ARS:F50, LRPWincl LRPW:F42. **Date E.Imp**, M.Imp?, **L.Imp**, **LAnt**.

C022	629455/4518181, IGM F°189 III N.O. Mass. S. Antonio. On Via Appia. S aspect, on very edge of a gentle Murge slope 80m directly S of eastern cluster of Mass. S. Antonio farmhouse. Site surrounded by underground caverns. Bottom of site (where most tile, less pottery) is ploughed round the edge of Murge. There is a valley through Murge to E; Lamandrella heights to SE, Serra Lorcara and valley of T. Gravina di Matera to SW and Murge to N. Bedrock is limestone Murge; soil is light brown at bottom of site. Stream 30m. to E. Vegetation is Murge, some trees, with Murge grazing and ploughed in valleys. Thin open scatter 30m. across. Area 700m^2. Alt 381 m. **Found:** 16 sherds incl. 2 BG, 4 Ckpt, 4 WMCW, 3 RS, 1 cream Vitreous Glaze (med or later); tile. *Noted:* ARS:F181. **Date** LIA? E.Hel? **M.Imp**.
C023	630555/4515581, IGM F°189 III N.O. Hill unnamed on map. Nearest farm Mass. Vucculo. The site is W-facing, on shoulder of hill slope below cap of hill (breccia gravel), overlooking a flat flooding valley. There are good-size hills to N and SE and a wide (2.3km.) valley to E and SE. Bedrock is limestone, with lumps in field, and the soil is a yellow-brown clay. Springs (in modern use) 100-150m. E. Agriculture (wheat stubble), almond trees on hilltop. The site is a scatter with wash down-hill over ca.100m in all directions. Nucleus of scatter is ca.10m diameter. Area 80m^2. Absence of tile suggests occupation finished before C4BC. Alt 347 m. **Found:** 88 sherds incl. 59 impasto, 24 GM, 2 BG, 3 WM plain. **Date FBA/EIA**, LIA.
C024	630955/4515481, IGM F°189 III N.O. Mass. Vucculo. Site faces SW, near the top of a curved re-entrant (between two heights), though on the breccia cap rather than the rim where the modern farm is. Moderate slope. The site overlooks a valley to the S/SW, and is hemmed in by heights to N, S and E. The area slopes down to a broad flat valley at W. Bedrock is limestone, with lumps in field, and soil is brown rather than yellow heavy soil/clay. Springs 80-100m NE. Agriculture, deep ploughed. Scatter 50 x 50m. Area 2500m^2. Alt 404 m. **Found:** 66 sherds, incl. 11 GM, 27 impasto, 2 GG, 17 WMCW; tile. **Date FBA/EIA**, **L.Hel**.
SM	615985/4527250, IGM F°188 I S.E. San Mauro. Platform ca. 6 hectares surrounded by remains of ?earthwork SE of Mass. Prelim. inspection only (5 people, 2 hours) Nov 2000. Begins in MIA, whole platform probl occupied in LIA and small part in E.Imp/M.Imp, expanding in Late Ant. **Found:** 2 GB, 17 WMP, 11 BG (C4/C3), 2 ITS, 10 ARS mostly late incl. stamp Hayes no 32 (LC4/C5), 18 plain, 11 LRPW, slag, dol, imbr waster. For the BA phase of the site, see Striccoli & Melodia 1995, 233-237. **Date BA, MIA, LIA, E.Imp,** M.Imp? **L.Imp, LAnt.**
V001	619955/4519581, IGM F°188 II N.E. Vinson (1972) 64, fig 10. Gravina. Burials under modern town connected with IA site on Botromagno. Alt 360m. **Found:** GB, WMP. **Date MIA, LIA.**
V002	617350/4520400, IGM F°188 II N.E. Vinson (1972) 65, fig 11. Botromagno, area of Cicotto. Perennial wells ca.200m W and NE. See now Radina (1981, 1986) for the excavation of the ditch of the settlement which extended ca.200m N-S. Just south of this was a robbed tomb area (V003/4). Alt 425m. **Found:** NeoImpr (Pl.51. 42, Pl.52. 44), Neo painted. **Date Neo.**
V005	615075/4520350, IGM F°188 II N.E. Vinson (1972) 65, fig 11. Perennial springs NW and SE. Site of uncertain size. Alt 400m. **Found:** Local geom, GN, SG, WMC, glass, ARS, lmwt. *Noted:* GB, Glass:E.IMP, ARS:F3B (Ian7), ARS:F14, ARS:F23B (Ian15), ARS:C2EC3,ARS:F50, LRPW. **Date MIA, LIA, E.Hel, E.Imp, M.Imp, L.Imp, LAnt.**
V006	605855/4523481, IGM F°188 I S.O. *Addendum* to Vinson (1972) 66. Monte Marano. Pozzo del Corvo (perennial well) 500m NE. Like Sites V25 and V88, much of this has been carried away by landslide. Neo material lies ca.100m S of the peak; IA and Hel. on the peak. Thick distribution. Alt 495m. Area 29987m^2 (100m radius). **Found:** Flint and chert débitage, NeoImpr, figulina (incl 1rim, 1 base) and HMCW in about equal proportions; 1 MIA/LIA carinated bowl rim, 1 ws impasto, geom (C6-C5), WMP, badly worn BG (C4?/C3BC?), RG, GG; lmwt, dol, tile. *Noted:* 2 BA bowl rims. **Date Neo, BA, MIA, LIA**, **L.Hel**.
V007	4522481/ 4522681, IGM F°188 I S.O. Vinson (1972) 66, fig 17. On N bank of Basentello, which is the only water source in vicinity. Now flooded by Diga. Road from it crosses that going up the Roviniero valley towards Spinazzola – important junction judging by range of finds. Site of uncertain size. Alt 250m. **Found:** Lithic, HM.impasto, WMP, BG, GG, Thin-walled? **Date** Prehist, **LIA, L.Hel**.
V008	604155/4522481, IGM F°188 I S.O. Vinson (1972) 66, fig 11. Near S bank of Basentello, now flooded by Diga del Basentello. Linked to site V7. Site of uncertain size. Alt 260m. **Found:** WMP, BG, SG, GG, amph; dol, quern, tile. **Date LIA, E.Hel, L.Hel**.
V009	603355/4523381, IGM F°188 I S.O. Vinson (1972) 66. Monte Serra. Seasonal wells 300m NW and 350m W. Site of uncertain size. Alt 306m. **Found:** Molfetta impr; BG, WMCW, ARS **(**EC4AD). **Date Neo**, **LIA? E.Hel? L.Imp.**
V010	600255/4522981, IGM F°188 IV S.E. Vinson (1972) 67. Spring 300m SW. Site of uncertain size. Alt 375m. **Found:** BG, 2 ARS, 2 WMCW; quern, tile. *Noted:* LRPW (Ian30). **Date** LIA**?** E.Hel**? M.Imp/L.Imp, LAnt**. The site perhaps corresponds to McCallum *et al* 2013, site B067, which produced frags of GG and RRS.
V011	599855/4522581, IGM F°188 IV S.E. Vinson (1972) 67. Close to the Fontana Vetere. Site of uncertain size. Alt 375m. **Found**: impasto, WMP, TS, ARS, WMCW, amph; dol, quern. **Date LIA, E.Imp,** M.Imp? L.Imp? L.Ant? The site corresponds to McCallum *et al* 2013, site A60.
V012	598755/4524581, IGM F°188 IV S.E. Vinson (1972) 67, fig 12. Perennial spring ca.200m NE. Site of uncertain size. Alt 340m. **Found:** ApRF, WMCW: dol, tile. **Date LIA**.
V013	597155/4523481, IGM F°188 IV S.E. Vinson (1972) 67, fig 12. Monte Serico. Perennial well 400m N, perennial springs 600m S and 700m SE. Settlement and necropolis extend down naturally terraced slopes on all sides of peak. Alt 548m. **Found:** Impasto, WMP, BG, RF, SG, GG, ARS, Med, amph; quern, tile, 1 oyster shell. *Additional material* collected by C. Small on 13 June 1985: 107 sherds, incl. 3 IAimpasto, 3 GM, 1 GB, 32 BG of C5–C3BC, GG, 1 ARS:F50, 66 WMCW, glass rim. *Excavations* in 2003-4 on W slope ca 700 m from the top revealed settlement remains of C9–C6 BC: Ciriello *et al.* 2008). **Date**, **EIA, MIA**, **LIA, E.Hel, L.Hel**, **L.Imp**, later (post-medieval).
V014	597455/4523981, IGM F°188 IV S.E. Vinson (1972) 67. Near a perennial well. Site 30-40 m. square. Area 900-1,600m^2. Alt 435m. **Found:** LBA/EIAimpasto, BG, UNG. ARS, LRC, WMCW. *Noted:* ARS:F8A, ARS:F9A, ARSx:C2AD, ARS:F59, ARS:F53B, ARS:F61B, ARS:F88, ARS:F99, ARS:F103, LRC:F3B. This is presumably the Roman area on the edge of McCallum & Hyatt 2014, Site A19. **Date** FBA?, LIA?, E.Hel?, L.Hel?, **M.Imp, L.Imp, LAnt.**

V015	588255/4528881, IGM F°188 IV S.O. Vinson (1972) 67. Seasonal well nearby. Permanent spring 600m NE near Mass. La Sala. Site of uncertain size. Alt 475m. **Found:** impasto; BG, WMCW. **Date** LIA? E.Hel? L.Hel? The site appears to correspond to Marchi's (2010) site 831, where she found frags of plain ware and amphorae in an area of 20m^2.
V016	588500/4529981, IGM F°188 IV S.O. Vinson (1972) 67. Perennial springs 300m NW and SE. NE facing slope 5.7 km SE of Spinazzola. Thick distribution. Area 2500m^2. Alt 410m. **Found:** Flint blade, impasto; BG, ESB2, ARS, WMCW, amph; tesserae. *Noted:* ARS:F3B, ARS:F8A, ARS:F9A, ARS:F17, ARS:F31, ARS:F42, ARS:F50B, ARS:F69, ARS:F53B. **Date** BA? LIA? E.Hel? L.Hel?, E.Imp**? M.Imp, L.Imp**. The site is separated by a small stream from Marchi's (2010) site 832, described as a large area of irregular shape extending for about 500m^2 along the NE slope of the hill, which yielded a thin concentration of material including tile fragments, ARS-D, plain ware, cookpot and large containers (dolia) from a settlement of the imperial period. It seems likely that the two sites formed parts of the same settlement.
V017	585340/4530968, IGM F°188 IV N.O. Vinson (1972) 68. Perennial well, Pozzo Paglione, 500m N. Site of uncertain size. Alt 425m. **Found:** impasto; BG, GG, RG, TS, ARS, WMCW, amph; tile. *Noted:* 2 blades 2 burins, 9 lithic flakes, NeoImpr (Pl.51. 40), 2 figulina. In the Neolithic period the site was very close to, and probably part of Site V105. It also corresponds to Marchi 2010, 207 no. 867. She found no Neolithic but reports a dense concentration of plain ware, BG, ITS, ARS-A of the C2–early C3AD, cookpot, amphora handles, ws of dolia, paving mortar and millstone frags in an area of 1000m^2. **Date Neo,** LIA? E.Hel? **L.Hel**, **E.Imp. M.Imp.**
V018	584932/4531363, IGM F°188 I N.O. (Vinson 1972) 68, fig.12. a perennial well, Pozzo Paglione, 100m N. Site of uncertain size. Alt 450m. **Found:** EIAimpasto, Hut daub; ARS; amph, tile. *Noted:* ARS:F50L, ARS:StampAII, ARSLampx:C4, ARS:F61B, ARS:StampAIII. The site corresponds to Marchi 2010, 207 no. 872 which yielded FBA/EIA impasto, plain ware, BG, ITS, ARS-D, "ceramica comune decorata dipinta" (=LRPW?) and frags of glass in an area of 1200m^2. **Date FBA/EIA**, LIA? E.Hel? L.Hel? **E.Imp**, **L.Imp**, L.Ant?
V023	614650/4522300, IGM F°188 I S.E. Vinson (1972) 70, fig 17. Just south of Fontana S Giacomo (perennial), on N facing slope. Alt 390m. **Found:** Flint blade, NeoImpr, Neo painted, daub; amph; dol, tile. **Date Neo,** Roman.
V024	607555/4524881, IGM F°188 I S.O. Vinson (1972) 70. Near some headwaters of Pentecchia river. No other source of water in vicinity. Area 150m^2. Alt 450m. **Found:** NeoImpr. **Date Neo**.
V025	605855/4526081, IGM F°188 I S.O *Addendum* to Vinson (1972) 70. Mass. Aspro whose owner, Sig. Mastrogiacomo, kindly brought to my attention a large collection of surface finds picked up on the slope below his farm. Perennial well 50m N. Springs ca.200m S and 300m W. Like Monte Marano (Site V006), a large part of the site had been carried away by landslide, but the settlement was probably on the crest of the plateau. Alt 460m. **Found:** ca. 8-10 kg of Eneo and BAimpasto, GG, TS, LRPW, WMCW; quern, tile. **Date Eneo, BA**, **L.Hel, E.Imp**, **LAnt**.
V026	605755/4525381, IGM F°188 I S.O. Vinson (1972) 70, fig 12. NW facing slope. Thick distribution and traces of ditch fortifications and rampart at SE and SW ends of promontory. Spring 250m N. Area 660,000m^2. Alt 475m. **Found:** FBA/EIAimpasto,: 11 returned incl. 7 black burnished (4 bowl rims incl Pl.56. 100), 3 coarse (2 impr cordons, 1 lug handle); GMEIA (Pl.56. 104), 1 LRPW. **Date FBA/EIA, LAnt**.
V027	600855/4531881, IGM F°188 IV N.E. Vinson (1972) 70. Perennial well 250m SE. Area 2500m^2. Alt 310m. **Found:** FBA/EIA impasto incl. 1 black burnished in-turned bowl rim, BG, SG, GN, WMCW, amph; dol, tile. **Date FBA/EIA**, **LIA, E.Hel.**
V028	598655/4533181, IGM F°188 IV N.E. Vinson (1972) 70, fig 13. Stream in Vallone Impiso 100m E. Group of perennial wells ca.150m to W. Wide range of mid to late neo wares to SE, hel. and Roman finds to NW. Site of uncertain size. Alt 375m. **Found:** Flint core, NeoImpr and scratched; BA; BG, ARS, WMCW, amph; quern, tile. *Noted:* 8 NeoImpr incl. Pl.51. 37 and 2 rocker Pl.52. 46, 48;), 2 Matera scratched (Pl.53. 52, 53); 1 Eneo bowl (Laterza) Pl.54. 69; BA 11 comprising 3 impr cordons incl. Pl.55. 78, 1 ring handle (Pl.54. 76), 6 bowl rims (5 carinated (Pl.55. 87, 89), 1 highly burnished black ribbon handle with triangular perforation; BG:Mo1332a1 (2nd ¼C4BC), BG:CP301, ARS:F50A (or F61), ARS:F50L, ARS:F53, ARS:F91B, LAMP:ARSIIA (Pl.56.109), LRC:F33, LRPWx:L, LRPW:F42C, LRPW:F43. **Date Neo, Eneo**, **BA**, **LIA, Limp, LAnt**.
V029	599084/4533981, IGM F°188 IV N.E. Vinson (1972) 70, fig 13. Stream in Vallone Impiso 100m W. No other water source in vicinity. Area 60,000m^2. Alt 385m. **Found**: Wide variety of BA cordoned wares, carinated bowls and handles, quern. See now Striccoli and Melodia 1995, 247-253 – Grotta del Forno (185 BA sherds). *Noted:* BA 21 comprising 8 impr cordons incl. Pl.55. 79, 1 Dec. Apennine Pl.56. 93, 6 carinated bowl rims incl. Pl.55. 88, 1 bowl with out-turned rim, 4 strap handles, 1 perforated ribbon handle. **Date BA.**
V030	598997/4533866, IGM F°188 IV N.E. Vinson (1972) 70. E bank of Vallone Impiso. No other water source in vicinity. Site of uncertain size. Alt 385m. **Found:** BAimpasto; GB, BG, GN, RS, WMCW; dol, quern, tile. *Noted:* BG:LC4 (2), BG:LC4EC3, LRC:F3B, LRPW:Early (Ian39), **Date BA, MIA, LIA**, **L.Imp, LAnt**.
V031	4535381/4533881, IGM F°188 IV N.E. Vinson (1972) 70. Water probl from Vallone Impiso 100m E. Site of uncertain size. Alt 370m. **Found:** impasto, BG, GN, SG, WMCW. *Noted:* BG:Mo1512A1 (end C4/ C3BC), BG:MI139 (end C4/ early C3BC). **Date** IA, **LIA, E.Hel**.
V032	621855/4525581, IGM F°188 I S.E. Vinson (1972) 71 fig 13. On S slope of Monte Castiglione (spur of Murge) near access route to plateau and ca.500m from drained lake of the Pantano. Enormous IA site with densest conc. of sherds below Monte Castiglione extending S ca. 1 km and up to 500 m E. Alt 455m. **Found:** IAimpasto incl. Pl.56. 98, 99; GB, BG, RG, GG, 1 LRPW, dol, amph, tile. *Noted:* GM:EIA, GM:C7, WMP , ITC 1, BG:EC5, BG:LC5; storage jar frag with seal impression Pl.56. 107; EIA tumuli at Castiglione La Mena and Scalcione (Lo Porto 1980, 52; Greiner 2003, 197). **Date EIA**, **MIA**, **LIA, L.Hel**.
V033	622155/4522681, IGM F°188 I S.E. Vinson (1972) 71. Alt 470m. **Found:** NeoImpr incl. Pl.51. 34 and painted, Pl.53. 59, BAimpasto; quern frags, daub, iron slag. *Noted:* 1 figulina; 1 Ckpt lid (uncertain date). **Date Neo**, **BA**, later spor.
V034	621055/4521681, IGM F°188 I S.E. Vinson (1972) 71. Near 2 perennial springs. Alt 420m. **Found:** HM impasto, WMCW, GG, ITS. **Date EIA, L.Hel, E.Imp.**

V035	621355/4522781, IGM F°188 I S.E. Vinson (1972) 71. 200m W of source of modern aqueduct. Alt 450m. **Found:** Worked stone, BAimpr cordon, impasto. **Date BA.**
V036	620555/4523481, IGM F°188 I S.E. Vinson (1972) 72, fig 14. Thin distribution. Area ca. 400m². Alt 350m. **Found:** WMCW, BG, GG; dol, quern, tile. *Noted:* BG:CP298, GG:MI124, GGlamp (Pl.56. 108). **Date LIA, L.Hel.**
V037	620855/4524481, IGM F°188 I S.E. Vinson (1972) 72. Cistern and seasonal well 250m E. Area 15000m². Alt 410m. **Found:** WMCW, ITS, ARS, LRPW, amph; quern, tile. *Noted:* ARS:C2, ARS:F14, ARS:F23, ARSx:C3EC4, ARS:F31, ARSx:C4EC5, ARS:F50. LRPW (Ian38, 55), amph:spth. (Ian 24). **Date E.Imp**, **M.Imp, L.Imp, LAnt.**
V038	619550/4527600, IGM F°188 I S.E. Vinson (1972) 72. Near access to plateau on SW slope between scarp of Murge and N edge of drained lake of the Pantano near Iazzo S. Monnara. Alt 425m. **Found:** impasto incl. 1 ?rim, 2 bases, 1 handle; tile. **Date** BA.
V039	618450/4529600, IGM F°188 I S.E. Vinson (1972) 72, fig 14. At Jazzo Portico. S facing slope below Murge with access to plateau. Cistern 300m to SE. Alt 494m. **Found:** BAimpasto. *Noted:* BA: bowl rim, *pithos* Pl.56. 97, 3 impasto incl. vertical handle (Pl. 55, 91) disk wt (Pl.56. 95); 1 HM plain. **Date BA**, Hel spor.
V040	618950/4525600, IGM F°188 I S.E. Vinson (1972) 72, fig 15. Perennial well 100m SW. ca.500m from edge of drained lake of the Pantano. Alt 420m. **Found:** NeoImpr, Matera scratched. *Noted:* 2 NeoImpr incl. 1 (Pl.51. 38) 1 rocker, 1 Triple tecnica (Pl.53. 55), 1 Neo painted (Pl.53. 57), 1 figulina, 1 Eneo (Pl.54. 70). **Date Neo**, **Eneo.**
V041	617850/4526300, IGM F° 188 I S.E. Vinson (1972) 72, fig 15. 20m S of Casa San Paolo. Close to drained lake of the Pantano. On E bank of stream. Perennial springs 200m and 400m to SE. Presumably linked with or part of Site V42 across the road. Area 900m². Alt 415m. **Found:** Flint arrowhead (Pl.50. 1), obsidian blade frag (Pl.50. 23), impasto incl. 1 NeoImpr (Pl.52. 45), 1 doppia tecnica (Pl.53. 54), 1 Neo painted, 3 BAimpasto incl. 1 ws impr cordon, 1 strap handle (Pl.54. 75), 1 carinated bowl (Pl.55. 86), 1 milk boiler (Pl.56. 94), 1 disc weight (Pl.56. 96); WMP, BG, GG, ARS. *Noted:* WMP incl. Pl.56. 106, ESB2 (Ian19), ARS:C4, ARS:LC3EC4, ARS:F50, IntB. **Date Neo, BA, LIA, L.Hel,** E.Imp? M.Imp**? L.Imp**.
V042	617950/4526100, IGM F° 188 I S.E. Vinson (1972) 72. Near Casa San Paolo at perennial spring. Close to S edge of drained lake of Pantano. Area 900m². Alt 410m. **Found:** impasto, BG, ARS, many amph frags; quern, tile. *Noted:*, ITS, PRW, ARS:F8A, ARS:F9B, ARS;F23, ARS:F31, ARS:F50, ARS:F50B, ARS:F61B (Ian18), ARS:F114, ARS:C2, ARS:LC2, ARS stamp AII, ARS stamp AIII, LRC (Ian28), LRPW (Ian31,42) amph:Lmb2 (or amph Dressel 1C –last quarter C2 Ian21), amph:LR, amph:Ostia LXI (mid-C1–C2 Ian 23). **Date** BA?, **LIA**, **E.Imp**, **M.Imp**, **L.Imp, LAnt.**
V043	617850/4526600, IGM F° 188 I S.E. Vinson (1972) 72. Near S edge of drained lake of the Pantano. Close to drainage canal. Nearest well ca.250m NE. Area 900m². Alt 417m. **Found:** impasto, WMCW, ARS, 8 LRPW, amph stoppers; tile. *Noted:* ITS (Ian3), ARS:F50A, ARS:C4 (F92 C5 Ian16), ARS:F61, LRC:F3B (2), Lamp:LC5C6 (Pl.56. 110), LRPW:F1, LRPW:F2 (Ian47), LRPW:F42 (Ian41), LRPW:F51, (Ian36), LRPW: Late (Ian49,50, 51), LRPW (Ian56). **Date** BA? **E.Imp,** M.Imp**? L.Imp, LAnt, EMed.**
V044	617950/4526500, IGM F° 188 I S.E. Vinson (1972) 72, fig 15, 17. Casa San Paolo. Subsequent excavation: Vinson (1974, 1975, 1978). Perennial spring 400m to S. Area uncertain. Alt 418m. **Found:** Lithics, incl. arrowhead (Pl.50. 2), blade frag; various Neo wares incl Pl.52. 51, Matera scratched ware; ?Eneo notched rim (Pl.54. 73); various BA wares incl. MBA cup with handle (Pl.55. 84), FBA bowls with in-turned rims (Pl.56. 101, 102). See the excavation reports for more Neo and BA material. Also, found in excavation, "Byzantine graves", probl. Lombard, not yet published. **Date Neo**, Eneo?, **BA**, **FBA, EMed**.
V045	617150/4524400, IGM F° 188 I S.E. Vinson (1972) 72. On plateau between T. Gravina to W and tributary to E. Perennial well 400m E. Site of uncertain size. Alt 400m. **Found:** impasto, BG, ARS, WMCW; dol, tile. *Noted:* BG:Mobase321C (end C3BC), ITS, ARS:F7, ARS:F8A (2), ARS:F9B, ARS:F14 or F16. **Date** BA? **E.Hel**, **E.Imp, M.Imp**, **L.Imp. L.Ant**
V046	6169504529100, IGM F°188 I S.E. Vinson (1972) 72, fig 14. On S facing slope below scarp of Murge near access route to plateau and ca.500m from edge of drained lake of the Pantano. Cistern 300m to SSW. Area 400m². Alt 450m. **Found:** Obsidian, flint, Neoimpasto. *Noted:* 2 frags obsidian blades, 1 frag flint blade, 1 frag chert blade, 4 NeoImpr, 2 Neo figulina (Pl.54. 63), Eneo (Pl.54. 71) 1 ws; 1 black burnished. **Date Neo**, **Eneo**, FBA?
V047	616950/4526100, IGM F°188 I S.E. Vinson (1972) 72, fig 15. On plateau above E bank of T. Gravina. Seasonal well ca.400m SE. Thick distribution. Area 1,600m². Alt 410m. **Found:** 2 worked chert flakes, Molfetta impr, red-on-buff, and Matera scratched wares; undec impasto. *Noted:* 2 NeoImpr rocker (Pl.52. 47), 2 painted (Pl.53. 61, 62). **Date Neo.**
V048	616450/4525700, IGM F°188 I S.E. Vinson (1972) 73, fig 15, 17. On spur between T. Gravina and tributary stream. These constitute the only source of water in vicinity. Area 3,700m². Alt 410m. **Found:** Stone tool, Neo red-on-buff, NeoImpr, Matera scratched, and Serra d'Alto wares; BA burnished. **Date Neo, BA**.
V049	616950/4525400, IGM F°188 I S.E. Vinson (1972) 73. On plateau above E bank of T. Gravina (150m W). No other perennial water source in vicinity. Site of uncertain size. Alt 410m. **Found:** NeoImpr and painted, HMCW, BG, ARS, WMCW. *Noted:* 3 Neo (1 impr, 1 figulina, 1 handlspring), SG, ARS:C3EC4. **Date Neo, E.Hel, M.Imp.**
V050	615450/4529300, IGM F°188 I S.E. Vinson (1972) 73. Stream from Murge 250m E. Cisterns 200m and 300m S. Area 1200m². Alt 490m. **Found:** NeoImpr incl. Pl.51. 35, and red-on-buff; WMCW; daub. *Noted:* 1 pedestal base (Pl.52. 50), 2 figulina. **Date Neo** with later spor.
V051	615650/4528800 IGM F°188 I S.E. Vinson (1972) 73, fig 15, 17. Near Jazzo Lama Cantarella on S facing slope below Murge on access route to plateau. 2 cisterns 300 and 400 m to NW. Area 7500m². Alt 455m. **Found:** Obsidian blade, NeoImpr incl. Pl.51. 29, Neo painted, BA incl. black burnished, GM, WMP. *Noted:* 3 figulina, 7 BA coarse impasto incl. rim (Pl.55. 92), ws with cordon (Pl.55. 81), 1 burnished strap handle (Pl.55. 85), 3 GM:lateC8BC n incl. Pl.56. 103, 105. **Date Neo, BA, FBA, EIA**.
V052	615750/4527400, IGM F°188 I S.E. Vinson (1972) 73, fig 15. On low spur between 2 streams N of Mass. S Mauro. Seasonal well 150m W. Site of uncertain size. Alt 430m. **Found:** BA black and brown burnished; WMP, BG, WMCW, lmwt. *Noted:* BG cup cf. No.607 (Fig.58. 113). Further survey by Striccoli and Melodia who found 136 BA mostly from N of the Mass. and 40 "epoca classica". **Date BA, LIA**. (LIA material probably from San Mauro). Further discussion under SM in this List.

V053	615650/4525700 IGM F°188I S.E. Vinson (1972) 73. On plateau above W bank of T. Gravina. 2 perennial springs 200m to W and SW. Area 100m². Alt 420m. **Found:** BG, WMCW, stone tessera. *Noted:* BG cf. No.767:midC5BC; BG:MI92:C4BC; BG lipped bowl (Fig.58. 117). **Date LIA, E.Hel**.
V055	614150/4529600, IGM F°188 I S.E. Vinson (1972) 74. South slope of Murge near Jazzo Martora. Cistern 150m S. Site of uncertain size. Alt 465m. **Found:** 1 Worked flint (Pl.50. 21), 1 worked white chert blade, impasto some BA/EIA incl. Pl.54. 74, ?local geom. **Date BA**, EIA.
V056	614050/4524800, IGM F°188 I S.E. Vinson (1972) 74. No spring or well in the vicinity. Area 900m². Alt 410m. **Found:** 1 brown chert core; impasto, WMP, BG; ARS, WMCW. *Noted:* RF, ARS:F50B, ARS:F53, ARS:F57, ARS:F59, ARS:F61, ARS:F61B, ARS:F64, LRPW. **Date** Prehist, **LIA**, **L.Imp, LAnt**.
V057	614230/4524000, IGM F°188 I S.E. Vinson (1972) 74. Crest of hill. Perennial well 250m N. Area 1600m². Alt 426m. **Found:** Worked chert, NeoImpr and red-on-buff. **Date Neo**.
V058	613850/4529400, IGM F°188 I S.E. Vinson (1972) 74, fig 15. S facing slope near Jazzi Purgatorio and Martora. No water in vicinity except for seasonal streams at the Jazzi. Site of uncertain size. Alt 450m. **Found:** HMImpasto, Neo Bellavista handle (Pl.54. 66). *Noted:* 1 NeoImpr, 2 Neo Figulina,. **Date Neo (**Late).
V059	613050/4529900, Vinson (1972) 74, fig 17. NE of Jazzo Lamadama on torrente from Murge. No permanent spring in vicinity. Site of uncertain size. Alt 530m. **Found:** 2 chert lithics, EIAimpasto? (3 retained). **Date** Prehist, EIA?
V060	613050/4527100, Vinson (1972) 74, fig 16. SW facing slope. Seasonal well 200m NE. Stream 400m N. Area 1200m². Alt 430m. **Found:** NeoImpr, burnished figulina, slipped WMCW. *Noted:* 1?Eneo (Pl.54, 68), 1 figulina. **Date Neo,** Eneo?
V061	613550/4526300, IGM F°188 I S.E. Vinson (1972) 74, fig 16, 17. Promontory facing NW. 2 seasonal wells at site. Site of uncertain size. Alt 390m. **Found:** Lithic, NeoImpr and red slip; BG, GG, WMCW. *Noted:* BG:Mo4373A2 (last ¼ C4 BC). **Date Neo**, **LIA, L.Hel**.
V062	613950/4526000, IGM F°188 I S.E. Vinson (1972) 74, fig 16. At W edge of plateau of Serra Rosiello above valley of Canale S. Francesco. Perennial well 300m NE. Area 4000m². Alt 425m. **Found:** 1 scraper (Pl.50. 8) 1 point (Pl.50. 6) 1 blade (Pl.50. 7), 1 obsidian blade frag (Pl.50. 24), debitage (Pl.50. 22); NeoImpr (10 retained incl. incl. 2 rocker (Pl. 51. 33, 41)); painted (3 retained incl. 1 Serra d'Alto rim (PBSR Fig.16C) and Pl.53. 60)); 3 figulina incl.Pl.54. 64, 1 BG, 1 ARS, WMCW. **Date Neo** (middle), LIA?, E.Hel?, M.Imp? L.Imp? LAnt?
V063	Vinson (1972) 74. No water in the vicinity. Perhaps scatter from Site 475. Area 900m². Alt 440m**. Found:** BA, incl. black burnished. **Date BA**.
V064	Vinson (1972) 74, fig 16, 17. Close to seasonal springs. Perennial spring 500m NW. Thick distribution. Area 10,000m². Alt 445m. **Found:** 2 arrow heads 1 complete, 1 frag; many BA sherds, some ?Neo and ?EIA. **Date BA**.
V065	612455/4527981, Vinson (1972) 74. No water in the vicinity. Area 400m². Alt 450m. **Found:** NeoImpr; BG, WMCW. *Noted:* 3 NeoImpr. **Date Neo**, LIA? E.Hel**?**
V066	612250/4528200, Vinson (1972) 74. No water in the vicinity. Area 200m². Alt 450m. **Found:** impasto, ARS, amph, tile. *Noted:* ARS C:F14 (Ian10), ARS:F50 (2), ARS:F52, ARSx:C4, ARS:F59B, ARS:F64, ARS:F67. **Date** BA?, **M.Imp, L.Imp**.
V067	612150/4528400, Vinson (1972) 74. Seasonal spring 350m NE. Perennial spring 450m NE. Site of uncertain size. Alt 440m. **Found:** impasto, GG, WMCW; tile. *Noted:* Eneo notched rim (Pl.54. 72), **Date** Eneo, **L.Hel**.
V068	611855/4529181, IGM F°188 I S.O. Vinson (1972) 74. Seasonal well 350m NW. Perennial well 500m SW dense distrib. Area 22,500m². Alt 450m. **Found:** Impasto, WMP (9 retained), GN, BG (12 retained), RG, SG, GG incl. Fig.58. 120; 2 ARS, WMCW, dol, amph, quern, tile. *Noted:* 1 LRPW. **Date** Prehist, **LIA**, **E.Hel, L.Hel, E.Imp, M.Imp**. **L.Imp**, **LAnt**. This is likely to be the same as the site on the Mass. Villa Filippi reported by Iannetti (pp.59-64) She summarizes a report to the Superintendency in Taranto which mentions "various tombs rich in fragments of pottery of pink clay (impasto rosa) painted with large red bands (*grandi fasce rosse*) and Christian lamps" found in a survey. A trench 2x3m was reportedly dug and the contents deposited without documentation with the Superintendency. In her analysis of the pottery Iannetti notes 1 ANF:LRA8 and refers to another 5, 1 ITS, 2 ARS, 2 ES, 9 plain incl. 1 C4-6, 5 Ckpt, 5 LRPW, 1 Lamp C5AD, 1 Lampx. Iannetti (presumably from information in Taranto) attributes the Trench to "Vinson e l'equipe canadese" who certainly did NOT dig it.
V069	611555/4528581, IGM F°188 I S.O. Vinson (1972) 74. Perennial well 150m N. Site of uncertain size. Finds mostly Neo. Alt 420m. **Found:** NeoImpr (5 retained); BA impr cordon and black burnished; 1 BG. **Date Neo, BA**, with LIA spor.
V070	611755/4530581, IGM F°188 I S.O. Vinson (1972) 74. Beside T. Costa. Perennial well at Mass. Costa. Area 200m². Alt 475m. **Found:** NeoImpr, BA; quern frags. pumice. **Date Neo**, **BA**.
V071	610950/4529800, IGM F°188 I S.O. Vinson (1972) 75. Seasonal well and stream 250m E. Area 2000m². Alt 445m. **Found:** BG, WMCW; quern, tile. *Noted:* BG:Mo2252 (C2BC). **Date L.Hel**.
V072	610530/4529550, IGM F°188 I S.O. Vinson (1972) 75. Low spur between 2 streams. Cistern 250m W. Nearest stream 250m E. Area 2500m². Alt 444m. **Found:** NeoImpr, buff burnished, HMCW; ARS (C1–C2AD), WMCW; quern, teg. *Noted:* ITS (Ian 2), LRPW (Ian53), Ckpt (Ian60, Ian62, Ian64=L Ant). **Date Neo**, **E.Imp**, **M.Imp, LAnt**.
V073	610055/4530381, IGM F°188 I S.O. Vinson (1972) 75. Nearest perennial water is a row of springs on SS 97 on the other side of the ridge, of which the nearest is ca.150m away. A seasonal stream at bottom of slope 100m SE. Area 600m². Alt 451m. **Found:** NeoImpr and red-on-buff; quern frags. **Date Neo**.
V074	609555/4530481, IGM F°188 I S.O. Vinson (1972) 75. Row of springs at approx 200m intervals to W on SS 97, the nearest being ca.200m away. Area 1600m². Alt 430m. **Found:** RF, BG, SG, GG, ARS, amph, quern, glass. *Noted:* BG rim (Fig.58. 115); BG:MI96, BG:MI139, BG:LC4EC3, ARS:C4EC5 (Ian14), ARS:F50B, ARS:F94, LRC:LC5, LRPW (Ian54), Ckpt C4–C7 (Ian58, 63, 66, 67, 68). **Date LIA, E.Hel, L.Hel**, **L.Imp, LAnt.**

V075	609355/4532081, IGM F°188 I N.O. Vinson (1972) 75, fig 16. Below scarp of Murge near access track to plateau. Water hole 300m N. Perennial wells ca.1km SW. Area ca. 10ha. (Castoldi 2014, 13). Alt 490m. = Iazzo Fornasiello **Found:** BA, WMP; BG, SG, GG, WMCW, 2 lmwts, amph; dol, quern, tile. *Noted:* black burn impasto, ITC, RF, WMP:C4, BG:Mo4382a1, Mo4124a1, Mo4382A1, Mo4382A1 (all last ¼ C4BC); SG:Mo3461A1 (C3BC?), bronze bowl rim. Recent excavations have produced much evidence for occupation of the site between the mid C7 and end C5 BC, and some ITS is reported as found on the surface: Castoldi ed. 2014. **Date FBA, MIA LIA, E.Hel, L.Hel. E.Imp.**
V076	608855/4531381, IGM F°188 I N.O. Vinson (1972) 75, fig 14. Perennial well 300m S and perennial spring 500m S. Site of uncertain size, perhaps part of Site 450. Alt 445m. **Found:** NeoImpr and Matera scratched; BA/EIA impasto, WMCW. *Noted:* NeoImpr 1, BA bowl (Pl.55. 83) **Date Neo, BA.**
V077	608755/4530581, IGM F°188 I N.O. Vinson (1972) 75. By a perennial well. Area 100m$^{2.}$ Alt 425m. **Found:** BG, ARS. *Noted:* BG:CP296, BG (Fig.58. 114), ARS:C2, LRPW:F45. **Date LIA, M.Imp, LAnt.**
V078	607355/4533081, IGM F°188 I N.O. Vinson (1972) 75, fig 16, 17. S facing slope below scarp of Murge. At a perennial well. Area 2500m^2. Alt 480m. Now see Striccoli and Melodia 1995, 238-241 Mass. Filieri. They report finds over ca. 1ha. incl. 45 coarse frags from pithoi, jars etc, 64 semi-fine and 29 fine. **Found:** 1 Lithic, BA impasto: 6 returned incl. rim with impr cordon (Pl.55. 82), 1 notched cordon, 1 carinated bowl (Pl.55. 90); some "archaic local geom". **Date BA**, MIA?
V079	607555/4531181, IGM F°188 I N.O. Vinson (1972) 76. Near valley bottom. At perennial water hole. Area 400m^2. Alt 425m. **Found:** TS, ARS, WMCW; amph, tile. *Noted:* ARS:F9, Rom unpainted (Ian27), Ckpt (Ian61 LAnt). **Date E.Imp, M.Imp, LAnt.**
V080	607355/4531381, IGM F°188 I N.O. Vinson (1972) 76. Near valley bottom. Perennial water hole 200m SE. Area 900m^2. Alt 425m. **Found:** NeoImpr, impasto black burnished, BG; tile. **Date Neo**, **FBA**, LIA? E.Hel?
V081	606855/4532181, IGM F°188 I N.O. Vinson (1972) 76, fig 16, 17. At Fontana Adogna (perennial). Near valley bottom and near entrance to a pass to the Murge. A large complex. Area ca.500,000m^2. Alt 450m. **Found:** Obsidian core (Pl.50. 26), Flint blade (Pl.50. 18), NeoImpr (4 retained incl. Pl.51. 28; 43), scratched ware, red-on-buff ware (Pl.53. 56), figulina; GN, BG, SG, GG, TS, ARS, LRPW, WMCW, amph; dol, teg, imb. *Noted:* BG:ribbed, BG:MI141, SG:MI164, ARS:F8A, ARS:F9A, ARSx:C2, ESB2 (Ian20), Lamp:LC1/EC2, LRPW (Ian46). **Date Neo, LIA, E.Hel, L.Hel, E.Imp, M.Imp, LAnt.**
V082	605655/4532281, IGM F°188 I N.O. Vinson (1972) 76. Well 500m SE. Area 400m^2. Alt 440m. **Found:** Flint blade frag, NeoImpr (2 retained incl. Pl.52. 49, red-on-buff incl. Pl.53. 58, figulina. **Date Neo.**
V083	605355/4532681, IGM F°188 I N.O. Vinson (1972) 76. In valley bottom. Perennial well just W, beside Canale Capo d'Acqua. Area 400m^2. Alt 445m. **Found:** impasto; RF, BG, SG, GG, WMCW; quern, tile. *Noted:* BG:LC4/C3, BG:Mo2234A1 (C3BC), BG:CP315. **Date** Prehist, **LIA, E.Hel, L.Hel.**
V084	605155/4535281, IGM F°188 I N.O. Vinson (1972) 76, fig 14, 16. Mass. Melodia. Watering hole at Mass. Cisterna just N of it. Below scarp of Murge at point where 2 tracks lead onto plateau. Area 22,500m^2. Alt 500m. **Found:** BA burnished, impasto, GM. **Date BA, FBA/EIA**.
V 0 8 5 / V137	603055/4532281, IGM F°188 I N.O. Paradiso area. Plateau. Seasonal spring 250m N and 2 more 450m SE. *Addendum* to Vinson (1972) 76 no. 85. Very large Hel. site (400 x 250m min). Prehist material at W end. Area 100,000m^2. Alt 450m. **Found:** Flint flake, HMCW; much BG, SG, GN, local GN, RF plate frags, RG, GG, Ckpt, WMCW, mortarium, amph, lmwts; tile. *Noted:* 4 ?FBA/ EIAimpasto. **Date FBA/EIA**, **LIA, E.Hel, L.Hel.**
V086	616550/4518500, IGM Fo188 II N.E. NE of access road to Mass. Secondino. Main site under wheat. Slight NE slope. 2 seasonal wells 100m S at Mass. and a perennial well 200m further S. Alt 330m. **Found:** 1 TS, Ckpt, WMCW; teg. **Date E.Imp**.
V087A	614650/4517234, IGM Fo188 II N.E. Near the Mass. Zingariello. [Perennial well 200m N]. Ploughsoil and wheat stubble. Alt 435m. **Found:** Abraded 1 ARS, WMCW (6), imb. An early Lombard ring fibula inscribed LUPU[S] BIBA[S] from the Fond. Santomasi is said to come from Località Zingarello: D'Angela 1994, 82. See also our site 907. **Date E.Med**.
V087B	615250/4517600, IGM Fo188 II N.E. Mass. delle Grotte, W of farm buildings, near head of torrente. Perennial well 200m S. Area ca.1,500m^2 (300 x 50m), limited by wheat. Sherds grouped in areas ca.5m across, some delimited roughly by circles of field stones, suggestive of hut foundations. Alt 450m. **Found:** Flint blade frag, 2 NeoImpr; Eneo bordered dot punctate, knobbed ware; BA impr cordon, and fine burnished, incl. tongue handles, *ansa a corno*, lug handles; quern frags. **Date Neo, Eneo**, **BA**.
V088	610155/4522581, IGM F°188 I S.O. On a terrace at about the 400m contour level, below the Mass. Giordano. Nearest source of water the Pentecchia river 200m S. Seasonal wells 200m N on other side of ridge. Nucleus ca.75m across. Area 4400m^2. Alt 400m. **Found:** ARS (incl. 1 370-440 AD, 1 400-450 AD), Ckpt, WMCW, amph, lmwt; quern frags, tile, decorative granite. **Date L.Imp**.
V089	608855/4523381, IGM F°188 I S.O. The Gravina-Venosa Road, tip of promontory ca.200m S of the Mass. Lamacolma. Perennial well just S of Mass. The bulk of the prehist material was found to the W, closer to the farmhouse. The modern road cuts through the Roman site. Nucleus ca.100m across. Area 7900m^2. Alt 445m. **Found:** Flint core, débitage; probl BG, badly abraded. Most sherds late ARS (some EC4/MC5AD), Ckpt, WMCW incl. some with red slip. Addenda 1993: 4 ARS, 5 cookpot, 1 RRS, 4 plain. *Noted:* 2 ARS:F8, 2 ARS:C2-3. **Date** Prehist, LIA? E.Hel? **M.Imp. L.Imp.**
V090	608155/4523281, IGM F°188 I S.O. 1.75 km Located around the Mass./Jazzo Lamacolma complex. Perennial well just S of Mass. and spring just S of the Jazzo. Nucleus ca.40-50m across. Area 1600m^2. Alt 456m. **Found**: WMP, 3 BG; lmwt; dol, quern; tile. **Date LIA.**
V091	608955/4521181, IGM F°188 II N.O. Seasonal well across road. Seasonal spring and cistern 600m W. Perennial well 600m E. Nucleus ca.20m across. Area 300m^2. Alt 400m. **Found**: BAimpasto, poss WMP (badly abraded); BG(C3/C2?), WMCW; tile. Probl same as our Site 715. **Date BA**, **LIA, E.Hel.**

V093	607664/4521097, IGM F°188 II N.O. ca.500m half-way between Mass. La Cattiva and Mass. Vagnari. (This is the site of the excavations at Vagnari). On low SW facing slope between 2 tributaries of the Basentello. No other water source in the vicinity. Thick distribution ca.400m across. "This is far and away the largest and one of the richest Roman sites that we found in Apulia, only sites V16 and V165 being comparable in apparent wealth". Now identified as a *vicus*, centre of an imperial estate (Small 2011). Area 125,800m². Alt 280m. **Found:** 3 BG; TS incl. 2 cup rims, plate rim, base stamped with L. GELLI (*in planta pedis*): (Sidebotham 1980) 243; much ARS, LRPW, 4 lamp frags, amph; teg, ?terracotta pipe. **Date LIA, L.Hel**, **E.Imp, M.Imp**, **L.Imp, LAnt, E.Med.**
V094	605355/4521581, IGM F°188 I S.O. In the Basentello valley which seems to be the only source of water. The topography no longer bears any relation to the map because of a dam and ambitious flood control project at the junction of the Roviniero and Basentello rivers. Sites V7 and V8 no longer exist. It is unusual in the extreme to find a Bronze Age site in such a low-lying region. The finds were thinly scattered over an area ca.150m across, suggesting a fairly large settlement for the period. It may have been a wintering station for flocks, but the quern frags and location strongly suggest farming. Area 18,000m². Alt 240m. **Found**: Débitage, BAimpasto, a few pieces of black-burnished ware; quern. **Date BA**.
V095	604055/4522381, IGM F°188 I S.O. Crest of hill at the SW end of the dam. Basentello is ca.200m N and a tributary ca.200m S. No other water in vicinity. Given its location overlooking Sites V7 and V8, this may have been a watch-tower or defensive post for the Madama del Piede complex. Area 100m². Alt 275m. **Found:** Badly abraded WMCW, 2 ?BG. **Date** LIA? E.Hel**?**
V096	603055/4522381, IGM F°188 I S.O. A wide thin scatter S of the Mass. d'Errico at Point 303. Seasonal well at Mass. Alt 303m. **Found:** 2 BG, WMCW, Ckpt; dol, quern. **Date** LIA? E.Hel?
V097	602455/4522281, IGM F°188 I S.O. ca. half-way between the Mass. d'Errico and Mass. Sargente. Stream 50m N. Seasonal well 600m E at Mass. d'Errico. Site ca.100m square. Area 10,000m². Alt 310m. **Found:** Chert core, probable BA (badly abraded); BG, WMCW, Ckpt, 1 ARS, amph; tile, quern. **Date** BA? LIA? E.Hel? M.Imp?, LImp? LAnt?
V098	600155/ 4522381, IGM F°188 IV S.E. At Point 347, SE of Site V11 where there is a perennial spring. Stream close by. Main site probl. upstream but it was under wheat when explored. ca.10m across. Now under the reservoir of the Diga. Area 80m². Alt 347m. **Found**: Flint débitage; a few impasto. *Noted:* 1 débitage (Pl.50,.10). **Date BA**.
V099	597755/4525581, IGM F°188 IV S.E. Mass. Regina. Seasonal spring at Mass. Scatter over 300m. Alt 380m. **Found:** 2 WMCW; dol, tile. **Date** Unclear.
V100	595655/4525481. IGM F°188 IV S.E. ca. Point 393. Perennial well ca.550m W. Probably several buildings, coarse wares at either end, fine wares in the centre. Alt 390m. **Found:** 3 EIAimpasto incl. urn handle; BG; Ckpt, WMCW, amph; dol, quern; teg, imb. **Date EIA**, LIA? E.Hel?
V101	591255/4527481. IGM F°188 IV S.E. ca.600m NW of Mass. Restaino. NW slope. Perennial well 250m NW. Neo sherds in separate 5 x 5m areas on hill. Alt 475m. **Found:** Calcite blade frag, flint and chert cores, stone grinder, abraded Neo HMCW, figulina; abraded BG, Ckpt, amph and smaller vases; lmwt; dol, tile. **Date Neo**, ***LIA? E.Hel?***
V102	590955/4528581. IGM F°188 IV S.E. At point 388. A stream flows past it. A perennial spring ca. 550m W. Alt 388m. **Found:** ?figulina, HMCW; 1 ?BG; 1 ARS:C2AD; tile. **Date** Neo?, LIA?, E.Hel? L.Hel? **M.Imp**.
V103	580355/4535481. IGM F°188 IV S.O. 200m SE of Mass. San Sudare. Permanent spring at Mass. Thin scatter. Alt 400m. **Found:** Badly abraded plain and CW; tile. **Date** Unclear.
V104	587555/4529781, IGM F°188 IV S.O. On creek below spring. No other water in the vicinity. Alt 405m. **Found**: Neo or BA HMCW, 1 fine ware. **Date** Neo? BA?
V105	585059/4531478, IGM F°188 IV N.O. A little E of Pozzo Paglione, perennial well. Alt 400m**.** Probably part of SiteV17 in the Neolithic**. Found:** Obsidian blade frag (Pl.50, 25); chert blade (Pl.50. 3); débitage (Pl.50. 11,12); abraded figulina, undec CW; local copy of Bellavista handle (Pl.54. 67) and rim sherd; Eneo knobbed and coarse black burnished wares; EIA abraded fine and CW, poss abraded BG, 1 Ckpt; lmwt; quern tile. *Noted:*1 chert sickle blade? (Pl.50. 4). **Neo, Eneo**, EIA? LIA? E.Hel? L.Hel?
V106	582555/4532581. IGM F°188 IV N.O. Difesa Nuova area W of Point 471. Perennial well ca.500m N. Diffused scatter over several hundred m. Alt 471m. **Found:** Abraded figulina, HMCW. **Date** Neo?
V107	581355/4533281, IGM F°188 IV N.O. W of Palazzo San Gervasio at Point 394. At foot of N facing scarp. Permanent spring 200m to W. Alt 394m. Probably the same site as Marchi 2010, no. 897, mid-imperial. **Found:** 3 poss figulina, 1 HMCW; 1 ARS:LC1/EC2AD, 1 WMCW; tile. **Date** ?Neo, **M.Im**p.
V108	580755/4533781. IGM F°188 IV N.O. At Ponte Rotto which crosses the Fiumara di Venosa. No other water source in the vicinity. Tile in field SE of bridge and in road ca.100m W of bridge. Alt 356m. **Found**: Teg. **Date** Rom?
V109	580255/4533681. IGM F°188 IV N.O. W of Ponte Rotto, both sides of road. Perennial spring 200m NW. Wide thin scatter over 200m. Nucleus ca.30m across on rise S of road. Area 40000m². Alt 375m. **Found:** Lithics: blade frag (Pl.50. 5), débitage; BA impr cordon (Pl.55. 77) and undec CW; abraded BG:C2 /C1(?), WMCW, 2 badly worn ARS. **Date BA,** L.Hel? M.Imp? L.imp? L.Ant?
V115	616150/4521700, IGM Fo188 I S.E. ca. 500m W of Fontana St. Angelo. Thin scatter. Alt 370m. **Found:** 1 débitage, figulina, HMCW; quern, tile. **Date Neo** and later.
V116	614550/4522600, IGM Fo188 I S.E. Near secondary road between Gravina and Spinazzola. NW facing slope. Field immediately NW of Fontana S. Giacomo (perennial). Alt 380. **Found:** Poss Neo wares; BG:C2/C1BC, 2 Ckpt; much tile. **Date** Neo? **L.Hel.**

V117	612850/4522700, By secondary road between Gravina and Spinazzola. Just SW of Podere S. Salvatore. Fontana Dolcecanto 200m NW. Nucleus ca.30m across. Area 700m². Alt 420m. **Found:** 7BA, 7HMCW; BG:C3/C2BC, TS, ARS incl. 1 80/90 - 160 AD, many Ckpt; dol, tile. **Date BA**, **E.Hel**, L.Hel? **E.Imp**, **M.Imp**.
V118	612550/4523200, On secondary road between Gravina and Spinazzola. S of road between Points 404 and 418. Stream 50m E. Wells 400m NW and E. Fontana Dolcecanto 500m SE. Mostly under wheat, but apparently some 300m across. Area 70,000m². Alt 404m. **Found:** Blade frag, 5 débitage, NeoImpr, HMCW. **Date Neo.**
V119	611150/4523400, IGM F°188 I S.O. ca.1.5 km Between Points 426 and 424. Stream 200m W. Perennial well 500m SE. Alt 425m. **Found**: Obsidian blade frag, 1 flint and 2 chert débitage. **Date Neo.**
V120	611050/4524400, IGM F°188 I S.O. The secondary road between Gravina and Spinazzola W of Podere S. Giuliano. Seasonal well at site. Stream of Canalecchie 500m E. Thin scatter of débitage over ca.200m square. Large but thinly occupied site. Area 40,000m². Alt 420m. **Found:** Débitage; 3 BG, 1 WMCW all abraded; tile. **Date** Prehist, LIA? E.Hel?
V122	609055/4524381, IGM F°188 I S.O. Mass. Sgarrone. Water hole by stream 300m SW. Under wheat but reportedly a large site. The site shows well on an aerial photograph from which its size has been estimated at ca. 7ha. Alt 450m. **Found:** Scraper, 1 flint and 4 chert débitage; HMCW?EIA, BG:C4/C3BC, Ckpt, amph; tile. **Date** Neo?, EIA?, **LIA**.
V123	596955/4537581, IGM F°188 IV N.E. N of Mass. Spada. 2 seasonal wells at Mass. Alt 430m. **Found:** Débitage, chert blade frag, figulina, HMCW, hut daub; badly abraded WMCW; tile. **Date**, **Neo** and later.
V124	596755/4536081, IGM F°188 IV N.E. ca.500m N of the Mass. Paredano. Perennial spring 150m E. Alt 410m. **Found:** WMCW, Ckpt; quern frags. **Date** unclear.
V125	594355/4535981. IGM F°188 IV N.E. ca.500m SE of Mass. Santeramo, S of dirt road. Perennial spring 200m E. Alt 340m. **Found:** 1 badly abraded EIA; 6 WMCW. **Date** EIA? spor. unclear.
V126	593955/4537781, IGM F°188 IV N.E. Between 2 small streams in a well-watered valley between rolling hills. No spring in vicinity. Quadrone area, around Point 346. Alt 346m. **Found**: Projectile point, chert scraper; 2 WMCW. **Date** Prehist and later spor.
V127	593555/4536481. IGM F°188 IV N.E. ca.250m W of Mass. Santeramo. Perennial well near Mass. Alt 360m. **Found:** Abraded EIA; 1?ARS, WMCW; quern. **Date EIA**, Rom?
V128	591955/4538581. IGM F°188 IV N.E. ca.500m W of Mass. Mazzilello. In valley bottom. Perennial spring at Mass. Alt 270m. **Found:** 2 ?EIA abraded; 8 WMCW; tile. **Date** EIA?, unclear.
V129	591755 /4538481. IGM F°188 IV N.E. In bottom of Vallone Locone. No other water source in vicinity. Slightly SW of Site 355. Alt 270m. **Found:** 2 HMCW, 2 ?local geom; 1 ARS, 24 battered WMCW, Ckpt. **Date** EIA? M.Imp? L.Imp? LAnt?
V130	595255/4532381. IGM F°188 IV N.E. Mass. Serrapalomba. Thin scatter. No water source in vicinity. Alt 430m. **Found:** ?BG, Ckpt, WMCW; tile. **Date** LIA? E.Hel?
V131	614150/4524200, IGM F°188 I S.E. ca.300m S of Point 431. Slope SSW. Perennial well 100m E. Alt 410m. **Found:** Débitage, NeoImpr, crude Matera Scratched Ware, figulina, biscuit rocker (see Vinson, 1978, 450) hut daub; 1 TS, 1 Ckpt. **Date Neo, E.Imp.**
V132	606055/4529781, IGM F°188 I S.O. End of promontory SE of Poggiorsini. Perennial well 550m NW. Stream 250m E. Site ca.40m square. Area 1300m². Alt 454m. **Found:** 13 NeoImpr incl. 1 with repair hole, hut daub. **Date Neo.**
V133	605055/4530981, IGM F°188 I N.O. Overlooking perennial Fontana Trigna, W of Poggiorsini. Alt 450m. **Found:** BG, RG, TS incl. base frag of cup or plate stamped]NOTH[I]: Sidebotham (1980) 244; ARS:EC2/LC2AD. **Date LIA? E.Hel? E.Imp, M.Imp.**
V134	602680/4538481, IGM F°188 I N.O. Plateau, Perennial Fontana Trigna 350m SW. Wide variety of forms and wares in a dense distribution. Site 150-200m across. Area 25,000m². Alt 460m. The site can be identified with the località Cafieri where Striccoli & Melodia (1995. 247-253) report finding material of the Neo and BA periods, and of the C5-4 BC and C1-2 AD. **Found:** BA incl. axe and tongue handles (2 with triangular perforations) and 1 ws with incised and dot punctate *dente di lupo* patterns; BG, TS, ARS incl. EC5AD rim, WMCW, lamp frag. **Date BA**, LIA? E.Hel? **E.Imp, L.Imp.**
V135	603955/4530981, IGM F°188 I N.O. Around Point 466, ca.1 km W of Fontana Trigna. Plateau. No water in vicinity other than the spring. Thin scatter across 500m. Area 200,000m². Large but thinly occupied site. Alt 466m. **Found:** Débitage, probl BAimpasto, late BG, ARS, WMCW; teg. all badly abraded. **Date** BA, **L.Hel**, M.Imp? L.Imp? L.Ant?
V136	603355/4531581, IGM F°188 I N.O. Monte Grosso area. Plateau. Perennial spring 250m N. Thin scatter across ca.75m. Area 4400m². Alt 460m. **Found:** Débitage, NeoImpr, 1 BG. **Date Neo**, later spor.
V138	605455/4533281, IGM F°188 I N.O. On SS 97. Near valley bottom. Nearest water a perennial well by the Canale Capo d'Acqua ca.750m S. Slightly NW of km 47, N of railway tracks. Light scatter over ca.30m. Area 700m². Alt 450m. **Found:** Débitage, 2 HMCW. **Dat**e Prehist.
V139	604988/4530995, IGM F°188 I N.O. On SS 97. Near bend in Canale Capo d'Acqua. Perennial watering hole at site. Alt 440m. **Found**: Débitage, poss figulina, daub frag; HMCWBA and 1 Apennine brown burnished; WMCW. **Date** Neo?**, BA.**
V140	603755/4534881, IGM F°188 I N.O. ca.500m SE of perennial Fontana del Tomolo. In valley bottom. Nucleus 30 x 100m. Area 3000m². Alt 440m. **Found:** BA? and EIA impasto; BG plate and cup rims, WMCW. **Date BA**, EIA, **LIA? E.Hel?**
V141	603855/4535781, IGM F°188 I N.O. ca.200m E of Point 454. Low SW slope near valley bottom. No water in vicinity. Alt 460m. **Found:** BAimpasto, brown burnished carinated bowl frag; WMP, CW. **Date BA, LIA**.
V142	602455/4522281, IGM F°188 I N.O. On S facing slope below scarp of Murge. No water in vicinity. Nearest is a perennial spring 1,5 km SE. Just N of Mass. Sacromonte. Alt 475m. **Found:** Neo red painted, figulina; HMCWBA bases, lug, strap handles, ws, brown burnished; 3 ?EIA, 1 ARS; quern frags; teg. **Date Neo, BA,** EIA? M.Imp? L.Imp? L.Ant?

V 1 4 3 / V144	600555/4535181. IGM F°188 IV N.E. These probl. form one site, near the Fontana Zezza. Alt 430m. **Found:** Chert and obsidian blade frags, chert scraper, débitage, abraded figulina, 1 NeoImpr; 1 WMCW, 2 Ckpt, amph; quern, tile. **Date Neo** and later.
V145	600455/4535481. IGM F°188 IV N.E. Just N and W of cluster of farmhouses. N facing slope. Perennial spring 150m SE. ca.100m across, partly under wheat. The Roman material was chiefly at the top of the hill, the Neo material to the S of the vineyard. Area 7900m^2. Alt 425m. **Found:** Figulina, NeoImpr, burnished, HMCW wares; BG:C2/C1, 1 TS, 3 PRW, 2 ARS, Ckpt, WMCW, amph; teg, imb. **Date Neo**, **L.Hel, E.Imp,** M.Imp**?** L.Imp? L.Ant?
V146	599555/4536681, IGM F°188 IV N.E. ca.600m NE of turnoff for Andria from SS 97. SW slope. No perennial water source in vicinity. Seasonal stream from Murge nearby. Alt 425m. **Found**: 1 BG, WMCW; tile. **Date** LIA? E.Hel?
V147	598655/4537981, IGM F°188 IV N.E. W of road to Andria where it enters a pass through the Murge. No spring in vicinity but close to seasonal stream flowing down from Murge. The iron slag suggests that the laterite deposits at the top of the pass may have been worked in antiquity. Alt 370m. **Found:** Chert blade frag, débitage (Pl.50. 13); disk spindle whorl, Neo impasto, figulina; BA impasto (5 returned incl. impr cordon, 3 vestigial knobs or lugs); GM, GB, 1 BG, WMCW; quern, 5kg lump of iron slag, imb. *Noted:* 1 black burnished turban rimmed bowl, 1 GM bowl rim with hatched triangles C8BC, 1 GB C6BC. **Date Neo**, **BA**, **FBA/EIA**, **MIA**, LIA? E.Hel?
V148	595455/4533681, IGM F°188 IV N.E. Close to SS 97. ca.200m SE of Point 439. Perennial well 300m NE. Sparse scatter. Alt 440m. **Found**: WMCW, Ckpt. **Date** unclear.
V149	595255/4533781. IGM F°188 IV N.E. On SS 97. Slightly SW of Point 439. Perennial well 400m E. Thin scatter. Alt 440m. **Found:** 1 CWEIA; 1 TS, WMCW; tile. **Date** EIA spor. **E.Imp**.
V150	594855/4533781. IGM F°188 IV N.E. On SS 97. Just N of km 34. Perennial spring 300m NW. Thin scatter. Alt 465m. **Found:** 1 ?EIA; WMCW, Ckpt; quern. **Date** EIA spor, unclear.
V151	591555/4535781. IGM F°188 IV N.E. Immediately S of Spinazzola. Alt 375m. **Found:** 3 CWEIA; terracotta female figurine (C4 type); tile. **Date EIA**, **LIA**.
V152	589855/4539481. IGM F°188 IV N.O. N of Boschetto Spada area. NE slope. No water source in vicinity. Alt 300m. **Found:** Some EIA; 2 poorly fired BG probl C3/C2, Ckpt, WMCW, all abraded. **Date EIA**, **E.Hel.**
V153	589755/4534681. IGM F°188 IV N.O. Near SS 168. ca.400m N of km 41. Perennial wells 250m N and 300m E. Thin distribution over ca.100m Area 7900m^2. Alt 425m. **Found:** Chert projectile point, figulina, HMCW; Roman WMCW; quern, tile. **Date Neo**, Rom.
V154	589355/4534881, IGM F°188 IV N.O. N of SS 168. ca.150m S of Point 424. Perennial well 200m E. Valle Ciolola 250m beyond that. Alt 425m. **Found:** Débitage, figulina, HMCW. **Date Neo**.
V155	589255/4534581, IGM F°188 IV N.O. ca.300m SW of Point 424. Perennial well 300m N. Valle Ciolola to E. May continue Site 345. Thin scatter. Alt 425m. **Found**: ?Figulina, HMCW. **Date Neo**.
V156	589155/4534881, IGM F°188 IV N.O. Le Sette Casette area, N of SS 168. NE slope. Perennial well 425m NW. Streams 200m N. May continue Site V154. Alt 450m. **Found:** 2 Débitage, badly abraded figulina; some HMCW, poss BA. **Date Neo**.
V157	589055/4535681, IGM F°188 IV N.O. ca.300m SW of Point 412. Seasonal well 300m W. Valle Gira di Nibbio 250m E. Site ca.50m across. Area 2000m^2. Alt 415m. **Found:** Neo? crude spindle whorl, lithic end scraper; 1 ARS plate base; 2 LRC, terracotta leg from stand, high proportion Ckpt, WMCW some with red slip [=LRPW?], amph, dol, quern frags, tile. **Date** Neo? L.Imp? LAnt**?**
V158	589055/4535281, IGM F°188 IV N.O. N of SS 168 (Spinazzola to Palazzo S. Gervasio). NE slope. Perennial well 250m SW. Streams 200m NE and SW. Just N of Le Sette Casette area. Alt 400m. The site appears to correspond to Marchi's (2010) site 1060 which yielded undiagnostic impasto frags. **Found**: 2 débitage, 1 probable figulina, 8 HMCW. **Date Neo.**
V159	588055/4534181, IGM F°188 IV N.O. S of SS168 (Spinazzola to Palazzo S. Gervasio). Mass. Capo Posto. A stream 300m E. No other source of water in vicinity. Sherds extend from Point 418 downhill to the NW. Apart from a few bits of undatable WMCW, the site is purely Neo. Alt 418m. **Found:** Obsidian blade, flint blade (Pl.50. 20), débitage, figulina, 1 NeoImpr, undec HMCW, WMCW. **Date Neo** and later.
V160	586655/4534181, IGM F°188 IV N.O. N of SS 168 (Spinazzola to Palazzo S. Gervasio). E of Mass. Barbuzzi and railway tracks. Perennial wells 250m W at Mass. and 200m S. **Found:** Débitage, badly battered figulina. **Date Neo**.
V161	584855/4530381. IGM F°188 IV N.O. At Point 412, S of Posta Vecchia. At base of hill. On a stream. No other permanent water source in the vicinity. Alt 412m. **Found:** 1 chert point, 4 débitage (Pl.50. 14), figulina; poss abraded BG; 1 abraded ITS, WMCW, dol, tile. **Date Neo**, LIA? E.Hel? L.Hel? **E.Imp**.
V161A	584555/4534981, IGM F°188 IV N.O. E of Pilone d'Errico. Near road leading NW from Palazzo San Gervasio to the Murge. Two seasonal wells and a perennial watering hole at Pilone d'Errico. In addition to the lithics and sherds listed here, Vinson noted an inscription subsequently published by Chelotti (1983, 19 no. 1), who transcribes it: *Amme hic sita/ [Susus magister/ [... gregarius [...* See also Andreani 2013, Small 2016 and above, Chap. IX 7b. Alt 400m. **Found:** 2 débitage, figulina, HMCW (9 retained); 1 ITS, WMCW. **Date Neo**, **E.Imp**.
V162	590555/4535381. IGM F°188 IV N.O. Near SS 168. Crest of hill ca.400m E of Chiesa della Madonna del Bosco. 2 perennial springs ca.300m W. Nucleus ca.20m^2. Area 400m^2. Alt 420m. **Found:** impasto; BG, SG, GN, ARS:C3AD?, WMCW; teg, imb. **Date** IA?, **LIA, E.Hel**, L.Hel? **M.Imp.**
V163	580355/4535481. IGM F°188 IV N.O. NE of the Chiesa della Madonna del Bosco, near creek at the bottom of the hill at perennial spring with another just to S. Nucleus ca.10m^2. Area 100m^2. Alt 390m. **Found:** impasto; WMP, BG, SG, WMCW; poss lmwt; teg, imb. **Date** IA? **LIA, E.Hel**. L.Hel?

V164	602255/4533581. IGM F°188 I N.O. Crest of a scarp on the S edge of the Pezza dell'Olmo. Perennial well 500m S. Alt 450m. **Found:** Scraper, 1 débitage, HMCW; 1 WMCW. **Date** Neo? with later spor.
V165	597355 /4530081, IGM F°188 IV S.E. ca.350m E of the Mass. Coticchio Spada near seasonal spring. The *tegula mammata* suggests a bath suite. Alt 435m. **Found:** WMP, ApRF, amph handle, BG (LC3/EC2BC), GG, RG, TS, ARS (LC2AD), glass frags, lmwt stamped with a circle; imb stamped ACACACA, *tegula mammata* frag. **Date LIA, E.Hel, L.Hel, E.Imp**, **M.Imp**.
V166	596255/4530081, IGM F°188 IV S.E. SW of Mass. Spada at Point 457. Perennial well 300m E. Alt 457m. **Found:** HMCW; late local geom, ARS, WMCW; glass cup rim, amph; quern, tile. **Date MIA,** M.Imp? L.Imp? L.Ant?
V167	598355/4527881, IGM F°188 IV S.E. Crest of hill, just W of km 9. Water probl from stream below hill ca. 200m. away. Nine items in an area 50m across. Alt 335m. **Found:** Lava rubber stone (Pl.50. 27), chert and calcite débitage (Pl.50. 15), 2 HMCW; 1 WMCW. **Date** Neo? with later spor.
V168	598355/4526881, IGM F°188 IV S.E. Point 373, SW of Mass. Veltri. Small knoll. Stream 500m S and E. Perennial well 500m NW. Nucleus ca.50m across. Area 2000m^2. Alt 373m. **Found:** Chert projectile point (Pl.50. 9), NeoImpr (5 returned incl. Pl.51. 31, 39); 1 Bellavista ware handle spring (Pl.54. 65). **Date Neo**.
V169	599655/4522981, IGM F°188 IV S.E Near Mass. Leggiadro. Perennial spring 500m SE. The main site (under wheat) is on the crest of the hill slightly west of the farmhouse. Small scatter. Alt 375m. **Found:** Neo, HMCW and figulina; 1 BG, 6 WMCW. **Date Neo**, LIA? E.Hel?
V170	598955/4523781, IGM F°188 IV S.E. Roughly between Points 367 and 366. Fontana dei Fichi ca.450m NE. Dense scatter over an area ca.1000 x 200m. Area 200,000m^2. Alt 370m. This site probably corresponds to McCallum *et al* 2013, site B74, with BG of C5–C3/2BC. **Found:** Some BG, WMCW, Ckpt; much tile. **Date** LIA? E.Hel?
V171	602032/4532710, IGM F°188 I N.O. Farm buildings SW of the Mass. Salomone. 2 seasonal springs 200m NW. Seasonal well at Mass. Perennial well 350m SE. Site in the farmyard. Alt 375m. **Found:** Neo sherds, BA black burnished. **Date Neo, FBA**.
V172	618250/4521600, IGM F°188 I S.E. The SS 97. Slightly NW of intersection of SS 97 with railway. Near valley bottom. No perennial source of water in vicinity. Thin scatter under wheat stubble and pasture, perhaps 100 x 50m. Area 5000m^2. Alt 370m. **Found**: Chert débitage, 1 NeoImpr, figulina, L.Hel? Ckpt, 1 WMCW. **Date Neo**, L.Hel.
V173	613450/4524300, IGM F°188 I S.E. Terraces at extreme end of promontory E of Mass. Pescofalieri and N of stream. No other water source in vicinity, scatter ca.70 x 50m. Area 3500m^2. Alt 400m. **Found:** BAimpasto; 20 GG, 1 RG, 3 TS, Ckpt (at least 5 different pots), WMCW, amph; 2 lmwts – 1 with stamped circles; imb. **Date BA, L.Hel**, **E.Imp**.
V174	617950/4522800, IGM F°188 I S.E. SS 97. Just W of Points 354 and 357. Nearest water a stream which flows beside site. Site ca.50m across. Area 2000m^2. **Found:** Débitage. BA mid-App. dec handle, App. rim with excised dec (nearby at 617255/4523281), 3 impr cordon, strap handle, misc ws. **Date BA.**
V175	613850/4523800, IGM F°188 I S.E. ca.800m SE of the Mass. Pescofalieri. NE facing slope. Beside a stream. Seasonal well 350m E. ca.50m across. Area 2000m^2. Alt 375m. **Found:** 2 débitage, 1 prehist HMCW; 6 Hel WMCW, 4 Ckpt; red coated dol. **Date** Prehist, E.Hel? L.Hel?
V176	613150/4522000, IGM F°188 I S.E. W of Mass. Lo Cuodio. SE slope above Pentecchia river. Seasonal spring 150m S. Wide scatter in plough soil. Alt 370m. **Found:** Flint blade frag, 2 Neo figulina, 3 HMCW, all abraded. **Date Neo.**
V177	618250/4519900, IGM F°188 II N.E. Botromagno, E end: addenda to material known from earlier work (Brooks *et al.*, 1966; Ward-Perkins *et al.*, 1969; Vinson, 1972); Du Plat Taylor *et al.* (1976, 1977); Gravina I and II). Alt 435m. **Found:** Chert point, App. bordered dot punctate and black-burnished ware; 1 ITS base, stamped ANNI SEX (Sextus Annius Afer of Arezzo): Sidebotham (1980) 243.= OCK 183, type 183.47, vessel no. 12,632; ca. 20 BC – AD 10. **Date BA**, **FBA, E.Imp.**
V179	605155/4528181, IGM F°188 I S.O. Near the secondary road between Gravina and Spinazzola. Just W of Mass. Scoto. Near Fontana d'Ogna. Alt 435m. **Found:** Chert blade frag and débitage, 3 figulina; various MBA and LBA wares and forms, poss EIA bowl rim; Hel. ring base. **Date Neo**, **BA,** EIA?, E.Hel? L.Hel?
V180	609855/4527081, IGM F°188 I S.O. Slope and top of hill 50m SE of well. A stream flows past the well. Pasture. Neo and Bronze Age wares chiefly at the bottom of the hill, Hel. wares mainly on top, where the nucleus is ca.100m across. Area of Hel. settlement 7900m^2. Alt 450m. **Found:** 1 chert débitage, 1 Neo figulina, 1 HMCW; BA fine burnished, BA impr cordon, 1 HMCWBA; BG, 1 GN, SG, WMCW, 2 Ckpt. **Date Neo**, **BA**, **LIA, E.Hel.**
V181	607555/4529881, IGM F°188 I S.O. W of Mass. S. Cataldo farm buildings. Perennial well 100m S. Seasonal spring at Mass. Site 100 x 30m. Area 3000m^2. Alt 440m. **Found:** BG, SG, Ckpt, WMCW, various amph; teg, imb. **Date** LIA? **E.Hel.**
V182	609255/4528681, IGM F°188 I S.O. Point 452, under W wall of Mass. Lamia Gianina. Perennial well just below site. Alt 452m. **Found:** 4 NeoImpr, quern. **Date Neo**.
V183	606255/4528681, IGM F°188 I S.O. Point 467. Only water source in vicinity a small stream 50m NW. Under wheat stubble. Site 20m across. Area 300m^2. Alt 467m. **Found:** 1 SG, 1 GG, 2 WMCW, tile. **Date E.Hel**. **L.Hel**.
V184	606155/4528281, IGM F°188 I S.O. Giuncorosso area, Point 478. Seasonal well 250m E, stream 50m W. ca.50m across. Area 2000m^2. Alt 475m. **Found:** 4 probl Neo HMCW; 1 abraded BG or SG, 1 Ckpt, 1 WMCW. **Date** Neo?, **E.Hel.**
V186	606955/4529381, IGM F°188 I S.O. Just W of entrance road to the Mass. S. Cataldo. Small stream just N. Canale di Mauro 350m W. Alt 445m. **Found:** Obsidian blade frag, 1 figulina, 1 HMCW; 1 BG. **Date Neo,** LIA spor.
V187	608555/4529881, IGM F°188 I S.O. Promontory N of Mass. Oriente. Seasonal spring and 2 cisterns 100-150m W. Nucleus ca.30-40m across. Area 1600m^2. Alt 435m. **Found:** Chert and flint débitage, 2 Neo impr and HMCW; 1 purple ptd, 1 TS, 1 RS, Ckpt, WMCW, tile. **Date Neo**, **E.Imp.**

V188	609255/4525681, IGM F°188 I S.O. N of secondary road between Gravina and Spinazzola. Mass. S. Nicola Romano, just N of Point 462. Cistern 300m S at Mass. Size undetermined because of wheat and straw. Alt 460m. **Found:** 1 flint and 2 chert débitage, 1 figulina, 1 HMCW; 1 BG, 2 Ckpt, 2 WMCW. **Date Neo**, LIA? E.Hel?
V189	608055/4530081, IGM F°188 I S.O. Promontory NE of Mass. S. Cataldo. Seasonal spring 450m SW at Mass. Nucleus ca.30m across. Area 700m². Alt 430m. **Found:** Prehist HMCW; 1 GG; 2 TS, 1 "colour coated", Ckpt, WMCW incl. base with dot punctate dec, imb. **Date** Prehist, **L.Hel**, **E.Imp**.
V190	608555/4529681, IGM F°188 I S.O. Mass. Oriente, just SW of Point 437. Seasonal spring 100m W. Nucleus ca.75m across. Tobacco and wheat stubble. Area 4400m². Alt 440m. **Found:** Calcite débitage, Neo HMCW incl. 1 ribbon handle and 1 *manica mamellonare*, abraded GG(?), 2 Ckpt, 3 WMCW. **Date Neo**, **L.Hel**.
V191	609255/4527481, IGM F°188 I S.O. Crest of rise E of Mass. Traetta. Perennial wells 100m SW and SE at Mass. Traetta and Mass. Limietta. Neo material found near well at entrance road and at N and E of farm building. Hel. site, ca.100 x 50m E of farm buildings. The WMCW and Ckpt were thickest W of the nucleus, the fine wares denser to the E. Area 5000m². Alt 465m. **Found:** Frag of core, figulina, impasto; BG(C3/C2BC), 2 SG, GG, WMCW, Ckpt, various amph handles; dol, quern; brick; imb. **Date Neo, E.Hel, L.Hel.**
V193	610855/4527681. IGM F°188 I S.O. Promontory above Jazzo Limielli, Point 454. Seasonal spring 500m NE. Perennial well 600m SW. Thin scatter. Alt 454m. **Found**: Flint scraper and blade frag, chert débitage, 1 figulina, 5 HMCW. **Date Neo**.
V194	609655/4527581, IGM F°188 I S.O. Farmyard of Mass. Limielli. Perennial well 100m E and another major one 200m S. Wide, thin scatter. Alt 459m. **Found:** Prehist HMCW; 2 Ckpt. **Date** Prehist with later spor.
V195	601455/4537081, IGM F°188 I N.O. Immediately below scarp of Murge near access path to plateau. On small seasonal stream from Murge which ends in cistern some 300m downstream. Inside central room and outside front door of Jazzo Senarico. Alt 505m. **Found:** Figulina incl. jar base with pedestal foot, 11 HMCW; BA/EIA black and brown burnished wares, fine ridged orange handle, impasto. **Date Neo**, BA?, **FBA/EIA**.
V197	601255/4533381, IGM F°188 I N.O. Promontory 1km W of Site 411. SW slope. No water in vicinity. Seasonal well ca. 1km W. Widely dispersed scatter. Alt 450m. **Found:** 5 débitage, 1 figulina, HMCW; abraded BG, WMCW, amph. **Date Neo**, LIA? E.Hel?
V198	595455/4526881. IGM F°188 IV S.E. ca. 200m SE of Mass. Conte Viti. Perennial spring at Mass. N slope. Nucleus 25m across. Area 500m². Alt 360m. **Found:** 4 flint and chert débitage, NeoImpr (Pl.51. 32, 36), figulina, hut daub with reed impressions; 1 ARS, 3 Ckpt, 6 WMCW; quern, teg, imb. *Noted:* 1 LRPW rim (traces brown wash & wavy line). **Date Neo**, M.Imp? L.Imp? **LAnt**.
V199	599555/4524381, IGM F°188 IV S.E. Point 361, SE of Jazzo della Regina. Neo material scattered over a wide area around this point. The Hel material was found in several clusters from the Fontana dei Fichi to Point 361 ca.350m NE. It may indicate a single large Hellenistic site. Alt 360m. **Found:** Hammerstone, 3 débitage (Pl.50. 16, 17), poss figulina, 2 NeoImpr incl. Pl.51. 30; 1 BA with cordon (Pl.55, 80); 2 ?BG abraded ring bases; imb. **Date Neo**, **BA**, L.Hel?
V200	599355/4523781, IGM F°188 IV S.E. ca.350m due S of Fontana dei Fichi. Nucleus ca.200m across. Area 32,000m². Alt 370m. The site perhaps corresponds to McCallum *et al* 2013, no. B73 (MIA-EImp). **Found:** 1 RF, BG, SG, Ckpt, WMCW incl. amph; quern, teg, imbr. *Noted:* BG:Mo4372A1 (1st half C3) BG:Mo1514C1 (ca.300BC), BG: 2 skyphos ws. **Date LIA, E.Hel.**
V201	598455/4524781, IGM F°188 IV S.E. Crest of hill 500m W of and above Jazzo della Regina. Perennial spring 600m NE. Nucleus 200m across. Area 32,000m². Large site of two periods, each of uncertain size. Alt 380m. **Found:** 1 Blade frag, 5 débitage, 2 figulina, HMCW; 1 BG, 5 Ckpt; imb. **Date Neo,** LIA? E.Hel?
V202	594355/4527081. IGM F°188 IV S.E. Near Mass. Cerasoletta. Perennial well 100m SW. NE slope. Nucleus ca.25m across. Area 500m². Alt 375m. **Found:** 1 débitage, 6 Neo HMCW. **Date Neo**.
V203	597255/4525881, IGM F°188 IV S.E. Promontory NE of Mass. Piedi Gentili. 2 perennial wells 350m SW at Mass. and seasonal spring 500m SE. Nucleus ca.20m Area 300m². Alt 375m. **Found:** 2 Débitage, 1 probl Neo HMCW; BG (C4/C3BC), WMCW, 20 Ckpt, amph with repair hole; imb. *Noted*: 1 BG ?saltcellar. **Date** Neo?, **LIA.**
V204	596855/4526181, IGM F°188 IV S.E. At Point 373, NE of Mass. d'Innella. Perennial well 250m S. Thin scatter. Alt 373m. **Found:** 2 lithics, figulina; 22 Ckpt, WMCW. *Noted:* 1 flint point (Pl.50. 19). **Date Neo** and later.
V 2 0 5 / V218	600755/4535681, IGM F°188 IV N.E. Reached by the access road from SS 97 to the 1st group of Riforma Fondiaria houses. Between 2 streams. Fontana Zezza 400m S. Chiefly Neo and Hel material N of the farmhouses and extending downhill in a thin scatter from them. Roman material SE of the houses, ca.5m from the front doors. Alt 425m. **Found:** Flint scraper, chert blade, figulina, HMCW; 1 GN, 6 BG, 1 GG, WMCW, Ckpt, TS base stamped S.EX TITI see Sidebotham 1980, 244-245, amph; dol, imb, quern. **Date Neo, LIA, L.Hel**, **E.Imp.**
V206	596855/4535481, IGM F°188 IV N.E. Near Mass. Paredano. Perennial spring at Mass. ca.50-75m across. Area 3000m². Alt 400m. **Found:** 3 flint and 2 chert débitage, figulina, Neo HMCW; impasto incl. 2 rims with vestigial knobs, black burnished fine, brown burnished hexagonal spindle whorl, hut daub; 5 EIA urn frags; imb. **Date Neo**, **FBA, EIA** and spor.
V207	598355/4534281, IGM F°188 IV N.E. Near SS 97. Slightly N of Point 391. Water perhaps from the Vallone Impiso 500m E. No other water source in vicinity. Nucleus 30-40m across. Area 1000m². Alt 390m. **Found:** Abraded NeoImpr, figulina, undec HMCW. **Date Neo**.
V208	598455/4534881, IGM F°188 IV N.E. S of Point 407 and E of Mass. Farano. Perennial well at Mass. 400m W or from Vallone Impiso 200m SE. Alt 405m. **Found:** Possible figulina. **Date** Neo?
V209	598455/4534681, IGM F°188 IV N.E. Near SS 97. Across ravine of Vallone Impiso from Point 374. Water perhaps from ravine or from perennial well 450m W. Alt 375m. **Found:** Teg. **Date** unclear.

V212	598555/4535681, IGM F°188 IV N.E. Just SE of lime kilns at Point 409. No spring in vicinity. Water probl from Vallone Impiso 100m SE. Alt 405m. **Found:** 1 Chert débitage, figulina base, jar neck, 2 HMCW. **Date Neo**.
V213	599355/4537681, IGM F°188 IV N.E. ca.350m S of Point 591. SW slope. No spring in vicinity but streams from Murge to both W and E. Cluster ca.5m across. Area 20m². Alt 575m. **Found:** 1 NeoImpr, 1 figulina, 91 black burnished, 15 HMCW. **Date Neo**.
V214	600455/4536081, IGM F°188 IV N.E. E of access road which splits Domenico area. S slope. No spring in vicinity. Water probl. from stream, now seasonal, from Murge 400m W. Thin scatter over ca.100m. Large but thinly occupied site. Area 7900m². Alt 460m. **Found:** 3 figulina. 7 CW incl. jar neck. **Date Neo**,
V216	599655/4537581, IGM F°188 IV N.E. SW of quarry. SW facing slope. Seasonal stream from Murge 300m E. May continue Site 392. Alt 500m. **Found:** Neo figulina and HMCW, hut daub. **Date Neo**.
V217	600355/4535881, IGM F°188 IV N.E. E and N of Point 414 just S of SS 97. Perennial wells 300m N and NW. Widely dispersed scatter, poss wash from sites on the hilltop. Alt 410m. **Found:** Burin, Neo figulina; WMCW strainer, amph, teg frags. **Date Neo**, Rom?
V219	4534881/4535381, IGM F°188 IV N.E. Just E of quarry. No water source in vicinity. Vallone Impiso 400m SE. Thin scatter over 40 x 50m. Area 2000m². Alt 405m. **Found:** Chert core reworked to scraper, figulina, HMCW; 2 BG(C3/C2), Ckpt, WMCW. **Date Neo**, **E.Hel**.
V238	614450/4526900, IGM F°188 I S.E. Near SS 97. NW facing slope. Stream beside site. Seasonal well 300m W. Mass. Caporusso. Wide scatter. Alt 430m. **Found:** Neo chert débitage, blade frag; BG(C2/C1BC), amph handle. **Date Neo**, **L.Hel**.
V239	579850/4538900, IGM F°187 I NE. Promontory SE of Mass. La Saponara. Perennial well ca.200m W. Possibly 2 sites, the Neo scatter being ca.20m across and well defined. Area 300m². Alt 375m. **Found.** Hut daub, figulina, HMCW; WMCW, Ckpt, [LRPW], teg, imb. **Date Neo. L.Ant.**
V240	579950/4538800, IGM Fo187 I NE. 2nd promontory SE of Mass. La Saponara. Perennial well ca.200m W. Dense distribution ca.80m across. The fine wares were conc at the SE end of the promontory. Area 5000m². Alt 375m. **Found** 2 prehist. HMCW; RP, CP, WMCW, varied amph types incl some white slipped, teg, imb, quern frags. *Noted*: ARS C2C3, ARSF50B, ARSF61B, ARS C4C5, ARS LC5C6, LRC, LRPCW, amph:AFR, glass(C5/C7). **Date** Prehist. (spor), **M.Imp, L.Imp, L.Ant.**
V240a	580000/4538700 IGM Fo187 I NE. 3rd promontory SE of Mass. La Saponara. Permanent well 400m NW. ca.20m across. Area 300m2. Alt 375m. **Found** Rom WMCW, CP, [9 LRPCW, 1 ARS, 3 LRC], amph, glass rim, teg, imb. *Noted*: ARSF53B, LRCF3C, amph:Oriental, amph:African. **Date M.Imp, L.Imp, L.Ant.**
V241	579800/4539800 IGM Fo187 I NE. Just W of farm buildings at Mass. La Saponara. At permanent well. Ca.30m across. Area 700m². Alt 375m. **Found** Neo impressed and figulina. **Date Neo.**

Table of site occupancy on the Older Surveys

Site number	Neo	Eneo	BA	FBA/EIA	MIA	LIA	E.Hel	L.Hel	E.Imp	M.Imp	:L.Imp	L.Ant/ E.Med	Med
A001													x
A002	x												
A003			x			x							
A004			x										
A005			x										
A006			x										
A007			x										
A008				x				x					
A009	x		x	x									?
A010			x										
A012			x										
A013			x										
A014	x			x	x	x	?	x	x	x	x	x	
A015			?	?		x	x	x					
A016			?	x	x	x							
A017				x	x	x	x						
A018			x										
A019						x							
A020	x					?		x					

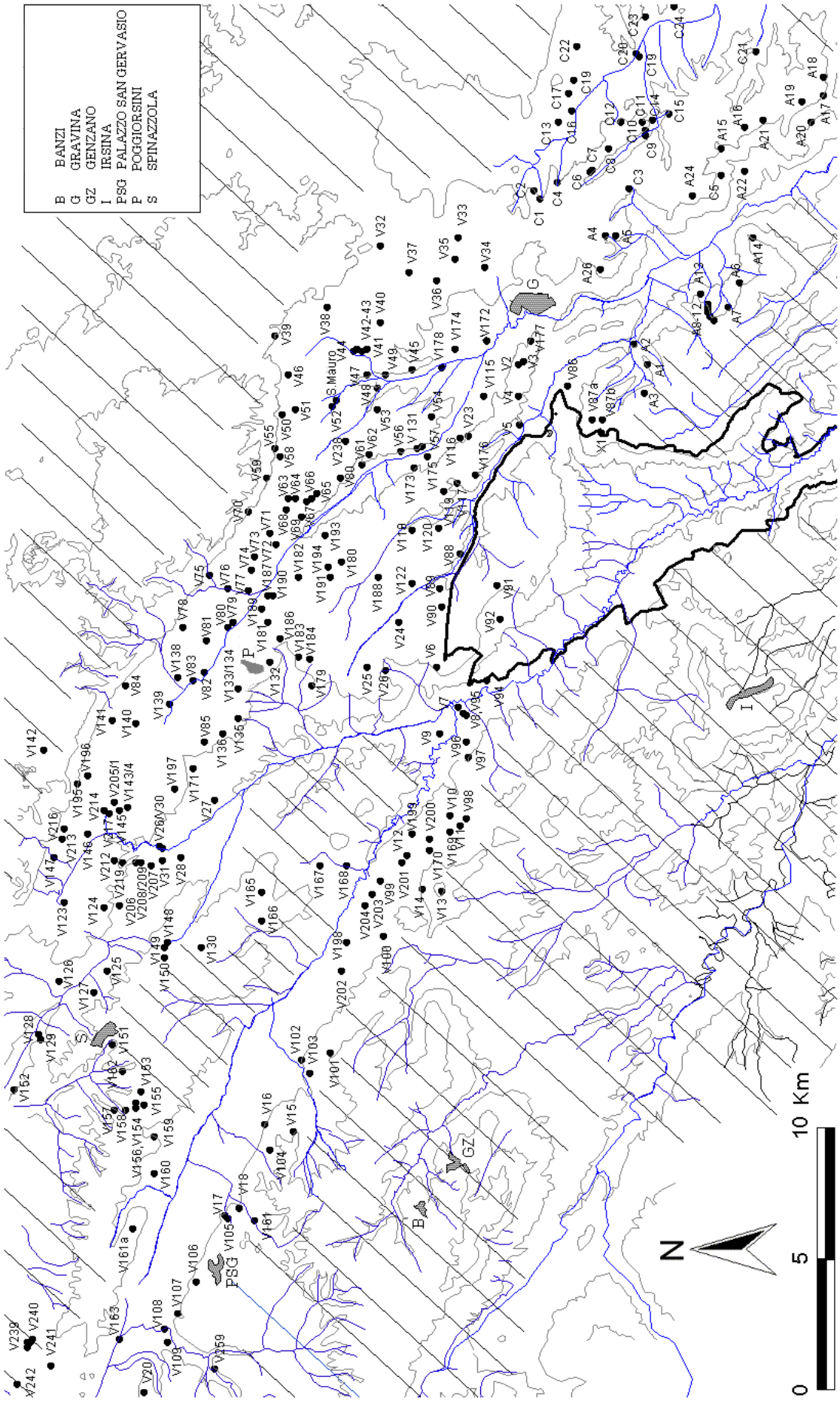
Site number	Neo	Eneo	BA	FBA/EIA	MIA	LIA	E.Hel	L.Hel	E.Imp	M.Imp	:L.Imp	L.Ant/ E.Med	Med
A021	?												
A022									x				
A024				?									
A026						x					x	x	
C001						?			x	x	x	x	
C002											x	x	
C003										x			
C004								x	x	x			
C005	x				x	x							x
C006								x					
C007						x		x	x	x	x	x	
C008			x										
C009								x	x	x	x		
C010	?							x	x	x		x	
C011			x							x		x	
C012				x		x				x			
C013	x												
C014				x									
C015										x			
C016						x	?	x		x	x	x	
C017	x												
C018				x		x							
C019						?	?		x	x	x	x	
C020						x	?	x	x	x	x	x	
C021									x	?	x	x	
C022						?	?			x			
C023				x		?							
C024				x				x					
SM			x		x	x			x	?	x	x	
V001					x	x							
V002	x												
V005					x	x	x		x	x	x	x	
V006	x		x		x	x		x					
V007						x		x					
V008						x	x	x					
V009	x					?	?				x		
V010						?	?			?	?	x	
V011						x			x	?	?	?	
V012						x							
V013				x	x	x	x	x			x		
V014				?		?	?	?		x	x	x	
V015						?	?	?					
V016			?			?	?	?	?	x	x		
V017	x					?	?	x	x	x			
V018				x		?	?	?	x		x	?	
V023	x												
V024	x												

Site number	Neo	Eneo	BA	FBA/EIA	MIA	LIA	E.Hel	L.Hel	E.Imp	M.Imp	:L.Imp	L.Ant/ E.Med	Med
V025		x	x					x	x			x	
V026				x								x	
V027				x		x	x						
V028	x	x	x			x					x	x	
V029			x										
V030			x		x	x					x	x	
V031						x	x						
V032				x	x	x		x					
V033	x		x										
V034				x				x	x				
V035			x										
V036						x		x					
V037									x	x	x	x	
V038			?										
V039			x										
V040	x	x											
V041	x		x	x		x		x	?	?	x		
V042			?			x			x	x	x	x	
V043			?						x	?	x	x	
V044	x	?	x	x								x	
V045			?				x		x	x	x	x	
V046	x	x		?									
V047	x												
V048	x		x										
V049	x						x			x			
V050	x												
V051	x		x	x									
V052			x			x							
V053						x	x						
V055			x	?									
V056						x					x	x	
V057	x												
V058	x												
V059				?									
V060	x	?											
V061	x					x		x					
V062	x					?	?			?	?	?	
V063			x										
V064			x										
V065	x					?	?						
V066			?							x	x		
V067		x						x					
V068						x	x	x	x	x	x	x	
V069	x		x										
V070	x		x										
V071								x					

Site number	Neo	Eneo	BA	FBA/EIA	MIA	LIA	E.Hel	L.Hel	E.Imp	M.Imp	:L.Imp	L.Ant/ E.Med	Med
V072	x								x	x		x	
V073	x												
V074						x	x	x			x	x	
V075				x	x	x	x	x	x				
V076	x		x										
V077						x				x		x	
V078			x		?								
V079									x	x		x	
V080	x			x		?	?						
V081	x					x	x	x	x	x		x	
V082	x												
V083						x	x	x					
V084			x	x									
V085				x		x	x	x					
V086									x				
V087b	x	x	x										
V088											x		
V089						?	?			x	x		
V090						x							
V091			x			x	x						
V093						x		x	x	x	x	x	
V094			x										
V095						?	?						
V096						?	?						
V097			?			?	?			?	?	?	
V098			x										
V100				x		?	?						
V101	x					?	?						
V102	?					?	?	?		x			
V104	?		?										
V105	x	x		?		?	?	?					
V106	?												
V107	?									x			
V109			x					?		?	?	?	
V115	x												
V116	?							x					
V117			x				x	?	x	x			
V118	x												
V119	x												
V120						?	?						
V122	?			?		x							
V123	x												
V125				?									
V127				x									
V128				?									
V129				?						?	?	?	
V130						?	?						

Site number	Neo	Eneo	BA	FBA/EIA	MIA	LIA	E.Hel	L.Hel	E.Imp	M.Imp	:L.Imp	L.Ant/ E.Med	Med
V131	x								x				
V132	x												
V133						?	?		x	x			
V134			x			?	?		x		x		
V135			?					x		?	?	?	
V136	x												
V138	?												
V139	?		x										
V140				x		?	?						
V141			x			x							
V142	x		x	?						?	?	?	
V143	x												
V145	x							x	x	?	?	?	
V146						?	?						
V147	x		x	x	x	?	?						
V149									x				
V151				x		x							
V152				x			x						
V153	x												
V154	x												
V155	x												
V156	x												
V157	?										?	?	
V158	x												
V159	x												
V160	x												
V161	x					?	?	?	x				
V161a	x								x				
V162						x	x	?		x			
V163						x	x	?					
V164	?												
V165						x	x	x	x	x			
V166					x					?	?	?	
V167	?												
V168	x												
V169	x					?	?						
V170						?	?						
V171	x			x									
V172	x							?					
V173			x					x	x				
V174			x										
V175							?	?					
V176	x												
V177			x	x					x				
V179	x		x	?			?	?					
V180	x		x			x	x						
V181						?	x						

Site number	Neo	Eneo	BA	FBA/EIA	MIA	LIA	E.Hel	L.Hel	E.Imp	M.Imp	:L.Imp	L.Ant/ E.Med	Med
V182	x												
V183							x	x					
V184	?						x						
V186	x												
V187	x								x				
V188	x					?	?						
V189								x	x				
V190	x							x					
V191	x						x	x					
V193	x												
V195	x		?	x									
V197	x					?	?						
V198	x									?	?	x	
V199	x		x					?					
V200						x	x						
V201	x					?	?						
V202	x												
V203	?					x							
V204	x												
V205	x					x		x	x				
V206	x			x									
V207	x												
V208	?												
V212	x												
V213	x												
V214	x												
V216	x												
V217	x												
V219	x						x						
V238	x							x					
V239	x											x	
V240										x	x	x	
V240a										x	x	x	
V241	x												
Total x	71	7	51	33	14	54	29	43	42	38	34	36	2
Total ?	16	2	12	13	1	37	38	15	2	15	12	11	1
TOTAL	87	9	63	46	15	91	67	58	44	53	46	47	3



Map of all Sites of all periods found on the Older Surveys with numbers

III. Table of illustrated artifacts from the Older Surveys

The plates of photographs of artifacts from the Older Surveys are at the end of the pages of Plates of Artifacts (Plates 50-56).

Plate	No.	Site	Description
Lithics: worked stone tools and débitage. See also Vinson 1972, 85, fig. 17			
Chert			
50	1	V41	Arrowhead.
50	2	V44	Arrowhead of dark chert = Vinson 1972, fig. 17C.
50	3	V105	Blade.
50	4	V105	Sickle blade?
50	5	V109	Blade.
50	6	V62	Point.
50	7	V62	Blade.
50	8	V62	Scraper.
50	9	V168	Projectile point.
50	10	V98	Débitage.
50	11	V105	Débitage.
50	12	V105	Débitage.
50	13	V147	Débitage.
50	14	V161	Débitage.
50	15	V167	Débitage.
50	16	V199	Débitage.
50	17	V199	Débitage.
Flint. For another flint blade frag. from Site V51, see Vinson 1972, 73, fig.17F			
50	18	V81	Blade frag.
50	19	V204	Flint point.
50	20	V159	Flint blade 11×2 cm.
50	21	V55	One-edged blade, retouched.
50	22	V62	Débitage.
Obsidian			
50	23	V41	Obsidian blade frag.
50	24	V62	Obsidian blade frag.
50	25	V105	Obsidian blade.
50	26	V81	Obsidian core. Drawn Vinson 1972, fig.17M.
Lava			
50	27	V167	Rubber in volcanic lava worn flat on one side.
Neolithic pottery			
Impressed ware – decorated with finger-tips or simple tools. For the technique used, see Natali 2009, 230-236 (analysis of the material from Favella). Early to Middle Neolithic			
51	28	V81	Base and lower wall. Cf. Pl.4 No.95.
51	29	V51	Ws with impressions made with the tip of a clam or mussel shell Cf. Pl.6 No.132.
51	30	V199	Ws. Cf. Pl.6 No.132.
51	31	V168	Ws. Grey. Cf. Pl.6 No.122.
51	32	V198	Ws. Coarse.
51	33	V62	Ws with dense columns of clam or mussel shell impressions. Cf. Pl.6 No.126.
51	34	V33	Ws. Cf. Pl.5 No.107.
51	35	V50	Orange ws with dense finger-tip impressions. Cf. Pl.5 No.114.
51	36	V198	Ws with loose columns of clam or mussel shell impressions.
51	37	V28	Ws with pattern of deep and less deep dragged finger-nail impressions. Cf. Pl.52 No.44.
51	38	V40	Ws with columns of closed clam or mussel shell impressions arranged in herring-bone fashion. Cf. Pl.6 No.121.
51	39	V168	Grey cup rim with impressions made with the point of a thin stick. Cf. Pl.6 No.138.
51	40	V17	Ws with cockle shell impressions. Cf. Pl.7 No.149.
51	41	V62	Ws with column of impressed chevrons.
51	42	V2	Ws with irregular rows of wedge-shaped impressions.
51	43	V81	Ws with pinched finger-nail impressions.

52	44	V2	Ws with pattern of deep and less deep dragged finger-nail impressions. Cf. Pl.51 No.37.
52	45	V41	Ws. Cf. Pl.6. No.121.
Impressed with rocker pattern (advanced Early/ Late Neolithic). Cf. Cat. 2.1a.2.			
52	46	V28	Impressed, rocker pattern.
52	47	V47	Grey ware with rocker motif *a dandolo.*
52	48	V28	Ws with handle-spring. Drawn Vinson 1972, 81 fig. 13D.
52	49	V82	Ws with dense pattern of ?clam shell impressions, partly rocked.
Pedestal bases			
52	50	V50	Large pedestal base.
52	51	V44	Pedestal base.
Matera scratched ware (Middle Neolithic). Cf. Cat. 2.1b			
53	52	V28	Large bowl rim with cogged dec and impressed rocker pattern. Drawn in Vinson 1972, 71 fig.13A.
53	53	V28	Large bowl rim with cogged dec and impressed rocker pattern. Perhaps from the same pot as No.52.
Matera scratched ware* a doppia tecnica:* slipped and painted inside (Middle Neolithic)			
53	54	V41	Ws.
53	55	V40	Matera scratched ware: incised reticulated triangles framing reserved lozenges above rocker impressed line on exterior; red painted dec on white slip in interior (triple technique). Drawn in Vinson 1972, 83, fig.15A.
Neolithic red painted ware (Middle – Late Neolithic). Cf. Cat. 2.2d			
53	56	V81	Figulina base frag. with grouped red lines.
53	57	V40	Figulina rim frag. with red band.
53	58	V82	Figulina platter rim with red band at rim and grouped red lines vertically below it; suspension hole.
53	59	V33	Ws with thin red band.
Red and white ware (Middle Neolithic). Cf. Cat. 2.2e			
53	60	V62	Ws with parallel red lines on white slip.
Neolithic red-on-buff ware (Middle Neolithic)			
53	61	V47	Ws with broad light brown angled bands.
53	62	V47	Bowl rim with broad light brown band and suspension hole.
Neolithic unpainted* figulina *ware (Middle/ Late Neolithic)			
54	63	V46	Figulina strap handle.
54	64	V62	Neo figulina ws with two suspension holes.
Late Neolithic Bellavista ware – tubular handles (Final Neolithic). Cf. Cat. 2.3			
54	65	V168	Bellavista ware ws with broken tubular handle.
54	66	V58	Orange Bellavista handle.
54	67	V105	Bellavista ware bowl rim and handle.
Eneolithic (Copper Age) wares			
54	68	V60	The organization of the dec in a panel of incised hooked motifs suggests an Eneolithic date. Drawn: Vinson 1972, 84, fig.16A.
54	69	V28	Black burnished hemispherical bowl with incised dec in a narrow panel; circular recessed base. Laterza culture. Cf. Biancofiore 1979a, fig. 331a (with two bands of decoration). Drawn in Vinson 1972, 81, fig.13B.
54	70	V40	Eneolithic scaly ware ws. Cf. Cat. No.211.
54	71	V46	Eneolithic ws with pinched globules of clay.
54	72	V67	Eneolithic notched rim in thin black impasto. Cf Radina 1989, 22 and fig.9.1,2 from Rutigliano, Le Rene.
54	73	V44	Notched rim. ?Eneolithic.
Bronze Age impasto pottery			
Thick vertical ring/ strap handles. Predominantly BA. Cf. Cat. 3.32.			
54	74	V55	Coarse impasto.
54	75	V41	Coarse impasto.
54	76	V28	Coarse impasto.
Wall sherds with finger-impressed cordons. Predominantly BA. Cf. Cat. 3.30.			
55	77	V109	With row of arched impressions.
55	78	V28	Pinched to create a row of conical protrusions.
55	79	V29	With row of arched impressions.
55	80	V199	Slightly arched, with spaced finer-tip impressions, perhaps from a lug handle.
With simple cordon. Predominantly BA.			
55	81	V51	Ws.
55	82	V78	Rim and wall; pie-crust dec on rim,
Bowl with tapering wall and vertical handle with raised edges.			

55	83	V76	Drawn: Vinson 1972, 82 fig. 14D. Probably MBA. Cf. Cassano *et al.* 1987, 146-147 and fig. 72.3 (but with simpler handle) from Coppa Nevigata: form 14, *scodella subtroncoconica*, found in levelBC1 with much protoapennine material.
Mug handle.			
55	84	V44	Brown coarse ware. Vertical handle with pronounced "elbow".
Carinated bowls and related handles. For the form, see Catalogue 3.B.1.			
55	85	V51	Black coarse ware handle.
55	86	V41	Rim and wall.
55	87	V28	Rim and wall.
55	88	V29	Rim and wall.
55	89	V28	Rim and wall.
55	90	V78	With less pronounced rim.
Miscellaneous, presumed BA			
55	91	V39	Coarse ware ws with pierced lug handle.
55	92	V51	BA rim sherd with knob.
Decorated Apennine			
56	93	V29	BA black burnished ws with white-filled incised and dot-punctate decoration. Cf Cat. No.314.
Milk boiler			
56	94	V41	BA milk-boiler. Cf. Cat. Nos.310,311.
Loomweights			
56	95	V39	Disc, used as a small loomweight or large spindle whorl.
56	96	V41	Disc loomweight cut from a sherd.
Final Bronze Age / Early Iron Age impasto pottery			
Pithoi with rounded shoulders and out-turned rims			
56	97	V39	With projecting knob on shoulder. Cf. Cat. Nos.352, 357 from San Felice.
56	98	V32	FBA pithos rim, small projecting knob on shoulder. Drawn Vinson 1972, 81 fig.13G. Cf. Cat. No.350 from San Felice.
56	99	V32	With finger-impressed cordon. The motif must be dated to the EIA on this site, as at Parco S. Stefano below Botromagno: cf. Gravina 1976, pl. XXII no. 111.
Black-burnished impasto bowls with incurving rim. For the form, see Catalogue 3.B.2 and 3.			
56	100	V26	FBA black burnished bowl with incurving ?turban-facetted rim.
56	101	V44	FBA black burnished bowl with incurving rim.
56	102	V44	FBA black burnished bowl with incurving rim.
Geometric monochrome pottery			
56	103	V51	Ws with panel of reticulated lozenges. Probably Period Gravina II, late C8/ early C7BC. Drawn Vinson 1972, 83, fig. 15L.
56	104	V26	Geom mono ws with part of a reticulated triangle, and a vertical hatched panel in the shoulder zone above groups of wavy lines between horizontal bands. Cf. Gravina *PBSR 1976* pl. XVII.38, Period Gravina I, C8BC.
56	105	V51	Ws with fine reticulated triangle in horizontal panel; small pendant triangle below. Period Gravina II, late C8/ early C7BC.
Wheel-made Painted pottery			
56	106	V41	WMP shoulder sherd of *stamnos* or column krater, with frond of olive leaves. Cf e.g. *Rutigliano*, 192, Tomb 68.4, 2nd half C5BC.
Amphora			
56	107	V32	Frag. probably of an amphora with illegible circular seal impression. The form of the impression suggests that it may have been made with a stamp derived from a coin type, such as were used in Athens in the early C4BC to validate measures of capacity, especially on amphorae: Lang & Crosby in *Agora* X, 52 (cylindrical measure), 54 (nut measure), 90 (amphorae). That may be the case with our piece, though the stamp is on the wall of the pot, not on the handle, as in the Athenian examples. Circular stamps derived more loosely from coin types had a wide currency in the Hellenistic world as symbols of the place of origin of the contents of amphorae: cf. Arévalo & Moreno 2020 for examples from late Punic Gadir (Cadiz). The piece requires further study. [I am grateful to G. Sarcinelli for these references - AMS].
Lamps			
56	108	V36	GG lamp. Pale grey clay with some small grey and white inclusions; slightly lustrous uneven grey slip all over. Nozzle and handle broken. Ø base 3.5, ht to rim 3.0, ht to handle break 4.2. Cf. Prag, *Gravina II,* no. 1681, Period Gravina VIIIa, late C2/ early C1BC.
56	109	V28	ARS lamp frag. Ø 6.0; max w. 4.5. *Atlante* I Form X/ Hayes 1972 type II, cf. *Vagnari,* 189 fig. 5.69; 2nd quarter C5–1st half C6AD.
56	110	V43	ARS lamp, Ø 7.0, max. dim. 5.8. *Atlante* I Form X, type 1A/ Hayes 1972, type II; mid-C5–C6AD.

Miscellaneous artifact drawings			
58	111	A4	LBA carinated cup. Highly burnished black impasto. Redrawn from Aldridge 1973 fig. 4.1.
58	112	A9	LBA carinated cup. Brown burnished impasto. Redrawn from Aldridge 1973 fig. 11.2.
58	113	V52	BG cup. Drab brown clay; slightly glossy black slip. Cf. No.767 from Site 407 in the Catalogue of artifacts; mid C5BC.
58	114	V77	BG one-handler cf. *Cozzo Presepe,* 314 ca. 350–250BC
58	115	V74	BG plate with projecting rim. Cf. Cat. No.839. End C4–1st half C3BC.
58	116	A17	BG plate with projecting rim. Orange clay; semi-glazed with thin black slip ending irregularly at dip line on wall. Cf. Cat. No.841, C3BC. Redrawn from Aldridge 1973 fig. 24.1.
58	117	V53	BG lipped bowl. Cf. Hempel 2001 Form 621 type 1 from the Tarentine necropolis phase D, 225–175BC
58	118	C7	GG bowl with sloping rim. Cf. Prag in *Gravina II* no. 952, period Gravina VIIIa, later C2/ early C1BC.
58	119	C4	GG carinated bowl. Cf Yntema 2005, 46, form 17A.c from Pantanello in the Chora of Metaponto, later C2/ early C1BC.
58	120	V68	GG hemispherical bowl/ *mastos* with grooved rim. Cf. Prag in *Gravina II*, nos. 1020, 1021, from contexts of Gravina VIIIa, 2nd half C2/ 1st quarter C1BC.
58	121	C9	ITS cup base. Compact reddish-brown clay; thick darker reddish-brown slip, fairly glossy. Stamped "IN" or "NI" in ovoid frame. Ø base 4.2, pres. ht. 1.5. Frame of stamp 0.75×0.65; ht of letters 0.45. Cf. *Atlante* I f XX var 11 – Iannetti 4. Not in OCK.
58	122	C4	ITS base frag. with *planta pedis* stamp, partly legible CASI (?) ... Not in OCK.

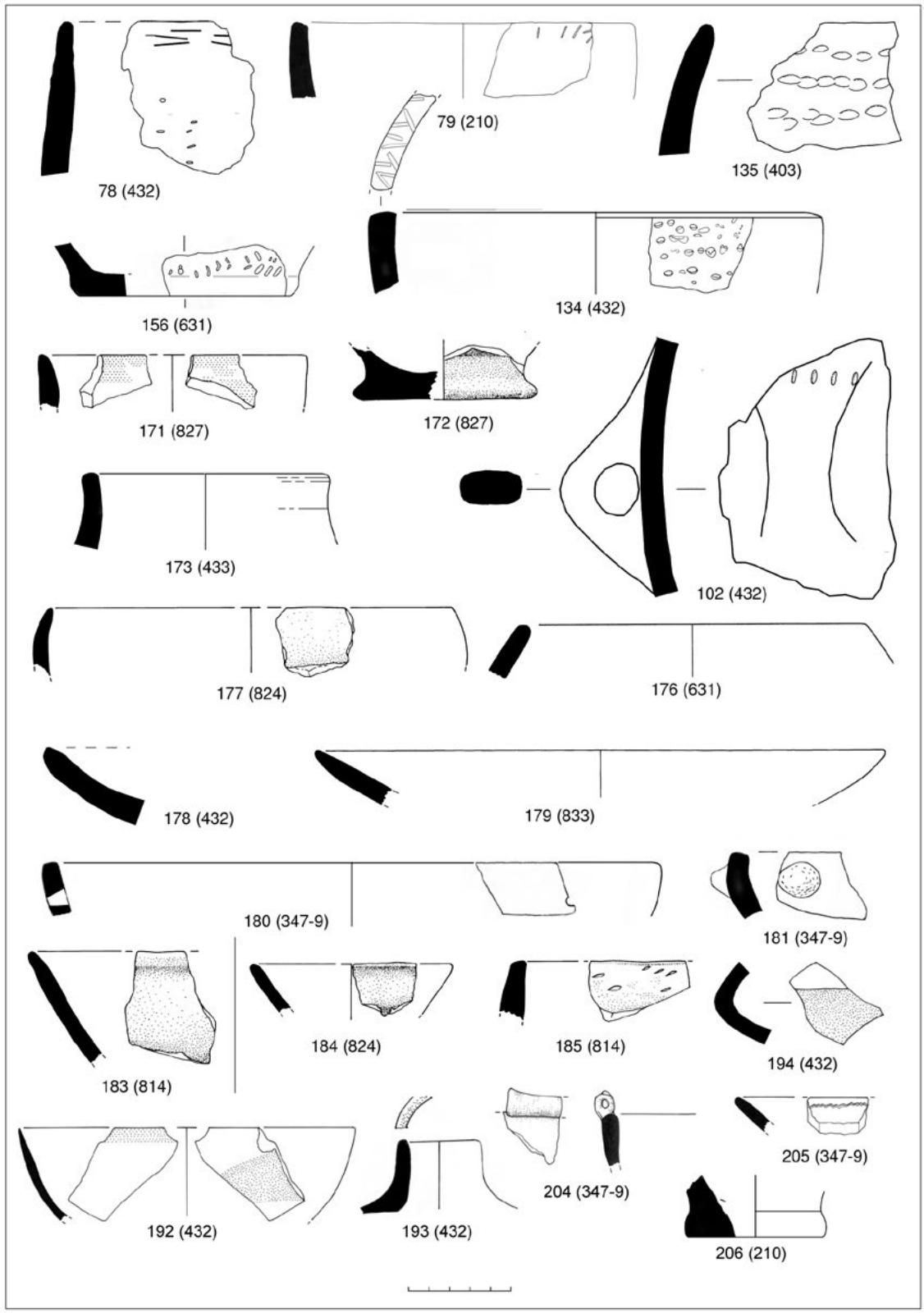


Fig. 1. Neolithic

Pieces with simple impressed motifs made with the fingers or natural tools 78, 79, 102, 134, 135, 156; Undecorated impasto pieces 171 - 173, 176,177; Undecorated figulina ware 178 - 181, 183, 184; Figulina with impressed dec. 185; Red painted ware 192, 193; Red and White ware 194; Diana-Bellavista ware 204; Macchia a Mare ware 205: Base with impression of reed mat 206

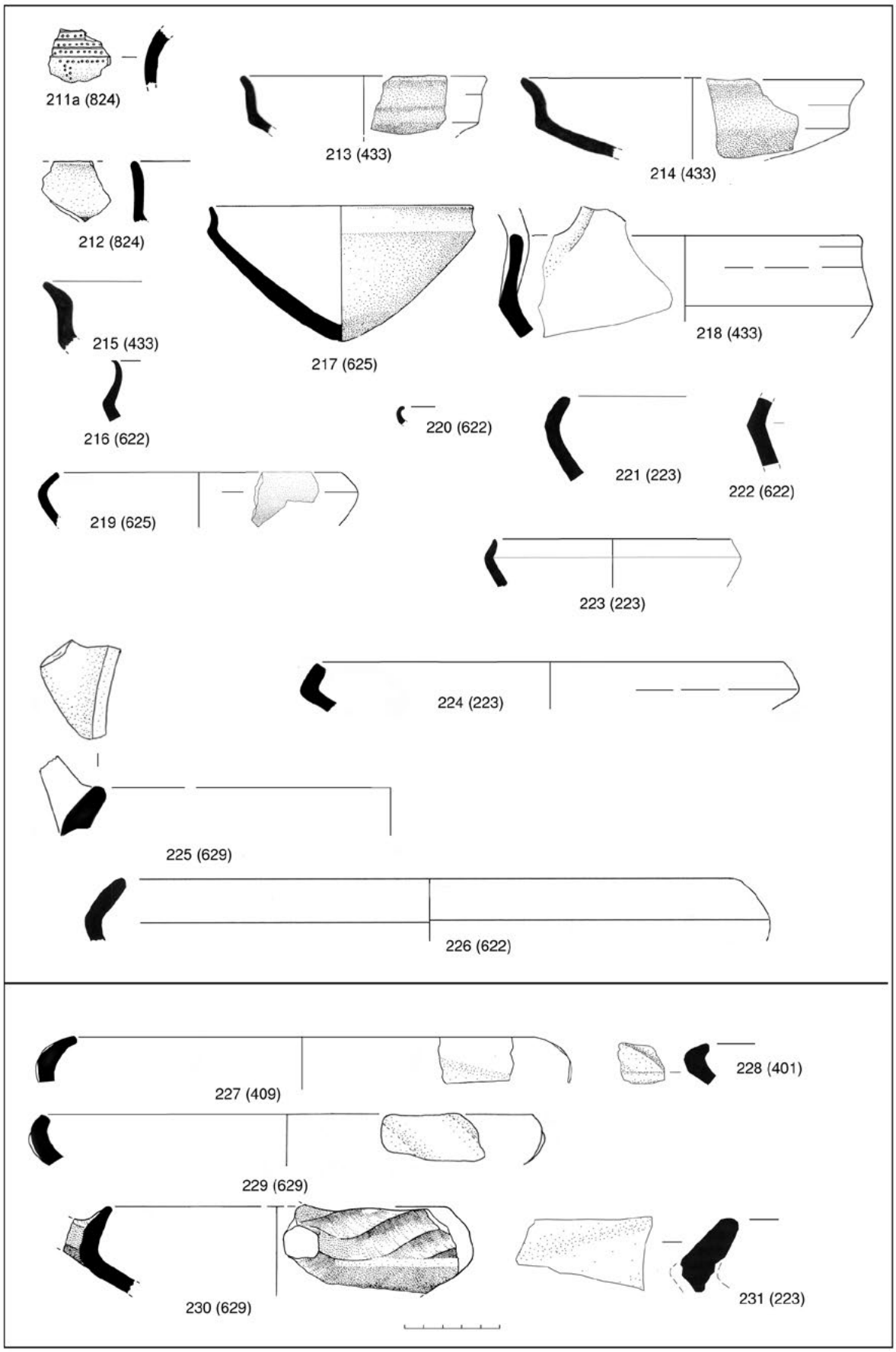


Fig. 2. Impasto
Eneolithic Laterza 211a
BA/EIA. Carinated bowls 212 - 218; bowls with plain in-turned rims 219 - 226; large turban-rimmed bowls 227 - 231

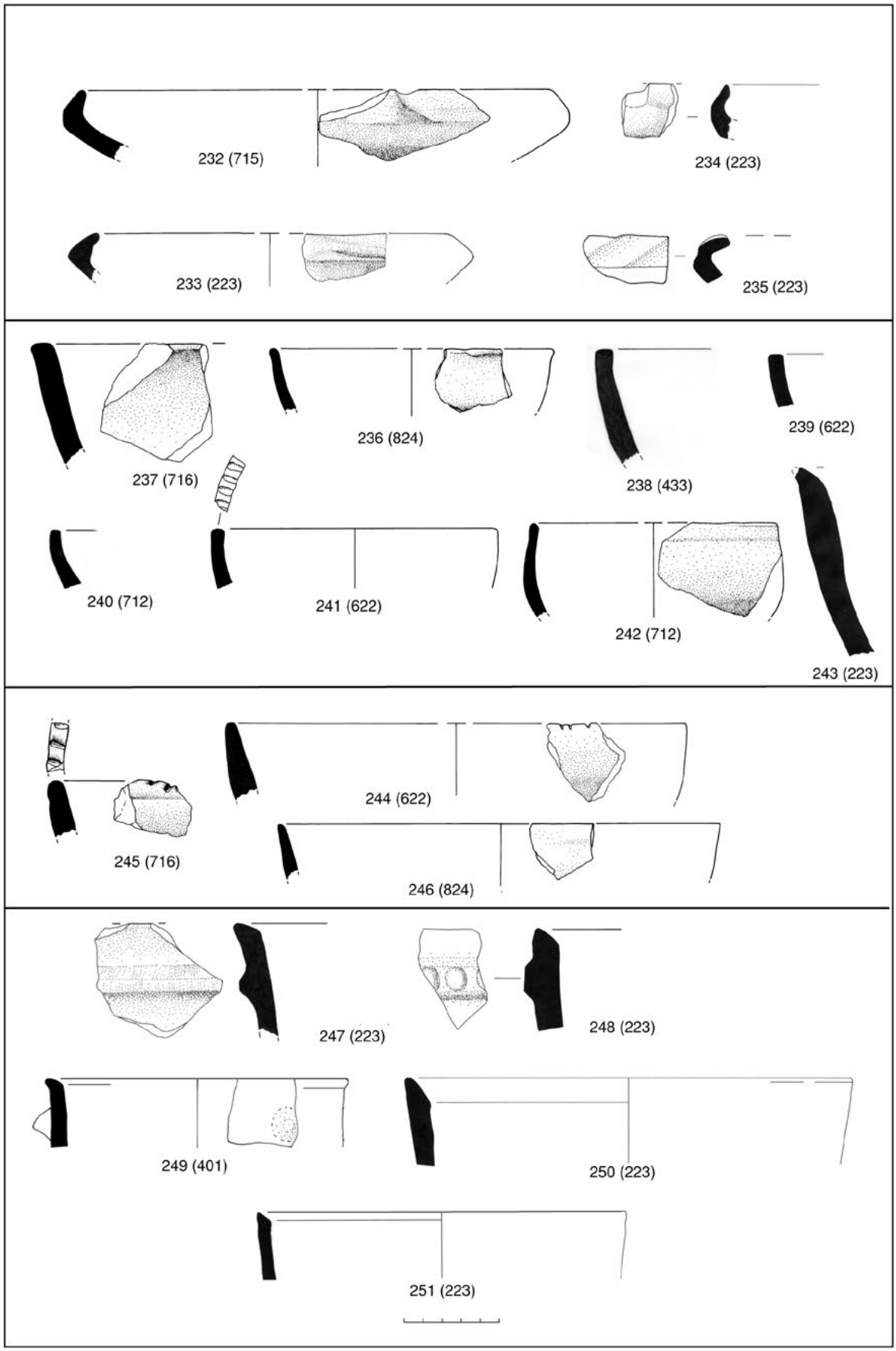


Fig. 3. Impasto

Turban-rimmed bowls 232 - 235; bowls with steep, slightly convex, sides 236 - 243; deep bowls with straight, slightly tapering, sides 244 - 246; deep bowls with straight sides, rims bevelled inside 247 - 251

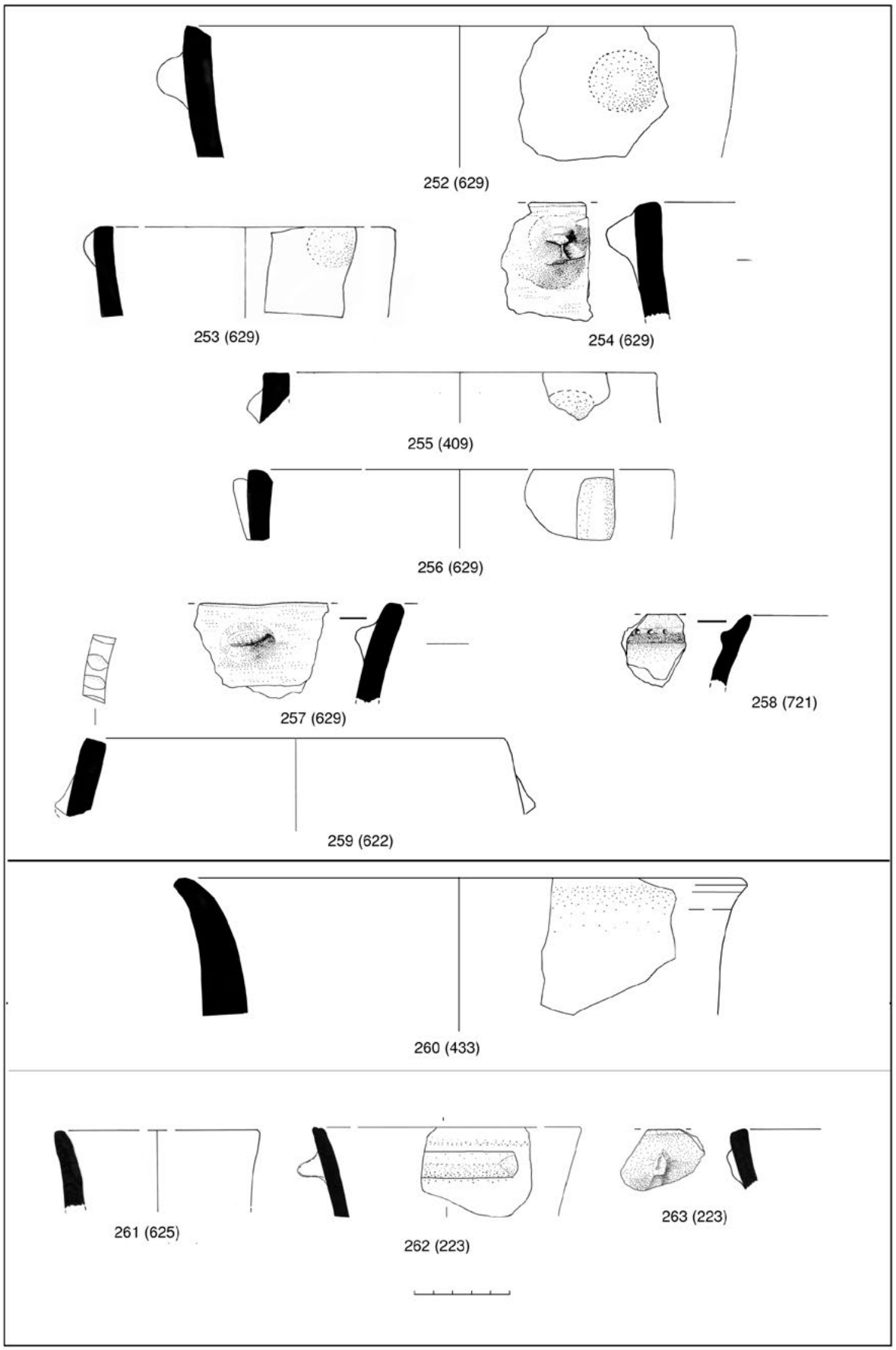


Fig. 4. Impasto

Deep bowls /situlae with straight, slightly tapering, sides 252 - 256; situlae with convex sides 257 - 259; basin 260; goblets 261 - 263

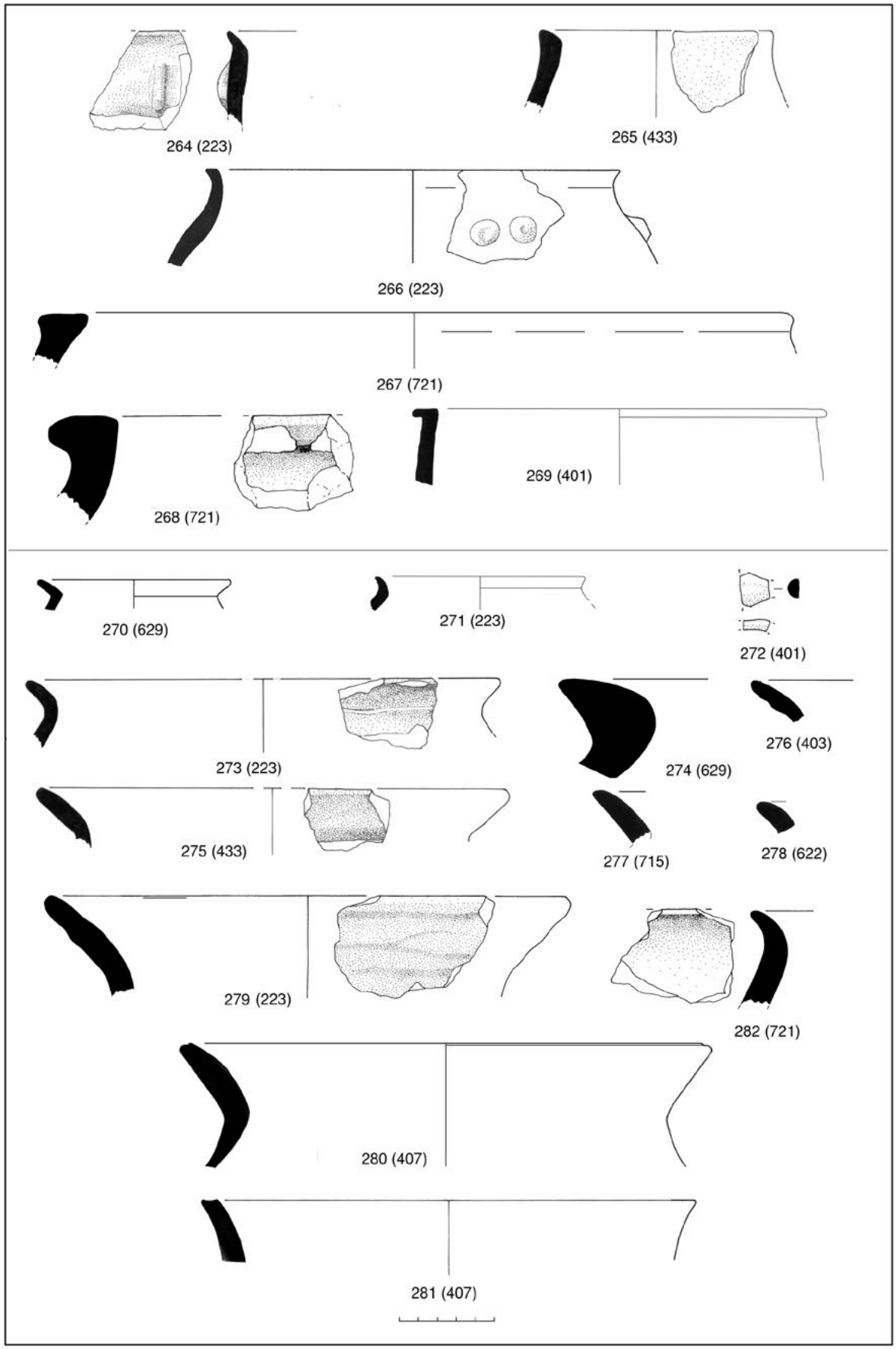


Fig. 5. Impasto

Misc. thickened or out-turned rims 264 - 269;
small pots with out-turned rims in fine black impasto 270 - 272; pithoi with out-turned rims 273 - 281

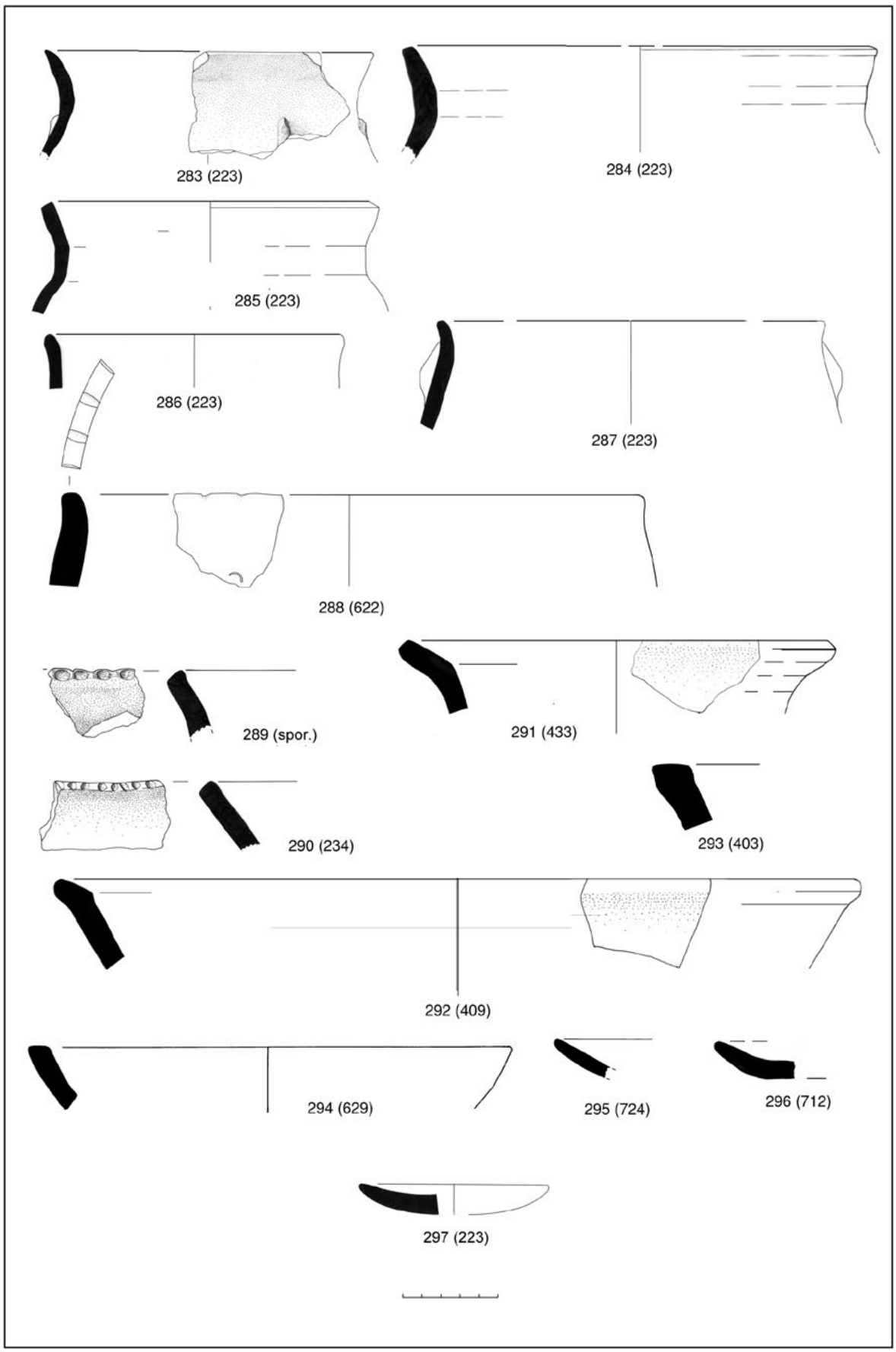


Fig. 6. Impasto

Pithoi with distinct neck 283 - 285; deep jars with near vertical rims 286 - 288; large pots with finger-impressed rims 289, 290; misc bowls and dishes 291 - 297

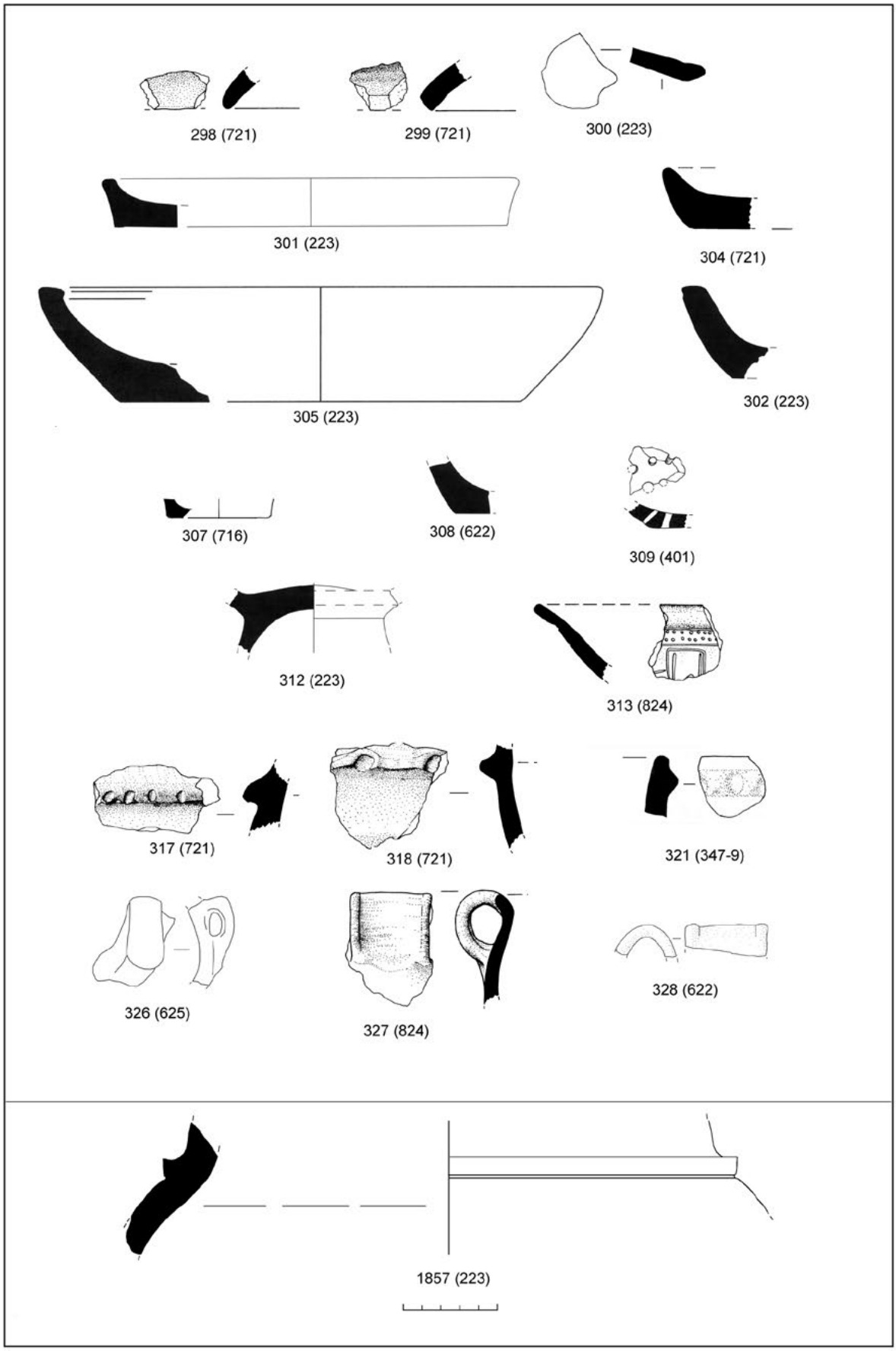


Fig. 7. Impasto

Shallow bowls or lids 298 - 300;
pans with flat bases; 301, 302, 304, 305; misc. bases 307, 308; colander 309; thymiaterion 312;
dec. wall sherd 313; finger-impressed cordons 317, 318, 321; misc. handles 326-328

Cordoned dolium (wheel-made) 1857

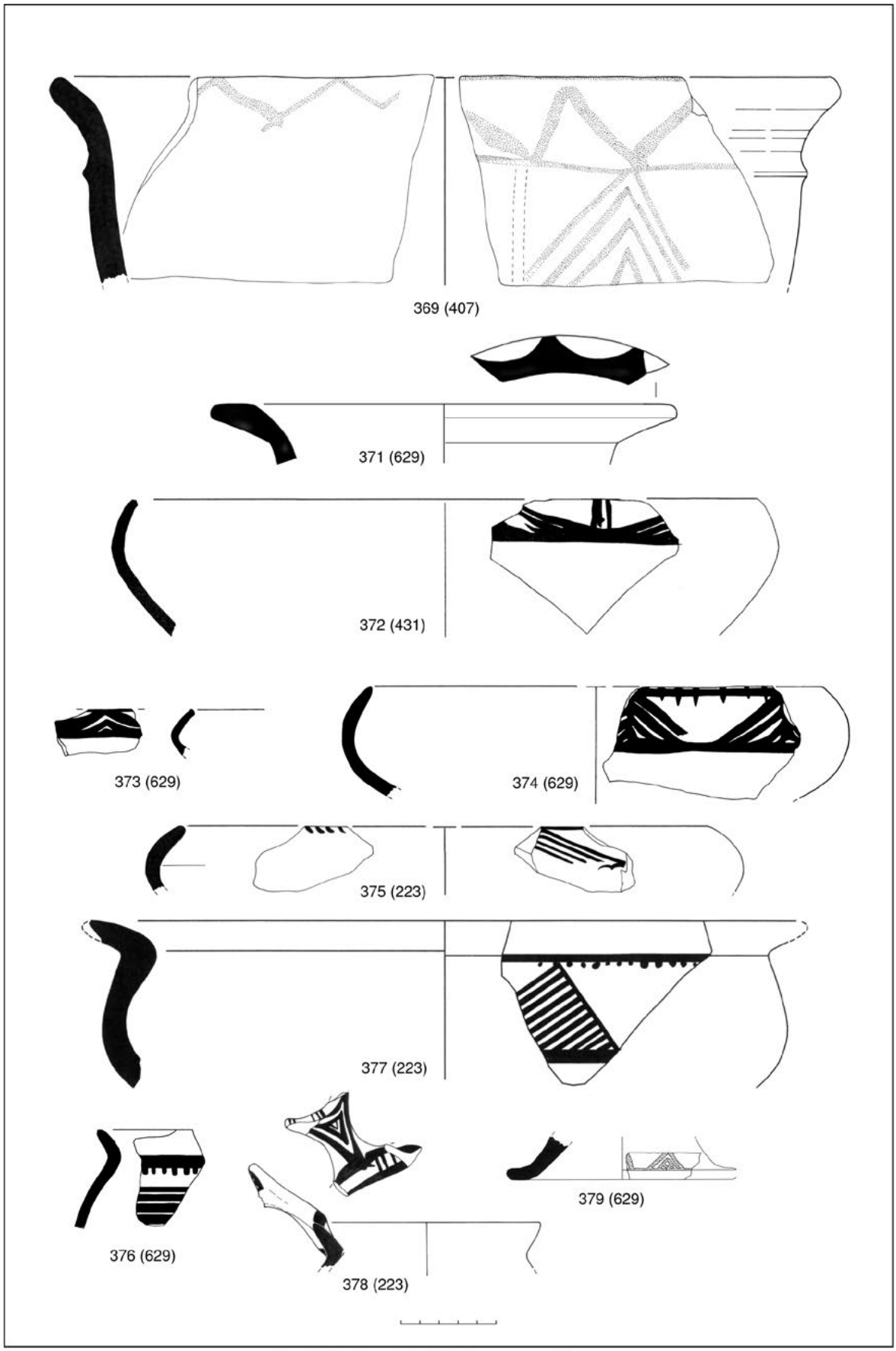


Fig. 8. Matt-painted Italic geometric wares
Iapygian protogeometric 369. Iapygian geometric: Period Gravina I bowls 371 - 377; kantharos 378; pedestal foot 379

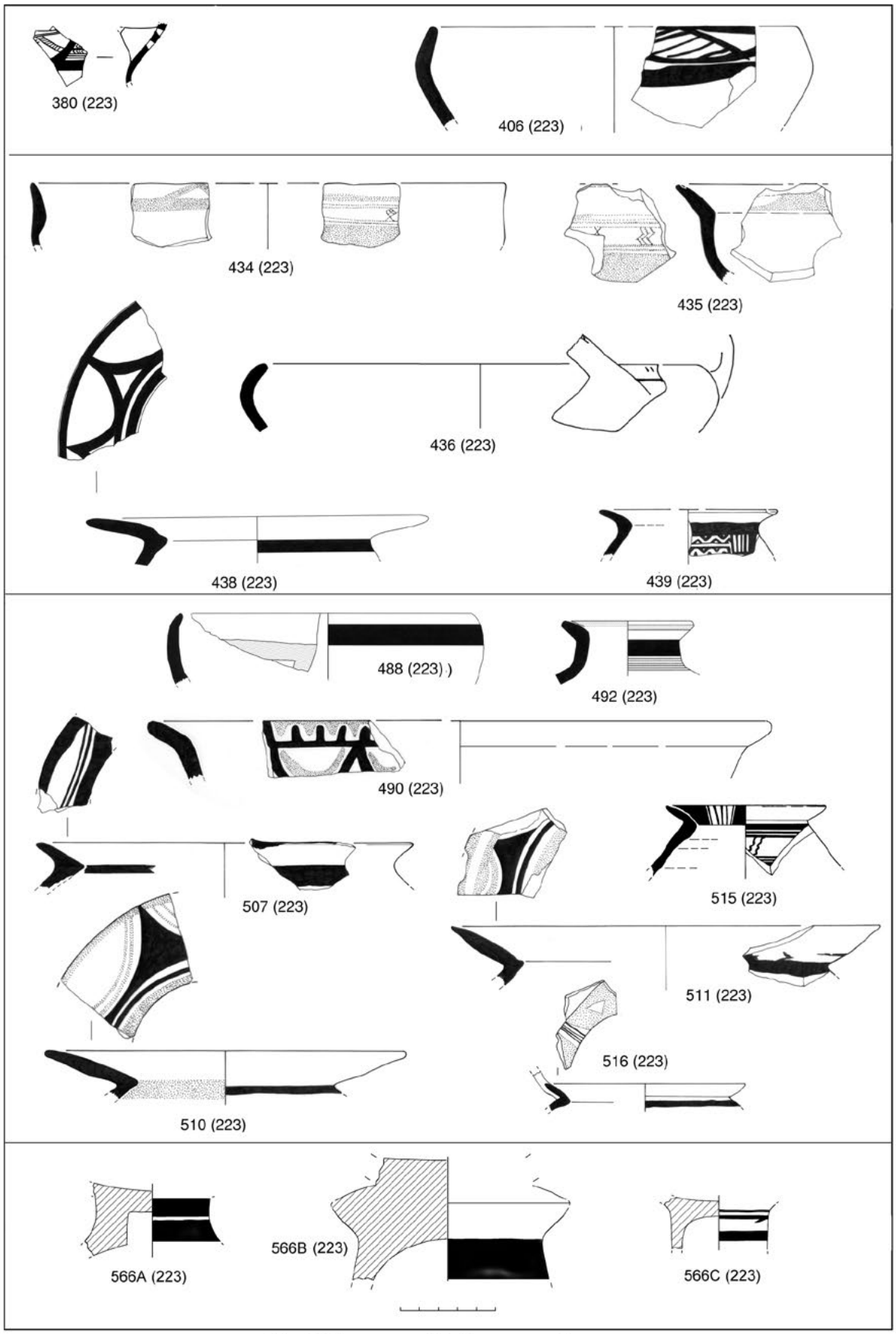


Fig. 9. Matt-painted Italic geometric wares

Period Gravina I (cont.) strainer 380; bowl 406. Period Gravina II bowls 434 - 436; biconical pots 438 - 439. Period Gravina III bowls 488, 490; askos 492. Period Gravina IV urns 507, 510, 511; kantharoi 515, 516; Thymiateria 566A - C

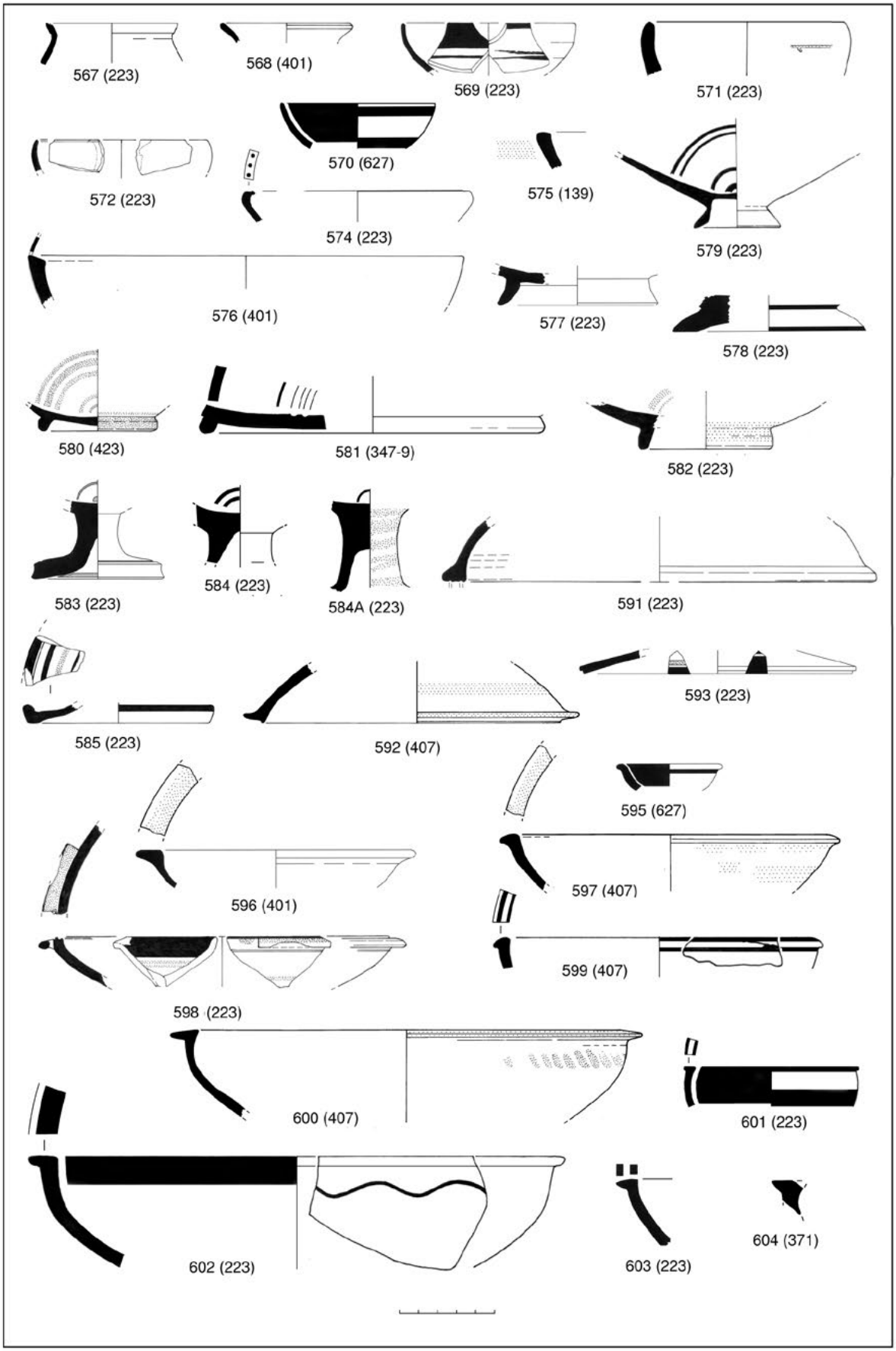


Fig. 10. Wheel-made painted
Red-slipped kantharoi 567, 568; one-handled cups 569 - 572; bowls with convex walls 574 - 576;
bases of open shapes 577 - 582; bases of stemmed vessels 583 - 585; lids 591 - 593; open shapes with out-turned rims 596 - 604

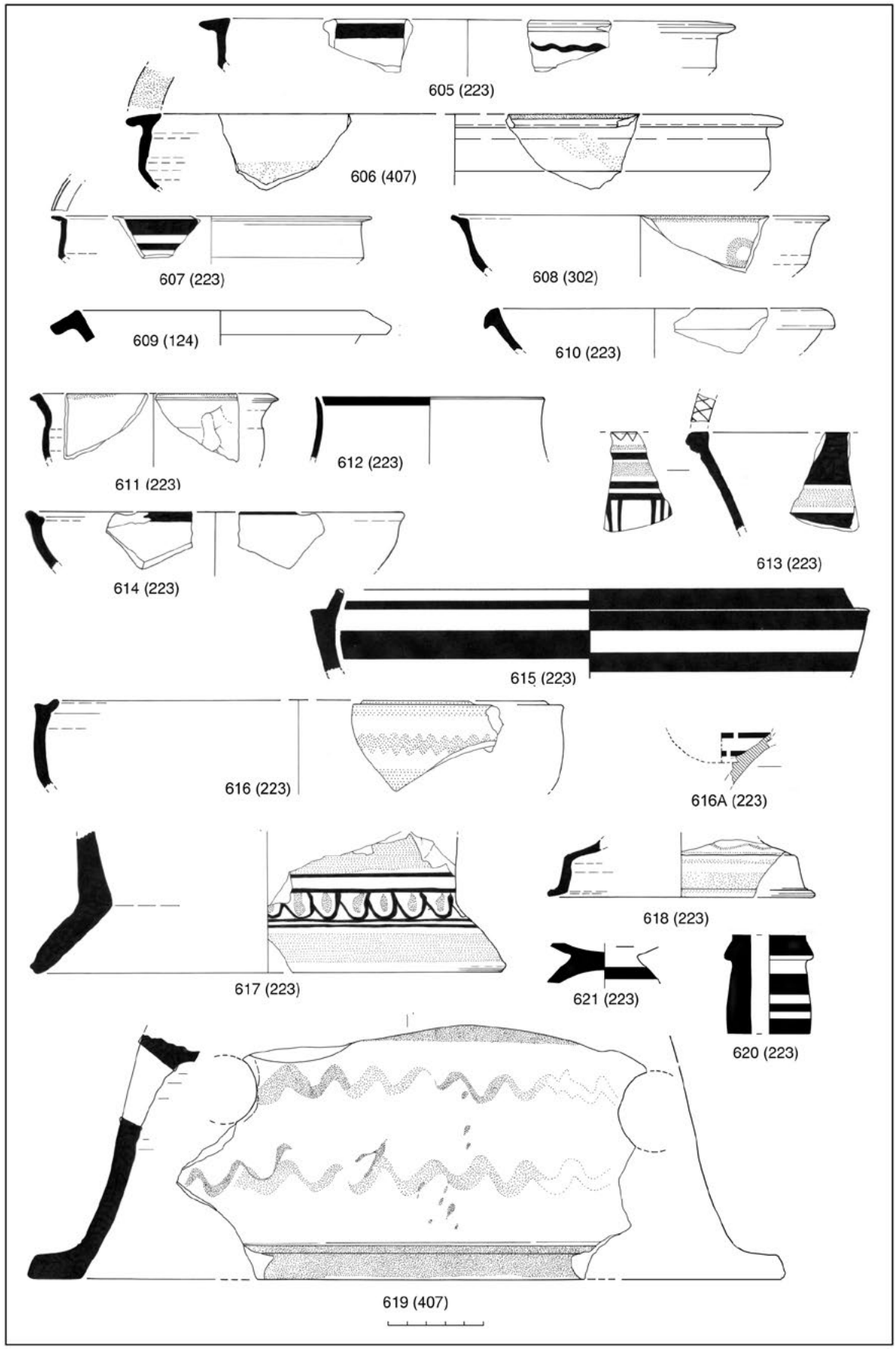


Fig. 11. Wheel-made painted

Lekanai 605 - 607; S profile bowl 808; bowls with down-turned rim 609, 610; beakers 611, 612; kalathos 613; pyxides 614-616; thymiateria 617 - 621.

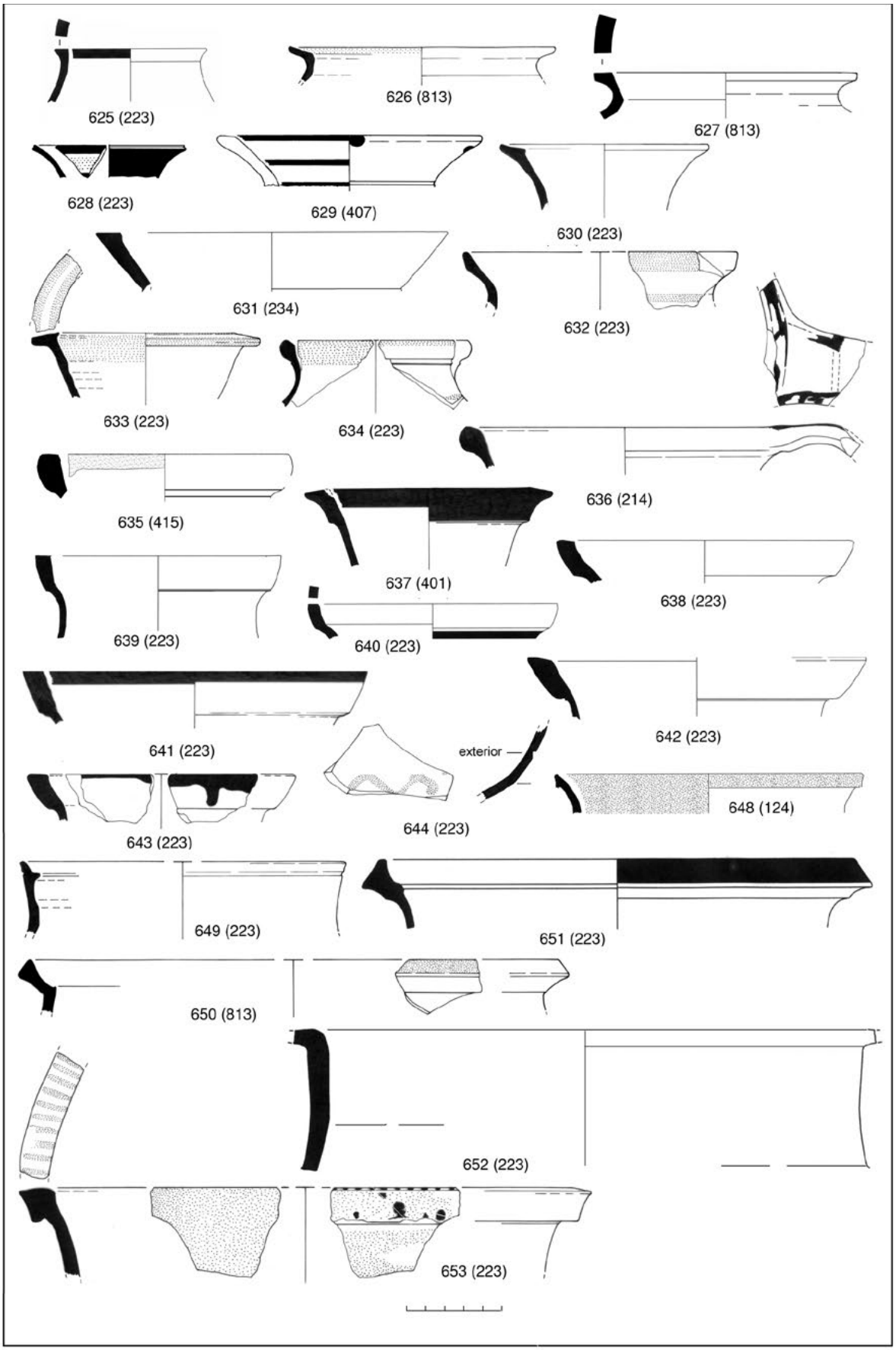


Fig. 12. Wheel-made painted

Jug or jar with plain thickened rim 625; jars with out-turned rim 626, 627; flaring rims 628, 629; jug and hydria rims 630 - 633; closed shape rims thickened externally 634 - 643; shoulder frag. of jug 644; jar with out-turned rim with hooked lip 648; jars/storage vessels with rims recessed for lids 649 - 651; column-kraters 652 - 653

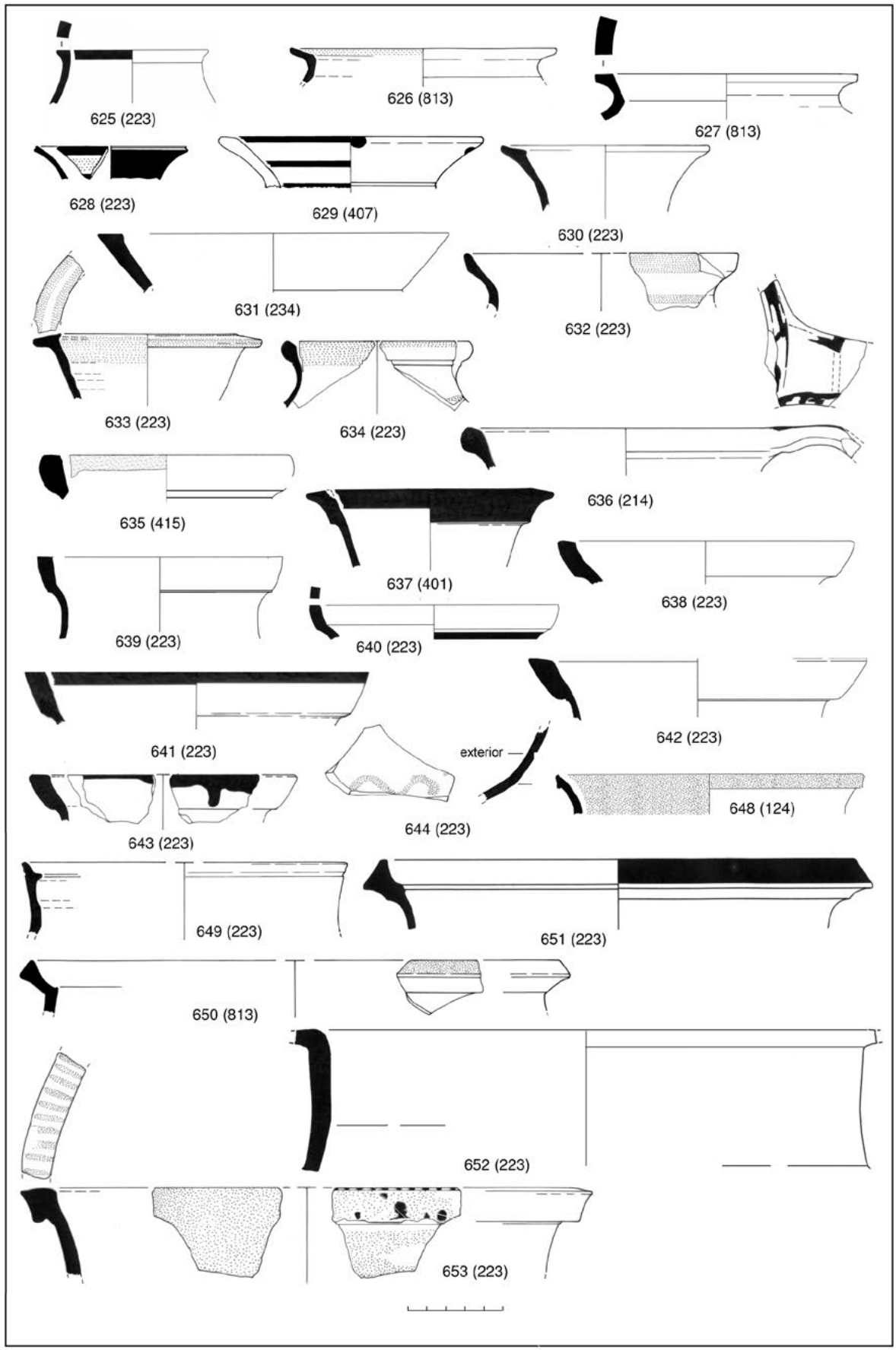


Fig. 13. Wheel-made painted

Jug or jar with plain thickened rim 625; jars with out-turned rim 626, 627; flaring rims 628, 629; jug and hydria rims 630 - 633; closed shape rims thickened externally 634 - 643; shoulder frag. of jug 644; jar with out-turned rim with hooked lip 648; jars/storage vessels with rims recessed for lids 649 - 651; column-kraters 652 - 653

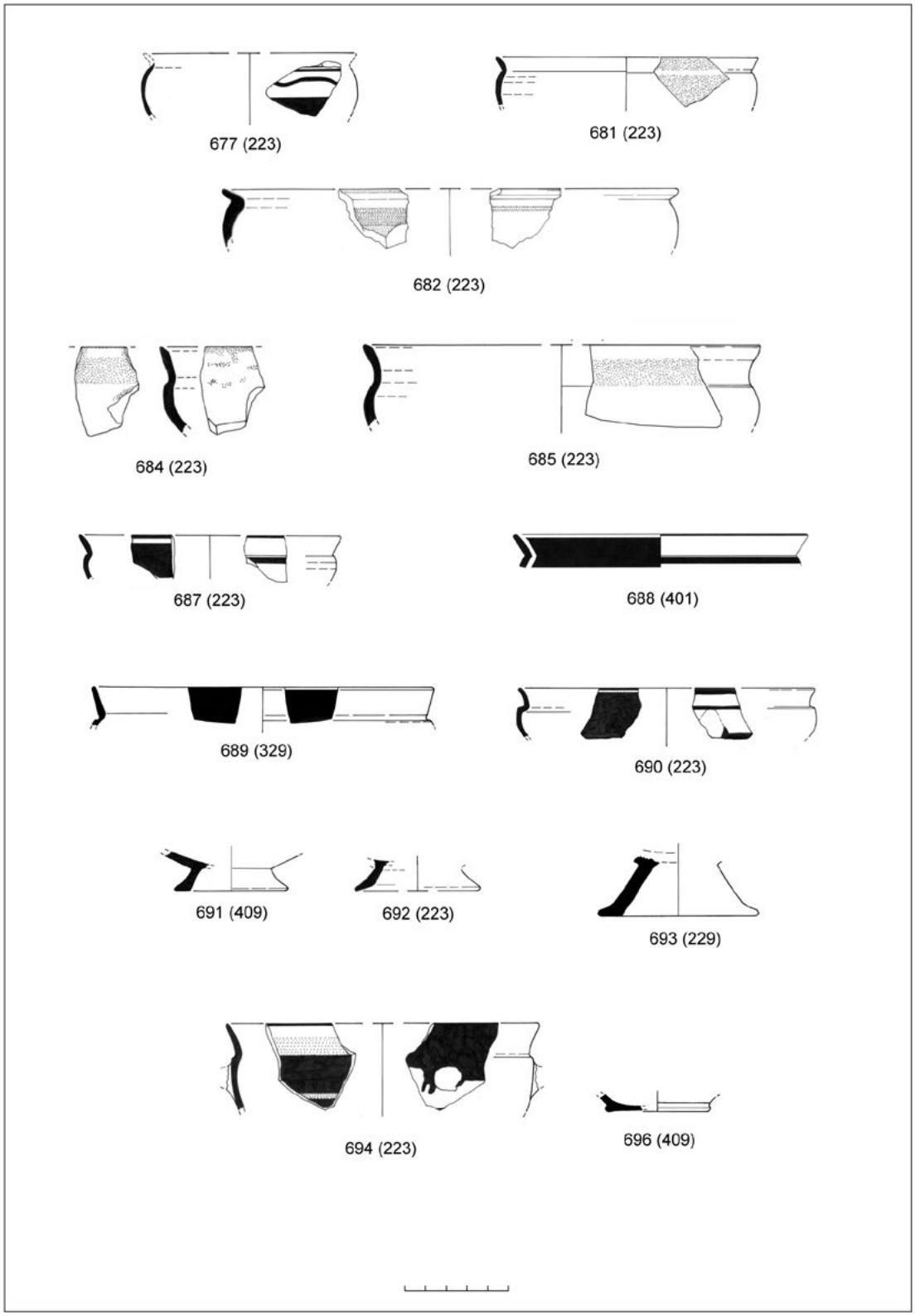


Fig. 14. Greek imported wares

Lipped cup 677; archaic Greek type cups 681, 682, 684, 685, 687 - 693; skyphoi 694, 696

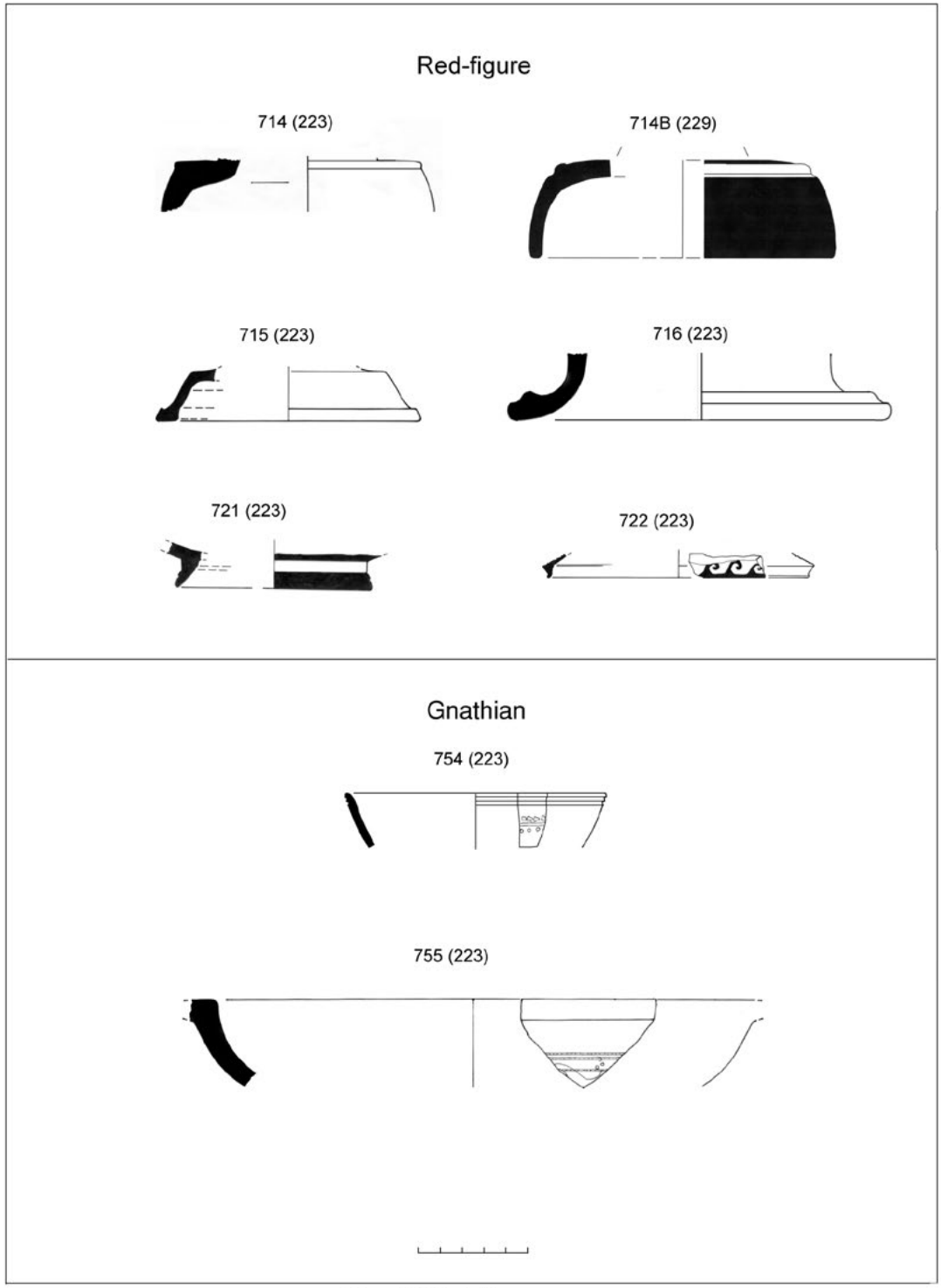


Fig. 15. Red-figure wares
Raised bases 714 - 716; cup skyphos 721; lekanis lid 722
Gnathian
Hemispherical bowl 754; bell-krater 755

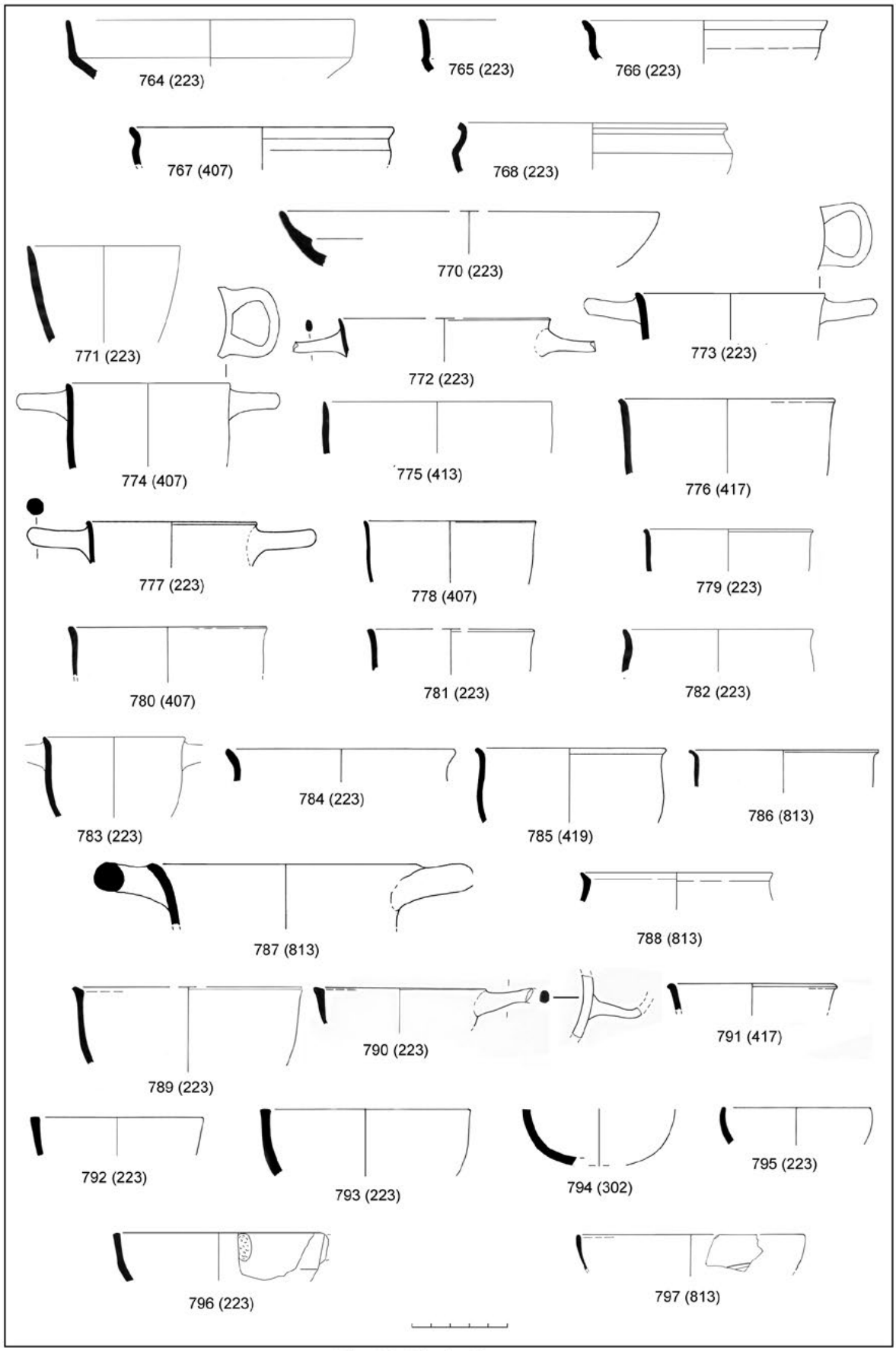


Fig. 16. Black-gloss wares

Stemmed kylikes 764 - 768; stemless kylix 770; skyphoi and cup skyphoi 771 - 787; small bowl or cup with sloping rim 788; one handled cups 789 - 796; hemispherical bowl 797

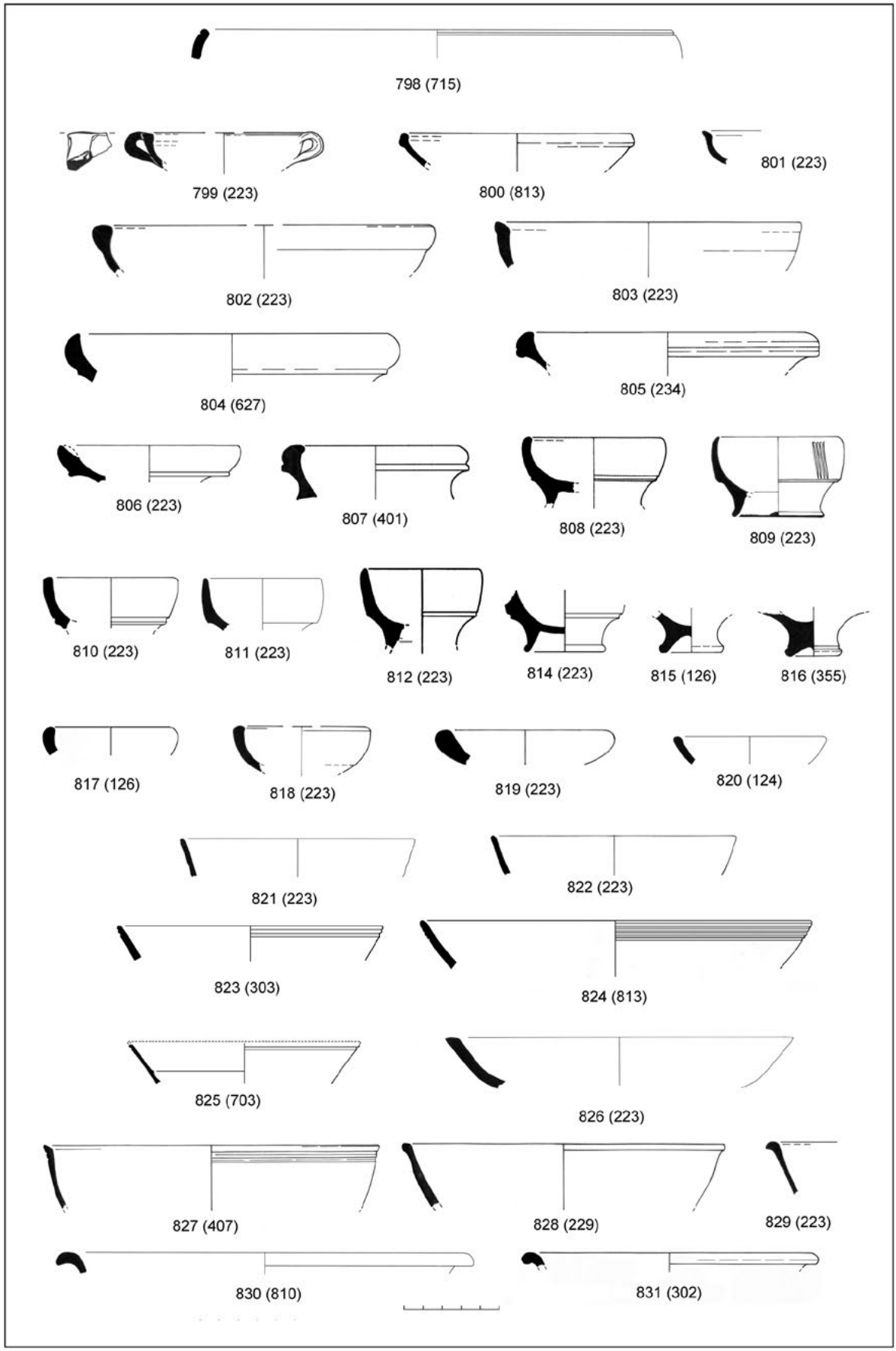


Fig. 17. Black-gloss wares

Misc. cups and bowls 798 - 800; stemmed dishes 801 - 803; salt cellars 804 - 812, 814 - 816; small bowls/dishes 817 - 822; mastoi 823 - 825; misc bowls 826 - 831

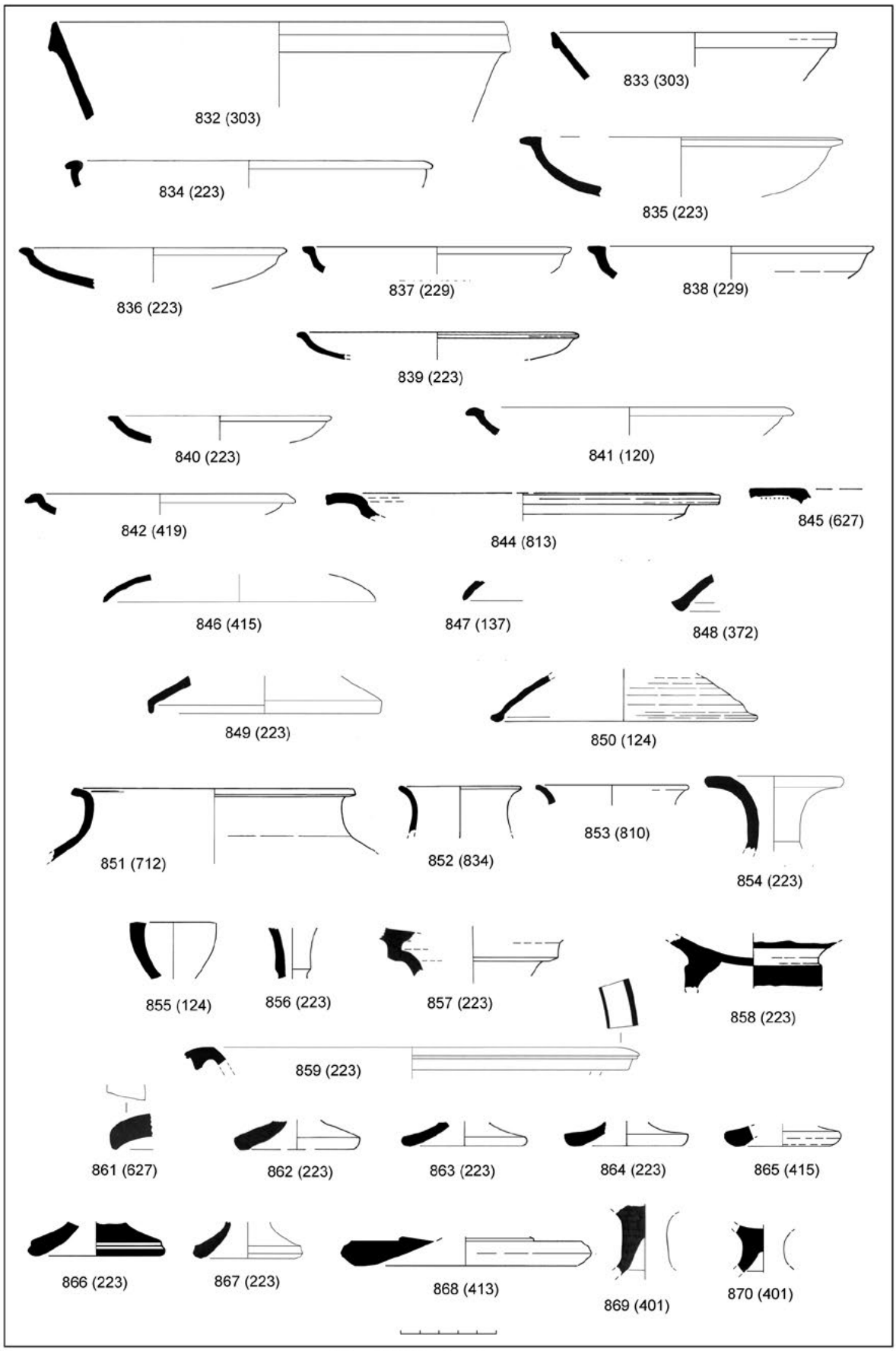


Fig. 18. Black-gloss wares

Misc. bowls and dishes 832 - 835; plates 836 - 842, 844, 845; lid or dish rims 846 - 850; stamnos 851; jugs/oinochoae 852, 853; alabastron 854; lekythoi 855, 856; thymiateria 857, 858; bell krater 859; handle 861; kylix bases 862 - 868; stems 869, 870

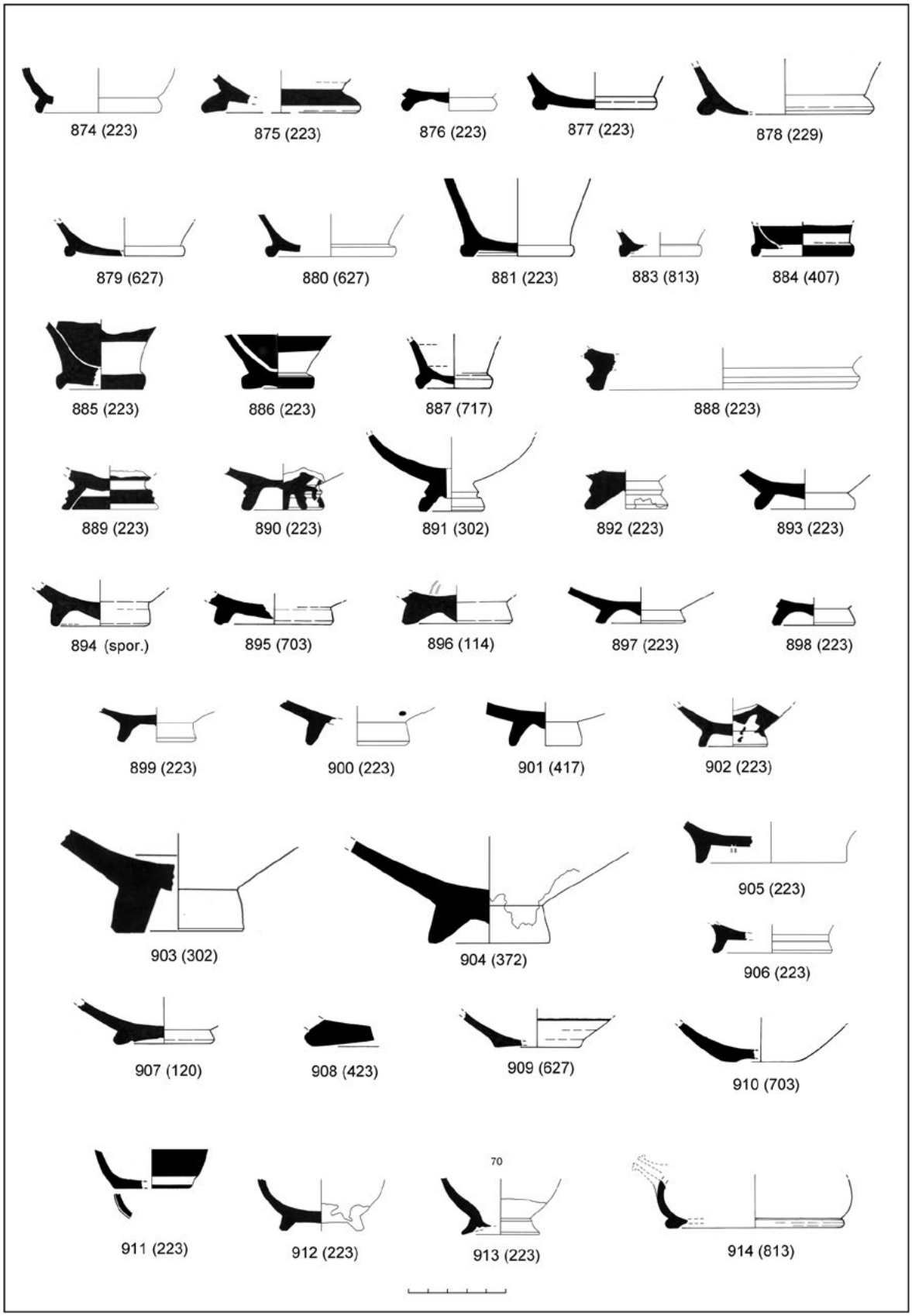


Fig. 19. Black-gloss wares

Skyphos bases 874 - 881, 883; ring bases "Attic" type 884 - 887; cup-kylix base 888, high bases 889 - 892; ring bases 893 - 906; offset bases 907 - 909; recessed base 910; bases of closed shapes 911 - 914

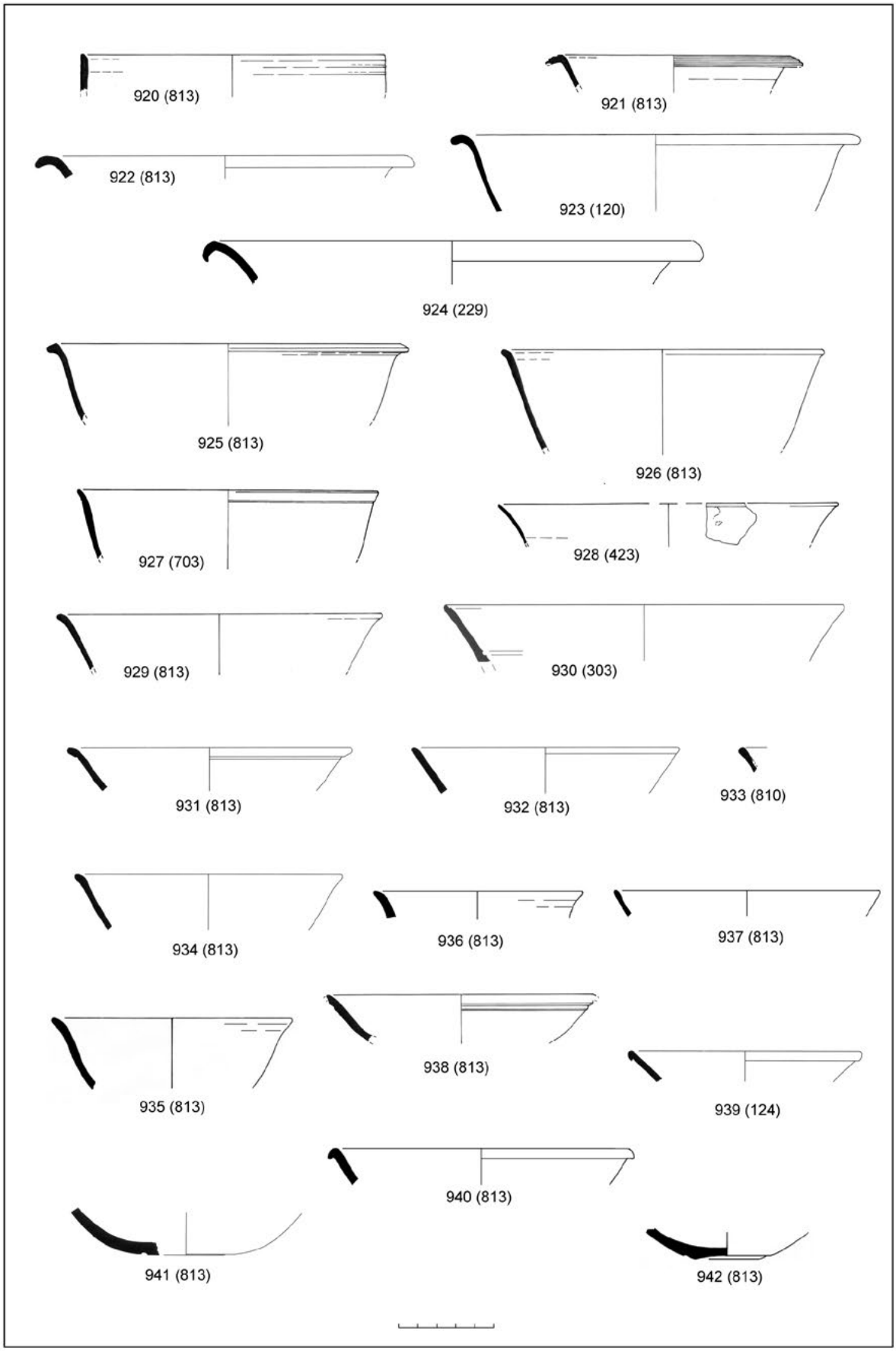


Fig. 20. Grey-gloss wares

Misc. bowls with vertical or out-turned rim 920 - 925; mastoi 926 - 937;
shallow bowls with oblique walls and hooked rims 938 - 940; mastos bases 941, 942.

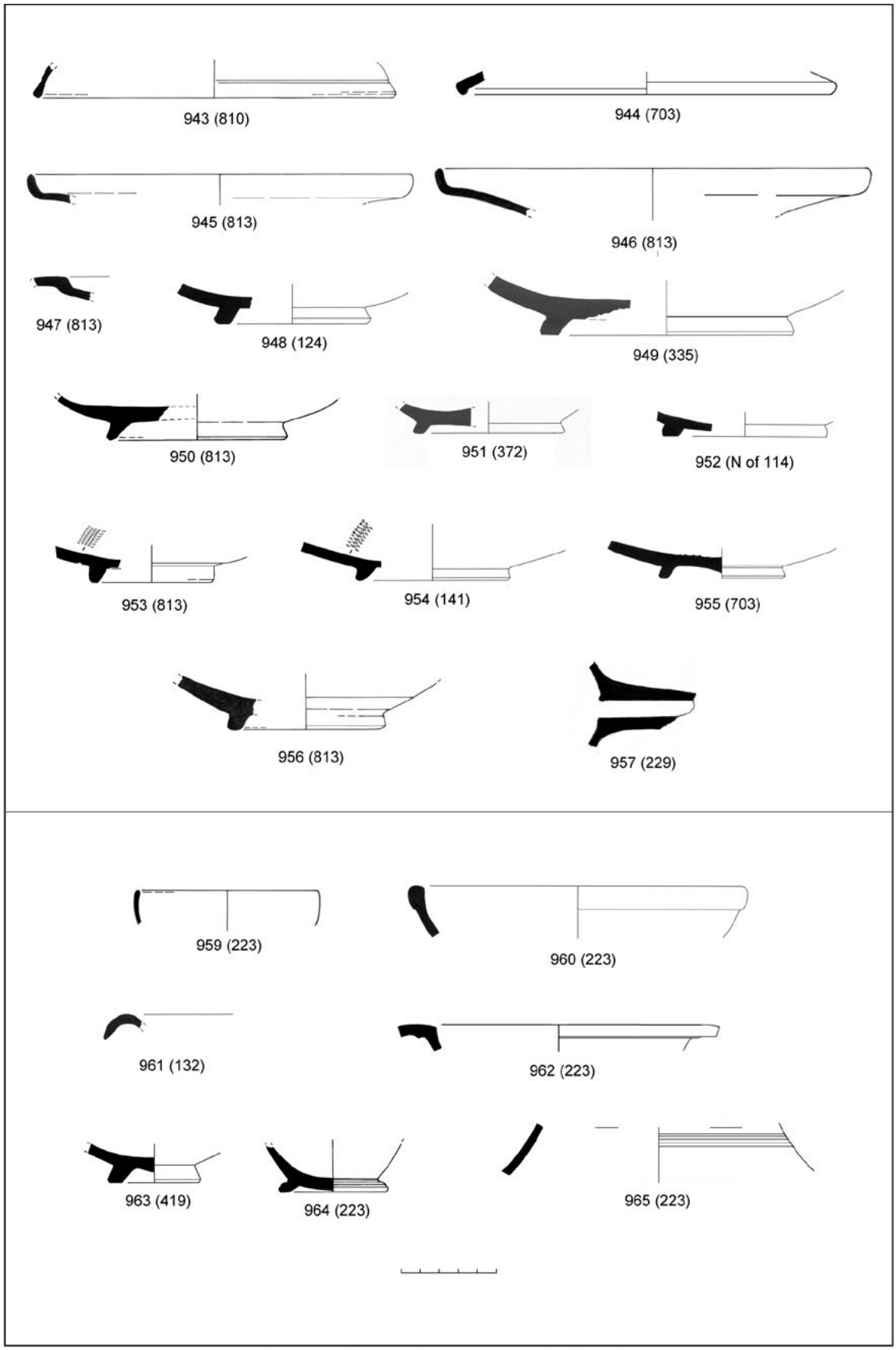


Fig. 21. Grey-gloss and pre-Roman red-slipped wares

Grey-gloss lid rims 843-944; plate rims 945-947; ring bases 948-956; spouted vessel 957.
Pre-Roman red slipped bowl rims 959 - 962; dish base 963; skyphos base 964; jug wall 965

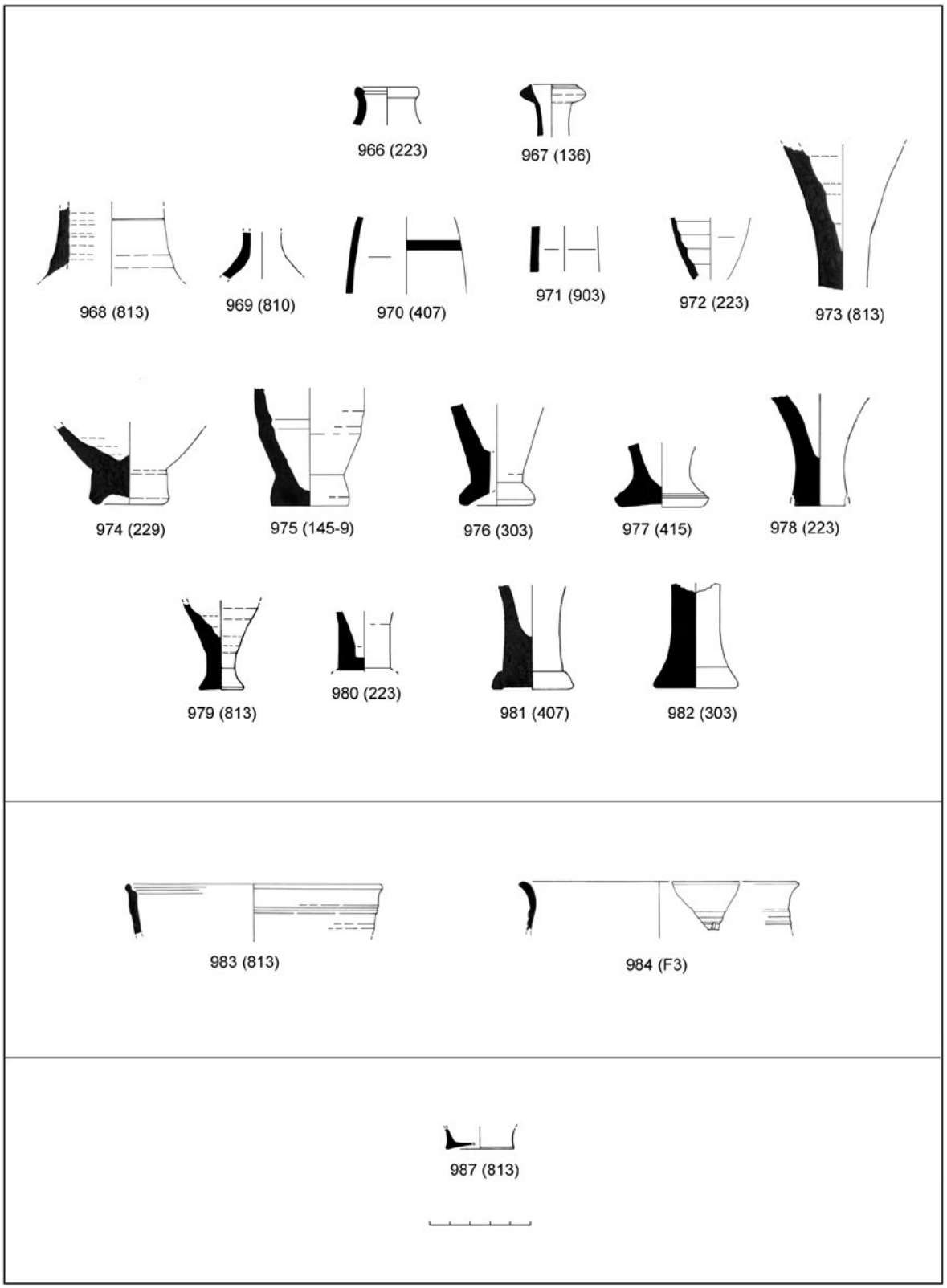


Fig. 22. Unguentaria, Relief decorated bowls and Thin-walled ware
Unguentarium rims 966, 967, wall sherds 968 - 9, feet and stems 974 - 982;
Relief decorated bowls 983, 984; Thin-walled ware 987

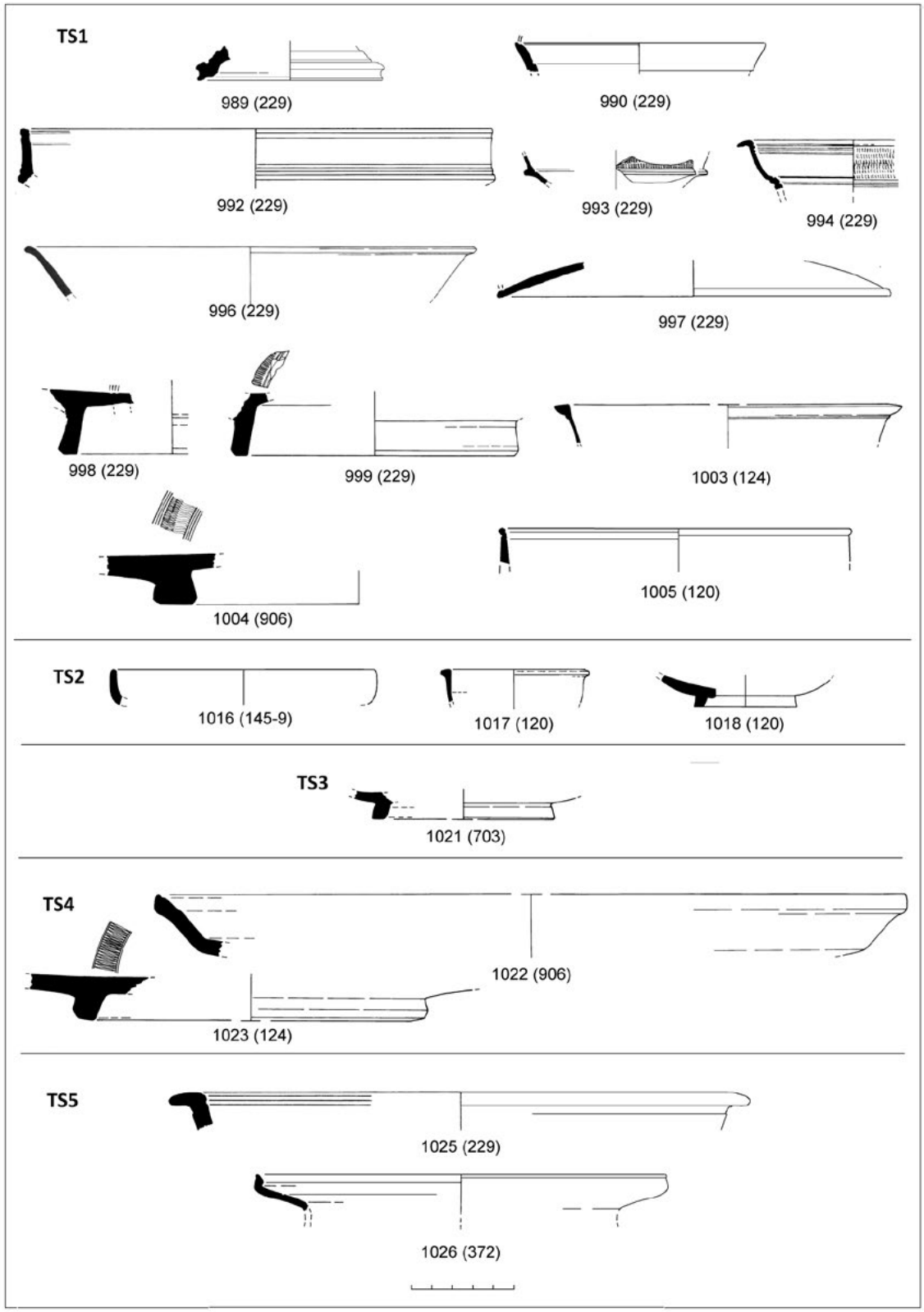


Fig. 23. Terra Sigillata

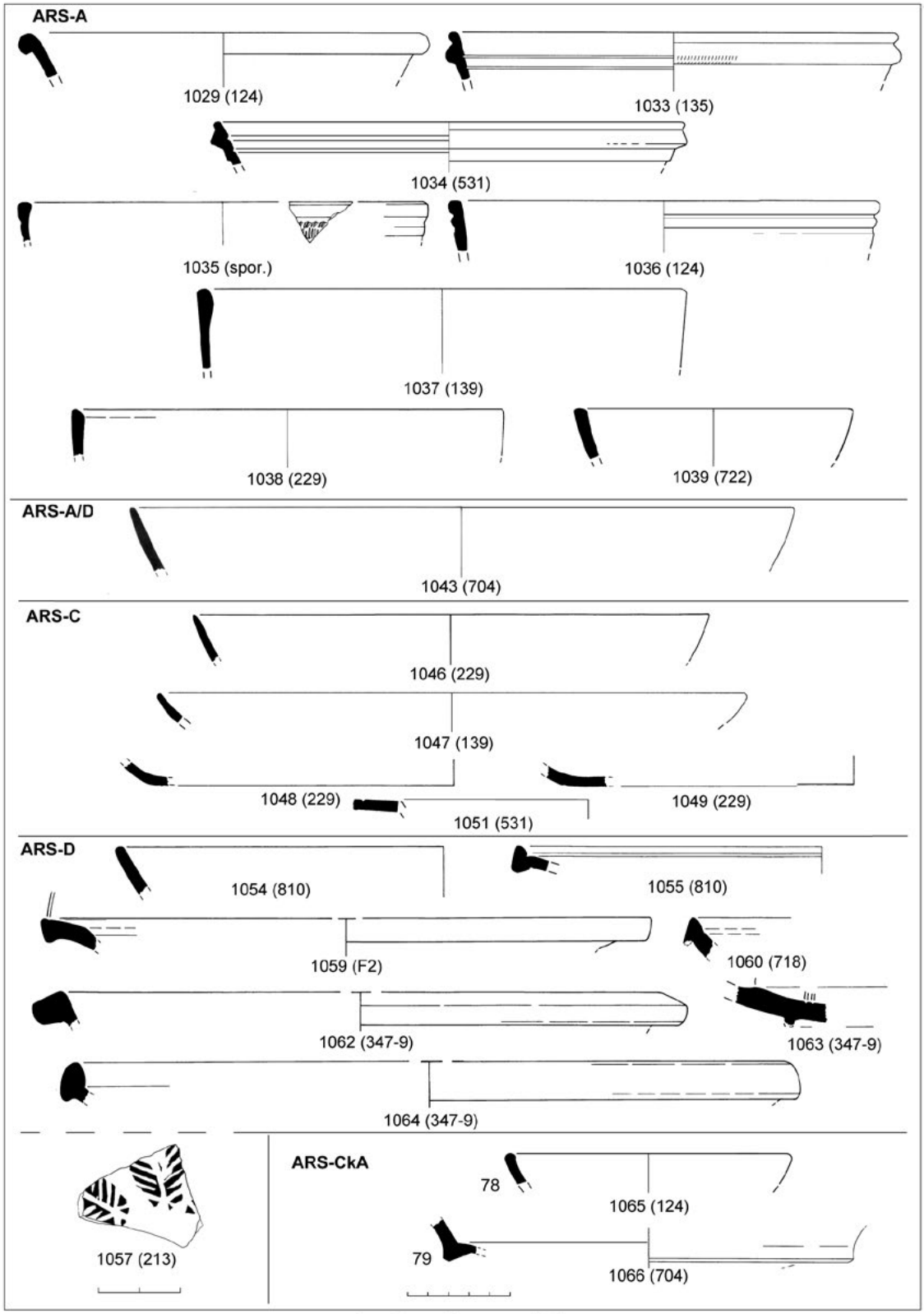


Fig. 24. African Red Slip

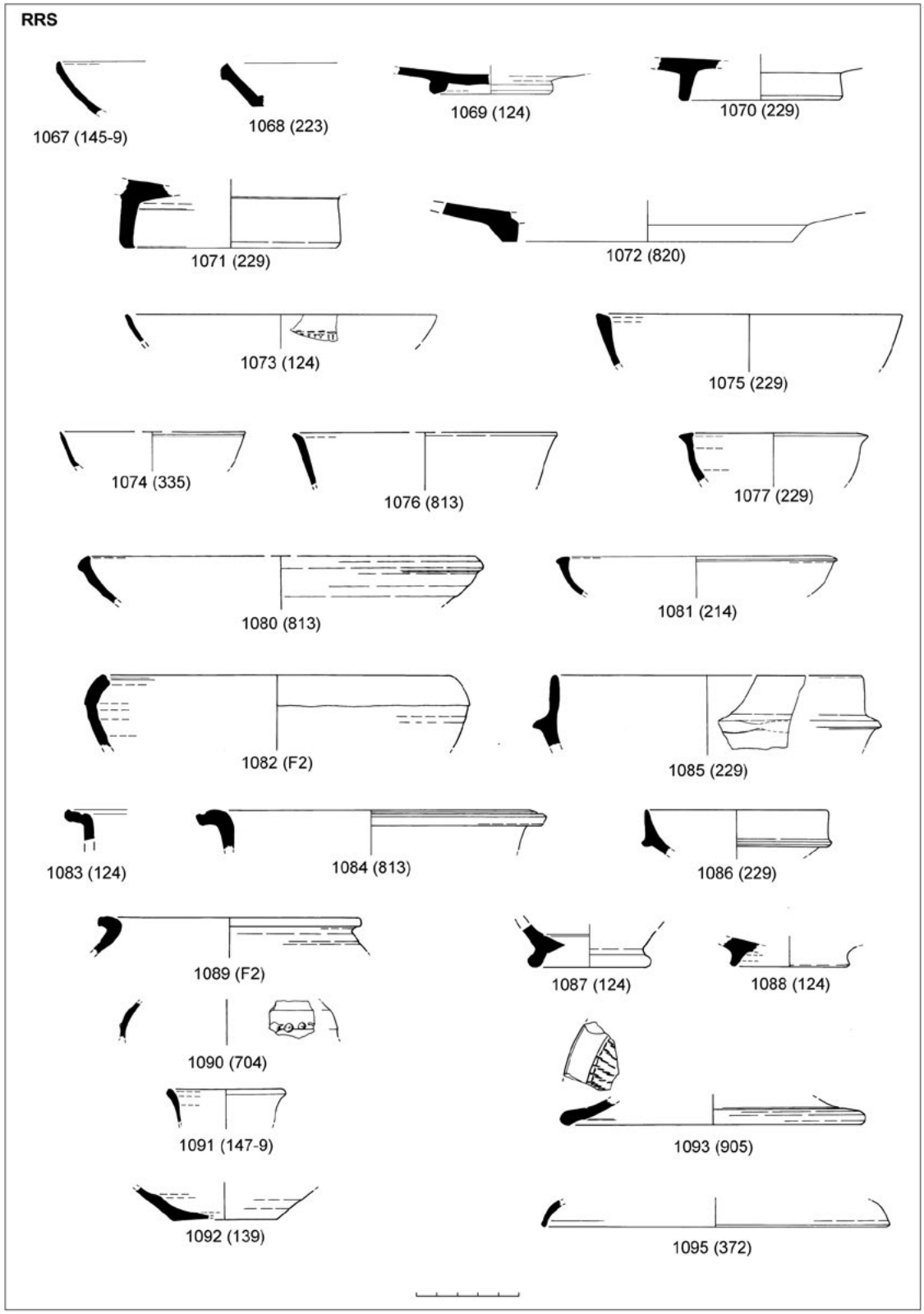


Fig. 25. Regional Red Slip

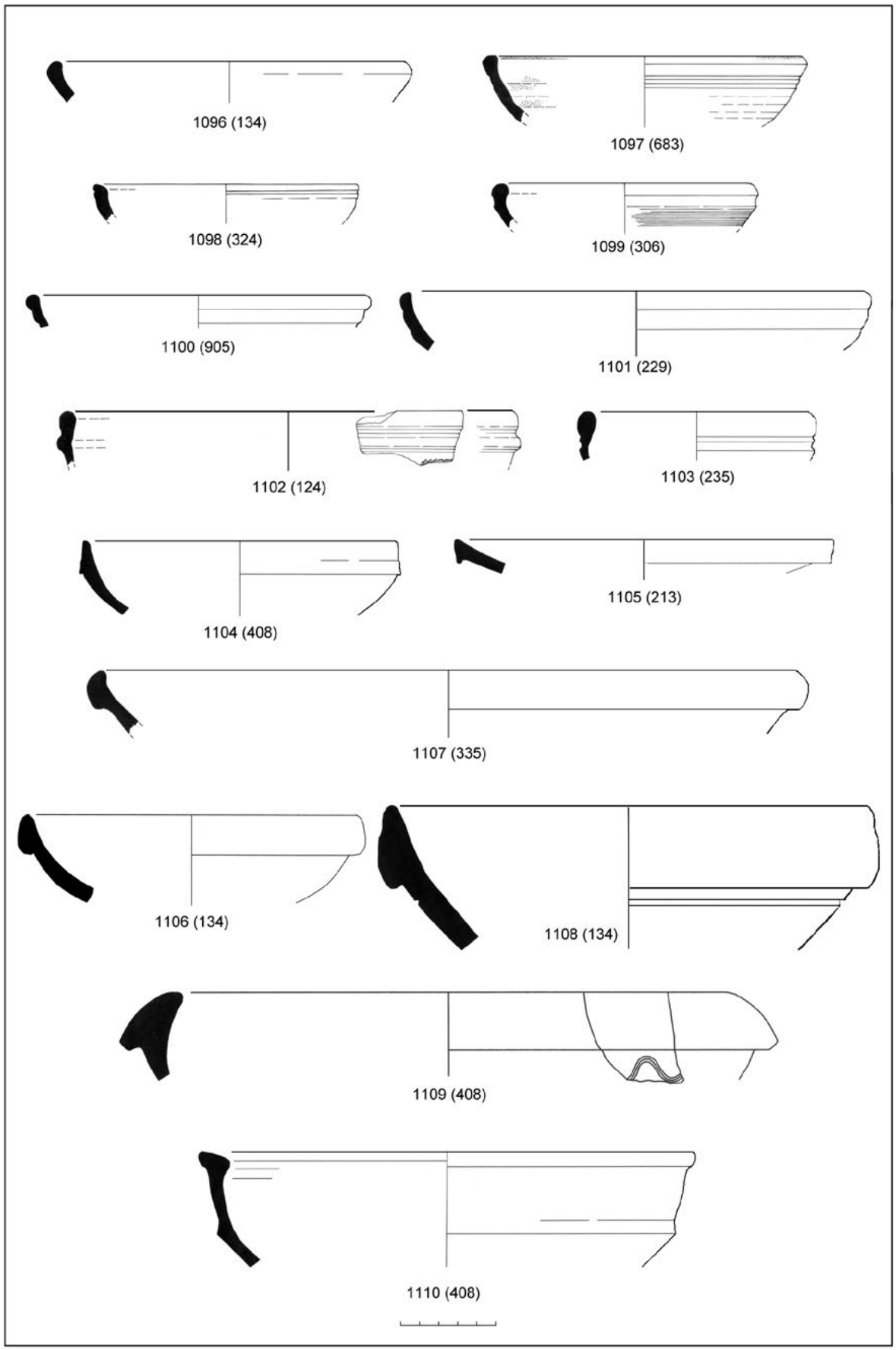


Fig. 26. Late Roman Painted Ware
SGR Form 21B 1096; Form 23 1097; Form 23 Variants 1098 - 1103; Form 28 1104, 1105; Form 31 1106 - 1109; unassigned bowl 1110

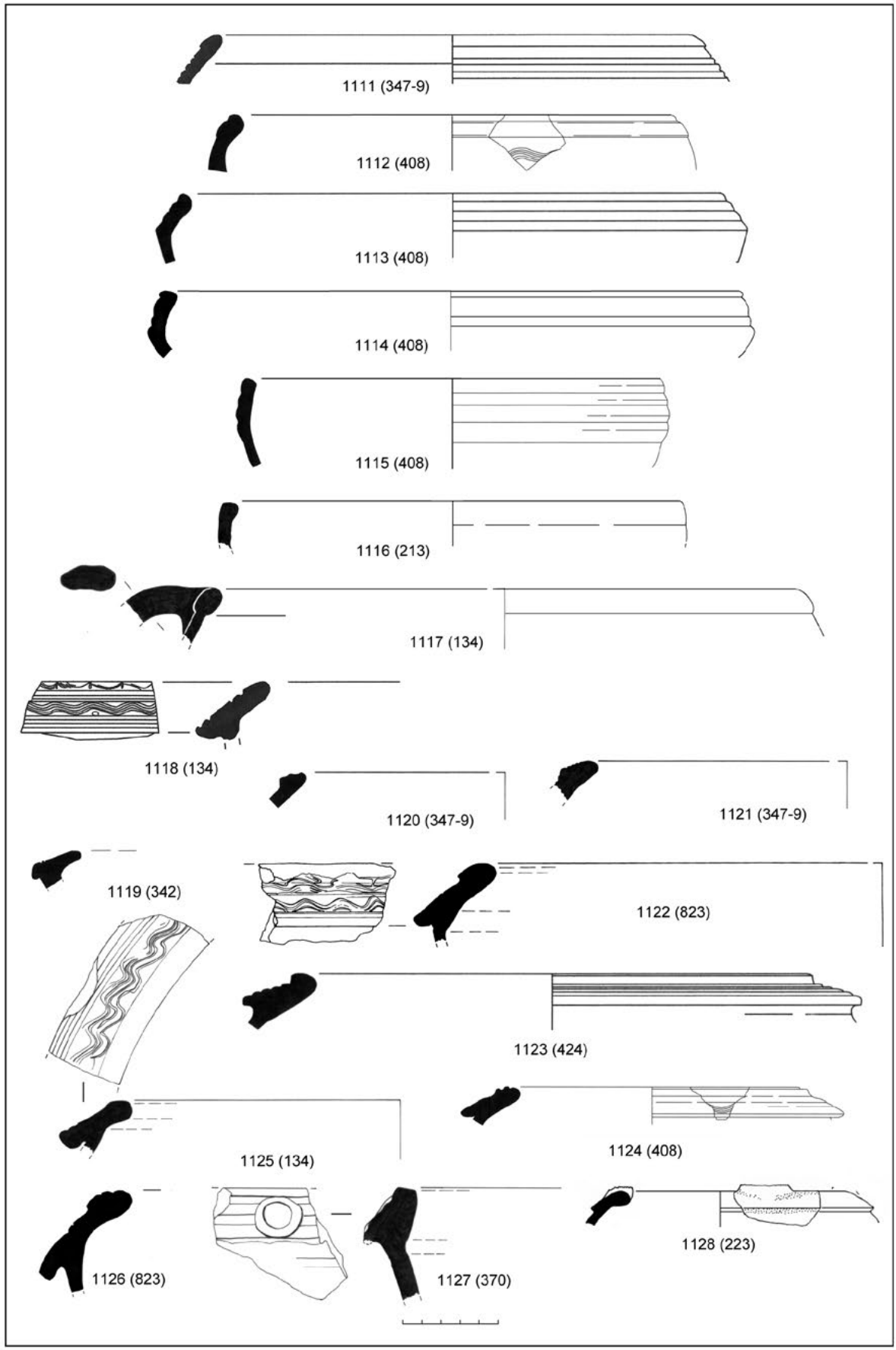


Fig. 27. Late Roman Painted Ware

SGR Form 53 1111 - 1116; Globular bowl with vertical handle(s) 1117; Form 42 1118 - 1128

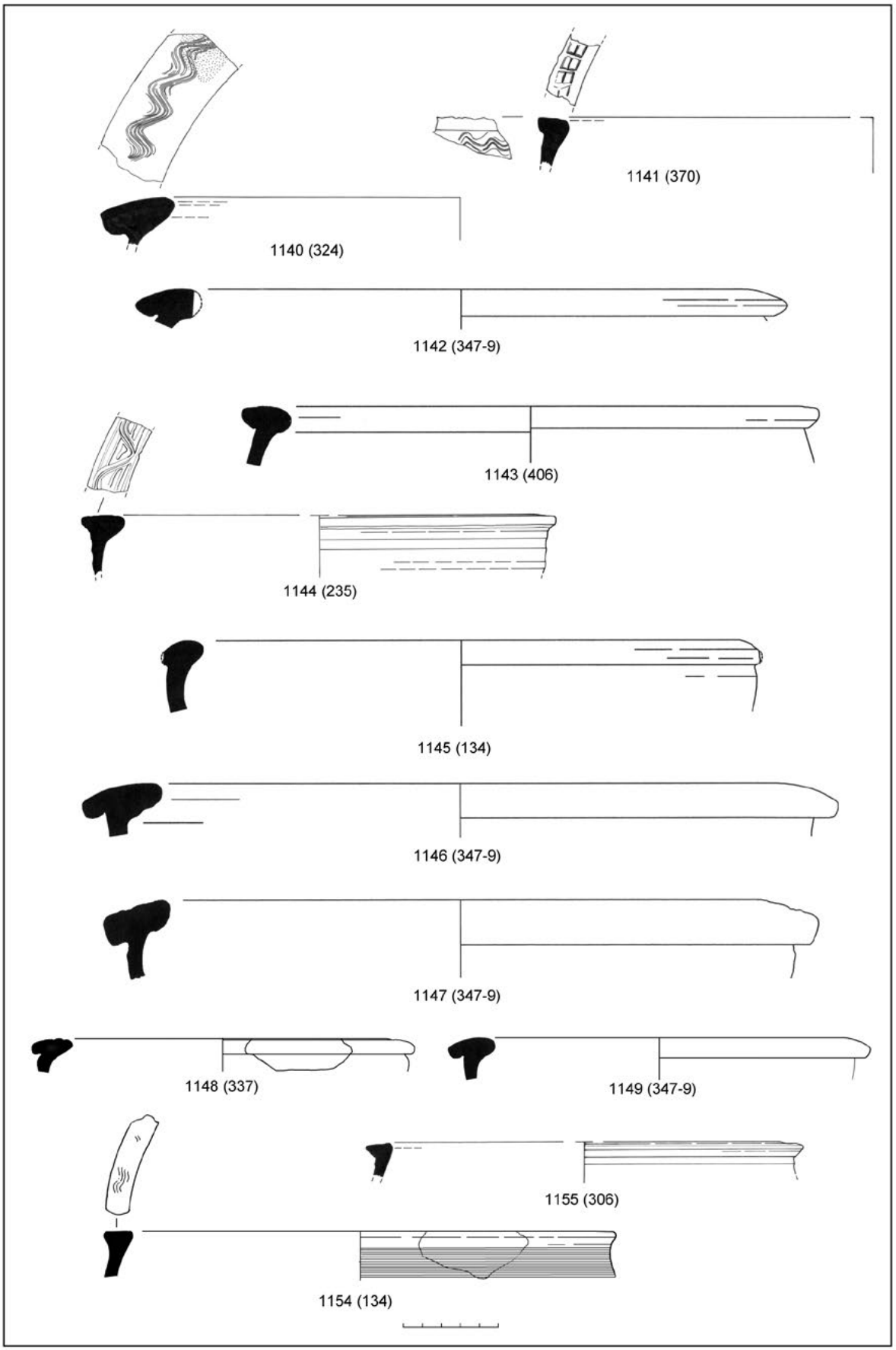


Fig. 28. Late Roman Painted Ware
SGR Form 43 1140 - 1149; Form 43 variants 1154, 1155

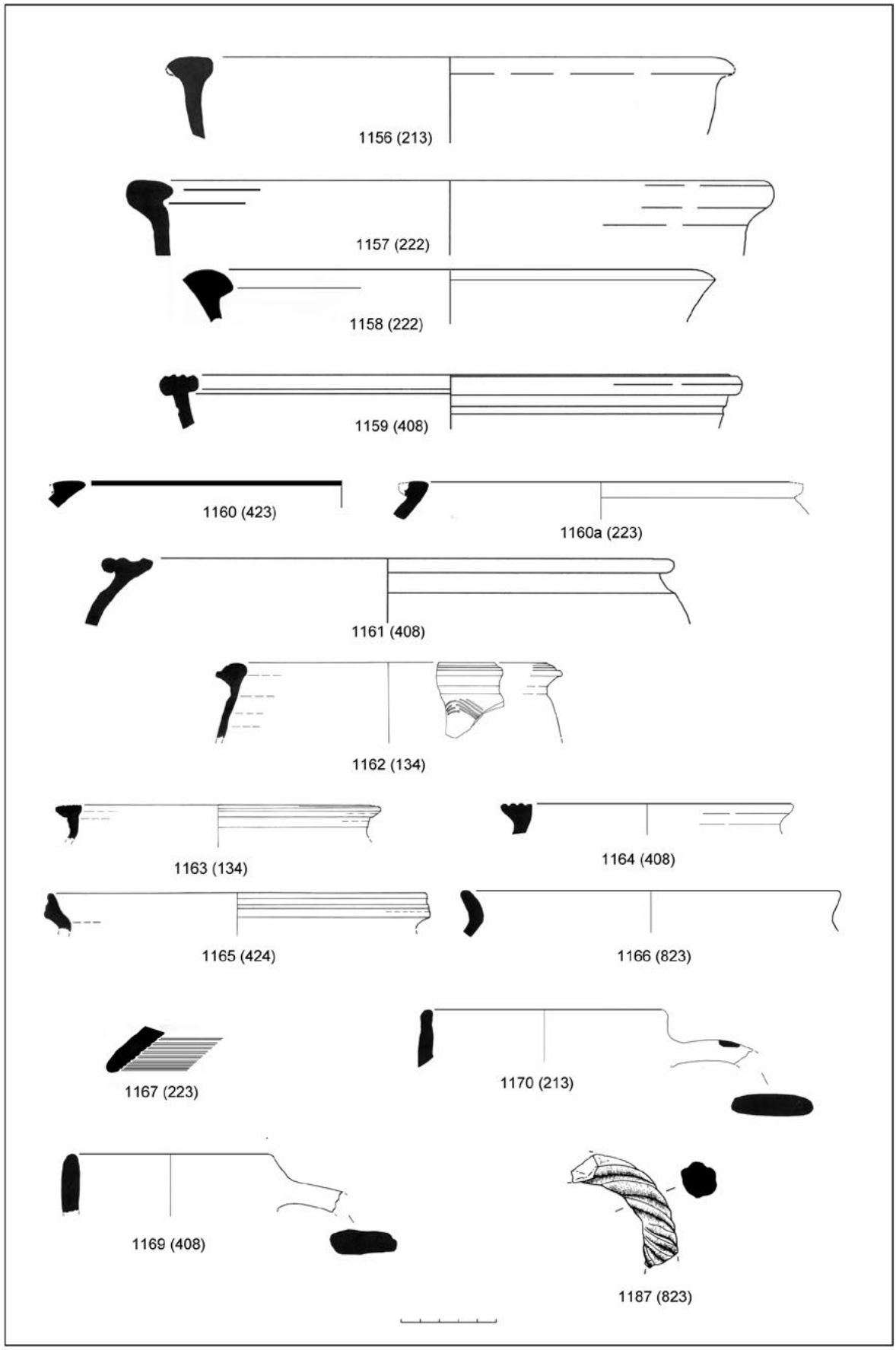


Fig. 29. Late Roman Painted Ware
SGR Form 43 variants (cont.) 1156 - 1159; globular jars/ bowls 1160 - 1161; Form 45 1162; misc. jars 1163 - 1166; lid? 1167; amphorae/flagons 1169, 1170, 1187

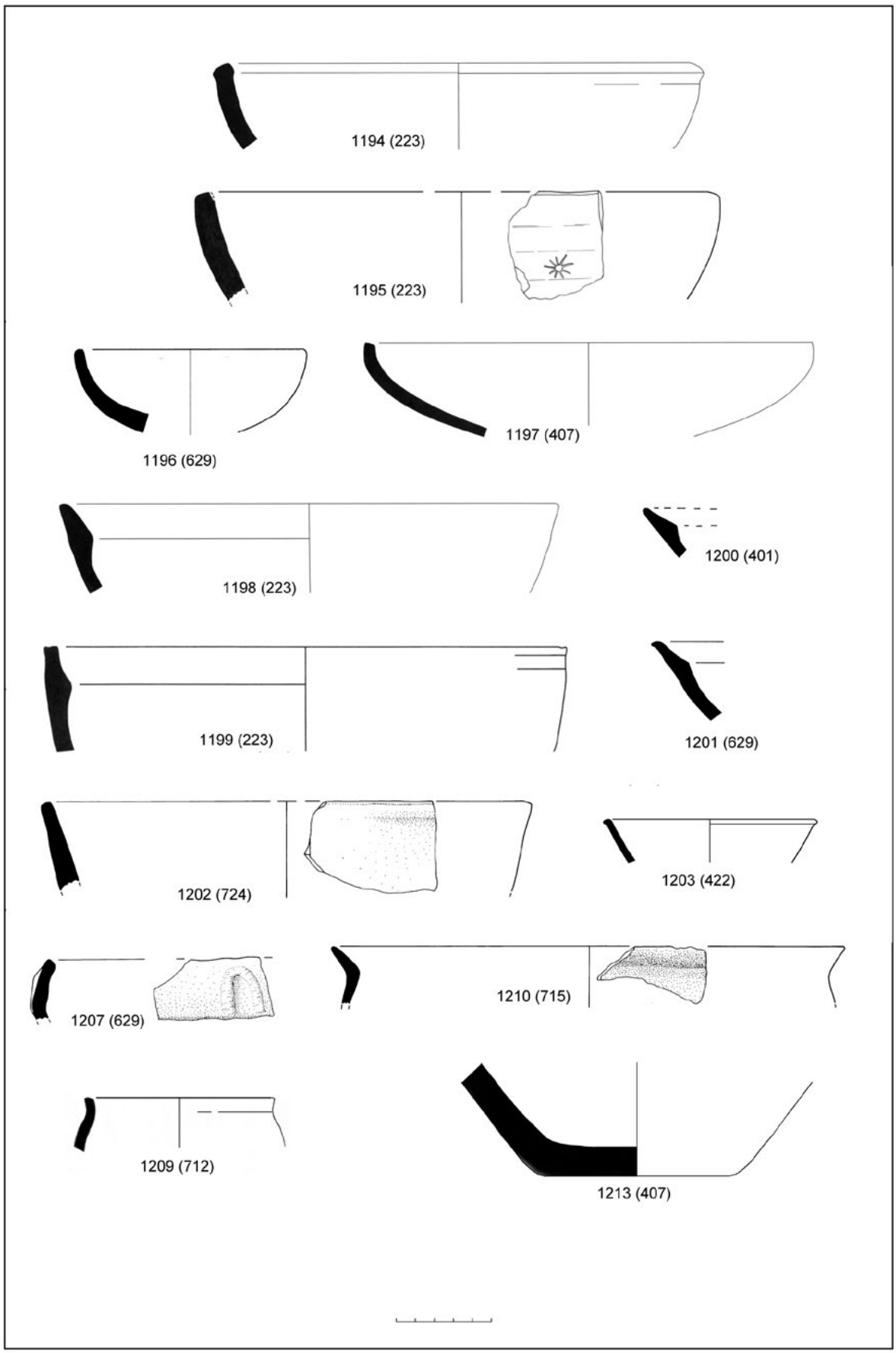


Fig. 30. Plain hand-made pottery
Bowls 1194 - 1203, 1207; rims 1209, 1210; base 1213

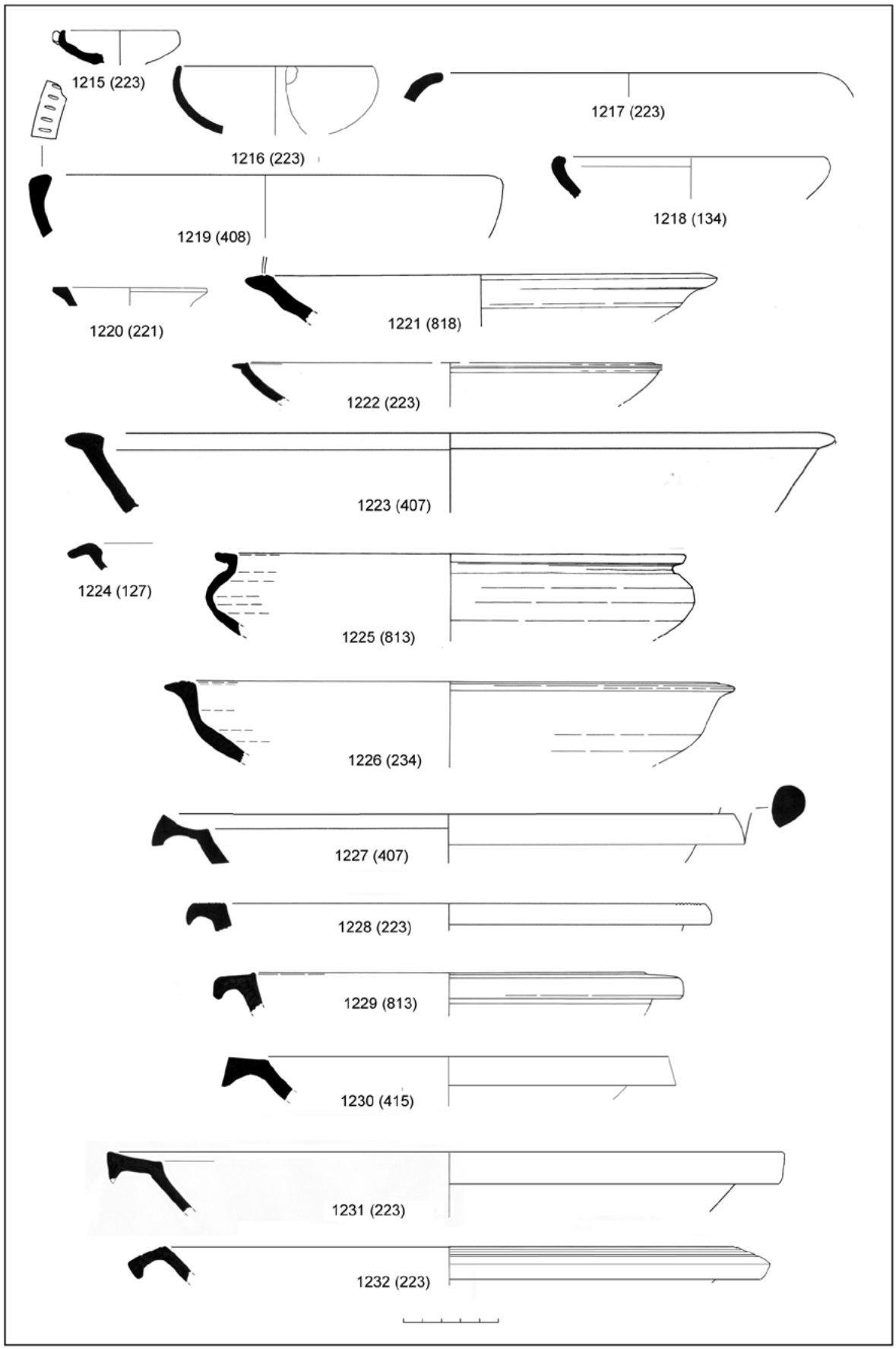


Fig. 31. Plain wheel-made wares
Miniature cup 1215; bowls and dishes 1216 - 1225; lekanai 1226 - 1232

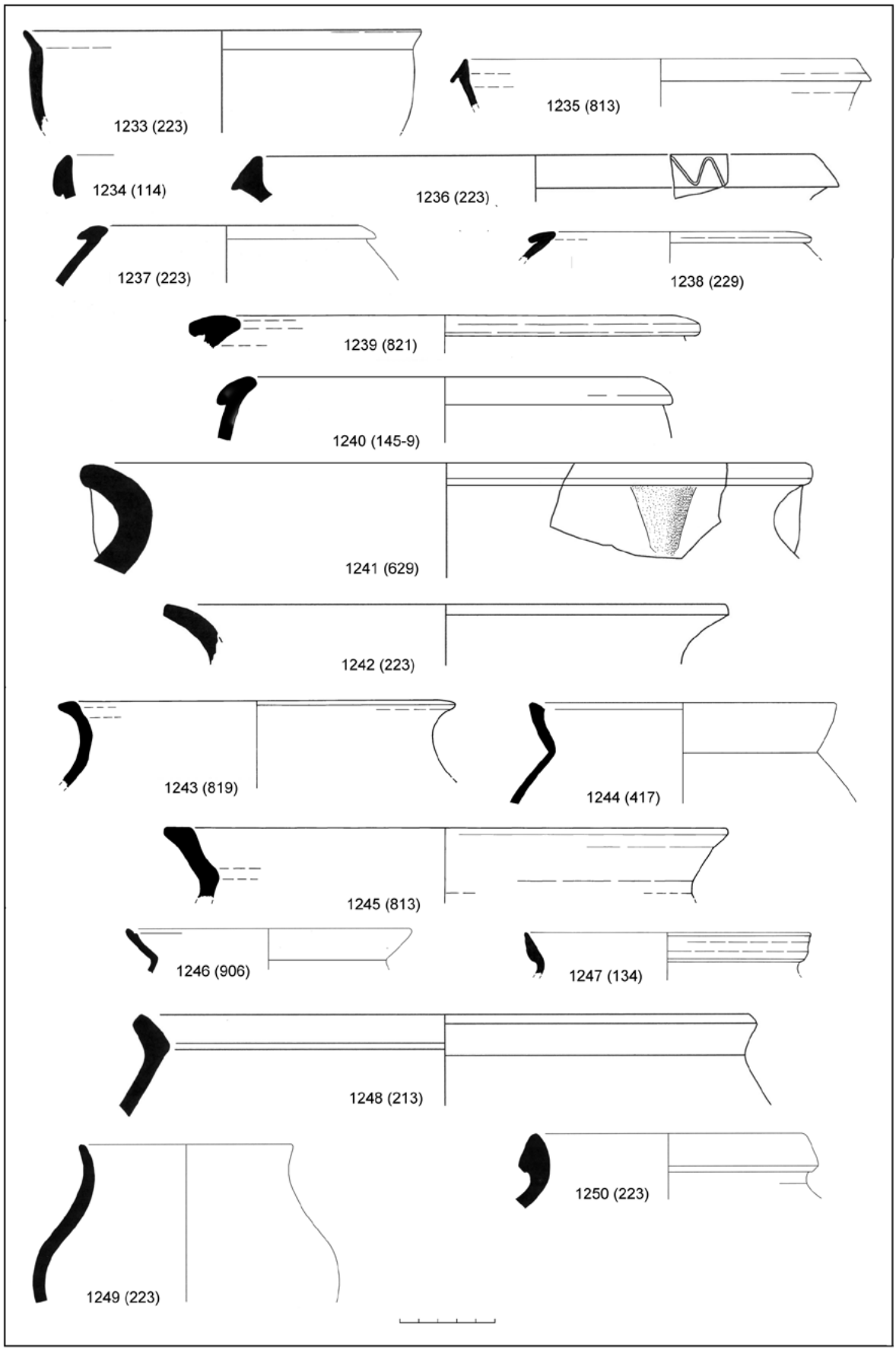


Fig. 32. Plain wheel-made wares
Misc. bowls 1233 - 1236; storage pots 1237 - 1248; misc. jars 1249, 1250

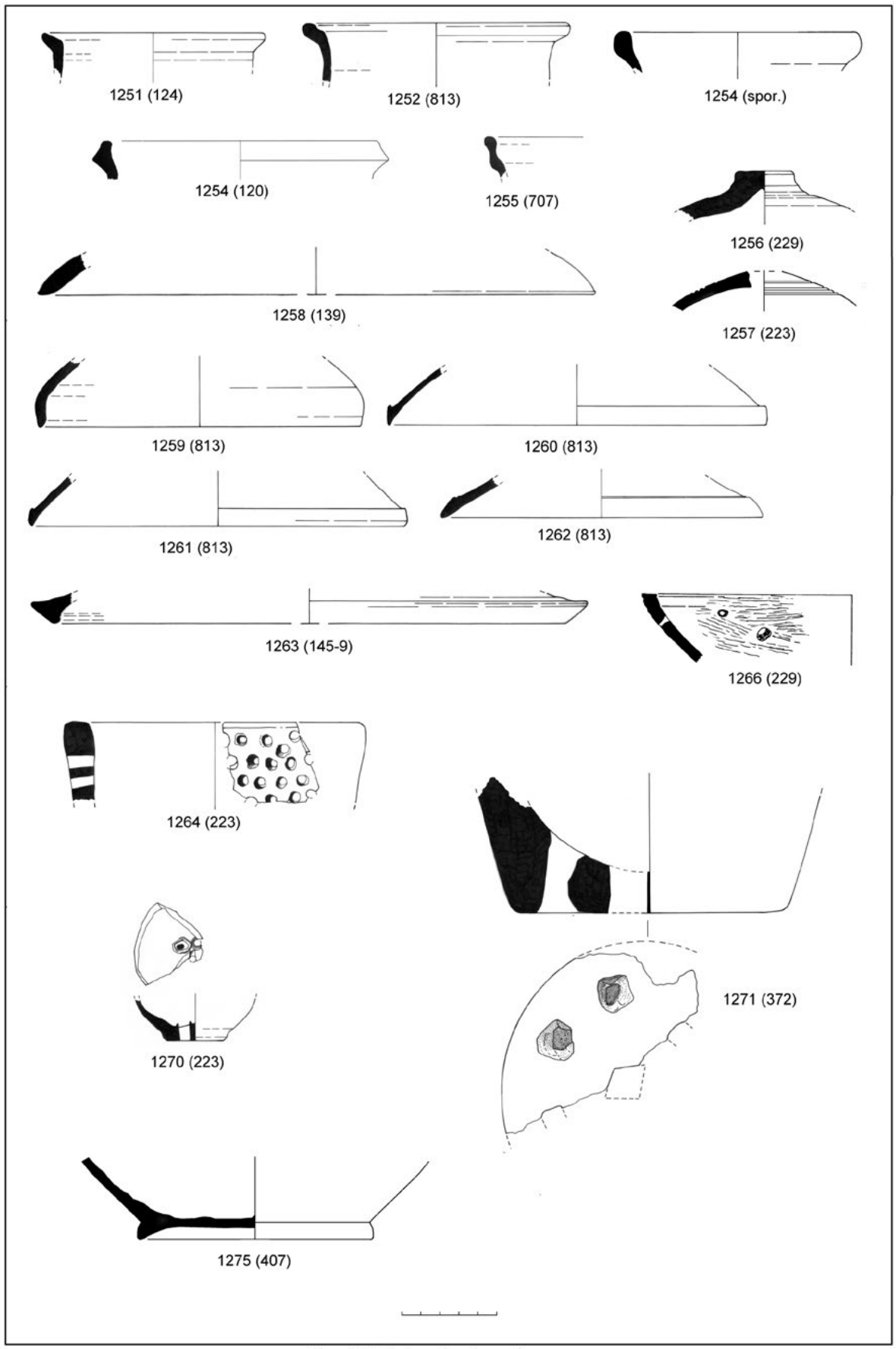


Fig. 33. Plain wheel-made wares
Table amphorae, flagons and jugs 1251 - 1255; lids 1256 - 1263;
colanders 1264, 1266; flower pots 1270, 1271; ring base 1275

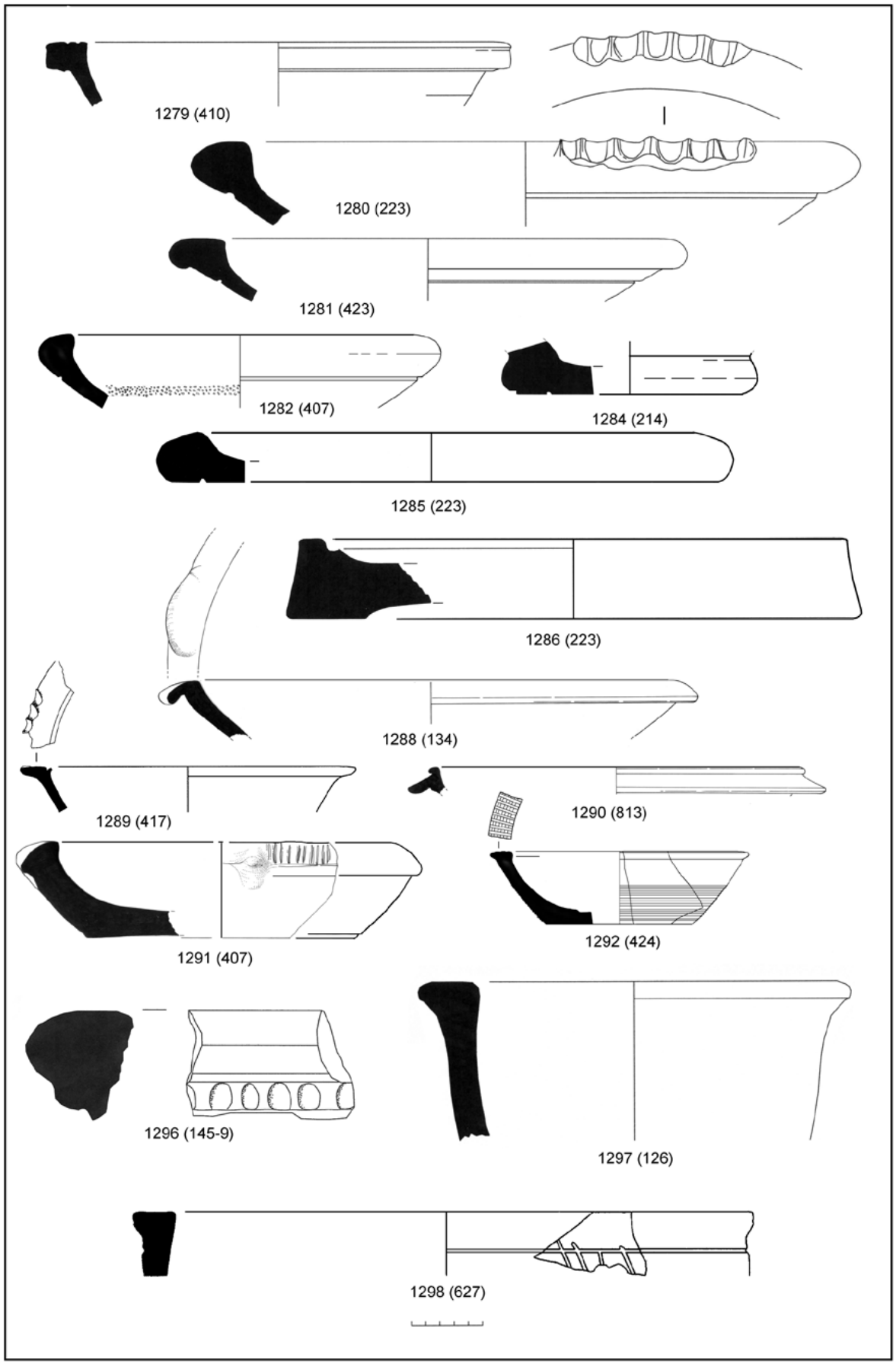


Fig. 34. Plain wheel-made wares

Mortaria and other large bowls 1279 - 1282, 1284 - 1286, 1288 - 1292; misc. basins 1296 - 1298

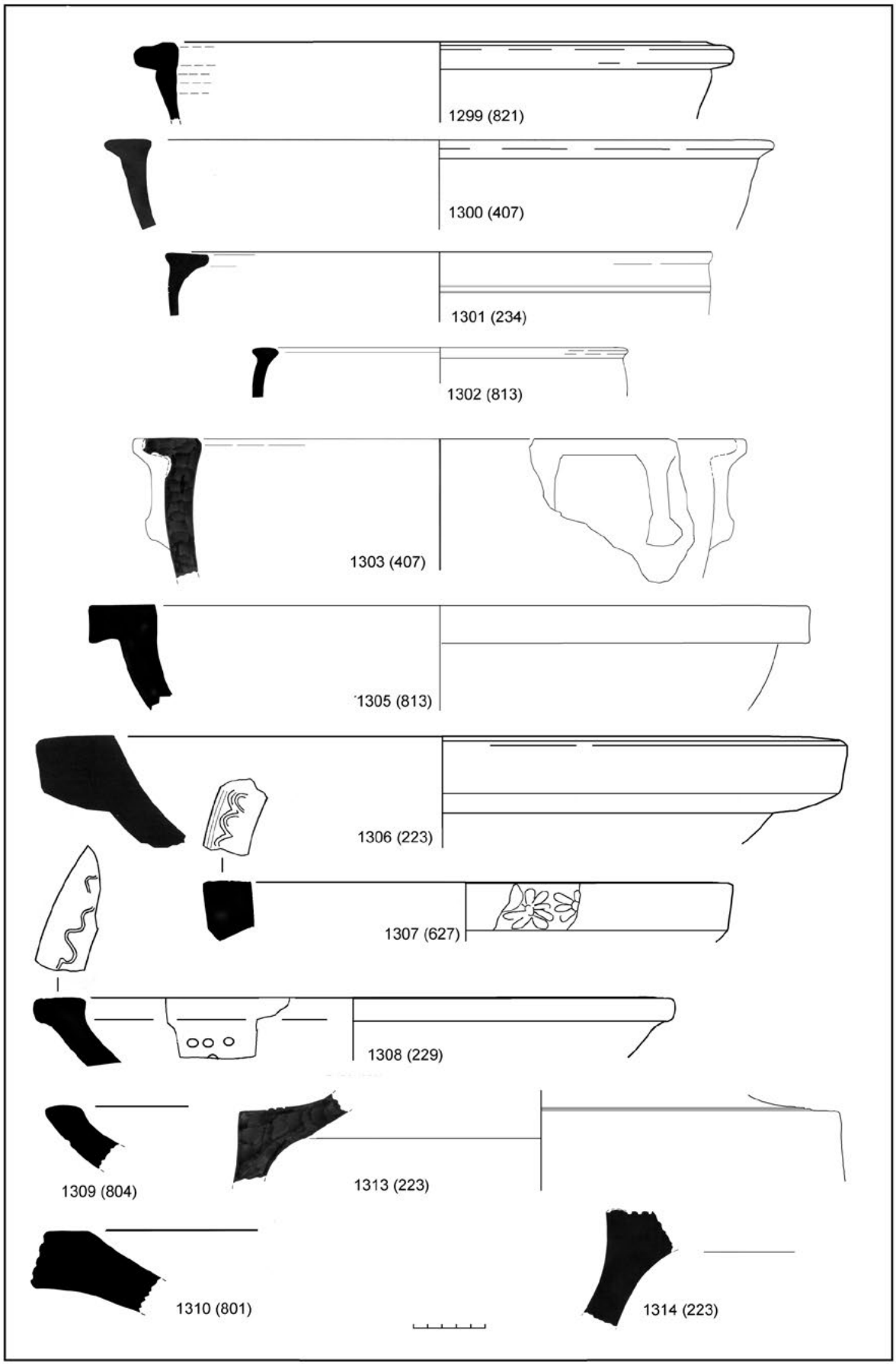


Fig. 35. Plain wheel-made wares

Misc. bowls 1299, 1300; large basins 1301 - 1303; louteria (basins)1305 - 1310, (pedestals) 1313, 1314

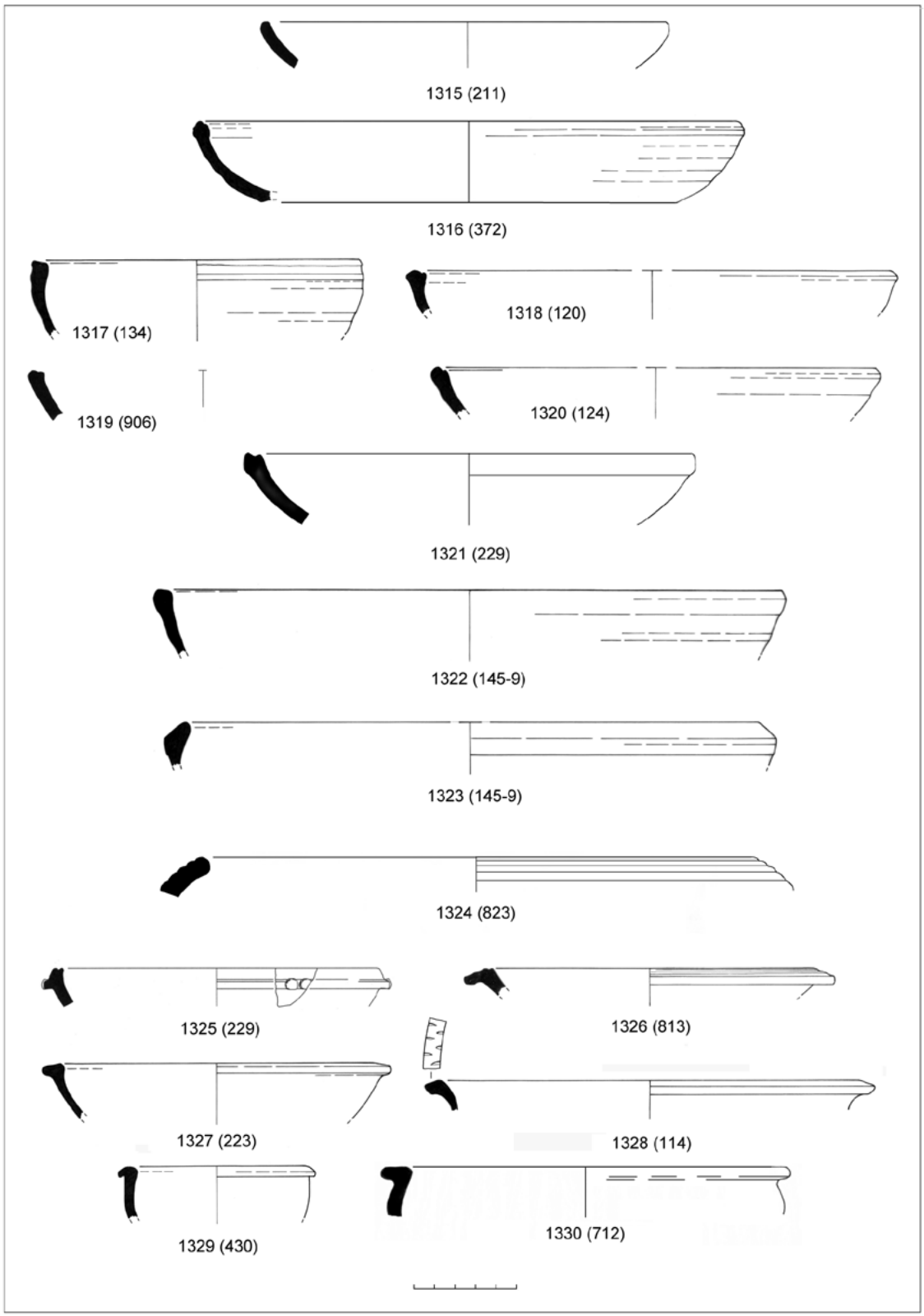


Fig. 36. Cooking pots

Dishes 1315 - 1323; funnel 1324; flanged bowl 1325; bowls with out-turned rims 1326 - 1330

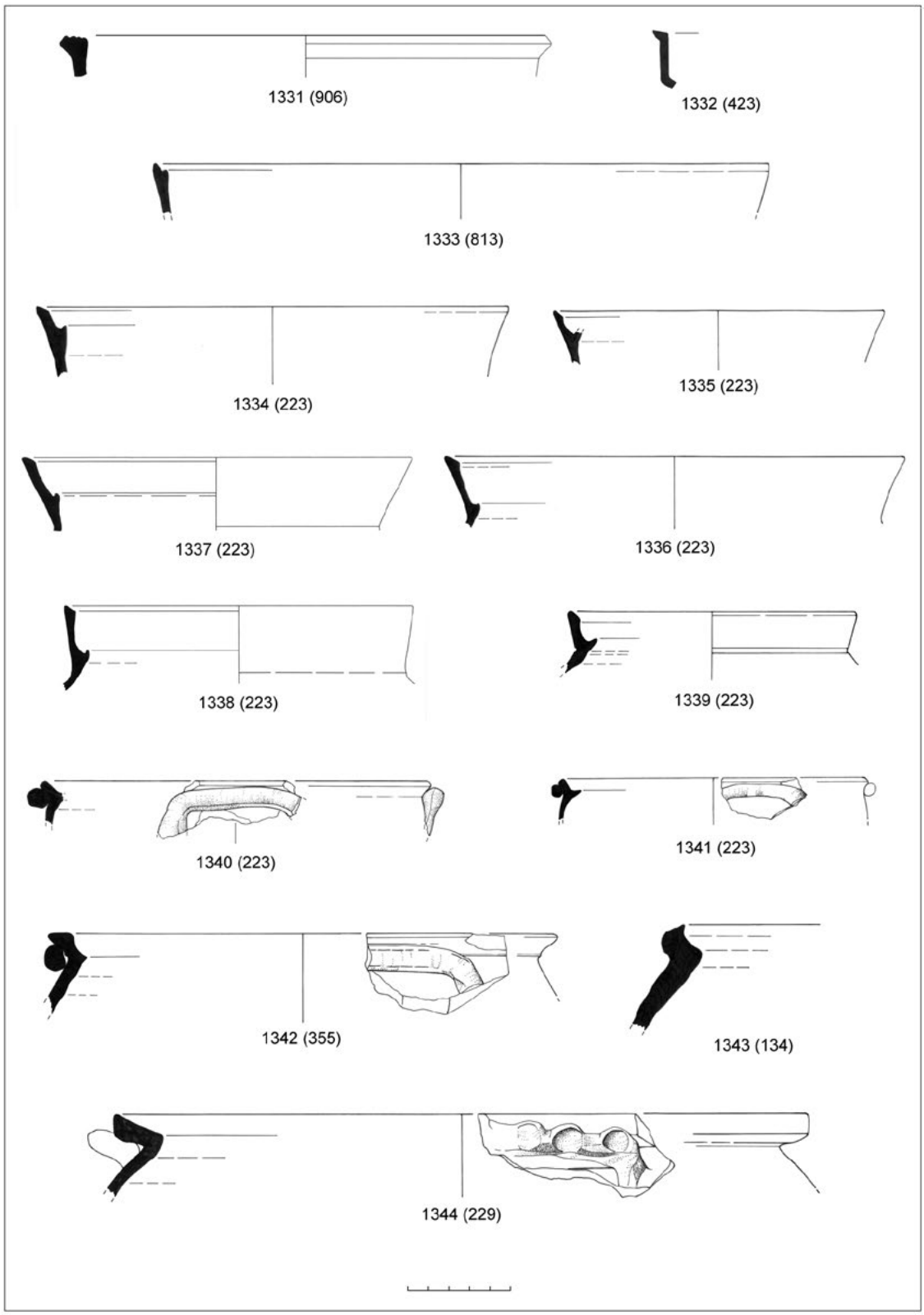


Fig. 37. Cooking pots
Basin 1331; carinated bowl 1332; casseroles (lopades etc) 1333 - 1344

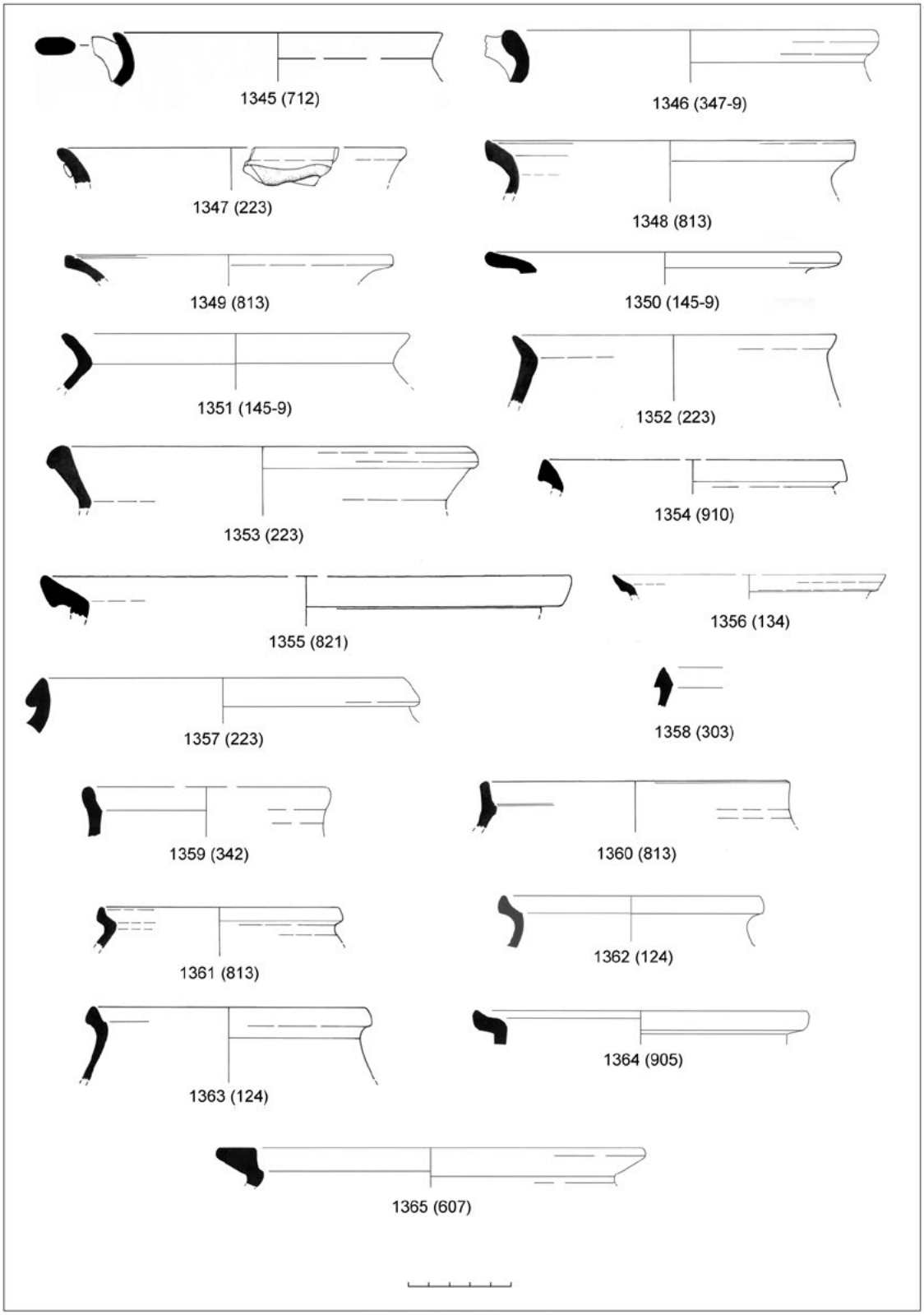


Fig. 38. Cooking pots
Chytrai and derivatives 1345 - 1358;
deep pots with narrower mouth and out-turned rims with seating for lid 1359 - 1365

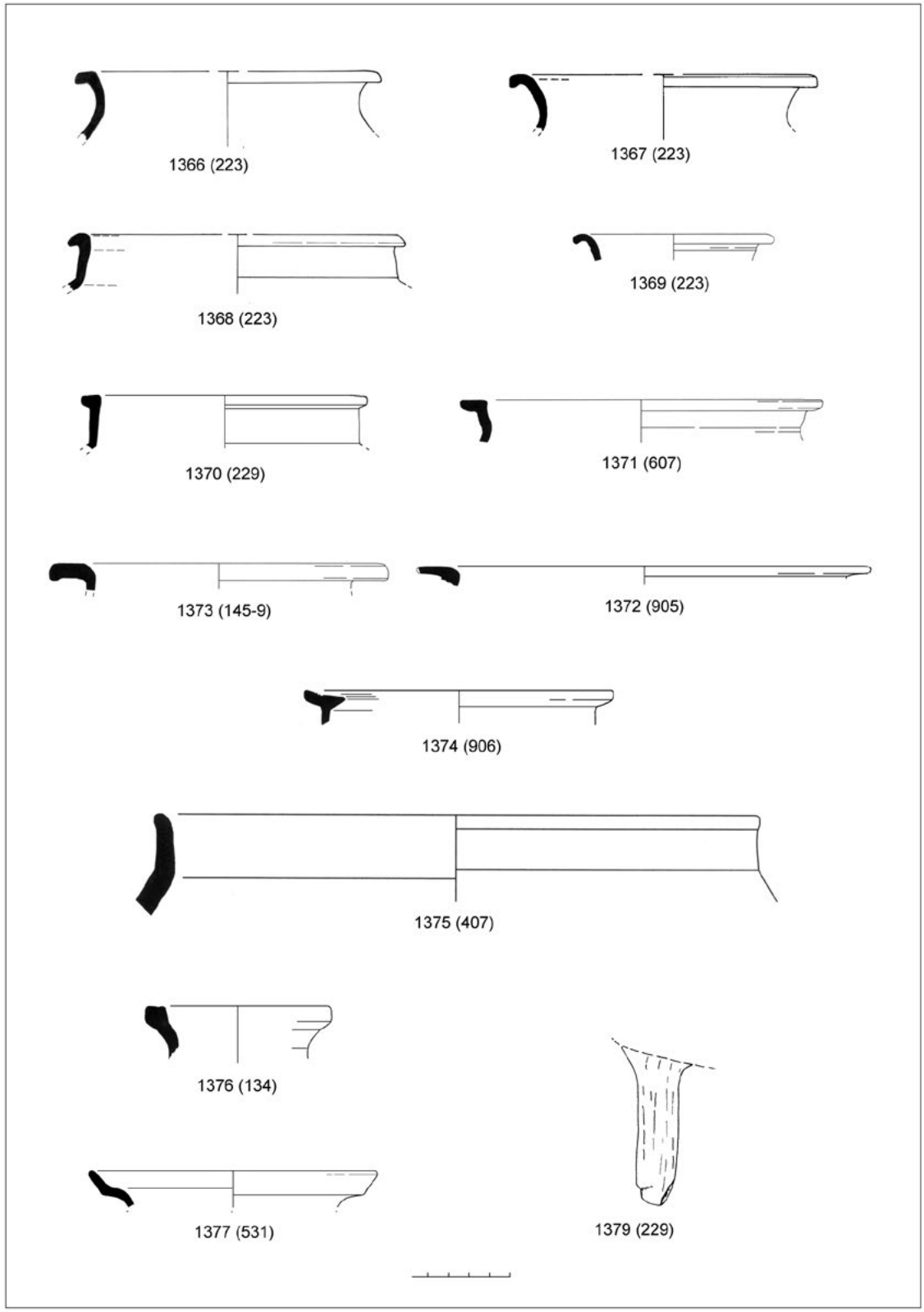


Fig. 39. Cooking pots

Boiling pots: with out-turned rim and distinct neck 1366 - 1371, with broad horizontal rims 1372 - 1374, with globular belly and vertical rim 1375; jug or flagon rims 1376 - 1378; foot of tripod bowl 1379

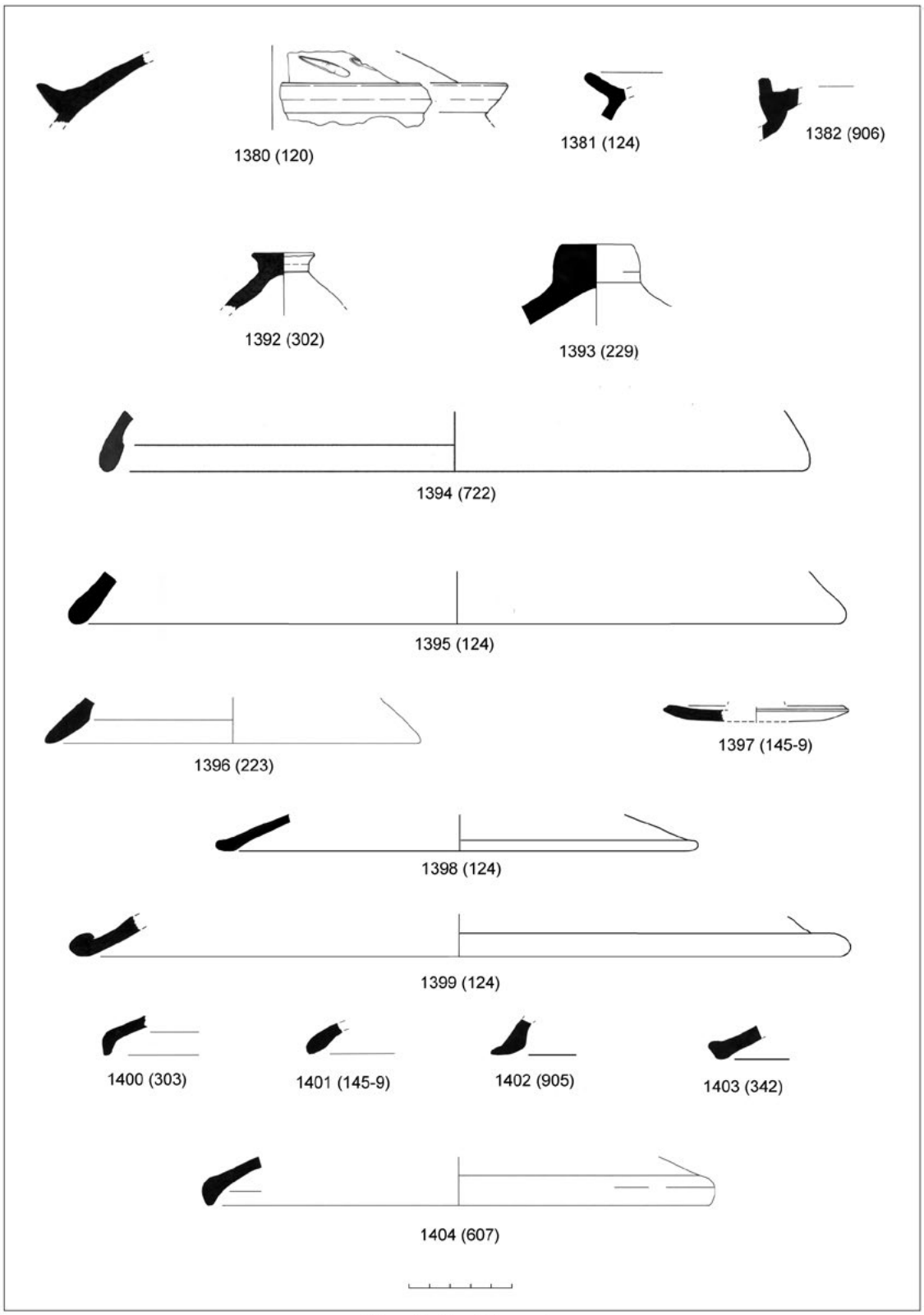


Fig. 40. Cooking pots
Clibani 1380 - 1382; lid tops with knobs 1392 - 1393; lid rims 1394 - 1399;
misc small rim fags 1400-1403; imitation African black-top cooking lid 1404

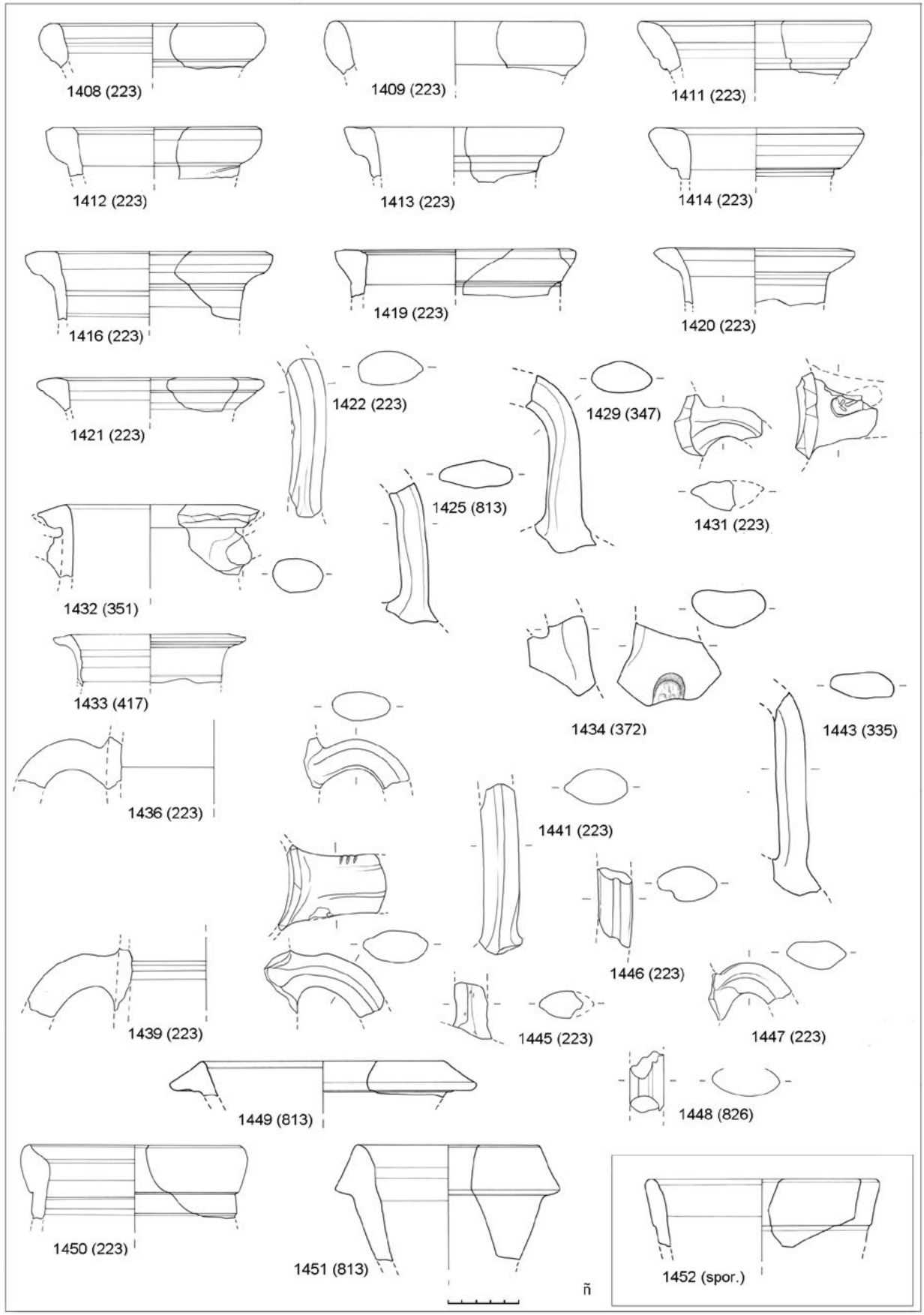


Fig. 41. Amphorae

Magna Graecian/Sicilian prod.: *Forme* 1a 1408, 1409; *Forme* 2 1411; *Forme* 5 1412 - 1414; Vandermersch III/Gr.Ita.III 1416, 1419 - 1422, 1425, 1429; Vandermersch IV-V/*Gr.-Ita*. Va 1432, 1433; Vandermersch IV/V o V-VI 1434, Vandermersch/*Gr.-Ita.* 1436, 1439, 1441, 1443, 1445 - 1448; Vandermersch V/*Gr.-Ita.* Vc 1449; Bertucchi tp. 5-Py tp. 9 *similis* 1450, Vandermersch VI/*Gr.-Ita.* VIb 1451. Punic-Sicilian prod.: "Tubular" amphora - *Maña C* variant (?) 1452

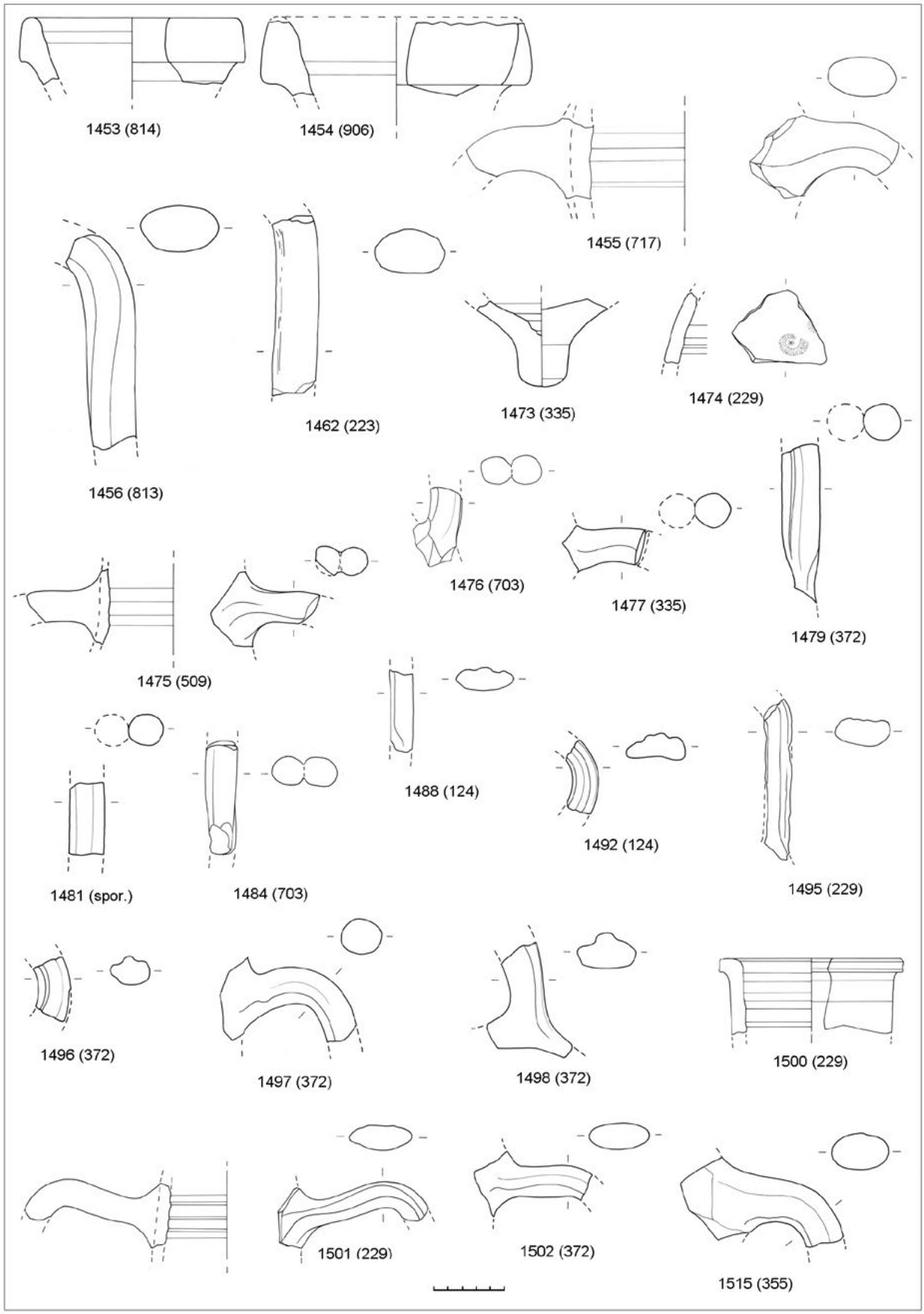


Fig. 42. Amphorae

Italian prod.: *Gr.-Ita.*/Lamboglia 2 1453; Lamboglia 2 1454 - 1456, 1462; *Brindisina* Apani V/Giancola 5 1473; *Brindisina* (?) 1474; Dressel 2-4 1475 - 1477, 1479, 1481, 1484; Flat-bottomed amphora 1488, 1492, 1495; Agorà M254/MR1 b 1496; Keay LII 1497; Otranto tp. 2 (Gruppo 5) 1498; Unidentified 1500 - 1502, 1515

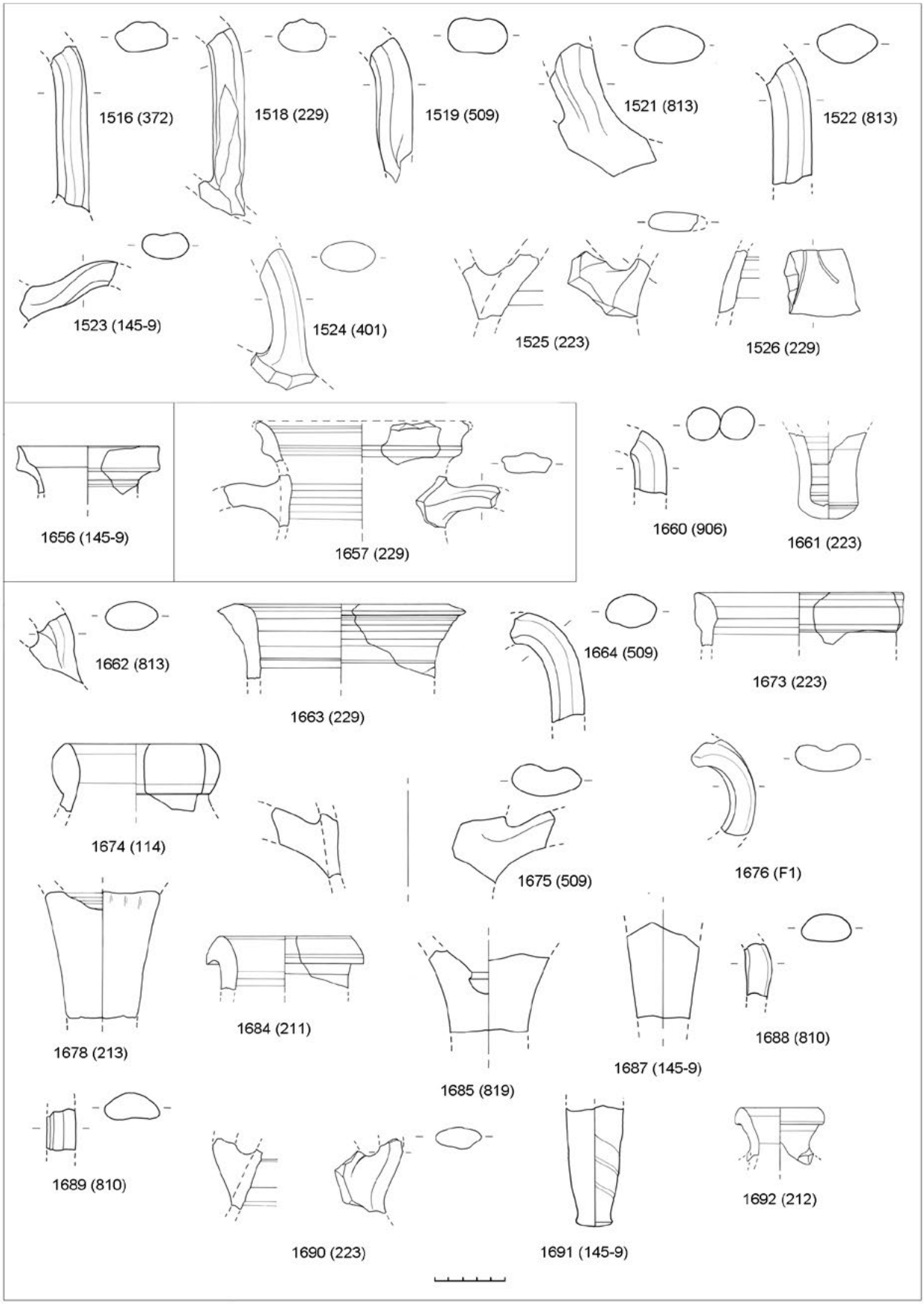


Fig. 43. Amphorae

Italian prod. (cont.): Unidentified 1516, 1518, 1519, 1521 - 1526. **Gallic prod. (?):** *Gallica* 11 1656. **Baetican prod.**: Dressel 28 1657. **African prod.**: Dressel 2-4/Schöne Mau XXXV 1660; Ostia XXIII 1661; *Tripolitana* II 1662; *Tripolitana* III 1663, 1664; *Africana* II B "*pseudo-Tripolitanian*" 1673; *Africana* II C 2 1674; Dressel 30/Keay I A 1675, 1676; *Africana* III B-C 1678; *Spatheion* 1 C 1684; *Spatheion* 1 1685, 1687 - 1690; *Spatheion* 2 A 1691; *Spatheion* 3 1692

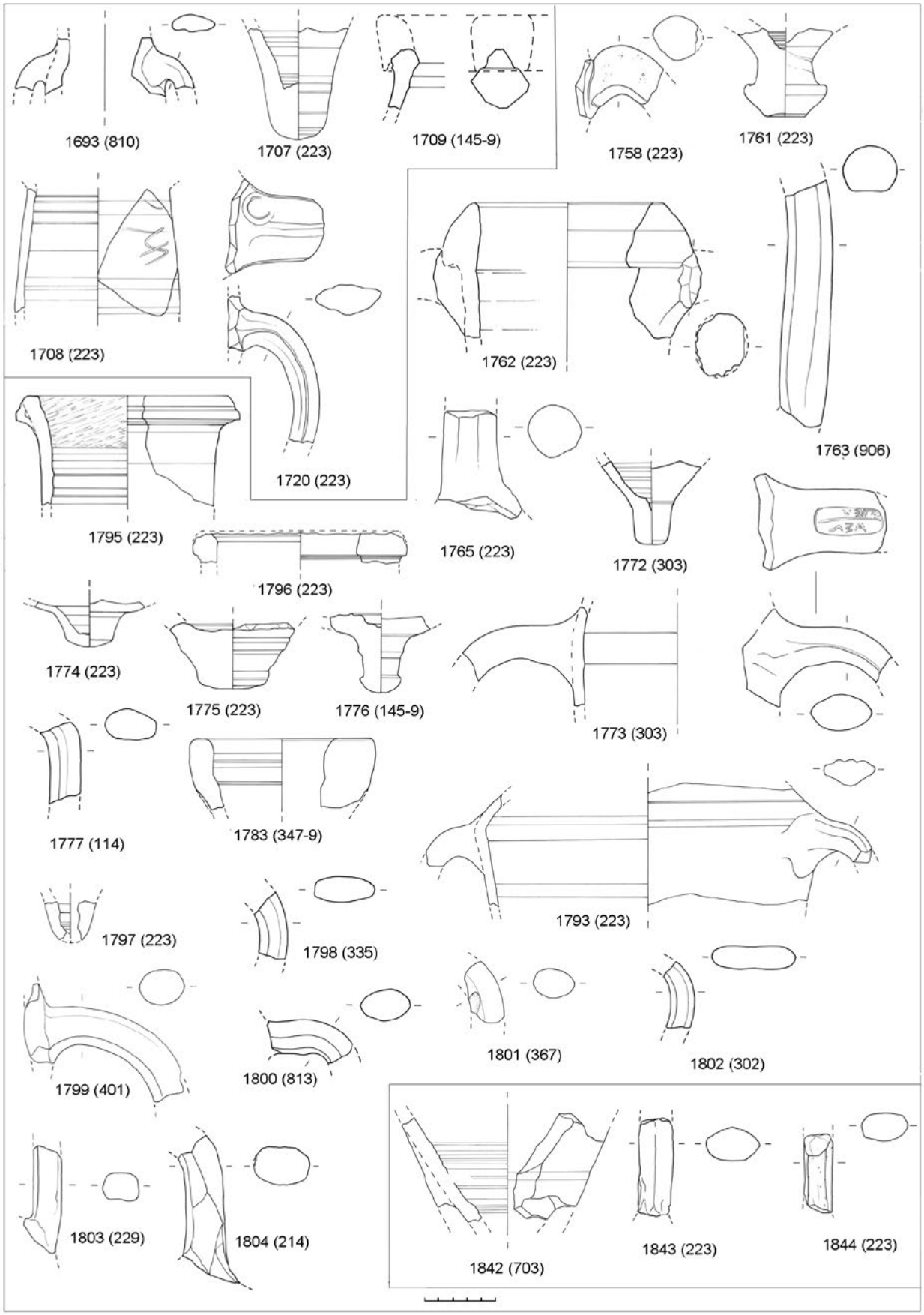


Fig. 44. Amphorae

African prod. (cont.): *Spatheion* 3 1693; Amphorae of the Punic tradition of the Gulf of Hammamet 1707, 1708, Keay 61 D 1709; Unidentified 1720. **Eastern Aegean prod.**: Corinthian A-A' 1758; Chian amphora "Straight neck series" - Chios tp. P (?) 1761; Corinthian A' 1762; Rhodian 1763, 1765; Rhodian small amphora 1772; Knidian 1773; *Antico-Romano-Cretese* 3 (?) 1774; Kingsholm 117 *similis* 1775; Dressel 24-Knossos 15 1776; Late Roman Amphora 1 1777; Late Roman Amphora 4 B2 1793; Unidentified 1795 - 1804. **Unidentified prod.:** 1842 - 1844

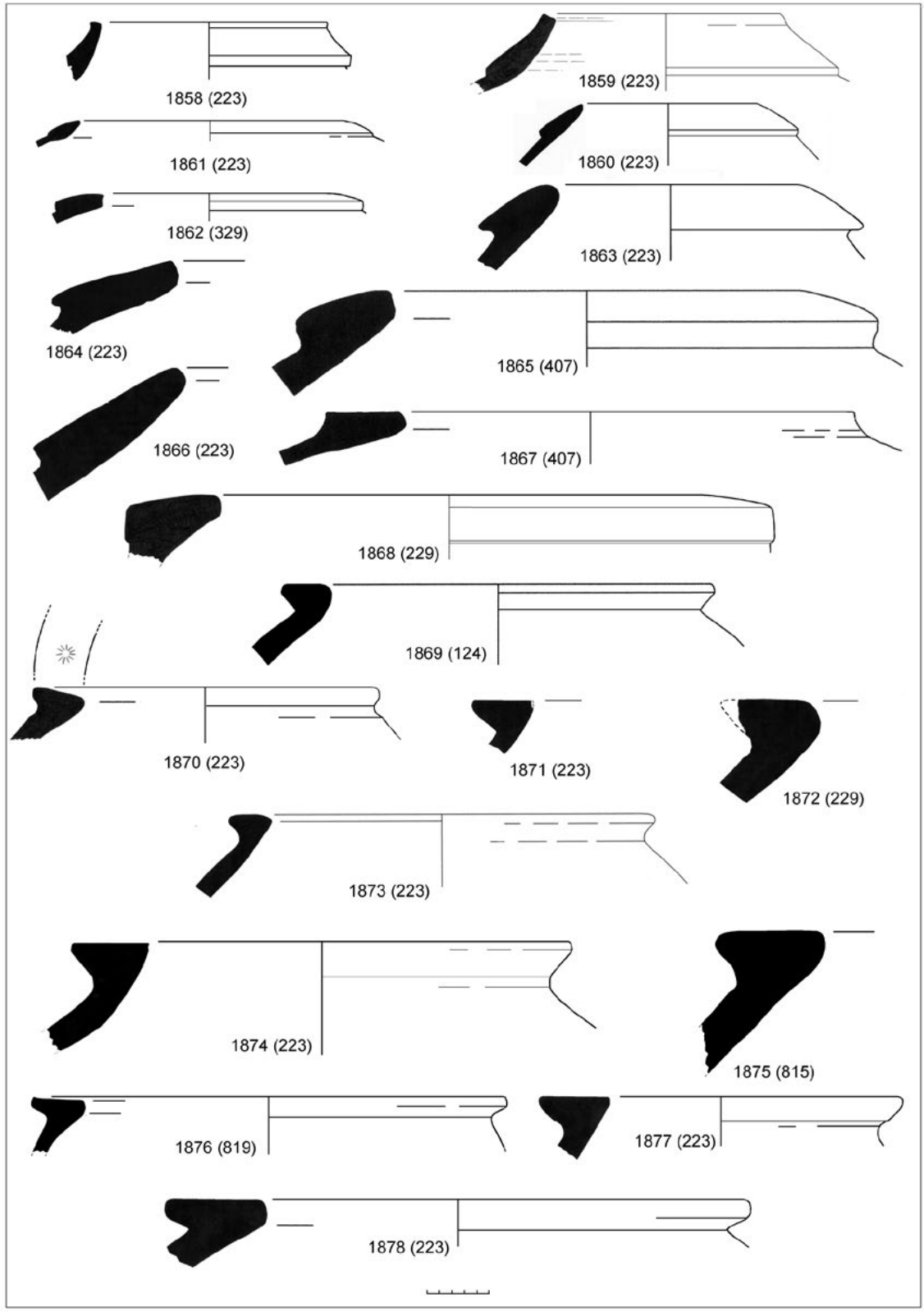


Fig. 45. Pithoi and dolia
Pithoi with globular bodies and rims folded back 1858 - 1868;
dolia with thickened rims, triangular in section 1889 - 1878

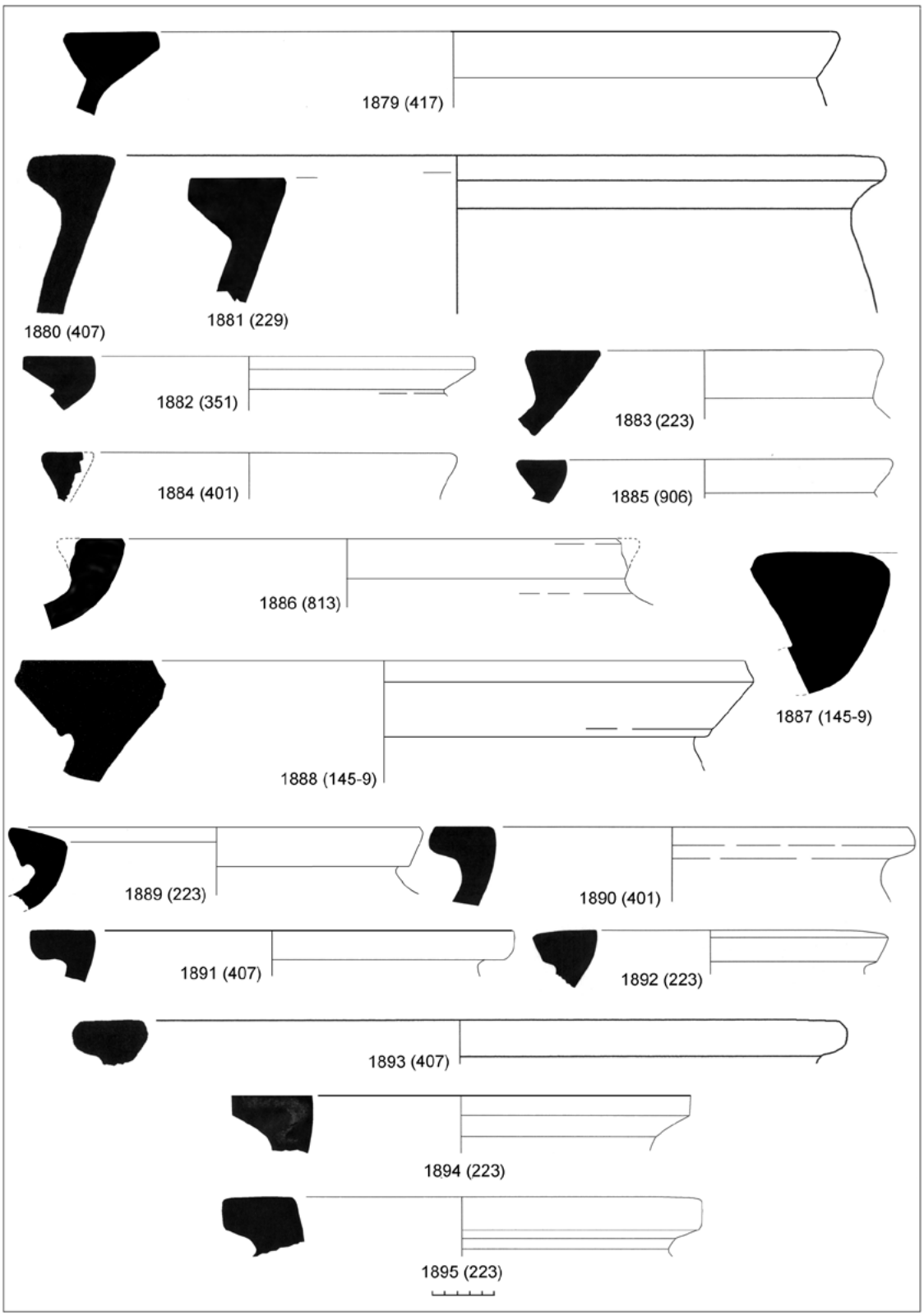


Fig. 46. Pithoi and dolia

Dolia with thickened rims, triangular in section cont.1879 - 1889;
dolia of various sizes with horizontal out-turned rims, sub-rectangular or trapezoidal 1890 - 1895

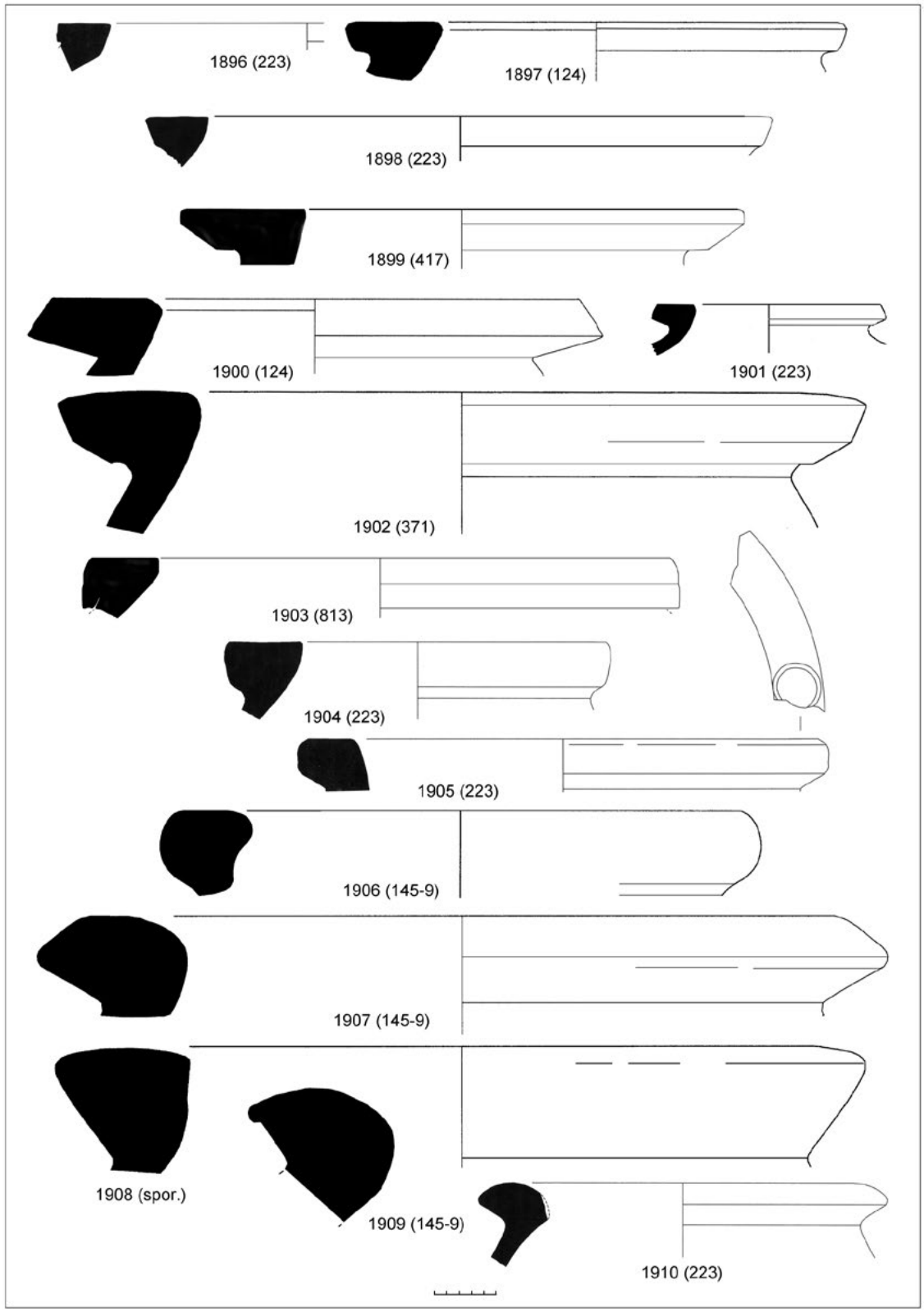


Fig. 47. Pithoi and dolia

Dolia of various sizes with horizontal out-turned rims, sub-rectangular or trapezoidal cont. 1896 - 1903;
dolia with thick rims, flat on top and rounded at the edge 1904 - 1906;
large dolia with thick rims rounded on top 1907 - 1910

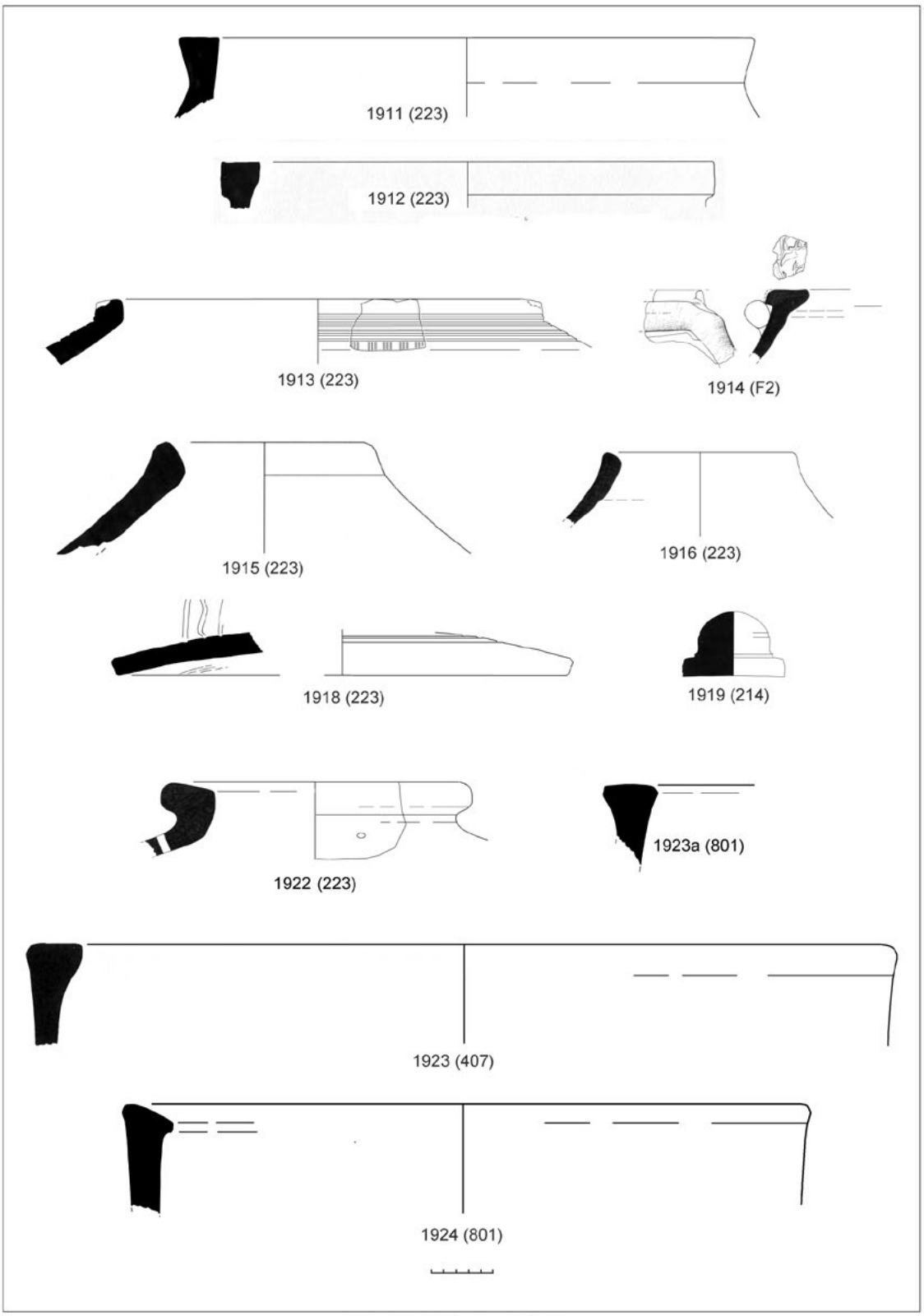


Fig. 48. Pithoi and dolia
Dolia or basins with near vertical rims 1911, 1912; pithoi with relief-decoration 1913, 1914; Late Antique /Early Medieval dolia 1915, 1916; pithos and dolium lids 1918, 1919; putealia 1923, 1923a, 1924

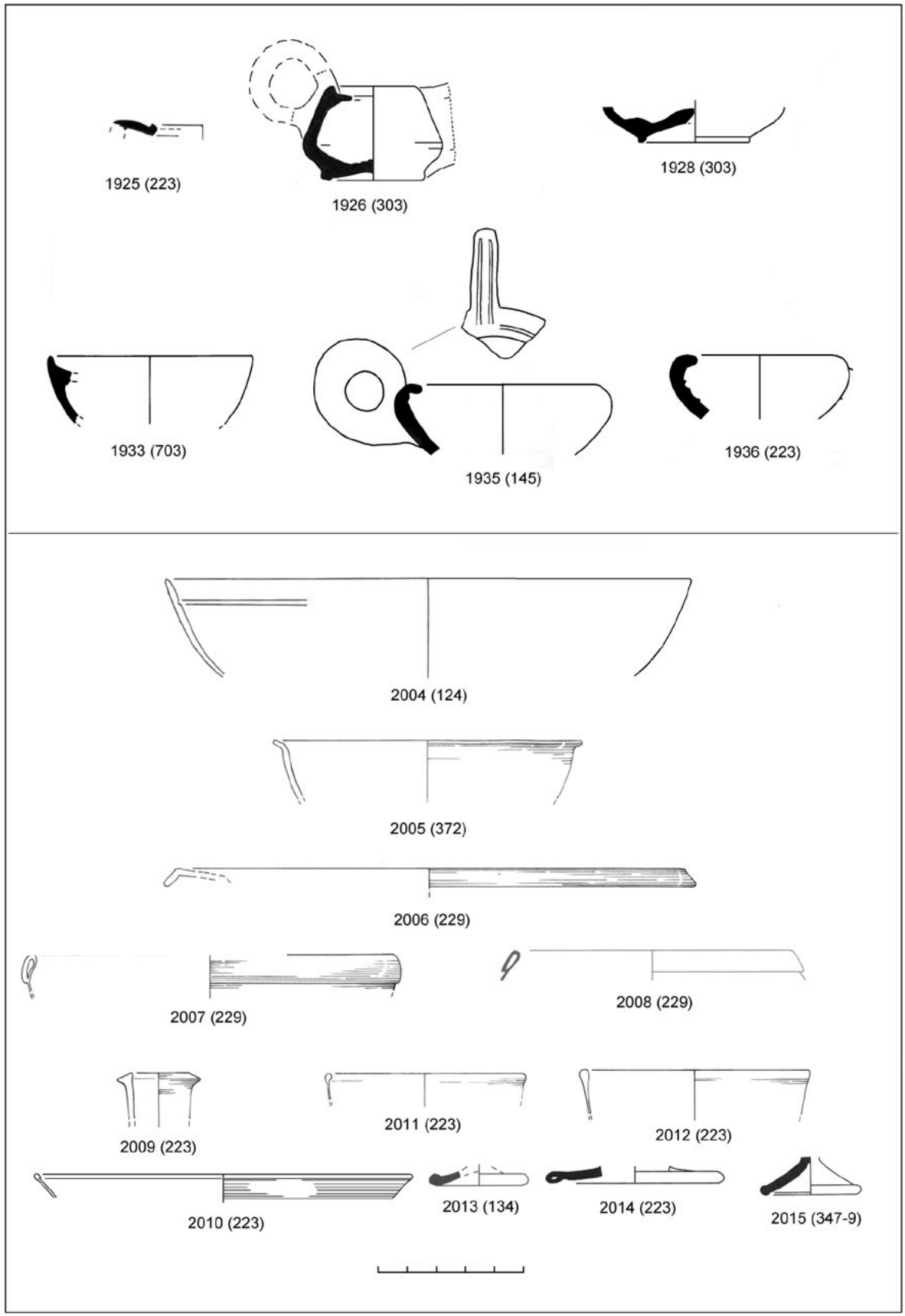


Fig. 49. Lamps and glass vessels

Lamps: wheel-made Hellenistic 1925, 1926, 1928; Roman mould-made 1933, 1935, 1936

Glass: mould-made bowls/dishes 2004 - 2006; blown vessels 2007 - 2012; bases of stemmed goblets 2013 - 2015

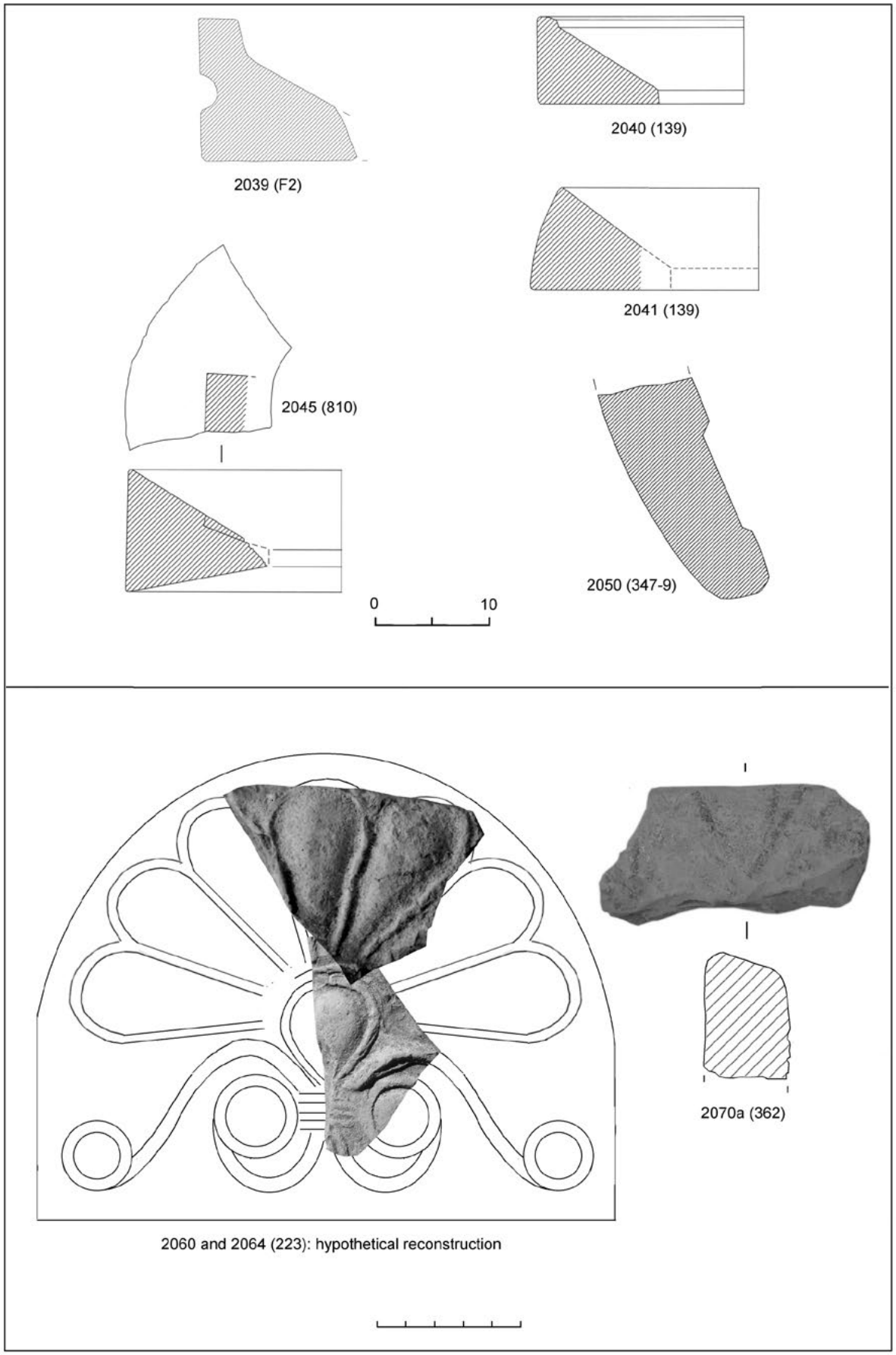


Fig. 50. Millstones and architectural terracottas

Millstones: hopper-rubber 2039; rotary hand-mills, catilli 2040, 2041, 2045; donkey or slave mill, catillus 2050.
Architectural terracottas: palmette antefixes 2060, 2064: reconstruction; sima fragment 2070a

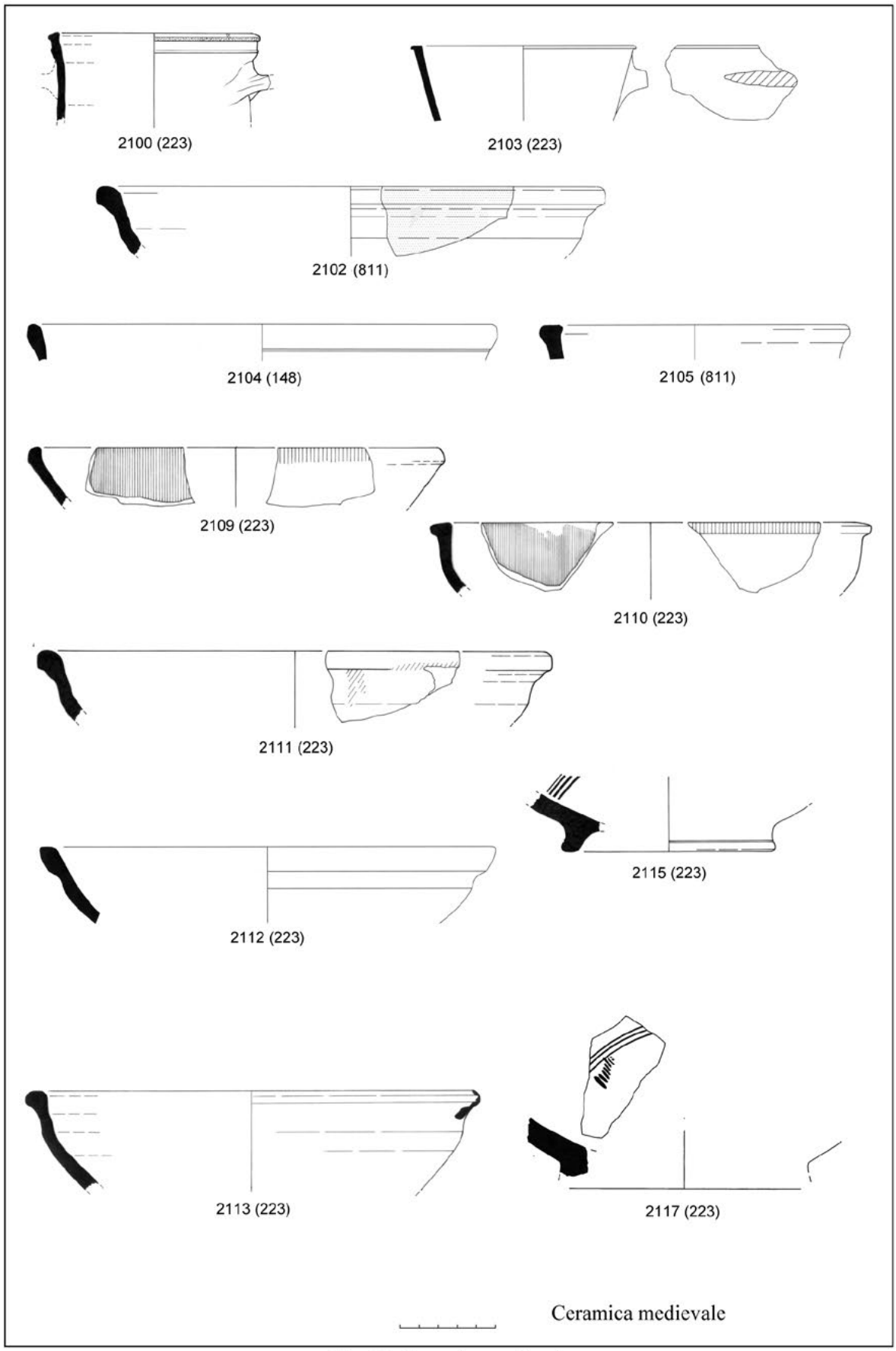


Fig. 51. Ceramica medievale

Ceramica comune acroma 2100, 2102, 2103; Invetriate monocrome verdi 2104, 2105, 2109 - 2113, 2115, 2117

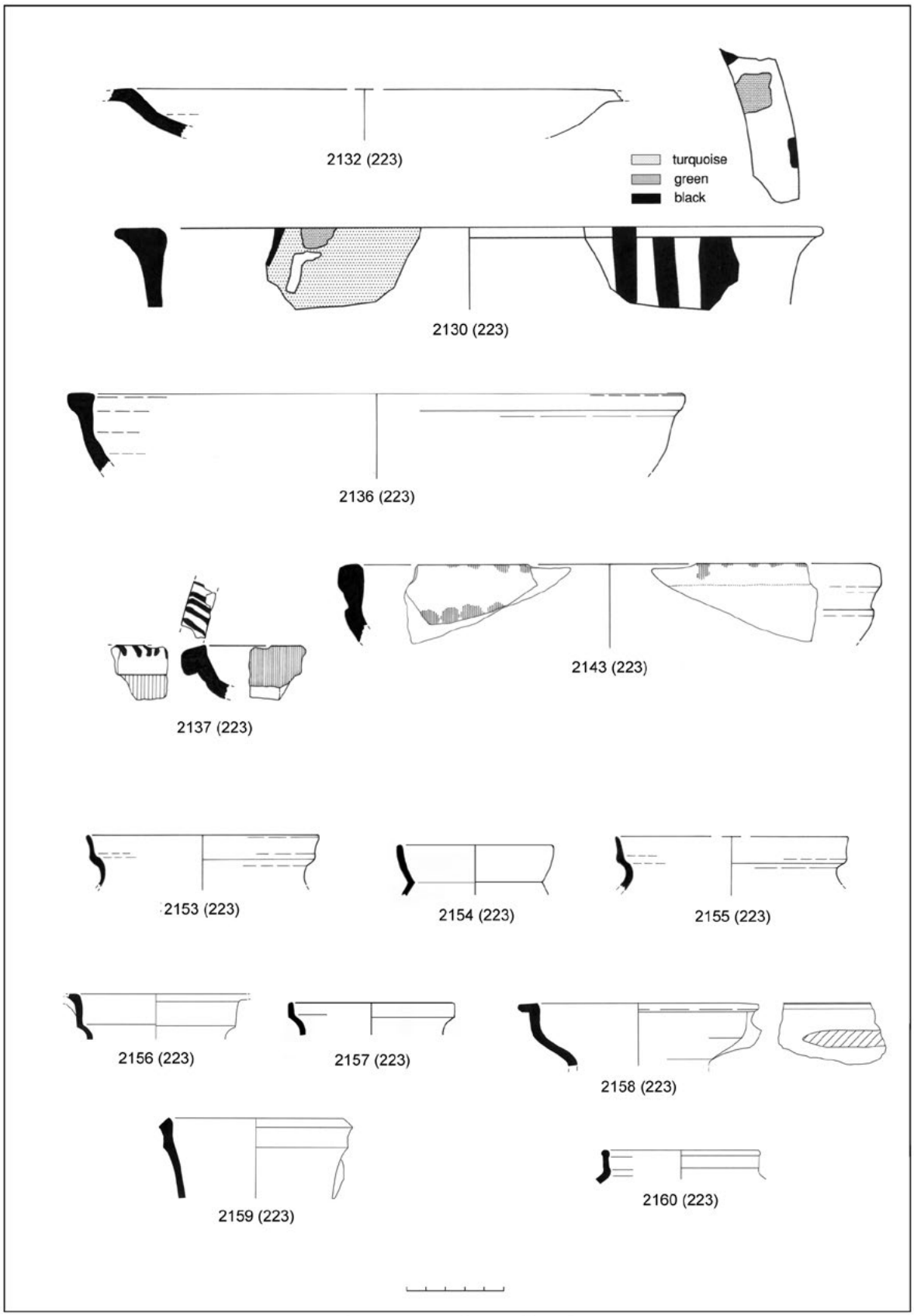


Fig. 52. Ceramica medievale

Ceramica invetriata "RMR" 2130, 2132; protomaiolica 2136, 2137, 2143; ceramica comune da fuoco 2153 - 2160

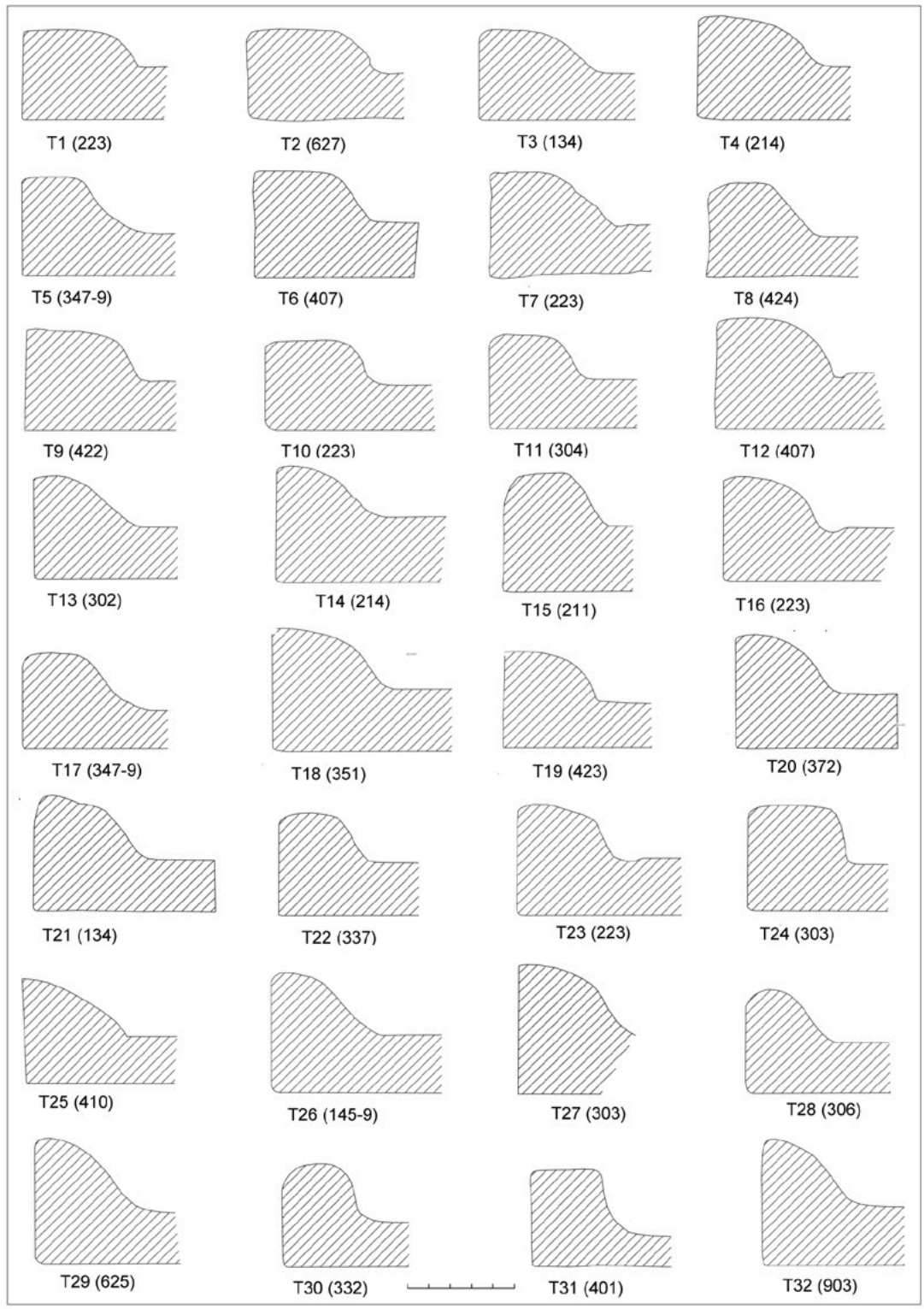


Fig. 53.Tegula profiles showing decreasing ratios of width to height of flange
Group 1 T1-4, Group 2 T5-24, Group 3 T25-32

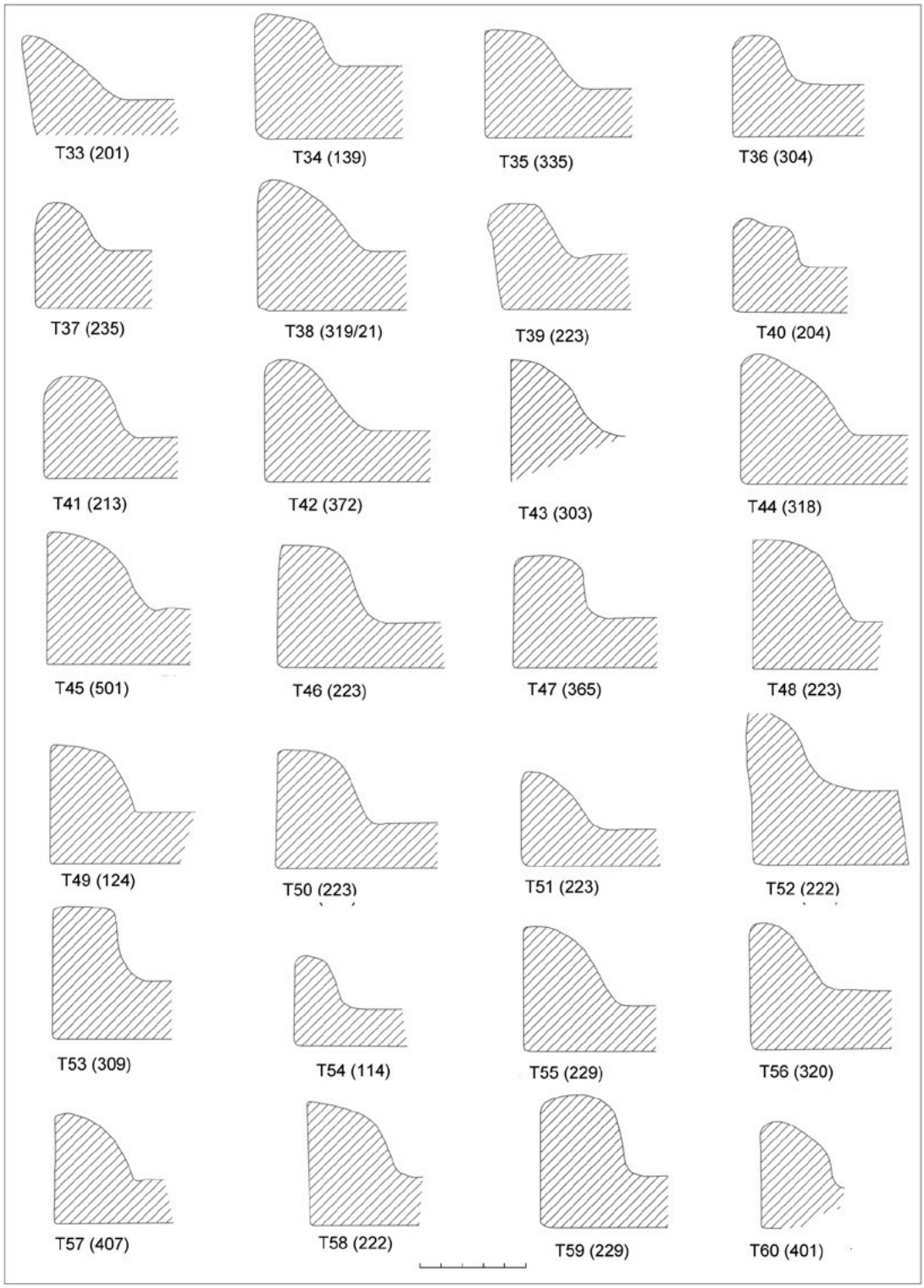


Fig. 54. Tegula profiles showing decreasing ratios of width to height of flange
Group 3 (cont.) T33-42, Group 4 T43-58, Group 5 T59, 60

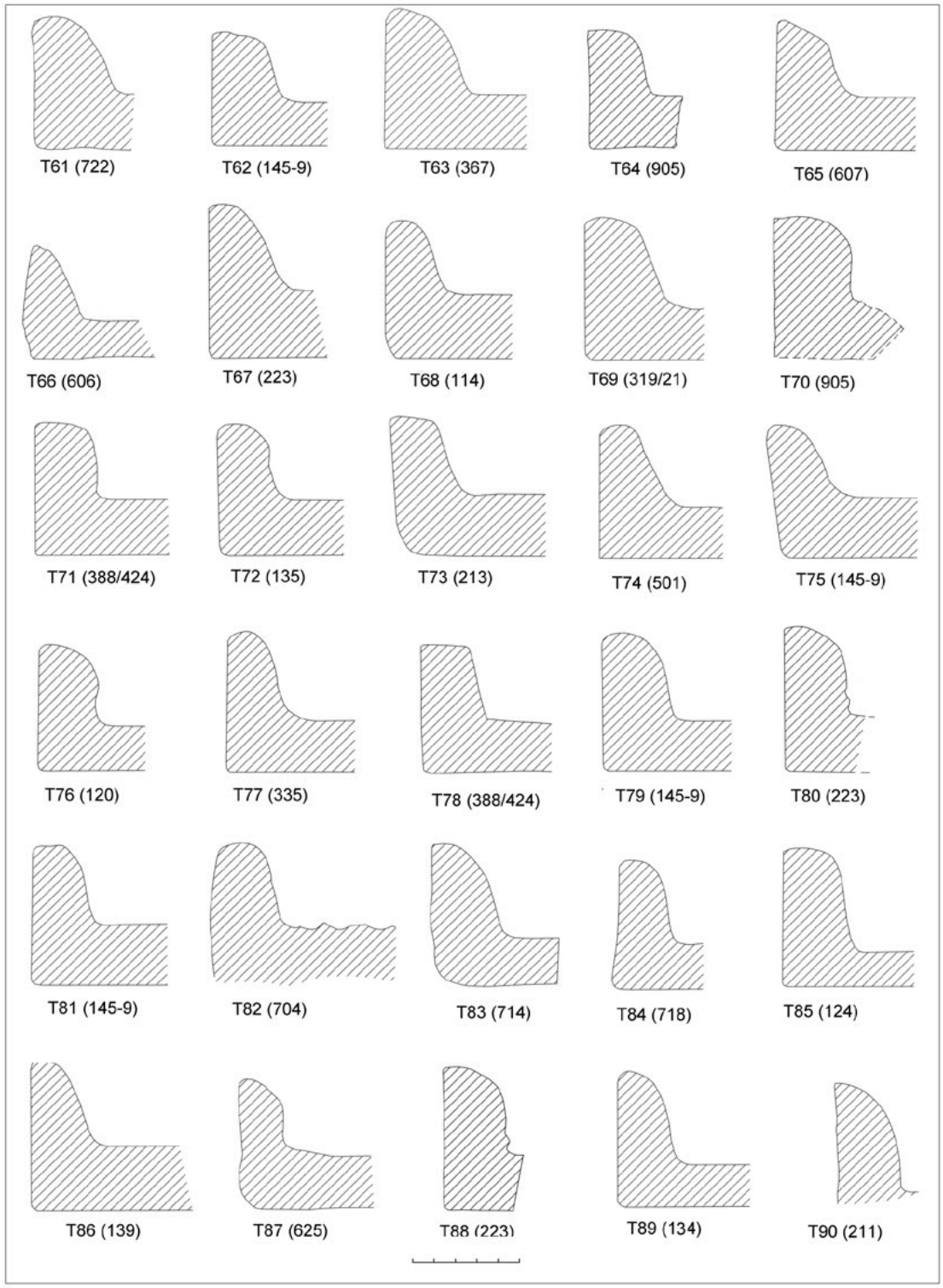


Fig. 55. Tegula profiles showing decreasing ratios of width to height of flange
Group 5 (cont.) T61-82, Group 6 T83-90

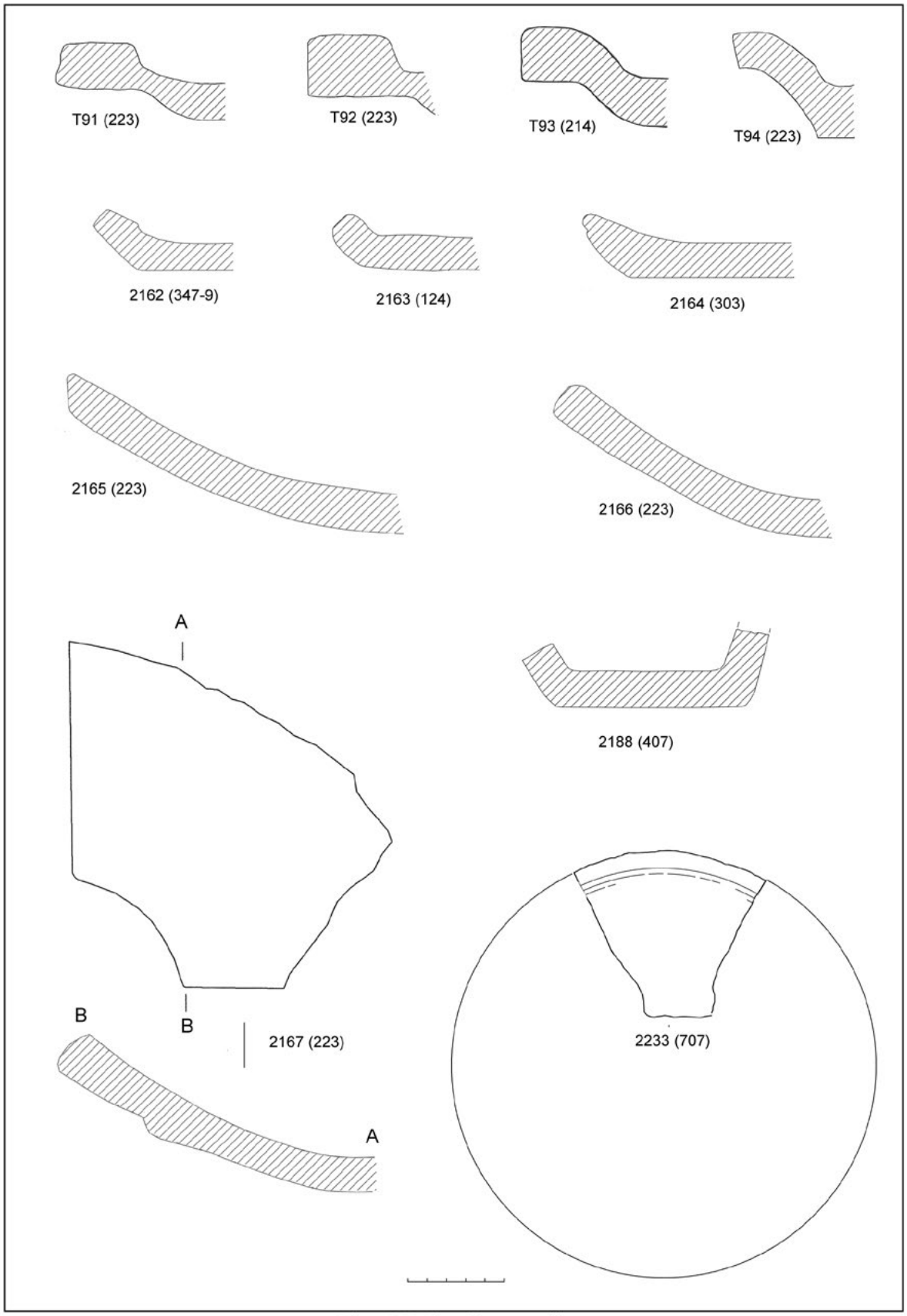


Fig. 56. Miscellaneous tiles
Tegula cut-aways T91 - 94; variant tegulae Nos.2162 - 2164; Laconian tiles Nos. 2165 - 2167
"chimney" tile No.2188; round (supensura) tile No.2233

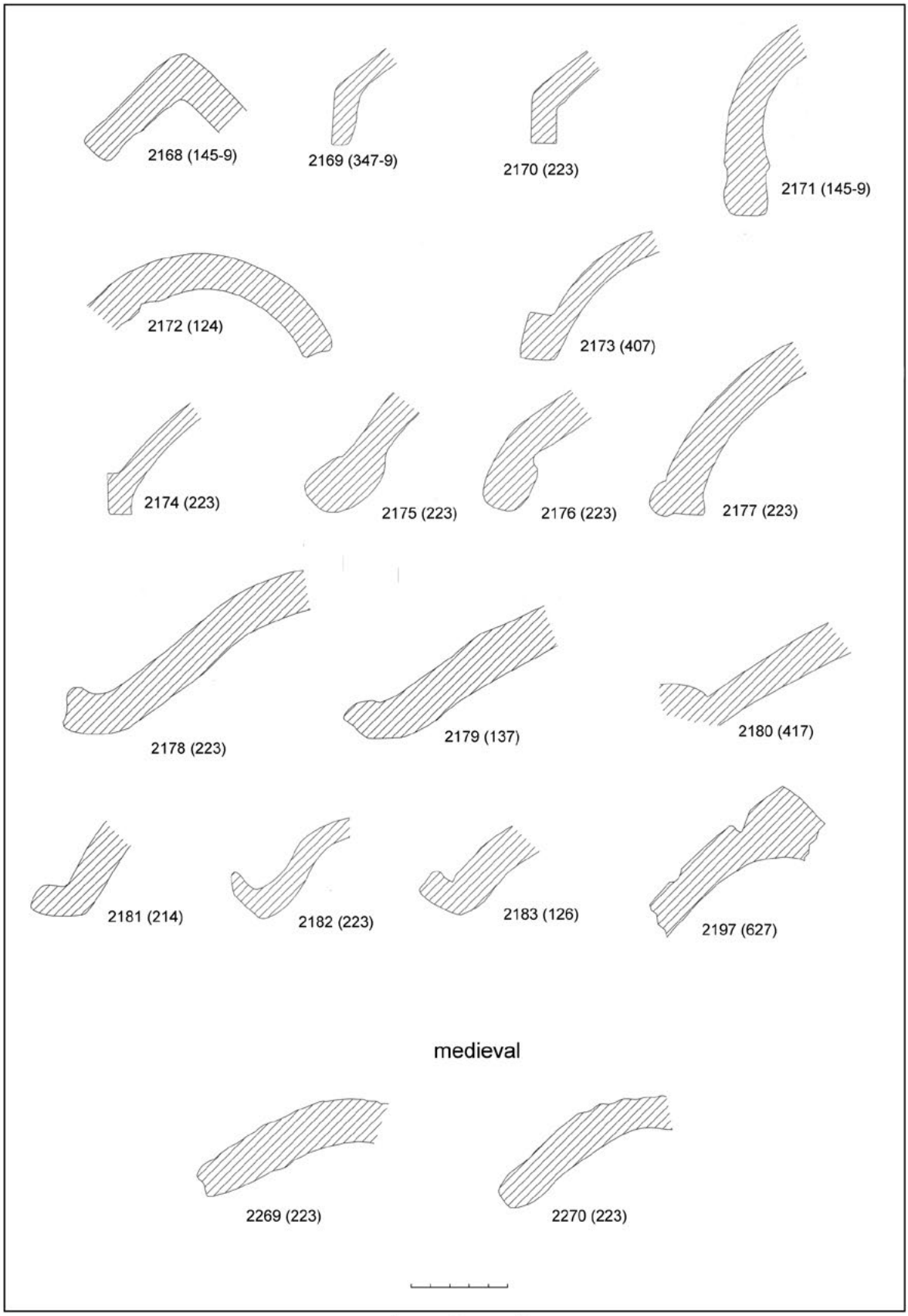


Fig. 57. Cover tiles

Angular imbrices Nos.2168-70; semi-circular imbrices Nos.2171, 2172; curved imbrices with thickened rims Nos.2173-2177; flanged imbrices Nos.2178-2183; 2 facetted grooved imbrex No.2197; Medieval "chaff" tiles Nos.2269, 2270

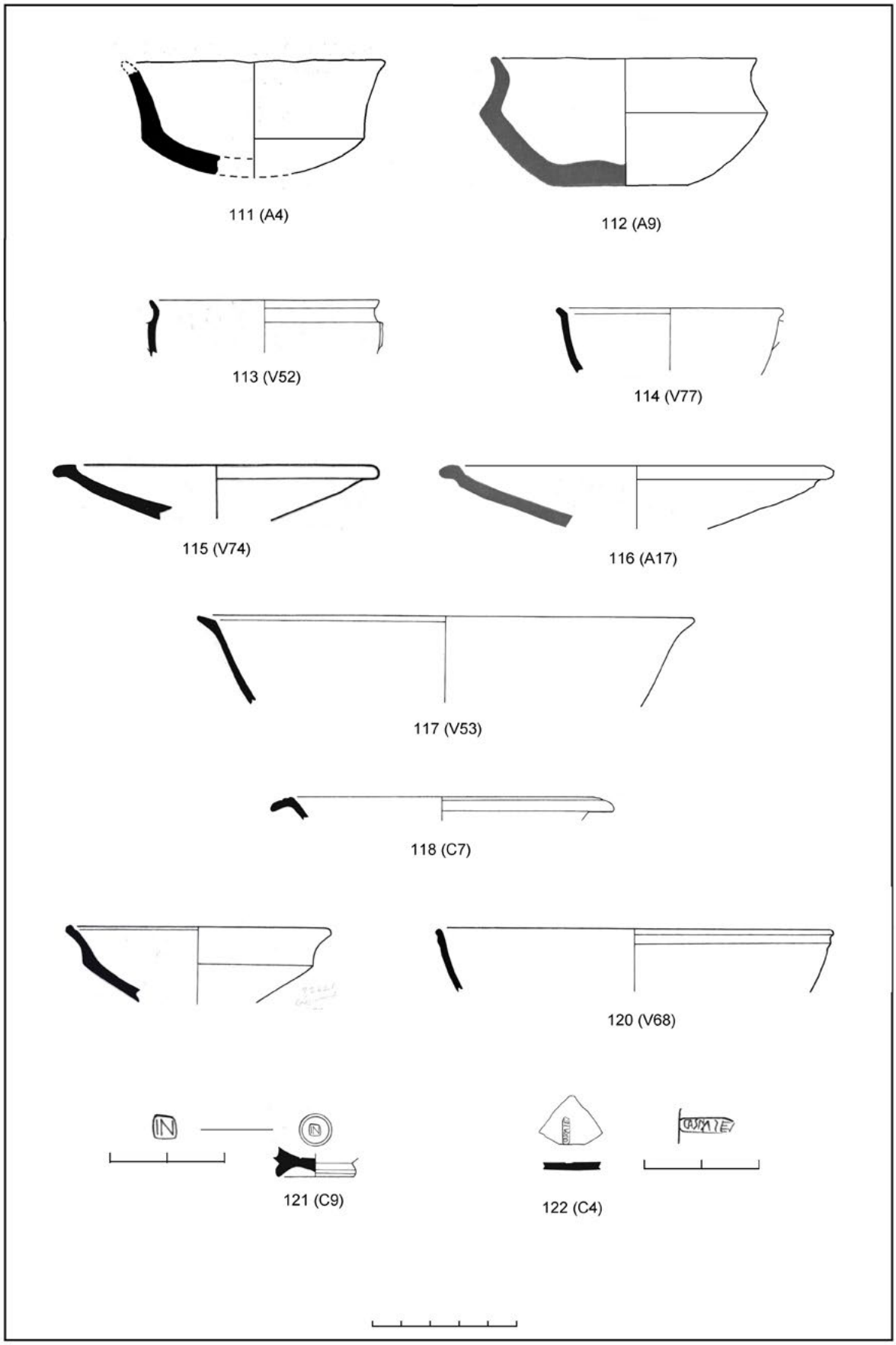


Fig. 58. Miscellaneous artifacts from the Older Surveys
LBA carinated cups 111 - 112; BG cups 113 - 114, dishes 115 - 116, lipped bowl 117; GG various bowls 118 - 120; ITS stamped bases 121 - 122



Pl. 1. Lithics

Middle Palaeolithic 1 - 7; denticulates 8 - 11; scrapers 12 - 24



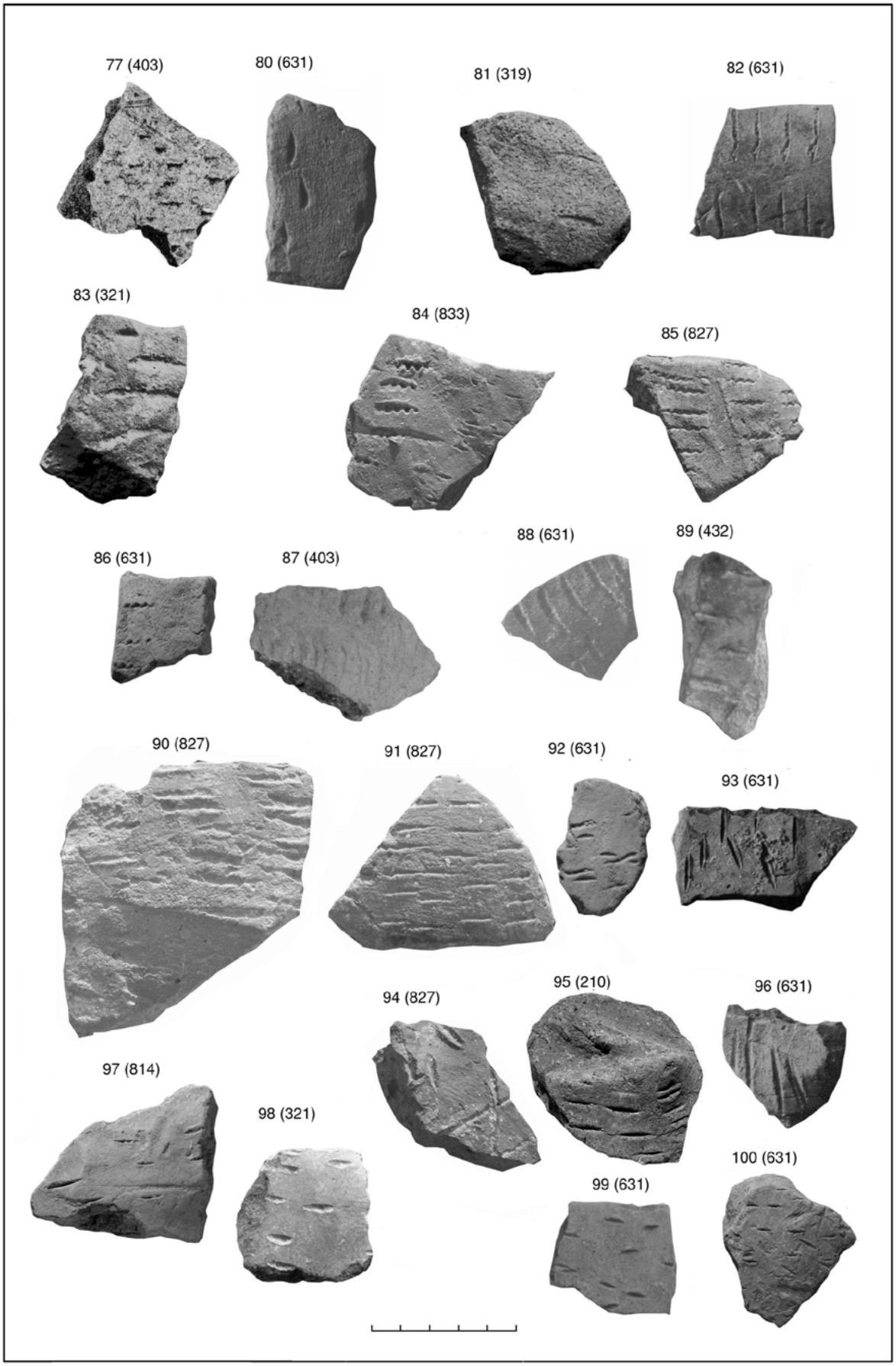
Pl. 2. Lithics

Backed blades and sickles 25 - 42; two sided blades 43 - 51; chopper 52, arrowheads 53 - 55

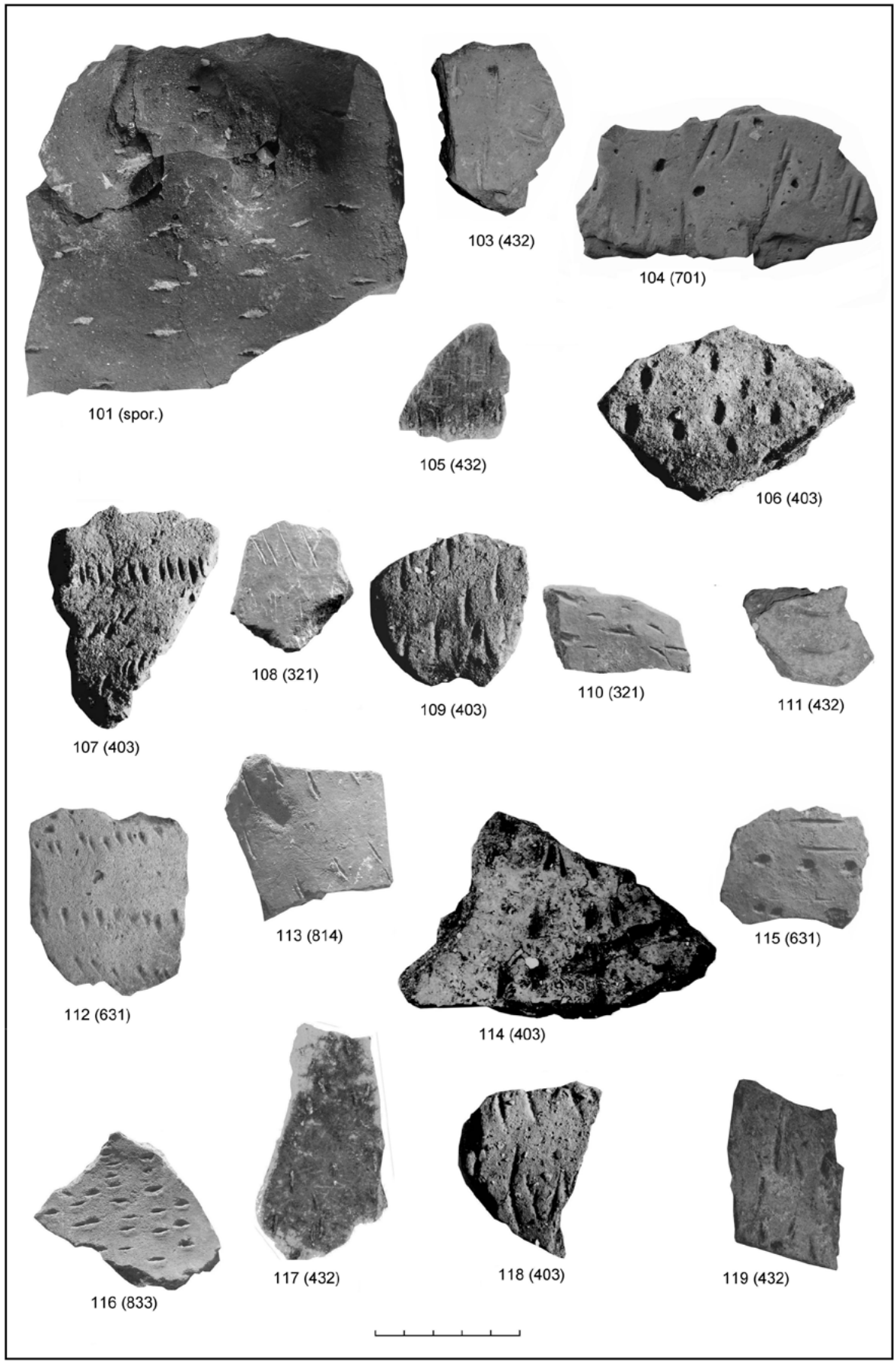


Pl. 3. Lithics

Points and burins 56 - 70, trapezoid 72, retoucher? 72; miniature hand axe 73; cores and débitage 74 - 76

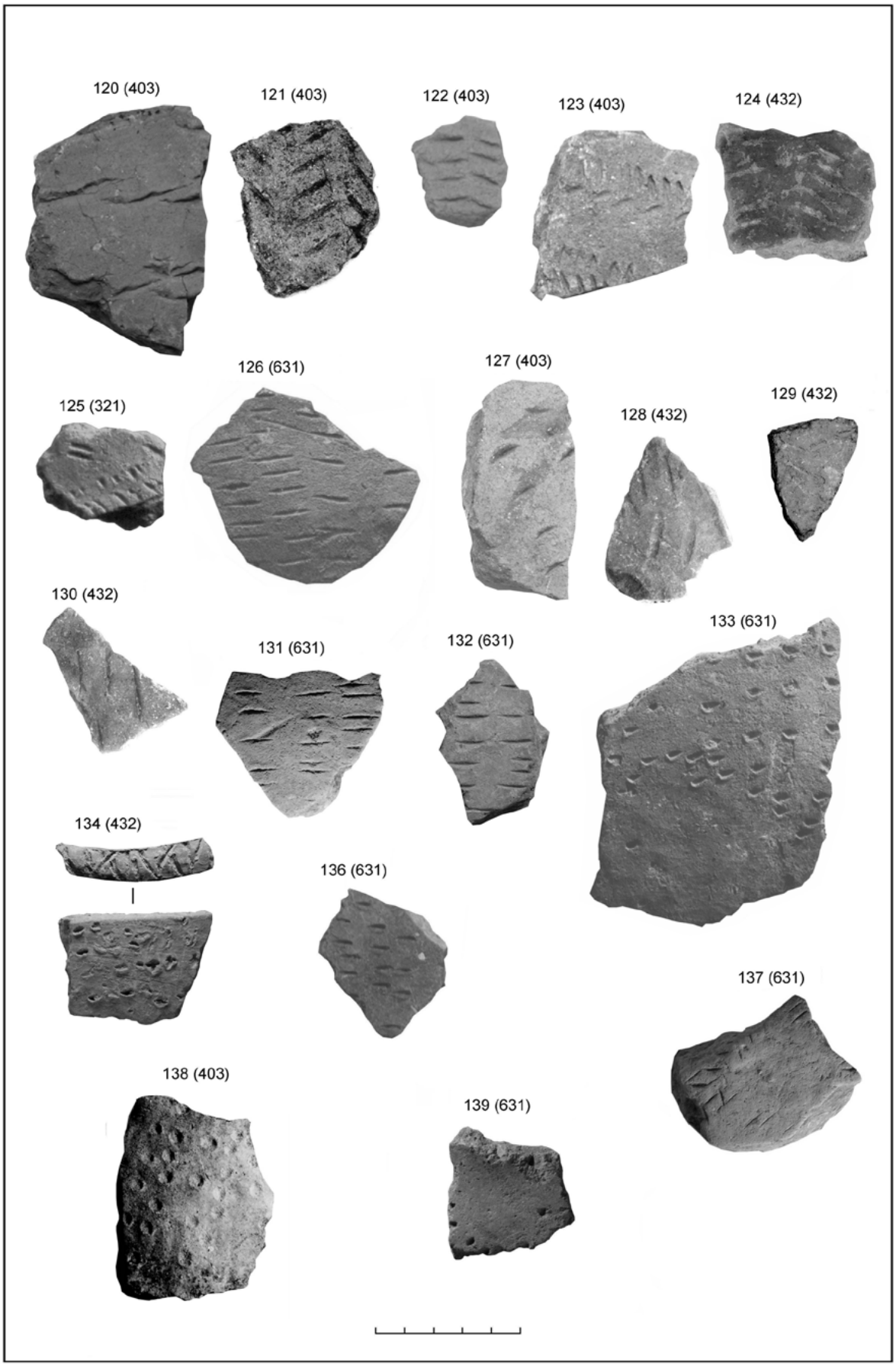


Pl. 4. Neolithic
Impressed wares 77, 80 - 100

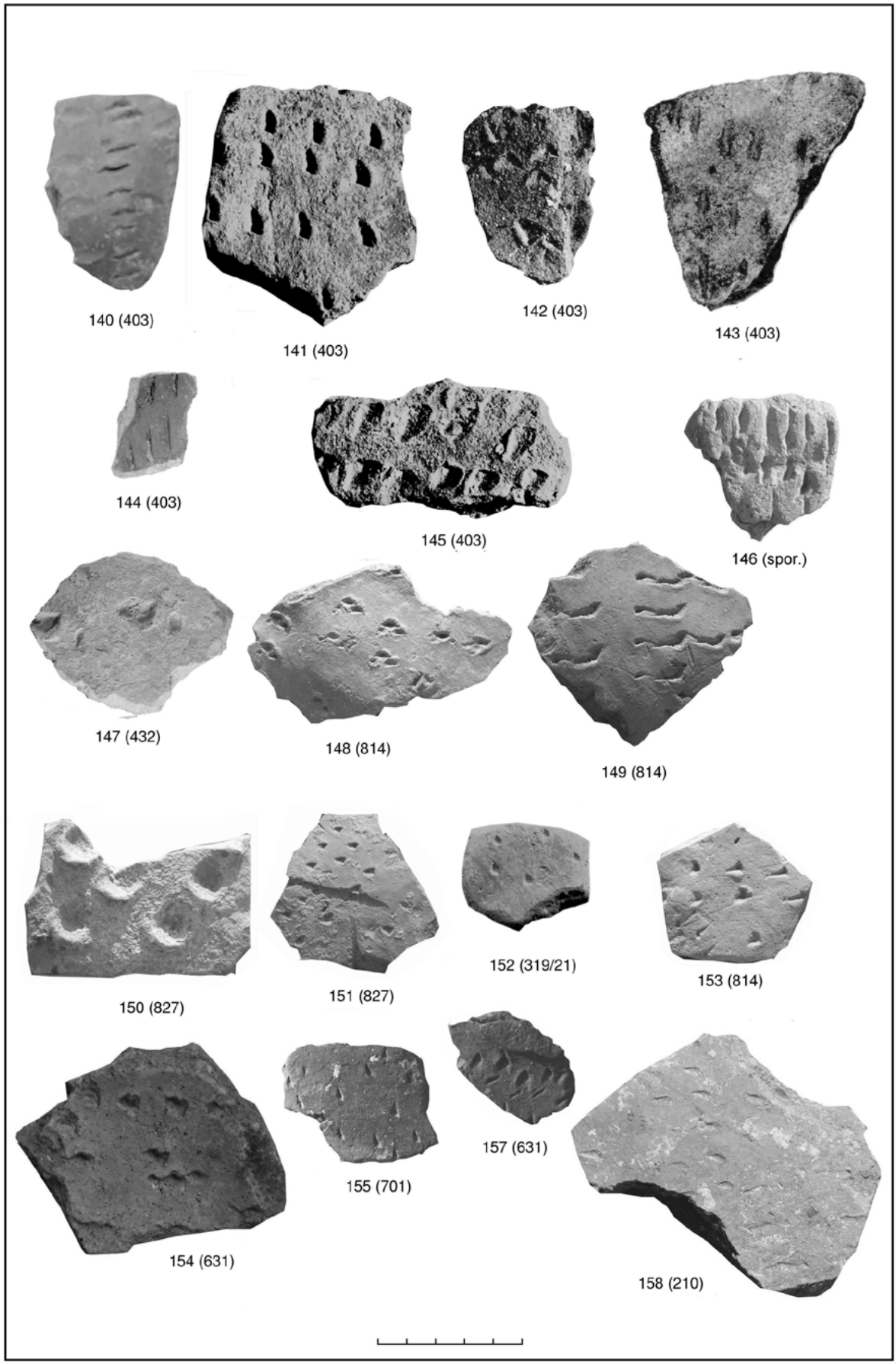


Pl. 5. Neolithic

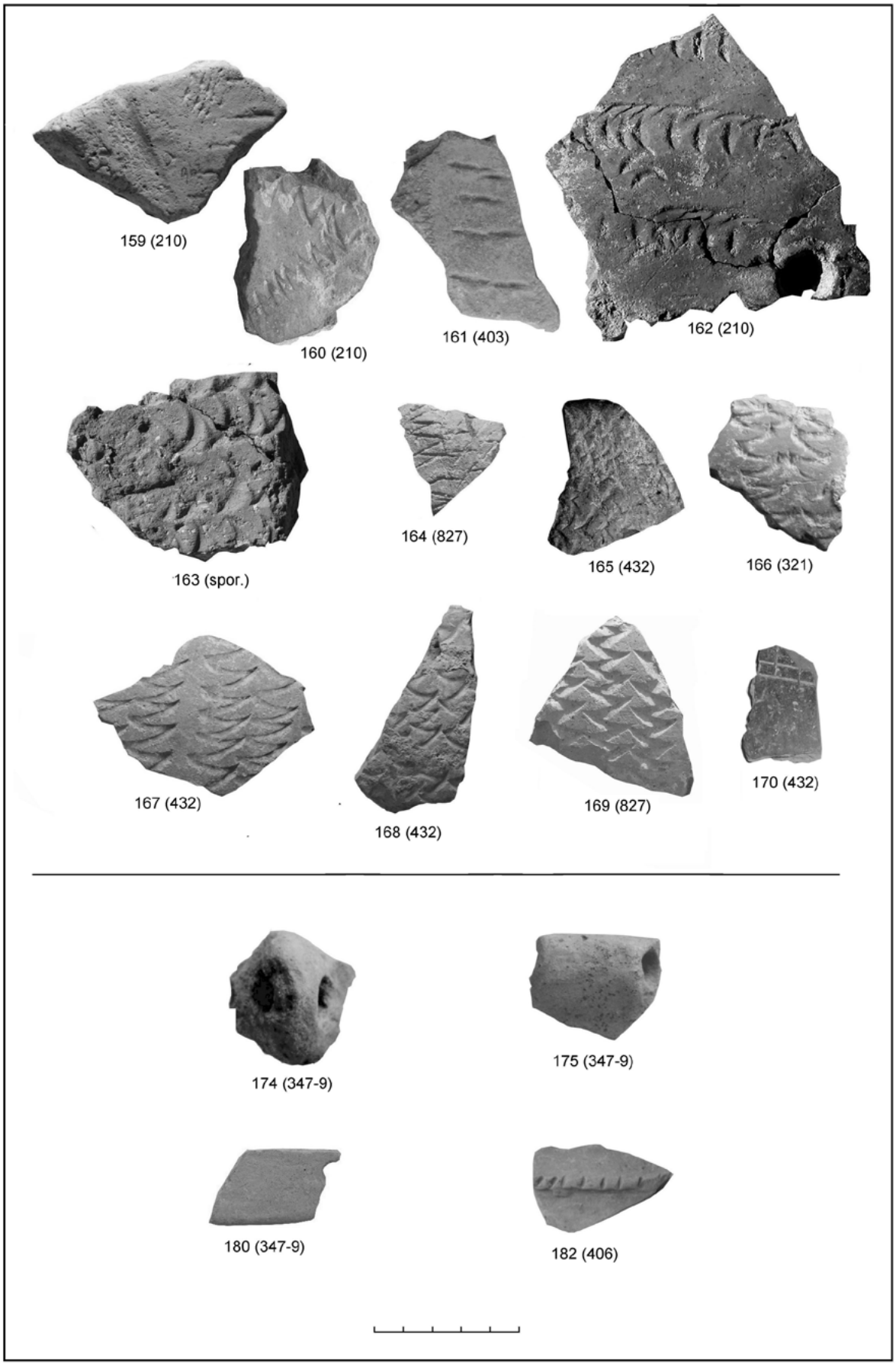
Impressed wares (cont). 101, 103 - 119



Pl. 6. Neolithic
Impressed wares (cont). 120 - 134, 136 - 139

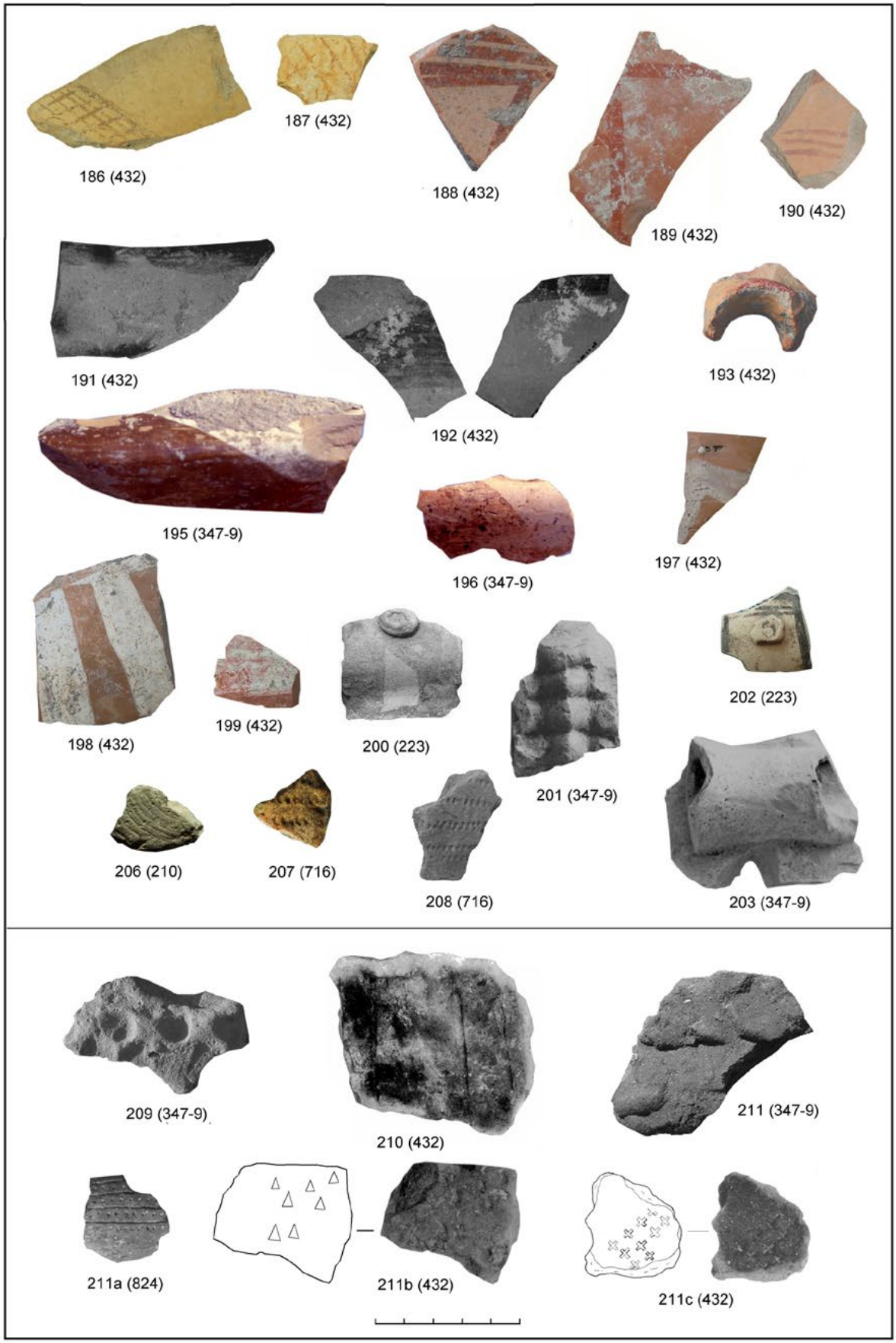


Pl. 7. Neolithic
Impressed wares (cont). 140 - 155, 157, 158



Pl. 8. Neolithic

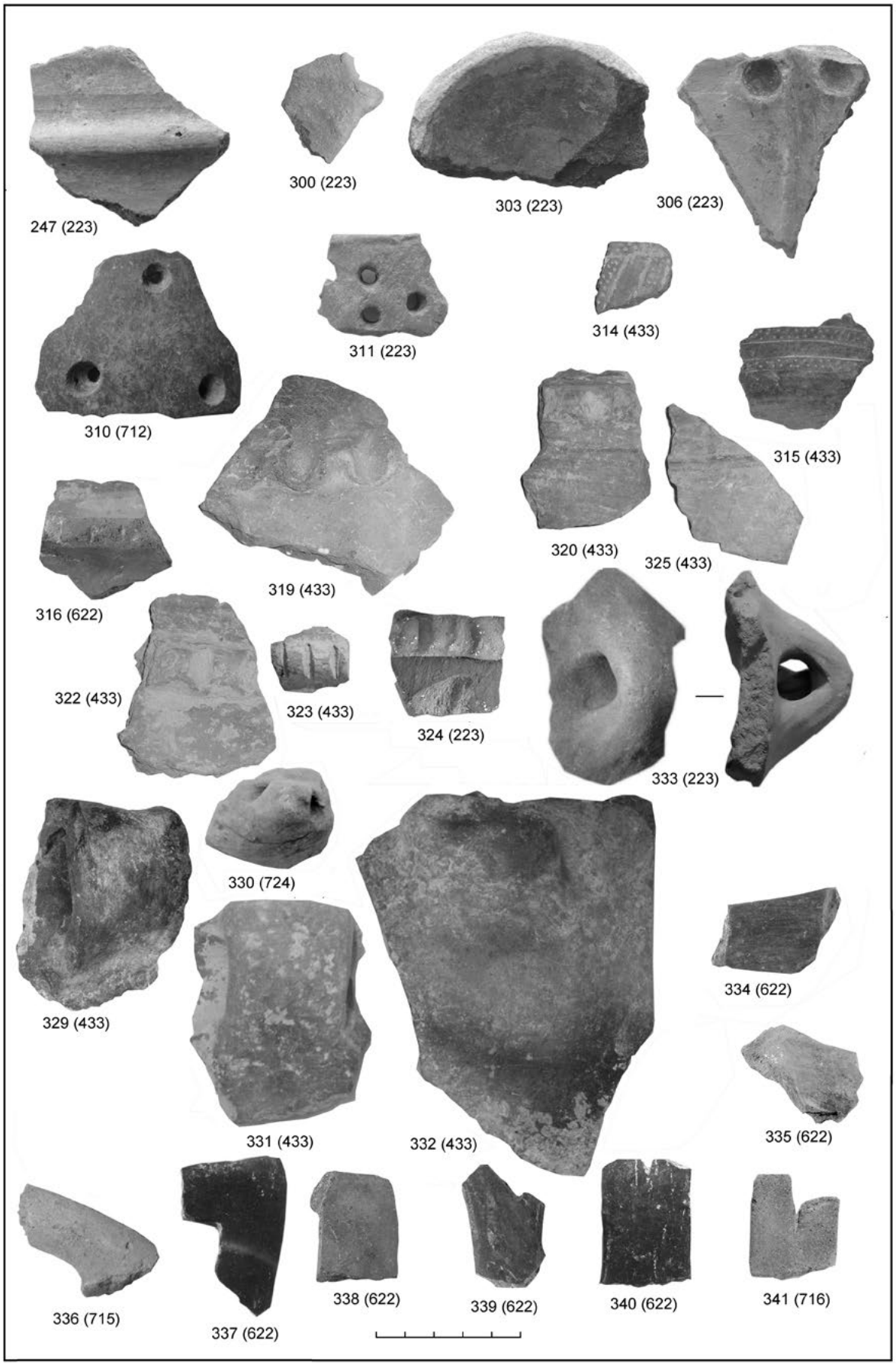
Rocker impressed dec. 159 - 169; scratched ware 170; undec. handles 174, 175; undec. figulina 180, 182.



Pl. 9. Neolithic and Eneolithic

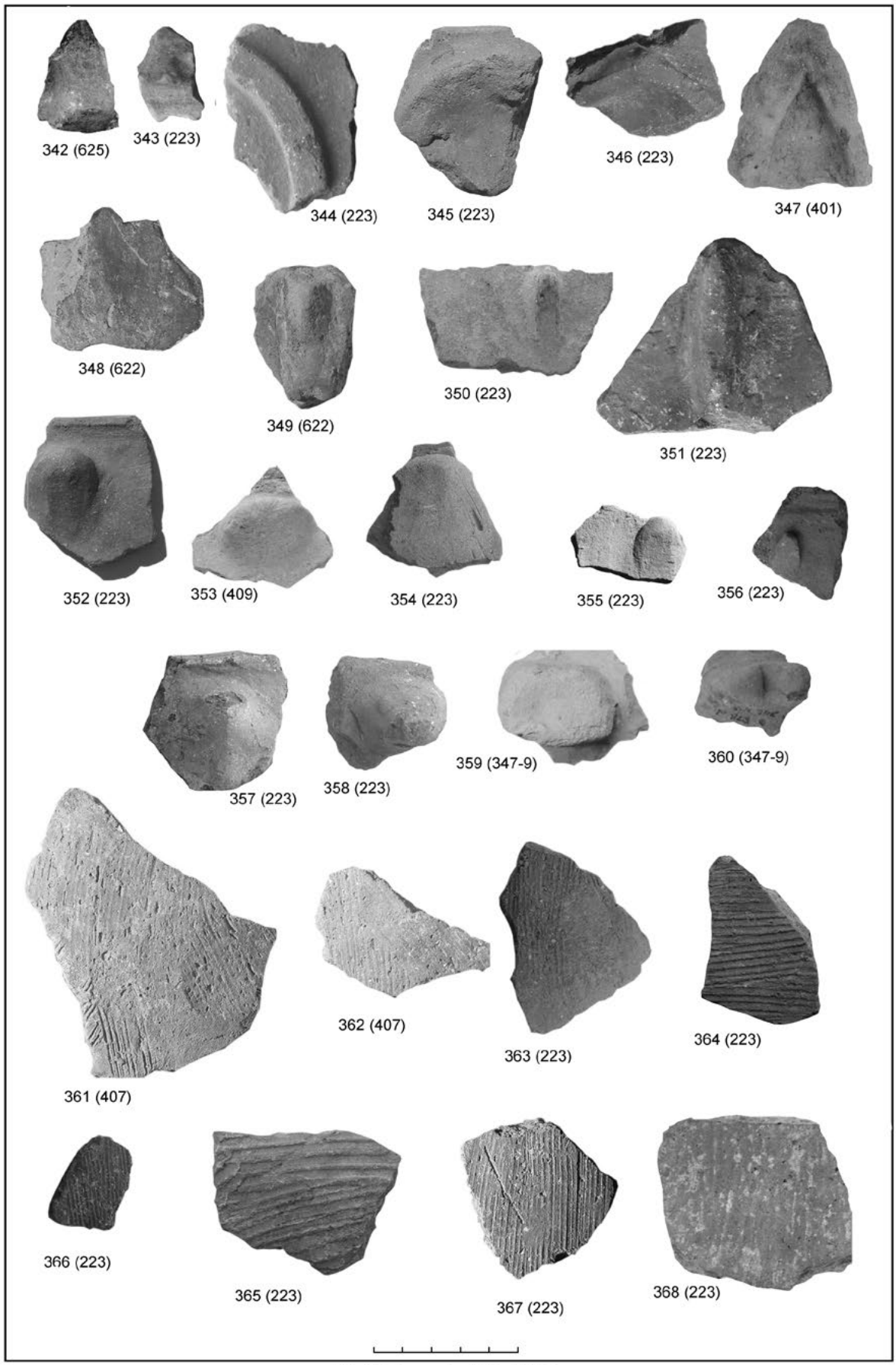
Neolithic: La Quercia type ware 186, 187; Red painted ware 188 - 193; Red and White ware 194 - 196, 199; Serra d'Alto ware 200 - 202; Diana-Bellavista ware 203 - 205; Macchia a Mare ware 206

Eneolithic: Impressed 109, 210; scaly 211; incised and dotted 211a; punched 211b, 211c



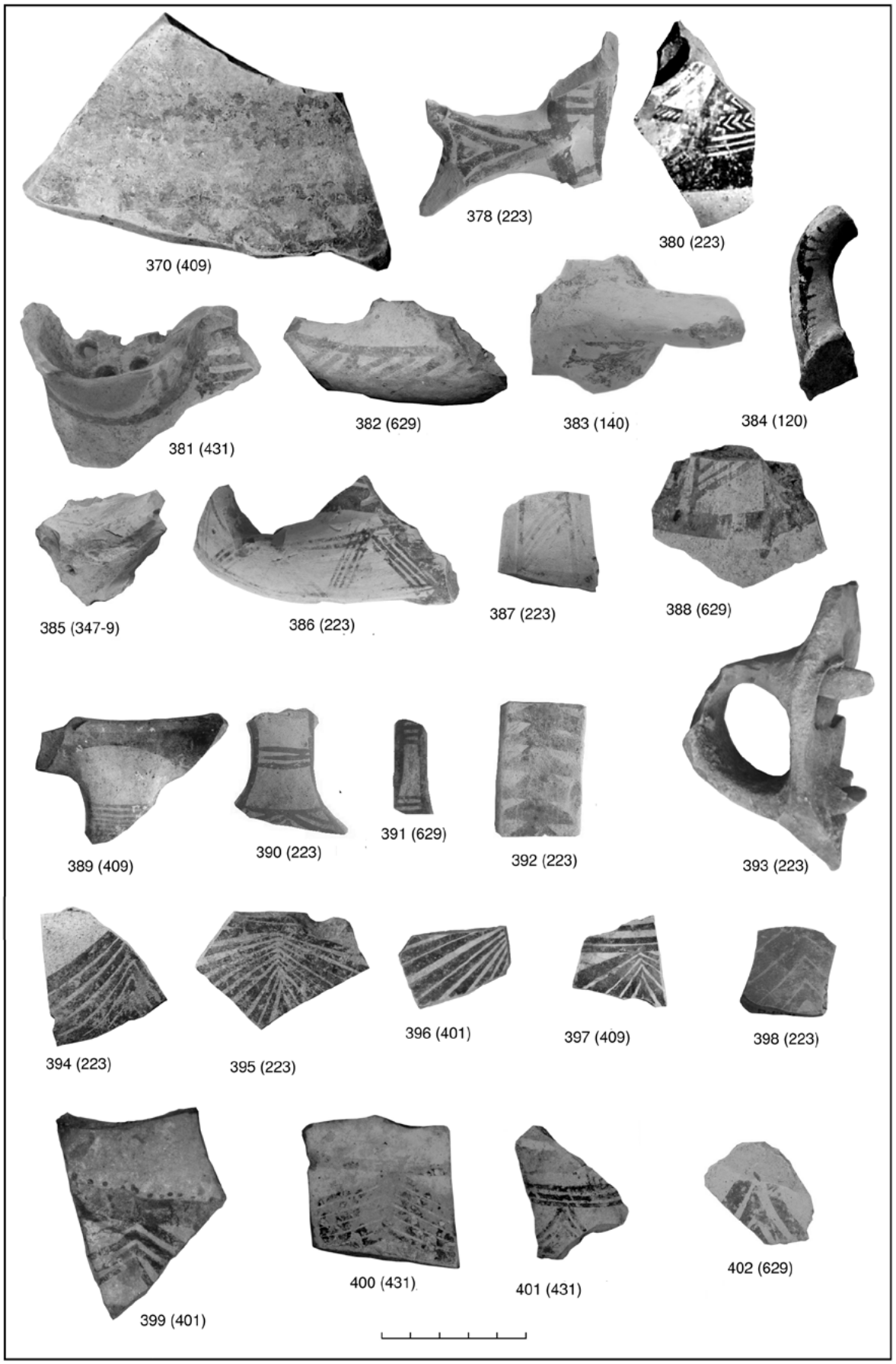
Pl. 10. Impasto (BA/EIA)

Cordoned storage pot 247; misc. bowls and dishes 300, 303, 306; strainers 310, 311; decorated Apennine 314-316; finger-impressed cordons 317, 320-326; misc. handles 331-341



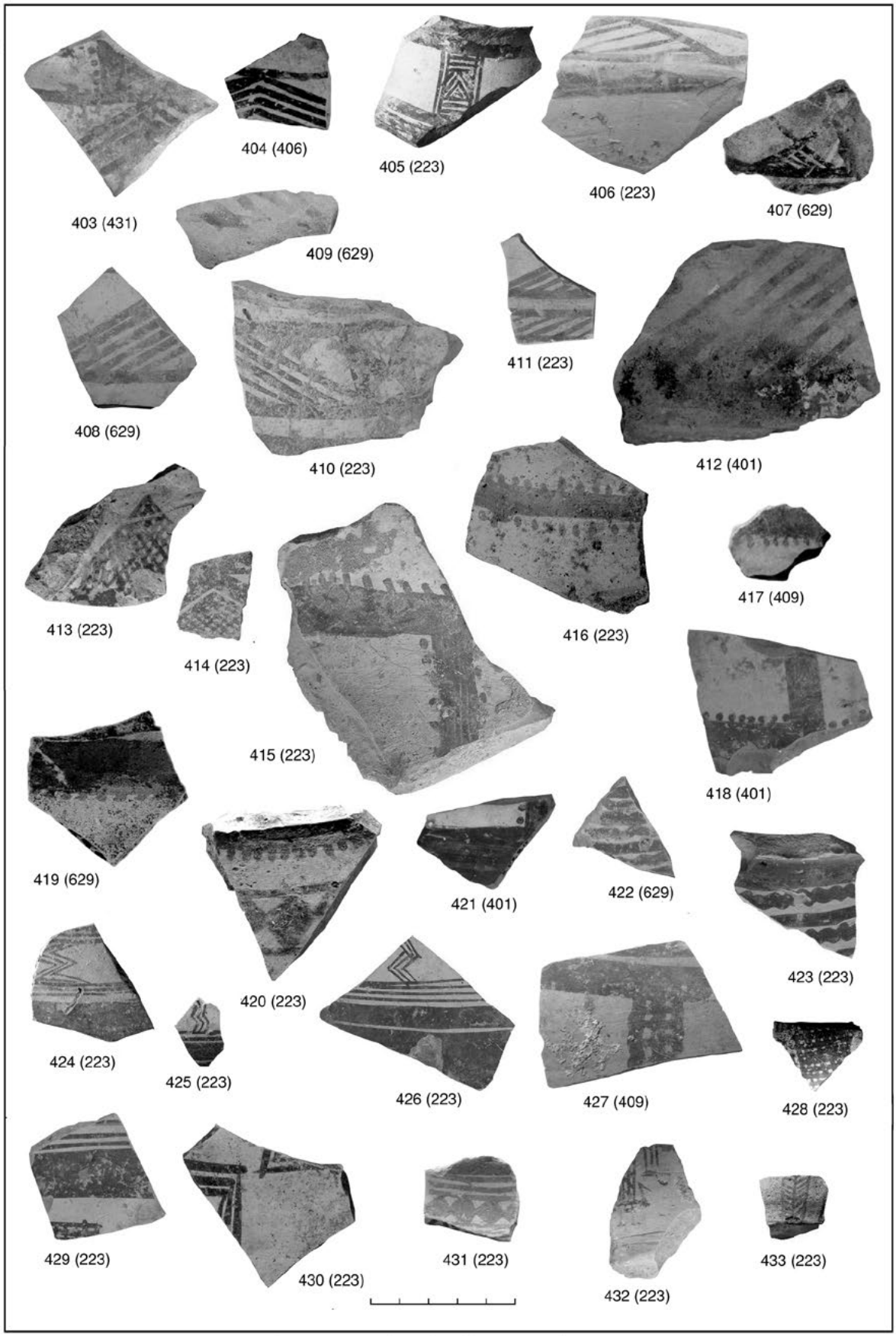
Pl. 11. Impasto (BA/EIA)

Dimples 342, 343; arched lugs 344 - 347; lugs and knobs 348 - 360; combed 361 - 368



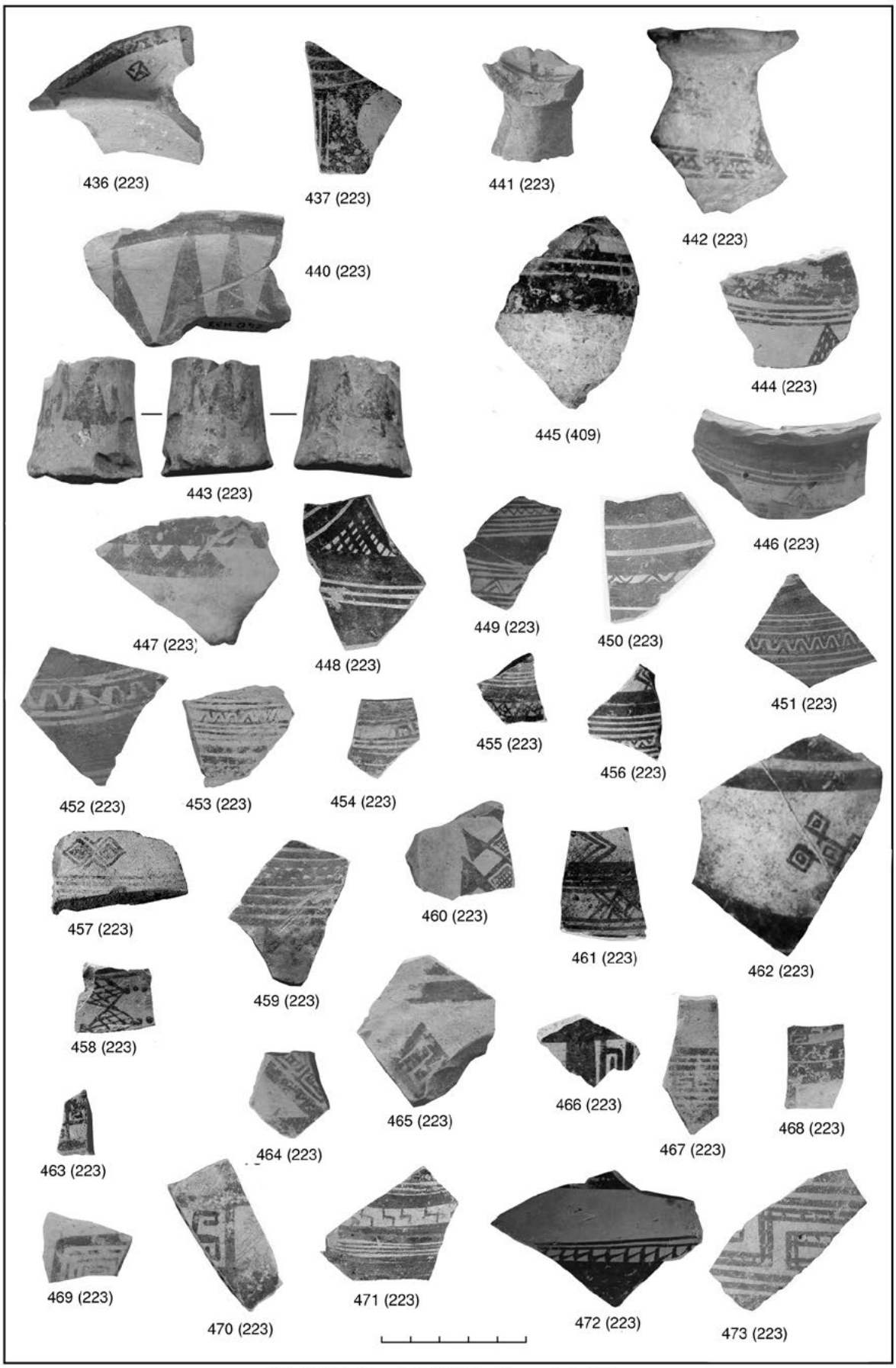
Pl. 12. Matt-painted Italic Geometric Wares

Iapygian geometric. Period Gravina I: kantharos 379; strainers 380,381; transverse handles 382 - 386; vertical handles 387 - 393; ws tenda motifs 394 - 402.



Pl. 13. Matt-painted Italic Geometric Wares

Iapygian geometric. Period Gravina I (cont.) ws: concentric triangles 403 - 405; hatched triangles 406, 407; hatched panels 408 - 412; cross-hatched triangles 413, 414; dotted/toothed lines 415 - 421; alternating bands and wavy lines 422, 423; grouped sigmas 424 - 426; cross-hatched panels 427 - 429; misc. motifs 430 - 433



Pl. 14. Matt-painted Italic Geometric Wares

Iapygian geometric. Period Gravina II: bowls 436, 437; biconical pots with out-turned rim 440; pillar handles 441, 442; thymiaterion 443; misc. ws : triangles 444 - 448; zig-zags 449 - 453; small squares and lozenges 454 - 465; hooked motifs 466 - 470; dog-leg and "N" motifs 471, 472; misc. motifs 473



Pl. 15. Matt-painted Italic Geometric Wares

Iapygian geometric. Period Gravina II ws: misc. motifs (cont) 474 - 477; pendant motifs 478 - 487.
Period Gravina III: bowl 489; urn 491; ws: triangles 493, 494; meanders 495 - 499;
key pattern and swastika 500, 501; others possibly later 502, 503.



Pl. 16. Matt-painted Italic Geometric Wares

Regional geometric wares; monochrome rims 504 - 506, 508, 509; bichrome rims 512 - 514; handle 517; ws: rows of small concentric circles 518 - 520; chequer patterns 521 - 523; rows of narrow vertical lines 524 - 526; squiggles 527 - 531; dotted lines 532



Pl. 17. Matt-painted Italic Geometric Wares

Regional geometric wares ws: dog leg 533, 534; star-shaped motifs 535 - 537; dot-rosettes 538 - 540; herring-bone 541; pendant motifs 542 - 545; W and M motifs 546 - 548; angular hooked motifs 549 - 552; concentric circles 553 - 556; red arc and chord 557; rhomboid chequer patterns 558 - 561; zig-zags 562, 563; cross-hatched panels 564 - 566



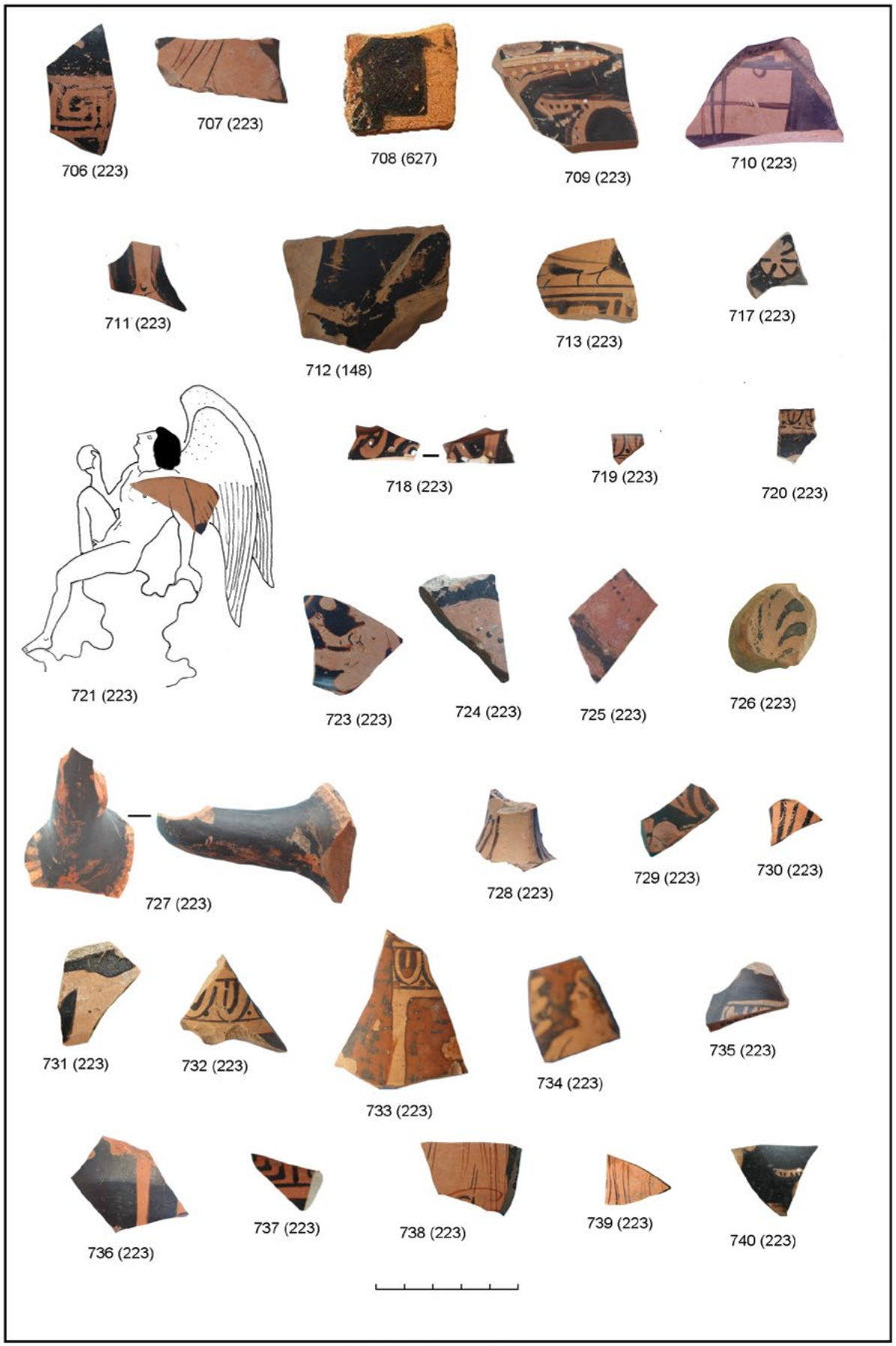
Pl. 18. Wheel-made painted pottery

One-handled cup 573; small open shapes: dishes, cups and bowls 580, 586 - 590, 594, 613; thymiateria 622, 623; jugs 645, 646; handle 647; krater 654; closed shapes 666 - 674



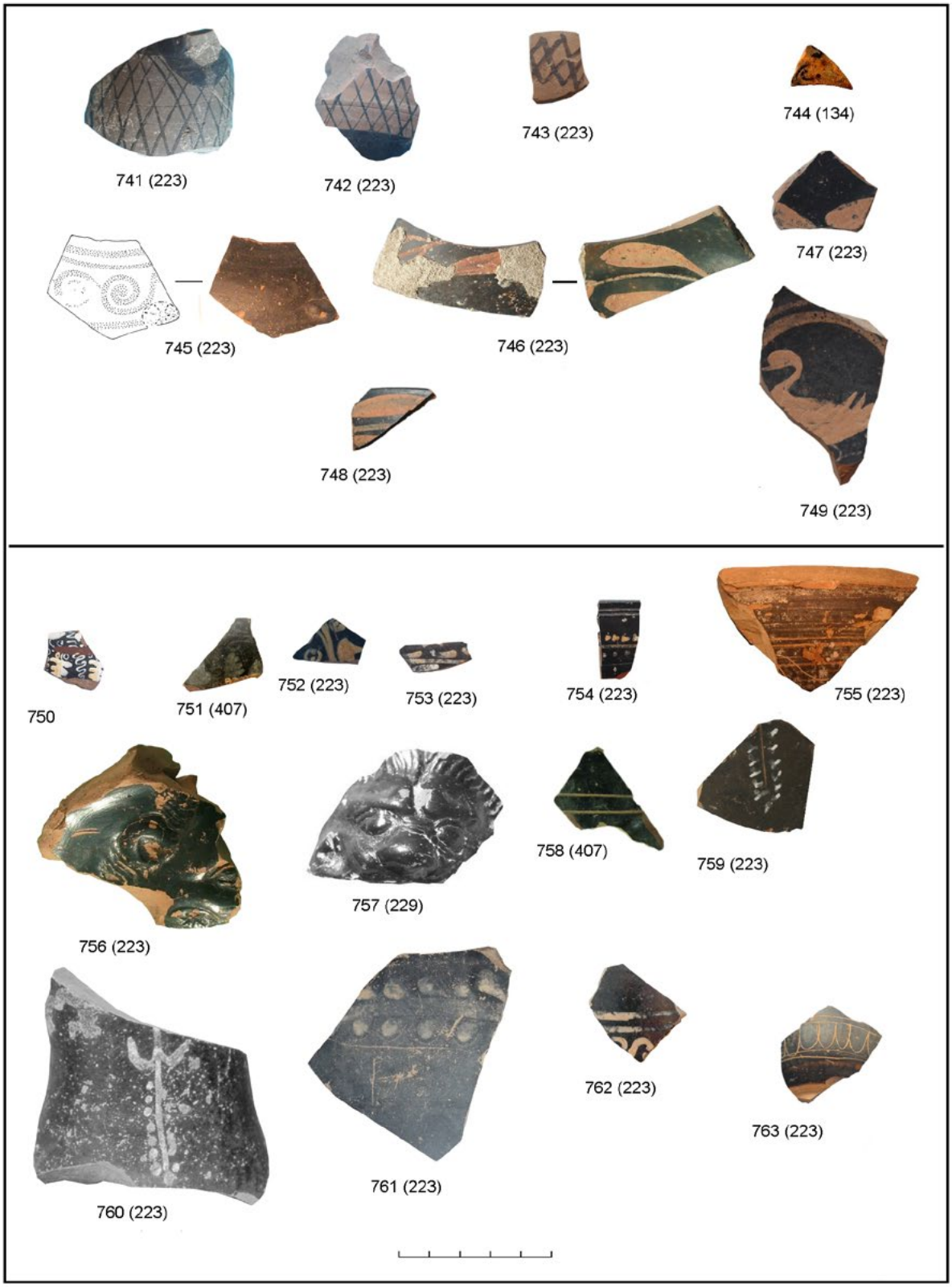
Pl. 19. Greek imported wares and Italiote red-figure

Greek imported wares: Protocorinthian lip cup 675; imitation protocorinthian aryballos 676; kotylai/skyphoi 678, 679; imitation East Greek 680; archaic Greek type cups 683, 686; skyphos with offset rim 695; Attic black-figure 697; Attic red-figure 698
Italiote red-figure: bell-krater rims 699-705



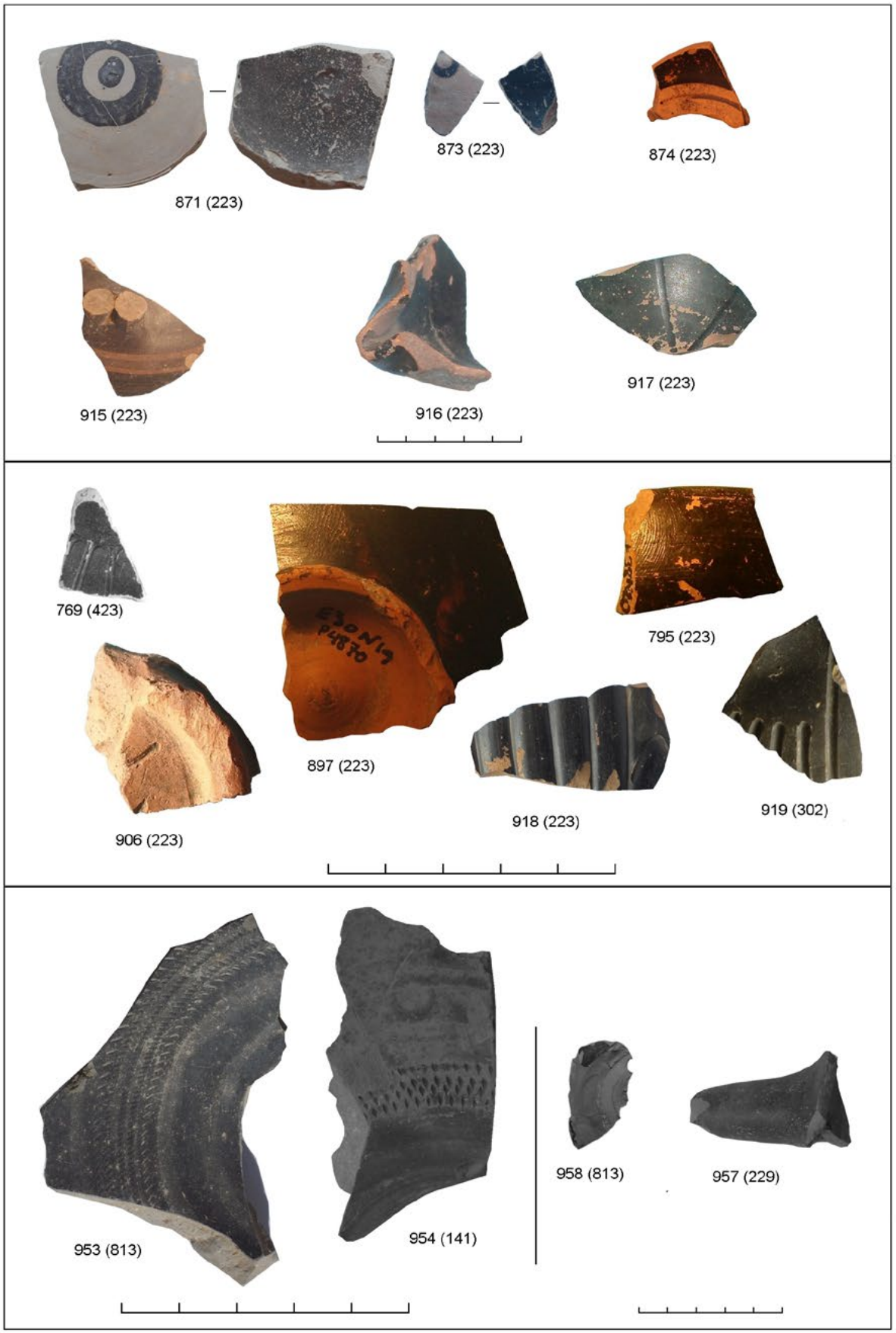
Pl. 20. Italiote red-figure

Ws probably of bell kraters 707 - 711; other kraters 712, 713; kylikes 717, 718; skyphoi 719, 720; cup skyphos 721; lekanis lids 722 - 726; hydria handle 927; lekythos 728; ws of miscellaneous open vessels 729 - 731; open vessel 729 - 731; ws of miscellaneous closed vessels 732 - 740

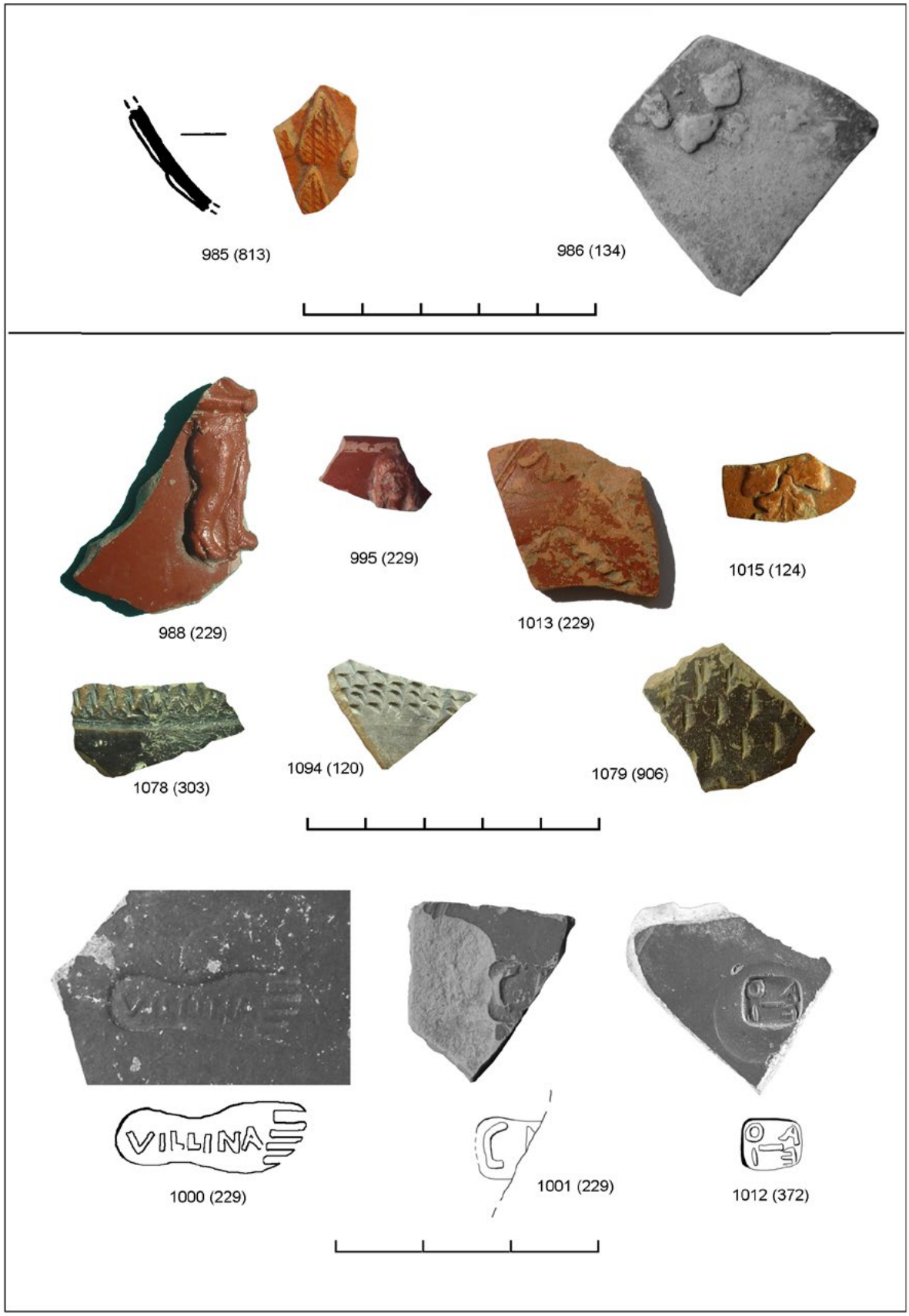


Pl. 21. Overpainted and Gnathian pottery

Reticulated lekythoi 741 - 743; black-on-buff 744; early over-painted lekanis 745; red swan group kylikes 746 - 749
Gnathian: skyphoi and cup skyphoi 750 - 753; cup 754; bell kraters 755 - 757;
large closed shapes 758 - 761; lekythoi etc. 762, 763

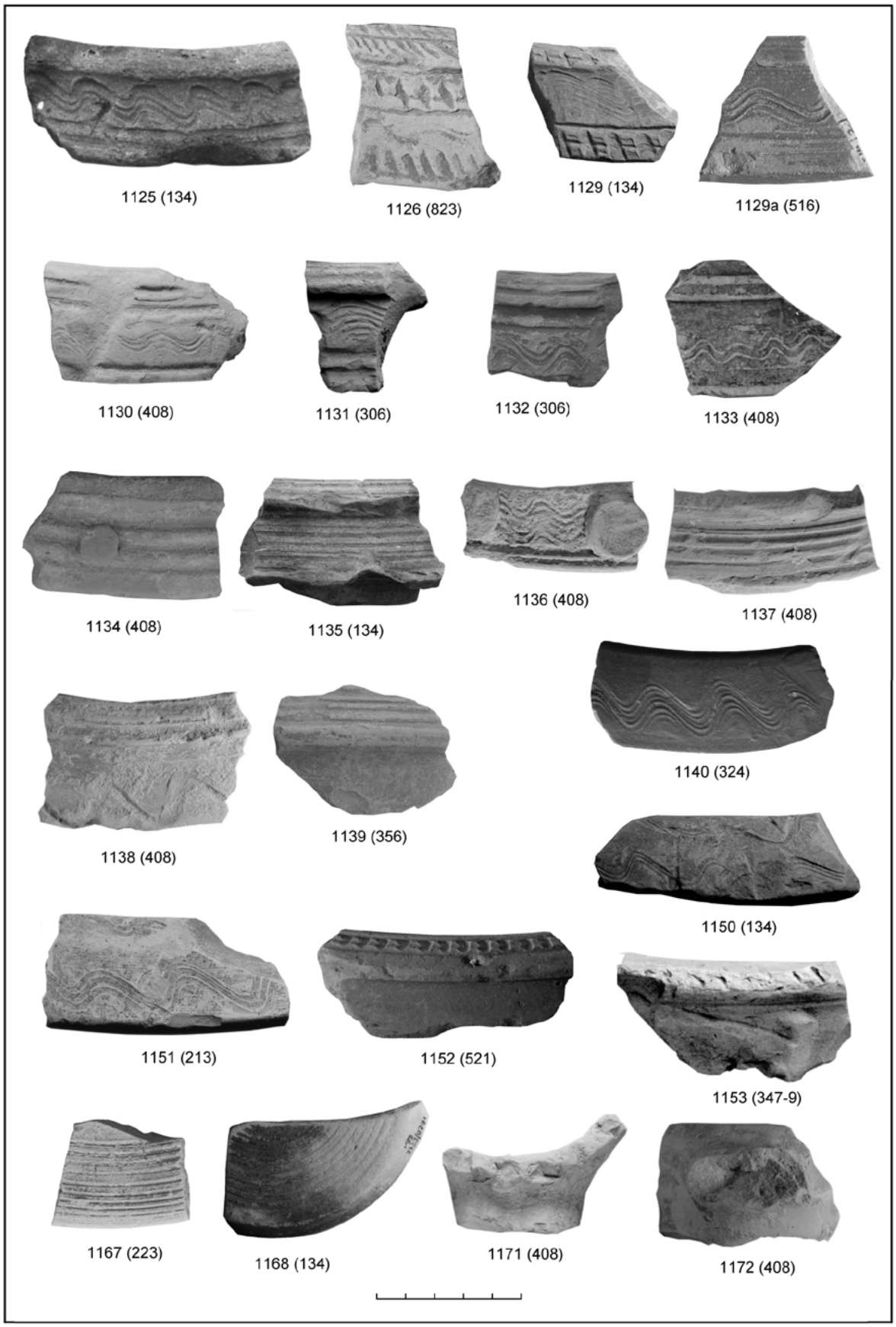


Pl. 22. Black-gloss and grey-gloss wares
Black-gloss: Attic kylix 769; skyphos base 871 - 874; ring base 906; ws 915 - 919
Grey-gloss: Ring bases 953, 954; spouted jugs 957, 958



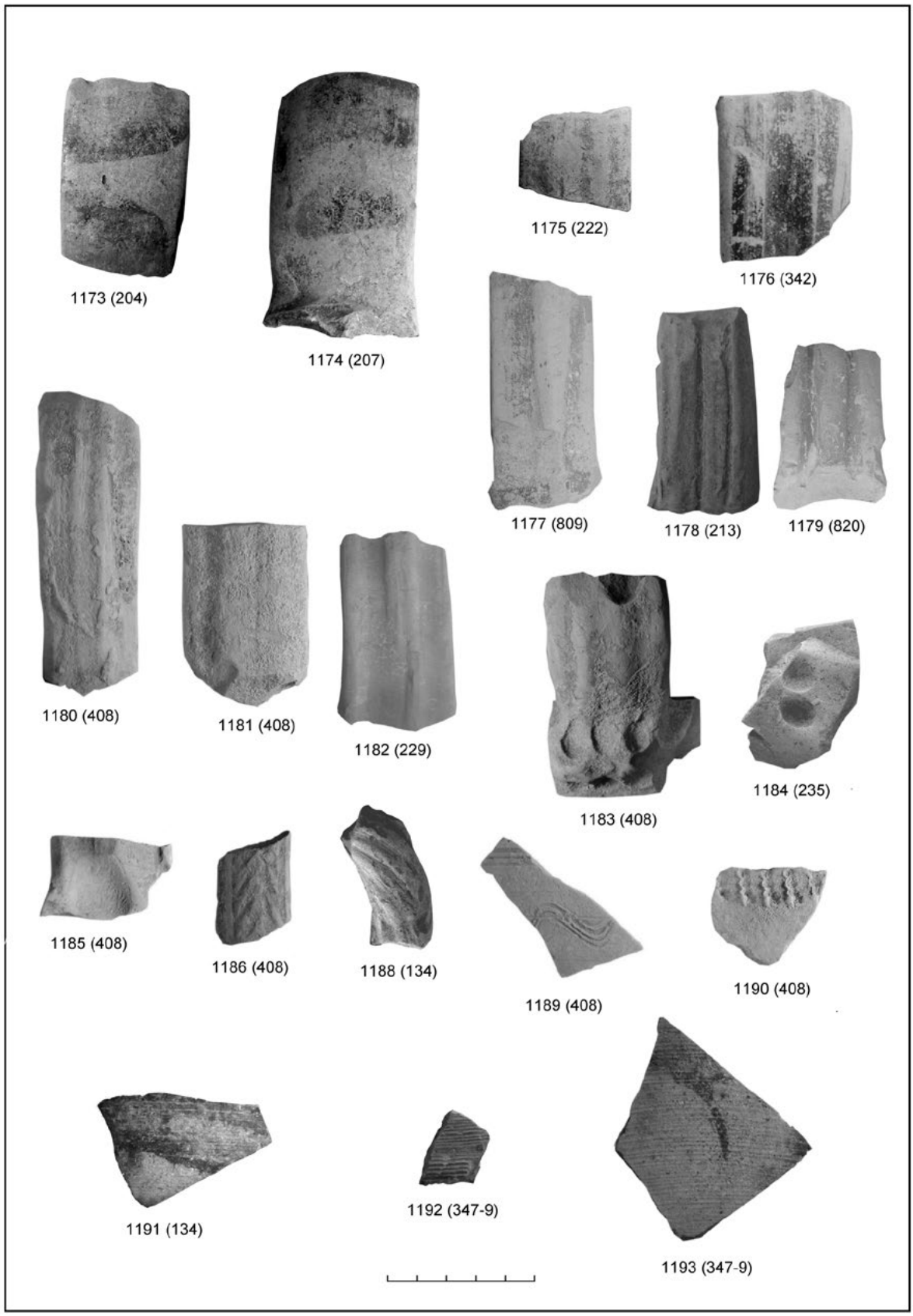
Pl. 23. Hellenistic relief wares and Roman fine wares

Hellenistic relief wares 985, 986; Terra sigillata TS 1 988, 995, Stamps *in planta pedis* 1001, 1002, 1003; TS2 1013, 1015; Regional Red Slip 1078, 1079, 1094

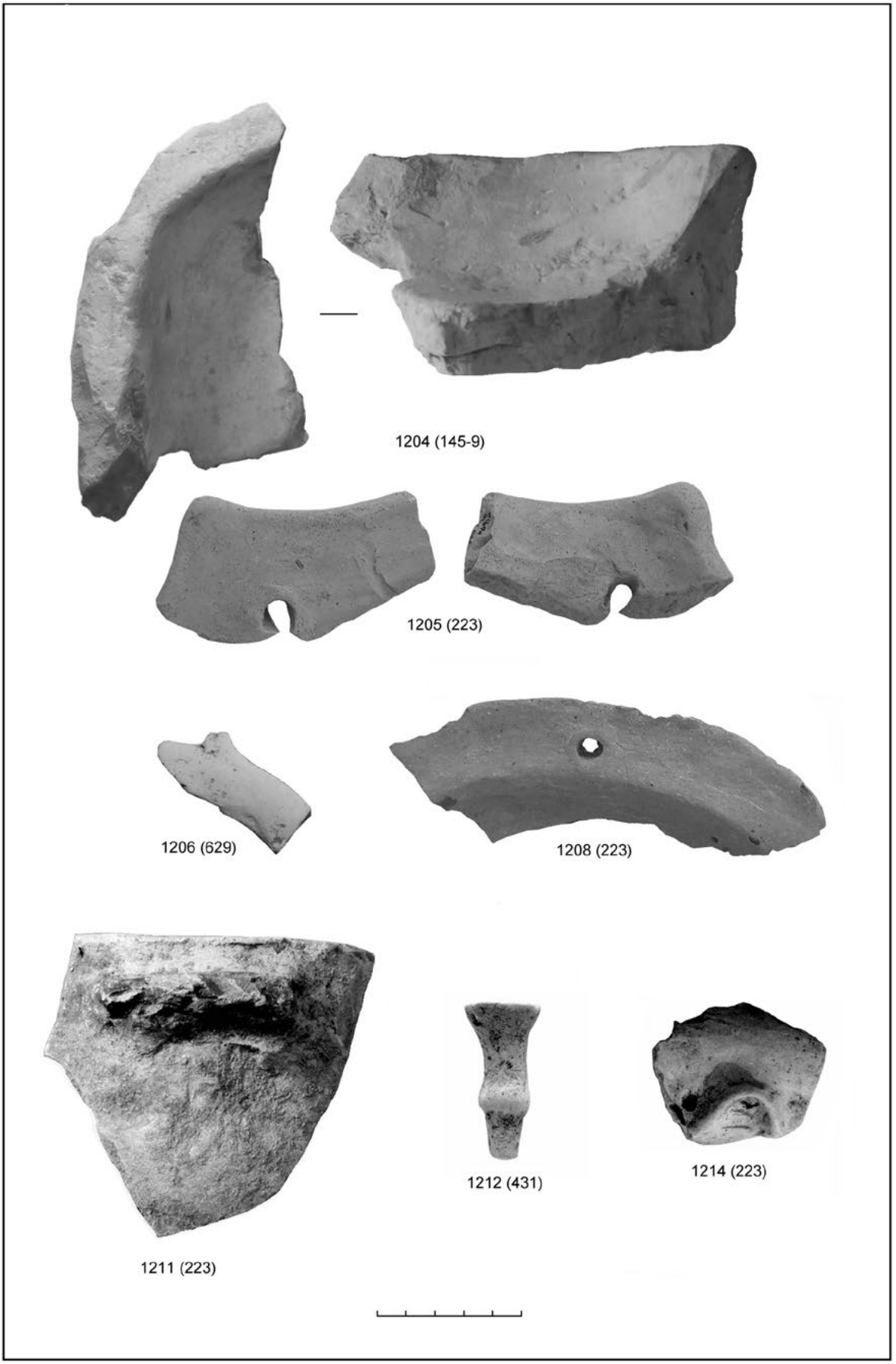


Pl. 24. Late Roman Painted Ware

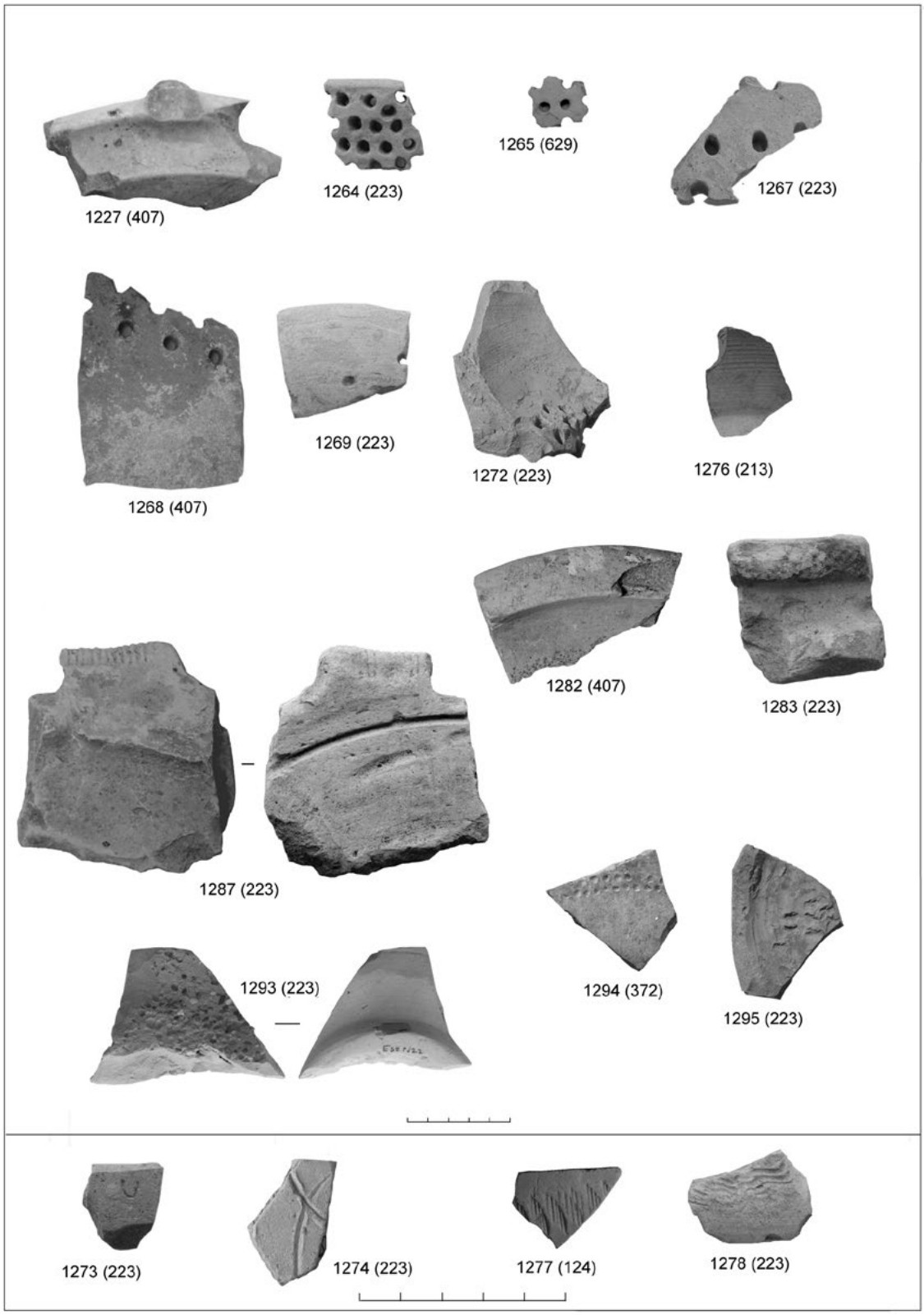
Form 42 variants 1125, 1126; Form 42 rims 1129 - 1139; Form 43 1140, 1150 - 1153; lid 1167; base 1168; rims of table amphorae/ flagons with handle springs 1171, 1172



Pl. 25. Late Roman Painted Ware
Handles 1173 - 1186; wall sherds 1188 - 1193



Pl. 26. Plain hand-made pottery
Basin with elliptical rim 1204; handles 1205, 1206; bowl with broad hoizontal rim 1208; situla with straight sides and arched lug handle 1211; pillar handle 1212; ws 1214

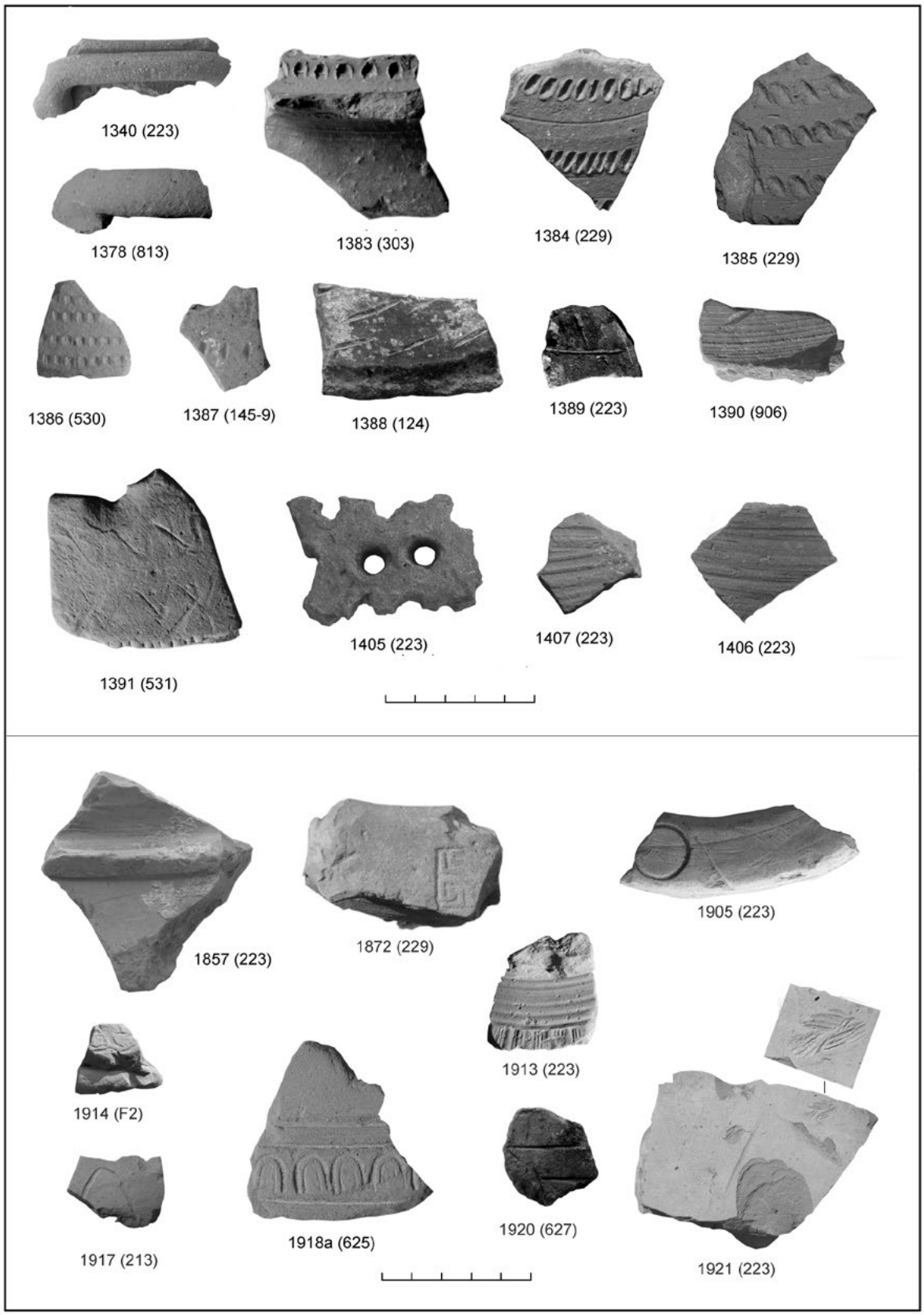


Pl. 27. Plain wheel-made wares

Carinated lekane 1227; colanders 1264, 1265, 1267 - 1269; flower pot 1272; inscribed frags 1273, 1274; combed base 1276; ws (feather rouletted) 1277, (wavy lines) 1278; mortaria 1282, 1283, 1287, 1293 - 1295



Pl. 28. Plain wheel-made wares
Large bowls, louteria or basins with rouletted or stamped decoration



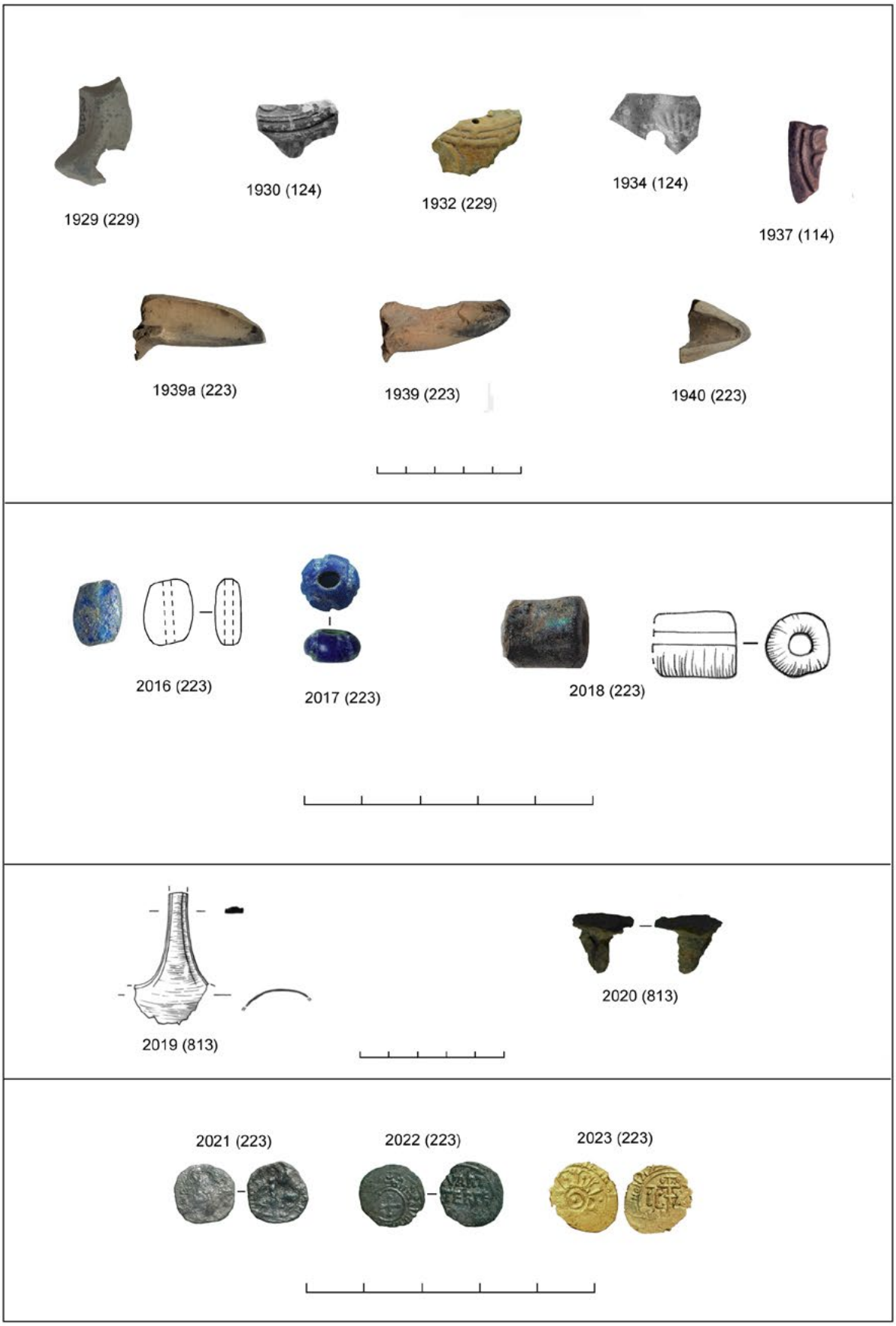
Pl. 29. Cooking pots and dolia

Cooking pots: casserole 1340; staff handle 1378; clibani 1383 - 1391; sieve 1405; brushed wall sherds 1406, 1407.
Dolia: cordoned wall sherd (FBA/EIA); rims with stamped decoration 1872; with impressed O 1905; other decorated dolium frags 1913, 1914, 1917 (Late Antique), 1918a (lid); wall sherds with impressed markings 1920 - 1922

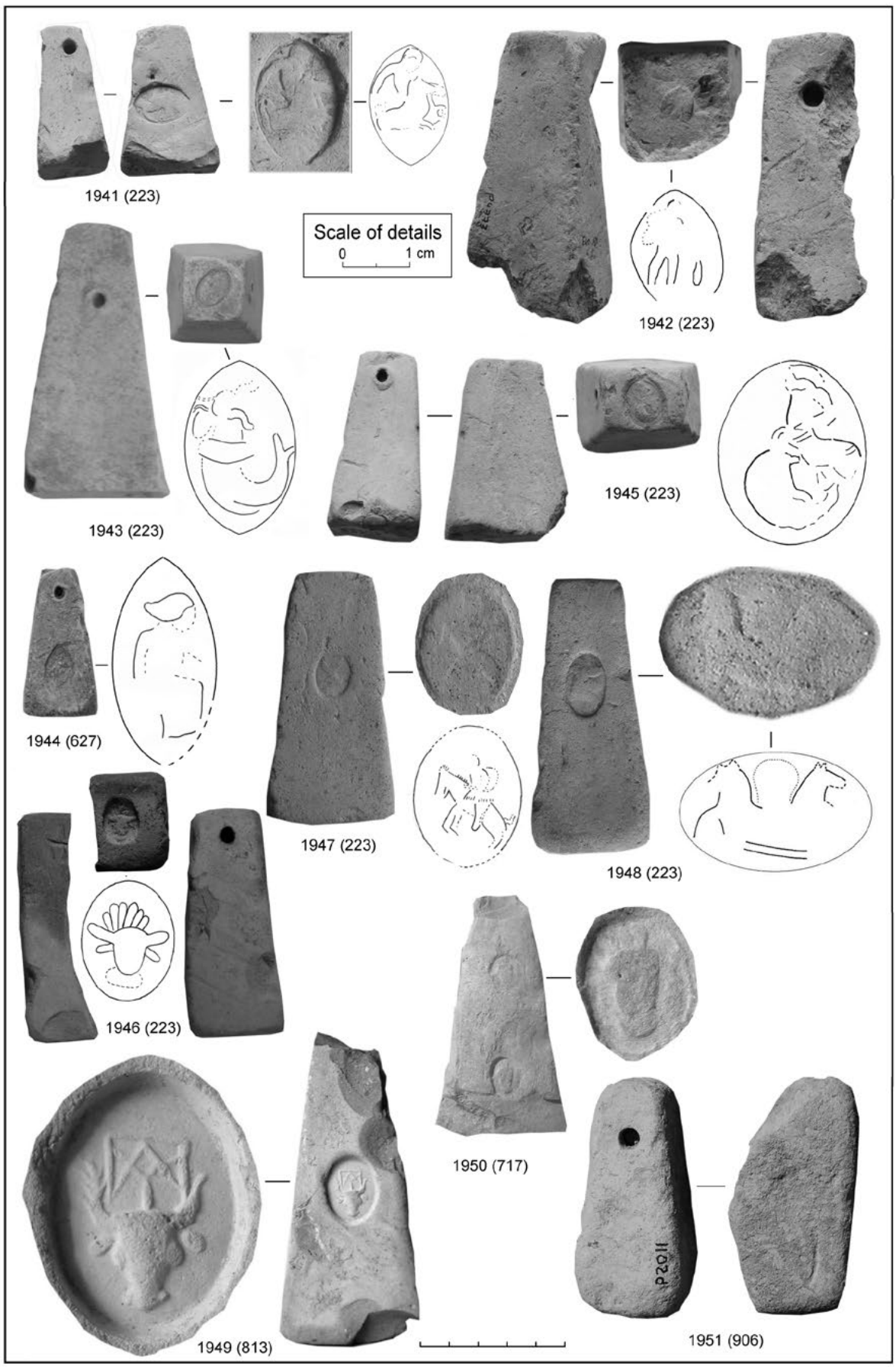


Pl. 30. Amphorae

Magna Graecian/Sicilian prod.: Vandermersch IV-V 1431; Vandermersch IV-V o V-VI 1434; Vandermersch/*Gr.-Ita.* 1439. **Italian prod.**: *Brindisina* 1474; Flat-bottomed amphora 1495; Unidentified 1526. **African prod.**: *Spatheion* 1 1685, 1687; *Spatheion* 2 A 1691; Amphorae of the Punic tradition of the Gulf of Hammamet 1707, 1708; *Spatheion* 3 1692; Unidentified 1720. **Eastern Aegean prod.**: Chian amphora "Straight neck series" - Chian tp. P (?) 1761; Corinthian A' 1762; Rhodian 1763; Dressel 24/Knossos 15 1776; Knidian 1773; Unidentified 1795, 1800

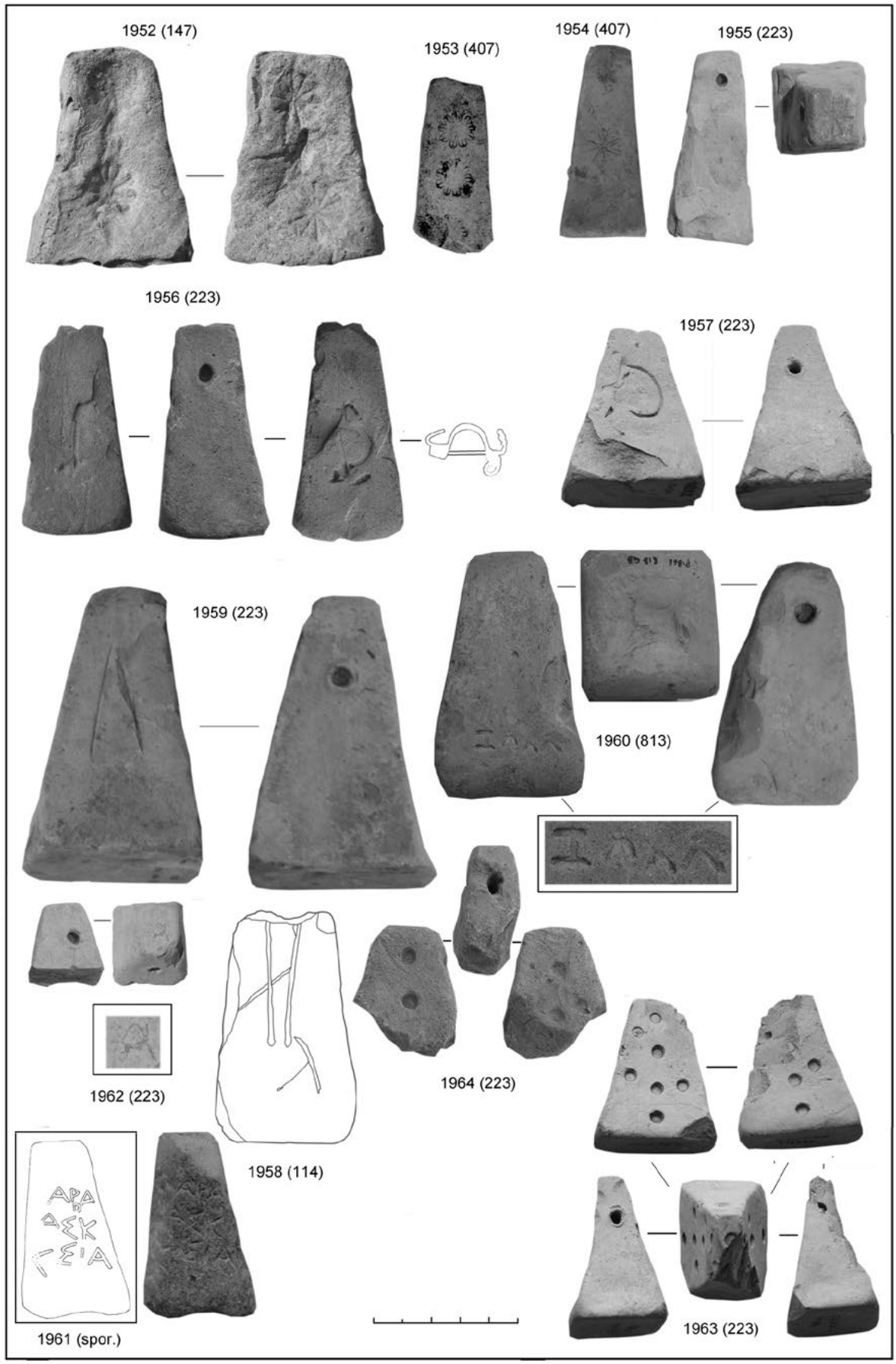


Pl. 31. Lamps, Glass Beads, Metal Objects, Coins
Lamps: Roman mould-made 1929, 1930, 1932, 1934, 1937; Medieval 1939, 1940.
Glass beads: 2016 - 2018; Metal objects: strigil 2019, nail 2020; Coins: 2021 - 2023



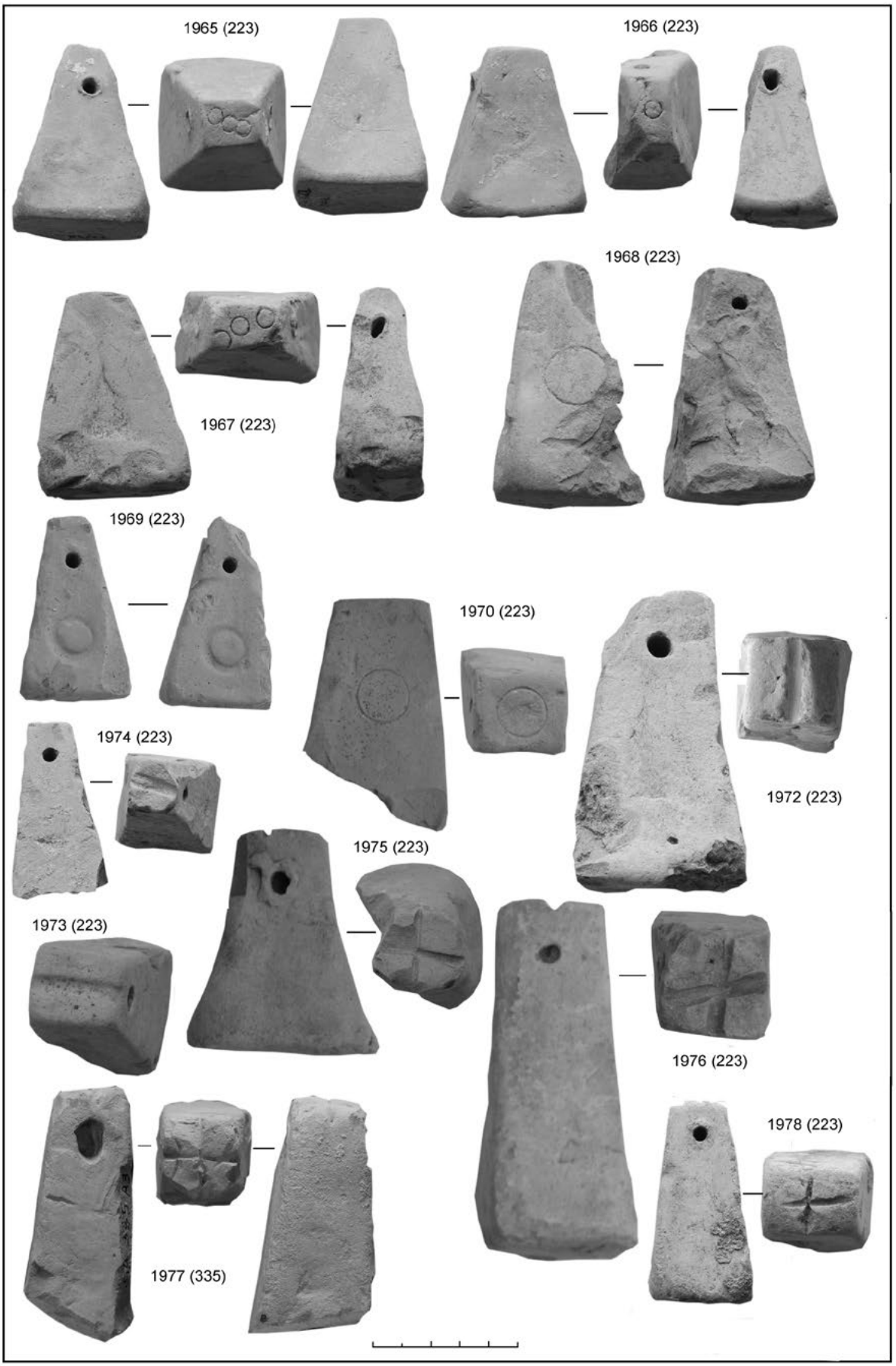
Pl. 32. Loomweights

With signet ring or seal impressions 1941 - 1949; with stamps *In planta pedis* 1950, 1951



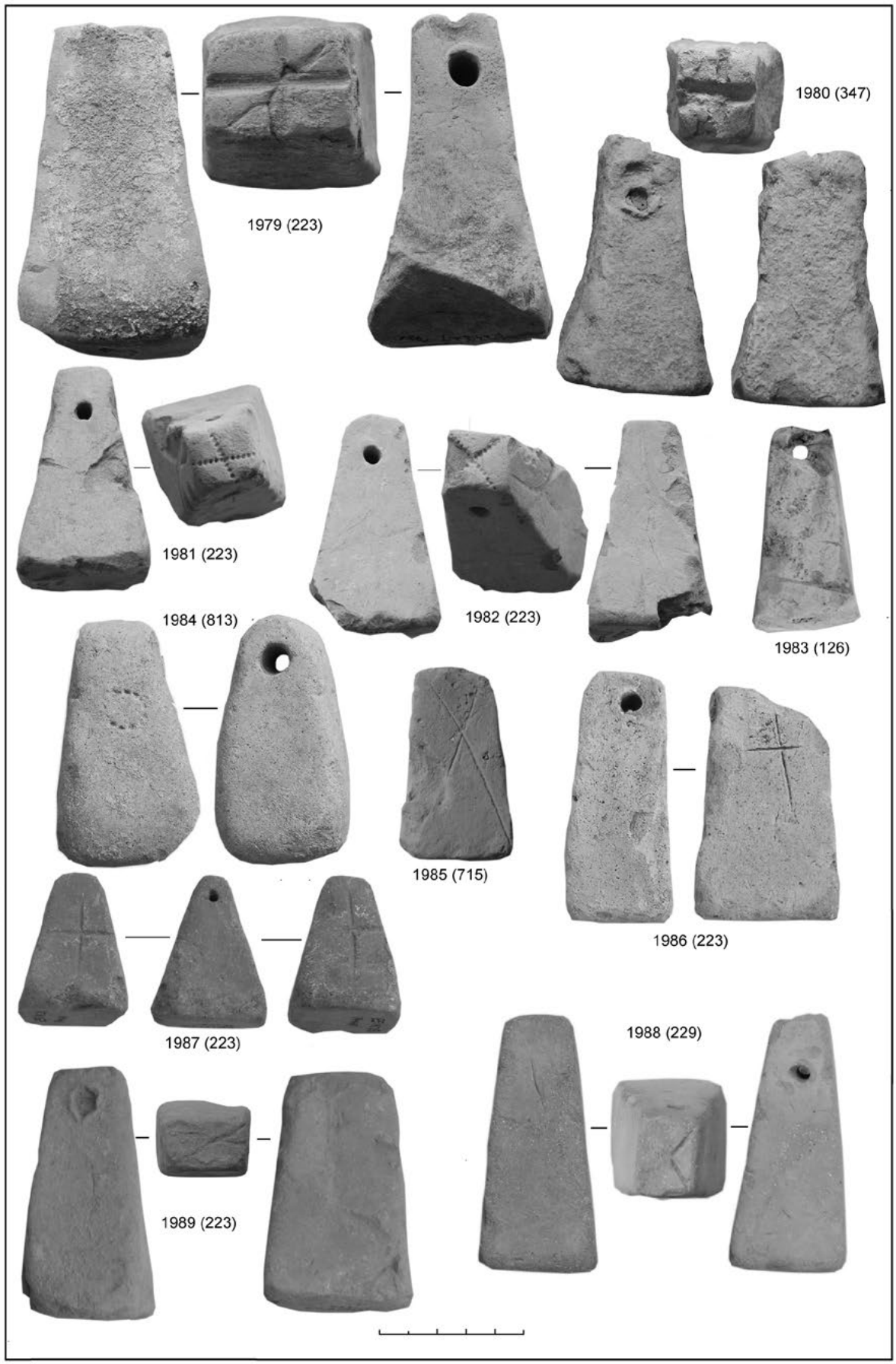
Pl. 33. Loomweights

With rosette or star motif 1952 - 1955; with fibula and tweezer impressions 1956 - 1958; with inscriptions 1959 - 1962; with reed impressions 1963 - 1964



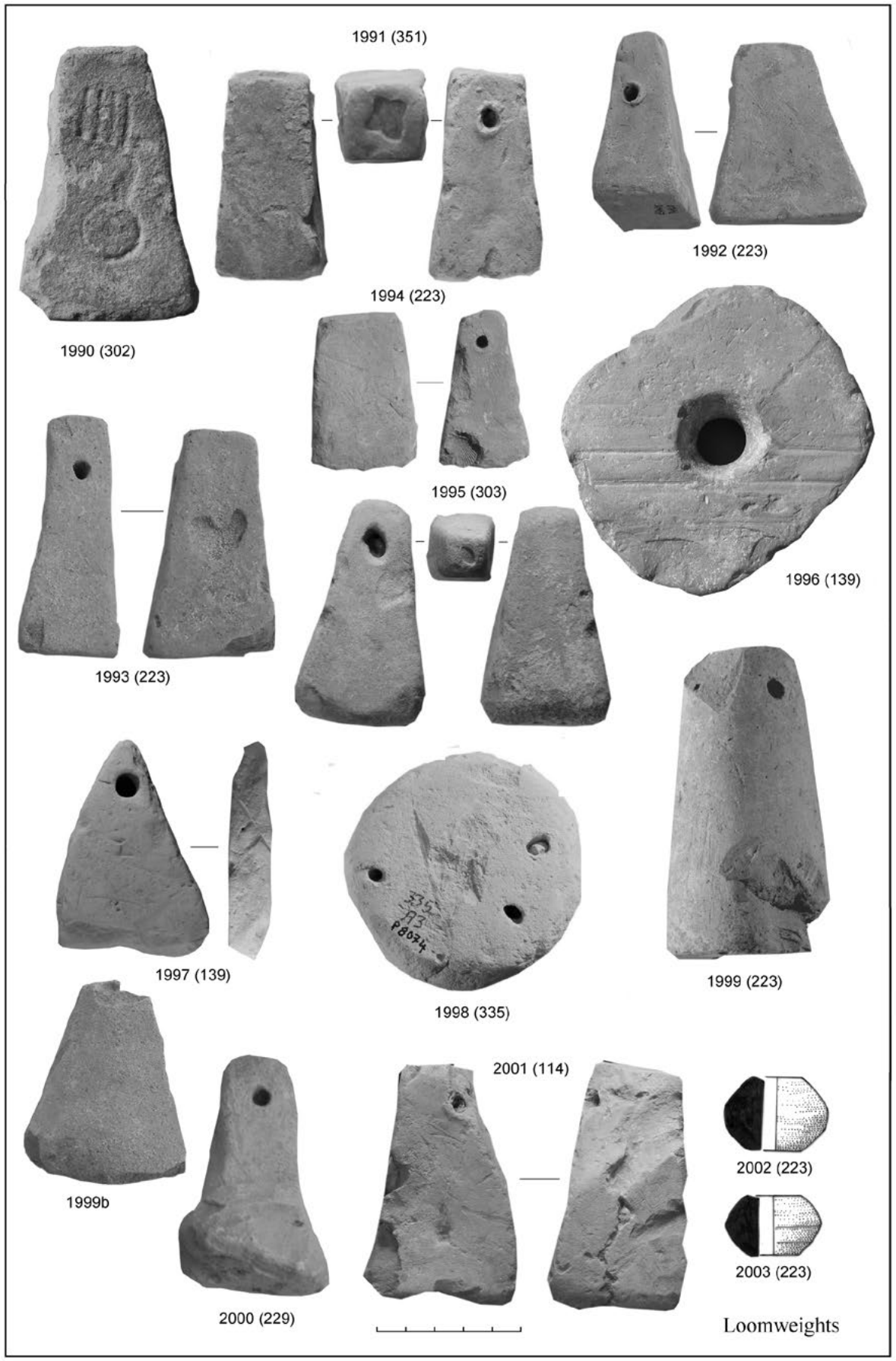
Pl. 34. Loomweights

With reed impressions (cont,) 1965 - 1967; with impressed circles 1968 - 1970; with grooves or crosses on top 1972 - 1978



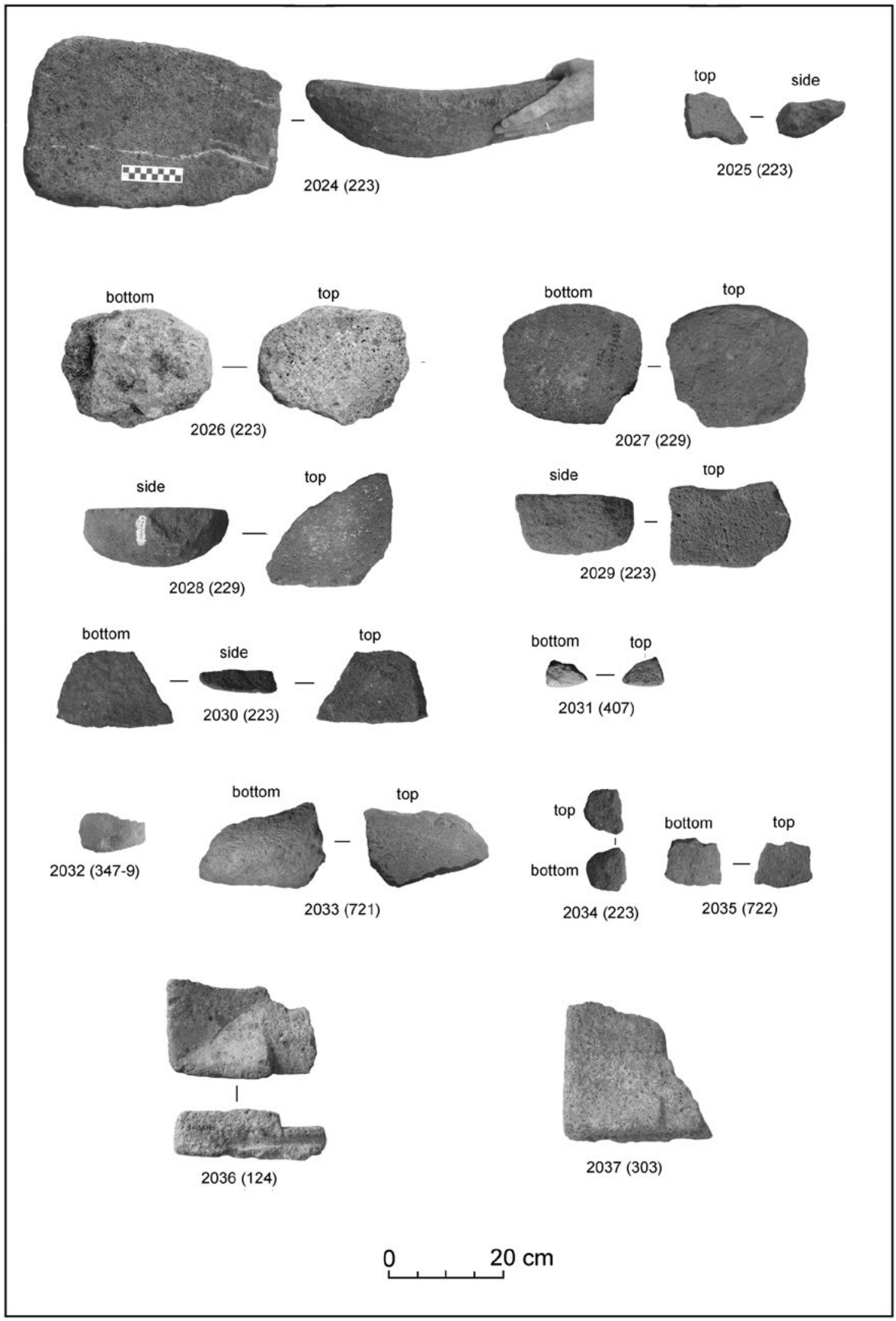
Pl. 35. Loomweights

With grooves or crosses on top (cont.) 1979, 1980; with dotted crosses or circles 1981- 1983; with incised crosses on side1984; with diagonal crosses 1985 - 1989



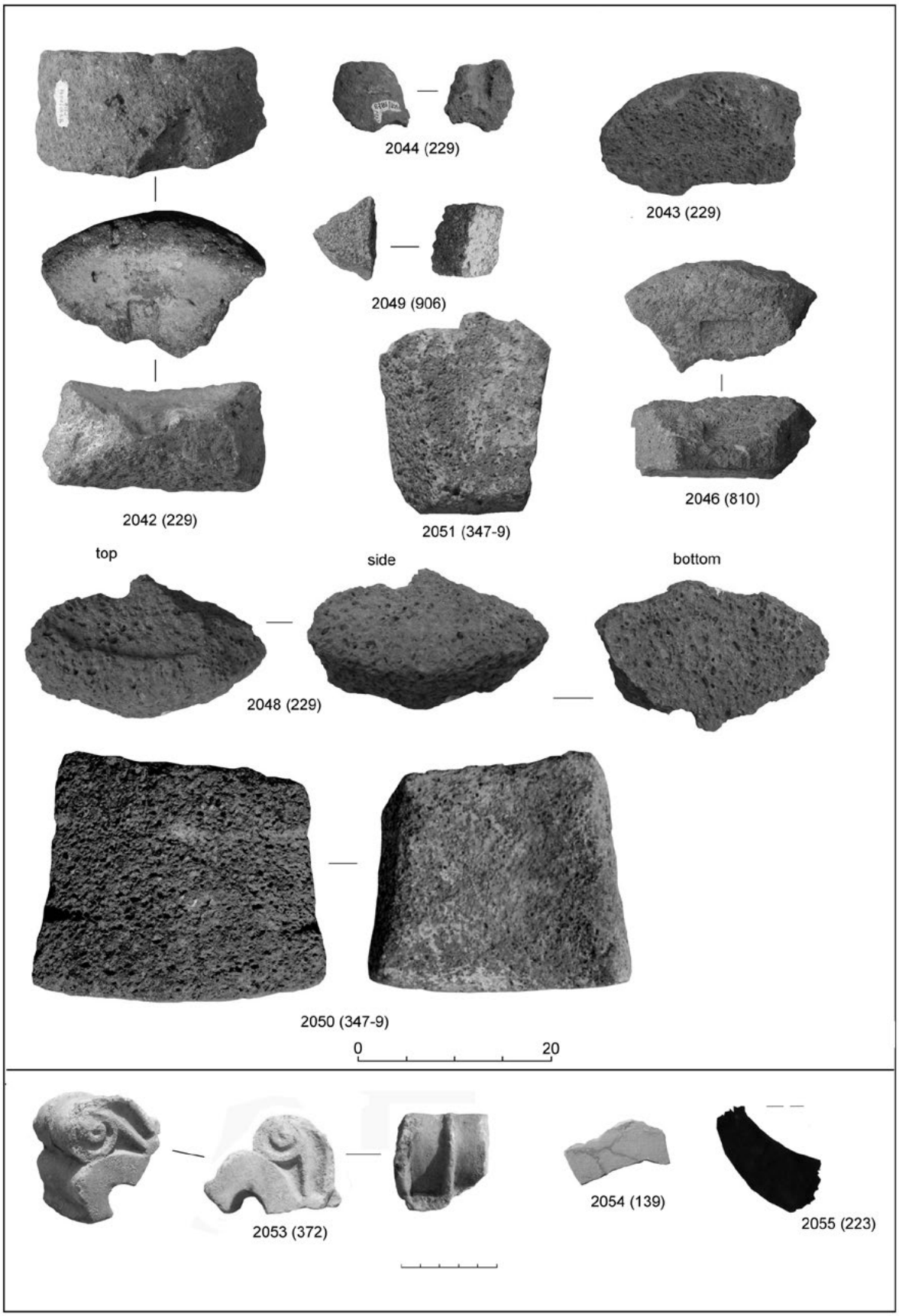
Pl. 36. Loomweights

Single examples of various features 1990 - 1995; weights probably not for looms 1996, 1997; shapes 1998 - 2001; spindle whorls 2002, 2003



Pl. 37. Millstones

Saddle querns 2024 - 2025; flat grinding stones 2026 - 2031; rubbers 2032 - 2035; hopper-rubbers 2036, 2037



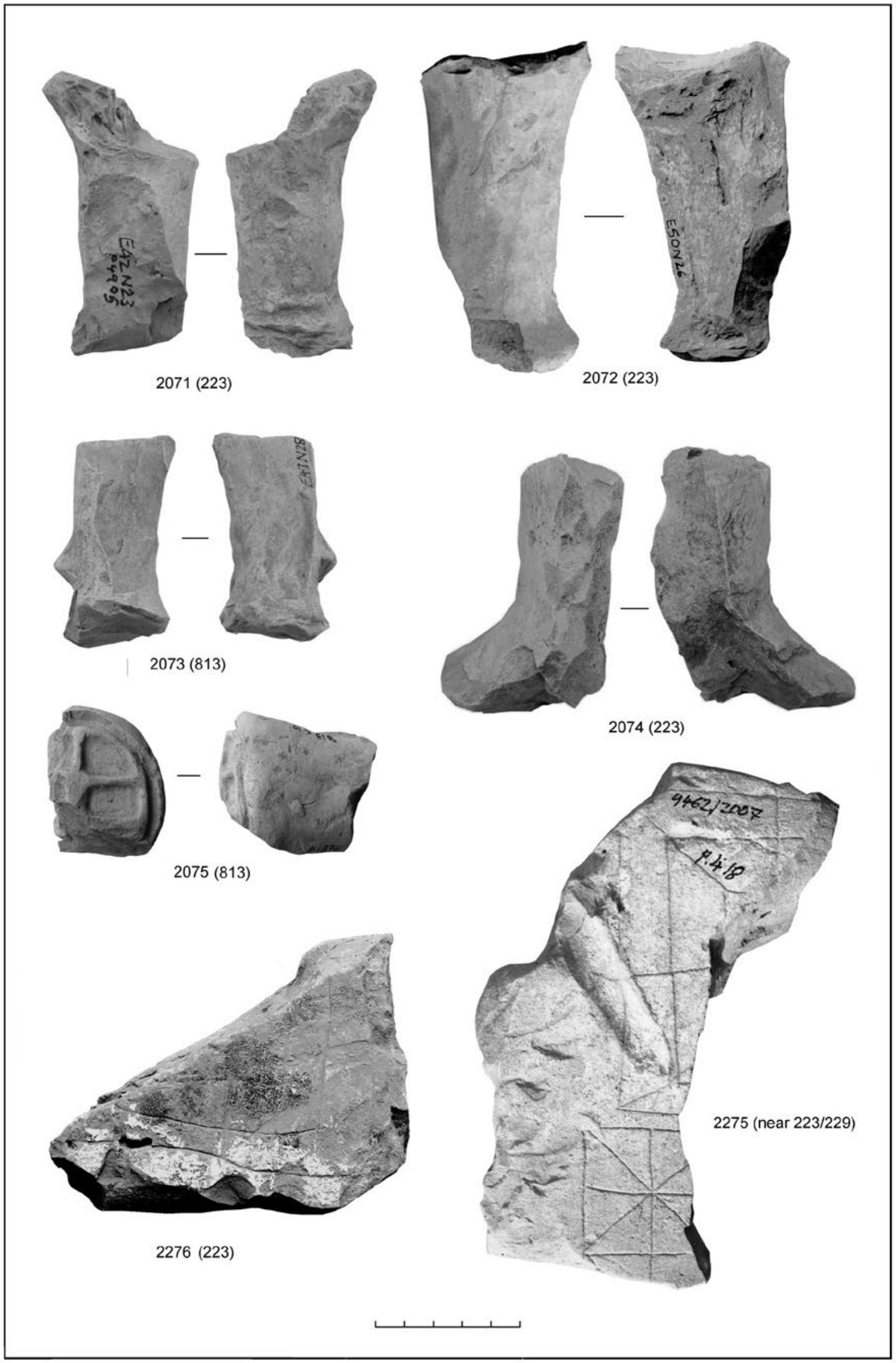
Pl. 38. Millstones and Marble fragments

Millstones: Rotary hand mills: catilli 2042 - 2044, 2046; metae 2048, 2049; donkey/slave turned mills: catilli 2050, 2051
Marble fragments: Ionic volute 2053; revetment 2054; basin fragment 2055



Pl. 39. Architectural terracottas

Plaques with gorgon's head 2056, 2057; semicircular antefixes with palmette 2058 - 2067; lateral simas 2068 - 2070



Pl. 40. Terracotta modelled objects and game boards
Horses legs 2071 - 2074; chariot wheel 2075; game boards 2275-2276



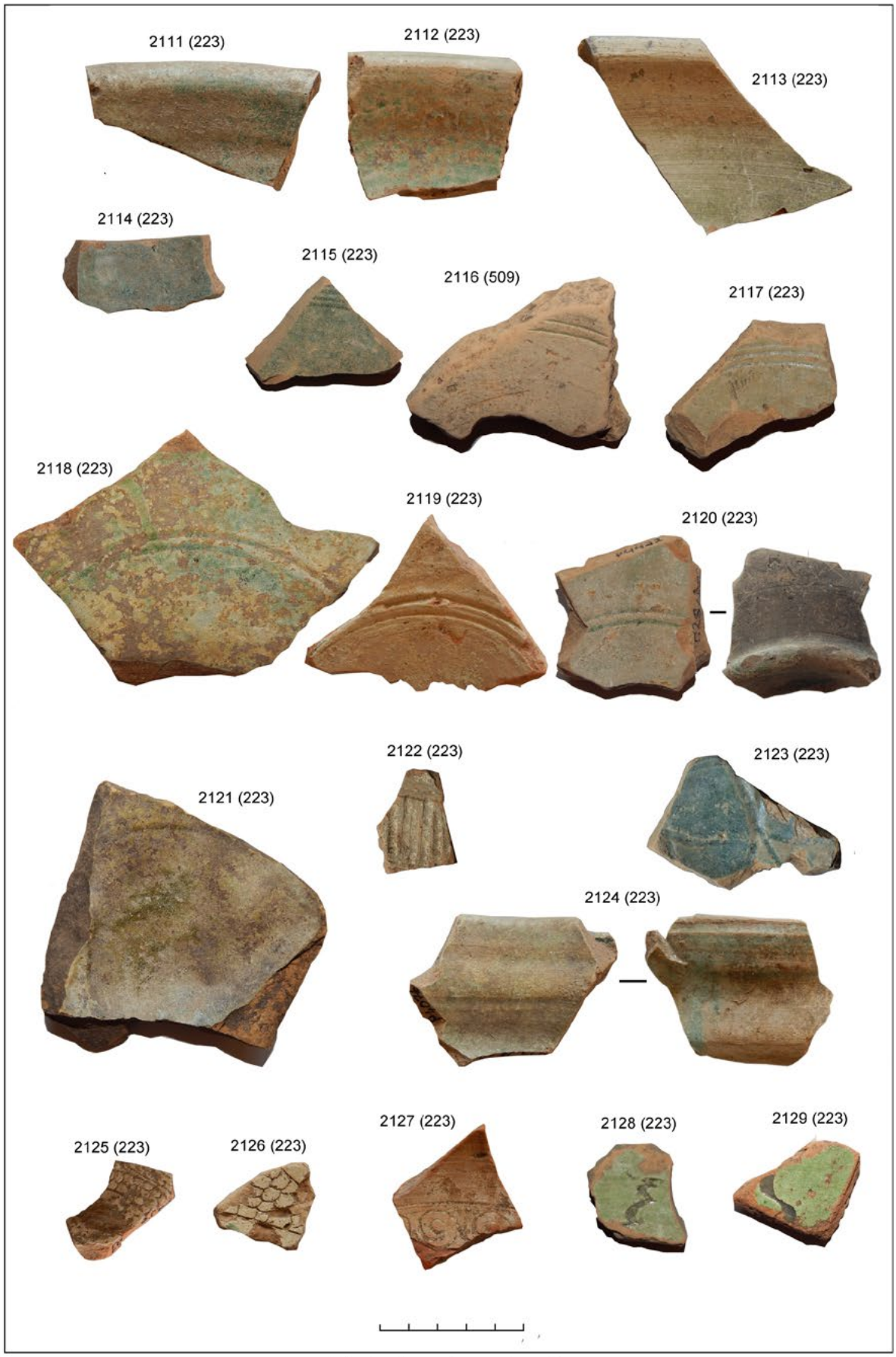
Pl. 41. Daub and industrial waste

Daub 2076, 2077; spacers 2078-2080; tile wasters 2081 - 2085; kiln waste 2086, 2087; smithing waste 2088, 2088a



Pl. 42. Ceramica medievale

Dipinta 2089-2094; Ceramica comune acroma 2095-2102; Invetriate monocrome verdi 2106-2110



Pl. 43. Ceramica medievale

Invetriate monocrome verdi 2111-2124; Ceramica graffita 2125-2129



Pl. 44. Ceramica medievale

Ceramica invetriata "RMR" 2130-2133; RMR "Bari type" 2134; Protomaiolica 2135-2151; Ceramica comune da Fuoco 2152-2154; Coarse ware with chaff impressions 2161



Pl. 45. Miscellaneous tiles

Ridge tile 2184; chimney or skylight tiles 2185 - 2187; painted tiles 2189 - 2192
grooved tiles 2193 - 2198; tegulae with impressioins 2199 - 2201; tegula with nail hole 2202



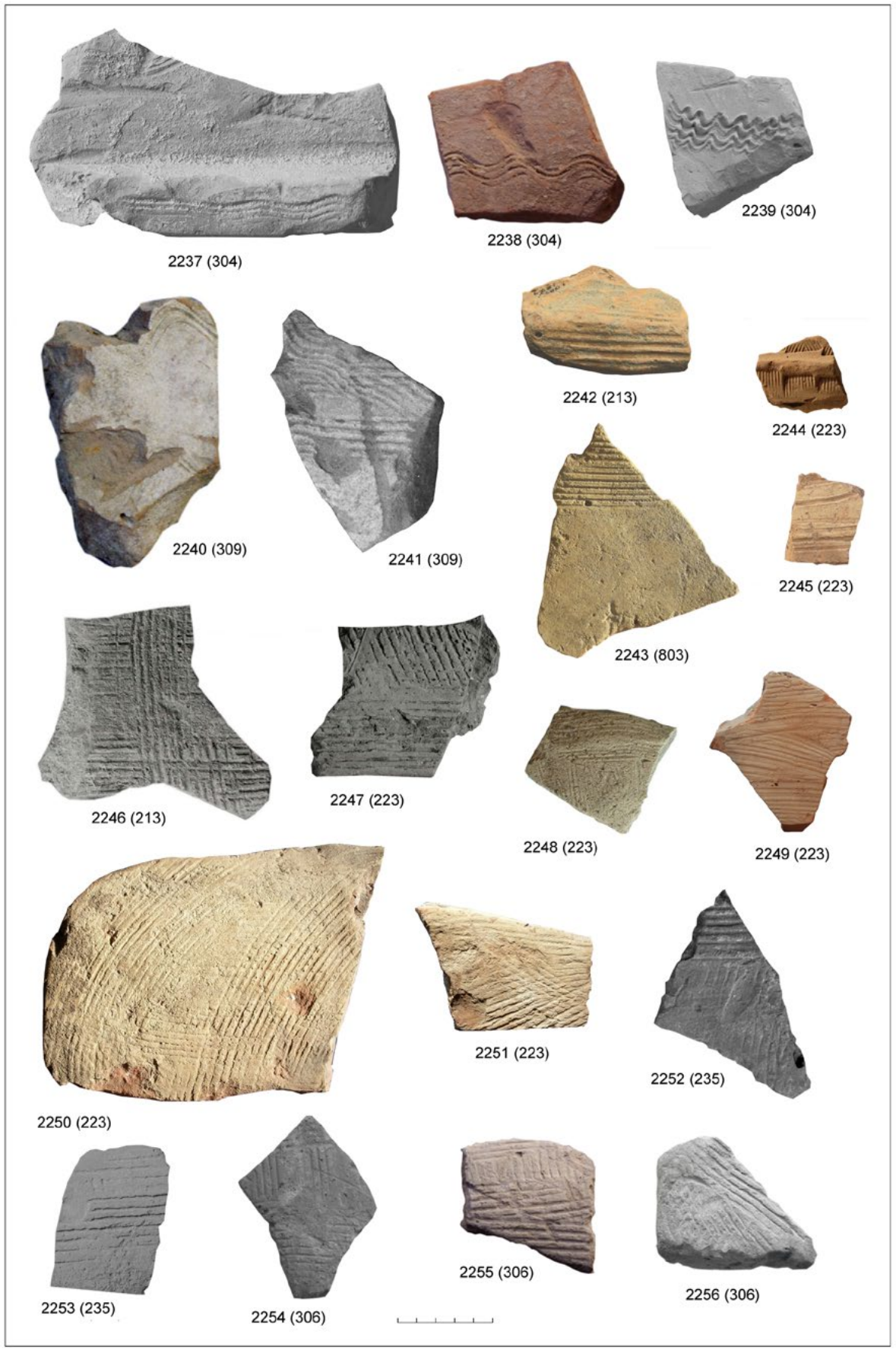
Pl. 46. Tiles with various motifs

Tiles with impressed circles and hobnails 2203 - 2205; tegulae with thumb prints 2206 - 2208; tegulae with animal prints 2209 - 2217; inscribed tiles 2218 - 2222

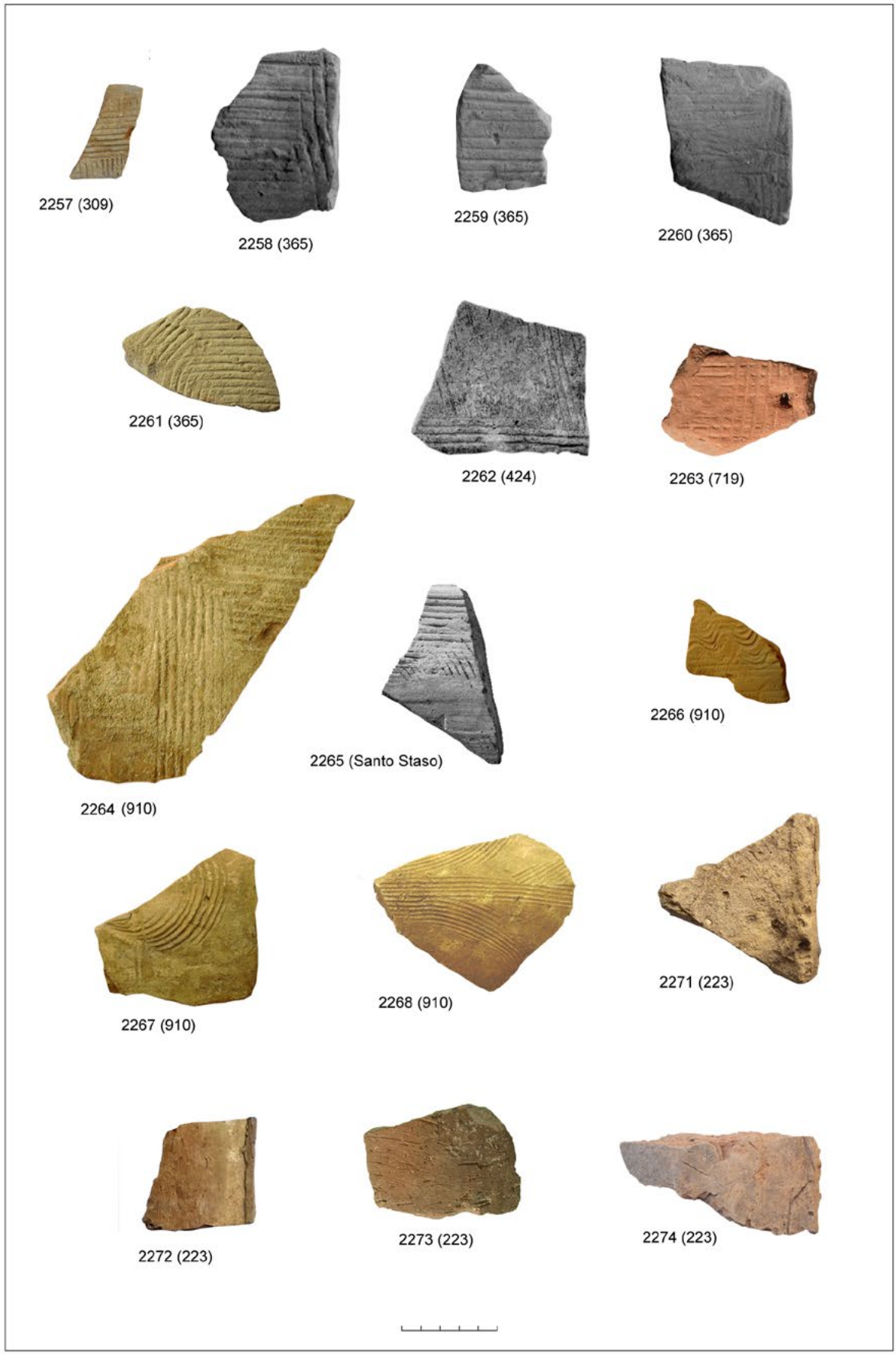


Pl. 47. Miscellaneous tiles

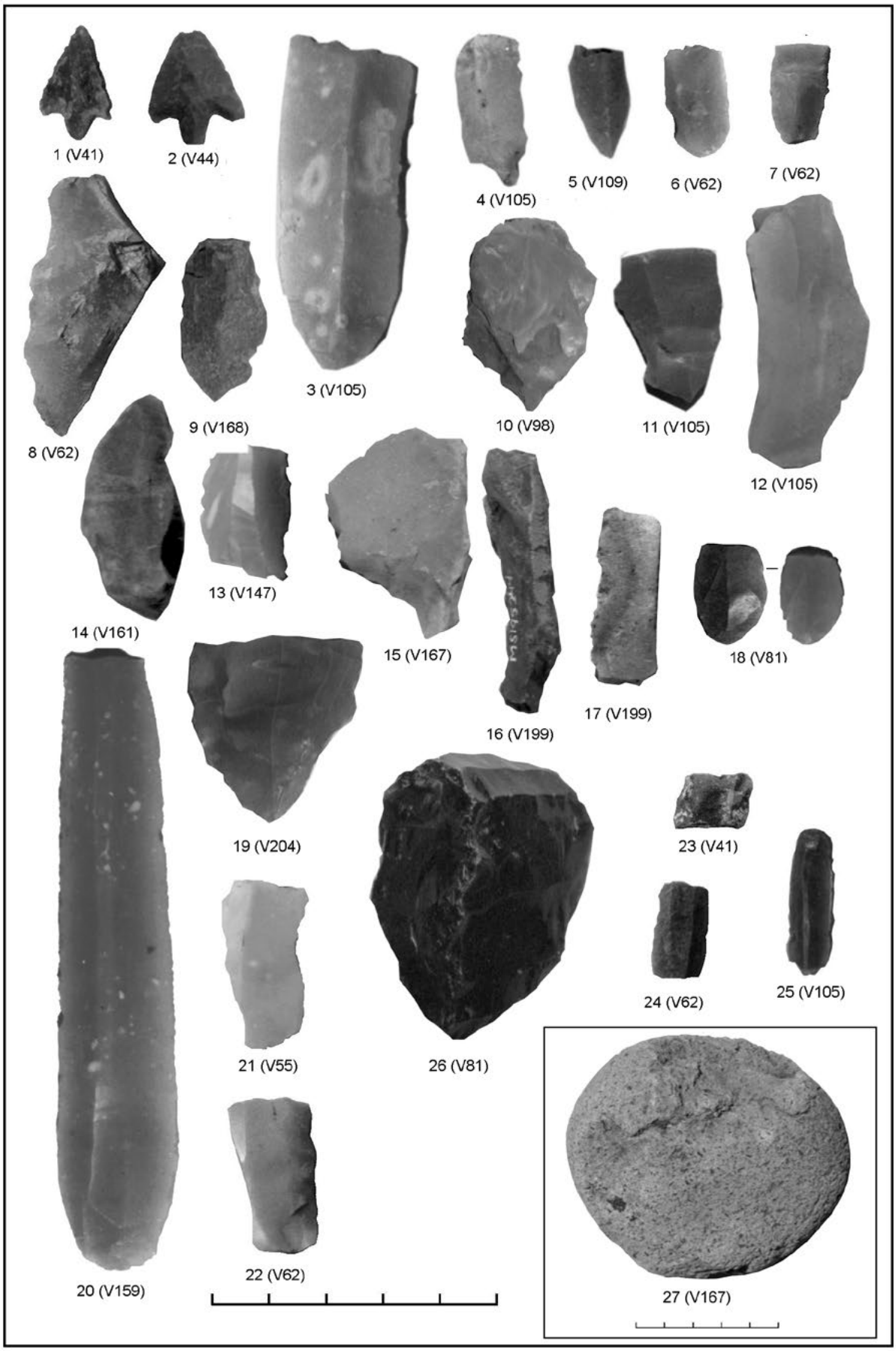
Stamped tiles 2223 - 2230; segmental and round tiles 2231 - 2233; finger-impressed grooved tegulae 2234 - 2236



Pl. 48. Combed tiles

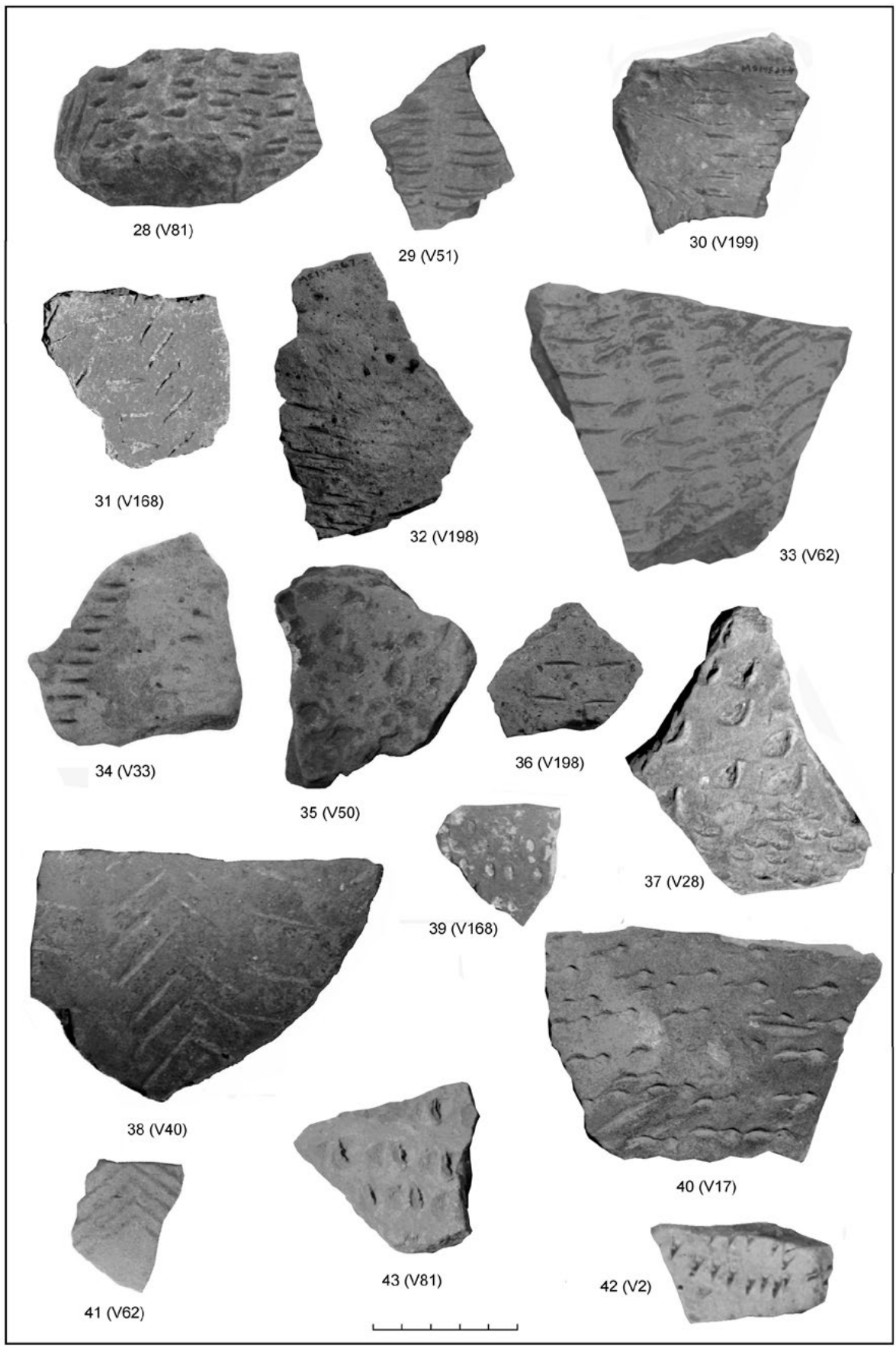


Pl. 49. Combed tiles and Medieval tiles (*tegole vacuolate*)
Combed tiles 2257 - 2268; *tegole vacuolate* 2271 - 2274

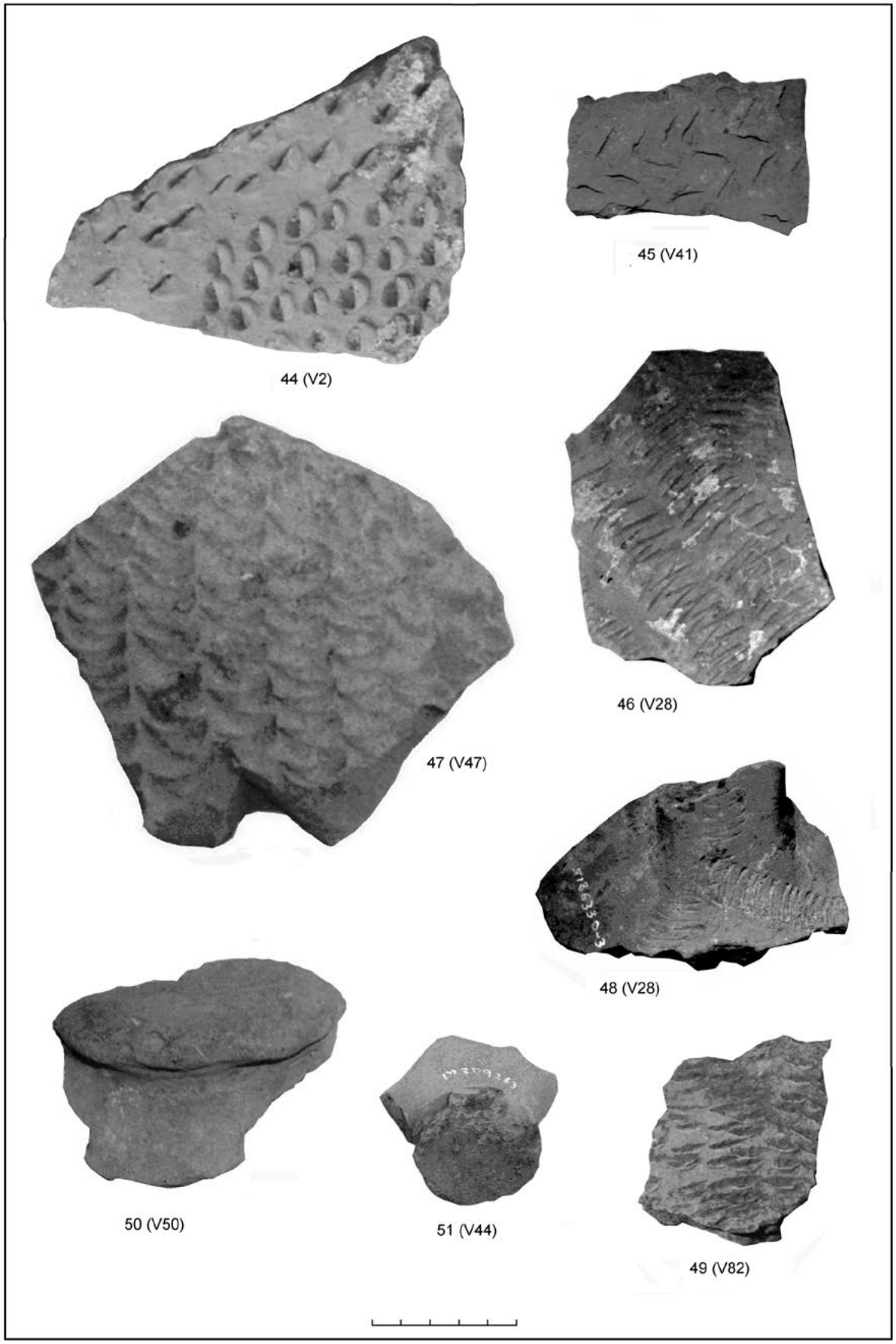


Pl. 50. Lithics found on the Older Surveys

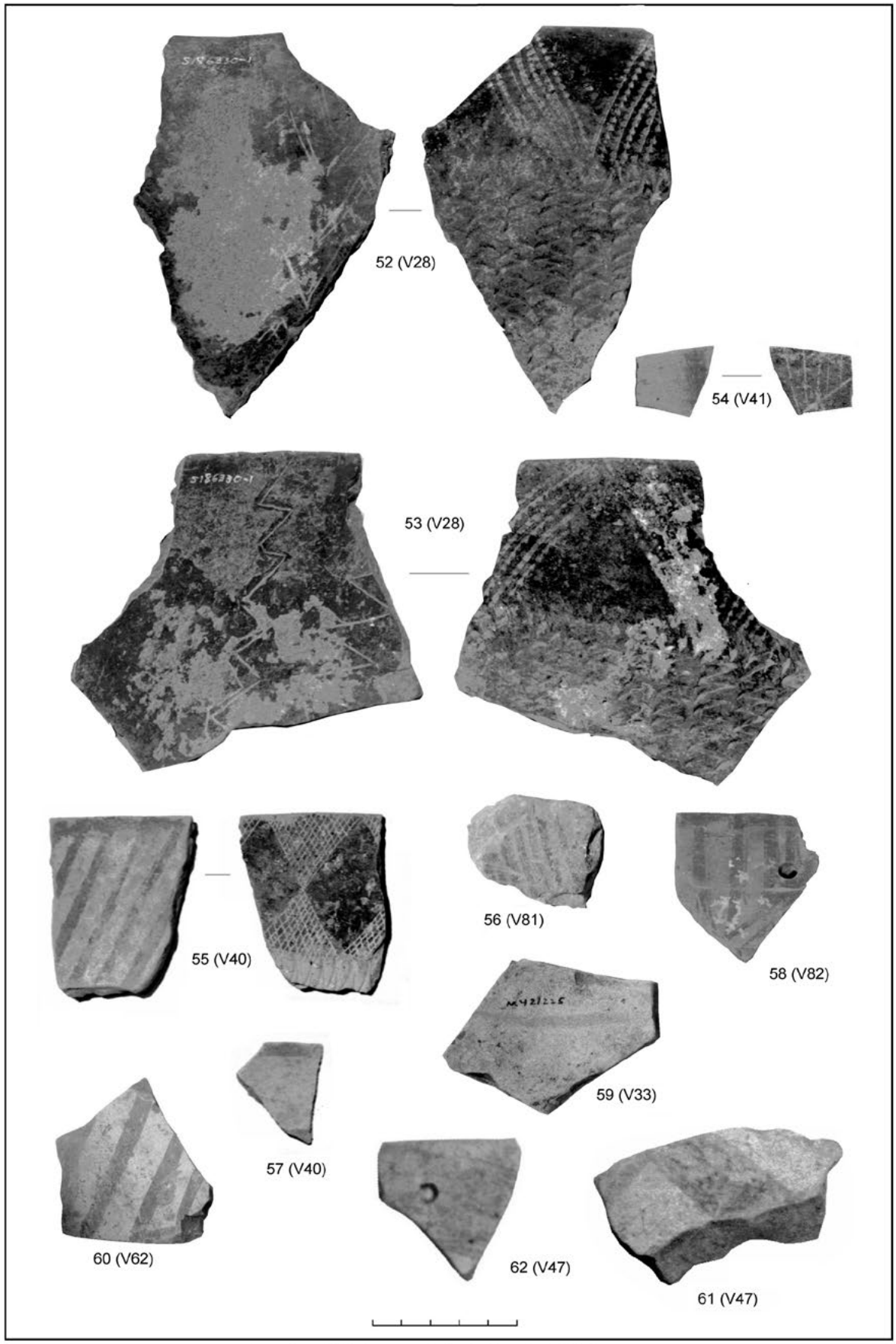
Chert tools and debitage 1 - 17; flint 18 - 22; obsidian 23 - 26; lava rubber 27



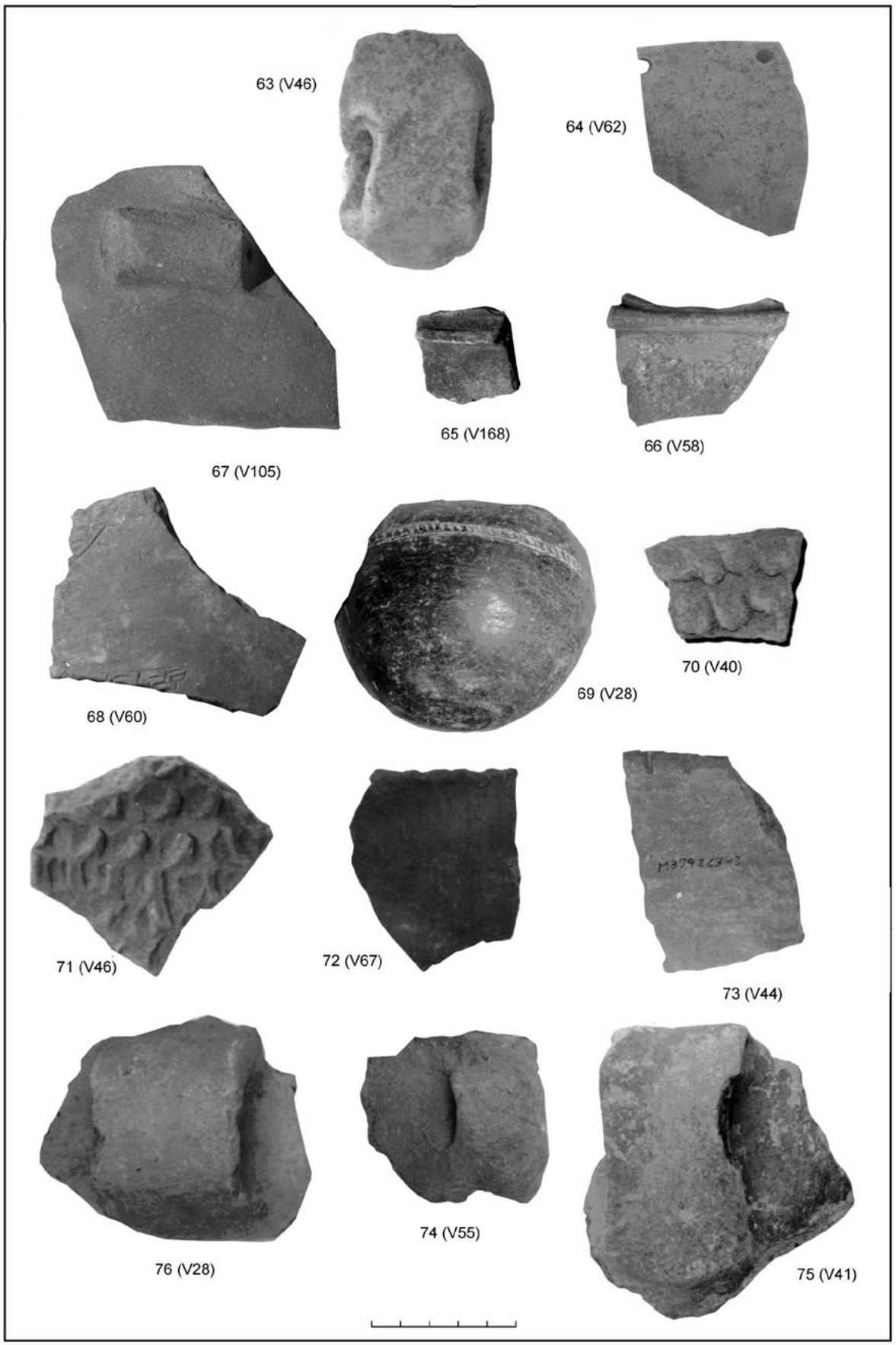
Pl. 51. Neolithic impressed sherds from the Older Surveys



Pl. 52. Neolithic impressed sherds from the Older Surveys
With dense linear impressions 44-45; with rocker impressed patterns 46-49; pedestal bases 50-51

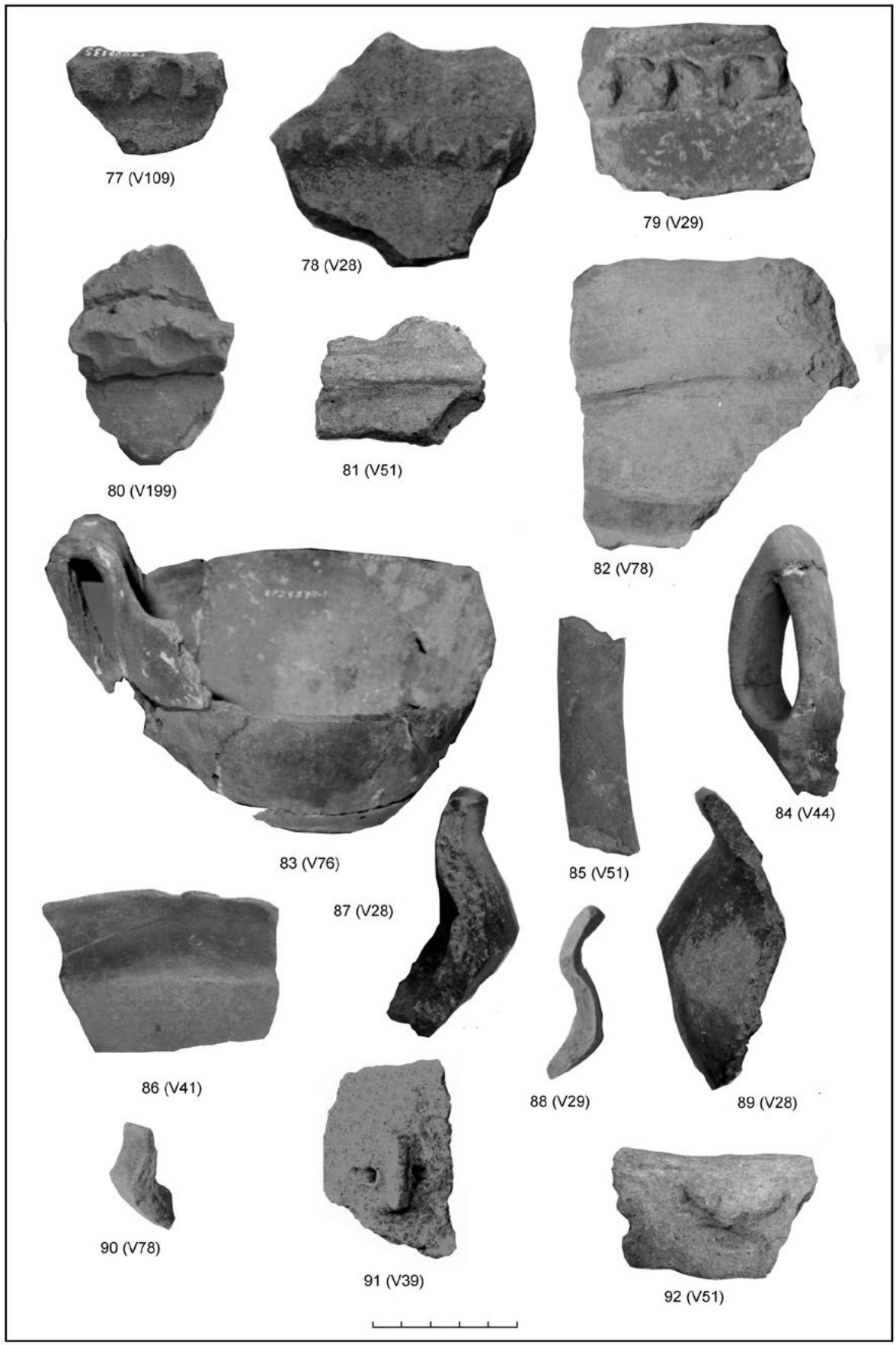


Pl. 53. Neolithic impressed sherds from the Older Surveys
Matera scratched ware 52 - 53; double technique 54 - 55; red painted 56 - 59; red and white ware 60; red-on-buff ware 61 - 62



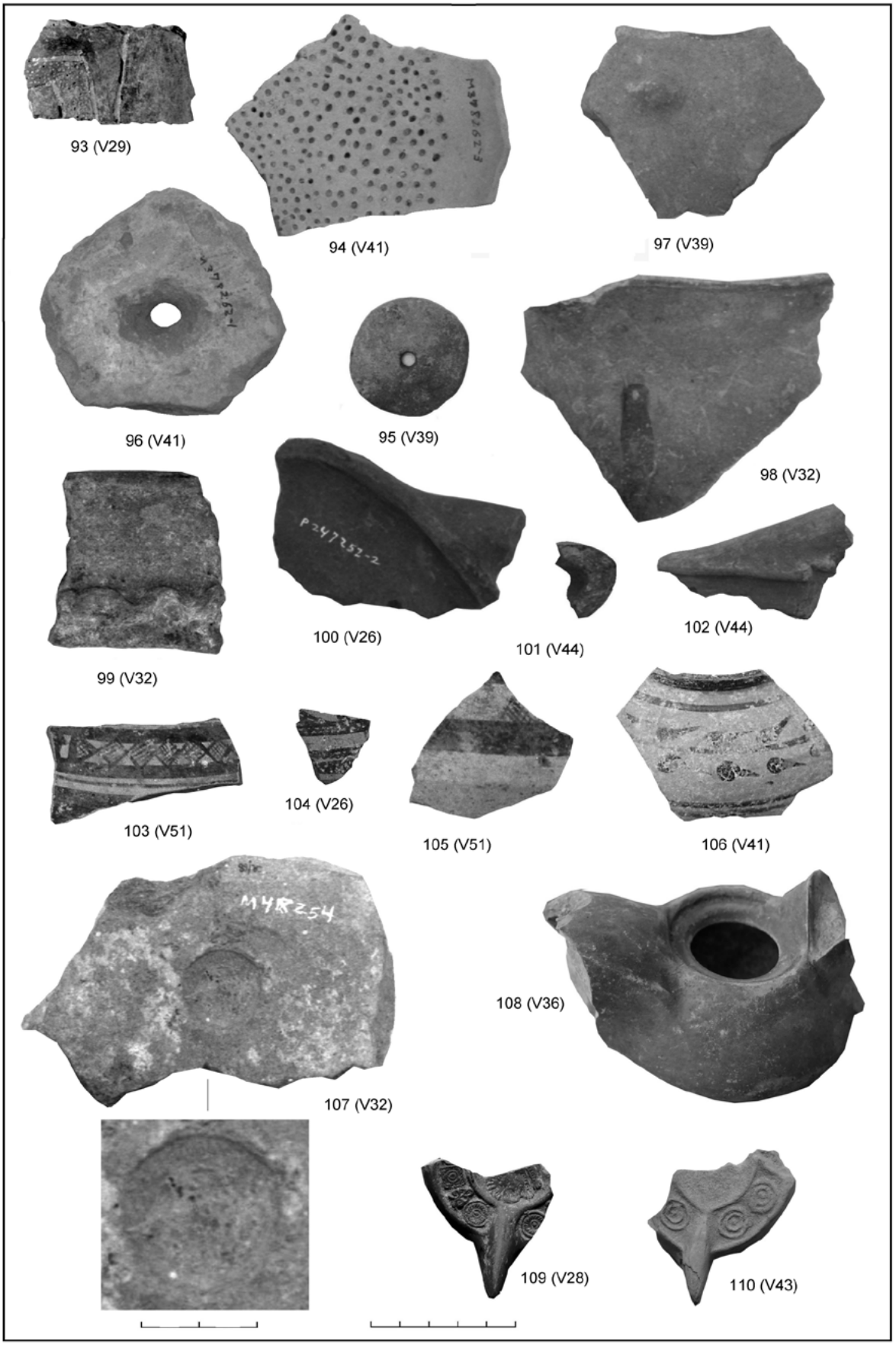
Pl. 54. Later Neolithic, Eneolithic and Bronze Age wares from the Older Surveys

Unpainted *figulina* 63 - 64; Bellavista ware tubular handles 65 - 67; Eneolithic wares 68 - 73; Bronze Age handles 74 - 76



Pl. 55. Bronze Age impasto pottery from the Older Surveys

Impressed cordons 77 - 80; simple cordons 81 - 82; bowl with tapering wall 83; misc. handles 84 - 85 carinated bowls 85 - 90; pierced lug handle 91; knobbed rim 92



Pl. 56. Miscellaneous artifacts from the Older Surveys

Dec. Apennine 93; milk boiler 94; loomweights 95 - 96; FBA/EIA pithoi 97 - 99, black-burnished bowls 100 - 102; geom mono 103 - 105; WMP 106; frag. of ?amphora with circular stamp 107; GG lamp 108; ARS lamps 109 - 110

BIBLIOGRAPHY

Abbreviations and conventions

AE	*Année Épigraphique*
AJA	*American Journal of Archaeology*
ASP	*Archivio Storico Pugliese*
BAR	*British Archaeological Reports*
BCH	*Bulletin de Correspondance Hellénique*
BSB	*Bollettino Storico della Basilicata*
BSR	British School at Rome
CAH	*Cambridge Ancient History*
CDB	*Codice Diplomatico Barese*
CNRS	*Centre national de la recherche scientifique*
C.Th	*Codex Theodosianus / Theodosii imperatoris codex* (Latin Library)
FA	*Fasti Archeologici*
FACEM	*Fabrics of the Central Mediterranean.* (www.facem.at/project-papers.php)
HN Italy[2]	Rutter, N. K., 2001. *Historia Numorum, Italy,* London: The British Museum Press.
IJNA	*International Journal of Nautical Archaeology*
ISBSA	*International Symposium on Boat and Ship Archaeology*
JRA	*Journal of Roman Arachaeology*
JRS	*Journal of Roman Studies*
MAAR	*Memoirs of the American Academy in Rome*
MEFRA	*Mélanges de l'École Française de Rome,* Antiquité
MEFRM	*Mélanges de l'École Française de Rome,* Moyen Age. (Both preceded by *MEFR Mélanges de l'École Française de Rome*)
Mon. Ant	*Monumenti Antichi*
MGH	*Monumenta Germaniae Historica.* (Sub series used are *Auctores Antiquissimi (AA), Scriptores (SS), Epistolae (in Quarto) (Ep), Scriptores rerum Langobardicum et Italicarum Saecularum (SRL)* and *Leges*).
NSc	*Notizie degli scavi di antichità comunicate alla R. Accademia dei Lincei per ordine*
PATABS	*Production and trade of amphorae in the Black Sea*
PBSR	*Papers of the British School at Rome*
PPS	*Proceedings of the Prehistoric Society*
RAAN	*Rendiconti dell'Accademia di Archeologia Napoli*
RM	*Römische Mitteilungen*
RSP	*Rivista di Scienze Preistoriche*
RVAp	Trendall, A. D. & A. Cambitoglou, *The Red-figured Vases of Apulia,* I.1978, *Early and Middle Apulian;* II, 1982*, Late Apulian.* Oxford: Clarendon Press.
SAP	Società Universitaria Padovana
SHA	Scriptores Historiae Augustae
UP	University Press

Atti Taranto. Abbreviated reference to the *Atti* of the annual *Convegno di studi sulla Magna Grecia*, giving the Number of the Congress and the year in which it was held. The publication date is that given on the title page which is not always that of the year in which the volume actually came out.

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APPENDIX

Le anfore dalla valle del Basentello: ricostruire la rete dei commerci e dei consumi delle derrate

di Giacomo Disantarosa

Introduzione

I 491 frammenti di anfore[1] provenienti dalle ricognizioni nella Valle del Basentello – effettuate tra il 1996 e il 2008[2] – sono inquadrabili all'interno di un ampio arco temporale che va dal primo quarto del VI sec. a.C. fino al XII/XIII sec. d.C. (Catalogo, #19). Solo il 3,06% sul totale del numero dei frammenti non è stato attribuito ad aree produttive note mentre il restante gruppo è stato ripartito all'interno di 6 produzioni individuate attraverso l'analisi macroscopica degli impasti effettuata su 60 campioni[3] (cfr. Cat. 19, Table 19-2). La produzione meglio rappresentata è risultata essere quella italica, con il 49,29%, seguita da quella africana, con il 20,16%, e da quella del comprensorio egeo-orientale, con il 17,31%, mentre minori appaiono le percentuali delle anfore riconducibili ai territori magno greci/ sicelioti, attestate con l'8,96%. Sono, infine, scarsamente rappresentati i contenitori prodotti nella Sicilia punica e in Gallia, ugualmente rappresentate dallo 0,20%, oltre che quelli provenienti dalla Betica, con lo 0,82%. (Graf. 1)

Il dato che accomuna nello specifico le singole produzioni individuate riguarda il valore percentuale delle forme *non identificate* che è risultato essere sempre notevolmente maggiore rispetto alle forme note: le pareti attribuite genericamente alle *Vandermersch/ Greco-Italiche* infatti corrispondono al 29,55% sul totale della produzione magnogreca/ siceliota; (Graf. 2); le *non identificate* italiche[4] sono addirittura rappresentate con il picco più alto, corrispondente al 80,58% (Graf. 3) e consistenti appaiono anche le *non identificate* all'interno della produzione africana, con il 38,38% (Graf. 4), e quelle egeo-orientali, con il 55,29% (Graf. 5). Questi dati si giustificano se si prende in considerazione l'alto indice di frammentazione dei reperti dovuto alla giacitura post-deposizionale in strati superficiali interessati, sempre più frequentemente, da diversificati fenomeni di esposizione agli agenti atmosferici, all'erosione geo-morfologica del suolo[5] e agli sconvolgimenti di natura antropica, tra cui, in tempi recenti, i processi di meccanizzazione dell'agricoltura[6] che hanno contribuito non solo a ridurre visibilmente la percentuale di conservazione ma anche a diffondere sulle superfici degli stessi una serie di scalfitture, scheggiature e spaccature oltre che di tracce di fumigazione per l'esposizione ai fuochi stagionali che vengono appiccati nel periodo successivo alla mietitura dei cereali.

Nell'insieme queste condizioni hanno costituito un limite al processo di identificazione e attribuzione sia durante la classificazione[7] sia nella fase successiva quando si è proceduti

[1] Corrispondenti ad un peso di 27.983 g il numero dei frammenti (466) indicato in Disantarosa 2014, 149 non era stato aggiornato rispetto ai reperti custoditi presso il Centro Operativo per l'Archeologia (complesso S. Sebastiano) di Gravina in Puglia della Soprintendenza Archeologia, Belle Arti e Paesaggio per la città metropolitana di Bari. Un particolare ringraziamento è rivolto a Luigi La Rocca, Francesca Radina, Maria Rosaria Depalo e Francesca Ariani, Giacomina Cacciapaglia, Michele Colonna, Maria Ceriaca Digesi per aver agevolato le fasi di completamento della classificazione.

[2] Per una sintesi sulle ricognizioni della Valle del Basentello si veda Small A. & C. 2002; e questo volume. Sono stati esclusi i frammenti alla raccolta sistematica delle UT 360 e 361, corrispondenti al sito di Vagnari (Small C. 2011, 69; Disantarosa 2011) e quelli provenienti dalla raccolta eseguita tra il 2002 e il 2004 presso Santo Staso (sito F2), alle pendici Sud della collina di Botromagno (Disantarosa 2010a, 497-500, fig. 76, tav. LXIV.a-b).

[3] Le descrizioni delle campionature sono fruibili attraverso una tabella di riferimento Cat. 19, Table 19-1 and 19-2; questa presenta una correlazione tra le voci presenti nella *scheda campioni impasti* (Parise Badoni & Ruggeri Giove 1984, 51-52) e una serie di numeri progressivi: *Pasta* (1-6), *Ingobbio* (7-11), *Inclusi* (12-16). L'identificativo del campione è stato effettuato attraverso la sigla *AVdB* (Anfore della Valle del Basentello) seguito da un numero crescente. Per il colore degli impasti si è utilizzato il Munsell 2000.

[4] Rientrano in questo gruppo una serie di forme che a causa dei dubbi legati all'identificazione sono stati accorpati in un unico gruppo in riferimento al calcolo generale delle percentuali. Nel presente contributo le singole forme *non identificate*, pur mantenendo questa dicitura, sulla base di ipotesi di attribuzione vengono presentate, in via del tutto preliminare e in assenza di ulteriori elementi diagnostici, all'interno dei paragrafi inerenti le specifiche fasce cronologiche individuate suggerendo una probabile classificazione.

[5] Calcolo della distribuzione dei manufatti rispetto alle pendenze del suolo per la collina di Botromagno a Gravina in Puglia è in Terrenato & Taylor 2000, 59-60. Si veda anche lo studio di geomorfologia per il sito di Vagnari in Campbell *et al.*, 2011.

[6] Disantarosa 2014, 150, note 9-10. Riflessioni sugli sconvolgimenti indotti dall'agricoltura meccanizzata e dal boom edilizio del dopoguerra in rapporto agli elementi residuali del paesaggio sono in Muci 2015, 65. Problematiche simili sono state registrate nella valutazione e nello studio dei reperti rinvenuti nella ricognizione del territorio di Brindisi (Aprosio 2008, 279, 307).

[7] Le attività di classificazione (Giannichedda 2016), della documentazione fotografica (con supporto di Franco Taccogna, che ringrazio) e grafica (disegni dei tipi) sono state svolte da chi scrive a Gravina in Puglia in parte presso il Centro Operativo per l'Archeologia (complesso S. Sebastiano) della Soprintendenza Archeologia, Belle Arti e Paesaggio per la Città Metropolitana di Bari e in parte presso la Fondazione "Ettore Pomarici Santomasi" oltre che presso il Museo "Vincenzo Ridola" di Matera. La fase di lucidatura e ricostruzione grafica delle basi dei disegni è stata effettuata, con professionale competenza, presso il *Laboratorio StudiUm – Sezione Archeologia* del Dipartimento di Studi Umanistici dell'Università degli Studi di Bari Aldo Moro da parte del disegnatore Vincenzo Acquafredda, che ha anche uniformato i disegni dei tipi 1413, 1420, 1433 (Fig. 41), 1774, 1793 (Fig. 44) effettuati prima delle attività di schedatura dalla disegnatrice Sally Cann. La rielaborazione dei grafici è di Andrea Giudiceandrea, che ringrazio per l'impegno e i dialoghi ricchi di spunti di riflessione; la carta di distribuzione è di Carola M. Small. Un ringraziamento speciale ad Alastair M. Small e a sua moglie Carola per avermi dato la possibilità di collaborare con loro, per il coinvolgimento nei loro progetti di ricerca, per i confronti metodologici e per la crescita

ad una ponderata valutazione dei flussi dei commerci o della stima tra anfore prodotte in territori 'locali' con quelle importate[8]. L'analisi proposta quindi predilige il rapporto con i periodi cronologici in modo da fornire un riferimento e un confronto per la ricostruzione dei cambiamenti socio-politici e militari che storicamente hanno influenzato il commercio e orientato il consumo di derrate alimentari in questo comprensorio.

Media età del ferro

Risultano scarse, tra il VI e il V sec. a.C., le tracce della circolazione dei contenitori da trasporto, presenti solo con lo 0,81% sul numero totale dei frammenti (Graf. 6) e rappresentati da soli esemplari prodotti nel territorio magnogreco. Le forme più antiche sono attestate esclusivamente nel sito di San Felice, UT 223, identificate con la ***Forme* 1α**[9] e la ***Forme* 2**[10], riconducibili per le caratteristiche macroscopiche degli impasti ai territori della sibaritide, della Puglia o della Calabria meridionale[11]. In assenza di analisi archeometriche specifiche, il riferimento agli impasti del *groupe* 3[12], è risultato maggiormente adeguato rispetto alle componenti dei campioni prelevati[13] anche se una delle problematiche aperte per questi contenitori resta il riconoscimento rispetto alle attribuzioni effettuate negli studi pregressi: le *Forme* 1α sono solitamente state identificate con le Corinzie B arcaiche mentre le *Forme* 2 sono state spesso classificate come "ionico-massaliote"[14].

L'assenza di un quadro tipo-cronologico di riferimento e le scarse conoscenze sui centri di produzione non consentono ancora oggi di distinguere nettamente gli esemplari importati dai fenomeni di imitazione[15]. Stabilire confronti puntuali tra gli orli della *Forme* 1α (Fig. 41.1408-1409) rinvenuti a San Felice (UT 223) e gli esemplari attestati nel comprensorio e nel territorio regionale resta al momento complesso ad esclusione del frammento documentato nel vicino Saggio A impiantato sul pianoro di San Felice indagato, tra il 2013 e il 2014, durante i lavori per la realizzazione di un impianto eolico[16]. Questo dato comunque rafforza di poco gli elementi che compongono il quadro della circolazione di questa forma che resta alquanto scarsa nel comprensorio della Puglia centro-settentrionale[17] a differenza di una distribuzione che appare al momento più consistente nel territorio salentino, dove queste forme sembrano ben distribuite sia negli abitati sia nei luoghi di culto[18] con testimonianze documentate nei siti costieri e in quelli subacquei[19].

La vinaria[20] *Forme* 2 (Fig. 41.1411) è rappresentata da una percentuale ancora più esigua[21] ed è accostabile ad esemplari rinvenuti solo ad Ascoli Satriano[22], Monte Sannace[23], nel brindisino[24], a Otranto[25] e nel leccese[26].

professionale che ne è derivata.

[8] Un ulteriore limite è quello di trovare confronti o discrepanze tra i reperti documentati in superfici e quelli provenienti dall'indagine stratigrafica di scavo, così come accertato attraverso lo studio delle anfore del sito di Vagnari. Si veda, inoltre, per uno studio comparativo tra materiali provenienti dalle indagini di scavo e quelli della ricognizione il caso di Nora in Sardegna (Nervi 2014a, fig. 3-10) e quello di Sicione in Grecia (Tzavella *et al*., 2014, 91-102).

[9] Sourisseau 2011, 184-187; Sacchetti 2012, 39-43. Rappresentati dal 6,82% sul totale dei frammenti di produzione magno greca/ siceliota (Graf. 2).

[10] Sourisseau 2011, 189-190; Sacchetti 2012, 43-48.

[11] Sourisseau 2011, 207-212. Per analisi archeometriche su un campione di contenitori rinvenuti a Napoli che rimandano a quest'area produttiva si veda Gassner & Scoppetta 2014, 119, 124-127 (cat. 3-5, 7-10).

[12] «*pâte claire fine, de couleur blanchâtre à grise et généralment chargée d'un dégraissant assez grossier constitué d'eléments anguleux de couleur blanche de nature indéterminée*» (Sourisseau 2011, 209). Differenti dalle produzioni campane (Gassner & Sauer 2016, pl. 2, cat. 13; Bechtold 2018, figg. 1-3).

[13] Campioni AVdB 41e 53.

[14] Bertucchi 1990; 1992. Si rimanda per le riflessioni sulle identificazioni a Nickels 1990, 103-104, fig. 3; Morel 1990, 283-284; Sourisseau 2000, 139-140; Santos Retolaza 2008, 126-128; ; Sacchetti 2011a, 100-101; 2015, 151-152; Swift 2011, 468, 473 (Amp 254-02; 200-01); Sacchetti & Sourisseau 2013, 644-647; Gassner 2015, 346-347, 349-353. Le *Archaic western Greek amphorae* identificate come «*non-micaceous Massalian amphorae*» sono state censite anche nei territori dell'Europa centrale (Sacchetti 2016, 252, 255, fig. 2). Per la Puglia Meridionale si rimanda a Semeraro 1997, 388 [«(...) lo stato delle ricerche sulle anfore arcaiche che nonostante i progressi fatti negli ultimi anni, è tuttora complicato dalla mancanza di tipologie e dalla difficoltà di reperire buone descrizioni delle argille. (...) le anfore di tipo B {corinzie} sono più difficili da individuare, se allo stato di frammenti, perché condividono molti particolari morfologici con un tipo di contenitore egualmente ben attestato nel Salento negli stessi contesti in cui compaiono le anfore corinzie: le cosiddette anfore "ioniche", "ionico-marsigliesi". La definizione rispecchia i problemi di identificazione di tale tipo di contenitore, di cui non è noto il centro di produzione, ma che è frequentemente attestato in Occidente nelle colonie focee e, più in generale, nelle aree interessate dal commercio greco-orientale»]. Per cogliere meglio il fenomeno si rimanda alla carta delle distribuzioni del Salento (Semeraro 1997, 390, fig. 298a-b).

[15] Desy & De Paepe 1990, 188-217 in riferimento ad un campione di anfore "Corinzie B" da Torre S. Giovanni a Ugento. Ulteriori riflessioni sul fenomeno «*imitations locales du type corinthien*» sono in Vandermersch 1994, 63-64.

[16] Cossalter 2017c, 106, tav. XIV.72.

[17] Una porzione superiore è stata rinvenuta in località Beccarini nel territorio di Manfredonia, nei pressi del probabile scalo di Arpi (Volpe 1990, 61-62, 246, fig. 242.2). Un orlo è documentato a Monte Sannace (Bianchi 2019, 513, tav. II.2).

[18] Il quadro appare così delineato già a partire dagli inizi degli anni Novanta del Novecento (Di Sandro 1990, 238, fig. 1) e riceve conferme attraverso la redazione del grafico delle distribuzioni in Semeraro 1997, 389, fig. 297.a. Confronti per la Fig. 41.1408 con esemplari Semeraro 1997,129, fig. 79.253, 80 (a Muro Tenente nel brindisino), 138, cat. 271 (ad Oria), 55, 61, figg. 14.25, 17.79 (a Cavallino), 91, fig. 48.171a (presso la Grotta Porcinara a Leuca), 247, fig. 208.919c (ad Otranto), 269, fig. 228.280 (presso la Grotta della Trinità a Ruffano), 302, fig. 250.1129 (dal Fondo Sant'Antonio a Vaste). Per la Fig. 41.1409 Semeraro 1997, 94, fig. 48.172f (Leuca), 250, fig. 208.943 (Otranto) 269, 271, figg. 228.279; 229.991 (Ruffano), 285, fig. 237; 238.1058 (dalle mura messapiche di Valesio), 294, fig. 244.1090 (dal Fondo Melliche di Vasto).

[19] Con gli esemplari documentati presso il tratto di mare antistante la Grotta delle Monache a Torre dell'Orso (Semeraro 1997, 277, fig. 231.1010; si veda anche l'esemplare documentato in Auriemma 2004a, 211, fig. 166.8; Auriemma 2004b, 64, SRI 74); presso il fondale antistante l'insenatura di Torre S. Sabina (Semeraro 1997, 279, fig. 233; Auriemma 2004b, 148, fig. 4); lungo il litorale brindisino (Semeraro 1997, 44, fig. 5; Auriemma 2004b, 53, SRI 19); da Porto Badisco, in riferimento ad un ipotetico relitto con tracce di pece sulla superficie interna (Auriemma 2004b, 121, SRI 372a); dal generico litorale salentino in seguito al recupero decontestualizzato (Auriemma 2004b, 135, SRI 431b). Si segnala la presenza nel relitto *Traste 2* documentato in Montenegro (Royal 2018, 11).

[20] Per un riuso di questi contenitori, impiegati per il minio o l'ematite, si rimanda ai ritrovamenti effettuati negli *slip way* 3 e 4 dei cantieri navali di Naxos (Lentini, Savelli & Blackman 2005-2006, 98, 100, fig. 12).

[21] Pari al 2,27% sul numero totale dei frammenti afferenti a questa produzione (Graf. 2).

[22] Ricciarini 2002, 200, tav. 50.6.

[23] L'esemplare proviene dall'US 514 (Matichecchia 2017-2018, 236, fig. 97.A2, indicato, in una fase preliminare della classificazione, come Greco-Italica V).

[24] Dal sito di Muro Tenenente (Semeraro 1997, 129, fig. 79.254); da Oria (Semeraro 1997, 156, fig. 98.324, 101).

[25] Arthur 1992, 200, fig. 7:1.799.

[26] Con un esemplare del sito in località Protosia o Poesia di

San Felice (UT 223) continua ad essere un riferimento per l'arrivo di contenitori prodotti in area magno greca e in particolar modo per la presenza dell'anfora ***Forme* 5**[27] con un campionario variegato per la presenza di tre tipi di orli (Fig. 41.1412[28], 1413[29], 1414[30]) che trovano confronti con esemplari documentati in contesti datati tra il V e la prima metà del IV sec. a.C.

Nel medesimo periodo il mercato ricettivo e di consumo del sito di San Felice sembra essere aperto anche al fenomeno delle importazioni dai territori egeo-orientali con flussi equiparati a quelli di produzione magno greca e comunque non elevati se si considera il valore percentuale dello 0,81% sul numero di frammenti. A questo gruppo ristretto appartengono un'ansa (Fig. 44.1758) che per ridotte dimensioni potrebbe essere attribuita alle **Corinzie A** o **A'**[31], contenitori inglobati in una rete distributiva che al momento sembrerebbe prediligere, sulla base dei rinvenimenti, le rotte e gli approdi meridionali della Puglia a partire dalla seconda metà del VII fino ad arrivare al VI-V sec. a.C.[32] includendo, nell'arco ionico, anche il porto di Metaponto e il suo territorio[33] e più a sud Pisticci[34], *Siris* ed *Herakleia*[35]. Importata è anche l'anfora **Chiota *"Straight neck series"***[36], rappresentata da un frammento di puntale (Fig. 44.1761) che ipoteticamente potrebbe essere accostato ad un esemplare classificato come ***Chios Tipo P*** (Pl. 30.1761) all'interno del carico del relitto El Sec[37] o ad un esemplare rinvenuto nel riempimento di un pozzo a Thasos[38]. La distribuzione di quest'ultima famiglia di anfore – dal contenuto vinario o anche utilizzate per il trasporto di miele, nocciole e olive[39] – si caratterizza per i grandi flussi di esportazione verso l'area orientale e in particolare verso le le regioni del Mar Nero[40], in un periodo compreso tra la fine del V e il IV sec. a.C. In Puglia è presente con indici esigui se si considerano i pochi esemplari documentati a Torre Santa Sabina, quest'ultimo con tracce di impeciatura sulle pareti interne[41], e quello rinvenuto ad Otranto[42] attribuibili a produzioni coeve o più recenti[43].

Rocavecchia (Semeraro 1997, 255, fig. 213.954) e per la presenza della risega con un frammento di orlo da Sogliano in località Iacorao (De Santis 2000, 74-75, tav. XV.5).

[27] Sourisseau 2011, 193-195, 204-206. Per le identificazioni con la Corinzia B si veda Göransson 2007, 96-97, 118-119 e Sacchetti 2011a, 99-100. Attestata con il 9,09% sul totale dei frammenti di questa produzione (Graf. 5).

[28] Per contesti datanti di riferimento si veda Semeraro 1997, 154, fig. 98.320 (Oria); 250-251, fig. 208.942b, 208.949 (Otranto); 270, 271, fig. 228.282; 229.990 (la Grotta della Trinità a Ruffano); 277, fig. 232 (Torre San Giovanni, area contigua al Faro); 302, fig. 250.1130 (Vaste, Fondo San Antonio). Non databile resta il contesto di rinvenimento subacqueo di Luogo Vivo a Leporano (Auriemma 2004b, 110, SRI 316c).

[29] Probabilmente affine all'esemplare documentato a San Paolo di Civitate (Tomba degli Ori?) e depositato presso il Museo Archeologico Nazionale di Taranto (Volpe 1990, 229, fig. 255.1) oltre che quello rinvenuto ad Acoli Satriano (Ricciarini 2002, 198, tav. 49.3) e da *Salapia* (De Venuto *et al*., 2015, 47, fig. 14.1); dall'edificio documentato presso Castiglione a Conversano (Caprio 2013, 472, fig. 32.10). Da riferimento per la cronologia sono il Contesto I di Cavallino (Semeraro 1997, 63, fig. 18.95); Masseria Fano, Salve (Semeraro 1997, 105, fig. 57); il Contesto X di Oria (Semeraro 1997, 211, fig. 189.697); Torre S. Giovanni (Desy & De Paepe 1990, 191, tav. 85.6). Rinvenimenti subaquei sono registrati a Leuca (Auriemma 2004a, p. 273, fig. 216a; Auriemma 2004b, p. 81, SRI 164); a Taranto (Auriemma 2004b, 100, SRI 252); dal litorale salentino (Auriemma 2004b, 129, SRI 407). Un ipotetico confronto potrebbe essere istituito con l'anfora rinvenuta ad Egnazia ed assegnata alla produzione Corinzia B tardo arcaica (Cassano & Mastrocinque 2016, 38, fig. 4). Confronti anche con gli esemplari documentati a Sant'Angelo Vecchio a Metaponto dove l'attribuzione viene indicata con un interrogativo (Calvaruso 2016, 419-420, SAV Amp 19, 22-23).

[30] Confronti con l'esemplare rinvenuto a Margherita di Savoia (Volpe 1990, 244, fig. 240.1); da Piana San Felice (Cossalter 2017c, 161, tav. XIV. 73); dal Contesto VIIb di Oria (Semeraro 1997, 154, 156, fig. 98.321); da Ruffano (Semeraro 1997, 269, 271, fig. 228.981, 229.989); da Torre San Giovanni (Desy & De Paepe 1990, 193, tav. 89.87). Confronti con un frammento di orlo dal sito di Sant'Angelo Vecchio a Metaponto (Calvaruso 2016, 420, SAV Amp 15-20).

[31] Koehler 1981, 97-100, 449-458; Koehler 1982, 285; Göransson 2007, 82-88.

[32] Alcuni esempi per la Daunia: Volpe 1990, 225; per i contesti di Ascoli Satriano: Disantarosa 2012a, 122, note 16-25; Anzivino 2012, 291, cat. 9.6. Per la Peucezia, contesto di Monte Sannace: Sapone 2019, 618-619; Bianchi 2019, 513, tav. III.3, 8; per la Messapia: Semeraro 1997, 388-392. Vengono inoltre segnalati probabilmente un frammento di un puntale dalla Grotta della Trinità a Ruffano (Semeraro 1997, 269, cat. 978) e da Vaste (Semeraro 1997, 305, fig. 251.1160) con caratteristiche dell'impasto che rimanderebbero alle produzioni di tipo A' ma assegnati al tipo A; da Muro Tenente (Yntema 1999, 89). Per i rinvenimenti subacquei, tra cui anche il litorale di Bari, si vedano: Auriemma 2004b, pp. 147-148; Disantarosa *et al*., 2018, 135-136, 139, figg. 5.1, 5.3, 7; Nuzzo *et al*., 2018, 243; Nuzzo & Disantarosa 2019, 132.

[33] Scioli & Sacchi 1992, 63-65, figg. 104-106, 117; Cavagnera 1995, 41-43, figg. 26-27, 30; Stea 1997, 27-28, fig. 17; Mortar & Leonard 1998, 733-735, 738-747; Tagliente 2006, 733-734, tav. V.1; Osanna 2008, 928; Swift 2011, 460-462; Calvaruso 2014, 322, 325-327; Calvaruso 2016, 417-418, SAV Amp 15-18.

[34] In località Casinello, esemplare inserito in un corredo tombale (t. 125): Tagliente 2006, 735, tav. VI.2.

[35] Riferimenti bibliografici specifici ad ulteriori siti di Metaponto e della *chora* oltre che alle necropoli di *Siris* e all'acropoli di *Herakleia* (Berlingò 1995, 424-426).

[36] Su queste anfore, che vantano una lunga tradizione a partire dal VII sec. a.C. fino al periodo romano, si veda: Dupont 1998; Abramov 2002; Monachov 2003, 11-24; Lawall *et al*., 2010, 358-359, 364-365, 375-376; Sacchetti 2011a, 101-102. Per le aree produttive si vedano: Whitbread 1995, 135-153; Gassner 2011b.

[37] Per le caratteristiche del profilo del "bottone" espanso, afferente alla porzione terminale del puntale, attinenze possono essere stabilite con l'anfora, la cui attribuzione non è sicura per il gruppo delle Chiote, attestata nel carico del relitto El Sec (Arribas *et al*., 1987, 466, n. 620; Cerda 1989, 65). Il frammento, inoltre, risulta affine dal punto di vista morofologico ad un puntale appartenente al *Nikandros group Ephesos H 1* (Lawall 2004, 179, fig. 3), ad un esemplare documentato nel pozzo S-AB del *Tetragonos Agorà* di Efeso, attributo all'area del *Southeast Aegean* (Lawall 2006, 134, 136, cat.-no. 212, taf. 33; Scherrer *et al*., 2006, 144-145; Tzochev 2010, 98, pl. 58) e ad un frammento documentato a Karnak (Marangou 2012, 382, fig. 157e, P.1380.3). Confronti stringenti possono essere stabiliti anche con un puntale di anfora attribuita (forse erroneamente) alla produzione cipriota del IV sec. a.C. rinvenuta ad *Amathonte* (Marangou *et al*. 2018, 161, fig. 16) oppure a quella cnidia (Monachov 2003, 301, *type* I-B) anche se, in quest'ultimo caso, le caratteristiche dell'impasto e il trattamento della superficie ne escludono l'accostamento. La consulenza fornita da M.L. Lawall, che ringrazio per la sua disponibilità, non escluderebbe anche una identificazione con il gruppo delle anfore "Samo-Mileto" (Sacchetti 2011a, 102-103; Sacchetti 2012, 81-95) così come già indicato in Disantarosa 2014, 155, fig. 2.9-P4764. Difficoltà di inquadramento anche per il puntale documentato a Palermo in Piazza Bologni (Aleo Nero *et al*., 2018, 11, 14, 31, tab. 1, cat. 4.2.2,).

[38] Blondé *et al*., 1991, 232, fig. 8.53.

[39] Lawall 2011a, 24-25, 27, 31 con riferimento ad analisi del DNA che hanno rilevato la resenza di mastice. Analisi di papiri con rimando alla pratica dell'impeciatura e al contenuto vinario delle anfore di produzione chiota di età ellenistica sono in Burkhalter 2013.

[40] Per le produzioni dei vini chioti *Ariousios* e *Fanaios* e per una panoramica distributiva nei siti della regione del Mar Nero si veda Tsaravopoulos Opaiţ & Fragou 2013, 105-106.

[41] Auriemma 2004b, 150, fig. 8-9; Antonazzo 2014, 193.

[42] Arthur 1992, 200, 202 (tipi non documentati graficamente).

[43] Esemplari cronologicamente più recenti presenti a Taranto (De Juliis & Cagnazzi 2005), a Gravina Botromagno (Cotton 1992, 199, fig. 87.1554 classificata come non identificata) e dal sito rurale di Ponte Rotto ad Ordona (Corrente *et al.,* 2016, 165-173; De Venuto *et al*., 2016, 4-5).

Etá del ferro recente – primo periodo ellenistico

Il passaggio tra il IV e il III sec. a.C. sembra vedere ancora il sito di San Felice come mercato preferenziale per il consumo di prodotti magno-greci così come confermato dalle percentuali (Graf. 2). Il fenomeno distributivo della derrata vino coinvolge anche la vicina villa[44] o altri siti censiti nella valle del Basentello afferente al territorio lucano[45], anche attraverso la presenza di contenitori ceramici che erano solitamente utilizzati nel simposio, come per esempio gli *skyphoi* e le brocche o le altre forme di vasi a vernice nera che rimanderebbero ad aree produttive che gravitano attorno a Metaponto o Taranto[46]. Ed è proprio nella *chora* tarantina e metapontina oltre che a Pomarico Vecchio e a Botromagno[47] che sono stati anche recentemente attestate una serie di tracce archeologiche legate alla coltivazione della vite e alla produzione del vino, identificabili con fosse escavate per l'impianto di questa coltura e datate tra la fine del VI e il V sec. a.C. con una frequentazione che si protrae appunto fino a tutto il IV e il III sec. a.C. o con ambienti dell'abitato destinati alla torchiatura dell'uva[48].

Vinario, infatti, era il contenuto delle **Vandermersch III/ Gr.-Ita. III**[49], diffuse a partire dalla prima metà IV fino ai primi decenni III sec. a.C., ben rappresentate rispetto alle altre forme della produzione magno greca-siceliota con il 34,09%. Si distinguono orli a sezione di "quarto di cerchio e con faccia superiore piana" (Fig. 41.1416, 1419[50]) e quelli "leggermente triangolare" (Fig. 41.1420, 1421) provenienti sempre da San Felice (UT 223) e anse a profilo appena sinuoso con altezze non estese (Fig. 41.1422, 1429), rinvenute presso UT 223 e Masseria Leblè (UT 813) (Fig. 41.1425), che potrebbero anche essere identificate con la forma Va e Gassner 7 diffuse nel medesimo periodo lungo il versante adriatico, tirrenico e in Sicilia[51]. Dal territorio centrale e meridionale della Puglia[52] e dalle coste ioniche provengono gli esemplari più vicini dal punto di vista morfologico agli esemplari documentati in questi siti e in particolare da Botromagno[53], Monte Sannace[54], Otranto e da Vaste[55]; più debole risulta l'accostamento con l'anfora documentata all'interno di un corredo tombale dalla necropoli del Casone a San Ferdinando di Puglia[56]. Ulteriori paragoni possono essere stabiliti con esemplari rinvenuti nei siti della Basilicata, nel territorio di Genzano di Lucania, Irsina[57] e in particolare con quelli del metapontino[58].

Anche se con valori minori è invece possibile registrare un lieve incremento distributivo di contenitori genericamente riconducibili alla forma **Vandermersch V**[59], attestati con il 4,55% sul numero dei frammenti, affiancate da anse che possono essere definite "ibride" dal punto di vista della classificazione[60] a causa delle caratteristiche del profilo e della sezione che risultano essere comuni a più forme afferenti a queste produzioni. Inquadrate infatti come **Vandermersch IV-V** o **V-VI**[61] sono risultate attestate maggiormente nei siti della Basilicata, nei pressi dell'area dell'UT 372 Azienda Pilota Asciutta (Fig. 41.1434), distinte per la presenza della tipica depressione superficiale riconducibile alla didata impressa nella porzione inferiore dell'ansa durante la fase di fissaggio di quest'ultima sulla spalla, e dall' UT 223 San Felice. Un ulteriore gruppo di anse invece presenta caratteri che non consentono attribuzioni specifiche e hanno orientano la classificazione verso una generica definizione di **Vandermersch** o **Greco-Italiche**[62]. Queste ultime sono rappresentate dal 29,55% sul

[44] McCallum & vanderLeest 2014, 131, nota 27.

[45] Siti censiti nei comuni di Genzano ed Irsina, tra Serra Fontana Vetere e Piana Zaccari (McCallum *et al*., 2014, 342, fig. 3; McCallum *et al*., 2015, 321).

[46] Small A. & C. 2010, 248-253. Per una sintesi dei dati relativi alle indagini condotte tra il 2004 e il 2010 presso la *villa* di San Felice si veda: McCallum *et al*., 2011, 32, 37, 70 (0,1% rappresentato dalla *Black Gloss* e il 3,0% di *Transport Amphora*, tab. 2). Per la diffusione della classe *black glazed pottery* nel territorio di *Herakleia* si veda Zuchtriegel 2016, 174-177, fig. 6; per l'*ager Venusinus* si veda Lecce 2019 e un quadro di sintesi per la Lucania è in Di Giuseppe 2019.

[47] Nell'abitazione tardo-ellenistica di Botromagno a Gravina in Puglia è stato documentato un ambiente dove probabilmente si torchiava l'uva (Small 1992, 273, tav. XCVIII).

[48] Dell'Aglio 2001 (Via Campania); Gallo 2003; Brun 2011, 114 con bibliografia specifica per i siti rurali produttivi; Marra & Raho 2015, 357-358; Dell'Aglio 2015a, 450-452, figg. 22-23 (Masserie Nisi e Raho); Roubis 2017, con bibliografia specifica per le fonti letterarie e per quelle archeologiche dei siti della Puglia e della Basilicata.

[49] Vandermersch 1994, 69-73; 2001, 171-173; Cibecchini & Capelli 2013, 433-434 (Gr.-Ita III). Per le produzioni localizzate a Locri si veda Gassner 2011a.

[50] Il *tipo 2* (Fig. 41.1419) trova confronto con un esemplare documentato a Castro nel contesto urbano di via IV novembre (De Mitri 2009a, 205, fig. 4.20) oltre che con esemplari rinvenuti in siti extra regionali: Ischia (Olcese 2010, 314, I.A.4); nell'area di Porta II di Agrigento (Parello & Amico 2016, 280, fig. 9.7); Pantelleria (Bechtold 2015a, 354, Kat. 10, fig. 1.10).

[51] Parker 1976-1977, 629-630, tav. CXXXVIII, fig. 1.3; Toniolo 2000, 13-16. Bechtold 2015a, 354, Kat. 14, tav. 1.14. Possibili paragoni anche con esemplari attestati sul versante tirrenico a Velia (Gassner, Trapichler & Sauer 2014, 245, 260, cat. 139, fig. 28).

[52] L'orlo Fig. 41.1419 è confrontabile con un esemplare identificato come Corinzia B e rinvenuto a Vaste (Semeraro 1997, 302, fig. 250.1131). Si vedano inoltre i rinvenimenti presso Gallipoli, Torre dell'Orso, Ugento e dal litorale salentino (Auriemma 2004b, 85, 99, 140, 143, SRI 191, 247, 444a).

[53] Confronti con l'anfora documentata come corredo nella tomba 16 del Sito DC di Botromagno a Gravina (Casavola & Curzio 1997, 254, fig. 212) mentre l'esemplare rinvenuto nella tomba a grotticella F121, sempre dallo stesso sito, presenta un orlo maggiormente pendente (Small A. 2011a, 525-526, fig. 5).

[54] Il *tipo 3* (Fig. 41.1420) è confrontabile con un esemplare documentato nell'abitato ubicato nella pianura occidentale di Monte Sannace; il *tipo 4* (Fig. 41.1421) con un'anfora rinvenuta nei livelli di crollo relativi all'Ambiente N (si veda rispettivamente Sapone 2019, 622-623, tav. 1.c-d, cat. 9, 11). Ringrazio Domenico Sapone per aver messo a disposizione il contributo prima che venisse stampato, e Paola Palmentola, responsabile scientifica dello scavo di Monte Sannace, per la possibilità di poter realizzare verifiche autoptiche sui frammenti presso il *Laboratorio della Scuola di Specializzazione in Beni Archeologici* dell'Università degli Studi di Bari Aldo Moro.

[55] Per il *tipo* 3 (Fig. 41.1420) si veda rispettivamente: Arthur 1992, 200, fig. 7:1.801, identificata come «*Undefined Greek*» e Campagna 1995, 233, fig. 9.7. Per gli esemplari rinvenuti presso il fondo Ficocelli a Vaste si veda: Caggia 1990, 165, cat. 284.

[56] L'accostamento con il *tipo 4* (Fig. 41.1421) è ipotetico perché stabilito sulla sola documentazione fotografica di un esemplare rinvenuto nella Tomba 32/71 attribuibile alla produzione magno greca ma con caratteri comuni alle produzioni greche (Blundo 1996, 157-158, cat. 3).

[57] «(...) various storage containers, ranging from small amphorae to *dolia*» (McCallum & vanderLeest 2013, 373-374).

[58] Attestate anche presso il sito di San Biagio attraverso la presenza di frammenti di anse (Calvaruso 2012, 89, cat. 3.1.1) e nei siti del metapontino (Swift 2011, 478-479, cat. 25, 28).

[59] Vandermersch 1994, 76-80.

[60] Per i limiti della classificazione (tipologia, documentazione grafica, aree produttive, cronologia) operata in Vandermersch 1994 si rimanda alla discussione in Panella 2010, 77-90; Cibecchini & Capelli 2013, 423-425; Pugliese 2014, 25-42; Rizzo 2014, 103-105.

[61] Rappresentate dal 4,55% sul numero dei frammenti all'interno di questa produzione (Graf. 2).

[62] Segnalazioni di generiche "Greco Italiche" provengono dalla località Lucatuorto a Gravina (Terrenato & Taylor 2000, 149); dal territorio di Monte Sannace (Del Monte 2019, 65; Galeandro &

numero dei frammenti e da una serie variegata di morfologie che individuano 8 tipi la cui distribuzione sembra prediligere la porzione orientale del fiume Basentello (UT 223, 335, 826) (Fig. 41.1436, 1439, 1441, 1443, 1445-1448) rispetto a quella occidentale dove risultano del tutto assenti. Tra queste si distingue il frammento attestato presso San Felice (Fig. 41.1439), caratterizzato dalla presenza di tre tacche incise, in maniera equidistante con solchi a sezione triangolare, in corrispondenza di una delle due rastremature dell'ansa, che rimanderebbe alla pratica dei graffiti o delle tracce di incisioni *post cocturam* eseguite con finalità commerciali e solitamente legate all'indicazione della capacità espressa in *kotylai* o, più probabilmente per questa classe, in *choes*[63]. Da segnalare è inoltre il frammento di una porzione superiore di ansa **Vandermersch IV**-**V** dall'UT 223 San Felice (Fig. 41.1431) per la presenza di un bollo *ante cocturam* con lettere in caratteri greci a rilievo (Pl. 30.1431), tra le quali sono leggibili due sole lettere: *KA*[---][64].

La forma V in particolare è presente attraverso due varianti di orlo, entrambi riconducibili alla **Greco-Italica Va**[65] inquadrabile tra gli ultimi decenni IV fino al secondo quarto del III sec. a.C. Documentata nello specifico in Basilicata presso UT 351 (Masseria Fenicia) e UT 417 (La Guardiola), si distinguono, nel primo caso, per l'orlo a sezione triangolare (Fig. 41.1432) con uno spessore maggiore rispetto al secondo esemplare (Fig. 41.1433). Queste differenze sono note all'interno di queste produzioni e di un contesto "chiuso" come il relitto di Capistello o anche dal recupero di Ibiza[66]. Questo tipo di contenitore è stato rinvenuto presso il pianoro di Camposanto a Timmari[67], nella *chora* di *Herakleia*[68], in quella di Metaponto[69], territorio quest'ultimo dove si assiste, soprattutto per la riproduzione della porzione superiore di queste anfore, anche a fenomeni di imitazione locale[70]. In generale la scarsa distribuzione di questi contenitori nella Puglia centrale consente confronti puntuali con pochi esemplari tra cui vanno menzionati quello del vicino sito di Vagnari insieme a quello documentato come elemento di corredo nella Tomba 6 di Botromagno[71] che richiamerebbero anche gli esemplari rinvenuti presso l'ipogeo Varrese a Canosa di Puglia[72]. Paragoni possono essere istituiti anche con un frammento proveniente da una raccolta di superficie presso la località Specchione a Terlizzi[73] o presso lo scavo di Muro Tenente a Mesagne[74]. Tra i siti costieri è possibile annoverare quelli di Bari[75], Otranto[76], Porto Badisco[77], Castro[78] e Leuca[79] e, risalendo lungo il versante ionico, quelli di Torre San Giovanni[80] e Taranto[81].

Periodo ellenistico

Nel III sec. a.C. si assiste ad un nuovo coinvolgimento dell'insediamento di San Felice (UT 223) all'interno dei flussi di circolazione di contenitori importati dall'area egeo-orientale, fenomeno già registrato durante l'*Iron Age* e del tutto simile per la quantità del dato che resta ancora attestato attraverso una una bassa percentuale pari all'1,18% all'interno della produzione (Graf. 5). Si tratta nello specifico della presenza di una **Corinzia A'** definita **recente**[82] (Fig. 44.1762) per lo schiacciamento dell'orlo sulle anse e la tendenza ad assumere un andamento verticale, quasi a fascia. Le caratteristiche dell'impasto[83] rimandano ad una produzione importata e isola questo frammento rispetto ad una serie di esemplari attestati nel medesimo periodo, simili morfologicamente ma afferenti alla cosiddetta produzione "ionico-adriatica"[84], come nel caso di quelli documentati presso gli scavi urbani della Cittadella Nicolaiana[85] o dal contesto sbacqueo del *portus* di Cala San Giorgio[86] a Bari. Questa particolare forma, probabilmente destinata al trasporto dell'olio o del vino[87], potrebbe essere inserita all'interno di circuiti distributivi e reti commerciali privilegiati. Tale ipotesi potrebbe trovare fondamento se rapportate ai ritrovamenti nei contesti funerari di Botromagno[88], Monte Sannace[89], di Via Melfi e dei "vasi canosini" ad Ascoli Satriano[90], nell'ipogeo delle anfore

Palmentola 2019, 583, fig. 37b); località Ariscianne a Barletta (Volpe 1985, 283-284, 291); località Salsello a Bisceglie (Garello & Manchia 1994, 132, n. 11); località Capitolo a Monopoli (Caprio 1998, 42, 44, tab. 3); territorio di Brindisi (Aprosio 2008, nelle UT 7,8; 11,1; 12; 13(?); 100,7; 102,1; 104; 111; 116; 147; 180; 206; 259; 267; 269; 310; 319; 324; 380; 382; 384; 701; 1060; 1101; 1207; 1228); Torre Ovo e Luogovivo nel tarantino (Alessio & Zaccaria 1996, 129; Zaccaria 1995, 149); a Lecce (D'Elia & Panarelli 2015, 237); a Castro (De Mitri 2009b, 140, 152, 175). Presenze anche in località Ciciriello a Venosa (Volpe 1990, 148).

[63] Olmer 2001, 228-230; Sacchetti 2011b, 248, tav. I.5.

[64] Garozzo 2006; Olcese 2010, 32-37, 132, 182 (ΚΑΡΠΟΙ). Per il carico del relitto di Terrasini B con Greco-Italiche V-VI si veda Olcese *et al*., 2013, 487-489.

[65] Cibecchini & Capelli 2013, 434-435 (*Gr.-Ita Va*, fig. 6). Per le attestazioni di *Gr.-Ita. Va* nei relitti (Roghi A, Capo Graziano, Secca di Capistello) si rimanda a Cibecchini 2013, 238, 240, 244-245. Forti attinenze con l'esemplare rinvenuto nel relitto *Tour Fondue* nei pressi dell'Île de Giens (Long 1990, 63, fig. 37.2) e nella Baia di *Gadir*/ Gades (Bernal-Casasola *et al*., 2013, 353, fig. 2.5).

[66] Cibecchini & Capelli 2013, 435, fig. 6.2-3.

[67] Osanna, Roubis & Bileddo 2012, 163.

[68] Zuchtriegel 2014, 165-166, fig. 8 (HE30).

[69] Swift 2011, 480, 483, cat. 31, 39.

[70] Come per gli esemplari attestati tra i materiali del deposito di abbandono del vano-dispensa della Masseria San Biagio (Giardino 2015, 608, fig. 36) e nello scarico presso la porta orientale di Metaponto (Giardino 2015, 592, fig. 17).

[71] Per il *tipo 1* (Fig. 41.1432): Disantarosa 2011, 388; Small A. & C. 2011a, 378-379, fig. 1; Cotton 1992, 199, fig. 86.1552; Herring 2000, 206-208, figg. 133-134.

[72] van der Wielen, 1992, 244, fig.14 con riferimento a Volpe 1988a, 84, tav. XXI.3.

[73] Più esemplari interpretati come «Lamboglia 2» (Mangiatordi 2011, 178, fig. 81b).

[74] Burgers 1999, 65, fig. 44.

[75] Volpe 1988c, 388, fig. 564, cat. 800.

[76] Auriemma 2004b, 80, (154, fig. 13), SRI 162; Mastronuzzi *et al*., 2008, 131, fig. 26.67.

[77] Con gli esemplari documentati presso la Grotta dei Cervi (Mastronuzzi & Caldarola 2019, 187, fig. 3).

[78] De Mitri 2009a, 208, fig. 5.28.

[79] Auriemma 2004a, 273, fig. 216c; Auriemma 2004b, 81, SRI 164.

[80] Desy & De Paepe 1990, 220, tav. 95.187.

[81] Guastella 2015a, 345-346, fig. 36, 47; D'Andria & Mastronuzzi 1999, 102-103, fig. 23.75.

[82] Koehler 1981, 457; Koehler 1982, 285; Sacchetti 2012, 26-27.

[83] Gassner & Trapichler 2011.

[84] Gassner 2011c. Processi di imitazione sembrano interessare anche centri del Mediterraneo occidentale come *Gadir*/ *Gades* (Sáez Romero 2014, 168, fig. 9).

[85] Disantarosa 2015b, 175, 177, fig. 2.1.

[86] Disantarosa 2018a, 118, fig. 7.2.

[87] Koehler 1979, 5-6; Vogeikoff-Brogan & Apostolakau 2004, 424-425, fig. 6.f; Gras 2010; Sacchetti 2012, 27-28.

[88] Small A., 2011a, 525-528, fig. 5.

[89] Attestazione probabile (forse di imitazione e non importata) all'interno della Tomba 10, datata alla fine del IV sec. a.C. (Ciancio 1989, 98-99, tavv. XXX-XXXIII); Capozzi *et al*., 2012, 75, fig. 31. Il tipo attestato anche presso l'abitato nella pianura occidentale presso l'*Insula* V, Ambiente I ed N (Sapone 2019, 619, 626, 628, tav. 2.b-c, cat. 2-3).

[90] Disantarosa 2012a, 122, note 16-17.

ad Arpi[91] e ad Ordona[92]. L'accostamento con il Tipo II del carico del relitto di Savelletri a Fasano[93] funge da riferimento per la ricostruzione delle rotte e delle vie di distribuzione che sembra interessare sia il versante adriatico sia quello ionico. Per quest'ultima rotta importanti risultano i confronti puntuali con gli esemplari rinvenuti a Torre dell'Orso[94], a Otranto[95], quelli attestati tra i materiali della necropoli di San Giorgio Ionico, sito che rientra nella *chora* ed è collegabile a uno dei tanti impianti rurali che gravitavano al vicino *phrourion* di Monte Sant'Elia, posto ad oriente di Taranto[96]; le anfore afferenti al carico del relitto *La Madonnina A*, classificabili come Corinzie A', rimanderebbero dal punto di vista tipologico, ad una produzione di poco più antica[97]. Queste anfore, comprese quelle della produzione 'recente', raggiungono anche alcune località del'entroterra della Basilicata, fenomeno distributivo che ha evidentemente anche interessato lo stesso sito di San Felice (UT 223). Vanno sicuramente menzionati gli esemplari vicini morofologicamente all'esemplare in questione e cioè quelli da una tomba rinvenuta nelle proprietà La Torre e Corrado a Pisticci[98], quello documentato presso la località Pizzica e nel *castrum* di Metaponto[99] e, infine, da un deposito di abbandono di Bosco Andriace a Montalbano Ionico[100].

In questo stesso periodo (*Early Hellenistic*) si continua ad assistere al fenomeno della circolazione e del consumo di derrate su un "doppio mercato" e cioè quello collegato alle importazioni e quello legato ai prodotti "locali" magno-greci. La percentuale all'interno del campione della Valle del Basentello si eguaglia al 0,20% per entrambre le produzioni. Dalla Masseria Leblè (UT 813) proviene infatti un orlo di una **Vandermersch V/ Gr.-Ita. Vc**[101] (fig. 41.1449), attestata in contesti databili entro l'ultimo quarto e la fine del III sec. a.C.[102], che viene solitamente assegnata alla fascia produttiva campano-laziale. Questo dato va comunque valutato in rapporto al fenomeno registrato del discreto incremento della coltivazione della vite durante l'età ellenistica nel territorio tarantino[103]. Le dimensioni del diametro, l'inclinazione e il profilo dell'orlo consentono paragoni con esemplari documentati presso la località Pozzillo, nella Valle dell'Ofanto[104], con esemplari provenienti da Botromagno[105], Monte Sannace[106], dal litorale di Bari[107], dalla villa Paduano a Mola di Bari[108], Taranto[109], Oria[110], Torre dell'Orso[111], Torre San Giovanni[112], Porto Badisco[113], Castro[114] e dal metapontino[115] oltre che presso Difesa San Biagio a Montescaglioso[116].

Osservando le percentuali, l'11,76% all'interno della produzione (Graf. 5) e il 2,04% in rapporto al periodo cronologico (Graf. 6), risulta evidente un incremento di importazioni di anfore egee e in particolare di **anfore rodie**[117]. Queste però sembrano essere attestate escusivamente nel settore settentrionale del campione ricognito e nello specifico nel UT 223 (San Felice) da dove provengono sei frammenti di pareti e una sola porzione di ansa mentre dalla località Santa Teresa (UT 906) proviene il frammento di ansa meglio conservato No.1763. Lo stato di frammentazione consente con grande difficoltà di restringere il campo cronologico in rapporto alla forma del contenitore. Il *tipo 1* (Fig. 44.1763) (da UT 906) e il *tipo 2* (Fig. 44.1765) (da UT 223) rimanderebbero alle produzioni inquadrabili tra gli ultimi decenni del III fino alla seconda metà del II-fine del I sec. a.C.[118]. Questi esemplari inoltre incrementano il quadro delle distribuzioni relative al comprensorio della Puglia centrale dove sono stati registrati esemplari nei comprensori di nord-est e nord-ovest, nello specifico presso Selva di Città nella zona murgiana bitontina e a Monte Sannce, distribuzioni che potrebbero in via ipotetica essere collegate con le attestazioni consistenti censite per la città-porto di Taranto[119].

Una porzione di fondo-puntale (Fig. 44.1772) è stato documentato nel territorio lucano ed è attribuibile alla famiglia delle cosiddette **'anforette' rodie**[120] che si caratterizzano per le piccole dimensioni e le ridotte capacità rispetto ai modelli classici da cui deriverebbero, calcolate all'incirca tra l'1,75 e 4 litri e corrispondenti ad 1 o 1/2 *chous*[121]. Questi particolari contenitori sono inquadrabili dal punto di vista cronologico al II sec. a.C., con alcuni esemplari attestati tra le anfore utilizzate come dotazione di bordo nel relitto A di Capo Graziani a Filicudi[122] e altri presenti nel carico del relitto

[91] Mazzei 1995, 148-149, 160, fig. 91, 226, cat. 70; Volpe 1995a, 234, fig. 146.4, n. 226.
[92] van Wonterghem-Maes 1971, 130, n. 55, fig. 33. Attestazione di un esemplare anche da un gruppo di ceramiche rinvenute nella basilica di Ordona (De Boe & Vanderhoeven 1976, 125, fig. 32.92).
[93] Kapitän 1972, 45, tav. II.2.
[94] Auriemma 2004b, 148, fig. 3.
[95] Mastronuzzi *et al*., 2008, 130-131, figg. 27.65-66.
[96] Alessio 1995; Alessio 2000, 171, tav. XCVI.1.
[97] Disantarosa *et al*., 2018, 135-136, 146-147, fig. 5.1-2.
[98] De Siena 2007, 439-441, tavv. XIII, XVI.
[99] Swift 2011, 1103, Tr. 7-13 AMP.
[100] Giardino 2015, 588, 590, 592, 605-606, figg. 14-15, 17, 32.
[101] Cibecchini & Capelli 2013, 439-440 (Gr.-Ita Vc, fig. 8).
[102] Si rimanda ai carichi dei relitti *Pointe Lequin 2* (Cibecchini 2013, 238-240, 245-246) e *Sanguinare A* (Cibecchini *et al*., 2012, 37-41, fig. 11). Si vedano anche gli esemplari rinvenuti nella *phase* D1 degli scavi di Velia (Gassner, Trapichler & Sauer 2014, 245, cat. 142, fig. 29).
[103] Dalla vicina *chora* tarantina provengono le testimonianze di fosse riferibili ad un vigneto (D'Auria 2015a, 360, fig. 395; Guastella 2015b, 362-363, fig. 399-401; Dimitri & Ancona 2015, 363-364, figg. 405-406) e dal territorio di Castellaneta (D'Elia 2015, 373-374, fig. 417).
[104] Disantarosa 2003-2005, 247-248, fig. 86. Per il contesto si veda Goffredo 2011, 280, CAN 134.
[105] Cotton 1992, 198, fig. 85.1536.
[106] Dai materiali residuali di un grosso forno circolare all'interno dell'Ambiente R, *Insula* III (Sapone 2019, 624, cat. 14, tav. 1.e); Bianchi 2019, 513, tav. I.4.
[107] Nuzzo & Disantarosa 2019, 131.
[108] Casavola 2002, 55, fig. 1.2.
[109] Palazzo 1988, 71, 73, tav. VII.9.2a; Costamagna 1983, 107-108, cat. 20-21, tavv. XLVI, L, 20-21; D'Andria & Mastronuzzi 1999, 97, fig. 14.42.
[110] Il contesto è quello di un pozzo documentato in Via Fratelli Bandiera (Semeraro 2015, 563, fig. 8).
[111] Auriemma 2004a, 211, fig. 167.16.
[112] Desy & De Paepe 1990, 220, tav. 95.185; 96.205.
[113] Mastronuzzi & Calandra 2019, 187, fig. 3.
[114] De Mitri 2009a, 205-206, fig. 4.23-25.
[115] Calvaruso 2016, 423-424, SAV Amp. 30-31, 33.
[116] Roubis 1996, 251, fig. 10.
[117] Finkielsztejn 2001, 51; 2002; 2006. Per la distribuzione delle anfore rodie attraverso il commercio marittimo si veda: Palamida *et al*., 2016.
[118] Finkielsztejn 2001, 50 (pl. C.17-18). Si rimanda alla *Rhodian long-necked amphoras of type I-E-1*, *I-E-2*, *I-F* in Monachov 2005, 77-86, 90-91, fig. 3-8, tab. 1-2. Pe l'uso cronologico di questi contenitori si rimanda alle riflessioni in Finkielsztejn 2002.
[119] Per un quadro delle distribuzioni delle anfore rodie in Puglia si veda: Disantarosa 2012a, 123-131, con bibliografia specifica e fig. 6 per la carta della distribuzione; si aggiungano i ritrovamenti registrati a *Salapia* (De Venuto *et al*., 2015, 50); Torre Santa Sabina (Auriemma 2015, 234-236, fig. 9); Oria (De Mitri 2016a, 113); Mesagne (Cera 2015, 46-48, fig. 39-40, 42).
[120] Finkielsztejn 2000a, 213; 2001, 51.
[121] Monachov 2005, 77-78, 80, 86, fig. 6.3-6, 7.4.
[122] Il relitto si data al primo quarto del II sec. a.C. (Cavalier 1985, 111, fig. 128.a).

di Spargi (isola Maddalena, Sardegna), datato al 120/100 a.C.[123]. In Puglia sembrano circolare poco se si considerano gli esemplari isolati di Vieste[124] e questo, attestato presso UT 303 Fosso Capicionna.

Alla stessa maniera risulta isolato il frammento di orlo (Fig. 41.1450) di un'anfora non identificata, le cui caratteristiche morfologiche rimanderebbero, in via del tutto ipotetica, ad una probabile **Bertucchi 5/ Py 9**[125]. Questo contenitore, che circola tra il III e il II sec. a.C., è attestato nel UT 223 (San Felice) ma al momento non trova confronti sia rispetto al territorio regionale sia in rapporto ai mercati di consumo dei comprensori dell'Italia meridionale[126]; per questo l'attribuzione resta alquanto dubbia.

Ancora tra i primi decenni e fino alla metà II sec. a.C. sono presenti contenitori tipo **Vandermersch VI/ Gr.-Ita. VIb**[127]**,** distinti per una capacità che oscilla tra i 25 e i 27 litri e noti per essere considerati tra le testimonianze di un ampio fenomeno dell'esportazione e del consumo di vino nei territori occidentali del Mediterraneo[128]. L'orlo, rinvenuto presso UT 813 Masseria Leblè (Fig. 41.1451), ascrivibile alla variante più tarda di queste produzioni per il profilo esterno lievementte concavo risulterebbe accostabile agli esemplari documentati a Botromagno[129]. Questa famiglia di contenitori raggiunge diversi siti di consumo all'interno del territorio regionale pugliese[130] e il fenomeno della distribuzione è meglio interpretabile se si considerano i carichi di vari relitti come quello censito presso l'Isola di San Pietro a Taranto, che conta una «trentina di anfore frammentarie, di forma "greco italica recente"»[131], quello di Torre Chianca Nord[132], quello presunto di Torre Chianca B, dove sono state segnalate «"greco italiche" piuttosto evolute»[133] e, infine, quelli di Torre Rinalda[134] e Torre Sinfonò a Gallipoli[135]. Ulteriori confronti si possono stabilire con i rinvenimenti effettuati presso il sito di Sant'Angelo Vecchio, nel metapontino[136] e in ulteriori siti pugliesi come Torre San Gregorio[137], Masseria Le Case, nel territorio di Squinzano[138], Egnazia[139], Otranto[140], Castro[141], Lecce[142], Taranto[143], Castellaneta[144], Monte Sannace[145], contrada San Bartolomeo a Conversano[146] e ad Ordona[147].

Il frammento di orlo classificato come **non identificato**[148] (Fig. 42.1500), rinvenuto presso UT 229 (la villa di San Felice), troverebbe confronti morfologici con esemplari di anfore Cnidie[149] della metà del II sec. a.C., ma queste ultime si distinguono per gli impasti differenti, soprattutto distinguibili per l'alta percentuale di mica, caratteristica che risulta completamente assente nell'esemplare in questione, che presenta invece una composizione più vicina alla **produzione "italica"**.

Periodo ellenistico recente – periodo romano repubblicano

Tra l'Ellenismo e l'età romana repubblicana, la presenza di anfore di produzione egeo-orientale e italica appare con lo stesso valore percentuale, pari allo 0,20% (Graf. 6). In particolare quelle di produzione italica rappresenterebbero una delle tracce concrete del processo di romanizzazione che coinvolge i territori apuli, calabri e lucani e che lentamente sembrano soppiantare la circolazione e il consumo dei prodotti precedenti. L'eredità di questo fenomeno è identificabile in alcuni caratteri morfologici di contenitori indicati con una doppia nomenclatura, come per esempio nel caso delle **Greco-Italiche/ Lamboglia 2**[150] presenti nel UT 813 (Masseria Leblè), dove la raccolta di superficie ha potuto testimoniare la presenza di un frammento che presenta forti analogie con i contenitori di ultima generazione delle produzioni magno-greche ma anche con caratteri che saranno fatti propri dalle produzioni successive. L'orlo (Fig. 42.1453) rinvenuto in questo sito dell'entroterra trova corrispondenze con una

[123] Parker 1992, 409, n. 1108 e Morel 1998, 493 con bibliografia precedente. Presso il *Stravros Cemetery*, sull'isola di Creta dove sono state documentate 300 tombe inquadrabili tra il III e il II sec. a.C., è attestata la presenza di una o due anfore poste all'interno delle sepolture come corredi; in particolare nella tomba 24 è attestata la presenza di un'anforetta rodia che viene però definita «*imitating the Rhodian shape*» (Vogeikoff-Brogan & Apostolaku 2004, 421, fig. 2d). Sulla sponda opposta dell'Adriatico, a Capo Treporti in Albania è stata documentata una porzione superiore di quest'anfora durante una ricognizione archeologica subacquea (Disantarosa 2017, 267, figg. 16.3, 17.12).

[124] Mazzei & Volpe 1998, 122 (nota 20); Pacilio 2008, 327, fig. 3. Per un quadro di sintesi della diffusione in territorio regionale di questa forma e del rapporto con le altre produzioni di questa famiglia di contenitori si veda: Disantarosa 2012a, 130; Auriemma & Degrassi 2015, 179.

[125] Bats 1993, 63 (A-MAS bd9).

[126] Confronti con esemplari attestati nella Languedoc occidentale (Passelac, Rancoule & Solier 1990, 142, fig. 5.6.) e lungo la costa ligure (de Vingo 1996, 345).

[127] Vandermersch 1994, 81-87; Cibecchini & Capelli 2013, 443 (*Gr.-Ita VIb*, fig. 10), Confronti con esemplari attestati a Velia nella *phase* D1 (Gassner, Trapichler & Sauer 2014, 245, cat. 145, fig. 29) e dal sito di Vigna Marini-Vitalini, *Caere* (Scalici 2016, 287-288, fig. 2.1-11).

[128] Cibecchini & Capelli 2013, 444. In particolare per l'attestazione nel relitto del Grand Congloué si veda: Cibecchini 2013, 238-240, 243, 245-246. Si rimanda anche ai confronti dell'esemplare in questione con i tipi documentati nel relitto Filicudi A (Olcese 2010, 572, tav. 5.II.2; Olcese *et al*., 2013, 491-494, fig. 12.2), presso Cala Scirocco (Firmati 1997, 69, fig. 12.14). Non mancano esempi presso areali nord-adriatici (Koncani Uhač & Uhač 2017, 37, 40) e dal litorale di Olbia sul Mar Nero (Buzoianu 2013, 293, figg. 3-14-15, 6.14-15).

[129] Cotton 1992, 198, fig. 86.1541, 1543; Herring 2000, 206-208, fig. 133-134.

[130] Per la diffusione delle "Greco-Italiche recenti" in Puglia si rimanda a Disantarosa 2012a, 139, nota 260 con bibliografia specifica; in aggiunta si vedano anche gli esemplari dal Cantiere 2 di Otranto (De Mitri 2016b, 15, fig. 4.1), dall'Area ad Est delle Terme ad Egnazia (Gramegna & Pignataro 2016, 196) e dal litorale di Bari (Nuzzo & Disantarosa 2019, 132).

[131] Auriemma 2004b, 47, SR 65.

[132] Auriemma 2004a, 144-145, fig. 104; 2004b, 44, SR 52.

[133] Auriemma 2004b, 38-39, fig. SR 42.

[134] Auriemma 2004b, 48, SR 67.

[135] Auriemma 2017a, 74, fig. 35.

[136] Calvaruso 2016, 423, SAV Amp 28.

[137] Auriemma 1998, 138, 144, fig. 9; tav. VI.LF 71/35; similitudini anche con tav. VII.LF 71/47.

[138] Auriemma 2004a, 147, fig. 107b.LC 95/6.

[139] Berloco *et al*., 2014, 207, fig. 4.4; Cassano 2015, 533, fig. 5.2 (esemplari dal corredo tombale 79/9); Cassano & Mastrocinque 2016, 48, nota 34.

[140] De Mitri 2016b, 492, tab. 1.

[141] De Mitri 2009a, 208, fig. 5.30.

[142] Dal contesto di Palazzo Vernazza (Polito 2012, 181, fig. 3, tav. II.29).

[143] Gli esemplari del terrazzamento presso il Convento di Sant'Antonio (Dell'Aglio 2015a, 445-446, fig. 17; 2015b, 336, fig. 349; La Rocca 2015, 855, fig. 19).

[144] Il contesto è quello di un granaio relativo ad una villa rurale (D'Auria 2015b, 383).

[145] Ciancio *et al*., 1989, 194-195, tav. 348-349.

[146] L'Abbate 2013d, 266, fig. 8.3.

[147] De Stefano 2008, 115-116, tav. XXII.4; 188.

[148] Classificato come *Tipo 1* (Tab. 1).

[149] Confronti con gli esemplari attestati nel deposito J di Alessandria (Harlaut & Hayes 2018, 221, pl. 51.41).

[150] In alcune edizioni compaiono anche nomenclature tipo «Lamboglia 2 di tradizone greco-italica» (Sedlmayer *et al*., 2017, 129).

serie di esemplari classificati lungo la costa meridionale della Puglia, parallelismi interpretabili come tracce di un complesso fenomeno produttivo e distributivo che coinvolge più approdi del territorio regionale – come per esempio quelli documentati presso l'approdo di Torre San Gregorio e in generale con quelli provenienti da vari giacimenti subacquei del litorale brindisino[151] – e da questi evidentemente l'immissione verso mercati di consumo interni.

Non si arresta totalmente il fenomeno dell'importazione di vini dai territori egei: lo testimonia, anche se attraverso un frammento isolato, rinvenuto al UT 303 sul Fosso Capicionna, ubicato immediatamente ad ovest del fiume Basentello, in territorio lucano; da questo insediamento proviene la porzione di ansa con bollo (Fig. 44.1773) di un'anfora **Cnidia**[152] attribuita – non senza difficoltà considerata la percentuale di conservazione del reperto e l'illegibilità del bollo[153] – all'eponimo [Ε]πὶ Εὐφρ[αγόρα] / Λῦσ(ία), probabilmente riferiti a *Euphragoras* o a *Euphranor*, e nella riga successiva al fabbricante *Lysias* con un tirso al centro del cartiglio che rimanderebbero ad una produzione del Periodo V-VI[154], inquadrabile alla fine del II sec. a.C.

La diffusione di anfore cnidie, principalmente adibite al trasporto del vino, forse anche dell'olio egeo[155], o in particolare del vino passito, probabilmente il *protopos* mensionato da Plinio il Vecchio[156], nel comparto regionale, risulta mediamente attestata; il frammento in questione non trova però paragoni stringent sia con gli esemplari bollati[157] sia con quelli privi di bollatura, come nel caso di quelli documentati a Mesagne[158] e dai recuperi subacquei presso Torre dell'Orso[159] a Torre Santa Sabina a Carovigno[160].

Periodo romano repubblicano

La circolazione di anfore di produzione 'italica', corrispondenti al 4,28%, risulta in questo periodo più significativa rispetto al 'timido' flusso dei contenitori di produzione 'punico-siciliana', attestati solo con lo 0,20% (Graf. 6). Il quadro che è possibile dedurre per i siti censiti nella valle del Basentello in età romana repubblicana è quello di un nuovo orientamento dei mercati produttivi, e delle reti di consumo. La presenza, infatti, delle vinarie **Lamboglia 2**[161], che risultano tra l'altro le anfore documentate con il maggior numero di frammenti in questo ambito produttivo e all'interno di questo ambito cronologico[162] (Graf. 3), è la chiara testimonianza di questo cambiamento. Il contesto in esame infatti esprime dati coerenti rispetto a quanto già registrato in numerosi siti pugliesi e lucani[163]. Nonostante i frammenti raccolti in

[151] Auriemma 1998, 139, tav. VII/LF 71/21; 2004b, 64, 129, 139, SRI 74, 403, 438. Esemplari di Greco-Italiche/ Lamboglia 2 sono stati documentati a Torre Santa Sabina, alcuni afferenti al carico del relitto *TSS4* (Antonazzo 2014, 193; Auriemma 2015, 233, fig. 6b). Segnalazioni anche nel territorio di Trinitapoli (Silvestrini 2005, 47).

[152] Empereur & Hesnard 1987, 14, 17, 20-21, pl. 3.15; 4.16-18; Py & Sourisseau 1993, 38 (A-GRE Cni1); Attula 2005-2006, 40, nota 2 con bibliografia specifica. Per i centri produttivi della penisola cnidia e i modelli standardizzati e il commercio si vedano rispettivamente: Cankardeş-Şenol 2015, 169, note 1-3; Rauh *et al*., 2013, 148-149, 157-158.

[153] Si ringrazia la preziosa consulenza fornita da Gonca Cankardeş-Şenol dell'*Ege Üniversitesi* (*Edebiyat Fakültesi – Arkeoloji Bölümü Ögretim Üyesi*) per il confronto e la discussione utile all'identificazione del reperto. L'illegibilità del bollo e l'unicità del reperto per l'intero campione di territorio ricognito non consente particolari ricostruzioni come il calcolo delle statistiche di circolazione, la quantificazione dell'attività produttiva e il confronto con emissioni monetali (si veda per esempio Debidour 2013).

[154] Lenger 1955, 493 n. 29 (C 971); Grace 1985, 1-54 (SS 13924; SS 943); Jefremow 1995, 71-76, 87-88, 146 (*Gruppe V – untergruppe A*), 147-150 (*Gruppe V – untergruppe B*), 151 (*magistrate* IvKnidos 115, 357, 362, 286, 45, 663), 154-157, 161-164, 167 (*Gruppe VII*), 194-195, 202 (475-476; 477-479; 480; 481; 482-483; 484-487; 488-489; 490; 632 *die schiffsbug – stempel*); Jöhrens 1999, 236, n. 796; Koehler & Wallace Matheson 2004, 163-165, fig. 3; Lawall 2007, 55, 58 (AH 70, Taf. 12) attestazioni a Efeso, bollo con lettere retrograde. Si rimanda a Lawall 2005a e Lawall 2005b, 35 per i commerci e il rapporto produttivo tra Cnido e Rodi nel II-I sec. a.C. Per il fenomeno della standardizzazione dei mercati e l'introduzione dei nomi dei magistrati nella pratica della bollatura delle anfore ellenistiche si rimanda a Lawall 2011b, 69. Per analisi archeometriche (*Neutron Activation Analysis*) realizzate su esemplari rinvenuti nel santuario di Apollo presso Emecik sulla penisola cnidia con l'individuazione del *Gruppen EMEC* in riferimento ad un'ansa datata al 78 a.C. con il bollo Ευφρ(-/Πτολ(- si rimanda a Attula 2005-2006, 43, abb. 7. Per l'eponimo *Euphragoras* in associazione con fabbricanti diversi da *Lysias* si vedano gli esemplari TD 0015 (*Aristandros*), TD 0084 (*Archagoras*), TD 0092 (*Ariston*), TD 0234 (*Aristandros*), registrati a Delo (http://www.amphoralex.org/timbres_delos/delos_affiche_tout_cnide.php).

[155] Koehler 1996, 331-333; Whitbread 1995, 68; Lund 2004, 212-213, 215-216.

[156] Plinio, *HN* XIV.75 e 85; Lemaître 2013, 33, 33. Per il fenomeno del consumo di vini egei appartenenti alla categoria del *passum* o dei *vina salsa* e *tethalassomenoi*, impiegati in rituali religiosi o per scopi medici, si rimanda al coso specifico dell'anfora di Chio rinvenuta, all'interno di una fossa con i resti di macellazione animali in un contesto che ipoteticamente rimanderebbe al rito della *lustratio*, presso la località Ponte Rotto nel territorio di *Herdonia* (Corrente *et al*., 2016, 169-170, 172).

[157] Documentate a Canosa (Morizio 1990, 53-54, 135, fig. 14; Volpe 1990, 238, fig. 235.6); ad Otranto (Arthur 1992, 200, fig. 7:1.802); a Taranto (Dell'Aglio, 1988, 61, 66, 9.1j; 9.1k, tav. IV; Dell'Aglio & Lippolis 1989, 542; Ferrandini Troisi 1992, 20, n. 4); fortuito dal litorale brindisino (Auriemma 2004b, 64, SRI 74).

[158] In un contesto funerario e in associazione con un'anfora rodia (Cocchiaro 1989, 13, 17; Andreassi 1997, 947, tav. XXXVIII; Zingariello *et al*., 1997).

[159] Auriemma 2004a, 211, fig. 167.19; 2004b, 119, SRI 356. Per la diffusione dei tipi cnidi nei relitti accompagnati da carichi misti di anfore di produzione italica si veda Pascual Berlanga *et al*., 2007, 512-513 con relativa bibliografia per i relitti del *Grand Congloué 1* e *Llatzaret* a Minorca. Per la diffusione delle Cnidie nella regione pontica e nell'Egeo si veda: Lawall *et al*., 2010, 373, 383, 393-394, 399 (nota 980 con biliografia specifica), 402. Per la diffusione ad Atene e Corinto: Koehler & Matheson 1990.

[160] Auriemma 2015, 234.

[161] Rizzo 2014, 120-122. Per una sintesi sui siti produttivi lungo il litorale occidentale dell'Adriatico si veda: Auriemma & Degrassi 2015, 167, 169-170; Cipriano & Mazzocchin 2017, 40, fig. 2 (con rimando alle relative schede). Per le produzioni nei siti del versante orientale (Issa, Epidamno, Durazzo, Apollonia) si veda: Panella 2010, 19 con bibliografia precedente.

[162] Rappresentate con il 7,85% sul numero dei frammenti di produzione italica (Graf. 3).

[163] Per un quadro della distribuzione delle anfore Lamboglia 2 in Puglia, anche in riferimento ai relitti e ai rinvenimenti sottomarini in ambito regionale e adriatico, si veda Disantarosa 2015a, 233-235, con bibliografia specifica; Auriemma & Degrassi 2015, 165-167, 169, 171-172, 182, 185, fig. 1; Disantarosa 2017, 260, 262-267. Si aggiungano le presenze presso la località Mezzana, a Pietramontecorvino (Marchi 2015, 190); da *Salapia* (De Mitri & Loprieno 2018, 293, fig. 5.1-2; Volpe 2018, 78); da Trani (Ronchi 1983, 111, n. 22); da Bari, Lungomare Imperatore Augusto (Nuzzo & Disantarosa 2019, 131-132, 135); dal litorale tra Polignano e Monopoli (Nuovo 2014, 386); da Seppannibale (D'Eredità & Caringella 2011, 454); da Oria (De Mitri 2016a, 113); il recupero subacqueo dalla località Cerano – Campo di mare a Brindisi (Cocchiaro 1995, 147, tav. LXXI); da Egnazia (Cassano & Mastrocinque 2016, 39, 76, 107; Cassano 2017, 210); dal Cantiere 2 a Otranto, (De Mitri 2016b, 492, fig. 4.5-6 rispettivamente per i confronti con i *tipi 1* e *2*, Fig. 42.1454-1455) dalla località Ciciriello a Venosa (Volpe 1990, 148). Si segnala inoltre la presenza di un frammento di ansa dal sito ellenistico F3 – 0617914/4518536 – nei pressi di Gravina (1/180 gr; h 7,6 cm) fuori catalogo.

questo comprensorio presentano un limite e cioè quello dell'elevata percentuale di pareti e anse dai siti 717, 813, 204 (Fig. 42.1455, 1456, 1462) rispetto ad una sola porzione di orlo (Fig. 42.1454) proveniente dalla località Santa Teresa, UT 906, la localizzazione delle distribuzioni delle Lamboglia 2 consente di notare una particolare concentrazione nei siti ubicati immediatamente a sud-est del torrente Pentecchia di Chimenti, in un areale che gravita attorno alla via Appia e che comprende i siti di San Felice (UT 223) e Masseria Recupa di Scardinale, UT 204. In particolare la porzione di orlo a fascia rilevato (No. 1454) trova confronti con esemplari attestati a Lucera[164], a S. Marco in Lamis[165], *Herdonia*[166], con un frammento proveniente dalla località Stazione di Canne nella Valle dell'Ofanto[167], presso la villa di Agnuli a Mattinata[168] e da località Paduano a Mola di Bari[169] oltre che avere affinità con un esemplare di produzione campana documentato nel carico del relitto *Port-Vendres 4*[170].

Rispetto a questi raggruppamenti più isolata risulta invece la presenza di contenitori da trasporto di produzione italica, databile al medesimo periodo[171], riscontrata presso Masseria Ribelli (UT 335), ubicata nella porzione centrale del campione ricognito e a nord-est del Basentello, dove è stato censito un puntale (Fig. 42.1473) riconducibile ad un'anfora olearia della famiglia delle **'Brindisine'**, meglio identificata con la forma **Apani V/ Giancola 5**[172]; il puntale resta difficilmente accostabile agli esemplari di questa forma rinvenuti soprattutto nel territorio brindisino[173] o, più a nord, a *Salapia*[174]. Dubbia resta invece l'attribuzione a questa famiglia di contenitori per il frammento di spalla con *titulus pictus* riferibile ad una lettera con segno di interpunzione, forse un *C*(*aius*)[175] (Fig. 42.1474) rinvenuto sul UT 229 (villa di San Felice), così come per l'ansa (Fig. 42.1515) documentata presso Masseria Pinna in Basilicata, attribuibile ad una generica "ovoidale" adriatica.[176]

Frammenti di orli attribuibili ipoteticamente alla cosiddetta **anfora "tubulare"** o **"Maña C variant"**[177], riconducibile alla tradizione punica ma indicata anche come produzione "punico-siciliana"[178], adibita al trasporto di salse di pesce o di prodotti ittici[179] durante il II e la metà del I sec. d.C., è attestata attraverso un solo esemplare (Spor. B) rinvenuto in maniera isolata presso il torrente Basentello in un areale nei pressi del tratturo Gravina-Tolve, sulla sponda lucana del Basentello, distinto per la morfologia della fascia dell'orlo a rilievo[180] (Fig. 43.1452). La circolazione di questi particolari contenitori appare rara non solo nel campione ricognito ma anche rispetto al quadro distributivo regionale pugliese[181] e lucano[182]: gli unici esemplari documentati in Puglia, infatti, sono quelli noti nel territorio di Lucera[183]; in Basilicata sono presenti a Tolve[184]. Gli indici bassi di distribuzione di queste anfore, caratterizzate dal corpo cilindrico e da un ampio diametro dell'orlo, risultano essere in perfetta sintonia con i dati rilevati anche per i siti del Mediterraneo, dalla Spagna ad Israele[185].

Periodo romano repubblicano – imperiale

Il consumo di vino tra la fine dell'età romana repubblicana e il primo periodo imperiale nel contesto in questione sembra intensificarsi così come dimostra la circolazione del contenitore che si ispira alle anfore di Cos, la **Dressel 2-4**[186]. I frammenti campionati, pari al 5,37% (Graf. 3), sulla base dell'analisi macroscopica degli impasti, rimanderebbero a produzioni adriatiche o del versante calabrese del Golfo di Taranto senza

[164] Volpe 1982-1983, 27, tav. II.3.
[165] Gravina 1999, 221, fig. 20.1.
[166] De Stefano 2008, 117, tav. XXII.6.
[167] Con un'altezza dell'orlo differente ma con la stessa inclinazione (Disantarosa 2003-2005, 246, 258). Per il contesto si rimanda a Goffredo 2011, 288-292.
[168] Casavola 1999, 262, tav. I.5.
[169] Casavola 2002, 58, fig. 2.1.
[170] Esemplari datati alla prima metà del I sec. a.C. Si veda: Martínez Ferreras *et al.* 2015, 283-285, 287, 290, fig. 7 (AB.06.33-60), 9 (f-h), tab. 1-2. Per analisi petrologiche su esemplari di Lamboglia 2 documentate in contesti subacquei si veda Royal 2018, 31-33.
[171] Importanti risultano a tal proposito le attestazioni all'interno dei carichi dei relitti *Albenga B* e *Tino 2* in Liguria (Trigona 2014-2015, 190, 194) e in quello della *Palombina* presso Ancona (Mercando 1983, fig. 11).
[172] Manacorda & Pallecchi 2012, 117-129, 140 (tav. XX.E2), 154-159.
[173] Dal porto medio di Brinsdisi e dalle Isole Pegagne (Marinazzo 1994, 149, il primo esemplare con bollo *AENEAS*); dal litorale di Apani (Auriemma 2004b, 123, SRI 378); da Torre Santa Sabina a Carovigno (Antonazzo 2014, 193; Auriemma 2004b, 163, fig. 25-26; 2014, 170; 2015, 234; Auriemma & Degrassi 2015, 459).
[174] De Venuto *et al*., 2015, 48, fig. 14.4.
[175] Rare risultano le anfore brindisine con *tituli picti* rispetto a quelle con bolli apposti sulle anse. Per le prime si vedano: Volpe 1995a, 237; Manacorda & Pallecchi 2012, 400, 529, 534 (per le attestazioni casi di *C.HE* su un'anfora rinvenuta a Iesso nella Terraconense; *C.MA* e *QL* letti sui contenitori recuperati nell'ipogeo delle anfore di Arpi; e i *tria nomina* che si riferiscono a date consolari su anfore attribuite alla produzione brindisina e provenienti da Masada). Un *titulus pictus* simile è attestato su un'anfora "greco-italica" (Manacorda 1986, 585, nota 24, fig. 2). Colgo l'occasione per ringraziare Daniele Manacorda e Paola Palazzo per la consulenza fornitami per la classificazione del frammento in questione.
[176] Empereur & Hesnard 1987, 35-36, tav. 9. Tra queste produzioni si possono annoverare, per similitudini morfologiche, anche le anfore ovoidali di produzione tirrenica (Bruno 2005, 369), tra cui quelle bollate *P. Veveius Papus* (noto produttore anche di Dressel 1 e di Dressel 2-4) e quelle di *M. Tuccius Galeo*, di probabile origine 'campana' (considerata anche l'assenza dei bolli *Galeo* nei siti adriatici o pugliesi: Scardozzi 2007, 68).
[177] Finkielsztejn 2000b, 141-142; Wolff 2004, 454.
[178] Botte 2012, 576-596, figg. 4-5; Pascual Berlanga & Ribera i Lacomba 2014, 461. Alcune produzioni lilibetane, destinate a contenere olio d'oliva, imitano produzioni tunisine (tipo AC8/T. 7.6.2.1.) anche se la morfologia dell'orlo è a collarino e non a fascia (Bechtold 2015b, 78, 82, fig. 28.10).
[179] Bernal-Casasola 2015, 73, fig. 7-C1-3.
[180] La morfologia dell'orlo rimanderebbe anche alla forma Mau XL e ai tipi affini a questa forma, che si inseriscono nelle produzioni tardo-puniche della Tunisia e della Tripolitania, destinate probabilmente al trasporto del vino e datate tra il I e il II sec. d.C. con esemplari residui nelle stratigrafie di III sec. d.C. a Scoppieto, Terni (Rizzo 2014, 267-268, fig. 28).
[181] In Puglia i dati editi citano generiche anfore "tardo-puniche", classificazione che non aiuta a meglio comprendre le produzioni e le forme specifiche. Per le attestazioni di questi contenitori si rimanda a Disantarosa 2012a, 133, nota 196 con ulteriore bibliografia. A Torre Santa Sabina è attestata un'anfora punica *Ramon Torres type* 7.6.2.1, anch'essa attribuita a produzioni non solo nord-africane ma anche della Sicilia occidentale, datata tra la fine del II e la metà del I sec. a.C. (Auriemma 2015, 236, fig. 10).
[182] Castiglione & Oggiano 2011, 224.
[183] Si veda: Volpe 1982-1983, 25-26, tav. II.1; 1990, 231-232, fig. 288.2.
[184] Greco 1979, 16-17, fig. 10.
[185] Botte 2012, 593-599, fig. 7; Pascual Berlanga & Ribera i Lacomba 2014, 461-465, fig. 1-3; Silberstein *et al*., 2017, 38, pl. 35.9, cat. 819. Si aggiunga inoltre un esemplare segnalato nel carico del relitto profondo *Allistro 1* posizionato al largo della costa est della Corsica (Cibecchini & Fontaine 2016, 104, fig. 87).
[186] Rizzo 2014, 125-126. Per la prima fase produttiva di quest'anfora si veda Iavarone 2012-2013.

che possa essere escluso il territorio cosentino[187]. Numerose anse bifide, insieme a poche pareti, hanno costituito la varietà tipologica e produttiva presente nei siti che gravitano attorno alla via Appia, come nel caso di UT 509 Masseria Mastrocaccia (Fig. 42.1475), UT 813 Masseria Leblé (No.1487) e UT 229 villa di San Felice No.1478 e più a nord presso Site 703 Lamiecelle (Fig. 42.1476, 1484). Questa forma appare più diradata verso il comparto centro-meridionale del campione, nei siti lucani UT 335 Masseria Ribelli (Fig. 42.1477), UT 372 (Fig. 42.1479) e UT 303 Villa Bianca. Le indagini stratigrafiche di Vagnari e quelle effettuate a Botromagno[188], oltre alle ricognizioni presso il sito di Santo Staso[189] supportano questo orientamento relativo ad una discreta presenza di anfore Dressel 2-4, fenomeno che è comune a diversi insediamenti pugliesi[190] e della Basilicata[191] abitati tra il I sec. a.C. e il I sec. d.C.

Nel UT 223 San Felice sono attestati due orli di anfore le cui forme restano **non identificate** (Fig. 44.1795-1796), attribuili in maniera del tutto ipotetica e sulla base delle caratteristiche macroscopiche degli impasti alla **produzione egeo-orientale**. Il probabile accostamento ad esemplari attestati in contesti pompeiani che si datano al I sec. d.C. potrebbero costituire al momento un riferimento per ingabbiare il dato cronologico ma non per risolvere quello dell'identificazione con una specifica produzione[192].

La percentuale bassa dello 0,81%, in riferimento alla produzione betica (Graf. 6) si giustifica in rapporto al fatto che nel campione ricognito è stato documentato, presso UT 229 (Villa di San Felice), un unico esemplare di **Dressel 28**[193], databile a partire dall'età augustea fino alla prima metà del II sec. d.C. Di queste anfore a fondo piatto, caratterizzate dalle dimensioni ridotte, utilizzate probabilmente per il trasporto vinario o per prodotti compatibili con la pece[194], si conoscono anche i prodotti di "imitazione" riferibili alla *Tarraconensis*, alla *Lusitania*[195], in siti tirrenici[196] o altoadriatici[197]. L'orlo rinvenuto (Fig. 43.1657) si caratterizza per una modanatura più accentuata rispetto a quello che proviene dalle ricognizioni effettuate sul sito di Vagnari, prima che venisse avviata l'indagine stratigrafica[198].

Periodo romano imperiale

Non rilevante è anche la percentuale di contenitori iscrivibili nella produzione gallica del I sec. d.C., corrispondente al 0,20% nella ripartizione delle produzioni per serie cronologiche (Graf. 7) e rappresentata da una probabile **Gallica 11**[199]. L'orlo (Fig. 43.1656) è stato documentato in Basilicata presso la Masseria Bollettieri (UT 145-9), in un'area prossima al Bradano ma trova confronti solo con esemplari prodotti nell'*atelier* di Mandelieu[200] e al momento, se l'area produttiva fosse confermata, sembra essere un *unicum* in questo comprensorio e in quello regionale.

In questo stesso periodo però si assiste, per i siti del campione ricognito, ad una significativa distribuzione di anfore italiche e nord-africane le prime nella fase primo-imperiale e le seconde in quella tardo-imperiale mentre i prodotti orientali risultano essere molto rari (Graf. 7). Questo fenomeno, che assume caratteristiche specifiche se rapportato ai flussi di distribuzione e consumo di merci provenienti dall'area egeo-orientale in tutto l'arco adriatico[201], è stato interpretato in rapporto allo sviluppo di economie locali orientate alla coltivazione di prodotti agricoli diversificati e supportate dall'allevamento e dalla realizzazione di manufatti ceramici[202], così come avviene nello specifico per la villa di San Felice dove i dati della cultura materiale testimoniano lo svolgimento di attività legate alla produzione del vino e dell'olio[203]. La connessione della presenza di contenitori da trasporto importati, e delle relative derrate in esse contenute, deve essere messa in rapporto con il fenomeno della cessione delle vecchie produzioni di anfore adriatiche, che avevano caratterizzato la distribuzione e i consumi dei due secoli precedenti, a vantaggio di una serie di prodotti provenienti principalmente dal Nord Africa, il cui potere distributivo in questo caso riesce ad imporsi anche oltre la linea della

[187] Auriemma & Degrassi 2015, 174-175; Dallo studio archeometrico (microscopia ottica polarizzata e analizzati mediante spettroscopia *XRF*, *XRPD* e *Raman*) di 11 campioni di ceramica comune e di anfore Dressel 2-4 rinvenuti a Cariati in Calabria è stato possibile dimostrare che le miscele di argilla e sabbia locali necessarie per la produzione di questi manufatti erano le stesse (Miriello *et al*., 2015).

[188] Disantarosa 2011, 389-390; Cotton 1992, 199, fig. 86.1545.

[189] Iannetti 2012, 147 (scheda 120), tav. XXXI.

[190] In Puglia settentrionale (Volpe 1990, 154, 160,173, 201; De Stefano 2008, 115; De Venuto *et al*., 2015, 49, fig. 14.8-9 ; De Mitri & Loprieno 2018, 293, fig. 5.6), centrale (Carrieri 1991; 1995; Casavola 2002, 63, fig. 3.1, 11-12; Fioriello 1999, 20, fig. 20 a-c; Mangiatordi 2011, 206; 240; Nuovo 2014, 387; Piepoli 2016a, 354, nota 40; Volpe 1995b, 21) e meridionale (Aprosio 2008, 317-321, 323, 325-326, 328, 330-332, 335-337, 339-342, 346-349; Arthur 1992, 202; Marinazzo 1994, 148; Auriemma 2004b, 80, 86, 115, 118, 135, 138, 141, 143, 161-162; Cera 2015, 136; Colangelo & Stigliano 2009, 151, fig. 2; De Mitri 2010, 33, 37, 53, 102, Marinazzo 1994, 148; Auriemma 2012, 549; Polito 2012, 182, fig. 3.7, tav. II.35; Antonazzo 2014, 193; Auriemma 2014, 170; Palazzo 2015, 99; Auriemma & Degrassi 2015, 456, 458; Polito 2015, 228; Gramegna & Pignataro 2016, 196, fig. 7a; Mastrocinque 2017, 231, fig. 8a, esemplare di produzione orientale).

[191] Gualtieri & Fracchia 2001, 135, fig. 108 (sito n. 42, contrada Viale/ Castel Ruggiero) esemplare attributo all'area campana (per le produzioni tirreniche si veda Iavarone & Olcese 2013); Metaponto (Lapadula 2011, 1148, tab. 33.1); Masseria San Biagio (Lapadula 2012, 148, 151-152), *Grumentum* (Bottini 1997, 258; Di Giuseppe & Ricci 2009, 161).

[192] Le anfore del contesto della *Regio VII* di Pompei sono state anch'esse classificate come di produzione egea e non identificate dal punto di vista della forma: Pascual Berlanga *et al*., 2007, 513, fig. 8.2019-19 (per la Fig. 44.1796; mentre per la Fig. 44.1795 l'accostamento con la fig. 8.2014=2015-1 è solo parziale).

[193] Panella 2001, 200-201; García Vargas & Bernal Casasola 2008, 668, 674-675, 677; Rizzo 2014, 207-209.

[194] Impeciati sono gli esemplari del carico del relitto *Port Vendres II* (Colls *et al*., 1977, 43-47) e del relitto *de la Rabiou* (Joncheray, A. & J.-P. 2009, 88).

[195] Rizzo 2014, 207-209, note 675-676.

[196] Menchelli & Picchi 2016.

[197] Per queste anfore a fondo piatto è stata supposta una produzione a Loron, in Istria (Sedlmayer *et al*., 2017, 133 con bibliografia specifica).

[198] Disantarosa 2011, 6.

[199] Laubenheimer 1989, 131-132.

[200] Laubenheimer 1989, 131, fig, 11.2 con bibliografia specifica.

[201] Auriemma *et al.* 2012; 274-281; Auriemma *et al*., 2015, 153-154. Flusso che investe anche i territori africani (Bonifay 2013, 531-540).

[202] Fioriello 2008; Conte 2010, 459-462; Di Giuseppe 2010; Conte 2012; Mangiatordi 2012; Fioriello 2012, 98-100; Polito 2012; Fioriello & Mangiatordi 2019, 153-164.

[203] Gli ambienti indagati nel 2011 risultanvano ancora ibridi dal punto di vista dell'interpretazione (McCallum & vanderLeest 2012, 377). Importante è sicuramente il rinvenimento di due pesi di pietra (McCallum & vanderLeest 2014, 130-132); il rinvenimento di bacini ricollegabili alla produzione del vino o dell'olio (McCallum *et al*., 2014, 399, fig. 1). Scavi effettuati, tra il 2012 e il 2017, nel *vicus* di Vagnari hanno evidenziato strutture interpretate come ambienti per ricovero dei lavoratori, per lo stoccaggio dei prodotti (*cella vinaria*, *dolia defossa*) o per la produzione di oggetti in metallo; i reperti sono inquadrabili tra l'età ellenistica e il IV sec. d.C. (Carroll 2013, 382-383; Carroll & Prowse 2014, 353; 2016, 333, fig. 1; Prowse & Carroll 2015, 324-325; 2017, 330-331; 2018, 333-334).

costa fino a raggiungere i siti dell'entroterra. È il caso, per esempio, del *vicus* di Vagnari insieme a quello, nella valle del Basentello, di Santa Teresa (UT 906), dove si registra la più antica testimonianza, databile a partire dagli inzi del I fino alla metà del II sec. d.C., della circolazione di queste anfore importate dalle regioni dell'Africa settentrionale. Si tratta di una porzione di ansa bifida (Fig. 43.1660) identificabile con la forma **Schöne-Mau XXXV**[204], un contenitore dalle dimensioni ridotte rispetto ai modelli di imitazione e destinato a contenere vino[205]. La distribuzione appare con indici quantitativi scarsi non solo nel sito in questione ma anche nel restante territorio regionale, che coinvolge in prima istanza alcuni siti portuali, come nel caso di Bari[206], Brindisi[207] ed una serie di insediamenti dell'entroterra che risultano ad essi collegati, come il sito presso Masseria Lapistrà nel Salento[208] e, nella porzione settentrionale della Puglia, a Canosa[209].

Nel UT 223 San Felice appare anche un puntale (Fig. 43.1661) attribuibile ad un esemplare di **Ostia XXIII**[210], un'anfora prodotta tra la fine del I e la seconda metà del II sec. d.C. nei territori africani e legata al consumo dell'olio[211], caratterizzata da una capacità di c. 40 litri[212]. Il contenuto era prodotto molto probabilmente nella valle della Méjerda nella Tunisia, che a sua volta risultava collegata con importanti siti come *Vaga* e *Bulla Regia* prima che raggiungesse la città di *Tauraca* o *Thabraca*, principale porto di imbarco[213], per le vie del mercato e del consumo. Nel UT 223 San Felice e in generale nel campione ricognito questo contenitore risulta comunque attestato con una percentuale molto bassa, pari all'1,01% (Graf. 4), confermando i valori medi sia della distribuzione di questi contenitori nel Mediterraneo[214] sia del numero di esemplari presenti nei carichi dei relitti[215]. In questi calcoli va comunque tenuto in considerazione il fenomeno delle errate attribuzioni di quest'anfora con il tipo Ostia LIX[216], destinato al trasporto di olive[217], a causa delle affinità morfologiche tra i due contenitori e quindi una stima precisa della distribuzione resta al momento difficile. Anche per il territorio regionale il dato sembra attestarsi su livelli di minime distribuzioni che coinvolgono sia gli insediamenti del comprensorio settentrionale della Puglia, in particolar modo il sito di Casalini di Sopra a Cerignola, nella Valle dell'Ofanto[218], sia il contesto urbano della Corte dell'Abate Elia di Bari[219], sia di quello meridionale con l'esemplare proveniente da un contesto subacqueo presso Lido Marini a Salve[220].

A quale derrata fosse destinata la **Tripolitana II**[221], che rappresenta la più antica attestazione di quei contenitori che si ispirano dal punto di vista della morfologia alle anfore puniche, è al centro di dibattiti da parte degli studiosi che indicano principalmente il pesce sottosale[222]. Il frammento di ansa (Fig, 43.1662) rinvenuto presso UT 813 Masseria Leblè è stato attribuito a questa famiglia di contenitori per le caratteristiche macroscopiche dell'impasto e per la particolare forma del profilo anche se la scarsa percentuale di conservazione non consente un'attribuzione più precisa ai tipi prodotti nel III sec. d.C. o a quelli di IV sec. d.C[223]. A questo ampio arco cronologico possono essere iscritte anche le anse di **anfore a fondo piatto** rinvenute presso UT 124 località Visciglia in Basilicata (Fig. 42.1488, 1492) e UT 229 villa di San Felice (Fig. 42. 1495). Difficile, anche in questo caso, è ipotizzare attribuzioni specifiche a forme e produzioni note; affinità possono essere stabilite con quelle dell'area adriatica, a partire dai prodotti realizzati nei centri dislocati nell'*ager Tergestinus*[224], a Loron[225], a Crikvenika in Croazia, inquadrabili attorno alla metà del I sec. d.C., o con quelle più meridionali, attive tra il I e il II sec. d.C., nella *Liburnia*, senza che però possano essere esclusi i prodotti dell'*Aemilia*, presso *Forum Popili* e Santarcangelo[226] e quelli realizzati a Felline nel leccese[227].

A queste produzioni sarebbero anche da assegnare le porzioni di anse (Fig. 42.1500-1501) classificate come **non identificate** di **produzione "italica"**, rinvenuti a UT 229 Villa di San Felice e presso UT 372 l'Azienda Pilota Asciutta, siti nei quali è stato possibile anche documentare ulteriori frammenti di anse morfologicamente simili (Fig. 43.1516, 1518), ma con dimensioni ridotte, attribuibili ugualmente a contenitori a

[204] Bonifay 2015, 29-30; Capelli & Bonifay 2016, 550 (per gli *ateliers* di produzione), 475; Bonifay 2016a, 605, 607, fig. 8.41; Rizzo 2014, 289-290. Si rimanda anche al contesto funerario di *Leptis Magna* (Cifani *et al.*, 2008, 2304-2307, fig. 12d).

[205] Bonifay 2007, 14, 20, fig. 8 (esemplari impeciati); Duperron & Capelli 2015, 168-170. La sua capacità è stata stimata pari a 10,99 litri (Rizzo 2003, 153, nota 55).

[206] Disantarosa 2015b, 186, figg. 8.6, 9. Similitudini con i fenomini distributivi che coinvolgono il porto di Scauri a Pantelleria (Baldassari 2009, 347, fig. 1).

[207] Aprosio 2008, UT 16,1; 16,2; 100,8; 314.

[208] Viene indicata come «Dressel 2-4 di produzione africana» (De Mitri 2009b, 20).

[209] Cassano *et al.*, 1985, 508.

[210] Bonifay 2015, 101, fig. 53 (*Amphore Type 14*); Bonifay 2016b, 512, fig. 124; Panella 2001, 209; Rizzo 2014, 281-282; Bonifay *et al.*, 2015, 190, 192-193.

[211] Per il contenuto di olio per le Ostia XXIII si vedano: Bonifay 2007, fig. 8; Contino 2013, p. 327, nota 10; Bonifay *et al.*, 2015, 200; Duperron & Capelli 2015, 170-171.

[212] Rizzo 2003, 182, nota 136.

[213] Bonifay *et al.*, 2015, 200.

[214] Per la distribuzione si veda: Contino 2013, 320-321. Attestata anche sull'isola di Malta (Bruno 2004, 145) e presso Quinta do Lago a Loulé in Portogallo (Arruda 2019, 102).

[215] Nel relitto *Camarina A*, nell presunto relitto di *Capo Graziano M*, quello di *Capo Plaia* e di *Ognina* (Auriemma 1997, 145-148 con bibliografia specifica). I 21 esemplari attribuiti alla forma Ostia LIX, rinvenuti nel carico del relitto *Grado 1* (Auriemma 1997, 134-135), a causa delle incrostazioni, sono stati classificati come Ostia LIX/XXIII (Auriemma 2000, 37-38). Per questo tipo di contenitori si è parlato del fenomeno della «*diffusion sans épave*» proprio per aver riscontrato rare presenze, dal punto di vista quantitativo, nei siti sommersi; questo dato è stato collegato anche al possibile commercio complementare della ceramica, dei marmi, dei cereali o di altre merci (Bonifay & Tchernia 2012, 326-327).

[216] Contino 2013, 318-320; Rizzo 2014, 279-281.

[217] Bonifay *et al.*, 2015, 193-195, 197-200; si veda anche la discussione sugli esemplari rinvenuti ad Arles (Djaoui *et al.*, 2015).

[218] Disantarosa 2003-2005, 247-248, fig. 86. Per il sito si rimanda a Goffredo 2011, 211, 303-305 (CER32-UT 158).

[219] Disantarosa 2015b, 187, figg. 8.7; 10.3-4; Disantarosa 2015a, 239-240.

[220] Auriemma 2004b, 98, SRI 245b.

[221] Bonifay 2015, 89, 92, figg. 47-48; Bonifay 2016b, 509, fig. 124. Per i tipi di impasto si veda Bonifay *et al.*, 2013, 120-121, fig. 30d-f.

[222] Bonifay 2007, 83, fig. 8; Bonifay 2016a, 597, fig. 2.

[223] Nel V sec. d.C. appaiono come residui nelle stratigrafie ostiensi (Rizzo 2014, 270-271).

[224] Žerjal 2011, 141-142, pl. 1.9-13.

[225] Maggi & Marion 2011, 178-180, figg. 4-5.

[226] Diverse sono le fornaci che producono anfore a fondo piatto in area romagnola (Forlimpopoli, Santarcangelo, Sant'Ermete, Rimini e Riccione). Una produzione di anfore a fondo piatto molto vicine alle tipologie romagnole è stata individuata nel 2006 a Crikvenica, a Sud di Fiume (Lipovac Vrkljan 2009; Lipovac Vrkljan 2011; Romanović 2017, 391-403). Per una sintesi sulla geografia delle produzioni e la tipologia delle anfore a fondo piatto si veda Rizzo 2014, 126-130, fig. 6 con bibliografia specifica.

[227] Manacorda 1994, 46-47, fig. 23.

fondo piatto, molto probabilmente di produzione locale, e già noti sia tra gli esemplari raccolti in superficie sia tra quelli documentati negli strati del sito di Vagnari[228].

Il mercato distributivo, tra i decenni finali del I e la metà/ terzo quarto del III sec. d.C., di questi contenitori vinari a fondo piatto coinvolge in maniera rilevante proprio l'Adriatico[229] così come testimonierebbe del resto il dato quantitativo del carico del relitto dell'isola di Ilovik[230] o gli esemplari recuperati nel porto di Zanton vicino Zadar[231]. In Puglia è stato segnalato soprattutto in corrispondenza di diversi approdi: Torre Pietra a Margherita di Savoia, dove è presente un relitto[232], più a sud presso Salsello a Bisceglie[233], a Bari segnalate in seguito alle ricerche di *survey* archeologico subacqueo presso il Lungomare Imperatore Augusto[234] e nell'immediato entroterra a Ceglie del Campo[235]. Non mancano attestazioni nel Salento: dalla *villa* di Giancola a Brindisi[236], a S. Foca, Punta Penne, Acque Chiare, Torre S. Sabina e Torre S. Stefano, fino all'arco ionico con gli scali portuali di Porto Saturo e Taranto[237] e nel contesto urbano di Villa Peripato[238]. I tipi attestati nei siti della valle del Basentello trovano confronti puntuali con gli esemplari documentati presso l'area del vescovado a Brindisi[239].

In età primo-imperiale si assiste ad una prima ricezione di prodotti egeo-orientali come per esempio il vino cretese[240]. Ancora una volta UT 223 San Felice costituisce un testimone dell'attivismo della distribuzione di queste merci che raggiungono mercati dell'entroterra anche se con indici irrisori[241]. Il frammento di puntale (Fig. 44.1774) ivi raccolto potrebbe essere identificato all'interno di un gruppo di anfore classificate come "antico-romano-cretese" e in particolare con la forma **ACR 3**[242]. Solo i contesti di Brindisi[243] fungono da riferimento per comprendere il grado di diffusione di questi contenitori in ambito regionale pugliese[244], che sembra non raggiungere mai quantità elevate.

A queste produzioni si affianca, a partire dall'età augustea e da quella flavia e con ipotetiche circolazioni che raggiungono anche la prima metà del III sec. d.C., il contenitore anch'esso vinario **Kingsholm 117**[245]; in particolar modo per il puntale (Fig. 44.1775), attestato sempre nel UT 223 San Felice, sarebbe da utilizzare in questo caso la dicitura ***similis*** proprio per le numerose varianti produttive con cui si caratterizza quest'anfora, di difficile distinzione tipologica soprattutto per le conformazioni dell'orlo e del puntale che in alcuni esemplari appare perfino distino da un elemento "a bottone"[246]. Il tipo più vicino sarebbe l'esemplare rinvenuto nel relitto *Grebeni*, presso l'isola di Silba vincino a Zadar in Croazia, databile appunto alla prima età flavia[247]. I probabili porti di riferimento per una diffusione di quest'anfora, anche per i siti dell'entroterra, potrebbero al momento essere individuati lungo il versante adriatico della Puglia. Lungo queste sponde sono infatti attestati i rinvenimenti di quest'anfora "levantina", come per esempio a Brindisi[248] e presso il *portus* esistente in corrispondenza della foce della lama San Giorgio[249], a sud-est di Bari. La probabile presenza a Vagnari di un frammento di spalla con l'attaco di ansa attribuibile a questa forma[250] non è data per certa in quanto proprio queste porzioni si presentano ibride e riferibili contemporaneamente sia alle *carrot* sia alle *Gazan amphorae*.

A partire dalla seconda metà del II sec. d.C. i flussi commerciali relativi alla valle del Basentello che attingono al comprensorio egeo-microasiatico appaiono variegati e arricchiti da ulteriori collegamenti commerciali in particolar modo con centri produttivi tradizionalmente legati alla viticoltura, come *Erythrai*, di fronte all'isola di Chio[251], o come la stessa Chio, Samo, Clazomene ed anche *Kyme* e Cos, dove è stata anche documentata una produzione di olio e di prodotti alimentari ricavati dalla trasformazione del pescato e *Phygela* cioè Yilanci Burun presso Kuşadası[252]. Le derrate prodotte vengono travasate nell'anfora **Dressel 24/ Knossos 15**[253] che, nel contesto in questione, risulta essere presente presso il fiume Bradano nell'UT 145-9, con un puntale tronco-conico inferiormente caratterizzato dalla tipica espansione (Fig. 44.1776). La sola porzione inferiore di quest'anfora non consente però di risolvere il problema di una attribuzione certa a questa forma considerate le affinità morfologiche tra Knossos 15 e la 18, *Berenice* MR18/ Zeest 90[254] o con la Dressel 24 *similis*[255]. Il frammento rinvenuto nella porzione meridionale

[228] Disantarosa 2011, 391.
[229] Auriemma 2006, 173; Auriemma *et al.,* 2008, 175, fig. 98; Maggi 2007, 128-129; Auriemma *et al.,* 2012, 270-271; Auriemma *et al.,* 2016, 384, fig. 6. Da segnalare il recupero isolato di anfore con anse a nastro scanalate (cfr. tipo Ostia II, 521 e Ostia III, 36) nel nuovo porto di Le Castella nei pressi di Crotone (Medaglia 2010, 331).
[230] Jurišić 2000, 20-21, 65, map 29; 2006, 186-127, fig. 26.
[231] Per il sito citato e per un quadro sulla diffusione di questa anfora in area adriatica si veda Romanović & Gluščević 2014, 154-155, kar. 1.
[232] Volpe 1988b, 161; 1989, 63, 72, figg. 15, 22; 1991, 109, 113, fig. 11; 1992, 212, fig. 4; Disantarosa 2010b, 127, tav. 16.2-3.
[233] Volpe 1992, 208.
[234] Nuzzo & Disantarosa 2019, 133, 135.
[235] Disantarosa 2010b, 127, tav. 16.1.
[236] Cocchiaro *et al.,* 2005, 421.
[237] Auriemma 2004b, 29, 71, 94, 107, 164, SR 25, SRI 108, 230, 304.
[238] Biffino & Gaetani 2006, 490, fig. 5.
[239] Per il *tipo 3* (Fig. 42.1495) si veda l'esemplare documentato in D'Andria 2012, 147, fig. 24.2.
[240] Rizzo 2014, 324-325 con bibliografia specifica; Martín-Arroyo *et al.,* 2017.
[241] Attestate con l'1,18% all'interno del raggruppamento per forme afferenti alla produzione egeo-orientale (Graf. 5).
[242] Portale & Romeo 2001, 274-275; Casaramona *et al.,* 2010, 116, fig. 5 (tipi I-III); Portale 2011, 129.
[243] Auriemma & Quiri 2004, 45-46; 2006, 228, fig. 7; Auriemma *et al.,* 2015, 147.
[244] Per un quadro della circolazione di queste produzioni in Puglia e in altri siti dell'Adriatico si veda Quiri 2011, 113-114; Auriemma *et al.,* 2012, 275-276.
[245] Timby 1985, fig. 28.117; van den Berg 2012, 222, 231-232, fig. 6-7, 12.G-I; Rizzo 2014, 343-344. Per il contenuto si rimanda a Reynolds 2005, 571; 2010, 73.
[246] Reynolds 2010, 80. L'orientamento di questa classificazione (tipo «*poorly defined*») è mantenuto anche nel caso del contesto della *Porticus Aemilia* a Roma (Contino & D'Alessandro 2014, 324).
[247] Gluščević 2009, 78-79, fig. 13.
[248] Auriemma *et al.,* 2015, 150.
[249] Disantarosa 2018b, 272, fig. 3.3.
[250] Classificato inizialmente come "non identificato" all'interno della produzione egeo-orientale in Disantrosa 2011, 399, fig. 5.19 (P2559).
[251] Alcuni tipi, indicati come *Cup-shaped rim/ Dressel 24 predecessor*, sono realizzati a *Erythrai*, ad Efeso e nella valle del Menandro (Bezeczky 2013, 72-75).
[252] L'ipotesi di produzione in area pontica, avanzata nella storia degli studi di quest'anfora (Rizzo 2014, 319-321), può dirsi superata rispetto al riconoscimento dei centri in area egeo-orientale; importanti a tal proposito sono anche i relitti, con carico di Dressel 24, di *Portolafia* e *Tourkolimano*, nel Golfo di Eubea in Grecia (Vidličková 2015, 23-26, figg. 2-3). Nella prima sintesi dei risultati della classificazione del gruppo di frammenti provenienti dalla raccolta in superficie nella valle del Basentello il frammento in questione è stato infatti attribuito a quell'area produttiva (Disantarosa 2014, 158, fig. 4.3).
[253] Hayes 1983, 147, fig. 22, A.46; Rizzo 2014, 318-322.
[254] Hayes 1983, 149, fig. 22, A49-50; Vnukov 2004, 411-412.
[255] Opaiţ 2007.

del campione ricognito trova confronti con i tipi attestati a Trieste e nel *Capitolium* di Brescia[256], inquadrabili tra la metà del II e i decenni centrali del III sec. d.C. o con altri esemplari distribuiti lungo le coste tirreniche, in area cisalpina oltre che in quelle adriatiche[257]. In Puglia questo contenitore è attestato a Brindisi[258] e Otranto[259] lungo una direttiva litoranea che costituisce una prima testimonianza delle rotte marittime per la distribuzione dei prodotti oleari[260] o, probabilmente, in fase di reimpiego, per le conserve di pesce o per un *garum* a base di ostriche[261].

Per tutto il III sec. d.C. non viene interrotto il canale commerciale con i prodotti nord-africani: un timido segnale in questa direzione viene fornito dalla presenza della **Africana II B "pseudo tripolitana"**[262] attestata a UT 223 San Felice e identificata attraverso la porzione del tipico orlo ad "S" (Fig. 43.1673) ma anche da esemplari documentati nelle stratigrafie degli scavi di Otranto[263] e presso Lecce[264]. Risulta ancora difficile stabilire se si tratta di un contenitore destinato al trasporto dell'olio o del vino, così come non sono escluse altre derrate[265]. Di questa particolare anfora, attestata nel relitto di Pakoštane in Croazia[266], tra l'altro non si conoscono ancora bene gli *ateliers* produttivi, forse ubicati in Tunisia centrale.

Ad implementare questi flussi, compaiono in maniera molto più consistente le olearie **Tripolitane III**[267] che sono infatti rappresentate dall'11,11% all'interno della produzione "africana" (Graf. 4), un dato che è risultato essere supportato dal medio-alto valore del 3,05% nelle produzioni in rapporto al periodo cronologico del *Roman Imperial Middle/ Later* (Graf. 7). La maggior parte dei frammenti attribuita a quest'anfora è costituita da pareti[268] la cui distribuzione risulta maggiormente diffusa per i siti ubicati nella porzione meridionale, tutti a sud-ovest del fiume Basentello e in territorio lucano come per esempio presso la località Visciglio UT 124 e Masseria Bollettieri, UT 145-9 nota anche come La Vaccarecchia. Minore è la presenza nel comparto centrale e settentrionale: per il primo risultano di riferimento UT 303 Villa Bianca (No.1670), ancora in Basilicata e in un areale al confine tra le due regioni mentre per il secondo, in Puglia, la documentazione riguarda UT 905 Masseria Santa Teresa (No.1672) e UT 509 nota come Mastrocaccia (No.1664). Da quest'ultimo sito e da UT 229 villa di San Felice invece provengono, oltre a frammenti di parete, anche un'ansa (Fig. 43.1664) e un orlo che forniscono ulteriori elementi per circoscrivere tra la fine del III e i decenni centrali del IV sec. d.C. la circolazione di queste anfore. Anche se l'orlo (Fig. 43.1663), in particolar modo, risulta essere stato modellato con una esemplificazione della modanatura – rispetto ad altri tipi noti e per questo iscrivibile all'interno dell'ultimo stadio evolutivo delle anfore tripolitane a "doppio gradino" – non è possibile proporre confronti maggiormente puntuali. Le caratteristiche macroscopiche degli impasti invece, caratterizzati da bicromia, rimanderebbero probabilmente alle regioni produttive di Tripoli e di *Leptis Magna* rispetto a quelle del territorio tunisino[269].

La presenza delle Tripolitane in questi siti della valle del Basentello è collegabile al fenomeno distributivo e del consumo dell'olio[270] o delle salse di pesce[271] importati e che coinvolgeva diversi centri del territorio regionale pugliese e lucano[272] durante il III e il IV sec. d.C., a sua volta collegati ad una rete commerciale articolata che inglobava rotte che toccavano mercati del Mediterraneo occidentale[273].

L'unico frammento di ansa attribuito al piccolo contenitore noto come **Agorà M254/ *MR*1 b**[274] proviene da UT 372 Azienda Pilota Asciutta. Questa porzione presenta le caratteristiche scanalature longitudinali (Fig. 42.1496) che rimanderebbero appunto alla produzione delle cosiddette "anfore con le anse a fiorellino" proprio per la tipica conformazione della sezione che sintetizzerebbe l'elemento floreale. Considerata l'esiguità della percentuale di conservazione del frammento in questione gli accostamenti potrebbero essere sia con il tipo Ostia VI 71 sia con il tipo Ostia I 453, quest'ultimo ricorrente nei livelli delle Terme che sono datati tra l'età domizianea e quella antonina. Non si escludono comunque le varianti tarde, attestate nei livelli di III-IV/V sec. d.C., vicine ai tipi Ostia II 522/ Ostia III 464[275] mentre l'unico confronto possibile per questo frammento in ambito regionale pugliese è con un esemplare, ugualmente conservatosi solo in corrispondenza delle prese laterali, recuperato da un contesto subacqueo del litorale tarantino, ipoteticamente attribuito al comprensorio costiero di Taranto[276]; per la Basilicata invece, i confronti

[256] Auriemma 2007, 141-144, tav. 33.61 (con bibliografia per Brescia).
[257] Belotti 2008; Auriemma *et al.,* 2012, 270, 277. La circolazione di questi contenitori risulterebbe anche legata, sulla base di una iscrizione graffita, al fenomeno delle distribuzioni di derrate alimentari alle legioni (Hárshegyi & Vámos 2007, 160).
[258] D'Andria 2012, 145, fig. 18.5-6; Auriemma & Quiri 2006, 234, 236; Auriemma *et al.,* 2015, 147-148.
[259] De Mitri 2016b, 496, fig. 5.19.
[260] Manacorda 1975, 383; Belotti 2008, 456-458; Rizzo 2014, 322.
[261] Federico 2007, 261, fig. 9.98; Auriemma *et al.,* 2015, 148; Auriemma *et al.,* 2016, 392-393, fig. 10 (esemplare con *titulus pictus LIQVAMEN MATTVM*).
[262] Bonifay 2015, 114, fig. 59. Per gli *ateliers* (Sousse/ *Hadrumetum* e *Pupput*) si veda Capelli & Bonifay 2016, 546.
[263] Arthur 1992, 203, fig. 7.1 (807).
[264] Il contesto è quello di Palazzo Vernazza (Polito 2012, 181, fig.3.9, tav. II. 37).
[265] L'ipotesi più accreditata è quella di un contenuto di olio (Bonifay 2016a, 596, fig. 2).
[266] Boetto *et al.,* 2012, 111, 128-129 (insieme alla Tripolitana II).
[267] Bonifay 2015, 105, 107, fig. 55a.1-3; 2016b, 512, fig. 124.
[268] Attribuzioni generiche alle forme I-III di questa produzione di contenitori, in riferimento soprattutto alla presenza di frammenti riferiti a fondi e a pareti, è stata avanzata nella classificazione dei reperti documentati nelle stratigrafie delle Terme del Nuotatore ad Ostia (Rizzo 2014, 286-288).
[269] Capelli & Bonifay 2014, 240-241; Bonifay 2015, 105-107, 471, fig. 55a (in part. 55a.3 da Nabeul, per il confronto con l'orlo attestato nel contesto in esame).
[270] Bonifay 2016a, 600, fig. 2.
[271] Drine & Jerray 2014, 110-113, fig. 12; Leitch 2014, 120-123; Nervi 2014b, 205, 208-209, figg. 20-21; Bonifay 2018, 332.
[272] Tripolitane I-III risultano attestate a Margherita di Savoia (Volpe 1988b, 162; 1989, 73); *Salapia* (De Venuto *et al.,* 2015, 60, fig. 15.5-6); Ordona (Annese 2000, 295); Bari (Disantarosa 2015a, 240; 2015b, 188; 2015c, 77); territorio di Monte Sannace (Del Monte 2019, 67); Giancola (Cocchiaro *et al.,* 2005, 424); Egnazia (Fioriello 2008, 178; Disantarosa 2012b); Brindisi (D'Andria 2012, 146); territorio di Oria (Yntema 1993, 115); Otranto (De Mitri 2002, 1130; 2016b, 496, tab. 3, fig. 6.10); Badia, Cutrofiano (Melissano 1990, 272); Otranto (Auriemma 2004a, 242; De Mitri 2002, 1130; 2005, 414); Torre Chianca, Porto Cesareo (Auriemma 2004b, 13, SR 5); Lecce (Polito 2012, 181; 2015, 228); Isole Cheradi, Taranto (D'Andria & Mastronuzzi 1999, 103); Metaponto (Giardino 1991, 847, nota 49, fig. 8.4).
[273] Per l'arco adriatico si veda Auriemma *et al.,* 2012, 283-284. Per il Mediterraneo occidentale si veda Mateo Corredor 2012.
[274] Rizzo 2014, 139-143, tab. 117 (per le equivalenze tipologiche); Bonifay 2016b, 517, fig. 124.
[275] Rizzo 2014, 139-141, figg. 8.c, d2; 9.b-c.
[276] Si tratta di un esemplare, che insieme ad un piccolo gruppo di altri contenitori da trasporto, è stato rinvenuto in maniera casuale durante una serie di esercitazioni subaquee della Marina Militare; i recuperi

rimanderebbero al sito di San Biagio[277], nel territorio metapontino, dato che aggiungerebbe una tappa alla ricostruzione delle vie di distribuzione di questi prodotti. Scarsa risulta essere la circolazione di questo contenitore nei territori limitrofi al campione preso in esame rispetto ad una diffusione più nutrita riscontrata in ambito tirrenico e nel Mediterraneo occidentale, che include, in alcuni casi, anche siti ubicati nell'entroterra europeo[278]. Quest'anfora era impiegata per il trasporto del vino ed è stata classificata non senza problemi di identificazione rispetto all'aria produttiva. Le prime attribuzioni hanno preso in considerazione i territori nordafricani tanto da definirla «*petit tripolitane*»[279], in rapporto al dato dei numerosi esemplari attestati all'interno dei depositi di *Leptis Magna* o per la rappresentazione della forma di questo contenitore sul mosaico di Dougga. In una seconda fase, il rinvenimento di *ateliers* presso Giardini di Naxos e Messina e ad *Acium* presso Catania, hanno confermato anche una produzione siciliana[280]. Le anfore nassie si distinguono proprio per le tipiche scanalature che potrebbero suggerire questo territorio produttivo come originario dell'esemplare documentato nella valle del Basentello. Non si escludono però fenomeni di imitazione presso Alcamo Marina o in altri centri del Tirreno o nei territori della stessa Africa settentrionale[281].

Dall'UT 114 ubicata nella fascia ad est di Monte Irsi, in direzione della porzione meridionale del comprensorio ricognito, proviene il contenitore per *salsamenta,* noto come **Africana II C**[282]; in particolare le caratteristiche dimensionali dell'orlo (Fig. 43.1674) permettono di classificarlo come variante **C 2**, vicino morfologicamente ai tipi rinvenuti nei relitti *Pampelonne*[283], *Levanzo I*[284], con quello di Ragusa indagato nel 1974 presso *Femina Morta*[285], nel relitto profondo *Messina 1*[286] e in quello *Ratino Sud 1*[287]. In riferimento agli esemplari attestati nei contesti pugliesi potrebbe essere accostato a quelli documentati nel Cantiere 2 di Otranto[288] e ad Egnazia[289], mentre per quelli lucani si rimanda agli esemplari rinvenuti nella *chora* di Metaponto[290].

A generiche attribuzioni di Africana I o II invece potrebbe essere ricondotta anche l'ansa con bollo anepigrafe a forma di cerchio[291] rinvenuta a UT 223 San Felice (Fig. 44.1720; Pl. 30.1720), e classificata in maniera più prudente come **non identificata** all'interno dei contenitori di **produzione africana**.

L'olio, le olive, la frutta, il pesce o le salse di pesce[292] dai territori africani circolavano ed erano consumati nei siti della valle del Basentello senza che raggiungessero mai, stando ai dati archeologici analizzati, percentuali significative (Graf. 4, 7). Resta il fatto che tra la fine III e la prima metà IV sec. d.C. si assiste ad una intensificazione delle colture olearie nei territori africani, in particolare proprio durante l'età adriano-antonina con la conseguente esportazione dei prodotti direzionati principalmente verso i mercati siciliani, tirrenici e delle coste meridionali della Gallia e della Spagna piuttosto che verso i siti dell'Adriatico[293]. Dal punto di vista quantitativo risultano significativi i dati provenienti dal carico dei relitti come per esempio quello di *Grado*[294] mentre per i siti pugliesi gli indici di rinvenimento, accorpando la circolazione delle Africana I e II, risultano attestati con valori percentuali bassi. In particolare la presenza di Africana II C è confermata per un contesto urbano a Trani[295]; i restanti tipi e le variegate varianti sono distribuite in maniera diseguale presso l'area settentrionale[296], con un numero minimo di individui basso,

sono stati in seguito depositati presso l'*Antiquarium* dell'Ospedale della Marina Militare di Taranto; questo fondo, costituito da 10 reperti, è stato oggetto di classificazione e studio nell'ambito di un percorso di esercitazione promosso dalla cattedrea del *Laboratorio di Archeologia subacquea* della sede di Taranto dell'Università degli studi di Bari Aldo Modo (Corso di Laurea in Scienze dei Beni Culturali per il Turismo), confluiti in una tesi laurea triennale di Marco Primiceri in *Metodologia della ricerca archeologica* dal titolo "Archeologia dei paesaggi costieri e subacquei a Taranto. Dati inediti dal deposito dell'Ospedale Militare" (a.a. 2017-2018). Con un numero minimo di individui pari a 2 la *MRA* 1 è attestata anche nel Cantiere 2 di Otranto (De Mitri 2016b, 496, tab. 3).

277 Lapadula 2012, 150, tab. 4.7.

278 Casalini 2014, 273, figg. 2.1b; 4.1-2; Franco & Capelli 2014a, 342, fig. 2; Franco & Capelli 2014b, 548, fig. 1 (mappa delle distribuzioni in riferimento agli *ateliers* di produzione); Pozzuoli (De Filippo 2014, 340-342, figg 4.31, 35-36); ad Aquileia (Degrassi & Maggi 2011, 268, fig. 3.5); a Cagliari (Soro 2019, 278, fig. 8.7); a Grosseto (Cibecchini, & Bargagliotti 2011, 84-85, fig. 12); a Siviglia in Spagna (García Vargas 2015, 400, 404, 406, figg. 1.1, 2.5). Presente nel carico del relitto *Levanzo I* (Royal & Tusa 2012, 32-35, fig. 9; Oliveri & Zangara 2014, 1037) e nel Canale di Sicilia (Oliveri 2016, 264, cat. 529-531); nel relitto di Porticcio in Corsica (Alfonsi 2017, 33); nel relitto *Punta del Francese* a Stintino, Sassari (Galasso 1997, 130, fig. 18; Beltrame & Cipolato 2019, 29-30). Più rara in ambito adriatico con segnalazioni a Guštinja in Croazia (Bekić 2012, 586-587, tab. 6.7) e presso Capo Arat, Isola di Silba (Gluščević 2016, 200-201, cat. 11).

279 Villedieu 1984, 180; Bonifay 2015, 146, 148.

280 Bonifay *et al.,* 2013, 114-116; Franco & Capelli 2014a, 345-348, 349-352; Franco & Capelli 2014b; Bonanno 2014, 574-575. Il frammento di ansa rinvenuto nel contesto della valle del Basentello potrebbe essere confrontato anche con le produzioni siciliane a fondo piatto cd. di "Naxos *Tauromenium*" in particolare con i contenitori *Tipo Spinella*, *Tipo S. Alessio* e *similis,* dal nome del relitto di *Capo Sant'Alessio* in Sicilia (Muscolino 2005-2006; Malfitana *et al.,* 2008, 139-141, fig. 12; Rizzo 2014, 144, 146, fig. 11a, c, e). Tra i contenitori a "fondo piatto" e caratterizzati da anse "a fiorellino" ci sono anche le anfore di Campanaio nel territorio di Montallegro – Agrigento, datate al IV sec. d.C. (Rizzo 2014, 141-143, con bibliografia specifica) e quelle rinvenute nella fornace rinvenuta presso il Villaggio Perruzzo ad Agrigento (Gullì & Sanzo 2016, 244-246, figg. 8-10).

281 Non è esclusa una produzione cirenaica (Mazou & Capelli 2011) e bizacena (Bonifay 2010, 41) e tripolitana (Bonifay *et al.,* 2013, 75, cat. 1.28).

282 Bonifay 2015, 114-115, 472; Bonifay 2016b, 513, fig. 124; per il contenuto; si veda anche Bonifay 2016a, 601, fig. 2; Bonifay 2018, 335; proprio i recuperi subacquei e alcuni esemplari da Annaba/ *Hippo regius*, grazie alla presenza di etichette in piombo, hanno consentito di rendere plausibile l'ipotesi sulla destinazione d'uso riservata alle *salsamenta*.

283 Lequément 1976, 179, figg. 3.b; 5.38.

284 Royal & Tusa 2012, 35-36, fig. 10 (SI06AA-0021). Un ulteriore esemplare di C 2 è stato rinvenuto in maniera sporadica presso il Banco Skerki (Oliveri 2016, 263, cat. 522).

285 Parker 1976-1977, 625-626, Tav. CXXXIV.5 (con differenze nella fascia di attaccatura interna tra orlo e collo).

286 La Rocca & Bazzano 2018, 226, fig. 4.

287 Bonifay *et al.,* 2014, 46-49, fig.3.1-2.

288 De Mitri 2016b, 496, figg. 6.3-4.

289 Conte *et al.,* 2017, 423.

290 Lapadula 2011, 1153, 1157, 18, LRA 769-01, tab. 33.3.

291 Bonifay 2015, 18, figg. 5.7-8. Maggi 1991, 237, tav. 41. AB 14. Il cerchio anepigrafe è attestato su una Africana II A 1 rinvenuta negli strati del porto di *Neapolis* (Carsana & Del Vecchio 2010, 460, fig. 4.2).

292 Auriemma 1997, 138; 2000, 31, nota 5 con bibliografia specifica; Bonifay 2007, 13, 17-18, 21, figg. 3, 6b.1, 7-8 con riferimento alle tracce di lipidi ma anche alla presenza di pratiche di apertura, che costituiscono una traccia indiretta del contenuto di liquidi poco densi piuttosto che olio (Bonifay 2016a, 600-601, fig. 2).

293 Bonifay & Tchernia 2012, 320-322, tab. 16.1-2.

294 Auriemma 1997, 129-134, 145-149. Si vedano inoltre le attestazioni ad Aquileia (Rousse 2007, 608); presso il Timavo (Degrassi *et al.,* 2011, 242). Per alcuni contesti alto-adriatici si veda Auriemma *et al.,* 2012, 281-282.

295 Lombardi *et al.*, 2015, 250.

296 Le attestazioni sono relative ai siti di *Herdonia* (De Stefano 2008, 117), nella villa di San Giusto, Lucera (dati inediti classificati da chi scrive) e quella marittima di Agnuli a Mattinata (Casavola 1999, 264).

e in quella meridionale in maniera più consistente, con attestazioni a Brindisi, San Foca, Vaste e Otranto[297]; le rotte commerciali di questi contenitori interessavano anche il litorale ionico, così come testimonierebbero i ritrovamenti di Ugento e di Lido Marini[298].

Verso la metà del IV sec. d.C. circola anche il contenitore prodotto nella *Mauretania Caesariensis* e nella Proconsolare, destinato al vino e noto come **Dressel 30/ Keay I A**[299]. I due frammenti di ansa, rispettivamente da UT 509 Masseria Mastrocaccia (Fig. 43.1675) e dal sito di San Gerolamo (F1) un sito extra-campione nei pressi di Gravina (Fig. 43.1676), da dove proviene uno degli esemplari di tegole bollate da *Gratus Caesaris*[300], costituiscono una probabile traccia dei circuiti distributivi di quest'anfora che evidentemente erono destinati anche ai mercati dell'entroterra. Questa constatazione si basa sul fatto che queste anfore appaiono, su scala regionale già a partire dalla fine del III sec. d.C.[301], sicuramente meglio diffuse – con indici comunque mai incisivi (Graf. 4) – lungo i siti costieri[302]. La maggiore concentrazione è registrata in Salento[303], rafforzata dai rinvenimenti che provengono da contesti subacquei[304]; pochi esemplari sono registrati nei siti della Puglia centrale, presenti nei contesti urbani di Bari[305] e in quelli del suo *hinterland*[306], nel territorio di Monte Sannace[307] come anche a Vagnari[308], e, infine, presso il territorio settentrionale, a Torre Pietra, litorale di Margherita di Savoia[309] e all'interno presso *Herdonia*[310] e negli insediamenti rurali di San Giusto a Lucera[311], della valle del Celone e dell'Ofanto[312].

Restando all'interno della produzione di manufatti importati dall'Africa settentrionale si assiste, tra il IV e il V sec. d.C., ad una maggiore circolazione, pari al 5,05 % (Graf. 4) dei cosiddetti '**contenitori cilindrici di medie dimensioni**'[313], una tendenza che sarà consolidata nella successiva epoca tardoantica. Le porzioni delle pareti sono state attribuite sulla base di un calcolo ricostruttivo del valore del diametro, consentendo di assegnare una identificazione ai frammenti documentati presso le località di Visciglio UT 124 e Fontana Fico in Basilicata oltre che presso Masseria Bollettieri UT 145-9 (La Vaccarecchia), e UT 223 San Felice in Puglia. Tra questi si distingue un puntale (Fig. 43.1678) di **Africana III B-C**[314] da Recupa di Scardinale UT 213, sito posto su un pianoro a sud del diverticolo stradale dell'Appia, destinata al trasporto di svariate derrate alimentari come le salse e le conserve di pesce, le olive, l'olio senza escludere il vino[315]. La carta delle distribuzioni include molti centri del Mediterraneo oltre che, nello specifico, la Basilicata e la Puglia[316]. Un rinvenimento decontestualizzato di un esemplare integro dal litorale di Bari potrebbe essere attribuito alla stessa variante B[317], così come le porzioni frammentarie documentate stratigraficamente nel saggio della Corte dell'Abate Elia[318] e dal giacimento sommerso ubicato proprio nello specchio di mare retrostante la Basilica di San Nicola[319]. La rete distributiva inglobava non solo i diversi centri del litorale pugliese[320] ma anche insediamenti dell'entroterra pre-murgiana e murgiana. Lo testimoniano i rinvenimenti censiti nell'agro di Terlizzi[321], quelli di Santo Staso nel territorio di Gravina[322] e a Conversano[323]; è inoltre presente a Lucera[324], Ascoli Satriano[325], *Herdonia*[326] e in diversi insediamenti della Puglia meridonale[327].

In questo periodo, oltre alle importazioni di derrate alimentari affidate a contenitori dell'area africana circolano anche pochi prodotti 'italici', in particolare il vino[328], come quello realizzato nel territorio del *Bruttium* e dell'area dello

297 Si vedano rispettivamente: Auriemma 2004a, 116; D'Andria 2012, 145, 147, fig. 21.1 (Vescovado a Brindisi); Auriemma 2004a, 180 (per la località nel comune di Melendugno); Melissano & Mastronuzzi 2012, 163-164, 168 (Vaste); De Mitri 2004, 1130; Auriemma 2004a, 224-225 (per Otranto e Torre S. Andrea).

298 Rispettivamente in Auriemma 2004b, 138, 98, SRI 435, 245a.

299 Bonifay 2015, 148-151; 2016b, 517-518, fig. 124. Per l'area produttiva si veda Capelli & Bonifay 2016, 538-540. Per il contenuto si rimanda a Bonifay 2007, 20, fig. 8; Pons Pujol 2009, 92-93; Bonifay *et al.,* 2013, 119-120 (esemplari documentati a *Leptis Magna* con tracce di impeciatura sulle pareti interne). Presente nel carico del relitto *Levanzo I*, insieme alle Africane IIC (Royal & Tusa 2012, 38-39; Oliveri & Zangara 2014, 1037-1038).

300 Per il sito si veda Small *et al.,* 2003, 181.

301 I contesti dell'alto e basso Adriatico tenderebbero ad anticipare la diffusione di questo contenitore alla prima metà del III sec. d.C. (Auriemma *et al.,* 2012, 284-285).

302 Volpe *et al.,* 2007, 359; Disantarosa 2010b, 127-128; Disantarosa 2012a, 133 (con ulteriore bibliografia).

303 Rinvenimenti ad Egnazia (Cassano *et al.,* 2007, 11; Cassano *et al.,* 2008, 427; Fioriello 2008, 178; Fioriello *et al.,* 2013, nota 76); Brindisi (D'Andria 2012, 146-147, fig. 21.6; Aprosio 2008, UT 30); Vaste (Melissano & Mastronuzzi 2012, 163-164); località Badia, Cutrofiano (Melissano 1990, 273); San Foca, Melendugno (Auriemma 2004a, 180).

304 Auriemma 2004b, 140, SRI 441 (di dubbia attribuzione).

305 Disantarosa 2015b, 188-189, fig. 8.9.

306 Andreassi 2004; Disantarosa 2010b, 128, tav. 17.3-4.

307 Del Monte 2019, 67.

308 Disantarosa 2011, 393.

309 Volpe 1988b, 162; Volpe 1989, 73.

310 Annese 2000, 295-296.

311 Disantarosa 2010b, 128, tav. 17.1.

312 Volpe *et al.,* 2007, 359.

313 Panella 2001, 209-210.

314 Bonifay 2015, 119, 122, figg. 63-64; Bonifay 2016b, 513, fig. 124.

315 Woodworth *et al.,* 2015 (accertazione archeometrica della presenza di pece di pino e contenuto vinario); Bonifay 2010, 45-46; 2018, 334-335.

316 Per il Mediterraneo occidentale si rimanda a Bernal-Casasola & Bonifay 2010, 101 e a Bonifay & Tchernia 2012, 320, 322, tabb. 16.1-2 (attestazioni relitti con carichi di anfore Africana III/ Keay 25.1, 25.3); per il comparto adriatico si veda Auriemma & Quiri 2007, 32-37. Attestazioni anche dall'area Mingardo, valle Pruno/ Rofarano (Gualtieri & Fracchia 2001. 147).

317 Volpe *et al.,* 2007, 359, fig. 2; Todisco 2013, 101.

318 Dal Saggio del 1987 (Disantarosa 2015b, 188-189, fig. 8.9).

319 Nuzzo & Disantarosa 2019, 131.

320 Attestata presso la villa di Agnuli (Casavola 1999, 256); Trani (Lombardi *et al.,* 2015, 250); Polignano (Ladisa 2015, 452); Egnazia (Cassano *et al.,* 2004, 76; Cassano 2007, 1261-1262; Cassano & Mastrocinque 2016, 121; Conte et al., 2017, 423); Otranto (Auriemma 2004a, 224-225; 2004b, 51, 101-102; De Mitri 2005, 414); Torre dell'Orso (Auriemma 2004b, 53); Torre San Gregorio (Auriemma 2004a, 284; Auriemma 2004b, 125); Saturo, Taranto (D'Auria & Iacovazzo 2006, 141).

321 Conte *et al.,* 2017, 423.

322 Disantarosa 2010b, 498, fig. 76.1; Iannetti 2011-2012, 146-147, scheda 119, tav. XXX.

323 Caprio 1998, 44.

324 Volpe 1982-1983, 47; Disantarosa 2010, 498.

325 Località Fontana di Rano (Goffredo *et al.,* 2012, 39).

326 Turchiano 2000, 347.

327 Attestata presso Egnazia (Chelotti 2019, 412); Giancola (Cocchiaro *et al.,* 2005, 426, 428) oltre che in diversi siti del territorio di Brindisi (Aprosio 2008, UT 5,1; 12-13; 23; 52,1; 100,1; 181; 183; 1028; 1025); presso la località Badia a Cutrofiano (Greco & Lapadula 2004, 21); località Centoporte ad Otranto (De Mitri 2009c, 140, 147); a *Rudiae* (Polito 2012, 189); località Cravara a Maruggio (Tarentini 2000, 100-105); località Vitagliano e Ortelle a Vaste (Melissano & Mastronuzzi 2012, 172).

328 Rothschild-Boros 1981, 86.

stretto di Messina[329], contenuto nelle **Keay LII**[330]. L'unico frammento riconducibile a questa forma è una porzione di ansa (Fig. 42.1497) documentata presso UT 372 Azienda Pilota Asciutta in Basilicata. Il conseguente indice percentuale per questo contenitore è quindi pari solo allo 0,41% rispetto agli altri prodotti italici (Graf. 3) ma appare anche in netta minoranza rispetto a quelli provenienti dal nord Africa[331] (Graf. 7). La percentuale di conservazione ridotta al solito non consente confronti puntuali che restringerebbero la forchetta produttiva di questi contenitori, individuata a partire dalla fine del III fino al IV-V sec. d.C.[332] . Keay LII risultano distribuite a Metaponto[333] e in diversi siti pugliesi[334], confermando anche in questo caso una preferenza nei confronti dei mercati costieri. A Taranto infatti risultano ampiamente documentate nei depositi di Palazzo delli Ponti[335], presso Villa Peripato[336] e le Isole Cheradi[337] e ancora, lungo il versante ionico, in particolar modo a Lido Marini, nei pressi di Ugento, dove questo contenitore è stato documentato all'interno del carico di un relitto[338]. Lungo il litorale ionico non mancano attestazioni presso Porto Cesareo e Gallipoli[339]. Sul versante adriatico invece sono testimoniate nei siti di Otranto, Porto Badisco[340], Brindisi[341], Egnazia[342], Bari[343] e più a nord fino a raggiungere la villa costiera di Agnuli[344]. Questi approdi e scali portuali hanno costituito una delle tappe di direttive distributive che tendevano a raggiungere, anche se in misura minore, anche i centri dell'entroterra, così come dimostrano i rinvenimenti di *Rudiae* nei pressi di Lecce[345], di *Herdonia* e di San Giusto a Lucera[346].

Molto più capillare risulta invece la distribuzione, agli inzi del V sec. a.C., degli ***spatheia***[347] dato che non è solo confermato dalle ricognizioni in questo comprensorio ma dall'intero territorio regionale pugliese[348], testimoniando in maniera inequivocabile il consolidamento delle rotte e dei commerci tra i siti del basso Adriatico e dello Ionio con quelli produttivi del nord Africa. L'orlo (Fig. 43.1684), documentato presso Masseria Recupa di Scardinale UT 211, è assegnabile alla variante **1 C** ed è confrontabile con gli esemplari già attestati a Vagnari[349], presso la località Villa Monteverde a Terlizzi[350], nel territorio di Vaste[351] e, in Basilicata presso la *chora* di Metaponto[352] mentre presso la la villa di San Giovanni di Ruoti il tipo documentato è assegnabile alla variante B[353].

La distribuzione degli *spatheia* assegnabili alla produzione **tipo 1** sembra essere concentrata maggiormente nella porzione settentrionale e meridionale del campione ricognito. I siti caratterizzati dalla presenza di queste anfore si posizionano nelle immediate vicinanze del diverticolo stradale principale antico, la via Appia, e immediatamente a Sud del torrente Pentecchia di Chimienti oltre che nell'area immediatamente a nord-est del fiume Bradano, nei pressi della confluenza con il Basentello, come nel caso specifico dei puntali distinti sia per la presenza di una depressione interna (Fig. 43.1686) sia per il puntale a fittone (Fig. 43.1685). Questi frammenti, documentati rispettivamente presso Masseria Recupa di Scardinale UT 213 e da Santa Teresa UT 819/22, risultano dal punto di vista morfologico vicini a quelli censiti nel sito di Santo Staso[354]. Le anse invece, provenienti dalla località Sant'Antonio Pace UT 810 e da Piano San Felice UT 223, sono a sezione ellissoidale e si distinguono per i profili lievemente rastremati verso le porzioni terminali (Fig. 43.1688), per l'appiattimento del profilo più vicino al collo (Fig. 43. 1689) o da rigonfiamenti longitudinali appena accennati nella parte centrale (Fig. 43.

[329] Spigo *et al.,* 2006, 454, fig. 4; Bonifay *et al.,* 2013, 116; Iannelli *et al.,* 2014, 1015, fig.3.4; Cuteri *et al.,* 2014, 69, fig. 10.1-6; Amari 2014, 228-229; Rizzo *et al.,* 2016, 217-218.

[330] Panella 2001, 196. Diffuse anche nel comparto settentrionale dell'Adriatico (Galletti *et al.* 2018, 546, fig.4 carta distribuzione; Ceazzi & Del Brusco 2014, 946-947; Genovesi 2014, 997, fig. 4.9; Cirelli & Cannavicci 2014, 965); in Grecia a *Nicopolis* (Reynolds & Pavlidis 2017, 656, fig. 7.2, tab. 1) e Atene (Kouveli 2014, 752, fig. 27-28); in Egitto a Marmarica (Möller & Rieger 2014, 115, fig. 8a).

[331] La produzione 'italica' è rappresentata dallo 0,20% rispetto al 2,65% di quella 'africana'.

[332] Pacetti 1998, 193-197, fig. 4.3. Presente anche nel carico del relitto *Levanzo I* (Oliveri & Zangara 2014, 1037; Royal & Tusa 2012, 31, 41, tabb. 1-2); nel relitto di Capo Alfieri nei pressi di Crotone (Volpe 1998, 594-595, 598, fig. 28; Medaglia 2008, 110-111). Il contenuto dell'anfora Keay LII è inserito tra le merci destinate al rifornimento annonario di Roma [Panella & Saguì 2001, 773-776, 787, figg. 3-4; Parodi & Venditelli 2004, 77-78 (Vigna Barberini), 110-119 (*Domus Tiberiana*), 136, 138, 148 (Bastione Farnesiano), 191, 193 (area a N-O del Foro Romano), 244, 261, 268 (area a S-E della *Crypta Balbi*), 355 (Aventino) e risulta anche ampiamente distribuita, tra V e VII sec. d.C.], all'interno dei siti del Mediterraneo con un rapporto privilegiato con l'Africa (Bonifay *et al.,* 2013, 116; Bonifay 2013, 535, nota 23 con ulteriore bibliografia).

[333] Giardino *et al.,* 1999, 367.

[334] Auriemma 2004b, 172; Auriemma & Quiri 2007, 50-51; Volpe *et al.*, 2007, 363; Disantarosa 2010a, 500.

[335] Disantarosa 2010b, 112, 134, figg. 7-8.

[336] Biffino & Pace 2012, 108.

[337] D'Andria & Mastronuzzi 1999, 95.

[338] Auriemma 2004b, 34-36, 172, SR 36; Auriemma 2004c, 22. Si rimanda anche all'esemplare proveniente dal litorale di Ugento (Auriemma 2004b, 77, 138, SRI 145, 435), a quello di Racale (Auriemma 2004b, 138, SRI 434) e a quello recuperato in maniera fortuita da Torre Chianca (Auriemma 2004b, 144, SRI 458).

[339] Auriemma 2004b, 60, 83, SRI 61b, 185. Si veda anche il ritrovamento fortuito dal litorale salentino in Auriemma 2004b, 94-95, SRI 233.

[340] Auriemma 2004a, 254; 2004b, 90, SRI 211.

[341] Località Giancola (Cocchiaro *et al.,* 2005, 424) con l'esemplare distinto per la presenza di *titulus pictus* (figg. 18.11, 21) che presenta le caratteristiche dell'impasto più vicine alle produzioni egeo-orientali. Un esemplare di Keay LII con *titulus pictus* è stato documentato in Egitto (Möller & Reiger 2014, 115, fig. 8a).

[342] Cassano *et al.,* 2007, 12; Cassano *et al.,* 2008, 428; Fioriello *et al.,* 2013, 290, 292; Berloco *et al.,* 2014, 209; Conte *et al.,* 2017, 423.

[343] Disantarosa 2015b, 70-71; Disantarosa 2015a, 241.

[344] Volpe *et al.,* 1998, 724; Casavola 1999, 264.

[345] Dall'area dell'anfiteatro (Polito 2012, 189, fig. 15.5).

[346] Si veda nell'ordine: Annese 2000, 296 e Volpe *et al.,* 2007, 363; Disantarosa 2010a, 500; Annese & Disantarosa 2013, 229-230.

[347] Bonifay 2015, 125-129 (*type* 1 e 2); 2016b, 514, fig. 124. Sul contenuto degli *spatheia* i dati archeologici propendono per vari generi alimentari: olive, come testimoniano i resti di noccioli presenti in due esemplari del relitto Dramont B, *garum*, legumi, olio, miele e vino (Bonifay 2007, 84, fig. 8). È accertato anche l'olio di ricino negli esemplari provenienti da Ravenna (Pecci *et al.,* 2010a, 618-619, tabb. 1-2).

[348] Auriemma 2004b, 169-170; Auriemma & Quiri 2007, 34-37; Volpe *et al.,* 2007, 360-361; Disantarosa 2010a, 498; Annese & Disantarosa 2013, 232; Disantarosa 2015a, 243. Ulteriori attestazioni nel Cantiere 2 di Otranto (De Mitri 2016b, 499, figg. 7.10, 15.9-10, 17.6-9, tab. 4-6); ad Egnazia nel quartiere produttivo e residenziale (Cassano & Mastrocinque 2016, 120-121, 123; Conte *et al.,* 2017, 423-424; Mastrocinque 2017, 235); in località Ciurcitano a Terlizzi (Campese *et al.,* 2018, 234, fig. 15); rinvenimenti subacquei a Cala San Giorgio, Bari (Disantarosa 2018a, 123-124, fig. 8.1-2; 2018b, 269); presso Masseria Alberti nel comune di Castelnuovo della Daunia (Marchi *et al.,* 2019, 12, fig. 12).

[349] La variante 1 C degli *spatheia* a Vagnari è presente con indici irrisori e proviene dalla collezione di frammenti raccolti in superficie (BC/14); le varianti B e D sono attestate nelle stratigrafie dei saggi indagati (Disantarosa 2011, 395-396).

[350] Campese *et al.,* 2018, 234, fig. 13.

[351] Melissano & Mastronuzzi 2012, 171, fig. 23.96.

[352] Giardino 1991, 55, nota 49; Lapadula 2011, 1153, 1157, cat. 19; Lapadula 2012, 150.

[353] Freed 1994, 65-66 (cat. 55, *Period 2*, il. 336); Small & Tarlano 2016, 147.

[354] Disantarosa 2010a, 498, 76.1, 3; Iannetti 2011-2012, 146, scheda 118, tav. XXX.

1690). Nell'insieme comunque possono essere accomunati per la medesima impostazione "a maniglia" rispetto al collo e alla spalla del contenitore.

Periodo tardo-antico

A partire dagli inizi del V sec. d.C. fino a tutto il VI sec. d.C. si assiste alla diffusione capillare di prodotti importati non solo dai territori africani ma anche da quelli egeo-orientali, fenomeno che nell'insieme rappresenta la diretta conseguenza di una serie di cambiamenti in ambito politico-amministrativo che coinvolgono la produzione agricola, l'artigianato e il mercato dei siti e dei territori dell'Impero.

A questa forchetta temporale è datata infatti la produzione di ***spatheia* 2**[355], contenitori «*fuselées*» di seconda generazione. Risulta attestato, in maniera isolata, a Masseria Bollettieri UT 145-9 il frammento di puntale caratterizzato dalla tipica espansione della porzione terminale, anticipata da una rientranza rispetto al profilo rettilineo del fittone (Fig. 43.1691), che consentirebbe di assegnarlo alla variante **A**. Questa classificazione lo avvicina all'esemplare rinvenuto nel quadrato AW/22 del sito di Vagnari, a quello documentato a San Giovanni di Ruoti e, infine, ad un frammento recuperato ad Egnazia[356].

Risultano invece attribuibili ad un *range* cronologico ampio, che va dalla metà del V fino alla seconda metà del VII sec. d.C., le generiche pareti di ***spatheia*** classificati come tipi **non identificati** in quanto lo stato di frammentazione non consente di assegnarli a particolari produzioni. Distinti esclusivamente sulla base dello spessore delle pareti, del valore medio del diametro del corpo e macroscopicamente attraverso l'analisi degli impasti oltre che del trattamento delle superfici esterne – dove spesso è stata registrata la presenza del tipico trattamento con "acqua salata"[357] e la presenza di spatolature verticali – è possibile evidenziare una maggiore concentrazione nei siti ricadenti nel territorio dell'attuale Basilicata, in particolare presso UT 145-9 Masseria Bollettieri e UT 372 l'Azienda Pilota Asciutta, mentre con una percentuale minore è presente presso le località pugliesi di Recupa di Scardinale UT 213, Sant'Antonio Pace UT 810, e Santa Teresa UT 820.

Alla seconda metà del V – e forse ad un periodo immediatamente precedente o successivo – sarebbero da attribuire gli unici due frammenti assegnabili alle **anfore di tradizione punica del Golfo di Hammamet**[358] entrambi attestati presso UT 223 San Felice. Anche in questo caso le dimensioni dei reperti rinvenuti non consentono attribuzioni precise: il puntale, parzialmente concavo (Fig. 44.1707), potrebbe essere paragonato ad una Hammamet 2[359] o alle più rare Sidi Jdidi 14.9[360]. Le difficoltà aumentano per l'altro frammento, identificabile con una porzione del collo, caratterizzata dalla presenza di una iscrizione *ante cocturam* che indicherebbe lettere in nesso: una *S* attraversata da un segmento obliquo (Fig. 44.1708). Incisioni simili sono state riscontrate su alcuni esemplari di *Pupput* e di Sidi Jdidi[361] o su puntali di Keay XXV/ Africana III rinvenute nello strato di riempimento del *lacus vinarius* della villa di Giancola[362] nel territorio di Brindisi o anche da un contesto urbano di Aquileia[363] oltre che su un esemplare del carico del relitto *Arles-Rhône 13*[364].

Il doppio flusso di merci, contenute all'interno di contenitori da trasporto di provenienza africana ed egeo-orientale[365], continua ad essere attestato per tutto il V e il VI sec. d.C. e per i siti della valle del Basentello. Si assiste, infatti, al riscontro di lieve aumento quantitativo delle importazioni, corrispondenti al 3,67% rispetto alle restanti produzioni africane dei periodi precedenti e di quelli successivi (Graf. 7). Questo fenomeno riscontrato in questo comparto territoriale sembra essere privilegiato se lo si confronta invece alla scarsa penetrazione dei prodotti importati che si registra per gli insediamenti della Tempa Rossa nel potentino[366]. I consumi sembrano essere orientati essenzialmente sul vino o, nel caso di riutilizzo dei contenitori, sull'aceto ma non sono esclusi l'olio, le olive e i cereali[367].

Si distinguono per quantità le ***LRA* 1**[368] e le ***LRA* 2**[369], le prime attestate con il 7,06% e le seconde con un picco di poco maggiore che raggiunge il 10,59%, all'interno del gruppo dei contenitori di provenienza egeo-orientale (Graf. 5).

Il primo dei due contenitori, attribuibile a diversi centri produttivi della Cilicia, della Siria, delle isole egee[370], è

[355] Bonifay 2015, 125, 127.

[356] Disantarosa 2011, 396; Freed 1994, 85 (cat. 121, *Period* 3A); Conte *et al.,* 2017, 423, fig. 5.d.

[357] Per questa pratica si veda Peacock 1984, 263-264; Sherriff *et al.,* 2002. Gli studi etnoarcheologici indicano che è preferibile utilizzare il termine "acqua salata" e non "acqua salata di mare", poiché si è osservato che in alcuni *ateliers* attualmente funzionanti in Tunisia (Maghreb) viene manualmente salata l'acqua dolce che in seguito viene utilizzata per ricoprire le superfici dei contenitori ceramici (Bonifay 2015, 41 e 44, fig. 20).

[358] Bonifay 2015, 21-22, 92-97, 467-471, 474, tab. IV. Per le analisi archeometriche sugli impasti si veda: Capelli & Bonifay 2014, 240.

[359] Dubbie sono le caratteristiche dell'impasto del frammento in questione. Una consulenza fornita da M. Bonifay, che ringrazio per la sua disponibilità, propenderebbe per una assegnazione ipotetica alle produzioni di Nabeul.

[360] Maurina 2010, 525, fig. 3.

[361] Bonifay, 2015, 21, fig. 8.15-16, 19.

[362] Cocchiaro *et al.,* 2005, 426, fig. 19.2.

[363] Il confronto è con un puntale che viene attribuito alla generica produzione "tunisina" ma non identificato con forme note (Maggi 1994, 493, tav. 79.AB40).

[364] Long & Duperron 2014, 130, fig. 17.3.

[365] Per la diffusione si rimanda a Rauh *et al.,* 2013, 160-166.

[366] I siti sono quelli indagati nel *Tempa Rossa Project* a seguito della realizzazione dell'oleodotto ENI Monte Alpi-Taranto (Lapadula 2015, 460-461).

[367] Riferimenti alle fonti sul vino di Cipro e di Tarso in Toniolo 2007, 93-94. Un utilizzo/ riutilizzo per olio, olive e cereali, aceto è stato accertato attraverso analisi archeometriche e *tituli picti* (Karagiorgou 2001; Romano 2001; Auriemma & Quiri 2006, 241, fig. 28; Pecci *et al.,* 2010b, 363-364). All'interno delle anfore *LRA* 1 e 2 del relitto *Yassıada* sono state documentati acini di uva (Ward 2015).

[368] Pieri 2005, 77-85; Fournet & Pieri 2008, 184-214 per attestazioni esemplari con *tituli picti* (da Antinopoli) e contenuto vinario. Si veda inoltre Opaiţ 2010 per l'origine della forma di questo contenitore e Poulou-Papadimitriou & Nodarou 2014, 875 per l'imitazione di questo contenitore.

[369] Pieri, 2005, 85-93.

[370] Williams 2012; Leidwanger 2014; 2015, 302-305, fig. 7. Analisi archeometriche hanno confermato aree diverse di fabbricazione per la *LRA* 1, tra cui la Seleucia Pieria (esemplari dal carico del relitto di *Cape of Plaka* in Crimea, Ucraina: Waksman *et al.,* 2014), Paros (Diamanti 2015). Il relitto di *Prasonisi* presso Rodi (Theodoulou *et al.,* 2015, 47-50, figg. 5-6, 8) presenta nel carico diverse tipologie di *LRA* 1 afferenti a diversi *ateliers*. Per le ricognizioni subacquee condotte a Elaiussa Sebaste, centro produttivo delle *LRA* 1, che hanno confermato dati relativi alle fasi di commercio di questo contenitore si veda Ferrazzoli

stato documentato attraverso diversi frammenti di pareti soprattutto nel UT 347-9 ubicata lungo la sponda orientale del fiume Basentello, nei pressi dell'attuale confine tra Puglia e Basilicata oltre che più a nord vicino l'Appia, presso UT 509 Masseria Mastrocaccia e a UT 223 San Felice (Nn. 1780-82, 1785, 1791 1792), sito quest'ultimo dove è stato registrato una maggiore concentrazione di frammenti attribuibili a questa forma. La sola ansa (Fig. 44.1777) rinvenuta proviene dalla Masseria Lo Russo (UT 114) in Basilicata e rappresenta l'unica porzione diagnostica[371].

Coincidenze distributive e quantitative si possono riscontrare per la forma 2 delle *Late Roman Amphorae* attraverso i frammenti di pareti provenienti da UT 223 San Felice e da UT 204 Recupa di Scardinale e in Basilicata presso UT 370 Azienda Pilota Irrigua oltre che da UT 347-9 ubicata lungo il confine tra le due regioni, da dove tra l'altro è stato possibile documentare l'unico orlo (Fig. 44.1783) attribuibile alla variante **B**, forma che circola tra la seconda metà del VI e gli inizi VII sec. d.C.

Almeno dal punto di vista quantitativo la diffusione dei contenitori *LRA* 1 e 2 sembra privilegiare i centri costieri del territorio pugliese e del versante ionico della Basilicata[372], rispetto a quelli dell'entroterra e con una particolare concentrazione proprio dei tipi 1B e 2B, dato che potrebbe in via ipotetica, essere anche letto in relazione ad una distribuzione di derrate direttamente amministrate dall'organizzazione statale[373], per la *annona militaris*, o da quella ecclesiastica[374].

Tra le **non identificate** di **produzione egeo-orientale** è presente anche un frammento di ansa da UT 229 Villa di San Felice (Fig. 44.1803) che morfologicamente possiede le caratteristiche e le dimensioni comuni almeno ad un paio di contenitori vinari: la Tardo Romano Cretese 3[375] e la Adamscheck RC 22[376], inquadrabili tra la metà del V e gli inizi del VI sec. d.C. Se il paragone potesse essere confermato in futuro da ulteriori ritrovamenti per una delle due forme, il dato in se non costituisce una modifica alle conoscenze sui flussi di circolazione di queste anfore egee che solitamente sono attestate, in entrambi i casi, con indici quantitativi bassi, così come testimoniano i contesti di Seppanibale a Fasano, Egnazia e Taranto[377].

Presenti esclusivamente nell'UT 223 San Felice sono le ***LRA* 4**, contenitori adibiti al trasporto del noto *vinum Gazetum*[378], documentate in questo comprensorio attraverso due soli frammenti, dato che contrasta con l'ampia diffusione di queste anfore, per esempio, in ambito adriatico[379]. Si distingue la porzione di spalla-ansa riconducibile alla variante **B2** (Fig. 44.1793) e riferibile alla seconda metà VI-VII sec. d.C.[380],

In questo stesso periodo circolano anche le "**africane cilindriche di grandi dimensioni**"[381] rappresentate nella maggior parte dei casi da porzioni di pareti e attestate in maniera più cospicua nei siti ubicati nella porzione settentrionale del campione ricognito, in particolare presso UT 213 Recupa di Scardinale (No.1714), UT 712 Leblé (No.1716), UTT 905 e 906 (Nn.1718, 1719) Santa Teresa e UT 810 nella località Sant'Antonio Pace (No.1717); i siti posti a sud sono invece quelli che hanno restituito porzioni maggiormente diagnostiche e ricadono nel territorio lucano, come UT 372 Azienda Pilota Asciutta (No.1716) e UT 145-9 Masseria Bollettieri (Nn.1710-1713). Da quest'ultimo sito proviene la porzione di orlo (Fig. 44.1709) identificata con una **Keay LXI D**[382], prodotta nella regione tunisina del Sahel[383] e utilizzata per la commerciliazzazione di derrate che comunque dovevano essere compatibili con lo strato di pece con cui spesso erano rivestite internamente[384]. Quest'ultima variante sembra essere quella meno diffusa rispetto alle produzioni A-C, iscrivibili nel più articolato gruppo delle anfore 'africane' di "terza generazione"[385], con esemplari attestati principalmente lungo i siti costieri e in particolar modo presso alcuni porti principali, come quello di Bari e di Otranto[386], rispetto ai siti dell'entroterra pugliesi[387].

& Ricci 2010; Pipere 2018, 373-375.

371 Per le *LRA* 1 di prima e seconda generazione si veda il contesto esposto in Demesticha 2014.

372 Auriemma & Quiri 2007, 38, 40-41; Annese & Disantarosa 2013, 229-233, figg. 9-10, 11.1-5; Auriemma 2015, 238, fig. 15; Disantarosa 2015a, 244-245, nota 226 con bibliografia specifica per i siti della Puglia settentrionale, centrale e meridionale; Auriemma 2017a, 65, 68, 71. Presenza di *LRA* 1B presso il sito di Santo Staso a Gravina (Iannetti 2011-2012, 146, scheda 117, tav. XXX). Attestazioni anche a Trani (La Rocca 2019, 769). Si vedano inoltre per Bari e il suo litorale: Disantarosa 2004, 5-6; 2007, 7-8; 2015b, 190-194; 2015c, 79; 2018, 124; Nuzzo *et al.,* 2018, 243; Nuzzo & Disantarosa 2019, 131, 133, 136. Per Conversano contrada San Bartolomeo (L'Abbate 2013d, 266, fig. 8); Cala Incina a Polignano: Nuovo 2019, 296; per Porto Badisco, Grotta dei Cervi: Mastronuzzi & Calandra 2019, 187. Ulteriori attestazioni ad Egnazia (Cassano & Mastrocinque 2016, 116, 121; Conte *et al.,* 2017, 423); Cutrofiano, località Badia (Mastronuzzi *et al.,* 2018, 8); Otranto, Cantiere 2 [De Mitri 2016b, 499, figg. 7.9, 13.3-5 (*LRA* 1), 40, fig. 13.7-8 (*LRA* 2), tabb. 4-6)]. Presenti inoltre presso Metaponto (Giardino 1991, 844, 856; Lapadula 2011, 1153) e a Sant'Angelo Vecchio nella *chora* metapontina (Lapadula 2016, 396, 406, SAV LR 03).

373 *LRA* 2 del carico del relitto *Yassıada* presentano un quadro artigianale standardizzato, con una capacità media di 33,166 litri (van Doorninck Jr. 2015a, 48-52) per garantire un maggiore controllo e una migliore gestione nella fase di distribuzione del vino (van Alfen 2015).

374 Steckner 1989; Arthur 1998, 174-179; Karagiorgou 2001, 138-139, 141-142; Leonard & Demesticha 2004; Demesticha 2005, 169-178; Quiri 2017, 232-233; Arthur *et al*., 2018a, 228-232. Nello specifico per il carico del relitto *Yassıada* collegato con l'*annona militaris* si veda: van Doorninck Jr. 2015b, 208-211. Per la questione «*The Standardization of Amphorae*» e per il sistema distributivo durante il periodo bizantino, alle reti marittime di scambio, fornitura e mobilità si vedano rispettivamete: Pieri 2012, 42-45; Heher *et al.,* 2017. Per il modello di standardizzazione di alcuni contenitori da trasporto di produzione egeo-orientale, con gestioni che rimandano a centri monasteriali produttivi si veda Molinari 2018, 183-184.

375 Portale 2011, 136.

376 Adamscheck 1979, 117, pl. 29-31 (RC 22c-22d).

377 Per Seppanibale: D'Eredità & Caringella 2011, 458-461; per Egnazia: Cassano *et al.,* 2008, 428; Fioriello *et al.,* 2013, 290, 292; Cassano & Mastrocinque 2016, 123; per Taranto: Biffino & Pace 2012, 107, 109.

378 Kislinger 2000; Decker 2007, 69-70. Un esemplare di *LRA* 4 rinvenuta ad Aquileia presso i Fondi Cossar è stata rinvenuta con all'interno una serie di resti combusti di lenticchie, indice di un reimpiego del contenitore (Dobreva & Riccato 2016, 433, 439-440).

379 Auriemma & Quiri 2007, 46-47.

380 Pieri, 2005, 104-114 e in part. 106-107 per la variante B2.

381 Bonifay 2015, 129-146.

382 Bonifay 2015, 140-141; Bonifay 2016b, 516, fig. 124.

383 Nacef 2010, 531; Nacef 2014, 104-105, fig. 3.21-27.

384 Bonifay 2015, 464-465, fig. 261.

385 Panella 2001, 210.

386 Attestati anche nelle acque di uno dei bacini portuali di Bari (Nuzzo & Disantarosa 2019, 136); ad Egnazia (Conte *et al*., 2017, 424); nel Cantiere 2 di Otranto (De Mitri 2016b, 505, fig. 15.1, tabb. 4-5) e dal litorale idruntino (Auriemma 2004a, 243). Recuperi decontestualizzati da località imprecisate sono stati effettuati lungo il litorale salentino (Keay LXI C: Auriemma 2004b, 124); un "contenitore cilindrico di grandi dimensioni" è stato documentato durante una ricognizione presso Torre Sgarrata a Lizzano (Auriemma 2004b, 111) e presso il sito costiero della villa di Saturo a Leporano (D'Auria & Iacovazzo 2006, 141).

387 Per la presenza di "contenitori cilindrici di grandi dimensioni"

Periodo tardo antico/ alto medievale

I prodotti di VII sec. d.C. sono attestati in pochi siti della valle del Basentello e tra questi compare UT 810 nella località di Sant'Antonio Pace, nei pressi del torrente Pentecchia di Chimienti. In questo insediamento è stato possibile documentare quattro porzioni di anse (Fig. 43.1693 e Nn. 1694-1696) di ***spatheia type* 3**[388] probabilmente accostabili ai *type* B e C. Queste piccole anfore, corrispondenti al 5,05% della produzione 'africana' (Graf. 4), presentano le medesime caratteristiche generali degli *spatheia* medio-grandi (*type* 1 e 2) ma si differenziano da questi proprio per le dimensioni e le capacità ridotte, condizione che li rendeva maggiormente maneggiabili tanto che, nel caso di alcuni tipi, sono stati anche realizzati senza anse. Si è ipotizzato che il contenuto di questi contenitori di piccola taglia doveva essere pregiato, come i balsami o gli unguenti senza che siano esclusi le salse di pesce[389] o le spezie destinate alla conservazione di carni. Olio o vino, ipoteticamente utilizzati per scopi liturgici, sono anche annoverati nell'elenco delle derrate a cui potevano essere destinati questi piccoli contenitori anche in rapporto alla constatazione dell'eccezionale prevalenza di *spatheia* 3 presso insediamenti con la presenza di edifici di culto e a carattere ecclessiastico[390], come nel caso calabrese di Piscino a Vibo Valentia[391] e in Puglia nel complesso di San Giusto a Lucera, in quello di San Pietro e del Battistero di San Giovanni a Canosa[392]. I recuperi lungo le coste di Gallipoli[393], Ugento[394] e ad Egnazia[395] costituiscono al momento il solo indizio delle direttive commerciali che questi contenitori hanno potuto seguire. Particolare risulta la presenza degli *spatheia* 'miniaturistici' nei siti del Mediterraneo[396] con attestazioni che sono state spesso messe in connessione con le postazioni bizantine, soprattutto durante il periodo del conflitto 'greco-gotico', a partire dalla seconda metà del VI fino alla prima metà del VII sec d.C. Sono infatti presenti in diverse località dell'Adriatico come Comacchio[397], nella laguna veneta[398], Trieste[399] e raggiungono i territori della Slovenia, dell'Istria e della Croazia[400] fino all'Albania, dove risultano distribuite anche nei siti fortificati dell'entroterra[401]. Proseguendo verso l'Egeo, questa piccola anfora, raggiunge i mercati greci, per esempio presso l'isolotto di Pseira[402], a Cassandra in Calcidica[403], a Tessalonica[404], a *Nicopolis*[405], e a Gortina[406] fino alla parte orientale del Mediterraneo, come nel caso del sito di Akko[407]. Sul quadrante occidentale, il fenomeno distributivo oltre che coinvolgere località della penisola italica come Miseno[408], gli insediamenti della Liguria[409], alcune località dell'entroterra senese[410], Cesena[411], passa dalla Sicilia[412] e si spinge fino a Cartagena[413].

La porzione di un orlo di *spatheion* 'miniaturistico' (Fig. 44.1692) è stato documentato presso UT 212 Masseria Pescarella, sito ubicato in un territorio poco distante dalla via Appia, accostabile, anche in questo caso, alla variante B ma distinto dagli altri esemplari della valle del Basentello per le caratteristiche dell'impasto, con tonalità "chiare", che non lo esclude comunque dal gruppo produttivo 'africano'[414], riconducibile probabilmente agli *ateliers* di Nabuel e confrontabile con un esemplare documentato a *Phoinike* in Albania[415].

Anche lo spezzone di ansa di anfora **non identificata** di **produzione egeo-orientale**, proveniente da UT 401/9 Crocevillina, e conservatosi nella porzione superiore dell'attaccatura (Fig. 44.1799), potrebbe essere inquadrabile

attestati nei siti della Puglia si veda Disantarosa 2015a, 243-244, note 219-220 con bibliografia specifica. Per Conversano si veda L'Abbate 2013d, 266, fig. 8; per il territorio di Terlizzi si veda Campese *et al.,* 2018, 234, fig. 15; per il sito di San Giusto, presso Lucera, si veda Biffino *et al.,* 1998, 269.

388 Bonifay 2015, 127-129; 2016a, 603, fig. 6.24-25.

389 Fournet & Pieri 2008, 180.

390 Esemplari dal complesso di Gortina (Rendini 1989, 648, fig. 6); della chiesa di Ostrakine, nel territorio settentrionale del Sinai (Arthur & Oren 1998, 203); da Sidi Jdidi (Ben Abed *et al.,* 1997, 23); dal Santuario di Santa Maria di Bonaccattu a Bonarcado in Sardegna (Salvi 1996 [2002], 218, fig. 6). Presso il *castrum* di S. Antonino di Perti, gli *spatheia* di piccole dimensioni «(...) costituiscono i contenitori da trasporto numericamente più rappresentati con un'articolata tipologia» (Gandolfi *et al*., 2010, 39 con bibliografia precedente).

391 Arthur & Peduto 1989, 869; Cuteri *et al.,* 2014, 67, fig. 6. Per la circolazione di queste anfore lungo le coste calabresi si vedano anche gli esemplari recuperati nella necropoli di Marinella a Steccato di Cutro (Medaglia 2010, 323) e nei contesti subacquei in un'area meridionale di Capo Colonna (Medaglia 2010, 289) e dall'area del relitto di Punta Scifo D a Crotone (Medaglia *et al.,* 2013, 142).

392 Volpe *et al.,* 2010, 645; Cassano 2008, 314. Si veda inoltre anche il ritrovamento in località Badia nel territorio di Cutrofiano (Greco & Lapadula 2004, 21).

393 Auriemma 2004b, 88.

394 Auriemma 2004b 78, 82.

395 Conte *et al.,* 2017, 423, fig. 5.3d.

396 Auriemma & Quiri 2007, 34, 36-37; Bonifay 2015, 127, 129 con bibliografia specifica. Considerazioni sulla diffusione degli *spatheia* 3 in Reynolds 2016, 144.

397 Negrelli 2012, 158.

398 Ferri *et al.,* 2014, 533.

399 Auriemma & Quiri 2007, 32.

400 Perko & Župančič 2005, 523, figg. 6.10, 14; 8.4; 9.1-8; a Capodistria, tra i materiali degli scavi dell'ex Orto dei Cappuccini, sono stati documentati 30 esemplari di *spatheia* 'miniaturistici' (Auriemma & Quiri 2007, 34 con bibliografia specifica); nel sito d'altura di Tonovcov Grad (Modrijan 2010, 687-688, fig. 3.10-11, con bibliografia sulla diffusione di questo tipo in Slovenia e in Friuli); dal sito di Rifnik vicino Celje (Bausovac 2010, 696, fig. 3.7-14). In Croazia nel sito di Bare, presso Narona (Auriemma & Quiri 2007, 34 con bibliografia specifica).

401 Negli insediamenti più interni fortificati come per esempio a Kruja e a Qafa (Auriemma & Quiri 2007, 35).

402 Poulou-Papadimitriou & Nodarou 2014, 876 (attestazioni dei tipi C e D).

403 Spyros & Elisavet-Bettina 2014, 727, figg. 7.22, 10.42.

404 In un deposito di Kastilya Havrasi (Akrivopoulou & Slampeas 2014, 289, fig. 9).

405 Reynolds & Pavlidis 2014, 452, fig. 9-13.

406 Portale 2011, 124, 146, figg. 34, 40.b-d. Attestazioni dal contesto della *Old Agora* (Portale 2014, 480, fig. 16.1-5).

407 Silberstein *et al.,* 2017, 54, pl. 48.12, cat. 245.

408 De Rossi *et al.,* 2010, 489-490, fig. 4.4.

409 Gandolfi *et al.,* 2010, 39, fig. 10.28.

410 Cavalieri *et al.,* 2014, 856, tab. I.5.

411 Negrelli 2009, 56, fig. 3.32-9-10.

412 Dalla località Carabollace di Sciacca (Malfitana *et al.,* 2008, 155, fig. 17). Anfore attestate nel cd. relitto delle macine presso San Vito Lo Capo (Tisseyre 2016, 269, fig. 74.537-538).

413 Vizcaíno Sánchez 2009, 607, 609, fig. 90, lám. 74; Reynolds 2015, 187, 189, fig. 13.

414 Così come esposto da M. Bonifay: «*La pâte claire de ces exemplaires tardifs n'est pas un argument pour une origine non africaine*» (Bonifay 2015, 129; Bonifay 2014, 75, 84). *Spatheia* 3 sono stati documentati a *Carthago Spataria* in Spagna insieme a Keay LXI e LXII (Reynolds 2011, 104, 106, 109, 111, 113, 123, fig. 7.82, tabb. 1, 3, note 7) e classificati come «*spatheion* Keay 26G *likely*», «*spatheion* type 3A or Keay 26G (n. 82)», «buff *spatheia* Bonifay Type 3B (n. 128-129, 131, 132)», «Keay 26G/ Bonifay *spatheion* type 3A (*in several fabrics: red, buff-cored, and greenish/ Bizerte?, "Raf Raf" Fabric*), "*unclassified fabric*"», «*Buff fabric with pale greenish yellow/ white surfaces. Fabric distinct to above examples of Keay 26G, but quite similar to that of the buff* spatheia (...). A*bundant fine, occasional 5mm rounded semi-clear, amber, clear and occ. red quartz, in a fairly even matrix with common voids and air holes*» con rimandi bibliografici alle diverse produzioni individuate (Carthage fabric 2.5 in Fulford & Peacock 1984, 17 «*from Raf-Raf/ Bizerte region*?»); Capelli & Bonifay 2016, 542, 546-547.

415 Cirelli 2018, 913, fig.1 (PH 06 A22 11 1246).

dal punto di vista cronologico al VII sec. d.C. ed essere attribuita, in via del tutto ipotetica, alle cosiddette "anfore globulari". In questa sede, considerata l'esigua percentuale di conservazione e alcuni elementi dell'impasto, si è ritenuto più opportuno non assegnarlo alle note *LRA* 2C[416] o, in maniera più specifica, alla forma Yassi Ada I-*Type* II, che rimanderebbe ad un sotto-modulo di questi contenitori anche note come «*small globular amphoras*»[417].

Periodo medievale

I dati percentuali sulla circolazione dei contenitori da trasporto in età medievale sembrano descrivere per la valle del Basentello una rarefazione delle distribuzioni rispetto alle produzioni e alle forme dei periodi precedenti. È contemplata, infatti, la sola produzione italica, rappresentata dallo 0,41% (Graf. 7), valore che tra l'altro non include il gruppo ristretto di frammenti che sono stati genericamente classificati come **non identificati**, a causa della evidente difficoltà di attribuzione per le percentuali ridotte di conservazione. Tra questi si distingue la porzione di ansa a sezione ellissoidale schiacciata dall'UT 223 (Fig. 43.1525) che potrebbe essere attribuita alla famiglia dei contenitori globulari che racchiude le anfore Mitello 1/ Gruppo 1[418], inquadrabili tra la fine del VII e gli inizi IX sec. d.C. La distribuzione, anche in questo caso, sembra riguardare mercati preferenziali e sembra essere gestita dal potere politico-amminstrativo bizantino[419].

A produzioni egeo-orientali invece potrebbe essere ricondotto un ulteriore frammento di ansa (Fig. 44.1798) proveniente da UT 335 Masseria Ribelli, databile all'XI sec. d.C. e identificabile con il *Type* 42 di Saraçhane[420]. Sempre allo stesso orizzonte cronologico sarebbe da ricondurre l'ansa a nastro (Fig. 44.1802) rinvenuta presso la Masseria Cappiello (UT 302) in Basilicata accostabile in questo caso ai *Type* 58 e 59 del sito di Saraçhane[421].

Più sicura invece risulta l'attribuzione alla forma ***Otranto Type* 2 (Gruppo 5)**[422] per l'unico frammento di ansa (Fig. 42.1498) rinvenuto a UT Azienda Pilota Asciutta. Il reperto in questione, distinto anche sulla base dell'impasto a matrice carbonatica e diffuso a partire dalla metà dell'XI fino a tutto il XII sec. d.C.[423], potrebbe essere a sua volta accostato con un ulteriore esemplare, documentato in altro sito della Basilicata, UT 145-9 Masseria Bollettieri, posizionata sulla sponda settentrionale del Bradano, conservatosi anch'esso in una porzione di ansa (Fig. 43.1523). Ingabbiato come "non identificato" potrebbe in via del tutto ipotetica rientrare in questa famiglia di contenitori piriformi e con la superficie del corpo esterno scanalata. La difficoltà di distinzione per i contenitori appartenenti alla "serie" di anfore detta appunto di Otranto è alimentata dall'esistenza di una molteplice gamma di impasti[424] che testimonierebbero l'esistenza di diversi centri di produzione, tra cui quelli adriatici, «*perhaps from the* Brindisi/ Bari *area*»[425], insieme a quelli dislocati nei territori dell'Albania, della Grecia e dall'Asia Minore[426].

Dubbi di attribuzione sono evidenti anche per il frammento di spalla con tracce di iscrizione graffita *post cocturam* (Fig. 43.1526) da UT 229, caratterizzato da segni curvilinei orientati in maniera opposta che, considerato il solito fattore della scarsa percentuale di conservazione, non possono essere interpretati o assimilati a specifiche lettere probabilmente afferenti a nomi di persona o a valori numerici[427]. Gli antroponimi sono infatti attestati, anche sotto forma di monogrammi, su diversi esemplari riferiti ai cinque Gruppi produttivi indviduati per questa famiglia di contenitori[428].

L'analisi della distribuzione di questi contenitori, che si distinguono anche per le non grandi dimensioni e una capacità compresa tra i 10 e i 15 litri, destinati probabilmente al trasporto dell'olio[429], ha fatto ipotizzare una relazione con i sistemi commerciali che coinvolgevano l'Adriatico e l'Egeo durante il periodo della cosiddetta seconda dominazione bizantina[430]. In rapporto alla percentuale delle attestazioni[431] è deducibile come solo una minima parte dei mercati della valle del Basentello sono stati coinvolti nello smercio e nel consumo dei prodotti contenuti in queste anfore. Il dato appare comunque coerente in rapporto al fenomeno distributivo di

[416] Pieri 2005, 88-91. Si veda anche il *Type 9* della classificazione relativa al sito di Saraçhane (Hayes 1992, 66, fig. 22.11).

[417] Bass 1982, 157-160; per la metrologia si rimanda a van Alfen 2015; van Doorninck Jr. 2015a, 48-52. Un esemplare di *LRA* 2C è stato documentato in un sito subaqueo presso Capo Treporti in Albania (Disantarosa 2017, 290).

[418] Leo Imperiale 2018, 47-50, fig. 4.8. Dal punto di vista morfologico si rimanda anche al tipo di anfora attestato nella *Tower* 1 di Butrinto (Vroom 2017, 292-295, fig. 4).

[419] Auriemma & Quiri 2007, 48, 50; Molinari 2018, 185.

[420] Hayes 1992, 73, fig. 23.9; potrebbe essere attribuita anche al *Type* 35 ed anticipare la datazione all'VIII sec. d.C. (Hayes 1992, 71, fig. 71.10).

[421] Hayes 1992, 75, fig. 25.14, 16.

[422] Arthur 1992, 206-207; Leo Imperiale 2018, 54, 57-59, fig. 8.16-20.

[423] Arthur *et al.,* 2017, 182, tab. 1 (*sample* 8) per la datazione al radiocarbonio su campioni prelevate dalle cosiddette *Otranto Type* 1 che sono inquadrabili rispetto alla forma più tarda attestata nei siti della valle del Basentello, tra IX e XI sec. d.C.

[424] Orecchioni & Capelli 2018; Molinari 2018, 184.

[425] Arthur 1992, 206.

[426] Leo Imperiale 2014, 330, nota 16; Leo Imperiale 2018, 47, 54-57.

[427] Un riferimento a graffiti *post cocturam* che esprimono valori numerali, spesso dalla ripetuta abbreviazione di *t(esta) p(ondo)*, con indicazioni utili al calcolo del peso del recipiente pieno e vuoto, provengono dal contesto di San Simone in Istria confrontati con l'esemplare di Altino-San Francesco (Sedlmayer *et al.,* 2017, 139-148, figg. 114-116, tavv. 17.6, 18.1-3, 25.1-3, 32-33).

[428] Sono attestati nomi iscritti per esteso e in alcuni casi accompagnati anche da un identificativo che rimanda al mestiere (Arthur 1999, 13, figg. 3-4; 2009, 156, fig. 160.32). L'uso degli antroponimi non esclude il riferimento «(...) al nome del produttore, del mercante o, forse in alcuni casi, del destinatario del carico» (Leo Imperiale 2018, 59-60). Iscrizioni sono state censite sulle superfici di alcuni contenitori provenienti da contesti subacquei croati, come quelli dell'isola di Mljet, dalla Baia di Pijan, Stara Savudrija e a Rogoznica (Brusić 2010, 244-246, 248-249, figg. 2.1, 5.1, 9.6). Da segnalare anche le pratiche di scrittura sui contenitori medievali documentati ad Otranto (Arthur 1992, 207, 209, 213, figg. 7:3.833, 7:4.837, 7:5.855, 857-859, 7:6.860-864); a Bari dal contesto della Cittadella Nicolaiana (Disantarosa 2015c, 76, figg. 5-7-8, 6.9-11; 2015b, 182, 184, figg. 2.17, 3.1-4a-b, 7.1, 8.3-4a-b); a Cagliari (Perra 2019, 653-654, figg. 4-5); da Saraçhane a Istanbul (Hayes 1992, 78, fig. 28.1-6); da esemplari attestati nel relitto di *Serçe Limani* in Turchia (van Doorninck 1989, 253-256, figg. 3-4, 2012, 130-132, fig. 18.3); dal sito subacqueo di Porto Palermo in Albania (Disantarosa 2017, 292, 295, figg. 35.2, 36.11a-c); nell'area danubiana serba (Bjelajac 1989, 111-113, fig. 2); in Doroudja (Barnéa 1989, 132, fig. 2); a Silistra in Bulgaria (Todorova 2011, 138, fig. 7).

[429] Arthur *et al.,* 2016, 101-102, 107-108, 112-113, tab. 1, 3 con l'attestazione di residui di lipidi e acidi oleici e quindi l'utilizzo di olio vegetale insieme ad acidi grassi tipici delle resine di pino; Arthur *et al.,* 2018b, 155 (anche per le *Otranto type* 1); Leo Imperiale 2018, 60-61. Va osservato come la pece poteva essere compatibile anche con contenuti oleici, utilizzata principalmente per la funzione impermeabilizzante (Romanus *et al.,* 2009; Pecci & Cao Ontiveros 2010, 595-598).

[430] Per un inquadramento sull'organizzazione e gestione degli insediamenti rurali durante il periodo bizantino e dopo il Mille in Salento si rimanda ad Arthur 2010.

[431] Attestata con lo 0,83% all'interno della produzione 'italica' (Graf. 3).

questi contenitori nell'entroterra lucano: risultano infatti attestati con quantità poco significative nella *chora* di Metaponto, presso il sito di Avinella – Pietra San Giovanni[432]. I commerci sembrano invece preferire i siti costieri poiché appaiono più numerose proprio presso gli insediamenti posti lungo il versante ionico fino a coinvolgere quelli del litorale calabrese[433]. In generale il quadro delle distribuzioni relativo al territorio pugliese si presenta con densità maggiore – e una particolar disposizione a corona – negli insediamenti che gravitano attorno ad Otranto, includendo anche i siti di Lucugnano, Copertino e Fulcignano, e una rarefazione in corrispondenza dei territori del comprensorio centro-settentrionale[434]. I porti di Brindisi, Egnazia[435] e Taranto[436], sul litorale ionico, hanno svolto un ruolo di riferimento per lo smercio di questi prodotti. Risultano comunque meglio attestati lungo le rotte adriatiche[437], considerati i rinvenimenti costieri e subacquei presso Cala San Vito a Polignano[438], Cala San Giorgio, Secca del Monte e il lungomare di Bari[439], con isolate attestazioni a Barletta[440] e nell'immediato entroterra, presso il sito urban di Canosa[441].

Anfore non identificate

Il gruppo di frammenti di anfore classificate come **non identificate** è stato oggettivamente escluso da specifici processi di attribuzione cronologica. Sono state comunque assegnati a diverse aree produttive sulla base delle caratteristiche degli impasti. È stato possibile riscontrare come le percentuali calcolate sul numero totale dei frammenti corrispondono sempre a valori maggiori e con un evidente distacco rispetto a quelle scaturite da precise assegnazioni crono-tipologiche (Graf. 8).

Questi frammenti corrispondono al 40% all'interno delle anfore della **produzione italica** e nella maggior parte dei casi sono rappresentati da porzioni di pareti (Tab. 1) e da poche anse tra le quali quelle distinte da sezione ellissoidale ed esternamente caratterizzate da solchi longitudinali paralleli appena accennati, rinvenute nell' Azienda Pilota Asciutta UT 372 (Fig. 43.1516) e Villa San Felice UT 229 (Fig. 43.1518). Questi esemplari potrebbero richiamare morfologicamente le anse di contenitori a fondo piatto già attestate nel sito di Vagnari[442] ed essere inquadrate ad un generico periodo primo-imperiale dell'età romana così come possono anche essere accostate ai tipi Ostia IV.252, Ostia IV.442, Ostia IV.440-441[443], confrontabili per esempio con quelli documentati nella valle del Serchio, presso Corte Uova a Lucca[444].

Sempre afferente alla cosiddetta produzione 'italica', dall'UT 509 Masseria Mastrocaccia proviene un'ansa (Fig. 43.1519) che si caratterizza per la sezione ellissoidale e la presenza di una depressione centrale longitudinale sul dorso esterno che resta comunque problematico rispetto ad operazioni di ipotetiche attribuzioni a differenza invece dei due frammenti rinvenuti presso UT 813 Masseria Leblè, il primo distinto da una sezione con un inspessimento nella parte centrale (Fig. 43.1521) e l'altro per le due lievi schiacciature in corrispondenza delle estremità (Fig. 43.1522) – insieme a quello documentato nel UT 401 Crocevelina (Fig. 43.1524), che potrebbero essere inquadrati come generiche "anfore bizantino-medievali"[445].

Passando al gruppo delle anfore non identificate della **produzione egeo-orientale**, rappresentate dal 10% sul numero del totale dei frammenti, si distinguono anse e un puntale. Quest'ultimo, caratterizzato da un da un profilo inferiore arrotondato e internamente vuoto (Fig. 44.1797) è presente presso UT 223 San Felice mentre le anse, a sezione ellissoidale variamente sagomate (Fig. 44.1800, 1804), presso UTT 813 e 214 Masseria Leblè e Recupa di Scardinale. Più distante da quest'ultime località è il sito distrutto di Jazzo Basentello UT 367 dove è stato raccolto il frammento di ansa a sezione pseudocircolare (Fig. 44.1801).

Solo il 3% sul numero totale dei frammenti è riferito alla **produzione non identificata**. Tra questi si distinguono due anse, entrambe a sezione ellissoidale ma con differenze morfologiche dettate dalla presenza di un lieve rigonfiamento nella parte centrale e da rastremature in corrispondenza delle estremità (Fig. 44.1843) e da schiacciamenti laterali (Fig. 44.1844). In entrambi i casi si tratta di attestazioni provenienti dall'UT 223 San Felice, nella immediata fascia a sud della via Appia; dalla porzione settentrionale del comprensorio ricognito, a UT 703 in località Lamiecelle, proviene la particolare porzione di un fondo di anfora sul quale è stato possibile documentare la sovrapposizione dei due strati di parete realizzati durante fase di innesto con il puntale (Fig. 44.1842).

Conclusioni

Durante il lungo arco temporale che coinvolge la vita dei siti individuati nella valle del Basentello – definito contemporaneamente comprensorio dell'entroterra e di

[432] Lapadula 2011, 1182.

[433] Arthur 1999, 11-14. Non sorprende la presenza in Sicilia, con pochi frammenti attestati a Siracusa nall'area di Piazza Minerva-Tempio Ionico (Cacciaguerra 2015, 367, tav. 2.12-15).

[434] Per la distribuzione delle anfore *Otranto type* si vedano: Arthur & Leo Imperiale 2015, 45-45; Leo imperiale 2015, 19, figg. 5.7-8, 6; Disantarosa 2015a, 248-249, fig. 4; Leo Imperiale 2018, 54, 60, fig. 7. Per i rinvenimenti subacquei lungo i litorali adriatici e ionici della Puglia meridionale si rimanda a Auriemma 2004b, 172-174 con bibliografia specifica.

[435] I reperti egnatini rinvenuti dal contesto del *castrum* (Cassano *et al.,* 2015; Cassano & Mastrocinque 2016, 45-46; La Rocca 2017, 198; Cassano 2017, 218) risultano inediti. Attestatzioni nell'entroterra brindisino ad Oria da Piazza Cattedrale (Cocchiaro *et al.,* 2015, 390, tav. 1.15).

[436] Colangelo & Stigliano 2009, 156-157.

[437] Leo Imperiale 2014, 330-332, figg. 1, 3; Disantarosa 2017, 292, 295, 299; Leo Imperiale 2018, 58-59, fig. 7.

[438] Nuovo 2019, 295.

[439] Da Cala San Giorgio (Auriemma 2004b, 173, nota 274; Disantarosa & Leotta 2014, 9; Disantarosa 2018a, 129; 2018b, 272); dal Lungomare Imperatore Augusto e dalla Secca del Monte (Nuzzo *et al.,* 2018, 243; Nuzzo & Disantarosa 2019, 132-133); dal sito urbano di Cittadella Nicolaiana (Disantarosa 2015c, 71, 73-74, 76; 2015b, 180-182, 184, 186; Nuzzo & Disantarosa 2019, 131-132); da Palazzo Simi (Sagliocco & Sanseverino 2008, 73, fig. 6.4-5); dalla chiesa di Santa Scolastica al Porto (reperti inediti, si veda scheda sito in De Palo & Disantarosa 2016).

[440] Volpe 1995b, 24, fig. 26.

[441] Esemplari attestati nel riempimento di una cisterna documentata all'interno della chiesa di Santa Maria presso il Battistero di San Giovanni (Valenzano 2013a, 282, 2013b, 84, fig. 2.3).

[442] Disantarosa 2011, 391.

[443] Rizzo 2014, 126-129.

[444] Ciampoltrini *et al.,* 2014, 320, fig. 6.

[445] Probabili accostamenti per il *tipo 6* (Fig. 43.1519) e il *tipo 10* (Fig. 43.1524) rispettivamente con la produzione delle anfore di Mitello 1 e Mitello 2-3, inquadrabili al VII-IX sec. d.C. (Leo Imperiale 2018, 47-50, fig. 3.3, 5) o con le produzioni campano-laziali (Gelichi & Negreli 2008, 314, 320, figg. 9.3, 11.2, 5); il *tipo 7* (Fig. 43.1521) con la famiglia di contenitori tipo Bozburun 1/Butrint 2/Yenikapı 12 riconducibili all'VIII-prima metà IX sec. d.C. (Leo Imperiale 2018, 50-53, fig. 5.5); il *tipo 8* (Fig. 43.1522) con le Otranto *Type* 1-2/ *Middle Byzantine Amphorae* 7/ Gruppo 3, datate al X-XI sec. d.C. (Leo Imperiale 2018, fig. 8.13). In generale per la tipologia delle anfore bizantine si rimanda alla revisione tipologica effettuata in Günsenin 2018.

'confine'[446] – il valore ricostruttivo fornito dalla presenza o dall'assenza dei contenitori da trasporto costituisce un punto di riferimento non solo per la ricostruzione degli aspetti economici, produttivi o del consumo legato al mercato alimentare ma anche per altre diversificate esigenze del sistema sociale della vita comunitaria dei gruppi che hanno abitato questi luoghi. Un esempio è fornito dall'impiego di particolari olii destinati alla fabbricazione di profumi e di medicinali[447] o al semplice funzionamento delle lucerne[448]. Quest'ultima classe è stata ben documentata per esempio nel sito di Vagnari anche se una buona percentuale proviene dall'area funeraria mentre un dato non certo quantitativamente rilevante è stato riscontrato per l'interno campione ricognito[449]. Si tratta in generale di esemplari tipologicamente riconducibili al I-II sec. d.C., rinvenuti presso Masseria Lo Russo UT 114, Visciglio UT 124, Masseria Bollettieri UT 145-9 in Basilicata e, nel territorio pugliese, presso UT 229 Villa di San Felice, UT 372 Azienda Pilota Asciutta e UT 703 Lamiecelle. Un dato che contrasta con queste attestazione è proprio quello dell'assenza negli stessi areali che definiscono questi siti di anfore destinate a contenere olio per i primi tre secoli dell'Impero romano. Questa mancanza potrebbe far ipotizzare un utilizzo di prodotti locali per alimentare le lucerne, con combustibili travasati in contenitori non necessariamente di grandi dimensioni e anch'essi probabilmente realizzati *in loco*. Una suggestione da questo punto di vista viene proprio fornita dal giurista Paolo che testimonia come nelle proprietà rurali si potevano produrre anche vasi, anfore e tegole e materiali utili alla edificazione delle stesse ville e come questi prodotti potevano appunto servire per un uso interno oppure, in alternativa, essere venduti[450]. Le uniche anfore olearie importate risultano essere quelle provenienti dai territori nord-africani e dall'area egeo-orientale, come le Ostia XXIII e le Kingsholm 117 *similis*, rinvenute entrambe nello stesso sito, il piano di San Felice.

Non deve comunque essere sottovalutato il complesso fenomeno del reimpiego che gli stessi contenitori subivano subito dopo aver assolto il compito originario. Numerose sono le prove archeologiche delle diversificate forme di reimpiego delle anfore, riutilizzate in ambito edilizio, per modificare il paesaggio ambientale, in quello funerario ma anche destinate ad altri generi di alimenti[451]. In quanto contenitori per il trasporto di derrate liquide, semi-liquide e solide, è evidente come le anfore forniscono una "traccia indiretta" del sistema che coinvolge la produzione, il commercio e la distribuzione delle stesse[452], consentendo di ricostruire, almeno in parte, alcuni scenari della cosiddetta "geografia dei consumi"[453].

Nel comprensorio in questione le produzioni più antiche attestate sono quelle "egeo-orientali" affiancate da quelle "magnogreche-siceliote": si assiste ad una circolazione di merci su un doppio binario preferenziale per i siti di questo territorio che vedono da un lato la richiesta e il consumo di prodotti realizzati nei territori meridionali dell'Italia e dall'altro la circolazione di anfore e derrate importate, favorite dai contatti con la Grecia e con i territori medio-orientali. Questo "mercato doppio" è definibile dal punto di vista cronologico a partire dalla seconda metà del VII sec. a.C. e persiste almeno fino al III-II sec. a.C., in una forchetta temporale compresa, rispetto alle specifiche forme di insediamento di questo comprensorio, tra l'*Iron Age* e il periodo *Hellenistic* (Graf. 9). Nel periodo finale dell'*Hellenistic* e per tutto il *Roman Republican* e *Roman Imperial* si impone il grande flusso di contenitori di produzione italica, con timide importazioni riferite alle produzioni punico-siciliane, galliche e betiche, denunciando una economia marchiata dai caratteri propri della fase della 'romanizzazione' che vengono successivamente rafforzati in quella 'imperiale'. Ed è proprio sulla scia di questo allargamento dovuto alla conquista dei territori e alla conseguente gestione politico-militare ed economico-amministrativa dell'Impero romano che si assiste ad una implementazione delle importazioni[454] dei prodotti africani a partire dalla prima età imperiale fino al *Late Antique*. A distanza di secoli si torna ad assistere nuovamente ad un bi-polarismo della circolazione delle merci: le anfore di produzione nord-africana infatti vengono affiancate da quelle egeo-orientali, la cui distribuzione si interrompe tra la seconda metà e la fine del VII sec. d.C.

Il periodo successivo denuncia un vuoto dal punto di vista della circolazione di contenitori da trasporto, soprattutto durante l'VIII sec. d.C. Solo, infine, per le produzioni 'italiche' o forse ipoteticamente importate dai centri di produzione egea, si assiste ad una nuova spinta per il mercato distributivo e il consumo dei prodotti contenuti nelle anfore del periodo *Early Medieval* e *Medieval*. Queste labili testimonianze potrebbero comunque essere messe in collegamento con il complesso fenomeno della riorganizzazione delle campagne che questi territori subiscono proprio a partire dall'VIII fino al XII/XIII

[446] Si vedano le riflessioni per lo studio delle relazioni spaziali ed economiche tra paesaggi, insediamenti, merci e distribuzione delle ceramiche anche in Mater & Annis 2002; Turker 2014; Bertoldi *et al.,* 2015.

[447] Brun 2000; Brun 2003, 169-182. Si rimanda ai vari contributi specifici in Carannate & D'Acunto 2012; Frère & Hugot 2012; Frère *et al.,* 2016; Fioriello & Mangiatordi 2019, 150-151.

[448] Plinio, *NH* XVII.93-94, il quale cita anche l'olio prodotto lungo le coste dell'Africa occidentale (*NH* XV.16) come prodotto scarso escadente, «buono solo per l'illuminazione». I dati provenienti dalle anfore e legati ai combustibili illuminanti soprattutto per il periodo tardoantico negli edifici di culto cristiano sono stati sintetizzati in Pavolini 2001-2002, 117-121.

[449] Lo studio è relativo ad un gruppo di 546 frammenti la maggior parte di questi afferente all'area sepolcrale dell'insediamento di Vagnari, insieme agli esemplari provenienti dalla villa di San Felice e da altri siti individuati durante il *survey* della valla del Basentello (De Stefano 2014). Per il contesto e l'attestazione di lucerne e di altre classi di reperti provenienti dall'area funeraria di Vagnari si veda Brent & Prowse 2014, 100-103.

[450] *D* 8.3.6.pr. (citazione in Rosafio 2014, 281).

[451] Per il fenomeno del reimpiego delle anfore si vedano: Piot 2001; Peña 2007; Disantarosa 2009; Tomber 2011; Disantarosa 2012, 121-123; Abdelhamid 2013; Botte 2013; Costantini 2013. Per le attività di riciclo in una economia della fase tarda della Tarda Antichità, soprattutto negli insediamenti rurali del sud Italia, si rimanda alla sintesi di Munro 2010.

[452] Così come espresso teoricamente in Giannichedda 2014, 89 affermando che: «(...) ad esempio le anfore, obbligano a ricercare la prova di esportazioni, in senso opposto e di pari valore, altrimenti non ipotizzabili e che, forse, non erano volutamente menzionate nelle fonti».

[453] Cirelli 2006, 170. Importante il lavoro di censimento delle *tabernae* anche grazie alla presenza di contenitori da trasporto (Bolzoni 2017, 102). Un riferimento è anche fornito dal sito di Roma (Panella 2018).

[454] Anche in rapporto alle trasformazioni registrate nell'ambito del sistema rurale tardoantico; per il territorio pugliese e la Fossa Bradanica si vedano: Goffredo 2017b; Goffredo & Volpe 2018.

sec. d.C.[455], così come testimonia l'insediamento medievale indagato presso il piano San Felice[456].

I dati forniti dalla ricognizione nella valle del Basentello hanno consentito anche una prima ricostruzione dei "modelli distributivi" delle anfore. In generale, dal punto di vista quantitativo, questa classe si caratterizza in prima istanza per flussi di circolazione ridimensionati almeno rispetto a quelli registrati per esempio nei siti costieri, in particolar modo rispetto a quegli insediamenti urbani muniti di infrastrutture portuali, o per i centri dell'interno collegati con assi viari importanti. La valutazione di questi dati tuttavia consente di dedurre come la distribuzione dei contenitori da trasporto appare assolutamente non disconnessa dall'articolato sistema amministrativo, vero motore che ha garantito la «diffusione dei prodotti oltre che la produzione»[457]. Consapevoli che una «mappa non è un territorio»[458], teoria che vale con maggior enfasi per gli spazi geografici antichi[459], ma anche coscienti dal punto di vista teorico del concetto dell'«*historical landscapes as a system*»[460], è possibile guardare alla carta della distribuzione delle anfore relativa ai siti della valle del Basentello (Carta-1) non in maniera disgiunta dal "sistema" che teneva insieme appunto le infrastrutture, gli insediamenti, le fortificazioni o il *management* della pubblica amministrazione e della fiscalità, a loro volta collegati ad un dinamico sistema produttivo che includeva anche aspetti della *social cohesion*, cioè delle sfere religiose e culturali[461]. La classificazione delle anfore di questo comprensorio, quindi, supporta fortemente la prospettiva di una lettura del paesaggio non più «sitocentrica» ma «storica» e cioè diacronica, in relazione ai cambiamenti ambientali, all'analisi quantitativa della produttività, attraverso quel filtro definito «*land capability analysis*»[462] che tiene in considerazione la cosiddetta «sostenibilità» che si instaura tra «*human settlement*» e «*natural resources*»[463].

È possibile comunque osservare per i siti censiti – anche se in rapporto a percentuali diverse in riferimento a specifici periodi storici e in relazione a tipologie insediative differenti – principalmente due areali di macro-distribuzioni: il primo si sviluppa lungo una direttiva che potremmo definire "orizzontale", con anfore presenti presso insediamenti posti immediatamente nel comparto settentrionale e meridionale dell'asse viario che verrà, a partire dall'età repubblicana, indicato come Via Appia[464], e il secondo "trasversale", legato al territorio immediatamente ad est e ad ovest della "viabilità" fluviale cioè del torrente Basentello, che risulta in effetti orientato in maniera nord-ovest/ sud-est e che nella porzione meridionale finisce per confluire nel corso d'acqua di maggiore portata, il fiume Bradano.

Nel primo caso è innegabile come la capillarità della diffusione delle anfore rinvenute nei siti che gravitano attorno al sitema viario principale di età romana sarebbe interpretabile come una soluzione pratica della distribuzione di questi prodotti che in maniera facilitata raggiungevano gli insediamenti interni[465] e che probabilmente erano specificatamente richieste presso le *stationes* e le *mutationes*. Le ricognizioni di superficie svolte infatti lungo la Via Appia, tra il 2012 e il 2014, hanno dimostrato l'alto potere attrattivo di questi siti da questo punto di vista. Tra questi sono emerse le percentuali di frammenti presenti in corrispondenza di quei siti ipoteticamente identificati con le stazioni itinerarie di *Blera* e *Sub Lupatia* dove è stato possibile anche registrare, oltre alle anfore, anche la presenza , quantitativamente rilevante, di ceramica da mensa importata[466].

Le "vie dell'acqua" costituivano evidentemente l'altro strumento di diffusione delle derrate contenute nelle anfore. In passato la presenza di un torrente o di un fiume nel territorio insediativo e/o produttivo assumeva un'importanza strategica principalmente se inteso come "via di comunicazione e di distribuzione" dei beni economici[467].

Importanti a tal riguado risultano i tentativi di paragone dei modelli insediativi – analizzati soprattutto a partire dall'età della romanizzazione e per le epoche succesive della

[455] Riferimenti ai sitemi di occupazione rurale in età altomedievale in Puglia sono quelli forniti dai casi studio di Faragola (Turchiano & Volpe 2019), in rapporto ad altri insediamenti nel territorio dell'*Apulia* (Volpe 2017) e nel Salento (Arthur 2017).

[456] Nanna *et al.,* 2017.

[457] Augenti 2010, 123-124.

[458] La relazione mappa-territorio descrive la relazione tra un oggetto e una rappresentazione di quell'oggetto, come nella relazione tra un territorio geografico e una sua mappa. Alfred Korzybski ha osservato che «la mappa non è il territorio» nel senso che un'astrazione derivata da qualcosa, o una reazione ad essa, non è la cosa stessa. Korzybski ha affermato che molte persone confondono le mappe con i territori, cioè confondono i modelli della realtà con la realtà stessa (Korzybski 1933). Il modello è applicabile a campi diversi (Smith 1993).

[459] Per un approccio all'archeologia dei paesaggi e alle sue interpretazioni si rimanda alle riflessioni in Chavarría Arnau 2015 e in Rippon 2015.

[460] Brogiolo 2015.

[461] Volpe G. 2015a, 325-326. Si rimanda inoltre ai casi-studio utili per l'analisi comparativa dei dati ricavati dalla ricognizione, per valutare il "potenziale geografico di insediamento" in Ikeguchi 2006; van Joolen 2002; Verhagen 2002; Alcock & Cherry 2004. Per i concetti di paesaggio e approccio di studio 'globale' si vedano: Cambi 2009; Volpe & Goffredo 2014; Volpe 2019a; 2019b, 215-217. I risultati delle ricerche di ricognizione effettuati in differenti territori, comparati tra loro per comprendere i fenomeni di distribuzione dei materiali e in rapporto ai vari periodi storici e alle dinamiche insediative, sono affrontate in Alfano 2015.

[462] Brogiolo 2014, 14, 18.

[463] Citter 2015. Si rimanda ad un particolare studio sulla "dinamica distributiva" (distribuzione spaziale attraverso ampie zone definite distretti attraverso i collegamenti, i marcatori di territorio, i non-siti) e la richiesta di forniture attraverso la ceramica (tra cui le anfore) in Mills & Rajala 2014, 28. Sul sistema economico in età romana come «*Adaptive System*» si veda Poblome 2015.

[464] Fornaro 2000; Small A. 2011b, 18-19, fig. 8; 2019; Grelle & Silvestrini 2013, 133-144, 151-152, 178; Vistoli 2013; Grelle 2017, 101; Goffredo 2017a, 313-318, 324, figg. 121-123; Cera 2019; Ceraudo 2015, 217-219, 225-228; 2019; Marchi 2019; 2019b; 2019c.

[465] Favia 2015.

[466] Viene proposta l'identificazione di due *stationes* dell'Appia in corrispondenza dei siti individuati presso Masseria Castello (*Blera*) e Masseria Caione (*Sub Lupatia*). Lo studio della classe delle anfore proveniente dalle campagne di ricognizioni svolte presso la *Via Appia* è in corso di svolgimento da parte di chi scrive. Ringrazio il responsabile, Luciano Piepoli, per avermi coinvolto in questo progetto. Per l'inquadramento di quest'ultimo e dei siti rinvenuti si rimanda a Piepoli 2014; 2016a; 2016b; 2017. Si veda, inoltre, per le fasi preistoriche e protostoriche degli insediamenti censiti in questo progetto di ricognizione: Piepoli & Pellegrino 2018.

[467] Esempio classico è quello del traffico delle distribuzioni di anfore e altre merci che avveniva tra Ostia e Roma (Keay & Paroli; Keay 2012; Rizzo 2012; Boetto 2016; Keay 2016; Karivieri & Meriluoto 2020) o tra Classe e Ravenna (Augenti & Cirelli 2012; Malmberg 2016). Si rimanda ad una serie di casi-studio ricostruiti in seguito ad indagini su relitti documentati in contesti fluviali come per lo *Stella 1* indagato nell'ambito dell'*Anaxum Project* (Castro & Capulli 2016; Castro & Capulli 2017; Capulli 2018); la barca rinvenuta a Comacchio presso Santa Maria in Padovetere (Beltrame & Costa 2016); il relitto di Canavella d'Adige (Tiboni 2017). Per una riflessione teorica dell'approccio verso lo studio dell'archeologia nautica osservata dal punto di vista dei porti e dei fiumi si rimanda a Pomey 2009. Importanti sono anche i canali artificiali navigabili (Felici 2016; Werther *et al.,* 2018).

prima e media età imperiale fino al Tardoantico – censiti all'interno di valli legate a corsi d'acqua come nel caso del fiume Ofanto e Cervaro e dei torrenti Celone e Carapelle nella Puglia settentrionale. Per questi comprensori la correlazione tra viabilità fluviale e insediamenti che densamente sono presenti e gravitano attorno a questi elementi naturali, fortemente sfruttati dal punto di vista della percorrenza antropica, è dimostrata proprio sulla base della presenza di siti che tra l'altro nella maggior parte dei casi registrano una continuità di vita che va dalla fine del VI secolo a.C. fino al III-IV sec. d.C.; la sopravvivenza dei *vici,* sia pur nel quadro di una politica insediativa volta al potenziamento dello sviluppo urbano e del ruolo egemone della città nel territorio, resta evidente tranne per una piccola percentuale di insediamenti che tende a scomparire[468]. Alla stessa maniera è possibile notare una densità di siti registrati attorno ai canali Reale, Apani, Giancola, Cillarese e i torrenti Calvignano e Monticello nell'*ager brundisinus*[469] e nel territorio lucano, tra V e II sec. a.C., nei pressi delle valli dei principali fiumi Bradano, Basento, Agri e Sinni[470].

La presenza di contenitori da trasporto nei siti della valle del Basentello induce principalmente a riflettere sulla tipologia dei modelli distributivi che rimancano principalmente le differenze tra insediamenti ubani e quelli rurali[471]. Tra i primi però vanno tenuti in considerazione i *ports of trade*[472], come per esempio quello di Metaponto[473] e di Taranto[474], oltre ad altri attracchi minori[475] del sistema portuale costiero pugliesi e lucano[476], che hanno giocato un ruolo fondamentale per l'arrivo dei carichi di anfore, lo stoccaggio e la ridistribuzione che ha successivamente coinvolto gli insediamenti dell'entroterra, sfruttando sia la viabilità terrestre sia quella fluviale-torrentizia. Ma è proprio da quest'ultimo punto di vista che è possibile registrare grossi ritardi negli studi dell'archeologia dei paesaggi considerate le scarse conoscenze sui paleoalvei, sulla distribuzione topografica degli insediamenti e delle infrastrutture lungo i torrenti e i fiumi che spesso venivano realizzati in condizioni ambientali difficili se si pensa ai periodi di piena stagionali e alle alluvioni[477]. A questo quadro così poco delineato si aggiunga la scarsa conoscenza archeologica delle infrastrutture relative ai corsi d'acqua, come per esempio i porti interni o gli atracchi costituiti da porzioni di sponde attrezzate per la sosta delle tipiche imbarcazioni che facilitavano lo smercio dei prodotti o la circolazione delle persone; assenti sono anche le informazioni sulla ubicazione e l'articolazione tipologica di particolari edifici che avevano funzione di dogana o di moli per servizi specifici come quello svolto dai traghetti[478].

L'osservazione della distribuzione dei siti nella valle del Basentello nei quali è attestata la presenza di frammenti di anfore fa emergere un ulteriore dato altrettanto eloquente, questa volta costituito però da una assenza: manca infatti la registrazione di contenitori da trasporto in corrispondenza

[468] Volpe 2011, 347-354; 2016, 94 con bibliografia specifica per le valli del Celone e dell'Ofanto; per la valle del Carapelle si veda inoltre Goffredo *et al.,* 2012a; Goffredo *et al.,* 2012b; per il comprensorio indagato nei pressi del fiume Cervaro si rimanda a Romano & Volpe 2016, 172-180 a partire dalle fasi della romanizzazione al'età altomedievale; Volpe V. 2015.

[469] Aprosio 2008, 74-78, 87-207, figg.18, 27, 28-31, 35-37, 43-44, 70-71. Quadro di sintesi su Brindisi e il suo territorio in Goffredo 2017a, 290-299.

[470] Marchi & Piergentili Margani 2019.

[471] Studi effettuati nel territorio toscano hanno evidenziato il rapporto tra circolazione di produzioni ceramiche (soprattutto per il VI e il X e tra XI e il XIII sec. d.C.) e di merci mediterranee persenti anche nei siti dell'entroterra (Vaccaro 2014; Cantini *et al.,* 2015). Per la navigazione interna nel XIV sec. d.C. e le comunicazioni del paesaggio economico attraverso l'analisi spaziale degli insediamenti e dei siti posti lungo le arterie fluviali si rimanda ai casi indagati nel territorio inglese (Oksaneu 2017). Importanti risultano essere anche gli studi di connettività sui porti antichi e medievali tramite percorsi navigabili così come emerge dall'analisi del territorio della Fossa Carolina, in Europa centrale e una porzione dell'Italia settentrionale (Preiser-Kapeller & Werther 2018). Per i periodi più antichi si segnala tra porti e distribuzioni interne di Taso, Pistiros e Krastevich (Archibald 2016), quelle registrate per il territorio di Corinto (Bonnier 2016) e per Narona in Dalmazia (Lindhagen 2016).

[472] Per la definizione di *ports of trade* o di *gateway settlement*, si veda De Mitri 2018, 83 che riprende Horden & Purcell 2000, 391-395, con ulteriore bibliografia e la sintesi, per la tipologia dei porti adriatici, in Auriemma 2017b. Si rimanda anche allo studio comparativo sui depositi di anfore rinvenute in alcuni principali porti del Mediterraneo (Rice 2011, 81-87, 91; Daum & Seifert 2018) e alle ricostruzioni in Cirelli 2016. Un riferimento, per il periodo romano, è il concetto di «*Cities as port authorities*» espresso in Arnaud 2015, 117-124, dove emergono anche le differenze dei ruoli svolti dalle "città-porto" dal punto di vista dell'amministrazione giuridica [« (---) *the importance of non-imperial institutions and their role in the development and organization of maritime trade under the Roman Empire. In particular I refer to the city*»]. Si rimanda anche alle riflessioni sviluppate in Reger 2016.

[473] Giardino 1983; Giardino 1999, 182-185; Giardino *et al.,* 1999.

[474] Per il porto di Taranto tra Antichità e Medioevo: Lippolis 1998; D'Angela 1998; Dalena 1998. Una valutazione del potere ricettivo del porto di Taranto attraverso i dati delle anfore è in Palazzo 1988; Dell'Aglio & Lippolis 1989; Disantarosa 2003-2005, 407-413; 2010b, 129-131, tav. 22.7-8, 23.3, 24.1-325.1-2, 26.3, 27.5, 28.4 (per il sito costiero di Palazzo delli Ponti); Biffino & Pace 2012, 109-110 (per le attestazioni di contenitori da trasporto dal saggio di scavo effettuato presso Villa del Peripato). Per il rapporto tra viabilità nel territorio lucano e i porti di Taranto e Metaponto si rimanda a Del Lungo 2017.

[475] Le ricerche archeologiche costiere e subacquee stanno sempre più confermando l'importanza del ruolo svolto dagli approdi e dagli scali portuali minori dei quali si sta dimostrando l'alto potenziale della funzione connettiva sia con la rete viaria litoranea sia con il sistema portuale principale, così come è dimostrato per il litorale abruzzese (Mancini 2019), il comprensorio del medio e basso Adriatico occidentale (Nuovo 2019; Antonazzo & Nuovo 2019) e per il litorale gravitante attorno a Cagliari (Sanna 2019, 48-53).

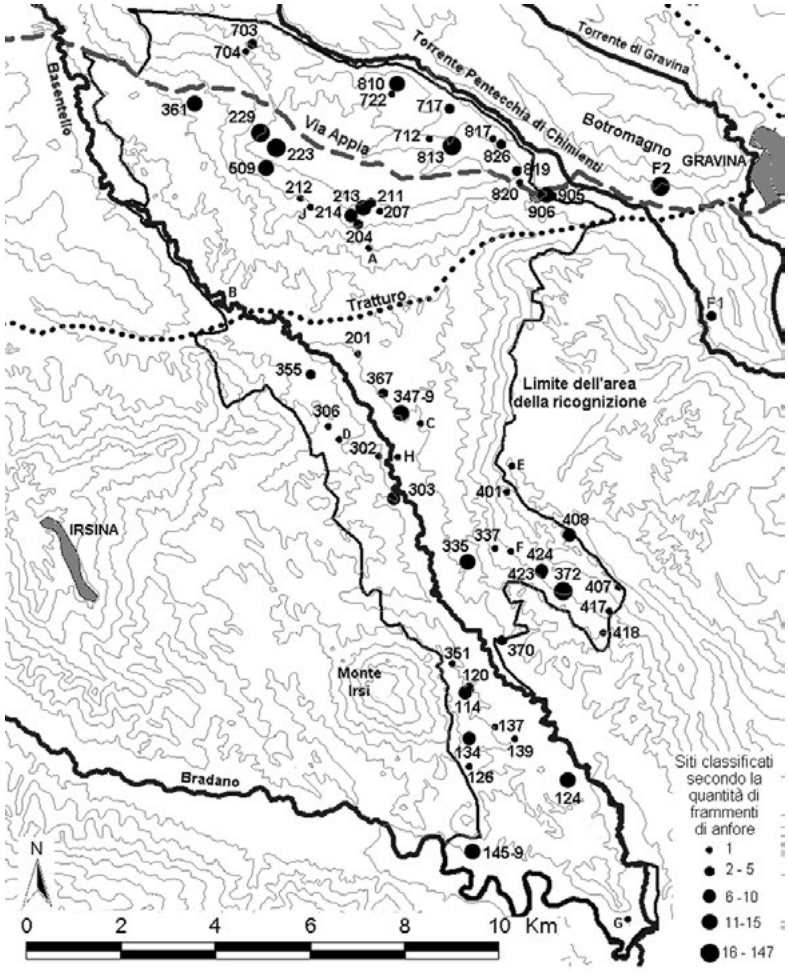
[476] Per la ricostruzione del sistema di viabilità dell'arco ionico, con riferimenti agli insediamenti e ai collegamenti pre-romani, di età romana e di età alto-medievale si rimanda a Donvito 1982, 147-158 con aggiornamenti in Fioriello 2019, 394-395, fig. 9.

[477] Jones *et al.,* 2017; un riferimento alla *cura riparum* e alla memoria archeologica dei fiumi è in Asta 2018. Un riferimento allo studio della viabilità dell'entroterra nei pressi dei fiumi Marta e Mingone, nei pressi di Corneto in Toscana è in Casocavallo *et al.,* 2018. I problemi di risalita dei fiumi della Basilicata (Bradano, Basento, Cavone, Agri e Sinni) devono anche essere rapportati ai fenomeni alluvionali che rendevano la costa predisposta all'impaludamento e all'insabbiamento delle foci (Giardino 1999, 176).

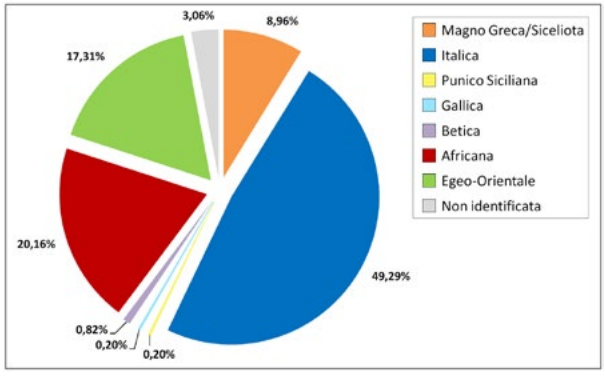
[478] Una sintesi in Luciano 2019, 31-35, 5456, 73-86, 96. Uno studio sulla viabilità storica in rapporto alle zone di attraversamento dei fiumi in Toscana (fiumi Ombrone e Albegna) è in Patacchini 2018 278-280, fig. 2. Esempi dal territorio fluviale del Nord Europa: Utrecht (Van de Moortel 2009; Reinders 2009), Hamburg (Lüth 2018), presso l'Isola di Föhr (Majchczack *et al.,* 2018). Lo studio di navi fluviali post-classiche rinvenute nei contesti del Reno e del Danubio ha consentito di ricostruire la rete dei collegamenti tra merci trasportate, tipologia delle imbarcazioni, sistema delle darsene e le restanti infrastrutture (Werther & Kröger 2017). Altri casi-studio sono quelli documentati per il fiume Main e Reno in Germania (Kröger 2017; Wunschel *et al.,* 2018, 373-388, 397; Driessen 2018; Mirschenz 2018) e per i restanti territori fluviali tedeschi (Teigelake 2003; Wunschel *et al.,* 2018, 388-397; Kröger 2018); in Polonia lungo la Vistola (Domzal 2006); in Serbia nel Danubio (Bockius 2003); in Croazia presso il fiume Sisak (Gaspari *et al.,* 2006). Per il territorio francese si rimanda ai contesti dei relitti fluviali di Lione (*Saint-Georges 8*), di Beutin (*EP$_1$-Canche*) a Pas-de-Calais, di Arles (*Arles-Rhône 3*): Guyon & Rieth 2012; Rieth 2012; 2017; Marlier *et al.,* 2011; Marlier *et al.*, 2012.

degli insediamenti che gravitano nei pressi del tratturo[479], una viabilità che si può definire "specializzata"[480]. Il dato resta complesso da interpretare se non in funzione del fatto che il trattuto e l'immediato territorio limitrofo, interessati dai movimenti stagionali del bestiame durante la transumanza, poteva volutamente presentarsi 'libero' per una serie di problemi connessi con questo imponente fenomeno di mobilità. Le fonti infatti informano e fanno emergere una serie di contrasti di natura giuridica e sociale legati al fenomeno della transumanza, a partire dalla sottrazione di capi di bestiame o a quello dell'equiparazione che spesso avveniva tra *pastores* e *latrones* a causa dei danni inferti ai limitrofi campi coltivati[481].

Nell'insieme i dati editi attraverso questo studio costituiscono comunque un minimale apporto all'interpretazione del sistema integrato che collegava l'entroterra con la costa[482] sia su scala territoriale locale sia su quella più ampia dell'Italia meridionale, coinvolgendo, per questa specifica classe di materiali, i rapporti tra attività diversificate come l'agricoltura[483], l'artigianato, l'allevamento, le reti commerciali e di consumo.



Carta-1. Distribuzione dei frammenti di anfore nell'area della ricognizione. Rinvenimenti sporadici sono indicati con sigle: A = No.1572, B = No.1452, C = No.1701, D = No.1824, E = No.1828, F = No.1454, G = No.1481, H = No.1732, J = No.1728. [Cartografia: CMS].



Graf. 1. Ripartizione delle produzioni delle anfore calcolata in percentuale sul numero totale dei frammenti.

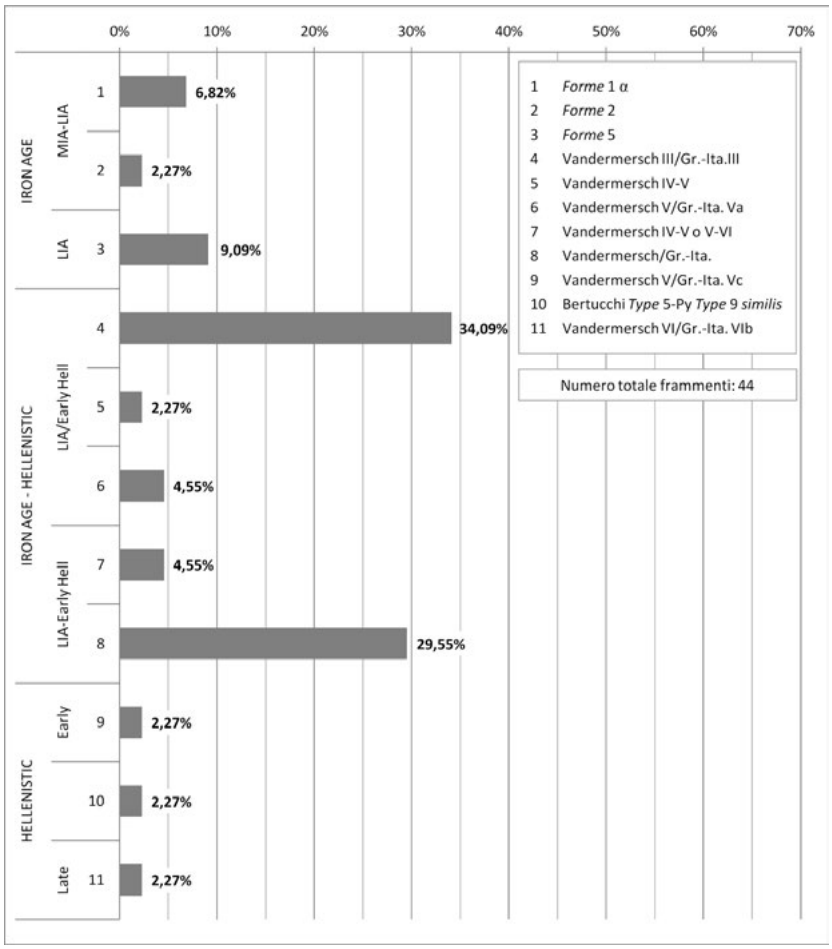
[479] Tranne per il sito coincidente con il toponimo Masseria Recupa di Scardinale (UT 213) che dista in linea d'aria dal tratturo ca. 2 km, e il rinvenimento sporadico del *find-spot* B.

[480] Sui tratturi e il fenomeno della transumanza in Puglia e Basilicata si vedano: Buglione 2010; De Venuto 2010; Volpe 2010; Volpe G. 2015b; Buglione *et al.*, 2015a; Buglione *et al.*, 2015b; Grelle 2016; Florenzano 2015; Small 2016.

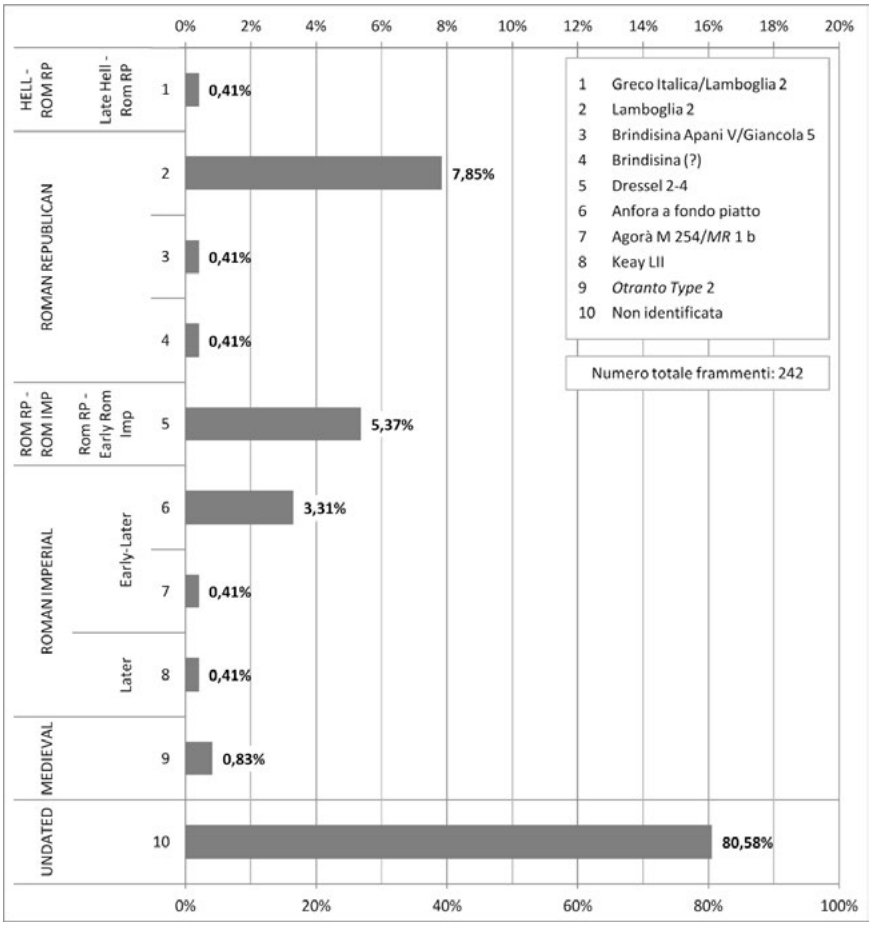
[481] Violante 2016, 333-334, con bibliografia specifica (in particolare de Robertis 1974; Russi 1988; Volpe 2006, 2007-2008, 2010), in riferimento alle testimonianze fornite dall'epigrafe di *Saepinum* (*CIL* IX 2438), datata tra il 169 e il 172, il cui testo rimanderebbe alle lamentele dei *conductores gregum ovaricorum* rivolta ai responsabili e ai prefetti del pretorio, per capi rubati del bestiame e la presenza di schiavi fuggitivi e di criminali tra gli *stationarii*, un corpo di gendarmeria municipale. Nell'epigrafe (*CIL* IX 2826), di epoca gota e rinvenuta presso *Buca*, vicino Termoli, emerge l'assimilazione a criminali per coloro che, durante la conduzione del pascolo, si discostano dalle *calles* stabilite, conducano un numero di capi più numeroso di quelle dichiarate o invadano i campi coltivati e i boschi (Pottier 2006, 261-262; Isello 2007, 250-251). La legislazione teodoriciana e quella successiva di età normanna individua sanzioni per i colpevoli di abigeato e permette di ricostruire indirettamente il quadro complesso degli equilibri tra coloro che affitavono i campi per i pascoli, il fenomeno del furto di bestiame e i danni alle colture per il passaggio degli animali.

[482] Un esempio parallelo è quello che proviene dallo studio del territorio veneto (Busana 2015), esempio evidenziato in Volpe G. 2015a, 328 insieme a quello toscano, presso il sito di Santa Cristina in Caio, dove emergono gli studi sui fenomeni di penetrazione delle merci (tra cui le anfore) attraverso la viabilità terrestre e i collegamenti con le infrastrutture del litorale (Bertoldi & Castiglia 2015; Citter & Patacchini 2018). Un sistema integrato "dal mare ai monti" è quello documentato per l'approvvigionamento ittico del monastero di San Vincenzo al Volturno in territorio abruzzese (Marazzi & Carannate 2010).

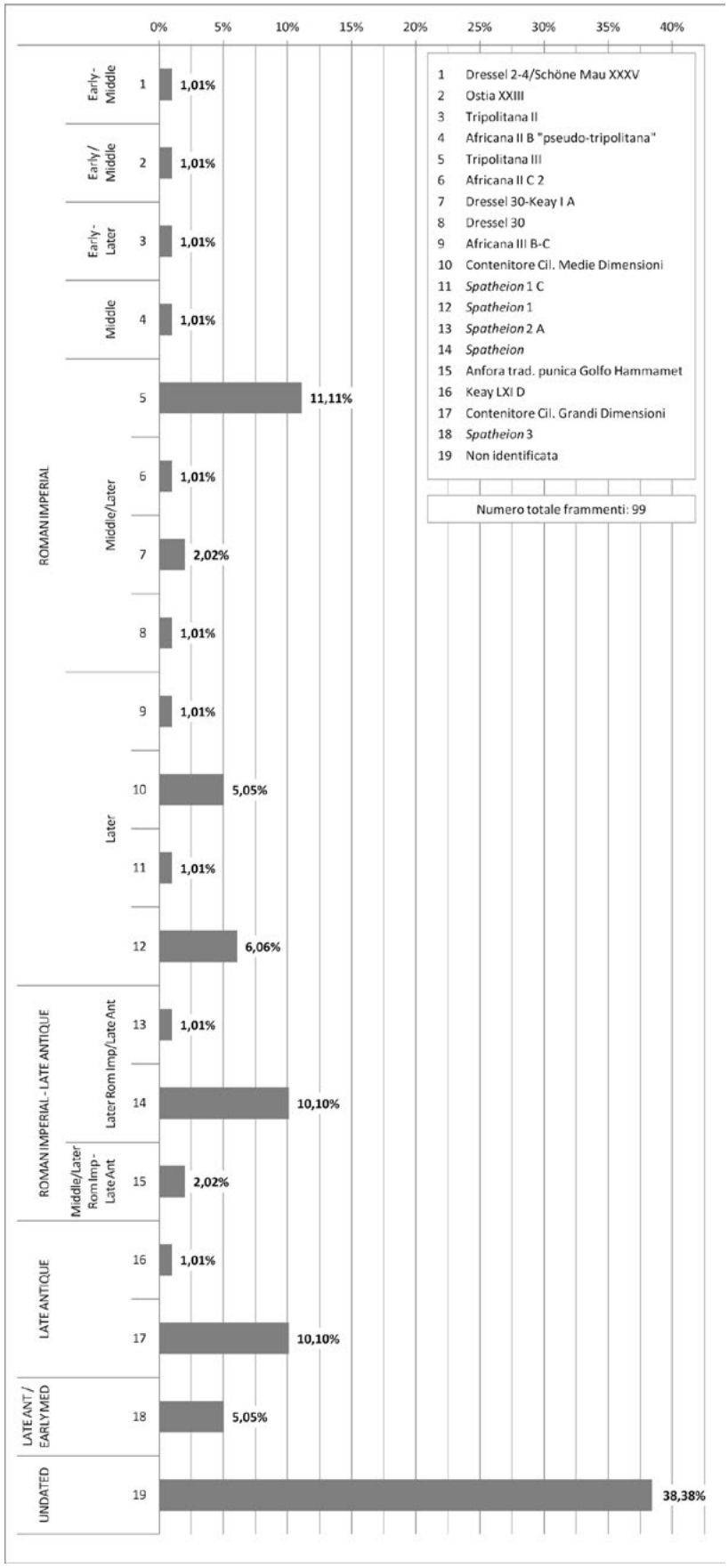
[483] Compresa, nello specifico per questi territori, anche quella del grano (Small 1994).



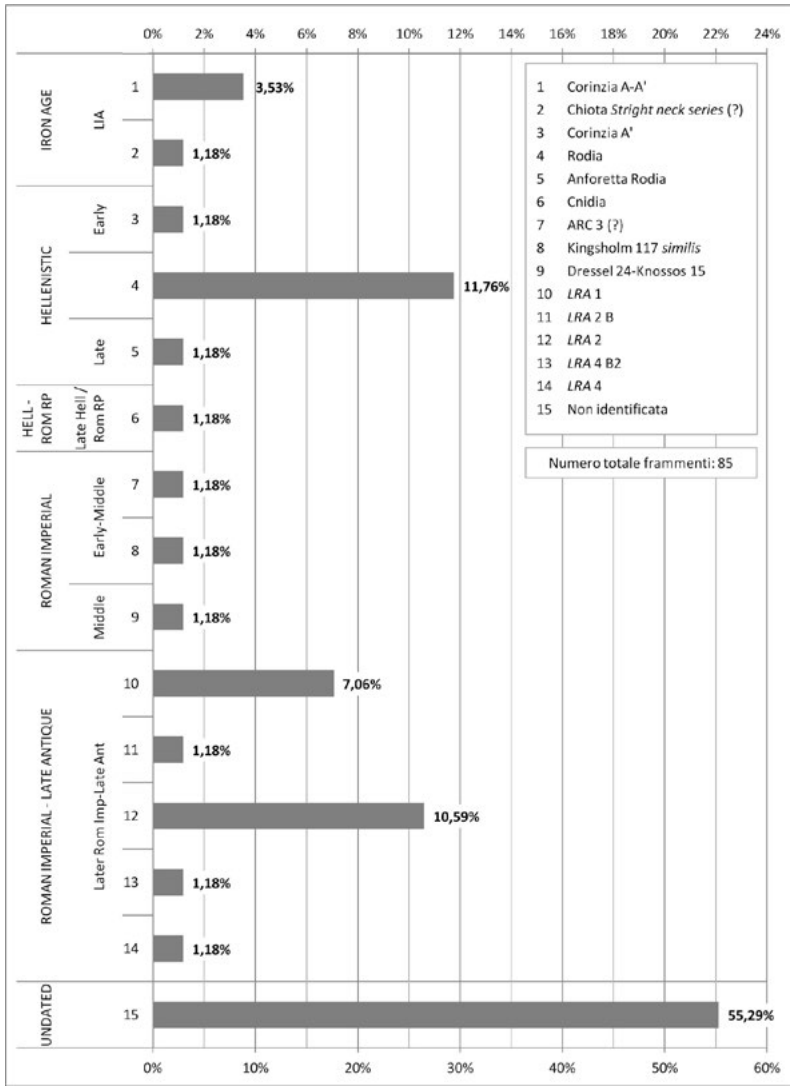
Graf. 2. Attestazioni distinte per forma calcolate in percentuale sul totale dei frammenti delle anfore di produzione magno greca/siceliota.



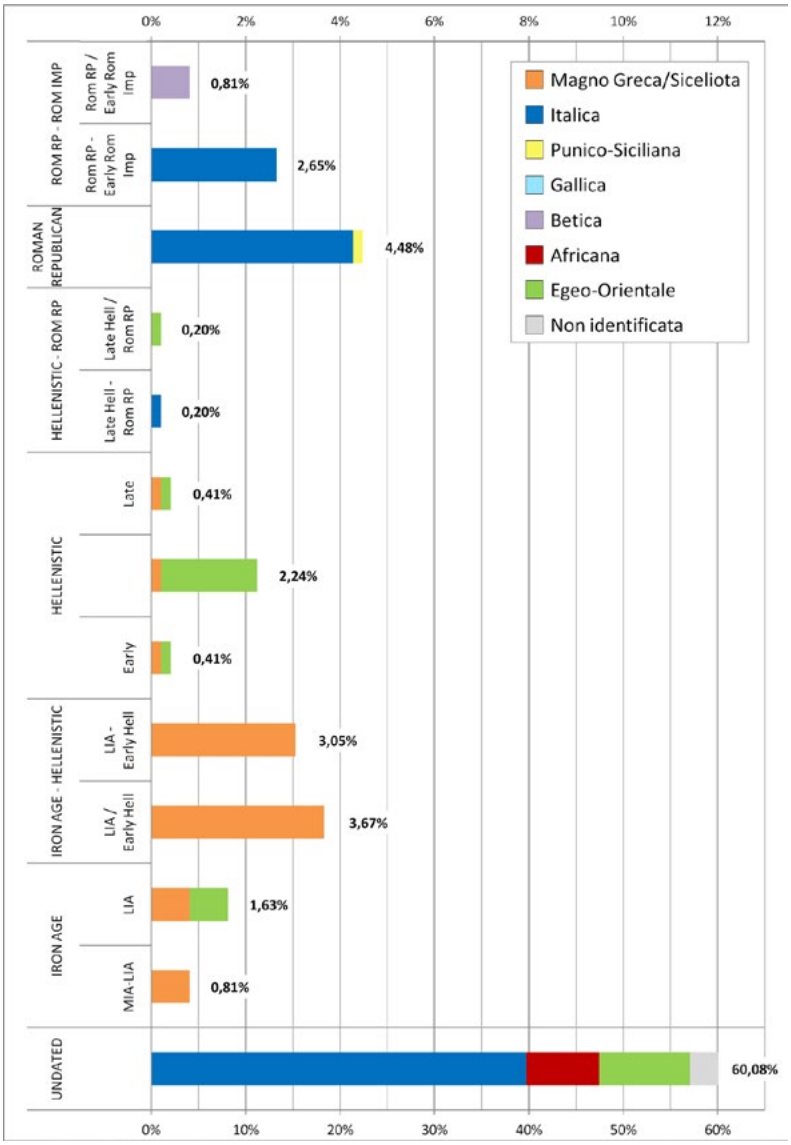
Graf. 3. Attestazioni distinte per forma calcolate in percentuale sul totale dei frammenti delle anfore di produzione italica.



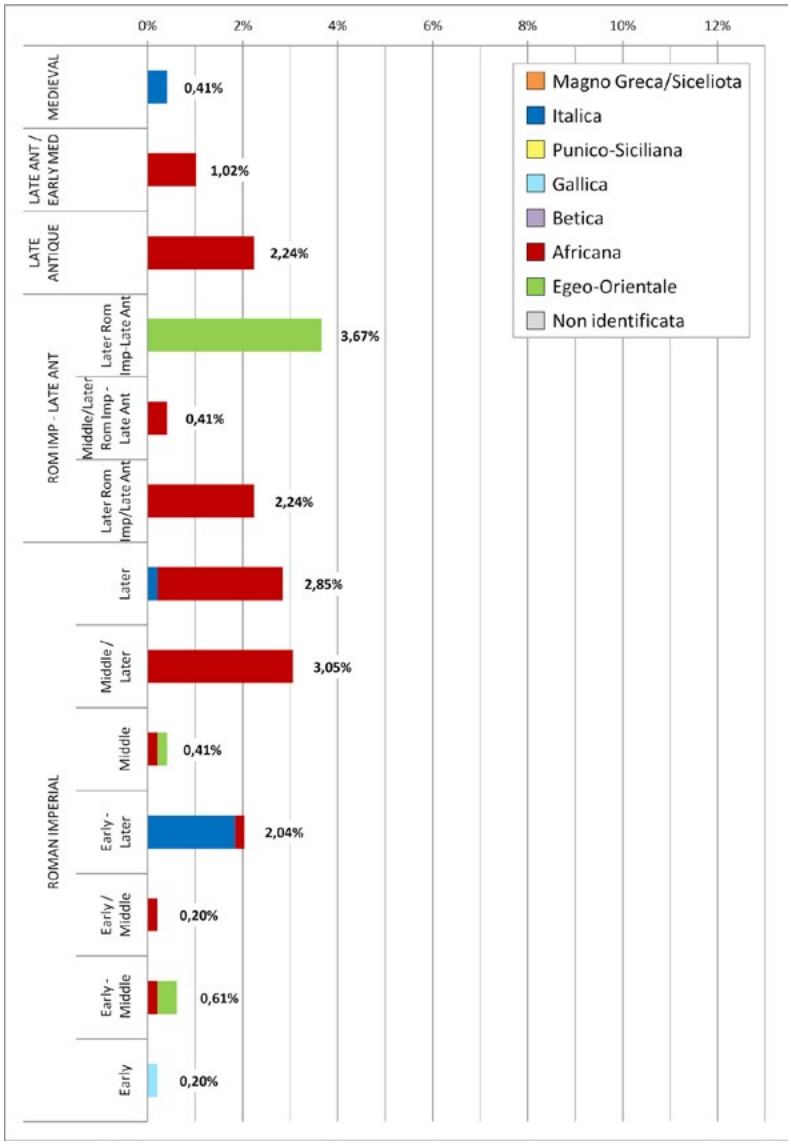
Graf. 4. Attestazioni distinte per forma calcolate in percentuale sul totale dei frammenti delle anfore di produzione africana.



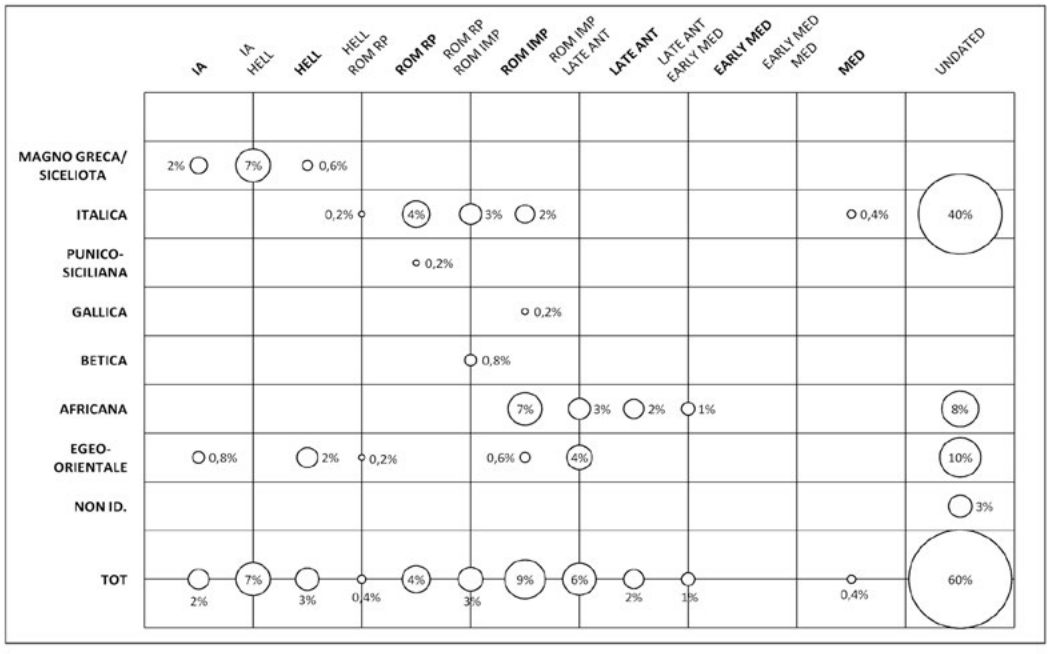
Graf. 5. Attestazioni distinte per forma calcolate in percentuale sul totale dei frammenti delle anfore di produzione egeo-orientale.



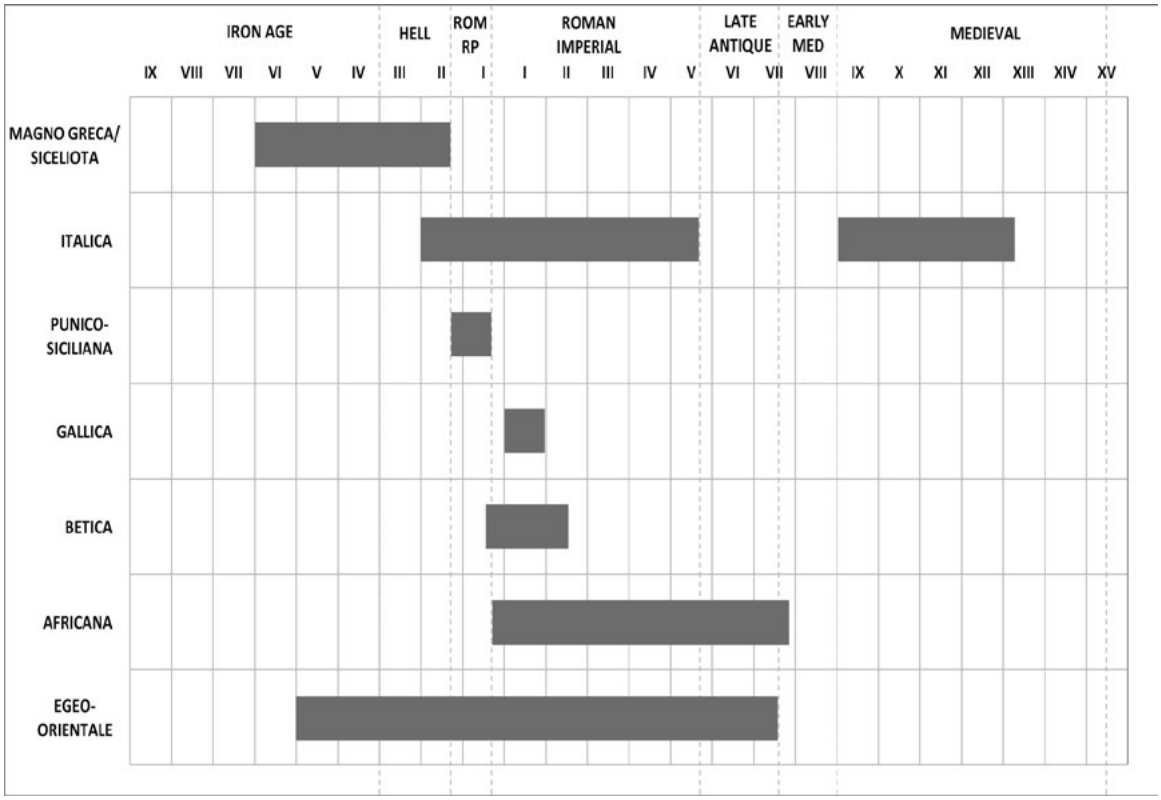
Graf. 6. Ripartizione percentuale delle produzioni di anfore raggruppate per serie cronologiche (da *Iron Age* a *Roman Republican-Roman Imperial*; *Undated*) calcolata sul numero totale dei frammenti.



Graf. 7. Ripartizione percentuale delle produzioni di anfore raggruppate per serie cronologiche (da *Roman Imperial* a *Medieval*) calcolata sul numero totale dei frammenti.



Graf. 8. Ripartizione delle produzioni delle anfore calcolata in percentuale sul numero totale dei frammenti e in rapporto alle serie cronologiche (da *Iron Age* a *Medieval*; *Undated*).



Graf. 9. Attestazioni distinte per produzioni in rapporto alle serie cronologiche (da *Iron Age* a *Medieval*) suddivise in secoli.

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The broad valley of the Bradano river and its tributary the Basentello separates the Apennine mountains in Lucania from the limestone plateau of the Murge in Apulia in South East Italy. For millennia the valley has functioned both as a cultural and political divide between the two regions, and as a channel for new ideas transmitted from South to North or vice versa depending on the political and economic conditions of the time. *Archaeology on the Apulian – Lucanian Border* aims to explain how the pattern of settlement and land use changed in the valley over the whole period from Neolithic to late medieval, taking account of changing environmental conditions, and setting the changes in a broader political, social and cultural context. There are three levels of focus. The first is on the results of a field survey (1996-2006) in the Basentello valley by teams from the Universities of Alberta, Edinburgh, and Bari, directed by the authors. The second concerns the discoveries of earlier field surveys in the late 1960s and early 1970s undertaken in connection with excavations on Botromagno near Gravina in Puglia. The third is a much broader synthesis of the results of recent scholarship using archaeological, epigraphic and literary sources to reconstruct an archaeological history of the valley and the surrounding area.
The creation of a vast imperial estate at Vagnari around the end of the 1st century BC and its long-lasting impact on the pattern of settlement in the area is a significant theme in the later chapters of the book.

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