

Archaeology of Public Estates

Origins of Economic Growth
in a Mediterranean Region
(9-11th Century)

Giovanna Bianchi



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Foreword

Parachuting and truffle-hunting in the Maremma

Richard Hodges¹

Fifty years ago, *Archeologia Medievale* established the existence of a discipline that distinguished itself in Italy from *Archeologia Cristiana*. The new discipline answered a call to arms by the French historians Georges Duby and Jean-François Lemarignier, and supported by the archaeologists, Michelangelo Cagiano de Azevedo, Withold Hensel and General Giulio Schmiedt made at the Spoleto conference dedicated to the early Middle Ages in 1965. These advocates sought to create an archaeology that was not devoted to ecclesiastical monuments and art but to settlements and their material culture². They found an extraordinary proponent in Riccardo Francovich who directed the journal, *Archeologia Medievale* from 1974³. But in hindsight, we might deduce that in 1965 Duby wanted the granular evidence of medieval life to lend colour to his wide-ranging textual studies, while Schmidt almost certainly sought an atlas of plans ranging from sites to regions. Francovich, however, with his breathtaking energy had other ideas. The son of a historian, trained in history and medieval topography, he intended to challenge historical paradigms using Medieval archaeology. He was not a truffle-hunter, in Emmanuel Le Roy Ladurie's sense, but devoted to using the granular evidence, as Le Roy Ladurie did, to become a parachutist that might reinterpret the origins and development of (his) medieval Tuscany⁴. Now, Giovanna Bianchi, a stellar pupil of Francovich, has written a book that far exceeds any of the expectations that existed in 1966 at Spoleto or 1974 when the new journal of record was created. This book will come to be recognized as a cornerstone of a Medieval archaeology that manages truffle-hunting with all the rigour of the so-called Third Scientific revolution⁵, while providing a parachutist's overview of not just the Maremma but of Tuscany as a *regione*, and its Medieval evolution alongside regions with more ample textual documentation in central and northern Italy.

The riches of this volume are immediately apparent. The reader need do no more than flick through the many illustrations. For the most part these are not simple images supporting the argument made in the book, but the product of interpretation and analysis, in support of a paradigm-shifting argument. Such illustrations have become a standard in north-west Europe⁶, but unusual in Italian Medieval archaeology where such resources have had a subsidiary status. The resources of the European Research Council (ERC) grant, rightly acknowledged by Bianchi, have made this approach to visual analyses possible, but of course it is the will to do this with such flair that might have won, for example, the approval of Georges Duby and General Schmiedt.

Then there is the thesis behind this ground-breaking book. It takes its direction from the excavations and research around the royal fisc of Vetricella and advances from there to a conclusion that provides

¹ Emeritus President, the American University of Rome.

² Voto per l'insegnamento di *Archeologia Medievale*, in *Agricoltura e Mondo Rurale in Occidente nell'Alto Medioevo* (Settimane di Spoleto XIII, 22-28 Aprile 1965), Spoleto, 1966, 13; see Hodges 2014.

³ Hodges 2011.

⁴ Cf. Le Roy Ladurie 1978; 1979.

⁵ Kristansen 2014.

⁶ See, for example, Blair 2018.

new thinking about Bloch's first and second feudal ages within the much-developed literature about the evolution of the Italian countryside in concert with its towns. This is truffle-hunting in a manner that would have engaged Le Roy Ladurie's micro-historical analysis. In some senses, Vettricella with its finely-tuned chronology and its remarkable material culture is an archaeological Montaignou. Bianchi takes the idea of the royal fisc of valli (the likely name of Vettricella) and advances to reconstruct the history of the valley, reaching from the Mediterranean to the Colline Metaliferre with its key town, a miniature Siena, at Massa Marittima.

There then follows a second example from the Maremma, pivoted on Grosseto, again using the initial discoveries at Vettricella to shed new light on a constellation of sites investigated over the past decades by archaeologists from Siena University including Francovich. Then, boldly, Bianchi advances into the Tuscan interior to pursue her argument within a modern approach to ecclesiastical archaeology, including the recently excavated 11th-century cult site at Montieri. Finally, in this section, she reviews the riches from forty years of investigations of mineral extraction in this region, giving scale as well as shape to the villages that came to underpin the urban revolution in Tuscany. How Francovich who passed away in 2007 would have been thrilled by this chapter. Three chapters conclude this book, each taking the preceding detail and working these into a model that surely would have resonated profoundly with past masters like Marc Bloch and Georges Duby. Here is an archaeologist examining how managed redistribution as opposed to a market took shape between the mid 9th and 12th centuries, and in time, fostered the local conditions upon which the larger inter-regional commerce at emerging towns was anchored. Boldly reaching out beyond Tuscany into northern-central Italy on the eve of the turn of the millennium and after, it is more than evident that her model is not simply a Tuscan story.

Bianchi carefully confronts the prevailing thesis proposed by Chris Wickham that lords were external to the process of production⁷. On this Tuscan evidence, there can be no doubt now that the aristocracy had access to a wider range of ceramics (and other goods) but were also the architects of redistribution strategies emanating from commodity centres at places like this coastal fisc at Vettricella as well as new communes in the Maremma like Donoratico. In the end, redistribution in a proportionate way served all levels of society with places like these rural central-places becoming conceptual but not actual forerunners of 12th-century market towns. Demand for ceramics, iron utensils and possibly glass was generated not only by the élite but also the peasantry as far as we can see from the archaeology of the range of households from this age described by Bianchi. At the same time standardization in all these materials projected for an emerging state an increasingly centralized and sustainable economy.

As such, in this far-reaching panorama, from a parachutist's viewshed, Medieval archaeology now presents a measured paradigm that will engage historians to re-examine their textual histories about the roots of Italian communal life. Beyond this, Bianchi has provided us with a benchmark that now merits careful scrutiny alongside other regional Medieval histories for western Europe. How one wishes now for such studies of provinces in the France, Germany and the Low Countries. In conclusion, we cannot doubt that this book successfully delivers the aspirations of the founders of Italian Medieval archaeology half a century ago.

⁷ Wickham 2008; 2023, 677.

Introduction

As someone who suffers from mild vertigo, I've always been a little afraid of heights. This is probably why, if I had to choose which category of archaeologists and researchers I would prefer to subscribe to, I would definitely choose “truffle-hunters” over the “parachutists”¹.

That said, however, I would not set much store by the negative connotations that are sometimes associated with truffle-hunters, as being somewhat lost in their own little world, and generally unable to come up with an overall vision. Indeed, I believe it is essential to proceed just as they do, adopting their particular approach to research work. As long as there is an awareness that, to home in on a specific aspect of the historical reality under examination (with the aim of identifying points of general significance), one has to engage in a continual critical analysis of the available sources. Moreover, these sources must be known and assessed thoroughly, especially if they are scant and fragmentary, as may well be the case when dealing with early medieval archaeology. This minutely detailed work is only possible if one uses a magnifying glass, and selects a territory that is not too large. It must also be carefully observed, in the full knowledge that the picture deriving from our case study will be ‘only one of the possible answers, one of the possible realities, that is arrived at by means of general questions’ (Levi 2021, 72). Thus, as every skilled hunter of truffles knows, one has to know how to root through the terrain in question and, without abandoning the big picture (the preserve of the high-flying parachutist), it is a good idea to keep going back to hard facts and actual data, and keep your feet firmly on the ground.

In an effort to do just that, in the present work I enjoyed returning to that idea of slowness, that brand of long durée, in a research context, referred to by Sonia Gutiérrez and Carolina Doménech for El Tolmo de Minateda (Gutiérrez, Doménech 2020). It is an essential precondition for dwelling on the data, going back to it, weighing it up, and framing new questions, as well as coming to conclusions that may sometimes differ from those formulated years before.

This last part of the research and review process would not have been possible without the ERC nEU-Med project². In fact, one may say that the project itself stemmed from a need to question and check, in the light of new research, findings that had become established and consolidated, starting from the well-known Tuscan model, setting out from the places where that model was originally drawn up by Riccardo Francovich.

Indeed, the choice was made to focus the investigation in the heart of the Maremma region. Here the ERC nEU-Med project set itself the goal of understanding the mechanisms of economic growth which, in the case of Tuscany, led to the formation of communes, and to the major development seen in the 12th century. Focusing attention on an area that has been heavily investigated archaeologically in the last 40 years was essential to this undertaking. Indeed, it meant having a strong knowledge base, a necessary condition for embarking on new, original analyses of a multidisciplinary nature able to provide data that could supplement and flesh out the historical and archaeological picture already compiled. To achieve this purpose, it was initially thought that the analysis had to be focused especially on the actions carried out by the various aristocracies present in the territory, interpreted through their material manifestations.

¹ Here I refer to Le Roy Ladurie's well-known division into categories, applied to archaeological research by Hodges 1989, and also revisited in the text by Hodges, Francovich 1990, 15-17.

² The ERC Advanced nEU-Med project: Origins of a New Economic Union (7th-12th centuries): resources, landscapes and political strategies in a Mediterranean region, which took place between October 2015 and May 2021, included Richard Hodges as Principal Investigator and myself as coordinator of the research team at the University of Siena, as the project's Host Institution. In this connection, see the main publications: Bianchi, Hodges 2018; 2020, and the project's website www.neu-med.unisi.it.

Slowly, however, as research progressed, the theme of public properties became a central element in our considerations, meaning the set of properties and assets associated mainly with estates and specific rights (resource exploitation, tolls, water use, markets etc.) held by the king, or by people who held public offices (Cristoferi 2023, 397). Indeed, evidence relating to the layout and structure of sites, to materials, and to anthropic transformations in the landscape were so macroscopic, and out-of-scale compared to findings from previous field research, that we gradually realized that we were looking at the material features of fiscal administration. In Italy this aspect is rarely illuminated by documentary and archaeological sources, meaning that still today it tends to languish in a certain shadow, one that is at times impenetrable.

A recent overview of historiography relating to this kind of property, compiled by Vito Loré, to which readers are referred also for the extensive bibliography (Loré 2019), highlights the fact that in Italy only in the early 1980s did attention to this subject, on the part of historians dealing with documentary sources, return to the centre of some studies. With the start of the new millennium came an acceleration when, beginning with studies focusing on specific economic aspects of the administration of these properties, or on their connection to the patrimony of queens (Carocci, Collavini 2012; Lazzari 2012b; Collavini, Tomei 2018), scholars began to reflect on the dimension of the royal patrimony, and on the dynamics of its management. This led to a picture in which the central powers had a profile that did not fit the image of weakness that emerged in previous studies, which often concentrated mainly on the actions of the aristocracies. The volume published in 2019 (Bougard, Loré 2019), bringing together the proceedings of an important conference on royal properties, enabled a more detailed outlining of the kinds of actions of the public powers, and their consequences, in an effective comparative approach that also considered other European contexts, thereby delineating a general, up-to-date analysis aimed at the formulation of a fresh research agenda³.

In the two years that have elapsed since the original edition of this volume appeared in Italian, research on the royal fisc, and the role of the state, has benefited from significant additional contributions, and the results of new projects. I refer in particular to the partially published results of a national project focusing on fiscal estates, and the recent publication of the proceedings of a conference held as part of that project. These include important contributions having to do with royal economic management, viewed primarily through written sources (Lazzari and Tabarrini 2023)⁴.

Further thoughts on these issues can be read in a recent volume that brings together articles on various European contexts on the theme of the concept of state, in which a study of political systems and their institutional structures is closely integrated with the study of economic and social practices in administering public properties themselves (Carvajal Castro, Tejerizo-Garcia 2023).

The publication of a volume on the 10th century in several European contexts also provides further information to supplement our understanding of findings for this chronological period (Santos Salazar, Tente 2023). For the economic history of the Ottonian reign in Germany, the volume by David Bachrach, published a few months after my book appeared in Italian, constitutes a valuable source of information for a comparison with the context of the Kingdom of Italy. For an overview and a comparative analysis, the recent volume by Chris Wickham (Wickham 2023), in which much space is given to a discussion of

³ For Tuscany, two studies published between 2017 and 2019, focusing respectively on a study of regional and Lucchese aristocracies by means of written sources (Cortese 2017; Tomei 2019), have underlined with particular force the role of the central powers and of the administration of fiscal properties in the processes of the formation, consolidation and growth of aristocratic possessions in a long period stretching from the 9th to the 11th centuries.

⁴ This is the project entitled “Fiscal Estate in Medieval Italy: continuity and change (9th-12th centuries)”, directed by Tiziana Lazzari (University of Bologna), to whom I am grateful for discussing, over the last two years, some of the findings that were emerging from the project.

Tuscany and central-north Italy, offers useful food for thought as to the general conclusions that I came to when drafting the findings set out in the following chapters.

A reading of these texts has confirmed the plausibility of the hypotheses put forward in this volume, as well as the fact that it was not necessary to update the central arguments of my work in this new, English-language edition.

By contrast, when it comes to archaeology itself, research focused on rural public courts in Italy has never really taken off fully. Indeed, apart from a few exceptions, evidence relating to public estates has often been found in research projects that were too limited in scope to supply an exhaustive, overall vision⁵.

To this end, the research sponsored by the ERC nEU-Med project in the Val di Pecora and the Val di Cornia, areas that were included within two royal courts, respectively *Valli* and Cornino, and the exceptional finds made during excavation of the Vetricella site (Scarolino, GR), have given a major push towards an understanding of the workings of such political entities also from the economic point of view.

In this volume, the area of the Maremma that I identified as a case study is geographically delimited by four royal courts which, between 937 and 999, were part of the patrimony of one of the most powerful queens of the time: Adelaide, the wife of Lothair II, and later of Otto I.

Even during the ERC nEU-Med project itself, I had cast an eye more than once at the territories bordering the Cornia and Pecora valleys, with special reference to those around Grosseto where, in the Salica valley, at the Vigna Nuova locality, fieldwork was under way that was revealing a material reality comparable to that found in the Pecora valley, and to the court of *Valli* (Campana 2021). Thus, in the search for further comparative analyses, a series of pointers gradually emerged which, viewed with an eye made more vigilant and open by virtue of the reconstructions in progress in the Pecora and Cornia valleys, gave me a glimpse of a new, possible interpretive key for an analysis of the findings deriving from several kinds of material sources, gathered over years of research, within a territory that seemed to share a historical trajectory similar to that of the valleys studied by the ERC nEU-Med project.

The idea underpinning this volume stems precisely from this: the challenge of analysing, using new interpretive tools, an area with a solid tradition of historical and archaeological studies, investigating the material mechanisms of public administration, and the interaction between these and local societies, ie. both the local aristocracies and the subaltern classes. This will make it possible to pursue a theme that has never before been addressed in concrete terms in detail, but which is common to several different geographical areas, and to do so by setting ourselves the following objectives:

1. identifying possible markers of areas characterized by the presence of public properties;
2. understanding their formation and management, and how they became transformed, especially by reference to material sources;
3. relating these findings to the complex history of a territory, in a long diachrony;
4. identifying their relationship to processes of economic growth.

In order to achieve these goals, in the first five chapters I have traced the history of many geographical micro-contexts, and several different sites, isolating and at times reinterpreting those which I thought stood out in the historical scenario as indicators of political courses of action associated with royal or margravian strategies. The findings made in the process served to draw up, in Chapter VI, an overall picture designed to interpret anthropic and natural landscapes that were closely connected to each other by a common fate, involving transformations, abandonments and rebirths. To lend weight to my hypotheses, in Chapter VII I compared the resultant findings to published findings for a number of

⁵ For a summary of these research studies, and their bibliography, readers are referred to Chapter VII of this volume.

INTRODUCTION

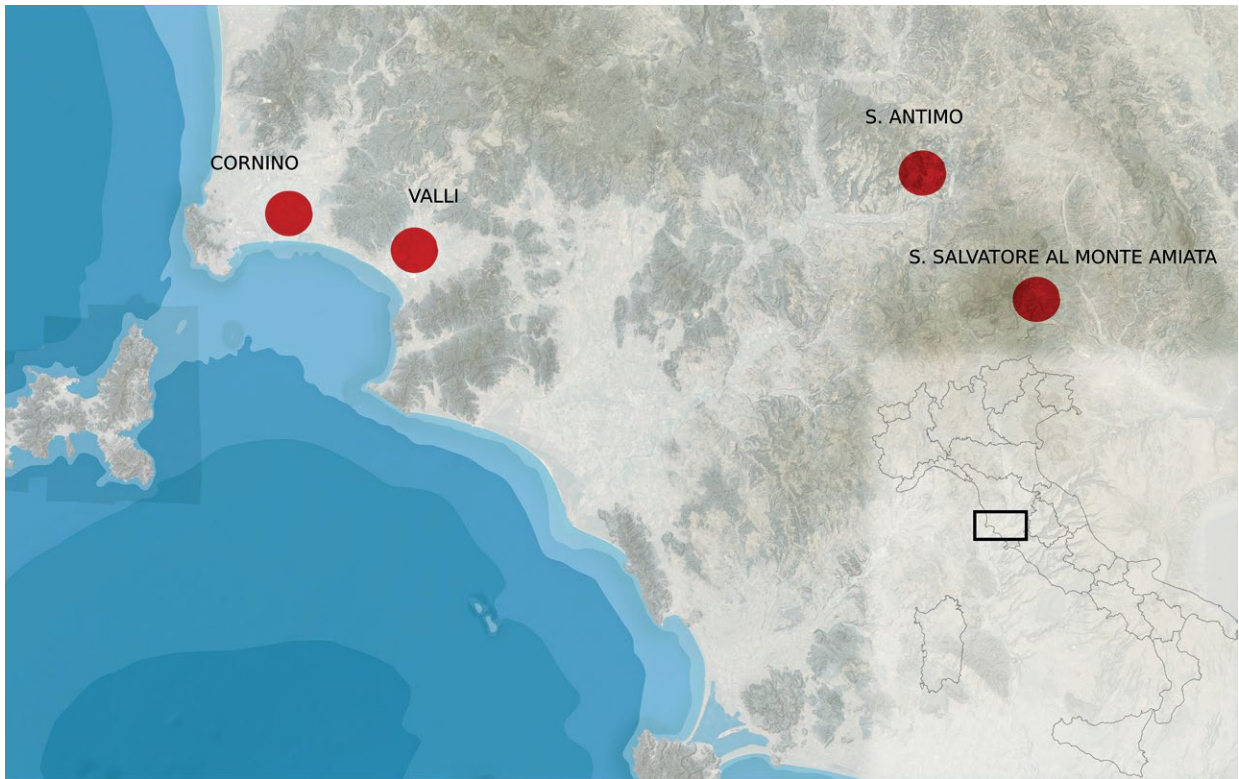


Figure 0.1 - The area investigated.

contexts in northern Tuscany, and in a central portion of the Po valley area, seeking points in common in histories that were apparently remote and disconnected from each other.

All this while being fully aware that I could not arrive at an absolute historical truth, but that I could try to identify plausible narratives to reconstruct the stages in a complex history, set out in the final chapter, as a paradigm for other territories, beyond and outside the case study, one that I hope may be able to guide new research.

To build my narration, I drew on material findings above all, and wherever possible, stemming not only from archaeological research, but also from research in other disciplines, aware that the contribution from the so-called ‘hard’ sciences, with a view to a thorough integration of objectives, is the way forward for gaining a better understanding of historical complexity.

The sources were interrogated, debated and often reread, to build a new narration. It was a laborious task in which I tried to never lose sight of the central thread, I hope successfully.

It has not been an easy task, and the fact I have managed to complete it is down to many friends and colleagues whom I would like to mention, and thank:

Richard Hodges, for having believed in the nEU-Med project, and for having joined me in this ‘adventure’, which saw him return to those places where, more than thirty years earlier, he was involved in the ‘glorious’ period of research in early medieval villages with his dear friend Riccardo Francovich;

my colleagues and young researchers, the ‘action nucleus’ of the nEU-Med project, with whom I shared in this exceptional period of research that has just ended, a period which I now view with increasing nostalgia: Alexander Agostini, Arianna Briano, Andrea Bardi, Mauro Buonincontri, Laura Chiarantini, Cristina Cicali, Simone Collavini, Carmine Lubritto, Lorenzo Marasco, Anna Maria Mercuri, Pierluigi Pieruccini, Giulio Poggi, Elisabetta Ponta, Alessia Rovelli, Luisa Russo, Francesco Sala, Davide Susini,

Serena Viva, Paolo Tomei, and Vanessa Volpi. The productive discussions I have had with each of them have truly meant a lot to me, and without their work much of this volume would not have been written; Luisa Dallai, a valuable travelling companion in all the various phases of the project, and an irreplaceable source of support in the no few critical moments along the way, as well as during the drafting of this volume itself.

Important advice and contributions to the project and, as a result, also to the construction of this book have come from many colleagues: Marie-Christine Bailly Maître, Marco Benvenuti, Marc Bompaire, Luc Bourgeois, Gaetano Di Pasquale, Alessandro Donati, Alessio Fiore, Sauro Gelichi, Michelle Hobart, Tiziana Lazzari, Michael McCormick, John Mitchell, Alessandra Molinari, Juan Antonio Quirós Castillo, Guillaume Sarah, Florian Téreygeol; Chris Wickham, Giacomo Vignodelli, and Enrico Zanini. My thanks go to each and every one of them.

Alexander Agostini, Monica Baldassarri, Arianna Briano, Mauro Buonincontri, Stefano Campana, Luisa Dallai, Roberto Farinelli, Elisabetta Giorgi, Alessio Fiore, Sauro Gelichi, Silvia Guideri, Richard Hodges, Lorenzo Marasco, Mario Marrocchi, Paolo Tomei, Luisa Russo, Emanuele Vaccaro and Serena Viva have patiently read parts of the volume, enriching them with their comments.

None of the above are responsible, of course, for any shortcomings and flaws in this work, for which I take full responsibility.

This book, the ideas underlying my research and the nEU-Med project itself, as well as my passion for my work, all this and much more, would not have been possible without Riccardo Francovich. He is ever in my thoughts, and I will always be grateful to him.

Chapter I

The Pecora river valley and the royal court of *Valli*

1.1 Chronological history of research in a plain

As already stated in the introduction, many issues discussed in this book are largely linked to the findings of the nEU-Med project. In turn, the success of that project was also the result of the number and quality of the findings made in the three-year period of intensive investigations at the Vetricella site, and in the Val di Pecora (Pecora valley). These data can open up new horizons for research, and stimulate complex hypotheses.

Accordingly, it is here that we must anchor the underlying arguments that will later lead us to other contexts of analysis in the following chapters.

The plain where Vetricella is situated is traversed by the river Pecora, and is bordered to the north by the Montioni and Cornia hills, to the east by Massa Marittima and the lower slopes of the local stretch of the Colline Metallifere, and to the south by the Monti d'Alma hills (Figure 1.1).

As a result of research conducted as part of the nEU-Med project, this site and its surrounding area were interpreted as falling within the royal estate of *Valli* (Bianchi, Hodges 2020). This place-name is used to refer to one of the estates allocated by Hugh of Arles, by means of the well-known dowry from 937, to his future wife Bertha of Swabia and to her daughter, Adelaide, who, despite being little more than a child, was destined to marry Hugh's own son, Lothair (Vignodelli 2012). The dowry that fell to Adelaide consisted not only in the estate of *Valli* but also in the Cornino estate, situated in the next valley, and two important courts lying further in the hinterland, linked to the monasteries of S. Antimo in Val di Starcia (province of Siena) and San Salvatore al Monte Amiata (province of Grosseto), as well as other property in northern Italy (Figure 1.2).

Adelaide, famously, was of course more than just another short-lived figure on the historical scene, and after being widowed by Lothair, she married Otto I, becoming the mother of Otto II and grandmother to Otto III. Her longevity meant that she was able to closely follow all the events at court until a few years up to her death, in 999. Throughout this time the four estates remained in her possession, as we shall see later on. However in the important work by Vignodelli (Vignodelli 2012), *Valli* and Cornino were still no more than two dots on a map, inexplicably at some distance from the largest nucleus of royal properties situated in northern Tuscany, and in the heart of the Kingdom.

From written documents, we know that much of this area, since the Carolingian period, fell within the civil district that came under the ancient city of Populonia (see chapter II), situated on top of the promontory of the same name, and a bishop's seat that was definitely attested to as of the end of the 5th century. This civil district, first mentioned in 826, became a *comitatus* in 901 (Ceccarelli Lemut 1985, 22). However, the written sources testify to the fact that, in late 9th century and early 10th century documents, the civil and ecclesiastical lands of Populonia were starting to be described with the adjective 'Cornino'. By contrast, the part situated to the south of our area, namely the part bordered by the Monti d'Alma, stood right on the boundary of the diocese of Roselle itself, and as such was the subject of competing claims between the two bishops between the 10th and 11th centuries (Ceccarelli Lemut 1985, 25). The *comitati* of Roselle, Populonia and Sovana, at least as of 857, were headed up by a member of the Aldobrandeschi family (Collavini 1998, 53-57), Hildebrand II, and the family continued

to hold this post, at least in the comitatus of Populonia, up until the last quarter of the 11th century (Collavini 2016, 57).

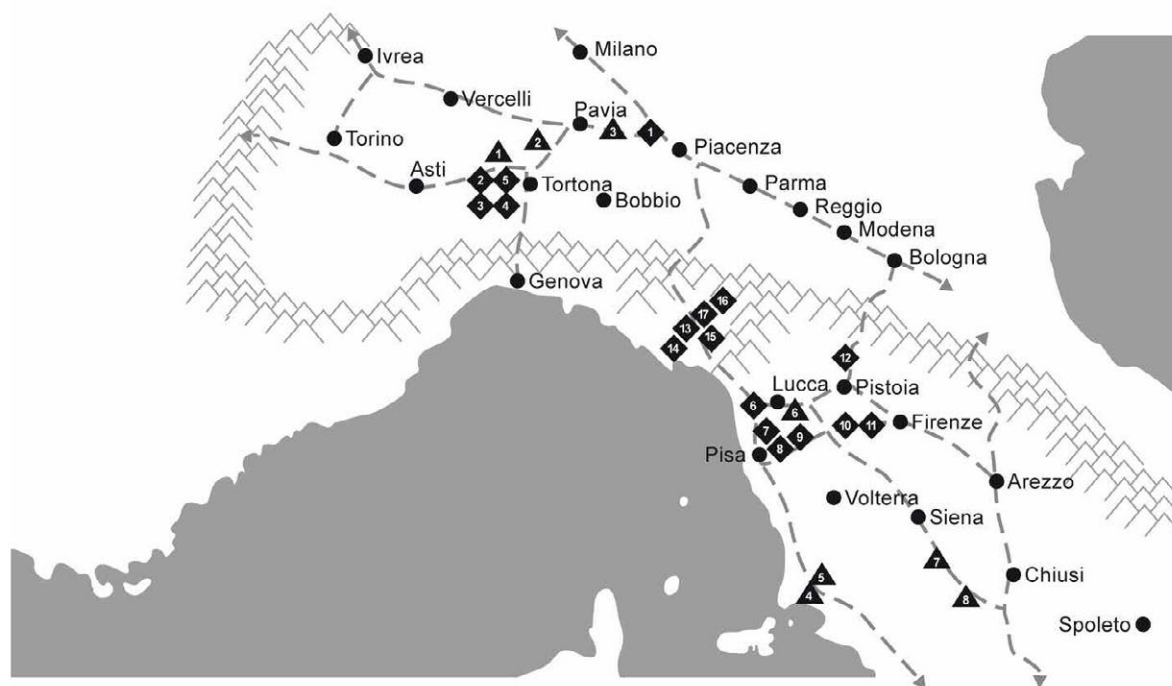
Obviously, the existence of royal properties all around, and in this area, ever since the 8th century, has already been underlined in previous, important works. However, relatively little significance has been attached to this fact, making it almost always subsidiary to the centrality of the history surrounding the formation of local seigneurships. Regarding the territory belonging to the *Valli* royal estate, the documents also provided additional information, directly or indirectly: the first mention of the toponym Valle, in 884, as a place that lay within the aforementioned area of Cornino (Ceccarelli Lemut 1985, 37, n. 76); the existence of a castle in the Late Middle Ages, Valle, positioned on a hill behind Follonica and north of the plain where Vetricella stands (Ceccarelli Lemut 2004, 5); the presence of a river, the Teupascio, attested to as of 746, which can be etymologically connected to the meaning of King's Water (Farinelli 2007, 67, n. 309), and which can be identified with the modern-day river Pecora, which flows through the valley, flowing into the sea in the bay of Follonica (Bianchi, Collavini 2018); the reference to the curtis of Scarlino in a document dating to 937 which states that it belongs to the Aldobrandeschi family (Ceccarelli Lemut 2004, 2); and the continuing existence, into the 11th century, near the original Roman harbour of Portus Scabris, of fiscal property and an estate called Portiglioni (Ceccarelli Lemut 1985, 31).

For archaeology we can rely on a considerable amount of previous data. Indeed, at the end of the 1970s Scarlino castle itself, overlooking the Vetricella plain, was the starting-point of that series of enlightened



Figure 1.1 - The geographical area where the court of *Valli* was located (from Marasco, Briano 2020, 11).

Berta e Adelaide: quadro d'insieme



◆ beni donati a Berta

- 1 *curtis de Senna*
- 2 *curtis de Gaumundio*
- 3 *curtis de Setiaco*
- 4 *castellum de Rivo Torto*
- 5 *curtis de Urba*
- 6 *curtis de Notiana*
- 7 *curtis de Advena*
- 8 *curtis de Longiano*
- 9 *curtis de Blentena*
- 10 *curtis quae dicitur Curte Nova*
- 11 *curtis de Sancto Quirico*
- 12 *curtis de Pinto*
- 13 *Agullia*
- 14 *abbatia de Valeriana*
- 15 *curtis de Valle Plana*
- 16 *curtis de Cumano*
- 17 *curtis quae dicitur Nova*

▲ beni donati ad Adelaide

- 1 *curtis de Marino*
- 2 *curtis de Coriano*
- 3 *curtis de Olonna*
- 4 *curtis de Valli*
- 5 *alia curtis in Cornino*
- 6 *abbatia de Sexto*
- 7 *abbatia Sancti Antimi*
- 8 *abbatia domini Salvatoris in monte Amiata*

● città

— percorsi stradali

Figure 1.2 - Location of royal estates mentioned in *Hugo of Arles dower* (from Vignodelli 2012, 12).

and innovative research studies by Riccardo Francovich which led to the formulation of the well-known ‘Tuscan model’ (Francovich 2008).

According to this previous research, in the Early Middle Ages the plain below the castle of Scarlino must have been all but deserted. This finding emerged, as an obvious consequence of the rather scant understanding of early medieval pottery, from the archaeological survey by Costanza Cucini at the end of the 1980s (Cucini 1985). This finding, later confirmed by field-surveys in other areas, provided strong support for one of the key points of the Tuscan model, namely the abandonment of low-lying plains, as of the 7th century, in favour of occupation, initially spontaneous and subsequently more controlled, of locations at higher altitudes, with the formation of hilltop villages. This is also confirmed by the clearer early medieval remains which emerged below the Rocca di Scarlino, bearing witness to continuity of habitation as of the 7th century in the late medieval castle, and at the hilltop site at Podere Aione (atop a medium-sized hill), with signs of occupation that can be dated to the 9th century, identified during the survey (Cucini 1989).

Almost twenty more years passed since that first, pioneering research before new investigations were conducted in the Scarlino plain. This new field research was associated with a larger research programme to study the archaeological landscapes in the Grosseto area, coordinated by Stefano Campana (Remote Sensing Laboratory, LAP&T, University of Siena). This featured the use of several investigative methods, including aerial photography analysis, Lidar surveys, and georadar and geoelectric surveying. It was in this new research context that the anomaly emerged consisting of concentric circles, associated with the Vetricella site (Figure 1.3). Further field-surveys were later conducted in the plain, as part of Lorenzo Marasco’s doctoral thesis, in the context of this larger project. These made it possible to place the local landscape, both natural and anthropic, in a more detailed context, thanks to the identification of a fair number of sites (Topographic Units; Italian abbreviation: UT) datable to the period between the 8th and 12th centuries, which will be discussed below (Marasco 2013). Also during this previous research campaign, limited archaeological excavations were conducted at the Vetricella site, revealing a chronology ranging from the 9th to the 11th centuries. These led to the site’s preliminary interpretation as a sort of proto-motte connected to the first manifestations of local seigneurial powers (Marasco 2012).



Figure 1.3 - The site of Vetricella prior to excavation (photo LAP&T, Siena University).

These stimulating findings focused a great deal of attention and energy on this site, and on its territorial context, during the phase when the nEU-Med project was being drawn up, to the extent that it was identified as a possible case study for the project.

This confidence in the site's value was richly rewarded by the results that were achieved. These I will illustrate in summing up a considerable amount of datasets, gathered in the course of a complex, multidisciplinary investigation conducted between 2016 and 2019, the analytical results of which were compiled especially in the volumes that appeared between 2018 and 2020 (Bianchi, Hodges 2018; 2020).

1.2 The Vetricella site and the plain between the 8th and first half of the 10th century

Regarding the landscape context peculiar to the Middle Ages, the recent geomorphological analyses of the former bed of the river Pecora (originally named the Teupascio in the documents) allow us to reconstruct its original course which, unlike the course of the modern river, took it quite close to Vetricella (Pieruccini *et al.* 2018). However, the whole area was characterized by the presence of a lesser hydrographic system which, along with the Pecora, ever since the Pleistocene, created an alluvial fan on which the site itself was also established (Susini, Pieruccini 2020 for further detailed geomorphological data, also discussed below). The alluvial fan contained a system of small valleys that allowed water to drain away, and Vetricella stood on a slight rise, between two of these small valleys, thereby having natural lines of drainage. Accordingly, much of the landscape around the site featured streams formed of surface run-off, with the volume of water depending on variations in seasonal weather events (Figure 1.4). In this landscape, corresponding to the final stretch of the river Teupascio, stood the royal estate the name of which, Valli, must have referred specifically to this low-lying plain (Bianchi, Collavini 2018, 226).

The river Pecora flowed into a lagoon, which is still recorded in 19th century historical maps under the name Palude (ie. "Marsh") di Scarlino (see the 19th century prints published in Guarducci *et al.* 2012, 88-89; 130), which was later drained in the 1950s.

Four core samples in the original lagoon area, ranging in depth from 5 to 10 m, in addition to geoelectric and geomorphological analyses, and a series of preliminary trenches conducted during the nEU-Med project, made it possible to determine the characteristics and possible boundaries of this wetland zone. The chronology of the sedimentary evolution found in the cores was then investigated by means of special radiocarbon analyses (Pieruccini, Susini 2020 for more detailed references to the entire geomorphological analysis discussed below).

The picture that emerges (Figure 1.5) is of a lagoon environment which gradually contracted over time, leading to the formation of scattered pools, some very deep and others relatively shallow. During the Early Middle Ages actual lagoon areas extended inland from the coast, lying around 1 km south and south-west of the site of Vetricella. The point of contact between the open sea and the lagoon was situated at the wide mouth of the lagoon, near where the modern-day locality of Puntone now stands, and not far from the modern port of Scarlino, and where in antiquity, too, stood the Roman port system of Portus Scabris (Figure 1.1), later called Portichale/Portigliani in the Late Middle Ages (Marasco, Briano, 2020, 18).

Variegated vegetation once grew on the margins of the lagoon area. Archaeobotanical analysis of plant remains from the Vetricella excavation (Buonincontri *et al.* 2020b for references to the archaeobotanical analyses cited below) confirms the presence in the Early Middle Ages of forests composed primarily of deciduous oak (*Quercus*), followed by *Fraxinus ornus* and, in smaller percentages, *Ulmus*. The most common species of *Quercus* was Turkey oak, and the research allows us to posit the existence of Turkey oak groves situated around 2-3 km from the site where the evergreen shrubs of the Mediterranean

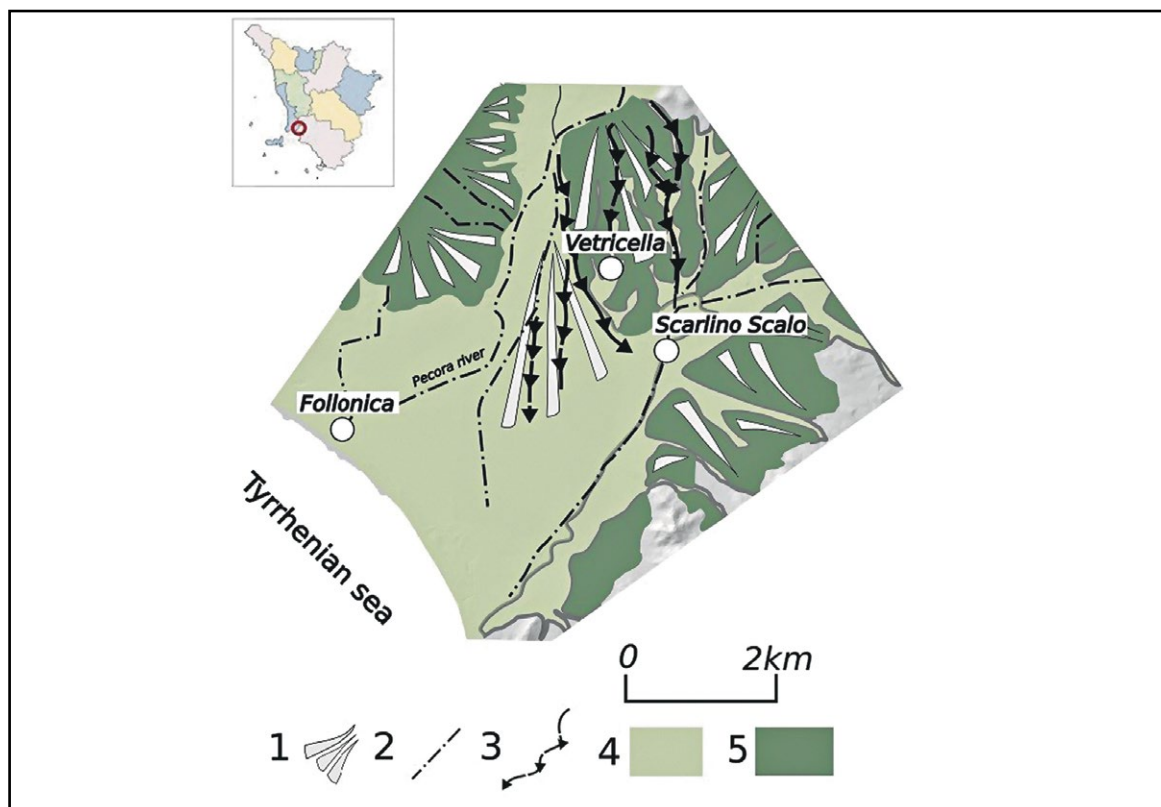


Figure 1.4 - Diagram of geomorphological system around the site of Vetricella (from Susini, Pieruccini 2020, 28).

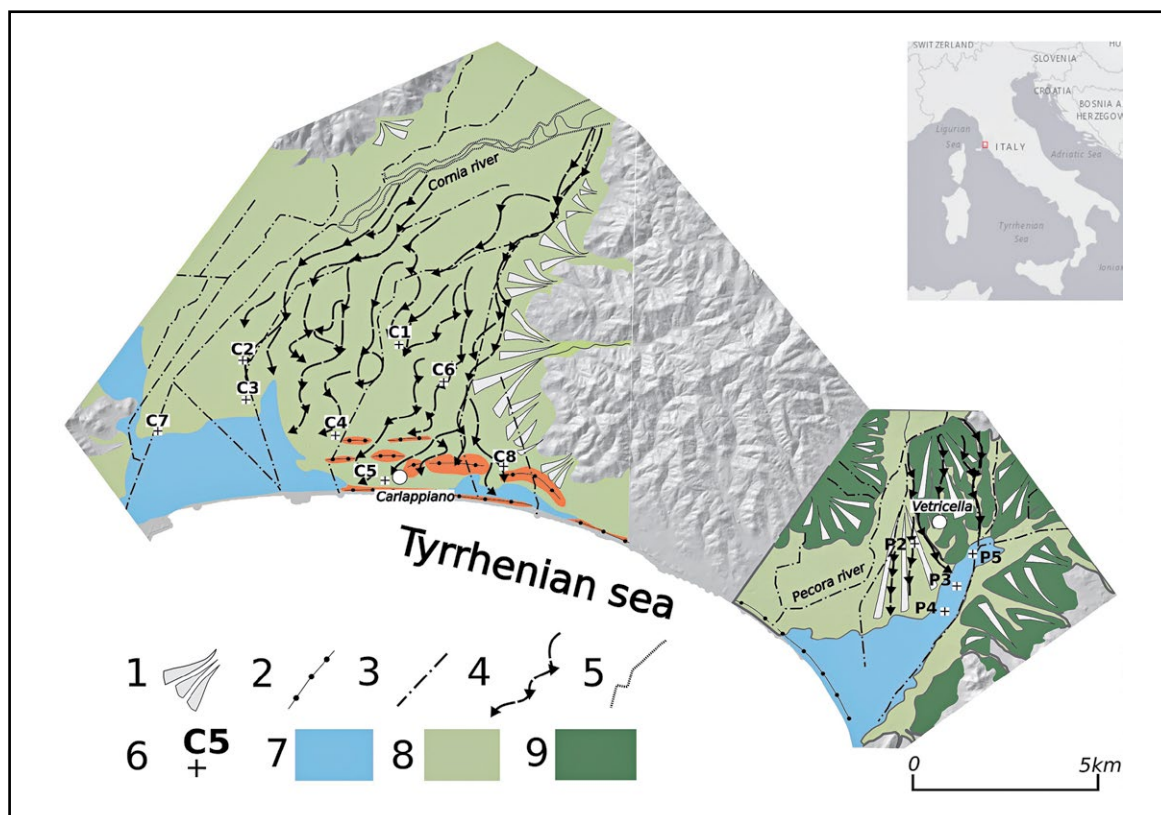


Figure 1.5 - Geomorphological reconstruction of lagoon areas in the Cornia and Pecora valleys (from Pieruccini, Susini 2020, 162).



Figure 1.6 - Vetricella. Left: plan of site at the end of the 2018 campaign. Right: drone orthophoto at the end of the 2018 campaign.

scrubland are currently found. This woodland habitat was well suited to the land, which would flood only occasionally. This must indeed have been the case with the plain area, which also featured typical riparian vegetation, with willow, poplar and alder.

The archaeological excavation of this site, which took place between 2016 and 2019, was by no means easy (Figure 1.6)¹. Indeed, its deposits are made up of stratigraphy that is often hard to define, but which nevertheless represents fundamental human and anthropic actions extending over a prolonged period of time. In many cases it has also been compromised by recent farming, which has left deep and extensive cuts in the deposit. For this reason, the sequence was supported by a very high number of radiocarbon dates. We shall be referring frequently to these in all the following sections, without going into specific detail, given that these datings and associated calibrations are outlined in a more analytical form in two articles which I will frequently refer to (Marasco *et al.* 2018; Marasco Briano 2020).

The first traces of human presence in this alluvial fan (Period I of the archaeological sequence) date to between the 8th and 9th centuries (Marasco Briano 2020, pp. 10-13; Bianchi, Marasco 2022). This evidence was brought to light especially in the final, non-extensive excavation campaign in summer 2019. It reveals extensive occupation, with high-temperature combustion pits, remains of possible forges, and strata altered by exposure to heat which have parallels with structures connected to possible metallurgical activities (Figure 1.7). The processing of these findings, which is still under way, and their small size, does not allow us to draw up hypotheses concerning the site's vocation. However, the clear evidence of productive activities is found in a territory which, just two centuries later, is documented as being part of a royal estate, but which included public holdings, as early as the 8th century, both to the north, between the Cornia valley and the Colline Metallifere, and to the south, in the territory of Roselle and Lake Prile (Bianchi Collavini 2018).

In the second half of the 9th century (Period II of the sequence) we see the major transformation which gave the site its distinctive feature of concentric circles, as can be seen in the aerial photo in fig. 3 (Marasco Briano 2020, 10-13). Indeed, after part of the alluvial fan was levelled out in advance, before then raising it artificially in the central part (Susini, Pieruccini 2020 for all references to geomorphological analysis cited below), the three ditches were created. These were laid out in accordance with a precise design based on circumferences of multiple radiuses, using units of measurement which, according to Marasco's suggestion, followed Liutprand's standard foot measurement (Marasco *et al.* 2018, p. 75): around 19m for the radius of the inner ditch; 38/39m for the middle ditch; and around 56m for the outer ditch (Figure 1.8). In view of the geomorphological characteristics of the area, as discussed above, at

¹ The excavation, conducted under a license, was coordinated in the field by Lorenzo Marasco, with the collaboration of Arianna Briano, under the scientific direction of myself and Richard Hodges.



Figure 1.7 - Vetricella. Period I: a) plan; b-c) possible furnaces dug into the ground; d) patches of ground exposed to heat (from Marasco, Briano 2020, 11).



Figure 1.8 - Vetricella. Plan showing outlines of ditches, and possible metrical units of measurement adopted (from Marasco et al. 2018, 76).

certain times of the year the ditches were partially filled with water (becoming moats), thanks to the natural drainage of surface runoff water, as well as rainwater. By contrast, geomorphological analysis has ruled out the possible arrival of water from the nearby river Pecora. Since it may be calculated that earth brought to the site from elsewhere to artificially raise the ground level of the central part of the site added around 1m to its height, it follows that, combined with the height of the alluvial fan which it stood on, this central part must have stood around 2m above the level of the surrounding plain.

The whole operation involved a considerable amount of earth-moving, with excavation, levelling, infills, and above all the creation of the three very large ditches (Figure 1.9)². This bears witness to a large-scale planning effort, involving a major investment in terms of financing and manpower. At this particular time, and in this area, such an effort could only be implemented thanks to a very high-level authority, who must surely have entrusted the planning of the site itself to skilled builders who came from outside the area, and who were familiar with this kind of site layout; a layout that is comparable, to a greater or lesser extent, with contemporary sites in northern Europe³. Only a few decades after this transformation we have a reference, with the dower of Hugh of Arles, to a royal estate in this territory, in 937. Accordingly, it is possible to suggest that this construction project may be attributable to an early, specific project on the part of the public powers aimed at reorganizing this general area.

A building in the shape of a tower, made of perishable materials, must have stood in the centre of the three ditches, and it was rebuilt with the same perimeter in the following periods. This would explain why this phase is attested to not by the perimeter walls but by a number of internal habitation levels (Figure 1.10). Outside this building, and thus still within the central area, the reduced stratigraphic deposits testify to a modest scale of habitation, while the dynamic of the earliest anthropic infills in the inner and middle ditches reveal rubbish tips that would attest to more intense habitation in the areas between the second and third ditches.

Given the characteristics of its layout, Vettricella could have had a dual function: on the one hand it may have been a defensive feature to protect fiscal property in the coastal area, within that panorama of public fortifications along the Italian coastline mentioned in the capitulary of Louis II from 866 (Settia 2003). At the same time, it may already have been an administration and control centre of inland landscapes and their resources (Marasco, Briano 2020, 19).

A similar function must also have distinguished the following phase, between the late 9th and the first half of the 10th century, when we again see a low level of frequentation of the area immediately outside the tower, and between it and the inner moat. Meanwhile, thanks to the material found in the gradual infills of the two other ditches, we can surmise, again, that the areas outside the central area were frequented more.

² The dimensions of the ditches are: ca. 5m wide and ca. 2m deep (inner ditch); ca. 6m wide and ca. 3m deep (middle ditch); and ca. 6m wide and ca. 1m deep (outer ditch).

³ Possible links between Vettricella and other north European sites were initially proposed in Marasco 2013 and later in Marasco *et al.* 2018, 77. A recent master's degree thesis (Turchi 2018-19) has explored this issue by means of a wider census, confirming that Vettricella is one of the earliest Carolingian examples of sites built on artificial mounds surrounded by ditches or moats. Excluding the site of Chiari (Venturini 2013), whose chronology is yet to be verified, the closest parallel is with sites in northern Europe built on the coast of the modern-day countries of the Netherlands and Belgium in the final decades of the 9th century (eg Furnes, Middelburg, Domburg), or with the German fortresses from the second half of the 8th and early 9th centuries (eg. Kaaksburg, Hünenburg, and Bokelerburg). Nevertheless, there are differences with these other sites. Indeed, despite the presence of ditches (which however are often single), in most cases these are far wider than the ones at Vettricella, ie. around 20m, with the addition of large-scale embankments that emphasize their defensive function. A defensive function is also clear in the planning of the site in Tuscany, but this was clearly not predominant, in view of the fact that the outer ditch was no more than 1 m deep. Thus, the uniqueness of Vettricella's layout and design confirms that it was the product of technological knowledge that certainly came from outside this part of Tuscany, but which was the result of complex reworking and adaptation to the local environmental and historical context.

For that matter, as clearly shown by Vignodelli, if King Hugh's 937 dower was part of a specific economic strategy to reinforce royal estates that were important as regards their position or their proximity to sensitive resources, it is logical to imagine that, at this time, the *Valli* estate must already have played a specific role in this assemblage of holdings (Vignodelli 2012).

This line of thinking introduces us to the subject of possible resources linked to this area.

The presence of the lagoon has always led to an assumption, in a somewhat deterministic fashion, that there were salt-works here, also on the basis of their existence in the protohistorical period, as seen in the archaeological record (Aranguren, Castelli 2006). However, it does not seem that in the Early Middle Ages this resource was predominant in the general vocations of this estate. Apart from a reference to salt exploitation in the late Lombard period, connected to public control by Chiusi over this area (Ceccarelli Lemut 1985, 26), we find new references only in the Late Middle Ages, although these do not seem to refer to large-scale production (Ceccarelli Lemut 1985, 71, n. 54).

On the other hand, the plain's proximity to the more inland mining areas, in what is now the Colline Metallifere Massetane district, would suggest that this estate had a direct link to exploitation of those mixed sulphides found in rich quantities in the inland territory, from which copper, lead, silver and iron were extracted.

It seems plausible to posit the exploitation of iron itself for the full 9th century, thanks to the presence of ferrous minerals and slag, which was consistently the result of iron processing, found in the various sample trenches excavated outside the outer ditch, as well as in the trenches investigating the fill layers in the ditches themselves, that can be associated with this time horizon (Marasco, Briano 2020).

Electronic microscope analyses (SEM-EDS) and chemical analyses (ICP-OES) conducted on these iron processing residues (Volpi *et al.*, forthcoming) have yielded a highly significant discovery, namely that both the ore and forge slag contain hematite whose make-up strongly indicates an origin on the island of Elba. This archaeometric finding would thus confirm that the raw materials also came from mines on Elba, located in the southern part of the island, facing the bay of Follonica itself, and which were exploited ever since the Hellenistic period. This is an important finding (commented on in Chapter V), and it shines a light in the darkness that shrouded mining on the island, with its excellent hematite, from the Late Antique period down to the Late Middle Ages, when Pisa, via its itinerant metalworkers, exploited the seams there (for a recent reference Pagliantini 2019, 18-21).



Figure 1.9 - Reconstruction of site of Vetricella at the time when the three ditches were created (Illustration: Francesco Sala).



Figure 1.10 - Vetricella. Period II: a) plan, with tower in centre; b), c) pictures of exploratory trenches in the infills of the middle and outer ditches. Photo B shows middle ditch in foreground, with outer ditch further away (from Marasco, Briano 2020, 12).



Figure 1.11 - Location of inland mining sites.

Thus, whereas up until now, for the early medieval period, the coastal area (also as a result of the deafening silence over the island's metallurgical history) had hypothetically been linked more to mining resources in its own hinterland, these new findings force us to consider a link between the mainland and Elba as already active in this period, leading to the arrival of raw materials in the plain. While, as we shall discuss later on, there are greater indications in the Ottonian period for suggesting the scale of trafficking in these ores, and how this was organized, and also to posit how the ores were used, for this phase there is no exhaustive answer to these questions, despite the fact that establishing that this was indeed the case is already a significant finding.

As well as iron-bearing minerals from Elba, archaeometric analyses also evidence a contribution from inland areas, since slag found at the site displays not only a signature from Elba, but also the signature of the Colline Metallifere.

This is in line with the results of previous archaeological investigations, thanks to which we know of the existence, between the 8th and 9th centuries, of at least two small settlements in the heart of the Colline Metallifere, near ore-bearing seams, namely the sites of Cugnano and Rocchette Pannocchieschi (Bianchi, Dallai 2019; see also Chapter V). Previous explorations also indicate iron exploitation at the village of Miranduolo which, its excavators suggested, was limited to the 7th century (Fronza, La Salvia, Putti 2012).

Traces of life dating to the 8th-9th century also emerged below stratigraphy relating to the Canonica di Montieri religious complex (which we shall discuss in Chapters IV and V), located on the slopes of a hill rich in ore-bearing seams that were mined on a large scale in the Late Middle Ages (most recently Bianchi, Cicali 2019) (Figure 1.11). This is to stress that the very existence of sites in the vicinity of subsoil resources may already indicate that mining work was organized in inland parts as far back as this time horizon. At the very least, it suggests an interest in these resources that may have been the rationale for the formation of small population nuclei, that may perhaps only have taken part in ore extraction, prior to its processing elsewhere, as I have already posited previously (Bianchi 2018b).

What kind of ore was predominantly extracted, in what quantities, and for what end use or uses are still largely unanswered questions, despite the fact that further analyses as part of the nEU-Med project have indirectly suggested certain hypotheses. However, I will not dwell on these here, since I will discuss them in chapter V.

As a result, on the basis of the aforementioned findings, in this phase the site of Vetricella could be interpreted, as of now, as a possible terminus for the arrival, distribution and perhaps processing of some of the minerals from the hinterland and from the island of Elba, within a complex operational chain controlled by the public powers. Thus, the organization of exploitation of ore-bearing seams would date to this period onwards, although, as I will describe later on, this was to be accelerated on a major scale in the Ottonian period, in the same manner.

There is more information, for this phase, regarding the start of larger transformations of the natural and forest landscape in this territory.

The chance find of a section of the paleochannel of the river Pecora/Teupascio, during earth-moving work to create an artificial feeder channel, situated not far from Vetricella, has made it possible to carry out (with the nEU-Med project) a detailed multidisciplinary analysis on artificial sections measuring around 400m long and 10m high. Thanks especially to geomorphological and archaeobotanical studies, this has led to some truly significant findings (Figure 1.12). In particular, the stratigraphy evidenced within the former river bed has yielded a precise dynamic of the formation and composition of the deposits contained in it.

Without going into too many technical details, since an analytical discussion may be found in a series of articles already published (Pieruccini *et al.* 2018; Pieruccini *et al.* 2021; Buonincontri *et al.* 2020a), the findings may be summarized as follows:

- The river Pecora originates in the area above Massa Marittima, and in its original, initial section it flowed through an extensive area of flat land, characterized by marshy wetlands, before descending, via a system of falls, into the same plain where Vetricella stands, before flowing into the lagoon.
- Radiocarbon dates for the infill of the paleochannel show that the sediments were deposited in the period between the 8th to the mid-5th centuries BC, and the mid-7th to 13th centuries AD.
- The impact of anthropic actions, which can be seen in the fills, became more incisive starting in the very Early Middle Ages.
- Indeed, as of the later 7th century AD, in the deposits of the former river course are found fragments of Calcareous Tufa belonging to the formation present upstream. In view of the amount of this material, and its type, geomorphological analysis attributes its origin to the result of anthropic alterations to the original river bed, and to nearby sedimentary tufaceous levels, in particular at the point where the river negotiated a sudden change in level between the flat-lying area upriver and the low-lying plain downriver. It would seem that these operations are to be identified as artificial cuttings or profilings of the river bed, designed to encourage the flow of water downstream. The presence of calcareous tufa in the sediments downstream would thus be the result of these man-made alterations (Pieruccini *et al.* 2021) (Figure 1.13).
- The start of these operations would have assisted the gradual drainage of the flatland upstream, and it appears that this land-drainage operation was further accentuated by a series of intentional fires which apparently opened up, both upriver and downriver, areas to be used for farming or animal grazing (Buonincontri *et al.* 2020a, 12-13).
- Archaeobotanical analysis of anthracological and pollen remains shows that these actions also affected woodlands lying both near the river and at some distance from it, as well as riparian and marshland vegetation itself.
- At the same time, finds of carbonized cereal caryopses in all early medieval sediment levels confirm that farmland was present in the valley, with species chosen for their rustic nature, such as *Triticum dicoccum* (emmer) and *T. monococcum* (einkorn) (Buonincontri *et al.* 2020a, p. 11).

Having summed up these points, which for the first time perhaps illustrate a material reality involving the agricultural management of a royal territory that can only partially be inferred from documentary sources, we now move on to findings revealed by radiocarbon dating, and by the quantities of finds made in the sediments.

These tell us that these transformations were not all on the same scale. They intensified more clearly as of the mid-9th century itself, namely at the time when the Vetricella site was redesigned with the three concentric ditches.

Accordingly, this confirms an accentuation of actions aimed at redefining the natural landscapes in the plain. In view of the scale of these operations, this in turn makes it plausible to believe that the royal estate had a vocation in this phase also as regards controlling and managing farming resources in the local territory.

Also as of this same period, zooarchaeological analysis reveals traces of pig-farming, the success of which was facilitated by the possibility of allowing the animals to graze freely in the very same Turkey oak woods that were not far from the site (Aniceti 2020).

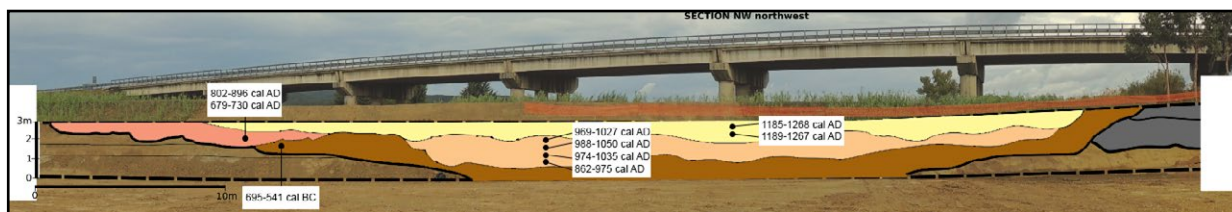


Figure 1.12 - NW section of artificial feeder channel where the paleochannel of the river Pecora was identified and the stratigraphic sequence identified within it, with associated radiocarbon dates (from Pieruccini et al. 2018, 21)

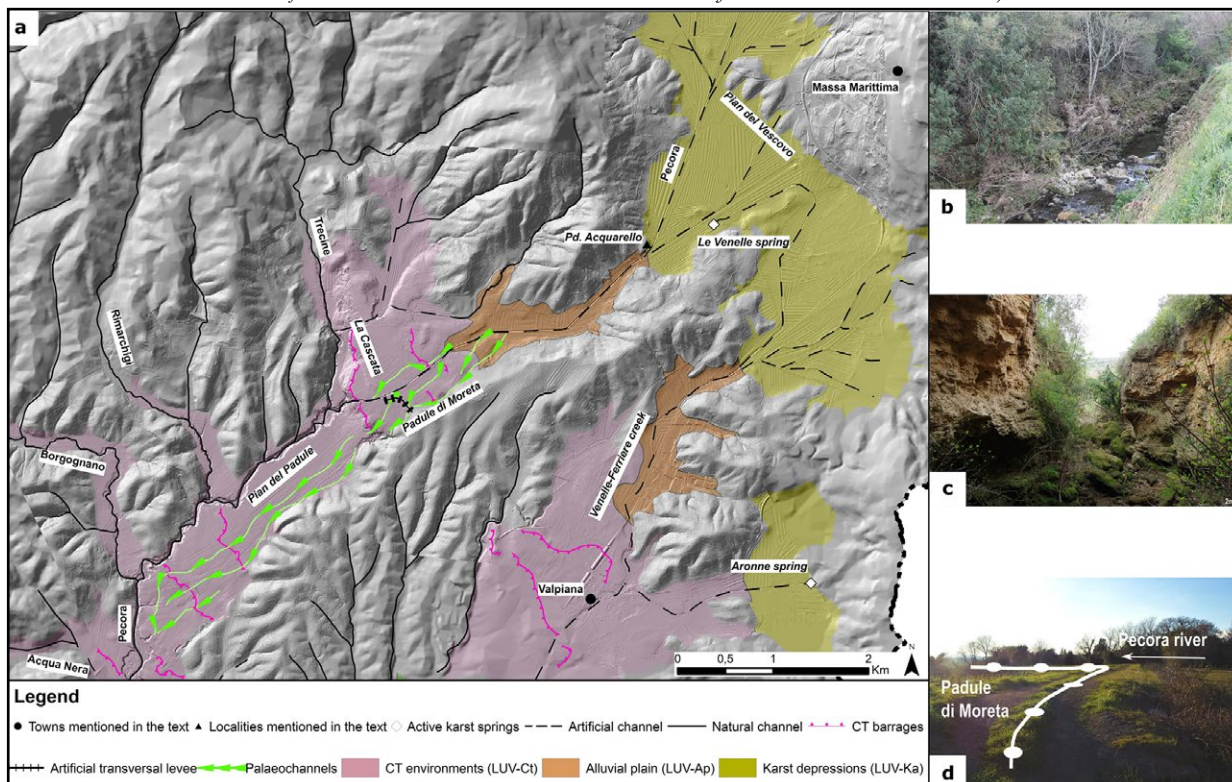


Figure 1.13 - The course of the former river Pecora/Teupascio and changes to it (from Pieruccini et al. 2021) a) nearby and intermediate sections of the Pecora drainage basin; b) channel with levee upstream from the main calcareous tufa barrier (“La Cascata”); c) the gully cut within the calcareous tufa barrier (“La Cascata”); d) artificial transversal levee in “Padule di Moreta” (white line with circles).

Naturally the presence of this reality raises the problem of who was engaged in these activities, and of farming activities per se, and where they might have lived, given that the only habitation structure revealed in the excavation is the tower-shaped building in the centre of the system of ditches. The material culture yielded by the habitation levels for this phase, despite not showing strong signs of the specific social status of the people who lived in the building (apart from a few sherds of sparse-glazed pottery, and red-painted pottery, Briano 2020b), does however indicate that it was only occupied on a limited scale, probably by a relatively small number of people, perhaps belonging to that contingent also made up of royal emissaries in charge of managing this site.

The remainder of the people living in and around the site probably lived in areas not very far from the site itself. As I have already written, field-walking surveys conducted by Marasco for his doctoral thesis had already revealed that the plain was not uninhabited in the Early Middle Ages. This fact has been confirmed once again by the new multidisciplinary surveys continued during the nEU-Med project, which were also backed up by geophysical and geochemical analyses (Marasco et al. 2018, 59-62; Dallai et al. 2018b; Dallai et al. 2020b).

THE PECORA RIVER VALLEY AND THE ROYAL ESTATE OF VALLI

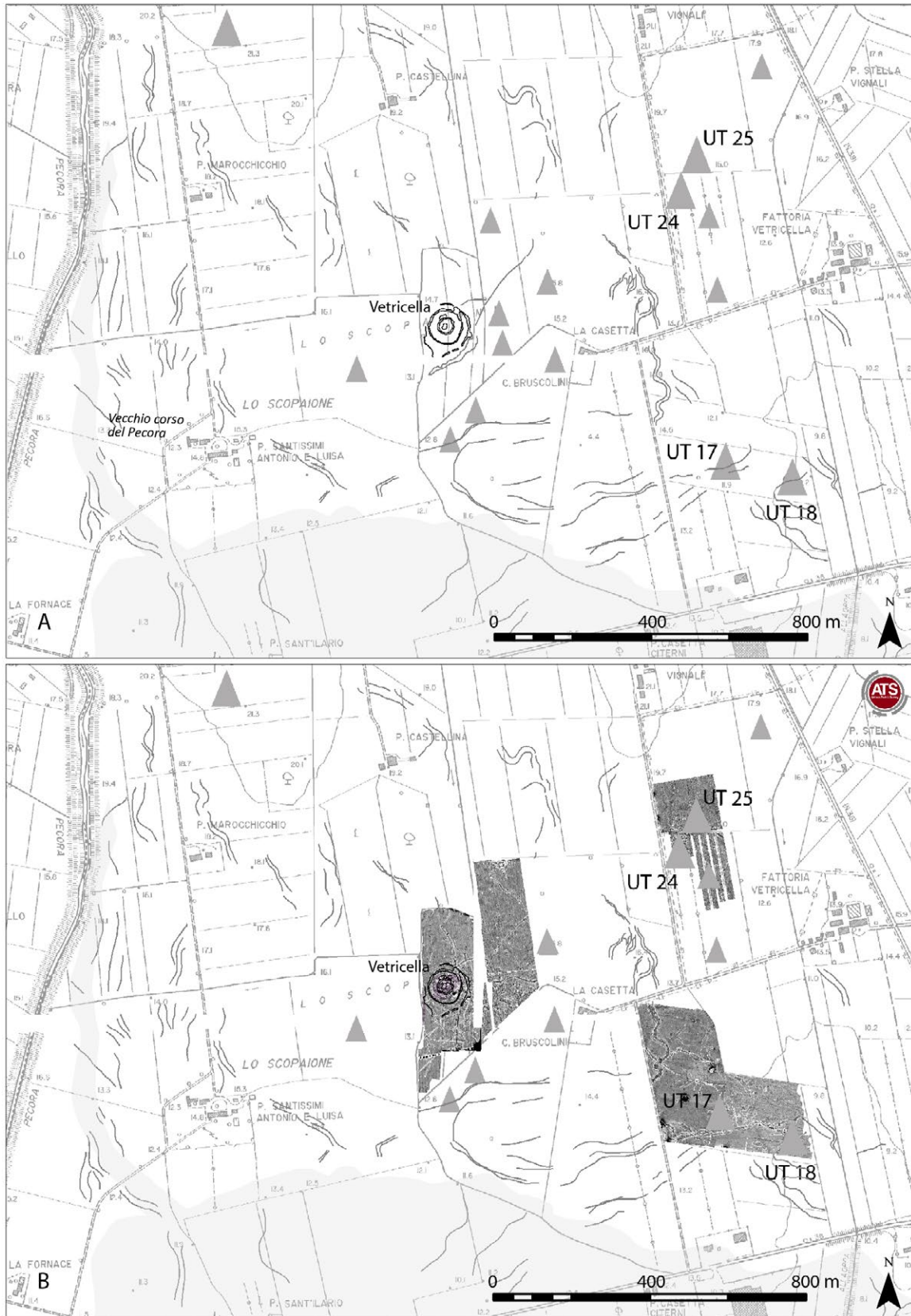


Figure 1.14 - a) Illustration with triangles shows main site contexts found during recent multidisciplinary surveys around Vetricella; b) location of magnetometric surveys (from Dallai et al. 2018b, 100).



Figure 1.15 - Location of archaeological sites found in multidisciplinary surveys in the plain datable to 9th century (based on Marasco 2014).

Following a phase dating to between the 6th and 8th centuries, in which we find an actual contraction in topographical features, the 9th century is the time when it seems that the plain starts to display greater settlement dynamism.

From this time on, with an intensification of features from the 10th century, as I will describe later, various small sites (UTs, ie. Topographic Units) appear that are distributed like satellites around Vetricella, on the opposite side to the former course of the Pecora. These are mainly situated on the dry hillocks in the plain, following a distribution arranged in bands (Figure 1.14). The first stands at around 200 m from Vetricella, and includes small settlements that can often be associated with indicators of iron-working, mainly metal-working slag. The second lies further away, around 800 m away, and also features sites of considerable size (Marasco *et al.* 2018, pp. 59-62).

In particular, worthy of note are Topographic Units 17/18, found superimposed on a Roman archaeological context, possibly to be interpreted as a farm. It has yielded slag, ore fragments, plain



Figure 1.16 - Photo with Scarlino Castle (Rocca di Scarlino) on the right, overlooking the plain below, where the marshland lay.

pottery, a scattering of stones, and human bones, possibly coming from a burial area (Dallai *et al.* 2020b, 150-154)⁴.

Radiocarbon dating for one of these burials, which emerged during the most recent test excavations, along with a very large stone-built wall, places it in a chronological range between the 10th and 11th centuries. This shows the continuity of occupation of these settlement contexts in the plain which, it is clear, began to form at the same time as the major overhaul of the layout of Vetricella, with the creation of the three concentric ditches, before then probably developing in an even more structured way in later phases, as we shall state below.

This is a trend which, thanks to the surveys by Lorenzo Marasco as part of his PhD research, had already emerged also for parts of the plain close to the slopes of the Monti Alma (Figure 1.15). Here the identification of several traces of archaeological sites at the place called Imposto (standing at the centre of an important intersection between a major and a minor road, between the coast and the hinterland, Figure 1.15) has led to the suggestion that a very large open village may have stood here, inhabited between the 9th and 12th centuries, erected on top of a Roman site (Marasco 2013, pp. 279-281). Not far away, located nearer the plain, near the fringes of the lagoon, there is also the collection of sites associated with the place-name La Pieve, a locality which today coincides with the modern-day farm, standing not far from the area where a major Roman villa had stood, with traces of habitation continuity up to the 7th century AD. During an emergency excavation, conducted by the Archaeological Superintendency (the ministerial body) in 2007, a series of burials were discovered, in the area close to the modern farm. These were interpreted as being linked to the phases when the villa itself had reached its maximum size (Aranguren, Castelli 2008), despite the fact that a later, unpublished radiocarbon date of one of these pushed the dating forward to a time horizon in the full 9th century⁵. The study of these,

⁴ The nearby UT 24 and UT 25 were recently interpreted as settlement sites connected to metallurgical activities. The most recent geochemical analyses (Dallai *et al.* 2020b) suggest greater caution in interpreting them, identifying their soils as fill layers, brought in from elsewhere. They would thus be less likely to yield detailed evidence, despite the fact that the scattering of slag and ore fragments remains important testimony of the presence of such activities in an area that could not have been too far away from the site.

⁵ Personal communication from Dott. Biancamaria Aranguren (Archaeological Superintendency) up until 2018.

conducted in collaboration with the Archaeological Superintendency, was the subject of a Master's degree thesis drawn up as part of the nEU-Med project (Scapolaro 2016-17). Anthropological analysis has enabled the identification of 18 individuals (as against 21, the figure imagined after excavation). This assemblage contained a fairly high number of sub-adults, and male and female adult individuals. Also as part of this work, radiocarbon dates were undertaken for two burials in this assemblage. The first of these is dated to the early 5th century date (Cal AD 377-426), and the second to a late 10th century date (Cal AD 952-1034). These dates, together with the unpublished 9th century date, mentioned earlier, indicate a long diachronic range of use for this burial area. Not far from this burial area, Marasco found a series of archaeological contexts (Topographic Units) indicating sites at the Case S. Jacopo locality.

These sites, situated in an area having a high density of occupation from the Republican period onwards, correspond overall to an extensive scattering, with an area of greater concentration of archaeological evidence that can be related to a continuity of occupation which, starting in Late Antiquity, intensified in the course of the 7th century, extending up to the 10th century (Marasco 2013, 245). As well as pottery, the context also features processing slag, ore, and the possible remains of a furnace, although it is hard to link the date of these possible iron-processing activities to a specific period in the long chronology of site use. Regarding the association of this context and of the burial area to a parish church (Pieve/plebs), which the toponym seems to refer to, this could be identified as the pieve of S. Donato di Morrano, one of the properties of the bishopric of Lucca, which was already a place of rogation in the Lombard era, and which stood near the Strata, which may be interpreted as a major road (Sodi-Ceccarelli Lemut 1994, 35-37; Tomei 2019, 83-84).

Nor must we forget Scarlino, with its long history, which has also been revised and fleshed out by Lorenzo Marasco, for his doctoral thesis.

Indeed, in the well-known excavation in the late 1980s, regarding the highest part of the modern-day town of Scarlino located inside the modern-day Rocca (Figure 1.16), as well as the earliest traces of reoccupation datable to between the 7th and 8th centuries, it is in the course of the 9th century that we see a more incisive transformation. This consists in the construction, along the margins of the flat hill-top, of new buildings with a probable residential function made of perishable materials, of various sizes (from 9 x 6m to 5 x 3m, or 6 x 4m), although a larger building measured between 9 and 12m in length.

On the side opposite Scarlino, on the slopes of the Monti Alma, we should mention the existence of that site (UT) already identified by Costanza Cucini near Podere Aione (Cucini 1989). This context, located near a possible Roman farm, was subjected to a further archaeological survey, and to various diagnostic investigations, which confirmed continuity of habitation from the late antique period until the 9th-10th century, as well as the presence of iron slag and ore from Elba (Marasco 2013, 245-250).

1.3 Changes between the second half of the 10th and first half of the 11th century

While important alterations in the site's layout, and in its territory, can already be seen as of the mid-9th century, such as to justify this estate being included among those regarded by Hugh of Arles as economic cornerstones of his kingdom, it is as of the middle of the following century that we see an exponential increase in the quantity of material evidence, testifying to new transformations, and above all a major acceleration in those trends already under way since the late Carolingian period.

Let us sum up the available facts and findings.

As regards the site of Vetricella, the numerous radiocarbon dates indicate precisely the chronological range in which these changes are to be placed. The changes recorded are many, and are concentrated in such a limited range of time that two sub-periods have had to be distinguished, in the interpreted sequence: 4.1, corresponding to the second half of the 10th century, with special reference to the final 30 years; and 4.2, datable to the first half of the 11th century, with many features datable to the first 30 years of that century (Marasco, Briano 2020, 13-15, for more detailed references to the whole sequence described hereafter).

In the first of these sub-periods, the changes are linked to a strategy that seems to give special importance to acquiring greater space for action around the central tower (Figure 1.17). To this end, the inner ditch was almost completely filled in, raising the levels that had already gradually formed in the previous periods, and sealing the latter with a thick layer of mortar, perhaps to eliminate probable rising damp, given the characteristics of the surrounding landscape described in the previous section (Figure 1.18). Afterwards, not very much later, stones were laid above the mortar covering, sealing the moat infill. In

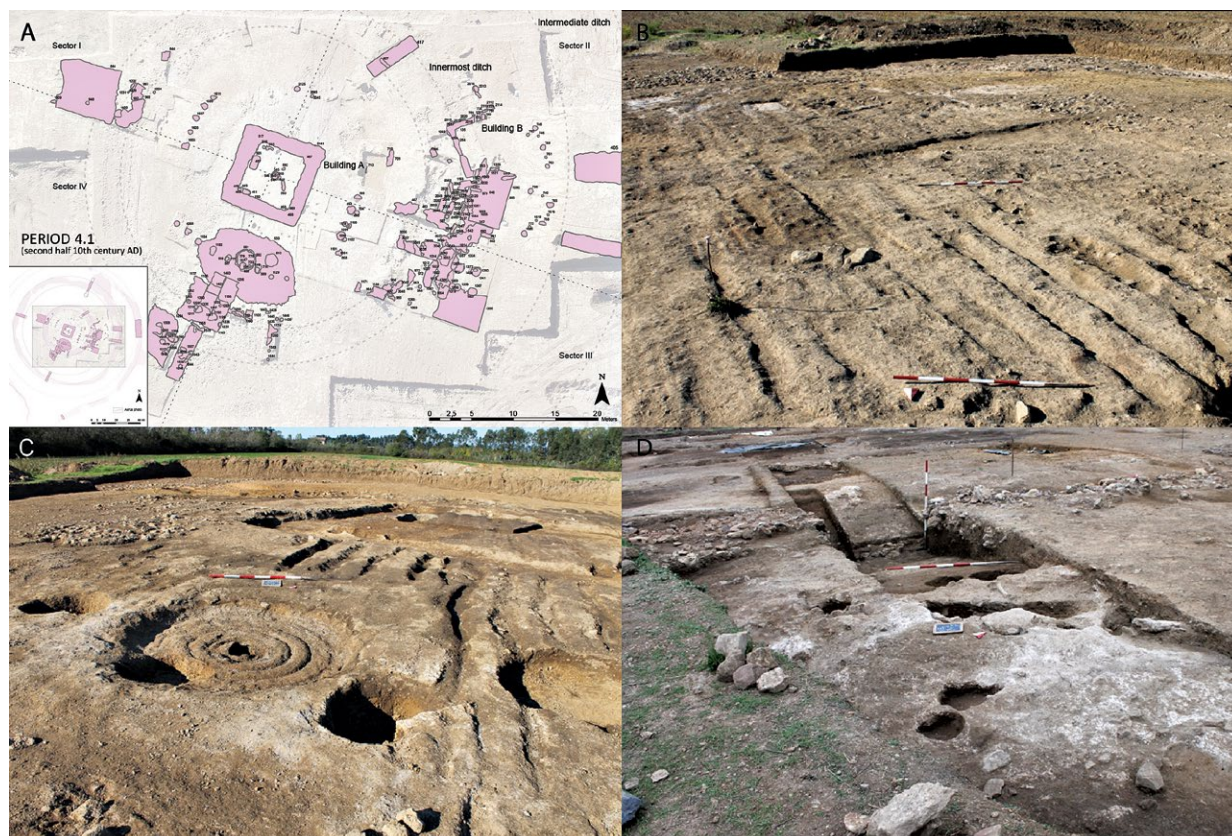


Figure 1.17 - Vetricella. Period 4.1: a) phase plan; b) archaeological evidence inside the central tower, with marks left by recent farming activity; c) the mortar mixer and the large post-holes for stakes supporting the probable palisade around the tower; d) levels of mortar around the tower (from Marasco, Briano 2020, 14).

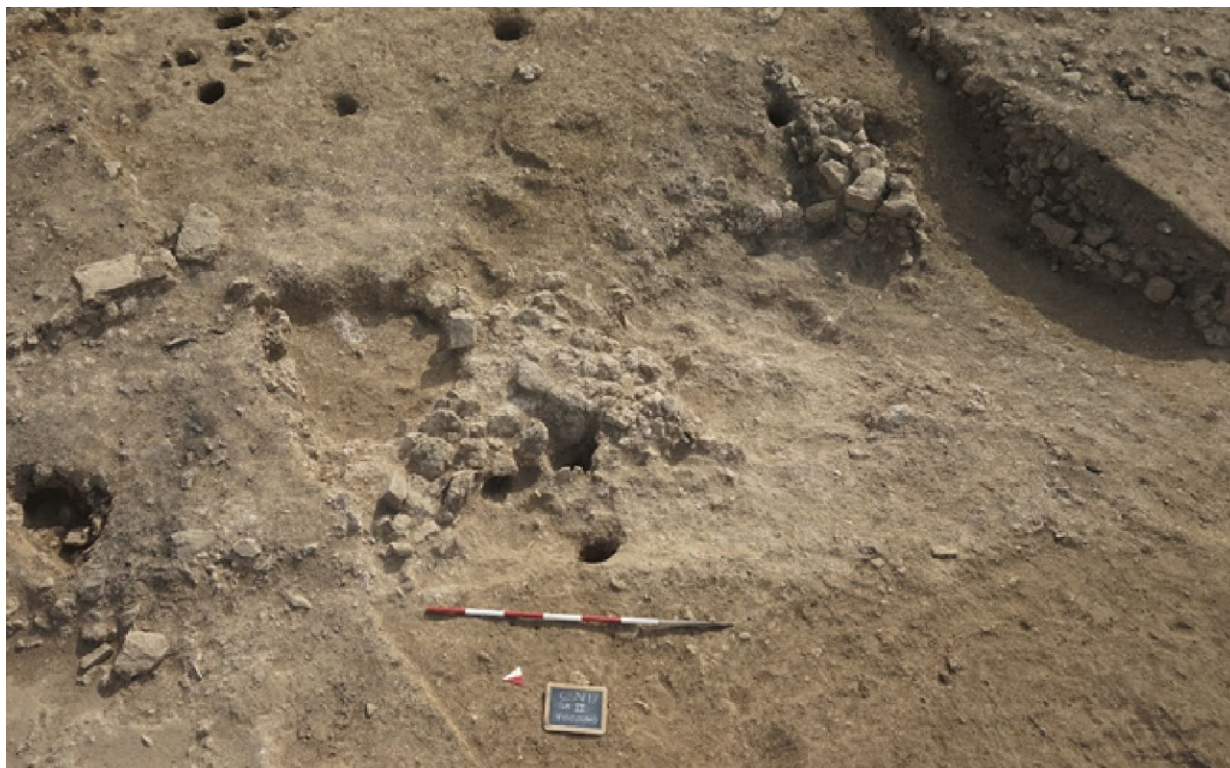


Figure 1.18 - Vetricella. Period 4.1: part of the mortar facing of the inner ditch, with patches of the later stone infill.



Figure 1.19 - Vetricella. Period IV.1: Occupation strata in the tower during excavation. In the foreground is one of the corner post-holes inside the stone basement of the tower, later systematically robbed, part of the foundation trench for which can be seen in the foreground (nEU-Med archive photo).

this way the ground surface level was doubled, and was now enclosed between the central tower and the edge of the middle moat.

Despite this, the tower remained the fulchrum of the overall layout, and in this phase its raised base made of stone and lime mortar was built, minor remains of which survive, which have been radiocarbon-dated (Figure 1.19). Indeed, most of this base was systematically dismantled during the phases of the site's abandonment, but the precision with which, in its destruction, the perimeter course was followed nevertheless allows us to identify its original size: 9.7m x 9.7m for the outer perimeter; 6.5m x 6.5m for the internal perimeter, giving a habitable area of almost 45 sq. m. Four large post-holes situated in the internal corners (diameter 0.60m) suggest there were posts anchoring and providing further support for a wall likely made of perishable materials, which must have defined at least one further floor level above (Figure 1.19). Similarities in size with the well-known tower-shaped building, which was also contemporaneous, at the site of Charavines on Lake Paladru suggest a probable, similar height that can be put at 14 m, at least (Colardelle, Verdelle 1993, 364).

On the ground floor, on the beaten-earth floor, a round cut in the centre has been interpreted as a possible base for a brazier associated with a place where burnt embers were disposed of, while near the north-west side an elliptical trench was located. This may have been used to accommodate vessels that were partially set into the floor. Space for accommodation must have been located on the upper floor or floors.

To reconstruct the material culture of the people who lived in the building, reference must be made both to finds found in primary deposit in the habitation levels for this phase, and to finds made in secondary deposit near the tower, as a result of later earth-moving operations. Undecorated kitchenware made of coarseware (olle, testelli, small jars, lidded bowls), and undecorated tableware made of levigated clay (jugs, jars with wave decorations, bowls), indicate a domestic context (Russo 2020, 61-64). However, the presence of fragments of long-stemmed goblets (with stems ranging from 0.02 to 0.09m), allowing no fewer than 20 individual examples to be reconstructed (an exceptional number for the Italian peninsula, Castelli 2020, 74), is definitely the feature that best characterizes the social status of the inhabitants of these interiors (Figure 1.20).



Figure 1.20 - Vetricella. Some fragments of goblets (from Castelli 2020, 73).



Figure 1.21 - Vetricella. Area plan, showing cemetery area in green (from Viva 2020, 106).

The fact that high-level figures, such as the royal emissaries themselves, passed through the site, and stayed here, is also testified to by the finding of blue glass fragments, decorated with filaments or small opaque white bulges, identifiable as belonging to small cups or lamps (Castelli 2020, 72-74). These are very unusual items of glassware, and specific, contemporaneous parallels exist in the form of finds in the area of France, Germany and the Low Countries in particularly important religious or secular contexts, including the emporia of Dorestad and Håitabu. Archaeometric analyses of these glass fragments have verified that they have the same composition as those found at French sites and at the Håitabu emporium (Gratuze 2020; Gratuze *et al.* 2023). This confirms Vetricella’s importance within a wide-ranging system of trade or exchange.

Outside the tower, specifically along the south-east side, a sort of uneven paved area of lime mortar was created. The presence of a mortar mixer, and comparisons, by means of archaeometric analyses (Bianchi *et al.* 2022), between the remains of the mortar inside this mixer and the characteristics of the mortars found in the level outside the tower, ie. in the sort of ‘upper paving’ of the moat, and of the tower base, show a similar composition. This allows us to connect the activity of this mixing facility to the production of the mortars in question (Figure 1.17). For some time now it has been clear that lime mortar mixers of this sort are connected to itinerant specialized builders, presumably coming from construction circuits in central and northern Europe, or who were in contact with these (Bianchi 2011b). This is further proof that the site was included within a network in which skills circulated across a wide area.

At the same time as this operation, a series of post-holes were created, the size of which was similar to that of those inside the tower (0.60m in diameter). Following a sort of semi-circular perimeter, these bordered a space that strictly formed part of the building itself. The positions of the post-holes suggest that they served for upright posts that formed a sort of palisade, probably also serving a defensive purpose. Similarly-sized post-holes are also found by following the inner side of the middle ditch, which



Figure 1.22 - *Vetricella*. Cemetery area: male burials in blue, female burials in red, burials of sub-adults (below age of 5) in green. Part of possible perimeter of religious building in yellow (from Viva 2020, 109).

was partly filled but still functional. In this case, too, these were probably linked to a possible palisade, to reinforce the boundary represented by the ditch itself.

In the space between this ditch and the filled-in inner ditch, a burial area was created. Here 52 individuals were excavated (Viva 2020 for more detailed data behind all the following anthropological analysis) (Figure 1.21). Radiocarbon analysis of a series of bone remains chosen from among the earliest and the latest burials, as dated on the basis of the relative sequence of the cuts made for their trenches, enabled the cemetery's formation to be dated as of the last 30 years of the 10th century, and up to the first few decades of the following century (Marasco *et al.* 2020, 15). All the individuals (52, including 10 males, 5 females and 37 sub-adults) were buried in simple trenches without any grave goods (except for an earring in relation to a female burial). Paleodemographic analysis presents us with the image of a group of inhumation burials consisting of 29.4% adults and 70.6% sub-adults, namely individuals aged between 0 and 14 years, with a high percentage, within this group, of infant burials (Figure 1.22). The position of many of these latter burials as being at the fetal or perinatal stage, or just a few years old, has determined the interpretation of the remains of the robber trenches of a small building (around 6 x 4m) built from perishable materials, probably anchored to horizontal beams. The building stands almost in the centre of the cemetery area, and the fact that the remains of infants are located along its sides, in accordance with the practice of sub stillicidio graves (ie. located in contact with the church and below the eaves of its roof), leads to its interpretation as a possible small oratory.

Most of the graves were oriented west-east, without gender distinctions, in positions that tend to radiate away from the central area of the site. Isotope analysis of paleonutrition reveals a good protein-based diet throughout the individuals, and an average age of around 40 for men, and around 35 for women (Viva *et al.* 2021b). Numerous traumas, identified thanks to paleopathological analysis, indicate that the community was engaged in tasks that were fairly physically demanding, in which some of the children were also involved, and which left serious injuries in some individuals. Despite the good diet, most of the sample, especially females and sub-adults, suffered from serious forms of congenital anemia, associated by anthropologists to the thalassemia gene, in particular beta-thalassemia, or Cooley's anemia, which in turn closely correlates with malarial environments, such as the environment which must have characterized the whole low-lying area of this royal estate. This pathology could, therefore, explain the high infant mortality seen at the site, but it could also indicate that this population was rooted in the coastal lagoon territory, as is also proven by the existence, ever since the late Carolingian period, of a settlement system, described in the previous section.

During the second half of the 10th century, this system certainly saw a greater degree of structural organization especially as regards larger settlement nuclei having their own cemetery areas. This is what happened at the archaeological site, around 800m away from Vetricella (UT 23-24), which we have already discussed, and where radiocarbon dating of one of these burials, which emerged during the most recent trial excavations, dates it to a chronological range between the 10th and 11th centuries (Figure 1.14). The same is also found further away, at the La Pieve locality, where, as stated in the previous section, one of the recent dates, also from radiocarbon dating, gives us a time horizon in the full 10th century⁶.

The very fact there are separate burial zones in the plain, linked to possible habitation nuclei, suggests that the human group buried at Vetricella was connected to the centre of the estate. It also poses questions regarding not only the habitation sites but also the role and social status of the individuals buried here. The number of burials is too high (also in view of the fact that not all of the cemetery area has been excavated), and they are too concentrated in terms of their historical succession, to imagine that they belonged to family nuclei living in the central tower in the space of two generations, at most

⁶ Analysis of these individuals, still unpublished, confirms that, like the Vetricella group, they also suffered from b-thalassemia. I am grateful to Serena Viva for this preliminary information.

(given radiocarbon dates, which indicate that the burials spanned a total of just over 50 years). The type of burials (in simple, unlined graves), and the lack of socially distinctive features, including in the positioning of the graves themselves, would lead one to link most of these individuals to the group of dependents directly employed in the centre of this estate, rather than to the possible royal emissaries, who perhaps only frequented the site occasionally, without living there continuously. It is of course difficult to speculate what might have been the juridical status of these individuals, who likely belonged to several family nuclei. Elsewhere (Bianchi, Viva, 2023) we have suggested the possibility that we may be looking at a section of those numerous groups of serfs, the *prebendari* referred to in various polyptychs as resident in the administrative centre (Pasquali 2002, 82-87).

The presence of these dependent workers and serfs is today regarded as indicative of an intensification of the exploitation of rural areas (Rio 2017, 199-201). Their disappearance towards the end of the 10th century, seen as a sign of an overall economic reorganization coinciding with the crisis in the curtense (manorial) system, would match the chronology of use of this burial space, which seems to have been abandoned in the early decades of the 11th century.

One interesting fact, with a view to defining the characteristics of this group of people, is the presence of thalassemia itself, as stated earlier, which is clear in the sample of females and sub-adults, and also in some of the males. By contrast, this condition was not found in a small assemblage of four adult males who were considerably tall. Their height, between 1.78 and 1.82m, was greater than that of the other male individuals, and especially compared to the females, who must have been around 1.50 m tall. Another feature that characterizes these individuals is the condition they suffered from, namely the so-called 'horseman syndrome' which comes from habitual horseback riding (Viva 2020). Analyses of strontium isotopes, which give us macro-data relating to the areas where certain individuals lived most of their lives, confirm that the four men were not native to this particular coastal area, unlike the rest of the sample⁷. Only for one of these individuals do we have results from DNA analysis. These confirmed, for the burial SK 18, a genetic component attributable to the central-northern European area⁸.

By contrast, diet and form of burial do not seem to mark out these individuals from the rest of the group, whereas two of them certainly did receive unusual surgical treatments, and particular forms of medical assistance, while still alive. Surviving a serious amputation, involving the foot and part of the right leg, as in the case of individual SK 44, was not a common event (and doing so for a certain length of time, in view of the pathologies later acquired owing to his limp), and we could say the same in connection with the very serious femur fracture found in skeleton SK 18 (Viva *et al.* 2021a).

As a result, all these findings mean we cannot be totally sure that the four males in question were local employees of this royal court.

If we were to base our considerations on the link between specific social categories and material evidence, especially for areas and historical periods such as the ones we are dealing with (for which there are few parallels anywhere in Italy), the 'horseman syndrome' itself could in itself represent a distinctive element, in a somewhat deterministic fashion. Thus, the four males could be the royal emissaries, perhaps residing in the tower on an occasional basis, who were sent in to control the demesne centre and the goods produced there. Thus we could be looking at the material remains of those royal actors of whom we find traces in early medieval documents referring to this territory as of the 8th century (Bianchi, Collavini 2018). Horse-riding, and traumas linked to this practice, and the amputation seen in the case of skeleton SK 44 itself, would tell of a life involving possible combat and battles, and long

⁷ The analyses, still unpublished, coordinated by Carmine Lubritto as part of the nEU-Med project, were conducted at the Department of Environmental, Biological and Pharmaceutical Science and Technology at the Luigi Vanvitelli University of Campania.

⁸ The analyses, still unpublished, coordinated by David Caramelli as part of the nEU-Med project, were conducted at the Department of Biology, University of Florence.

journeys on horseback, given the non-local provenance of these individuals. Knowing very little about these royal emissaries, it may be no surprise that they were buried without distinctive markers, along with the probable group of dependents working for the demesne centre.

However, the same evidence could be interpreted differently.

Regarding the prebendari, some writers have stressed, for given contexts, their special and privileged role also compared to free peasants (Pasquali 2002, 89). The specialization of this estate leads us to consider the possibility that its management was given over to employees having conspicuous experience in certain activities, and that this level of specialization also presupposed that they were relocated from other estates, perhaps far from their places of origin, in a context in which these dependents, who were

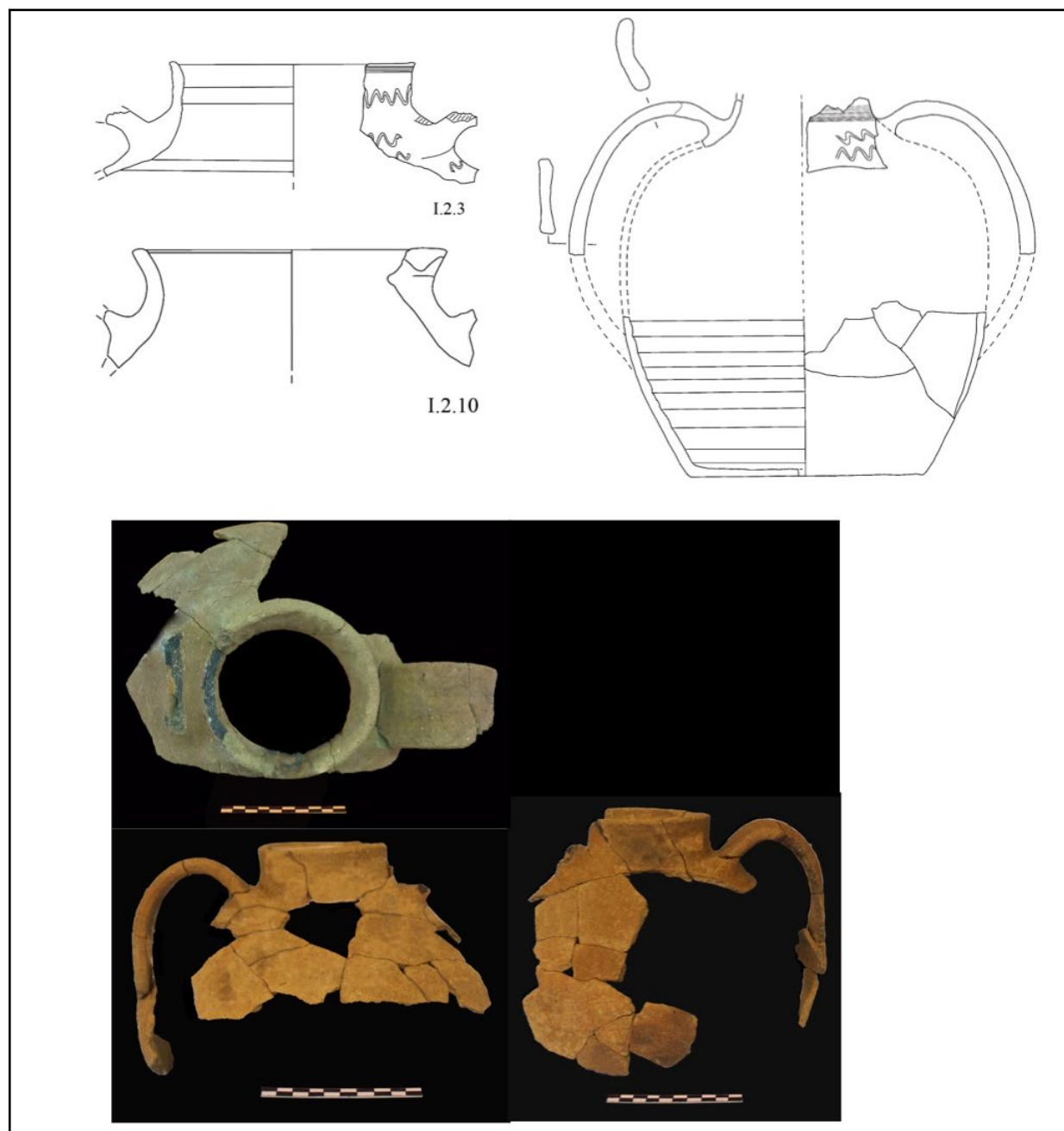


Figure 1.23 - Examples of 'small amphoras' with incised wave decoration (from Russo 2021, 642).

valuable (and whose welfare therefore received particular attention), tended to be circulated between rural royal estates themselves.

With a view to this, and assuming that one of their specific functions also involved breeding horses, all the aforementioned indications in support of these four males having a higher social status could be seen instead as lending weight to their identification as members of the specialized workforce composed of serfs.

Thus, at present we do not have definitive answers inclining towards either of the two hypotheses, and I would leave both possibilities open.

As for where this group of people resided, this will perhaps remain forever an unanswered question.

As I have already stated, apart from small trial trenches, the investigation did not extend beyond the bounds of the middle ditch on the east and west sides, and not far beyond the inner ditch, on the north and south sides. Therefore we cannot exclude the possibility that buildings with a residential function stood in the uninvestigated spaces, or in the spaces between the middle and the outer ditches. In any event, these zones stood at a lower level than the central nucleus, and have thus been very much compromised, in many places, by recent farming activity. Finding traces of dwellings made of perishable materials in a context of this sort (which, it should be remembered, has a circumference of between ca. 78m for the inner ditch, and ca. 264m for the outer ditch) is practically like looking for a needle in a haystack, and the remote sensing surveys themselves did not yield findings that might support concrete possibilities to that end. We could imagine that small habitation nuclei may have stood not too far from those localized contexts identified in the survey, situated around 200m from the site, discussed in the previous section, and which feature continuity of habitation as of the 9th century. But it is hard to go any further than that.

However, we can be more certain about the activities in which these individuals were engaged, which bear relation to the economic vocation of the site in this phase.

Probable horse-breeding (with radiocarbon dates for their bones to this phase, Cal AD 950-1015), with remains that also attest to the presence of young animals, is also indicated by zooarchaeological analysis (Aniceti 2020 for all references to the analyses referred to hereafter). In this phase there was also a major increase in pig remains, and in this connection the fact that perinatal individuals are found confirms there was a pig-breeding facility in the vicinity of the site. The presence of Turkey oak woodland not far away certainly represented the ideal environment for them to graze in freely, without intense control over this animal population, as seems to be proven by the high number of adult pigs. The considerable amount of bones, and the presence of specific meat cuts, with particular reference to pork shoulders, attests to an intense specialized form of butchering, and perhaps this was geared to consumption extending beyond the local area. The adult age of bovines (the bones of which have been found in considerably lower numbers, in common with goats) testifies to their use as working animals, used in the fields. Smallish areas where cereals were grown must have existed here and there in the plain, as established by pollen analysis both of the core samples from the former lagoon, and of the micro-sections of the infill layers from the ditches (Furia *et al.* 2021; Clò *et al.* 2023).

In addition, one of the most important activities engaged in was management of various stored supplies. But supplies of what?

The answer is not immediately forthcoming as regards the nature of the commodities that filled the large quantity of undecorated coarseware vessels found in primary and secondary stratigraphic positions, numbering 487 fragments, out of a total of 42,896 (Russo 2020 and Russo 2021; 2023 for all the following references). Belonging to this pottery ware is a specific type of transport vessel, called a 'small amphora' by Luisa Russo, who studied this form for her doctoral thesis, but which has been called a 'water pot' (*olla acquaria*) in other find contexts, such as Grosseto (Valdambrini 2006, 474).

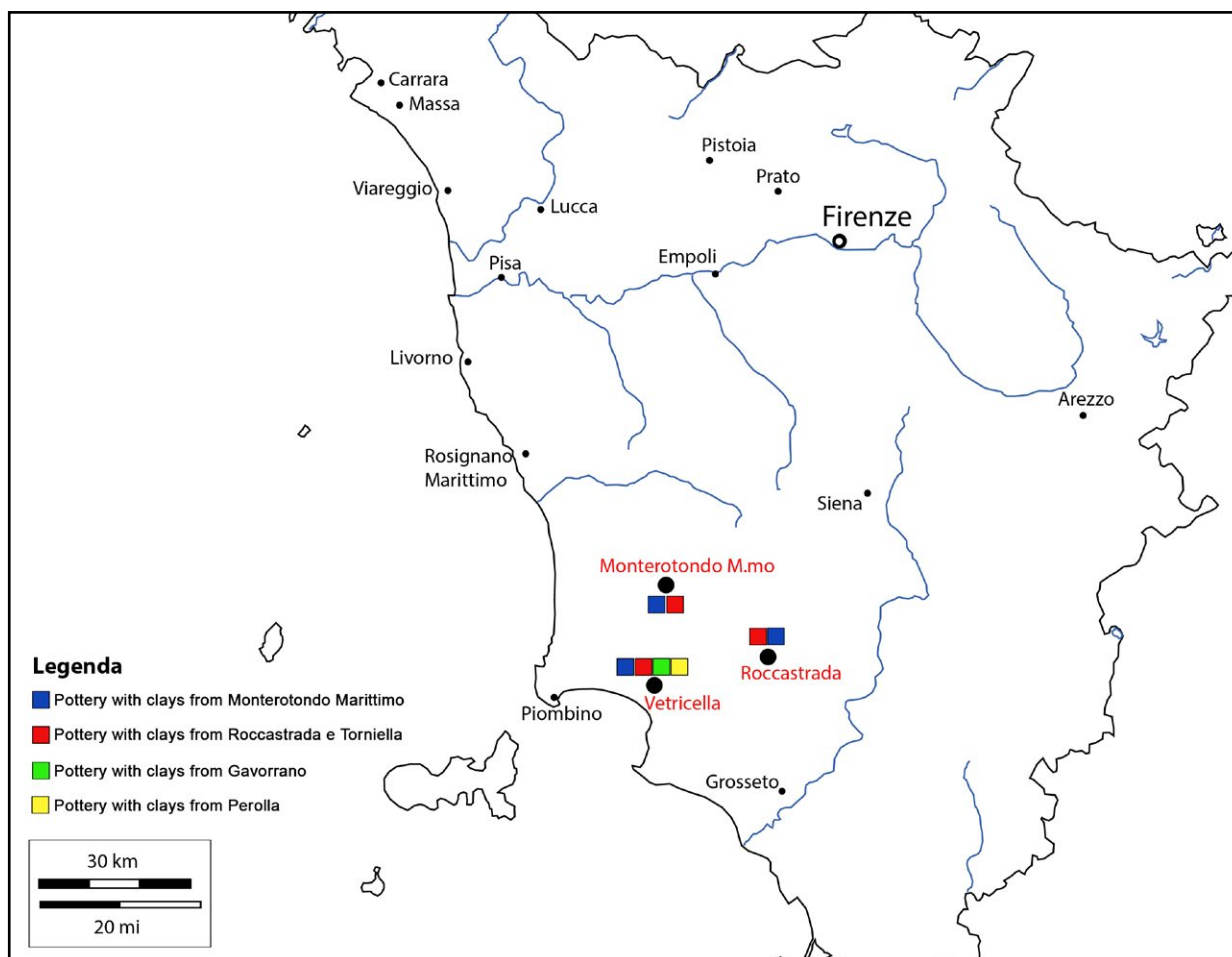


Figure 1.24 - Distribution of 'small amphoras' and other types of pottery made from clays sampled in the area between Monterotondo Marittimo and Roccastrada. It is clear that Vetricella has the greatest variety of articles in relation to the raw materials used (from Ponta *et al.* 2020, 230).

This is a medium-sized pottery vessel (height between 0.27 and 0.35m) having a mouth with a diameter varying between 9 and 12 cm, a globular and oval-shaped body, and a double strap handle attached at the shoulder (Figure 1.23). In the past it has been recorded in finds made in the Colline Metallifere (at the sites of Rocchette Pannocchieschi and Rocca degli Alberti, Briano *et al.* 2018), and in and around Grosseto (Vaccaro 2015). New surveys have made it possible to identify remains of small amphoras also in the Roccastrada area. However, the important fact is that whereas their numbers are relatively small at these sites, at Vetricella currently 232 vessels have been counted. A very high number indeed, if compared to the type of site (with only one residential building).

Preliminary findings from thermoluminescence analysis indicate that the chronology of production of these small amphoras was the period between the mid-9th and the 11th centuries⁹. Quantifications in relation to the stratigraphic sequence show that they increased exponentially during the 10th century, and that their remains were chiefly located in the area surrounding the tower. A study to compare the chemical and mineralogical characteristics of the fabrics of these small amphoras with local clay deposits confirms that they were locally made, in an area around the municipalities of Monterotondo Marittimo and Roccastrada (Ponta *et al.* 2020) (Figure 1.24). In the case of Roccastrada, already on the occasion of the 1980s surveys the numerous kiln wasters found at Montorsi had led to a suggestion that

⁹ The analyses were conducted, as part of the nEU-Med project, at the Department of Materials Science, University of Milano-Bicocca.

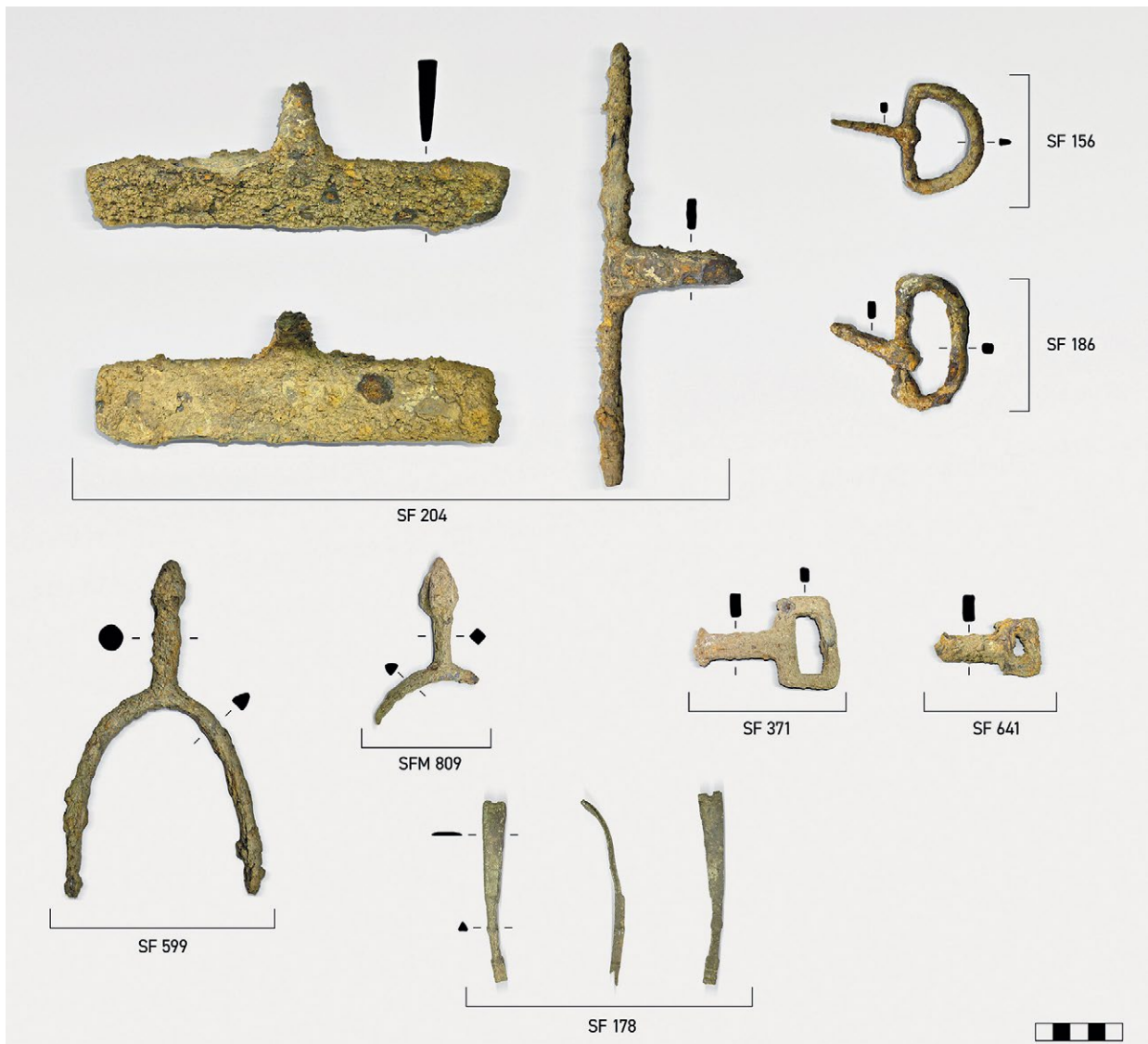


Figure 1.25 - Vetricella. Examples of horse trappings. Most of the finds date to the 10th-11th centuries, but some (eg. SF 178) can be dated to the earliest phase of the site (from Agostini 2020, 39).

there was an atelier there that specialized in making plain, undecorated coarseware pottery (Guideri 2000, 12-18). A review of this material as part of the nEU-Med project enabled the identification of 29 minimum ‘small amphora’ vessels. Accordingly it is possible to suggest that there was a macro-area of production that took concrete shape in several ateliers for the production of vessels all having similar sizes, designed to contain between 7 and 14 litres, intended for the transportation of some product (or products) linked to the territory in which Vetricella was the collection site, or one of the collection sites. Gas chromatography analysis of the organic residues in a very small sample of these amphoras (a sample which therefore is not indicative of a general trend)¹⁰ revealed in some of them the presence of wine and grape juice, while others yielded no recognizable traces using this type of analysis. In these latter cases, one might posit the presence of cereals, rather than water, as previously thought.

¹⁰ The analyses were carried out by Alessandra Pecci in collaboration with S. Mileto (Equipe de Recerca Arqueològica i Arqueomètrica de la Universitat de Barcelona (ERAAUB) - Departament de Història i Arqueologia - Universitat de Barcelona.

For that matter, imagining cereals as the possible contents of these vessels also ties in with the agrarian landscape at the time, which, as we stated in the previous section, saw a more accentuated transformation in this phase, in the area higher up the valley from Vetricella, with new spaces turned over to crop-farming by burning off existing vegetation on an extensive scale (Buonincontri *et al.* 2020a; Pieruccini *et al.* 2021).

The connection between the clays in this larger geographical area, and the link between these not only with the production of the ‘small amphoras’ but also with other types of plain, undecorated pottery made from purified or coarse clay, for a period mainly between the 9th and 10th centuries (Ponta *et al.* 2020), confronts us with a further resource which up until now, for the Early Middle Ages in this territory, had existed somewhat below the radar, namely the excellent and numerous clay-diggings (which, however, already in Dallai, Ponta 2009 were listed among significant resources). An interest in this resource was nothing new, in view of the fact that beyond the Pecora valley, in the Cornia valley, near the site of Vignale (which has extensive stratification), and dating to the early Imperial sequences, there was a kiln making bricks, amphoras and plain pottery associated with a *mansio*, in its most active period (Giorgi, Zanini 2014, 35-36). However, the idea that this sort of specialized production may have continued, beyond the apparent, isolated case of the kilns at Montorsi, near Roccastrada (Guideri 2001, 7-23), had grown weaker for the Early Middle Ages, losing much of its force within an overall vision of pottery production as being more fragmented and localized. This notwithstanding the fact that new findings sketch out a new picture which we shall comment on further later on, in chapter VI.

A clearer indication of the nature of the goods stored at Vetricella comes from the finding of a very large number of metal items (Agostini 2020 for all the findings reported below). Bearing in mind, once again, the absence of residential features apart from the tower, the statistics are truly remarkable: 1,660 fragments, equating to 1,574 objects, of which (given the poor state of conservation) only 828 are clearly identifiable. Some 95%, ie. 1,498 of these items, are made of iron, while only 45 are made of copper alloy, and 31 of lead alloy. Studying these objects, especially in relation to their original context, was no simple task, given that, owing to post-depositional events, a high number were found in secondary deposit in the upper layers of the stratigraphic sequence, and thus their dating was attributed on stylistic and comparative grounds, thanks to parallels consisting, in some cases, in the same objects found in primary deposit. In this latter case, there are few finds datable to the first three phases of life at the site, while most are dated to the period we are discussing in this section.

As regards the types of objects in question, the largest group is connected with horse-riding: there are a great number of horseshoe nails, parts of horse-fittings such as buckles and clasps, and perhaps a strigil (Figure 1.25). These are followed by 13 spurs, the largest such group found anywhere in Italy, having very close parallels with similar finds made in the general area of France and Germany. Then there are objects connected to artisanal activities such as textiles, forging, hide- and leather-working, and woodworking: drills, punches, awls, burins, wedges, a lead flywheel, carding tools, shears, knives of various sizes, and a certain number of keys and latches. Items linked to farming are almost totally absent: only a minimum percentage, around 2% of the total. Equally sparse are finds linked to the military sphere, or hunting. In addition, there are semi-processed items in the form of small and medium-sized rhomboids. Also found in this large number are used or broken objects that may have been held in storage here in this context prior to being recycled at a later time.

Thus we are dealing with a large quantity of finds, the numerical anomaly of which is also underlined by comparison with finds made up until now in stratigraphy dating to this period at the many sites excavated in the past in this very same geographical area. A systematic survey of these finds, conducted as part of a doctoral thesis (Belli 2005a), found no more than a few dozen per site, including in contexts that were the richest in term of finds made, within hilltop villages, investigated by Francovich and by we his pupils.

Thus, the first question that naturally arises is where these objects were made.

On the basis of excavated evidence, it is hard to imagine that the production cycle took place in the central area of the site. In the south-west and north-east sectors, heaps of red-stained earth and carbon, a combustion trench dug into the ground, and scorch marks, as well as zones with high magnetization, may suggest forging areas (Marasco, Briano 2020, 13-14), but as such they would have met the everyday needs of the site itself, or otherwise may have been geared towards the preparation of only a small number of items. Such evidence is too scant to believe that large-scale production may have existed here. Indeed, on the basis of the numerical volume of the objects produced, such production must have left far larger traces, and above all a number of pieces of forging waste that was definitely higher than the number that can be related to this phase (Volpi *et al.*, forthcoming, for all the references to waste analysis summarized below).

Accordingly, it is clear that these activities must have taken place outside the central area, as in the previous period, perhaps between the middle and outer ditches, or even further beyond. Indeed, the largest quantity of ore and wasters, of which a sample of 86 finds has been analyzed, was found predominantly on the margins of the central area, or in the test excavation of the fill layers of these particular ditches, ie. the middle and outer ditches. Processing waste found at the sites (Topographic Units) present in a radius lying closest to Vetricella seems to confirm the suggestion that processing took place outside this site.

Also in the case of reduction furnace slag, or forge wasters ascribable to this phase, electron microscopy analysis (SEM-EDS) and chemical analyses (ICP-OES) have identified the presence of both hematite from Elba and iron from the Colline Metallifere, confirming the continuation of a large-scale supply system that drew on two mining districts. The practice of mixing different raw materials, in order to obtain an improved final product, would thus evidence, in this context, the fact that technological practice was at an advanced stage compared to established practice in the Late Middle Ages (Dallai 2016, 103). The finding of semi-worked items too, in stratigraphies for this period, means it is plausible to suggest that products that had been through the reduction process also came from these districts, in addition to raw materials themselves.

However now, unlike in the previous period, we clearly see the final stage of this complex production system, which, near Vetricella or in the plain, must have involved reduction with low-flame furnaces, forging, and the making of metal articles. This end result consisted in the storage of hundreds and hundreds of finished products, and a considerable number of products probably destined to be recycled.

At the same time, also in this same chronological arc, the results of new field surveys, exploring in more detail and defining better the characteristics and chronology of many sites already surveyed by Costanza Cucini in the 1980s, show, in the course of the 10th century itself, a gradually increasing density of the system of settlements, especially in areas close to the lagoon and to Portus Scabris (Figure 1.26) (Marasco 2003, 281-296 for all the following information). The series of sites identified in the Le Case locality, not far from the spot known as La Pieve, belong to the full 10th century phase, if not the 11th century phase too, as does the Meleta context situated near Portus Scabris. Moreover, there are traces of a context at the site of Canonica, datable to between the 10th and 11th centuries, where a church was built between the 12th and 13th centuries. Dating to the 11th century is the first mention of the Portigliani court, a fairly large population nucleus in the vicinity of Portus Scabris, which Costanza Cucini may have identified some traces of in the form of scatterings of medieval pottery, to be placed in relation with the port itself (Cucini 1985, 172), which was mentioned between 1276 and 1377, and where boats from Pisa, engaged in the wheat trade, still arrived (Ceccarelli Lemut 1985, 71). In addition to this evidence, there is continuity of occupation at settlement contexts already reported for the previous century, such as the sites (UTs) near Vetricella, the ones near Podere La Pieve, those at the Imposto hamlet and, on the opposite side of the plain, the one at Podere Aione.



Figure 1.26 - Location of archaeological sites found in multidisciplinary surveys datable to 10th-11th centuries (in yellow), and contexts already present in previous century (in green) (based on Marasco 2014).

In many of these contexts, archaeological surveys have revealed the presence of indicators of production activities connected to iron-working. As well as the individual sites close to Vetricella, such indicators have also been found at the following localities: Canonica; Imposto; Le Case, near Podere La Pieve; and Podere Aione. An overview of all these concentrations of archaeological evidence, as well as the large quantity of sporadic pieces of slag found in the plain during the 1980s surveys, although often lacking specific chronological references attributed to the late medieval activity of smiths from Pisa (Cucini Tizzoni, Tizzoni 1992, 60-64), yields a picture that allows us to suggest that, in the course of the 10th century not only does the system of sites in the plain intensify, with settlement contexts being concentrated to a greater or lesser degree, but there is an increase in the number of places where iron was processed. The indicators - raw ore, slag, and furnace walls - indicate traces of an entire production cycle. Whereas in the recent past these indicators could be interpreted as scattered evidence, today, in the light of the hundreds of iron items found at Vetricella, they could be linked to a single, large production area engaged in the exploitation of iron (coming from both the island of Elba and the Colline Metallifere). The centre of this area was at the site of Vetricella, the heart of the royal estate, within a natural environment where the abundance of fresh water may also have been exploited for various phases of technological processes such as ore-roasting, bathing the charcoal in the furnaces, and cooling down the ore itself (Dallai 2016, 102). We will reflect on these findings in the final section.

Returning to where we left off, after this lengthy digression, namely to the probable occupations of the community buried at Vetricella, on the basis of these findings we can imagine its members as being engaged both in tending and raising horses and pigs, and butchering them for food, and in working in the fields (given the presence of adult bovines used for draught), and also in organizing and managing these large facilities for the storage of both agricultural products and objects made of iron, as well as the daily running of the administration centre that must also have included tasks associated with the presence, occasional or otherwise, of the royal emissaries and their probable retinue.

Inside the central nucleus, and on its fringes, near or beyond the middle ditch, and at the other sites on the plain, we must reckon on the circulation of a considerable number of specialized workers, perhaps seasonal, who were engaged in the iron-working metallurgical cycle. Archaeometric analysis of a sizable sample of knives found in the sequences for the period we are dealing with shows that the processing characteristics of the pieces leads to the identification of at least four different techniques, which is evidence of several individuals responsible for their forging (Agostini 2017).

Furthermore, a high number of non-specialized workers, not only members of the small nucleus of people buried at Vetricella, must have been engaged in getting hold of fuel for metallurgical operations. The anthracological record that has been analyzed, from several levels dug at the site, has led to the identification of finds mostly deriving from deciduous *Quercus*, predominantly *Q. cerris*.



Figure 1.27 - Vetricella and the court of Valli as it appeared in the late 10th-early 11th centuries (Illustration: Francesco Sala).

This confirms that fuel supplies came from the woods not far from the site. An equally sizable number of workers must have been engaged in transporting the ore, or semi-finished goods, from Elba or the Colline Metallifere.

In short, we see a major movement of products, women and men revolving around the centre of this plain, thereby underlining its importance (Figure 1.27).

But another detail clearly pointing to the site's economic centrality consists in coin finds datable to between the late 9th and the first few decades of the 11th century, in the period between the reign of Berengar I and Conrad II (Rovelli 2020 for all the following references to the study of the coins; Marasco, Cicali 2020 for an analysis of the find context). Specifically: 6 denari attributable to Berengar I; 2 to Hugh of Arles and Lothair II; 3 to Otto I and Otto II; 3 to Otto II; 2 to Otto III; 1 to Hugh, Margrave of Tuscany; and 4 to Conrad II. In all, 21 coins. Not a very large number in absolute terms, but it becomes exceptional, for a rural context, if compared with the fact that very few stratigraphic examples have been found for the same time horizon in contexts relating to the Kingdom of Italy, including contexts with considerable political importance.

Given that many of these finds were found in secondary deposit, and in levels inside and around the tower, it is not easy to understand the origin of their primary deposit. It could be a possible hoard that was later broken up, following post-depositional events in the modern era, as suggested by Rovelli (Rovelli 2020, 89). However, this attractive hypothesis, which may be more valid for the denari issued in the period of the kings of Italy, all concentrated in sequences inside the tower-shaped building, has a weak point: some Ottonian denari were found in the original surface fills of the inner ditch.

Equally, it is hard to understand what this presence derives from: payments of land taxes (*censi*)? This would be plausible, given the numerous mentions of payments of this type in the local area (described in Ceccarelli Lemut 1985, 27-29). Or evidence of market transactions, referring to the sale and/or purchase of surplus items from these specialist forms of production, as suggested by Alessio Fiore (Fiore 2020a, 202)?

It is hard to make suppositions regarding this aspect, or at least it would be appropriate, perhaps, to cautiously outline them in the final chapters of this volume, after reviewing all the clues that have been gathered.

However, the collection of findings set out in this long section clearly tells us that this period did indeed mark a considerable shift up in gear as regards the general political and economic profile of this estate, with major transformations that were not confined, at the Vetricella site, to those described thus far, but that continued, one after another, at a rapid rate, also in the early decades of the 11th century.

Indeed, it was at this time, as we learn from radiocarbon dates, that the two palisades, one around the tower and one where the middle ditch lies, were dismantled. These were replaced by a sort of circular paved area, in many sections with mortar bonding, following the circumference of the former inner ditch, which had been filled in in previous decades. A new mortar mixer was set up to produce the mortar needed for this operation, as is confirmed by comparative archaeometric analysis of the mortars in question (Bianchi *et al.*, 2022). Also recorded are a certain number of post-holes in the paved area itself, perhaps linked to a wall made of perishable materials. New occupation levels came on top of the previous levels, in some cases again indicative of forging, along with more burials in the cemetery area (Marasco, Briano 2020, 17).

This is what we learn exclusively from the material evidence, because no information has come from documentary sources regarding the broad picture sketched out thus far, and the supposed lesser figures active in it.

However, the documents do tell us a few things concerning the main actors involved.

For much of the 10th century the *Valli* estate remained in the possession of Queen Adelaide, and of the monastery she founded, San Salvatore in Pavia. It is no coincidence that, in this long period of time, no claims to this property were made on the part of the most important family that gravitated around this territory, the Aldobrandeschi family, Counts of Roselle and Populonia, who were established in the nearby castle of Scarlino, as we know from a document from 973 (Bianchi, Collavini 2018, 151). Thus, we can continue to link all the notable transformations at Vetricella and in its territory, as just described for period V.1, to ownership by Adelaide.

However, when Adelaide retired to a private life, in around 995, followed by her death, in 999, this estate once again became available to be run by new individuals. These could be identified, within the Marca di Tuscia itself, as being families connected to it, or royal monasteries, or local comital families. Thus we see the Aldobrandeschi family itself appearing on the scene in the form of one of their representatives, Rudolph III, who dated a deed in 1010 in the castle of Valli, which we could imagine as a fortified structure that still lay within the estate's lands, perhaps identifiable as the castle of Valle mentioned in the Late Middle Ages (Bianchi, Collavini 2018, 151). It is perhaps to this interim phase, occurring in the stormy context of the civil war after the death of Otto III, between Arduin of Ivrea and Henry II, that we should link the changes at the site in period IV.2 which do not seem yet to alter its general economic vocation.

1.4 Loss of function and abandonment

After the political upheavals, the *Valli* estate was, however, probably once again placed by Henry II within the circuit of fiscal property, and its management was entrusted to a series of actors linked to royal or margravian power: the Rolandinghi family in Lucca, the bishop of Lucca, and the monastery of S. Bartolomeo di Sestinga. However, none of these actors seems to ever gain full control over it, and from the mid-11th century onwards there cease to be indicators of further interest in this property (Bianchi, Collavini 2018, 151).

These final changes of ownership, featuring a form of management that was far from incisive, occurring during and after the handover of the Imperial throne from the Ottonian dynasty to the Salian dynasty (with the election of Conrad II in 1024), led to Vetricella finally turning the corner.

Once again, material finds are more indicative than documentary evidence in this connection, and they speak to us of a drastic transformation.

Between the mid-11th century and the 1150s, while the Marca di Tuscia was by then heading towards a break-up, and the process of development and establishment of territorial seigneurships was under way in much of the Kingdom of Italy, the centre of the estate continued to be inhabited. However, the great movement of men, and storage and production in the previous period, is merely a distant memory. Indeed, the site was frequented on a much more limited scale, a prelude to its loss of function in the following period.

The tower continued to be inhabited, as shown by the presence of a hearth dating to this period, while the sequence of burials broke off, and at the same time the small oratory lost its functions, since we now see levels inside it that can be ascribed to hearths, or even to metallurgical activities (Marasco, Briano 2020, 15-17).

Further signs of life are seen in the ground levels above the ring-shaped "paved" area and around the tower. The clearest feature of this phase is, however, the presence of small trenches for the storage of cereals (barley and wheat) and various types of legumes, the carbonized remains of which have also been found in vast heaps in the central area of the site, as if Vetricella had simply become an ancillary depot for the temporary storage of crops harvested in the nearby fields (for a comment on this new use, see Bianchi, Collavini, 2022). The reconstruction of a sort of circular palisade, bordering the central

area, seems to protect this ad hoc storage space at a time when, probably, both the middle and outer ditches were by now almost completely filled in.

Similarly, in the surrounding territory the available data presents a picture which moves in the direction of a major dismantling of the previous layout and form of organization. Indeed, starting in the later 12th century we no longer find clear traces of frequentation in almost all the surface contexts found in the plain, whether or not they were satellites of Vetricella. Surprisingly, this shows that it was in this century, and not in the 7th century, as had been stated after the 1985 surveys, that the plain was abandoned on a particularly widespread scale, contemporaneously with the reconstruction of stone-built castles at hilltop sites.

In the stratigraphies in the former course of the river Pecora, the thickness of sediments belonging to this chronological phase declines considerably, thereby indicating an almost total interruption in anthropic activities connected to the alteration of the former river bed itself, and of the landscapes in the plain and in the immediate hinterland, by means of controlled fires. By contrast, it is significant that the bio-stratigraphic sequence (pollen and micro-carbons) of the nearby Lake Accesa, near Massa Marittima, points to an increase in such fires, for the later 12th century, rather in the inland forests. Indeed, it was here that, in those decades, the new territorial seigneuries were also encouraging mining activities by means of their castles (Buonincontri *et al.* 2020a; 12, see also Chapter V).

Starting in the mid-12th century the sequences gradually become fainter, with weak frequentation, borne witness to by traces of two structures made of perishable materials. A small trench for cereal storage is also associated with one of these, in the west sector.

However it is in this final period that the most important action is undertaken, one that also features a strong symbolic significance. The tower which, ever since the Carolingian era, had represented the heart of the site, also defining it visually as a feature on the plain's skyline, was not only abandoned but also systematically dismantled, and the stone base on which it stood was almost entirely destroyed, leaving only its foundation trench filled with all kinds of detritus. However, the former religious building did not share the same fate. In this phase, it was still frequented as a domestic space, although there may also have been efforts to dismantle it during the actual abandonment of the site, which is evidenced around the mid-13th century (Marasco, Briano 2020, 17-18).

1.5 Reconstructing the geographical and economic organization of a royal estate

After following the diachrony of this landscape, we can attempt an overall reconstruction of the royal estate, at least in its period of maximum activity, connecting together all the facts and information outlined above (Figure 1.28).

We learn from documents that 50 mansi (small farms) came under this estate. In order to try and quantify the size of these individual farms, Ceccarelli Lemut has calculated that on average they each covered an area of around 9 ha. (Ceccarelli Lemut 1985, 28). On the basis of this estimate, our estate must have covered around 450 ha. Too little for what must have been its actual overall size. With the rider that it is not possible to determine the limits exactly, in the absence of specific documentary data, we can still however try to hazard a figure, setting out from considerations linked both to written references and the material record. Connecting all the occupied sites in the plain that are attested to archaeologically, from Podere Aione all the way to the numerous sites on the slopes of the Alma hills, and in the vicinity of the lagoon and where it meets the sea, we can state with a fair degree of certainty that this estate occupied the whole area corresponding to the final section of the river Pecora/Teupascio bordered on the north by the Montioni hills, which separated it from the Cornia valley, and from the royal estate of Cornino, and on the south from the Alma hills. Within this coastal band, unsurprisingly, we find no

explicit mentions in the documents of major landowners except as of the late 11th or 12th centuries, and already in previous writings it was suggested that this estate was generated when former senatorial property in the Imperial period, in particular belonging to the Aurelii Cottae family, was added to the royal fisc (for a summary Marasco, Briano 2020, 18, including for bibliographic references).

In material terms this plain area would represent an example of those major royal possessions which we usually have very little documentation of (Bianchi *et al.* 2019, 347). Revolving like satellites around the borders of these properties were the possessions of other owners, whom we are able to identify in the documents. These, in turn, were the result of property grants by the royal fisc, detached from the borders of that nucleus. These satellites were not fixed and independent, but changeable, and once properties were ceded, depending on the political and economic conditions, they could return to royal ownership, becoming reabsorbed by the centre of that sort of 'dark matter', so to speak, thereby disappearing from written documentation, even for long periods of time, before reappearing again after being granted to the same owners, or to differing individuals.

Consequently, we can try to identify the boundaries of *Valli* by setting out from these very sites located on the margins, whose owners we know the names of, at the time when the estate was the sole property of Adelaide, or shortly after the queen's death.



Figure 1.28 - Market in red the hypothetical size of court of Valli.



Figure 1.29 - The cathedral of Massa Marittima.

We should state right at the outset that the identification of these actors is straightforward, because we are mostly dealing with two very high-level political figures: the Aldobrandeschi family, who it will be remembered were at the head of the *comitatus* in which the estate lay, namely Roselle and Populonia; and the bishop of Lucca.

The first site on the margins is the castle of Valle, which we have already referred to at several points in the previous sections. Valle stands within the range of hills between the Pecora valley and the Cornia valley. Owing to drastic transformations linked to the construction of a tourist residence, we must refer to the description of it given by Costanza Cucini 35 years ago, during her survey. This castle occupied a fairly large area, and sections of the outer wall were visible at the time. Inside this, and certainly dating to the central phases of the Middle Ages, a tower-shaped structure was visible, along with other buildings, including a church, which it is hard to date. Pottery dating to the Republican period was found here, attesting to the fact the site was frequented for a long period of time, as at Scarlino castle, while the presence of later medieval pottery confirms the site's diachrony, which is also documented by the interest shown by the Aldobrandeschi family in the 13th century in acquiring rights from the Alberti family in this locality (Collavini 1998, 329). In 1010 we know that this same family, the Aldobrandeschi, in dating a deed in this castle, indirectly claimed ownership of it (and probably also ownership of part of the royal estate, as stated in the previous section). Thus it is possible that Valle, a fortification perhaps built by themselves, as mooted by Collavini (Bianchi, Collavini 2018, 226), represented one of those outer limits (which would also fit with the geography of the place) of the estate, on the border between it and the Cornino estate.

One of the other southern boundaries is also connected to the Aldobrandeschi family, being attested to by the document dating to 973, as is well known. This is Scarlino, which, precisely in the phase of peak activity at the *Valli* estate, in the course of the 10th century, was given a new circuit of outer walls, as

well as a church and internal buildings (three have been excavated, to be precise, Marasco 2008). It is harder to work out whether the royal estate's boundary extended beyond Scarlino, stretching as far as the Alma valley, given that the same 973 deed also mentions that the Aldobrandeschi family were the owners of the Alma court, the remains of which have been identified at Poggio Castello (Cucini 1985, 168; Vaccaro 2005, 248), while in 940 the documents mention an estate as lying not far away, at the Collicle locality, connected to the bishop of Lucca (Ceccarelli Lemut 1985, 32-34). A series of sites in a document dating to after 1055 look to the church in Lucca, in the period when, as already stated, management of the *Valli* estate was entrusted to a series of figures coming one after the other, including the bishop of Lucca himself. In the document, the Aldobrandeschi family pledged to the bishop of Lucca that they would not contest or harm his properties in several localities: these include Monte di Muro, a locality also situated in the Monti d'Alma which, according to Marasco, can be associated with the remains of the fortified site at the Monte di Stella locality (Marasco 2013, 288-290). These findings would tend to suggest that the royal estate of *Valli* did not extend beyond Scarlino and the Alma hills.

It is less straightforward to establish the possible boundaries upstream from the *Valli* estate, since, in the case of the important estate of Lacchise, for example, also belonging to the bishop of Lucca, all traces of it are lost after the 9th century (Ceccarelli Lemut 1985, 31), in favour of a mention of the castle of Accessa which, at the end of the 11th century, joined the property held by the church of S. Cerbone in Massa. Mention is made of the Teupascio locality in 746, with reference to its proximity to those waters of the King that can be identified as the river Pecora, already mentioned earlier. In this place, at least as of 942, there existed an administrative centre connected to the church in Lucca regarding which, in that year, permission was granted to rebuild a mill, already attested to in 867 (Farinelli 2007, 83). The grant was made to no less a figure than Ademari, one of the king's vassals (Collavini 1998, 78), and brother of the then Count of Roselle and Populonia, Hildebrand II. Intriguingly, these details could be connected to those mooted transformations of the former course of the Pecora, as of the second half of the 9th century, identified by geomorphological analyses, and described in the second section, which apparently affected the river, halfway down the valley and for its lower stretch, with artificial cuts in the tufaceous sediments, gradually getting under way the drainage of the marshes upriver, and consequently also assisting the drainage of these lands. Indeed, the aforementioned document from 867 itself mentions that the mill in question was fed by water channels (Farinelli 2007, 83, n. 446). What might have been interpreted up until now as an isolated case, albeit a very interesting one, if placed in relation to the huge quantity of calcareous tufa found in the paleochannel of the Pecora downstream, offers us an idea of the real scale of these earth-moving operations over time, with the major acceleration in the course of the 10th century. This suggests a wide-ranging strategy such as might have been connected to royal power, in estates managed by figures having a clear public physiognomy (such as the bishop of Lucca himself, and Ademari). Significantly, the mill was still one of the bishop's holdings in 942 when, now coming under the Teupascio court, it was granted by Bishop Corrado to a relative of his as part of a probable strategy of support for the wider project connected to royal property (Tomei 2019, 83). For that matter, the link between royal property and mills would seem to be attested to by the mention, albeit later, in 1135, of *mulina reggi* in this very area (Farinelli 2007, 67).

Thus, it is possible that the area north of the estate was dotted with further public properties that must have stretched upriver from the middle section of the Pecora valley, extending as far as the hill on which Massa Marittima stands (Figure 1.28).

Massa Marittima's early medieval history seems to have been swallowed up in a kind of 'black hole', despite being listed in the Late Middle Ages as one of the largest urban centres in the Maremma (with an estimated population of 10,000 Ginatempo Sandri 1990, 107) after having become, from the mid-11th century, the final seat of the bishop of Populonia (Ceccarelli Lemut 1985, 24). Of its oldest phases, in terms of material evidence, the only surviving features are traces of a site that had a church on the slopes of the hill on which the modern-day town stands, at Massa Vecchia, identified by long-standing

tradition with the original urban site (Cucini, 1985, 257-260). The lack of systematic investigations at this site, which displays a long diachronic history of settlement as of the Republican period, has thus far not enabled this hypothesis to be verified. Thus on the hilltop everything would seem to begin with the arrival of the bishop, and the resultant commencement of the construction of the cathedral (Figure 1.29) dedicated to San Cerbone, at the tail-end of the 11th century, although it was then rebuilt in its current form in the second half of the following century (Chiantelli, Montecvecchi 2013, 77; 79, n. 12).

This paucity of information might not be a chance occurrence, if we were to think of Massa Marittima as previously belonging to a collection of royal properties. This is by no means a new hypothesis, as it has been argued in the past precisely on the grounds of the mention of an *arcem montis regis*, corresponding to the hilltop part of Massa Marittima, which was enfeoffed in 1194 to the bishop himself by Henry VI (Farinelli 2007, 69-70, n. 309). On the other hand, a new development could be that this place was introduced within the more complex early medieval royal production system that had its terminus in the *Valli* estate.

Moreover, the suggestion that this upper part of the valley may have been part of a vast geographical unit has also been made by Farinelli, in identifying the area of Massa/Massa Robiani, already identifiable in documents as of the 8th century, with the area of Massa Marittima, for which early medieval texts use the expression in *finibus Massa*, and where deeds were also drafted (Farinelli 2007, 43-45). Massa may thus have represented an intermediate stronghold, lying outside the *Valli* estate, and providing an important link between the upper Pecora valley and inland parts of the *Colline Metallifere*, following a route leading to the ore-bearing seams in the hinterland, where we find the early medieval remains of the future mining castles of Rocchette Pannocchieschi and Cugnano, and the whole area in and around Montieri (see chapter V). At the same time Massa could also serve the purposes of controlling the upper Pecora valley itself.

On the basis of archaeobotanical data we know, as stated earlier, that in the flat areas below Massa itself (Figure 1.30) numerous controlled fires had opened up many spaces that could be set aside for farming. However, we also cannot ignore the complex late medieval system of exploitation of the ore-bearing deposits in the hills bordering this plain, with extraction taking place at the Bruscoline and Serrabottini



*Figure 1.30 - Panoramic view of the valley below Massa Marittima. In the background, slightly to the left, the bay of Follonica and the coastal plain where *Vetricella* stood. In the middle, the outline of the island of Montecristo, to the right of it the lower parts of the promontory of Piombino-Populonia, and on the far right, also in the background, the outline of Monte Capanne, on the island of Elba.*

deposits, in the latter case with ancient mining dump areas dated, by carbon 14 dating, to the second half of the 12th century (Aranguren *et al.* 2007a, p. 86). Dating to the later 13th century are the ore-processing facilities at Pian delle Gore, which include channels dug into the limestone tufa sediment, and the housings for two water wheels that harnessed the energy of the river Pecora (Dallai 2014, 75-79).

In the medieval period, and also in the more remote protohistorical period, these deposits were exploited especially for copper and silver-bearing lead, while an interest in ferrous ore is more associated with the end of the Middle Ages, with the domination of Siena and the major smelting furnace at Valpiana, and with the modern era, with domination by the Medici, when the Accesa facility joined the Valpiana furnace (Santinucci 2014, 63).

Thus, taken together, all this evidence leads us not to exclude the possibility of exploitation of ore seams and associated ore-processing in this area, also for the Early Middle Ages, within a large-scale area managed by the public powers. Whereas in the recent past this might have remained a hypothesis, without any great supporting evidence in the material record, now, with the Vetricella site, it may gain a greater margin of plausibility.

All the above is enough to suggest an estate that was more clearly delimited in the coastal band, but which led, smoothly and seamlessly, into an inland territory that was closely connected to the estate in terms of the kinds of resource, and resultant production processes.

Thus, bearing in mind Valli's northern and southern confines as described at the start of this section (the castles of Valle and Scarlino), assuming the boundary higher up the valley as lying approximately at the start of the middle-to-upper section of the Pecora valley, the total size of the estate would amount to around 5,000 ha.

The estate also had an outlet to the sea near the point where the system of dunes comes to an end. Here, in the bay of Portigliani, stood the Roman Portus Scabris, and this was the site of the Portigliani estate that was connected to the medieval harbour, where up until the 14th century boats from Pisa used to moor (Ceccarelli Lemut 1985, 58-64). The recent review, during the nEU-Med project, of the pottery finds made during excavations for the construction of Scarlino's new harbour, which took place at the start of the new millennium, attests to the fact the harbour was frequented continuously throughout the Middle Ages (Vaccaro 2018). In view of the characteristics of the coast, to this harbour we should link a larger system that perhaps also included landing-stages in the lagoon, which geomorphological investigations themselves tell us was fairly deep and large, at least in its initial section (Pieruccini, Susini 2020), with more marshlands only appearing in the later 13th century (Ceccarelli Lemut 1985, 58-64). This would be confirmed by the existence up until Late Antiquity of the system of Roman villas and settlements along the southern shore of the lagoon itself.

Observing the distribution and above all the chronology of the settlement nuclei identified by the various surveys (Figure 1.26), it is interesting to note that it is only as of the 10th century, ie. as of the moment of peak vitality at Vetricella, that we once again start to find greater occurrences of sites (identified by archaeological survey) situated again near the southern limits of the lake, and of the harbour of Portus Scabris/Portigliani. This is the case at the following places: Meleta; the Le Case locality, near the site of the former Roman villa at the place known as La Pieve; and la Canonica. Meanwhile, near the far northern end of the lagoon stood the site at the Casetta locality which, as stated above, was probably of a certain size, and which had its own cemetery at least as of the 10th century.

Thus, this pattern of sites would tend to suggest a certain movement by the lagoon, and also in the harbour.

However the aforementioned, systematic analysis, conducted as part of the nEU-Med project, of pottery finds made during excavations at the place where the coastal harbour must have stood, has revealed a very scant influx of imported pottery. This influx seems to have been broken off almost entirely with the

7th century, given that up until the later 11th century it is evidenced by a number of finds that can be referred to a very small assemblage of minimum vessels: 1 fragment of Forum Ware (glazed pottery), and 1 of sparse glazed ware, made in Lazio; 2 fragments of undecorated pottery ('a pasta chiara'), made from purified clay, produced in Lazio; and 5 amphoras, 4 dating to the first half of the 8th century, of which two are globular, perhaps of Aegean production, and from north-east Sicily, and 1 globular amphora dating to between the 8th and 9th centuries, of uncertain provenance (Vaccaro 2018, 89-95). Thus the quantities are small (compared to the numbers found up until the 6th century), and this led Vaccaro to posit that, throughout the Early Middle Ages, Portus Scabris/Portiglioni had become a place for only limited maritime traffic, or was merely a stopping-off place for boats bound for other destinations.

A harbour therefore with reduced vitality, with few connections to long-distance maritime traffic, connected to a coastal territory that was largely depopulated, except for hilltop sites, linked to a low-profile, purely local economy. This picture aligns very well with the previous narrative of this area for the whole of the Early Middle Ages.

However it seems clear to me, thanks to the huge mass of information summed up earlier, that at least as of the late 9th century the plain was very much full of life and vitality, with a major crescendo as of the second half of the 10th century. Accordingly, the activity of the harbour could be assessed differently, if seen from a standpoint that takes into account the discoveries made by the nEU-Med project's multidisciplinary research. Indeed, the picture changes if we start to consider as an indicator not the arrival in the harbour of imported pottery, but the arrival of large amounts of ore or semi-finished articles from Elba which were later distributed across the various sites in the plain (as stated in section 3 above), for completion of production processes that led to the making of the hundreds and hundreds of objects stored at Vetricella. The same picture changes further if we contemplate the possibility that Portiglioni was not an entry-point for goods, but an exit-point, as we can suggest in the case of iron objects, especially, bound for other maritime harbours, within a circulation of specialized products between several different estates, as already suggested in the recent past (Bianchi, Collavini 2018). For that matter, it is no coincidence that the site of Vetricella was also located not far from the route of a more important road that skirted the entire lagoon. According to several researchers this road corresponded to the Aurelia Vetus, while other researchers have argued that it passed, instead, along the sandy ridge that closed off the lagoon (Dallai *et al.* 2006 for an analysis of the various positions on this point). Leaving aside the various suggestions for whether the consular road can be identified, what matters is the presence, also for the early medieval period, of active coastal and inland roads, able to link up, by means of back roads and secondary routes, with roads in the hinterland, thereby enabling the arrival or transportation of products to and from Vetricella, and to and from the harbour. With this information in mind, it is therefore not hard to stand the historical vision of this territory almost completely on its head, and finally give a deeper historical meaning to that simple dot on the map that once indicated, in the article by Vignodelli (Vignodelli 2012), the 'mere' presence of a royal estate.

1.6 To sum up

The information set out in the previous sections, taken together, allows us to put into focus a number of aspects of the overall history of this royal estate which I intend to keep in mind in the following chapters, in a search for possible parallels and comparisons that are needed to highlight common features in other contexts in neighbouring territories.

Let us try to list them.

First and foremost, the size of this royal estate. If the estimate of its possible size is correct, namely 5,000 ha., the number of mansi (small farms) belonging to it, which is often the only piece of information that

we have available to us in documentary sources, is certainly not sufficient for a correct estimate of the surface area that it occupied. We have also seen that the boundaries of this estate are easier to distinguish north and south of the coastal section, where the presence of hilltop sites controlling the plain and linked to political figures closely connected with royal power does not appear to be a coincidence, in terms of delimiting boundaries. As regards the limits higher up towards the hills, the facts incline us to believe they were more unstable, encompassing royal property that extended continuously throughout the Pecora valley, alternating with property owned by other figures who consistently displayed a pronounced public character.

In the plain, the presence of the site of Vetricella as of the second half of the 9th century, with an acceleration in the Ottonian era, created a whole host of settlement nuclei which were predominantly agglomerated. These, like Vetricella itself, stood on alluvial hillocks standing above a landscape of woods, ponds, marshes and runoff streams on the fringes of the marshland into which the river Pecora flowed. This was the landscape of an estate whose administration centre took the form of the site of Vetricella, which was subject to very deliberately planned structural transformations between the second half of the 9th century and the end of the following century, indicative of a complex construction organization, as well as of a highly developed awareness of the value of the nearby lagoon, the key link between the mainland and the sea. However, this value was not linked to salt exploitation, as might be thought deterministically, but was instead connected to the system of transportation of hematite from Elba, and perhaps to the use of fresh water for iron-working processes.

Also dating to the Ottonian period was the most incisive reorganization of both the natural and farming landscape, as well as of this estate's vocation, to which was linked a highly specialized production system making iron articles. This system comprised several processing hubs located both in the plain, where the ore from Elba and the Colline Metallifere arrived, and perhaps higher up the valley, in the area below Massa Marittima where, as well as the minerals extracted in the area, ore from the hinterland may also have passed through.

The heart of this system was at the site of Vetricella, the storage site for finished products. The already high number of identified objects (1,574) is probably just a tiny fraction of the number actually present in sequences at the site, considering that the central area has not been completely excavated, and only a very small part of the spaces between the central area and the middle moat has been investigated. All this while also bearing in mind the considerable loss of sequences and finds, owing to recent agricultural work.

An important storage function also involved possible agricultural products (wine or cereals), as evidenced by the large number of small transport amphoras. This quantity, probably to be assumed as having been originally higher, due to the same considerations regarding iron objects, could however fit the normal standards of an estate of this size, in view of the fact that wine, cereals and pork (and, as we have seen, Vetricella had pig-husbandry of its own) were the most common commodities in this territory, and are also uniformly attested to as forms of production or as canons at nearby estates bordering *Valli* (eg. the estates of S. Vito in Cornino, Accesa, and S. Giorgio di Ravi, Ceccarelli Lemut 1985, 27-31). In any event, we should suppose that the surplus of this production was later distributed to other estates, near or far, via the system of land and sea routes described in the previous section. However, the interesting aspect of this storage activity comes in the shape of the 'small amphoras' themselves. These were produced in standard sizes, with slight variations, in two areas in the hinterland, and they circulated throughout much of the wider district of the Colline Metallifere (Ponta *et al.* 2020). This evidences a form of pottery production that was organized on a large scale, and that seems to be a full part of this production and distribution system of royal goods themselves. In other words, it appears it was not totally autonomous and independent, as had been suggested in the recent past (Grassi 2010, 23-24; but we shall return to this point in chapter VI).

The collection site, or one of the collection sites of the products contained in the ‘small amphoras’ made in the two areas mentioned, was Vettricella.

In view of the fact that, in the surrounding estates, land taxes (*censi*) are frequently attested as having been paid in the form of coinage (see the examples mentioned by Ceccarelli Lemut 1985, 28-31), the number of coins found, albeit exceptional in terms of archaeological finds, would be fairly normal. It would be slightly less normal if we were to agree with Alessio Fiore’s suggestion (Fiore 2020a, 202) that the coins are also evidence of purchases of surplus production (with particular reference to iron objects).

As for trade and transportation, it has been proposed that there were more outgoing products than incoming products, in terms of the movement of goods at this estate (apart from ore from Elba). The almost total absence of imported pottery in contexts from the harbour area seems to support this trend, although it did not exclude prestige goods, not so much from the central and southern Mediterranean, but rather from the Kingdom of Italy or from central and northern Europe. Proof of this is in the form of the small blue glass cups and lamps at Vettricella, made in northern Europe (Gratuze 2020), and the small brooch found at Scarlino (Marasco 2008 and see chapter VI). Also apparently originating from the north European area is the circulation of skills and knowhow linked to the planning and design of the concentric ditches (Marasco *et al.* 2018, 76), the construction of the mortar mixers (Bianchi 2011b), and the type of spurs and the small lead flywheel found at Vettricella (Agostini 2020, 37; 41).

On the basis of all of the above, I will end this chapter with a list of questions that help to address a comparative analysis with the other territories in our case study:

Apart from Valli, what happened at the other royal estates, and in the territories characterized by public properties?

- What were the characteristics of sites in the plain and on hilltop positions?
- Can we identify specializations and production districts, as for the *Valli* estate?
- Was there a network for the exchange of specific products, and if so what was its chronology?
- Were there sites that met a fate similar to the early abandonment of this estate?

Chapter II

The Cornia valley and the royal court of Cornino

2. 1 History of an apparently invisible royal court

To undertake an initial comparative study based on Valli, one need only look a little further north, where the royal court of Cornino was located.

This stretch of coast is not very different from the coastal area pertaining to the *Valli* court: an upland terrain, here represented to the north-west by the numerous hills of the Piombino-Populonia promontory (where the ancient urban centre of the same name, which formed in the Hellenistic period, was located; Figure 2.1), alternating with an extensive low-lying flatland, the Piombino plain, blocked off from the sea by a system of dunes. It is a remnant of the former lagoon landscape into which flowed the river Cornia, with the Cornia valley standing between the hills of Montioni and Campiglia Marittima to the west (Figure 2.2).

It is a landscape of great beauty still today (Figure 2.3), despite the major industrialization and anthropization that has gradually followed the large-scale drainage of the lagoon, which began in the first 30 years of the 19th century (Dallai 2016, 93). It is in this context that the royal court of Cornino is situated. It is definitely a more problematic case than the court of *Valli* for a series of reasons that we will analyze one by one. The prime reason involves its name. The court, with its 30 mansi (small farms), is mentioned as such in the dower of Hugh of Arles dating to 937, which was settled on Bertha and Adelaide (Vignodelli 2012).

However, prior to this document, a certain number of mentions, beginning in 8th century documents, had raised the question of whether the toponym Cornino referred to a specific place connected to water (ie. a hydrotponym), or a larger geographical area. Subsequently, in view of later references, it was



Figure 2.1 - The promontory of Populonia.



Figure 2.2 - An overview of the modern-day area where the Cornino estate stood, showing places mentioned in the text.



Figure 2.3 - The Piombino plain. The remaining part of the former wetlands, now a WWF oasis.

suggested that the toponym referred to an area of land stretching from the original castle of Suvereto to the lower Cornia valley and to the sea, to include, as of the end of the 9th century, the civic and ecclesiastical territories of Populonia, the original bishop's seat (Ceccarelli Lemut 1985, 22-23; Ceccarelli Lemut 2004, 1).

In all these previous works, precisely because the issue of royal estates always remained below the surface, the question was never addressed regarding whether this place-name, in some cases, might coincide with the royal estate cited in the dower.

Accordingly we shall see whether, on the basis of possible analogies with the court of Valli, and thanks to the latest research, it may be possible to make a contribution to a more specific definition of this public property.

However, we shall start at the beginning, with a description of the original natural environment.

Recent investigations associated with the nEU-Med project (Pieruccini, Susini 2020), following the campaign of geomorphological and chemical analyses, also including eight deep core samples (between 5 and 10 m) in the deposits of the former lagoon, have enabled us to define the coastal landscape here more precisely. Indeed, already in the fairly recent past its reconstruction has attracted the attention of many scholars (Isola 2009, 165-167; for a summary, see Dallai 2016, 92-93).

On the basis of these new data, today we now know, with a fair degree of certainty, that the strictly lagoon landscapes remained basically stable as of the late Holocene period. They did not, therefore, undergo substantial alteration throughout the historical era. The only important changes involved the mouth of the river Cornia. Its original course, corresponding to what is now the river Corniaccia¹, continued to shift to the north-west, owing to the continual deposit of detritus. In the medieval period, also in accordance with the nEU-Med research, the appearance of this environment was not too different from that shown in the 1821 Catasto Leopoldino (Grand Ducal Land Register): a veritable lagoon having a certain depth in the vicinity of the Piombino promontory, and a series of flood plain environments consisting of dry zones alternating with areas with smaller or larger pools and marshes, linked to a lesser network of rivers, now borne witness to by a complex system of former water-courses. This context was separated from the sea by a long sandy ridge that came to an end just before the last slopes of the Piombino promontory, and where, immediately inside it, the Roman port of Falesia once stood. Active also throughout the medieval period, its remains were obliterated by the industrial sites of the last century (Figure 2.4). There was another, similar harbour on the other side of the promontory, in the bay of Baratti. Indeed, Baratti and Falesia are both cited as harbours on medieval sailing charts, and were also available to be used depending on which way the wind was blowing (Ceccarelli Lemut 2004, 49-67). All this confirms the strategic position of Cornino as regards both maritime routes and land routes, given that inland, continuing from the plain of Scarlino, the territory was still traversed by the Roman Via Aurelia, albeit with slight changes to its route (Figure 2.5) (for a recent summary, see Dallai 2016, 94).

Accordingly, this is the context in which, from the Etrusco-Roman era up until the medieval period, a string of sites were situated which have been identified thanks to a long-running series of archaeological surveys, although few of these can definitely be dated to the Early Middle Ages. They are basically indicators, in some cases of great importance. However, they are never so numerous as to outline with any certainty large, clearly structured contexts. Nevertheless, they are sufficient to formulate a series of hypotheses. This is due in part to the low level of archaeological visibility of these contexts, aggravated by dynamics involving land infill as part of the wholesale drainage operations that began in 1828, as

¹ The identification of the ancient Cornia with the Corniaccia, already suggested in Ceccarelli Lemut 1985, 23 n. 26, has now been confirmed by recent research linked to the nEU-Med project, Pieruccini, Susini 2020.

well as the subsequent, invasive anthropization of the plain (for a recent reconstruction of the landscape see also Poggi 2021).

Setting out from the Vignale site (Figures. 2.5-2.6), we know, thanks to long-running archaeological investigations, that here, near the Via Aurelia and set back slightly inland from the lagoon, a farm was established in the Hellenistic period. This was later transformed, in the second half of the 1st century BC, into a large villa, one part of which was converted into a mansio (a stopping place for travellers) during the 1st century AD (Giorgi, Zanini 2014 and, most recently, Giorgi 2018; 2021 for the relevant bibliography, and for all information reported below). In the 4th century AD a luxury residence was created on top of these pre-existing structures, and in the first half of the same century one of the new interiors was adapted for use as a reception room, and adorned with a mosaic floor (Figure 2.7). The quality of this mosaic, and its unusual iconography, featuring what was probably a personification of cyclical time in the centre, in the shape of a young man seated on a globe (Figure 2.8), suggests that the owner of this residence belonged to the high-ranking urban aristocracy, comparable to the Cecina or Vettii, whose properties were present in the south and north of this territory.

After being abandoned, at the start of the 5th century, this site was once again frequented. Indeed, the restoration of this same mosaic, which still cannot be dated with certainty, suggests that the new owner

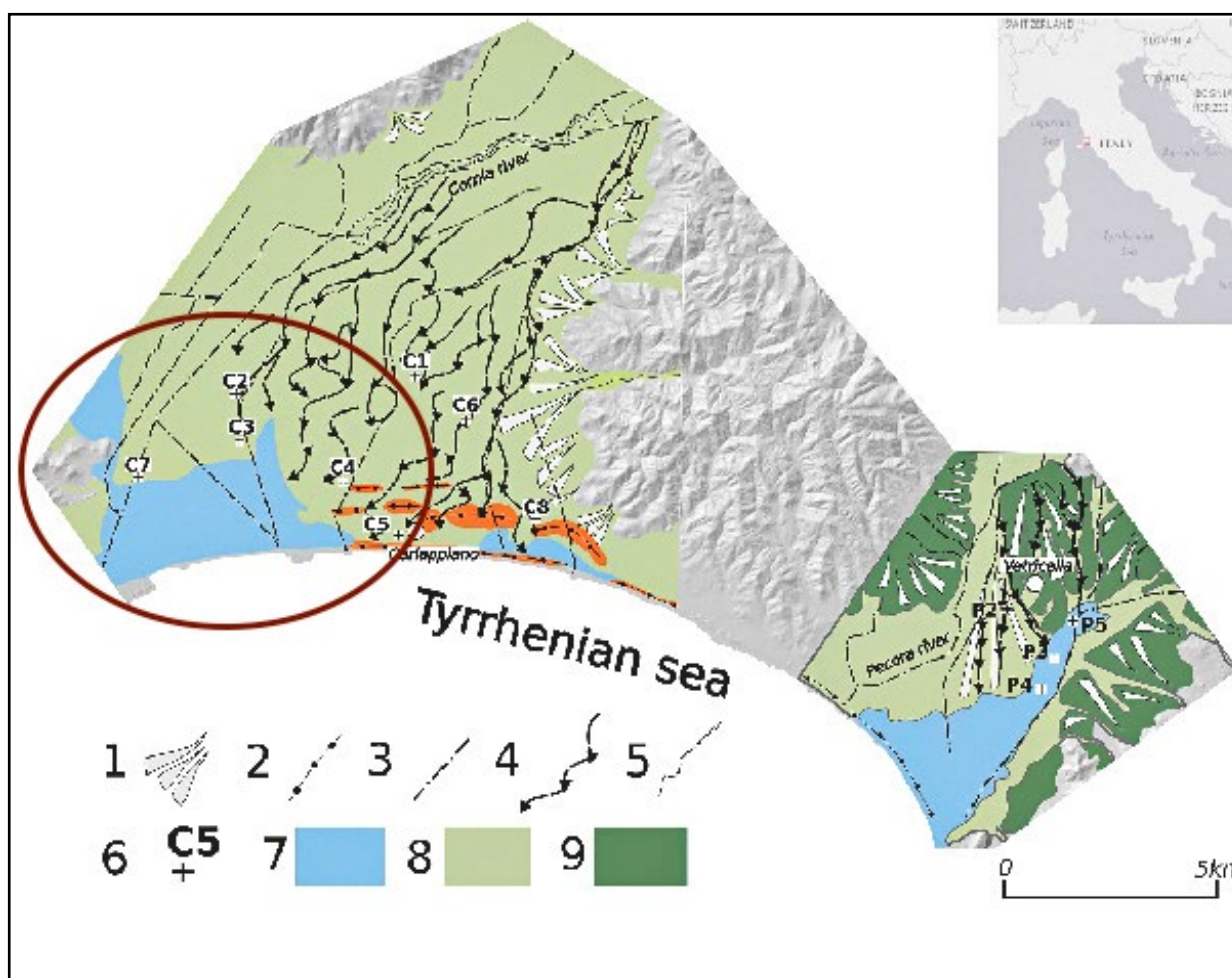


Figure 2.4 - Geomorphological reconstruction of the lagoon areas in the Cornia and Pecora valleys (from Pieruccini, Susini 2020, 162).

THE CORNIA VALLEY AND THE ROYAL COURT OF CORNINO

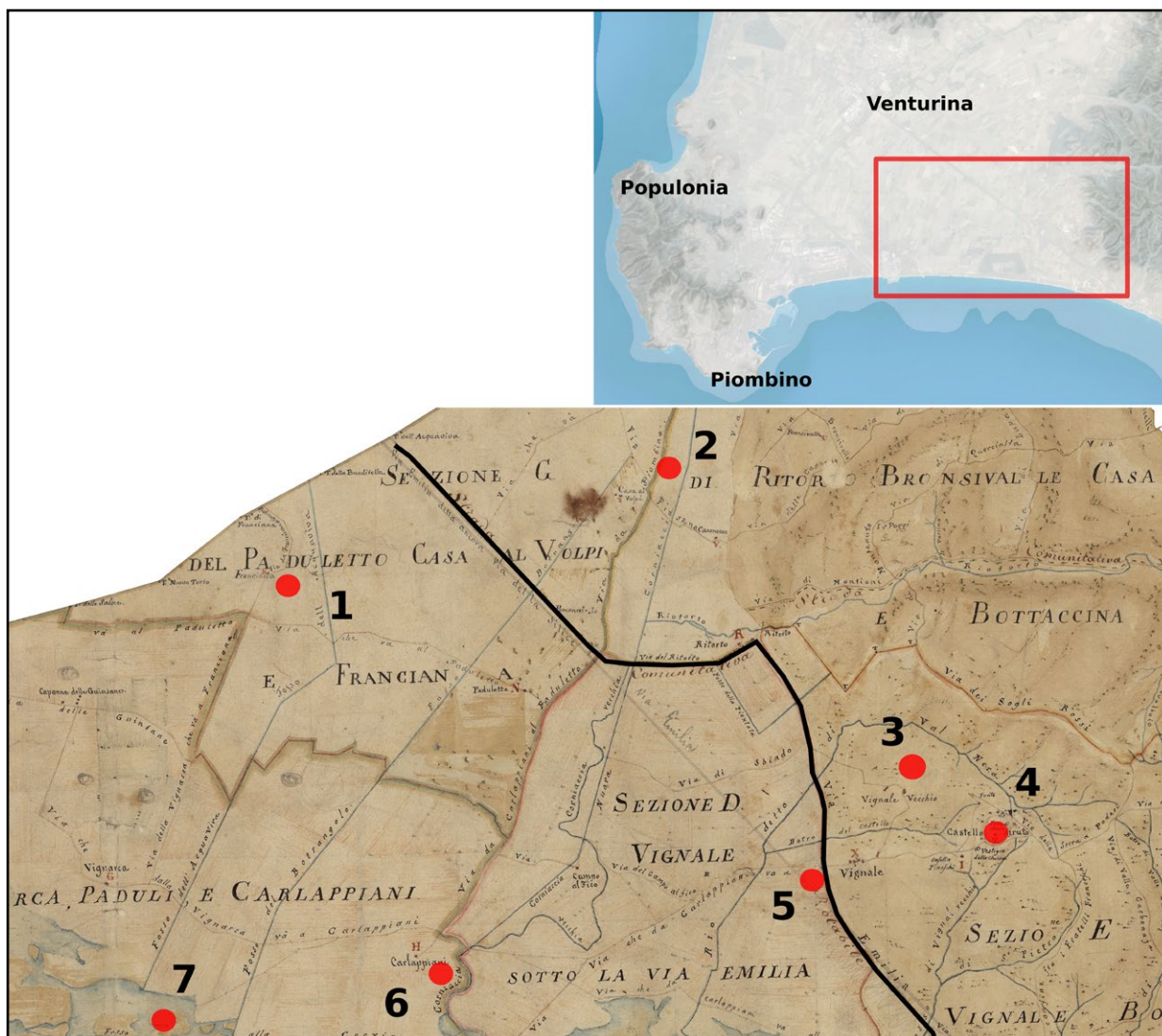


Figure 2.5 - The black line, superimposed on the Catasto lorenese (1821), Project Castore Regione Toscana e Archivi di Stato Toscani, shows the route of the Via Aurelia, while the numbers indicate the position of the following sites referred to in the text: 1 Franciana; 2 Casal Volpi; 3 Vignale Vecchio; 4 Vignale Nuovo; 5 Vignale (former Roman villa); 6 Carlappiano; 7 Torre del Sale (reworked map, taken from Dallai et al. 2018a, 30).



Figure 2.6 - Aerial photo of Vignale excavation (Archive Uomini e Cose a Vignale-Unisi).



Figure 2.7 - Vignale. The large room in the villa with the mosaic (Archive Uomini e Cose a Vignale-Unisi).

was connected to the Ostrogothic nobility. Further restorations of the mosaic, of uncertain chronology, altered the decoration contained in the side tondos, with aniconic figures. These new motifs, which were added to the pre-existing motifs, especially in the case of the central figure itself, which from the mid-5th century was used to depict Christ on the celestial globe, have led scholars to suggest that these interior spaces may have been given a new function, connected to the religious sphere. It is thought that this possibility could be backed up by a series of burials found in spaces near the ceremonial room itself which had since lost their original function. Moreover, further burials were found in an open area to the north, perhaps previously the site of one of the gardens of the villa. The high number of this latter group of burials, estimated as being around a hundred individuals, although not explored systematically, suggests that these areas were not reused only on a short, temporary basis, but did in fact constitute an actual cemetery.



Figure 2.8 - Vignale. Detail of mosaic floor (Archive Uomini e Cose a Vignale-Unisi).

Regarding the cemetery's date of use, previous sporadic finds from the grave goods of some of these burials had led to the belief that the final period of use of the burial site was the late 6th century and early 7th century. However, recent radiocarbon datings of a group of these burials, carried out by the nEU-Med project, confirm an interesting chronology between the 7th and the later 11th century, opening up new scenarios for interpretation². Although the archaeologists involved with the Vignale site have understandable reservations over the hypothesis that the reception room was transformed

² Specifically, burial 1 is dated to between 620-659 (Beta Analytic Radiocarbon Dating Lab, USA); burial 2 to between 770-900; and burial 3 to between 1081-1152 (samples prepared by the Università della Campania Luigi Vanvitelli, Department of Environmental, Biological and Pharmaceutical Science and Technology, with the collaboration of the National Institute for Nuclear Physics in Florence, Laboratory of Nuclear Techniques Applied to Cultural Assets).

into a church, the totality of the data collected makes them more confident in hypothesizing, between Late Antiquity and the Early Middle Ages, the presence of a church in the vicinity of the villa, and of a vicus connected to this possible 'centre of diffusion of Christianity in rural areas' (Giorgi 2018, 99; Giorgi 2021). I will return to these data later on.

Another context that points to the Early Middle Ages is the one found at Carlappiano (Figure 2.5), not far from the original mouth of the Corniaccia, near the wetlands and only a short distance from the coast (Dallai *et al.* 2018a for all the information given here below). In previous years, analysis of aerial photographs had revealed the presence of an area in the shape of an elongated circle, surrounded by what appeared to be water channels, also identified in subsequent diagnostic archaeological surveys carried out as part of the nEU-Med project. This survey was followed by the excavation of some portions within these channels, or moats (Figure 2.9)³.

A period of multidisciplinary research clarified the geomorphological nature of this space, identifying ancient traces of a dune surrounded by a system of former water courses, bordered by a moat of ancient origin, but which was definitely present with that subcircular form in the Middle Ages. In the 13th and 14th centuries a system of masonry basins or tanks was constructed, and a long stone-built conduit, together with a number of buildings (Figure 2.10). The data suggest that these are to be interpreted as the remains of evaporation salt-works, that operated on a seasonal basis. Specifically, it is believed that the tanks that were unearthed were designed to produce brine. This process was enabled and controlled by the system of water channels, in turn connected to the extensive moat that surrounded the dune, which was connected to the river Corniaccia by a feeder channel. The buildings have been interpreted as accessory storage spaces that were part of the salt-works themselves, while it is only possible to suggest that there may have been larger evaporation tanks in the lower section of the dune (Figure 2.11). The geographical location of Carlappiano (Figure 2.5), consisting of an important patch of dry land between the lagoon and the sea, would have made it possible to make use of a supply of fresh water, thanks to the proximity of the mouth of the Corniaccia, as well as of the salt water necessary for the various stages of salt production, within an environment that was in any case characterized by shallow waters.

While this material evidence refers to a production cycle that was implemented in the Central Middle Ages, ceramic material recovered during the most recent archaeological surveys attests to the fact that the site was frequented over a long period, definitely from the 1st century BC to the 7th century AD. A smaller amount of undecorated pottery, and a fragment of glazed pottery (Forum Ware), also suggests possible phases between the 8th and the 10th centuries. Indeed, this represents the only important pottery evidence, for the whole of the plain, for a human presence dating to these chronological horizons. Indeed, as already stated, the material found at Vignale, apart from the burials, does not go beyond a 7th century chronology.

We find a similar situation at the site of Case Franciana, north-east of Carlappiano towards the hinterland (Figure 2.5). A complex site developed here in the Hellenistic period, followed in the middle Imperial period by a villa with signs of habitation up until the 7th century (Botarelli 2004).

Carlappiano thus represents possible, significant evidence of continuity of life, although unfortunately it has not been possible to define the features of this habitation more exactly, owing to the forced interruption of the excavation after the first archaeological campaign, following non-authorization by the owners of the area.

Thus we have three site contexts to set out from, Carlappiano, Vignale and Case Franciana (Figure 2.5), to sketch the possible structure of this royal estate. This is not much, given that only for Vignale and Carlappiano do we have evidence, however slight, of continuity of habitation in the Early Middle Ages.

³ The excavation, conducted in 2016, was coordinated by Luisa Dallai and directed by Richard Hodges.

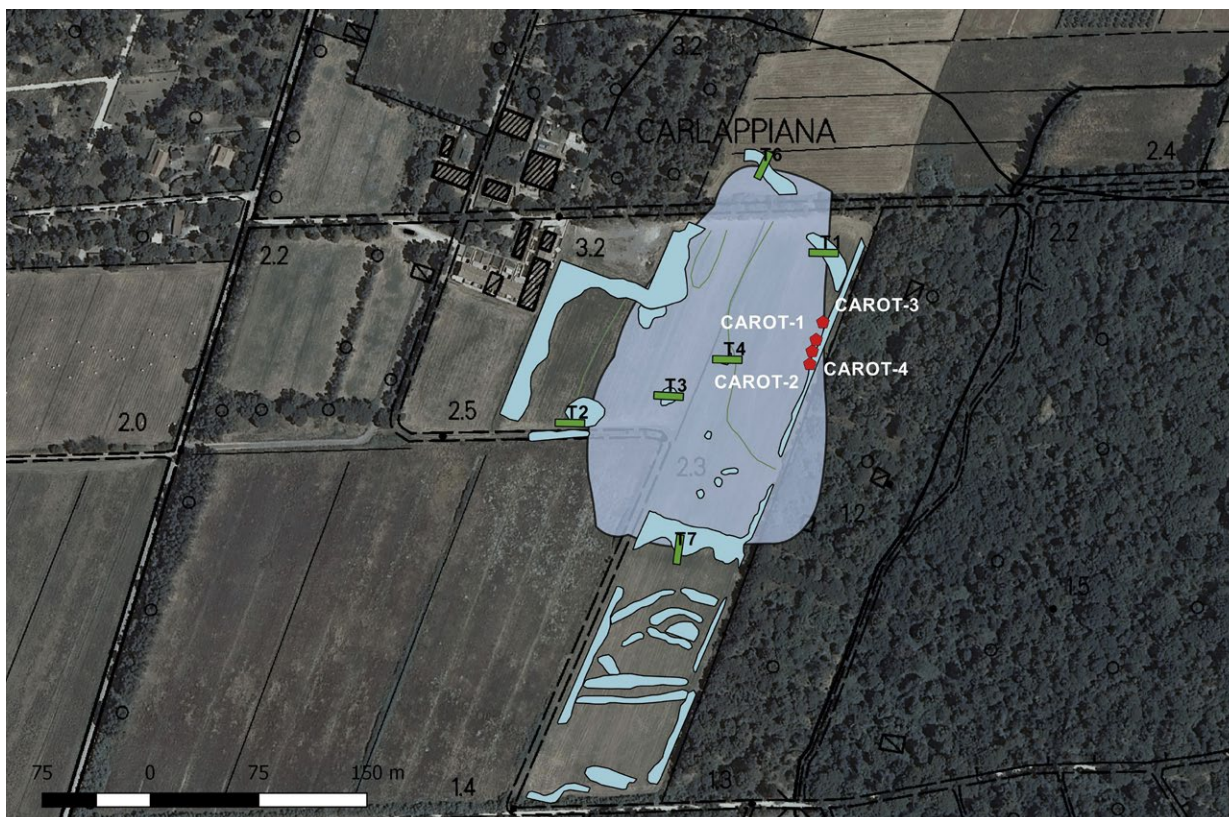


Figure 2.9 - The site of Carlappiana showing (in blue) the magnetometry anomalies, test borings, and trial excavations (from Dallai et al. 2018a, 34).

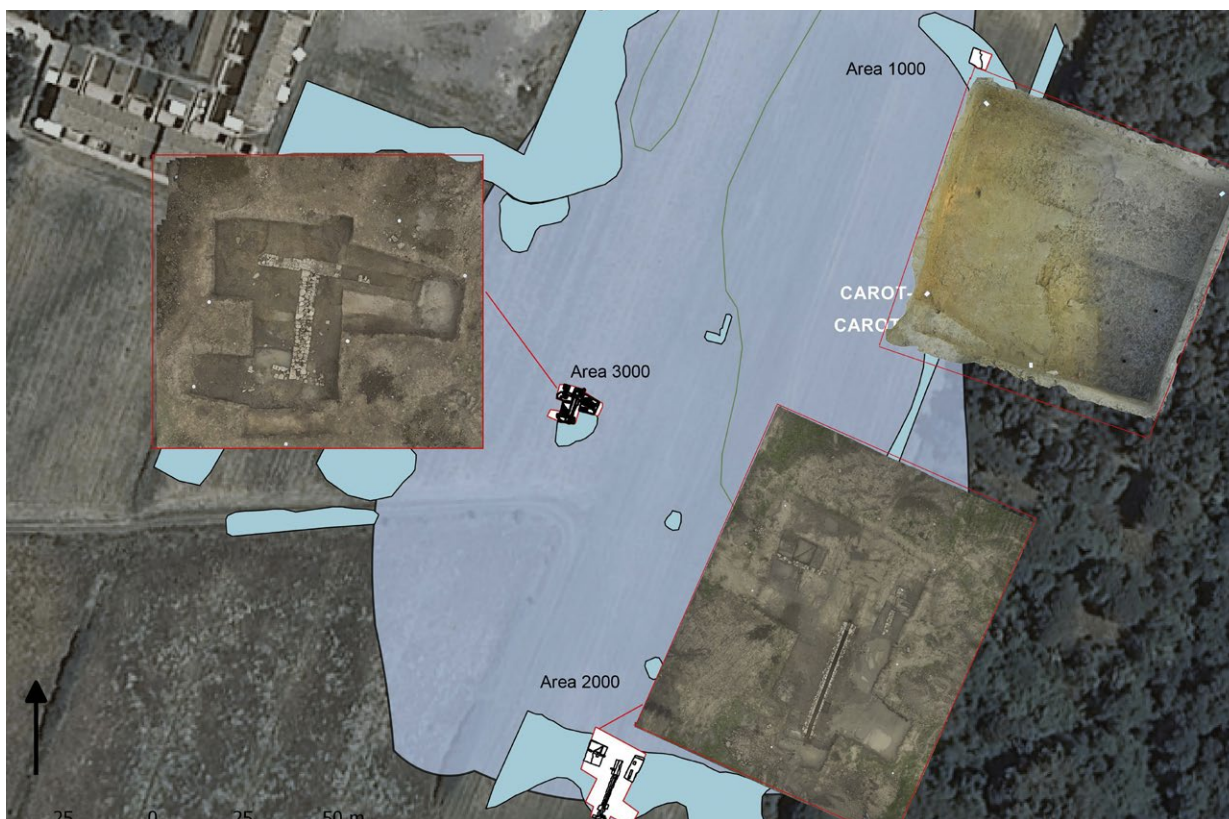


Figure 2.10 - Carlappiana. Orthophoto of excavated areas at the end of the 2016 campaign, and their location within the anomaly (from Dallai et al. 2018a, 35).

However, still with an eye to the material record, we shall try to derive information from a geomorphological and geochemical reconstruction of this landscape. As already stated, according to the reconstruction, the entire south-eastern part of the lagoon featured systems of dunes, with shallow brackish waters, into which, however, the fresh waters of the Corniaccia flowed, with its course characterized by many meanders (Dallai, Volpi 2019; Poggi 2021). Thus this environment was ideal for salt-works to be established, as verified in the case of the Carlappiano dune, and as also seen in the salt-works to the west, in the nearby area of Torre del Sale, which in the 1821 Catasto Leopoldino bore the name Casetta del Sale (Figure 2.5). Here only an analysis of aerial photography, especially from flights made in 1938, made it possible to spot traces that can be attributed to salt-works. Today, unfortunately, these have disappeared, owing to the more recent construction here of an ENEL power station (Dallai 2016, 95). We also know of the existence of salt-works on the opposite, north-western fringes of this lagoon, in the area of Montegemoli, attested to in documents up until the later Middle Ages, although no traces of it remain. Another facility, perhaps also linked to fish farms, is suggested further north, between Case Franciana and Vignale, near the Corniaccia (Dallai 2016, 96-97).

However, the Carlappiano/Torre del Sale area is the zone of most interest to us, given that it is probably in this area, where the modern-day landscape has been considerably altered, that the most important salt-works must have stood. These salt-works constituted the defining feature of the royal court, determining its primary vocation. This suggestion is backed up by a number of considerations that must necessarily be supported by the documentary sources.

Indeed, thanks to Simone Collavini's work on the Cartulary of the nearby monastery of San Quirico di Populonia (Figures 2.1-2.2), situated on the promontory of the same name (Collavini 2016), and

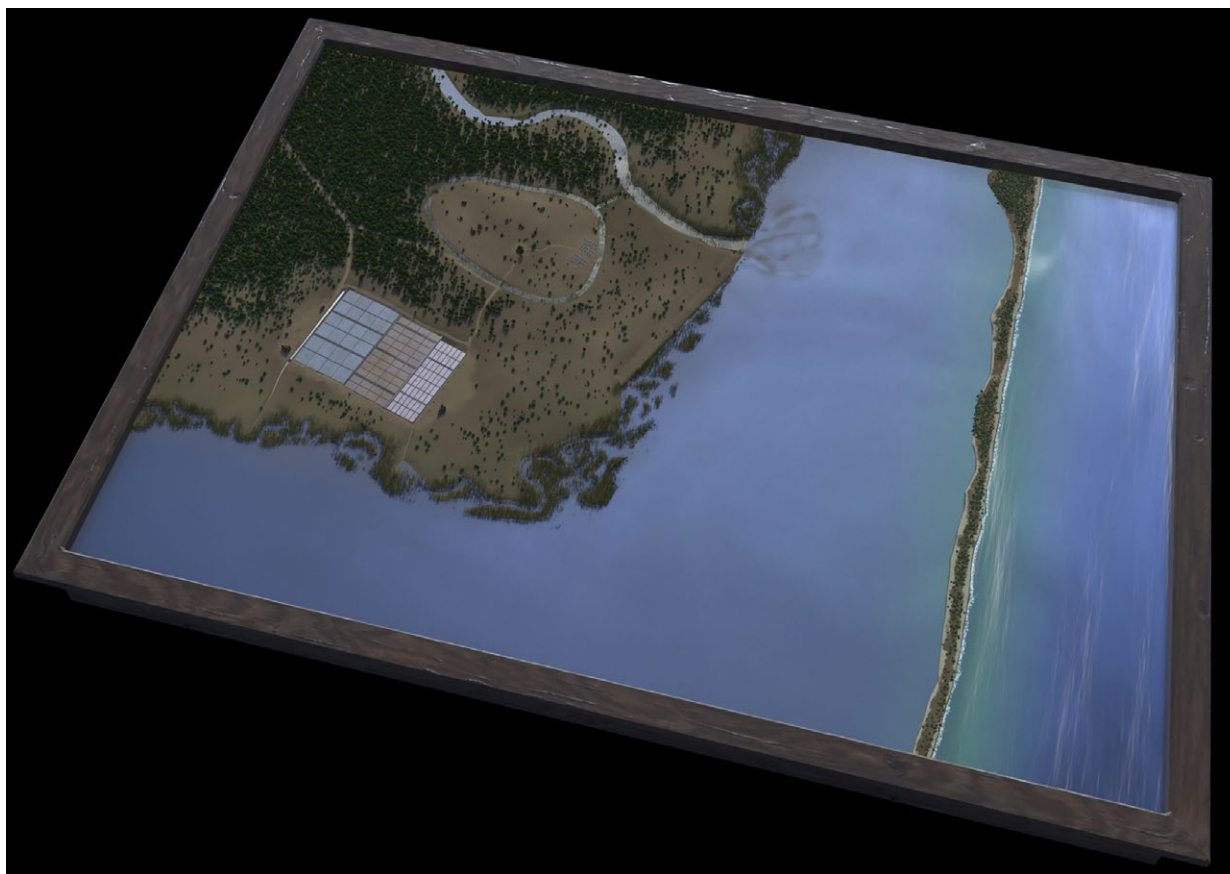


Figure 2.11 - Carlappiano. Schematic reconstruction of the salt-works (illustration by Mirko Buono; from Dallai et al. 2018a, 48).

Paolo Tomei's work on early medieval sources, carried out as part of the nEU-Med project (later partly published in Tomei 2020), it is possible to assemble important pieces in this historical jigsaw.

Setting out from an analysis of Lombard and Carolingian documents which Cardinal Deusdedit compiled at the end of the 11th century, Tomei identifies some places in this coastal area as having belonged to large estate complexes granted by the Lombard sovereigns to the papacy. For the area of the future Cornino, in texts dating to the first few decades of the 8th century, the *curtis* of Flacianum, with its *caio Tertio* or *Territio*, are identified by him, respectively, with the toponym Franciano, today identifiable in the Case Franciana area, and with structures associated with the former harbour of Falesia (Figure 2.5), situated south-west of the lagoon (Tomei 2020, 25-26).

If we observe the relative positions of these sites on a map, we see that the area of Case Franciana is not very far from Carlappiano, standing on the margins of the original wetlands, as has been verified by recent archaeological investigations. Also attached to the court of Franciano was a *villa magna* identified by Tomei as being the Vignale Roman villa. In the Early Middle Ages this may have been the site of a population centre, which is indirectly attested to by the burials described above, and heir to that possible Late Antique *vicus* that is thought to have originated from the remains of the villa (Giorgi 2018, 99). In 8th century written sources there is no mention of salt-works, but it is important that the toponym Franciano corresponds to the name shown on the document. As such, it stands out as possibly the main area of this papal property.

Accordingly, although archaeology attests to a long chronological continuity for Vignale, it is the Franciano area that seems to hold considerable importance in the 8th century. This continued to be the case for almost 400 years, as can be inferred from the Cartulary of the monastery of San Quirico di Populonia. In it we learn that, in 1094, the *curtis* of Franciano was donated by the Aldobrandeschi family to the monastery, along with its salt-works (which are mentioned now, unlike earlier on, Collavini 2016, 66-69). The importance of this donation was such that it marked a considerable phase of economic growth, defining a new political physiognomy for the monastery.

However, the Cartulary places us firmly in the Central Middle Ages, and to understand better these historical events we must go back a little, to try to explain this alternation in the name of an important possession. Indeed, in the 8th century it was called Franciano, before changing its name to Cornino in Hugo of Arles' 937 dower (which we have frequently had occasion to cite), before returning to the name Franciano in the 1094 donation.

At the start of this section we stated that it is only as of the late 9th century that we can suppose that the term Cornino was used to describe a larger area, corresponding to the lowest section of the Cornia valley. According to Tomei, the omission in Carolingian documents of any mention of Franciano among the rents available to the pontiff (who may have been Benedict III, 855-58) may be evidence that, in this phase, it came under direct administration by the *fiscus* (Tomei 2020, 26). It is therefore possible that, at this time of change, and, as we shall see, of general restructuring, there was a preference in favour of calling the public estate Cornino (without adopting the previous term Flacianum) to refer to a larger area that, as well as the lagoon, also included more inland parts, connected to the course of the river Cornia.

However, it is from this time on that the use of hydrotponyms, generated by proximity to the river Cornia, names that were identical to the name used to refer to the royal court, led to those difficulties involving the location of sites, and the interpretation of important historical events in this general area.

One of the latter is connected to the problem of locating the site of the bishop's seat itself. Indeed, it is known from documentary sources that the bishopric associated with the ancient city of Populonia, attested to at the end of the 5th century, had been transferred, by the mid-9th century, 'in Cornino', and only in the mid-11th century did it find its definitive location in Massa Marittima.

According to recent research (Gelichi 2016), this does not mean that, at the time when the bishop's seat was relocated in Cornino, Populonia was uninhabited. Indeed, coinciding with the bishop's move, in the archaeological sequences of the former acropolis, we see a phase of reoccupation, already noted in Dadà 2009. These traces of new habitation are somewhat discontinuous (Figure 2.12): remains of wooden huts near a former cistern, perhaps reused in this very same phase, associated with which there was a reoccupation of some spaces that formed part of the nearby, pre-existing complex known as Le Logge. However, the pottery associated with these stratigraphies is the material that mainly distinguishes the people who, perhaps only occasionally, frequented this summit area.

Indeed, it is not altogether common, in the numerous archaeological excavations in much of this coastal territory, as well as more inland, including Vetricella itself, to find a quantity of finds that is as significant as those found in these stratigraphies. These finds consist in glazed pottery (Forum Ware) made in Lazio, identifiable with specific forms such as chafing dishes (for heating food), together with a certain amount of 'red-painted' pottery from Campania and Lazio. The quality and sheer amount of these pottery finds have led to the suggestion that it was here, in this very part of the ancient city, that the new civil district was established which, starting in the Carolingian period, distinguished the Populonia comitatus from the one at Roselle, from the Carolingian period onwards and which, at least as of 857, was headed up by a member of the Aldobrandeschi family (Gelichi 2016, 362-363).

Accordingly, if we start to connect all the facts and data together, the picture becomes clearer. Around the mid-9th century, this whole stretch of coast underwent large-scale transformations. A comitatus seat for the new civil district probably took shape in existing structures atop ancient Populonia, which the district came under. Also, around the lagoon of Piombino a royal estate developed that was now called Cornino. In addition, just beyond this lagoon, in the Pecora valley an unusual site was created, Vetricella, with its three concentric ditches, also standing within a public estate, the court of *Valli*.

This is the context in which the bishop's seat was transferred. Its exact location has always been debated.

In this connection, the most widely-held notion is that the new location may have been Suvereto, a hilltop site in the hinterland, and around the property of the Aldobrandeschi family, with Cornino being understood as a larger territorial area (Figure 2.2). The information supporting this suggestion, drawn up by Gabriella Garzella, is scant, and can be summed up as follows: the mention of a church at Suvereto dedicated to San Cerbone, in 1070, the only church in the diocese named after this saint, apart from the cathedral of Massa Marittima (built after the definitive relocation of the seat), which contains the remains of this bishop-cum-saint from Populonia; the granting of an agrarian contract (*livello*) on the part of the bishop of Populonia in 923 in favour of the church of S. Giusto; the security requisites of the site, that became necessary after a pirate attack in 809⁴; and the importance of establishing the seat of the bishopric at a site belonging to the Aldobrandeschi family (Garzella 2005, 143-144).

However, I do not wish to dwell overmuch on the problem of the exact location of the new bishop's seat. This is an issue which would take us a long way away, and onto risky ground, although it would certainly warrant fresh consideration in the light of the clear context of an overall reorganization of this area on the part of the public powers. This reorganisation was so important that it transformed this coastal nucleus into one of those 'black holes' which we have already referred to on the subject of *Valli* and Massa Marittima, and which made it practically invisible via written documentation, except for that small window that was opened up on the occasion of the 937 dower.

Thus we shall attempt to reconstruct this royal property.

⁴ Regarding the act of piracy involving Populonia, I agree with the reservations expressed by Gelichi in not seeing this as the main cause of the change of location of the bishop's seat, and consequently as the reason for a search for safe sites (Gelichi 2016, 344-345), all the more so in view of the fact that the whole area of the Piombino lagoon, owing to its inclusion in a large and crucial royal estate, could provide good requisites for protection.

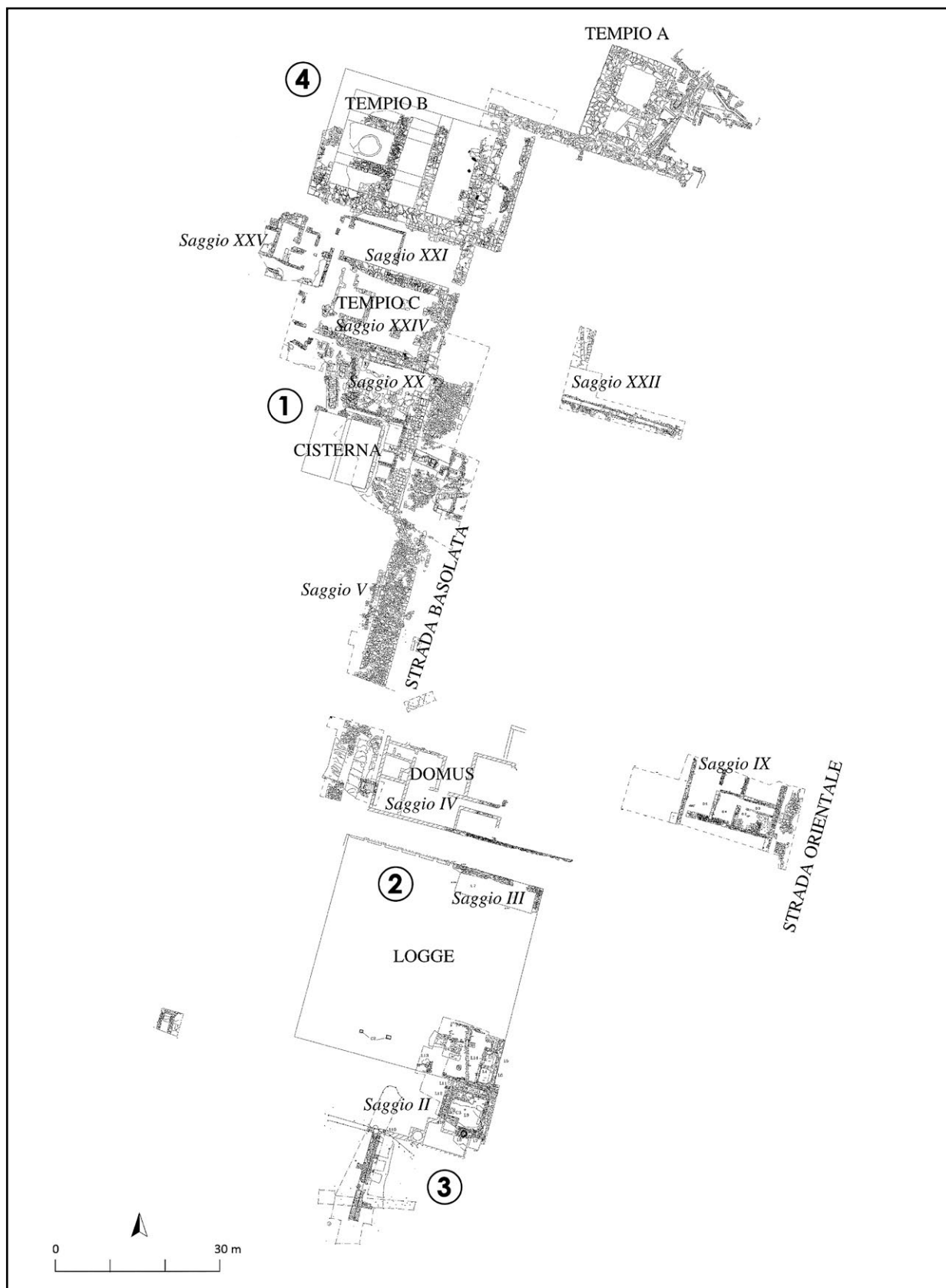


Figure 2.12 - Populonia, Acropolis: plan of areas investigated archaeologically, showing areas where traces of early medieval frequentation were found (from Gelichi 2016, p. 364).

2.2 The possible organization of the court, and its subsequent break-up

As we have suggested, the nucleus for managing the main economic resource, namely the salt-works, must have stood in the general area of Franciano, as of the 9th century, within the court of Cornino. Indeed, when this court, like the court of Valli, was dismantled during the course of the 11th century, the Aldobrandeschi were the ones who took over its most important and central part, namely the court which, under the name Franciana, was later donated to the monastery of San Quirico, as I have already written.

Thanks to written sources, we have a highly important piece of information concerning Franciana. Indeed, in the Cartulary of the monastery of San Quirico di Populonia a *castellare* is referred to in this court, at the end of the 11th century (presumably corresponding to a complex that had fallen into ruins). In another document, dating to 1125, also contained in the Cartulary, this is described as being surrounded by ditches, and by a water-channel (Collavini 2016, 67-69). This description reveals considerable similarities not only with the original appearance of Vetricella with its three concentric moats dating to the second half of the 9th century, but also with the possible similar fate of general dissolution in the course of the 11th century.

Regarding the location of this *castellare*, the probable administrative centre of the court, we can only devise theories. The area of Case Franciana, where the archaeological survey found a presence existing up until the 7th century at least, may not correspond to the centre of the court, despite having adopted its name. This is also owing to its position, originally lying close to the imagined outer limits of the royal court, given that ever since the 8th century holdings have been attested to slightly to the north which came under the Casalappi court, belonging to the bishop of Lucca, as can also be clearly inferred from the monastery Cartulary itself⁵.

Its position, as well as the findings from the archaeological excavation and from the multidisciplinary field surveys, the dune of Carlappiano, with its former ditch, would be concrete grounds for thinking that the *castellare* stood here. Accordingly, it would have been situated close to the area of the salt-works, and would have been linked by secondary roads both to Torre del Sale and to the court's other main hub, namely Vignale. The forced interruption of the archaeological excavation does not allow us to proceed beyond this hypothesis, although, in my view, it could be one of the most plausible hypotheses open to us (having already been cautiously expressed by Luisa Dallai in Dallai *et al.* 2018a, 33).

For Vignale, any interpretation involves some degree of risk. Nevertheless, we shall try to outline one or two possibilities all the same, setting out from the complicated medieval history that has been sketched out up until now. Vignale has always been thought to have belonged to the court of S. Vito in Cornino, owned by the bishop of Lucca. The reason for this is that, leaving the royal estate in the background again, in default of other written sources, a document from 829 was the only testimony to the existence of the most important bishop's court in this area (Ceccarelli Lemut 1985, 27). The hydrotoponym Cornino provided a certainty as to the fact that this centre stood in the plain, near the original course of the Cornia (namely the modern-day Corniaccia). On the basis of this association, Ceccarelli Lemut went on to take the view that the place-name Viniale, which appears in a document dating to 980 (Ceccarelli Lemut 1985, 23 n. 27), referred to a place that stood within the court. However, she argued that the Vignale referred to in this document coincides not with the area of the Roman villa, which is currently being excavated, but with the locality known by the current, modern-day name of Vignale Vecchio (Figure 2.5). This is an area situated among low hills, around 700 m north-east of the villa, and it is thought that the centre of the court of S. Vito in Cornino was moved here at some point

⁵ In this regard, reference is made to the hypothesized lease of the Livellaria locality, granted to the monastery in the first cycle of donations between 1073 and 1101, which Collavini plausibly locates north of Case Franciana, recognizing it as an area pertaining to the court of Casalappi (Collavini 2016, 59-61).

in the 10th century (Ceccarelli Lemut 2004, 8 and n. 41). It is claimed that this argument is corroborated by the presence, in the court, of a tower cited in 996. Ceccarelli argues that this is indicative of a process of fortification which characterized its gradual shift to the status of a castle at Vignale Vecchio. This is despite the fact that this is only attested to as such with certainty as of 1084, when “in loco Vignale prope ipso castello”, a donation to the San Quirico monastery was drawn up (Ceccarelli Lemut 2004, 6).

However, at the start of the 12th century the castle no longer belonged to the bishop. Instead, it was definitely among the holdings of the Della Gherardesca family. This is attested to in documents dating to 1108 and 1139, in which it is once again referred to as the property of which half was donated by Count Hildebrand Della Gherardesca to the archbishopric of Pisa, in those years that saw a major expansion by Pisa in this rural area (Ceccarelli Lemut 2004, 20). The same castle was still linked to the branch of the Della Gherardesca Counts of Campiglia when, following rebellions and the omission of demonstrations of loyalty to Pisa, during the war of the Tuscan Guelphs against Pisa, the city apparently decided to build a new castle, in 1280, called Vignale Nuovo. This was designed to replace the Vignali veteri de plano Maritime, which, in 1285, is described as still being inhabited, and having its own rural comune. According to Ceccarelli, this new castle was built on a hill not far from what is now Vignale Vecchio. Consequently, this would mark a new transferral from the old fortified centre to the new one, where significant ruins can still be seen among the vegetation (Ceccarelli Lemut 2004, 11-12) (Figure 2.5).

From this overview, it is very clear how easy it is to lose one’s way in this history, with its repetitions of the place-name Vignale in several different places: in a highly prominent Roman villa on the borders of the wetlands (located in the present-day locality of Vignale); on a site mentioned at the end of the 10th century, thought to have possibly stood within the court of S. Vito al Cornino, and later transformed into a castle (in what is now Vignale Vecchio) which belonged to the Della Gherardesca family as of the 12th century (called Viniali veteri in the 13th century); and, finally, in a castle on a nearby hill built by the Pisans in the second half of the 13th century (called the castrum novum of Vignale). Throughout this narration, first formulated by Ceccarelli Lemut back in 1985, which has now become the standard reference for anyone dealing with this territory, there are a number of weak points⁶.

The first involves the material evidence itself. Apart from the fact that the conspicuous presence of the Roman villa remains somewhat in the background in this reconstruction, no traces of a human presence have ever been found in old and new archaeological surveys in the modern-day locality of Vignale Vecchio and in the surrounding areas such as might bear witness to an episcopal court whose size has been estimated as being between 100 and 300 ha. (Ceccarelli Lemut 1985, 28), and of a later castle that was still inhabited in the mid-1200s. The new castrum of Vignale, built by the Pisans, may perhaps not have been so newly constructed. Indeed, as one climbs the hill where the castle was located, immediately outside its outer walls one comes across the remains of a church, identifiable as the pieve di San Giovanni, first mentioned in a late 13th century document. The building, with a ground plan in the shape of a Tau cross, had a large nave with adjacent transept. The ichnography and masonry technique have close parallels in the churches of Campiglia Marittima and Suvereto (Belcari 2008, 80-83). Such analogies suggest the same construction date for this building, namely the second half of the 12th century. The church would thus seem to predate the construction of the castle by almost a century, rather than being contemporaneous with it, as was argued by Ceccarelli Lemut (Ceccarelli Lemut, 34). Not to mention the fact that, within the outer walls, there are remnants of masonry walls that are closer to the 12th century modes of construction. These are very different from the remains of other constructions that are clearly later, as I have been able to verify at first hand (Figure 2.13). Above all, however, this narrative completely ignores the role that may have been played by the public power, and its royal court of Cornino, in this whole series of transformations, whether real or imagined.

⁶ To this reconstruction we must add a further variant that helps to fill out the picture, namely that the court of S. Vito is to be located at the site of Carlappiano, a hypothesis proposed in Farinelli 2007, 105.



Figure 2.13 - Castello di Vignale Nuovo. Left: detail of the walling of the church outside the outer walls. Centre: part of the church's southern transept. Right: a section of the outer walls, presumably corresponding to the late 13th century reconstruction.

Accordingly, we can try to provide certain pieces of information for a differing narration, starting with recent and new findings from research in this territory.

Following Collavini's considerations regarding the supposed workings of large public estates, it is more than likely that, like 'the layers of an onion', certain parts were also peeled off from the Cornino court (Bianchi, Collavini 2018, 150), in a way similar to what we find in the case of the *Valli* royal court.

One of these parts, along with the Casalappi court, could be the court of S. Vito. Indeed, this is first mentioned in 829, at the time of this major reorganization, and significantly it was made over to an important figure, the bishop of Lucca who, as already stated in the previous chapter, already had other estates as of the 8th century, on the fringes of both this court and the *Valli* court.

A review of the material from an old archaeological survey from the 1990s, and the findings made in the context of new field-surveys for Elisabetta Ponta's doctoral research, also connected to the nEU-Med project, enable us to draw up a new hypothesis as to the more exact site of this court, positioning it to the north, corresponding to the sites of Casal Volpi, podere San Giuseppe, and Pievaccia (Figure 2.5). Here, during the archaeological survey the identification of a series of concentrations of surface finds (Topographical Units), which Ponta plausibly links to a single context, attest to a considerably large site. This would stretch from Fosso Botrangolo to Corniaccia (ie. the early medieval Cornia), featuring at least one stone building, and pottery associated with a long chronological period covering the entire Early Middle Ages, with a nucleus of pottery finds, in the area of Podere S. Giuseppe, datable to between the 9th and the 10th centuries (Ponta 2018, 54)⁷.

According to this hypothesis, San Vito al Cornino (whose court is described in a document dating to the second half of the 9th century as having not just a church but also a store-room, barn, woodland, vineyards and fields of cereal crops) would thus be a court situated on the margins of the royal property of Cornino. This court would have little to do either with the former Roman villa, or with the 10th century Viniale, and the resultant supposed fortification of Vignale Vecchio⁸.

All this takes us back to the Late Antique villa, and prompts questions concerning its possible function in the Early Middle Ages. It was certainly a large-scale burial site. On the basis of a low estimate of around 100 individuals buried there (Giorgi 2018, 97), if this cemetery were associated with a village, then that site would have been by no means small, perhaps as of the 7th century. The date would be given by the

⁷ This new interpretation was discussed in depth and agreed upon with Luisa Dallai, Simone Collavini, Paolo Tomei, and with the rest of the team on the occasion of seminars held as part of the nEU-Med project.

⁸ The location of the estate centre with a chapel and tower of San Vito, near the river Cornia and the Botrangolo gully, nevertheless accords with the reconstruction drawn up by Ceccarelli Lemut (Ceccarelli Lemut 1985, 27-29, later returned to in Ceccarelli Lemut 2004, 6-8).

date of the burials, and by chance finds that can be ascribed to Lombard-era grave goods (Patera *et al.* 2003, 289-290). Such a size would justify the term *villa magna* that is already found in 8th century texts referring to one of the properties characterizing the papal court of Franciano.

The idea that the villa's original ceremonial building, adorned during Late Antiquity by a stunning mosaic that plausibly links it to a very high-ranking patron, was later associated with the religious sphere, on the basis of the motifs in the restored parts of the same mosaic, is a notion that has already been put forward by archaeologists. The presence in the area surrounding the building of burials dating to a period from Late Antiquity to the end of the Early Middle Ages would seem to support this hypothesis, and the notion that the cemetery had a long diachrony.

Thus it is more than likely that, ever since the start of the Early Middle Ages, the *villa magna* with its possible church (perhaps identifiable as the room with the mosaic floor?) represented the main religious hub of the royal court, being complementary to the economic hub, which had its main focus near the salt-works, in the area of Franciano.

The temptation to locate here, in this part of the court of Cornino, the bishop's seat that had been transferred from Populonia is indeed very strong. Moreover, this interpretation would be very much in alignment with Sauro Gelichi's convincing suggestion that this episcopal polity should be numbered among rural ones. Accordingly, the relocation of the bishop's seat to the Cornino area would constitute a 'late episode' compared to other Late Antique cases (Gelichi 2016, 345), being connected to the former site of a Roman villa, close to the Via Aurelia, which was still active, and within a royal property. Indeed, we find the same characteristics attested, albeit for the Late Antique era, in other examples of rural episcopalities across Italy, the most well-known case being the site of San Giusto (Lucera) (Volpe 1998, especially 332-338).

Despite the temptations, however, it is not appropriate to risk pursuing this hypothesis much further, devoid as it is of many forms of material corroboration. It is better to stick to the idea, already a fairly bold one, of identifying this site, and its possible church, as that Viniale mentioned in 980. This way, we avoid complicating the story overmuch, with the further step involving Vignale Vecchio, the result of the transformation of the bishop's court of San Vito, as argued thus far in the previous narrative. It is difficult to find out more without falling back into the hypothetical black hole typical of royal estates. This is also in view of the total absence of archaeological evidence datable to the Early Middle Ages in the excavation of the Roman villa, apart from the more complex continuous chronology testified to by the dating of the burials⁹.

If our hypothesis is correct, the life of the Viniale (ie. the former villa) would have continued at least up until the 11th century, when the fate of this royal estate saw a drastic transformation.

Like the nearby royal court of Valli, it is possible that, for this large property too, the civil war between Arduin of Ivrea and Henry II marked the beginning of transformations that were subsequently accelerated by the break-up of the Marca di Tuscia, in the course of the 11th century (Bianchi, Collavini 2018). At this time Franciano, its *castellare* now probably in ruins, formed part of the property of the Aldobrandeschi family, before being ceded with the salt-works, at the end of the century, to the San Quirico di Populonia monastery. Moreover, we know from the Cartulary of the presence of properties owned by other figures in the territory: the monastery of San Pietro at Monteverdi, the Da Biserno family, and above all the Della Gherardesca family.

The latter family were responsible for the later development, during the 12th century, of the whole coastal area west of the lagoon, thanks to the foundation, on papal lands which already comprised a

⁹ We should mention that this site too underwent drastic transformations and destruction of its sequences following the construction of the Strada Regia Grossetana in 1830-31, and also as a result of farming in the modern era (Giorgi, Zanini 2014).

church, of the monastery of San Giustiniano di Falesia, located near the ancient port of the same name, and the probable consequent formation of the castle of Piombino (see, most recently, Ceccarelli Lemut 2016, 33-41). As stated earlier, ownership of the castle of Vignale Vecchio was also associated with the Della Gherardesca family. According to Ceccarelli Lemut, this castle was only completely abandoned following the construction of the castle of Vignale Nuovo.

If, as we hypothesize, the court of S. Vito al Cornino was situated much further north-west, and the Vignale mentioned in 10th century sources does not correspond to Vignale Vecchio, but to what is now the area of the former villa, where did the Della Gherardesca family's castle stand, and what site was it associated with?

The presence of well-built walls which can be glimpsed among the vegetation on the hill where Vignale Nuovo once stood, and above all the evidence of a church and of other buildings that are architecturally datable, on the basis of their wall construction technique, to the full 12th century, and not to the end of the 13th century, when this castle was allegedly built *ex novo*, leads one to suggest a possible different narration. Accordingly, the castle of Vignale Vecchio, referred to in 13th century documents, would be a fortification which, by contrast, the Della Gherardesca family built on the same hill where the late 13th century castle was later rebuilt by the Pisans. At the height of the phase when the royal court was being dismantled, already in the second half of the 11th century (by which time, moreover, the bishop's seat itself had been moved to Massa Marittima), this new fortification would have been sited on the hill above Vignale and its villa magna, adopting its name (as likewise happened in the nearby Pecora valley in the case of the castle of Valle, see Chapter I).

Indeed, it is hard to believe that, in the locality of Vignale Vecchio, where, as I stated earlier, the archaeological survey did not reveal any evidence, a castle existed which, up until the later 13th century, had a church (plebs) of its own, and its own Comune. The reference in Pisan documents to a Vignale Vecchio with abandoned or destroyed buildings, as opposed to Vignale Nuovo, could be an example of the Pisan rhetoric of conquest, without these facts implying an actual relocation and resultant new foundation, but only perhaps a partial reconstruction of a pre-existing fortification.

2. 3 Other public properties: Gualdo del Re and inland areas

Moving inland from the Cornino royal court, we enter a territory in which, as we travel up the Cornia valley upstream, a series of properties stood since the 8th century that were chiefly associated with the bishop of Lucca. As well as Casalappi, S. Vito al Cornino and the court in the Montioni hills, already referred to, also worth mentioning is the estate of Casale Longo, located where the modern-day place-name Calzalunga is now found, which is attested to as of 867 (Farinelli 2007, 80; as well as Ponta 2018 for findings from archaeological surveys). These properties constituted a fully-fledged enclave of Lucca in this micro-district which largely looked to the most important bishop's estate centre, namely S. Vito in Cornino. Their position was crucial, because they were located along the secondary road between inland areas and the coast. Continuing further, one came to another important nucleus of fiscal estates.

In the final stretch of low-lying land wedged among the hills in the area of Monterotondo stood the collection of royal properties that came under the area which early medieval sources call Gualdo del Re ('King's Gualdo') (Figure 2.14). This toponym, deriving from the Lombard term *wald*, originally referring to public woodland, as opposed to privately-owned *silva* (Francovich Onesti 1987-88, 18), appears in documents as of 754 (Farinelli 2007, 67, n. 303). Ever since then, it was used as a territorial reference. As already emphasized in the past, the mention of *gualdi* seems to represent an important indicator of pre-existing public lands dating to Late Antiquity, which later became part of the royal estate (Farinelli 2007, 67 n. 102, also for the relevant bibliography). Thus it is no surprise that we see an *actor domini regi* attending in this area the drafting of a late 8th century document (Farinelli 2007, 67; Collavini 2007).

The recent archaeological survey allows us a clear interpretation of this long continuous chronology, especially with reference to a number of sites within Gualdo del Re.

The first is the one that the sources name *Balneo Regis*, or *Bagno del Re* ('King's Baths'), first mentioned in a document dated 779 (Farinelli 2007, 63). Its location has for some time been plausibly identified in the plain below the Frassine (Figure 2.15), a tiny borgo where the church of S. Maria Assunta stands out among the few surrounding houses. This was rebuilt in the modern era, to include the remains of an apse that was part of the 12th century building, and which are still visible. The church is also known as the *Madonna del Frassine* sanctuary. Indeed, miracle-working properties are ascribed to the fine wooden statue of the *Madonna and Child* which can be viewed inside, and these are attested to by the numerous *ex-votos* present within. It was popularly believed that the statue had been brought by Archbishop Regolo, who came from Africa to settle in these Tuscia woodlands, where he was later beheaded, in the days of King Totila, afterwards being made a saint (Susi 2005, 23-25). As a saint, his history is closely intertwined with the administration of these territories in the Early Middle Ages, as we shall shortly see.

To return to *Bagno del Re*, the main topographical reference is the *Bagnaccio* locality, where the ruins of a two-storey building are still visible. The ancient and modern toponym refers to one of the most important features and resources of this whole inland area, which is still exploited on a large scale today, namely geothermal activity (Figure 2.18).

During his travels in the Maremma region, in the second half of the 18th century, and with regard to this building, the scientist Giovanni Targioni Tozzetti records accounts from local people of the presence of hot water springs on the ground floor, later obliterated by *butteri* (cattlemen). This would confirm the thermal nature of the building. Judging by its architectural features that are visible today (as far as the vegetation allows), the building presumably dates to the 15th-16th centuries (Targioni Tozzetti 1770, IV, 215).

The archaeological survey conducted in the flat area around the building has revealed the presence of several Topographic Units displaying a certain density of pottery finds (Ponta 2018, 105-112; Dallai, Fineschi 2006; Dallai *et al.* 2009 for all the following information). Analysis of this pottery bears witness to continuous occupation of the area, from the Archaic period up to Late Antiquity. This also continued throughout the Early Middle Ages, despite the fact that there are few ceramic finds in the case of the final period. Fragments of 'Maiolica Arcaica' pottery attest to some form of human presence in the Late Middle Ages, too. The presence of imported north African pottery up until the dawn of the 7th century stresses the importance of this place, and the fact that it formed part of a system connecting this inland area with the coast, following the valley of the river Cornia¹⁰. The stability of this system from the Late Antique period, which constitutes an important feature that existed prior to the context of the early medieval Gualdo del Re, is also proven by the presence of an important site, identified in the nearby *Serraiola* locality (Figure 2.14). Here, despite the fact that documentary sources are silent, archaeological surveys have established the presence of a well-structured site that functioned throughout Late Antiquity. This site, according to Elisabetta Ponta, was a significant intersection point in trade between the coast and inland areas, especially with reference to woodland resources, and resources connected to the excellent clay deposits found in the north-eastern area, in the direction of *Monterotondo Marittimo* (Ponta 2018, 96-102).

The presence of important resources, combined with thermal waters, would thus have led to the continuing importance of the *Bagno del Re* area in the Early Middle Ages, too. Analyses of these waters,

¹⁰ In September and October 2021 the area was the site of an archaeological excavation directed by the Superintendency for Archaeology, Fine Arts and Landscape for the provinces of Arezzo, Siena and Grosseto. This unearthed a large number of pre-medieval structures (dating from 2th century BC to 5th century AD) which are currently being studied, and this evidence further underlines the importance of the area (Acconcia *et al.* 2023).



Figure 2.14 - Location of the bishop of Lucca's court of San Vito al Cornino, Casalappi and Calzalunga, and of the Gualdo del Re area, showing sites referred to in the text.



Figure 2.15 - The valley below the village of Frassine, where part of Gualdo del Re stood. To indicate how close it was, the arrow in the background marks the site of Castiglion Bernardi, with its nearby alumite quarries.

THE CORNIA VALLEY AND THE ROYAL COURT OF CORNINO



Figure 2.16 - Modern-day thermal phenomena at località Lagoni Rossi, not far from Gualdo del Re.



Figure 2.17 - Detail of Buca dei Falchi alunite quarry, at località Monteleo.



Figure 2.18 - Orthophoto of 16th century furnaces excavated at località Monteleo (nEU-Med Archive).



Figure 2.19 - On the right, the hill where Castiglion Bernardi stood, now the site of an Enel electricity pylon; alunite quarries visible on far left.

conducted by the chemist and botanist Giorgio Santi at the start of the 19th century, attested to the fact they were fit for drinking (Ponta 2018, 107). Thus it is not hard to believe that, although a long way from the heart of the Kingdom, this place, easily reachable from the Cornino royal court, with hot water pools, thermal drinking waters and surrounding lush woodland, suitable for enjoyable hunts, had all the characteristics for royal visits, on a par with some of the more well-known areas in northern Italy, such as the royal court of Orba or Marengo.

Today the only surviving remnants of this hypothetical past are concentrations of surface finds, the ruins of the Bagnaccio building, and other, small clues in the form of evocative modern-day place-names.

During archaeological surveys, in an area situated on the lower hills in the direction of the Frassine, called Casone del Re, wall alignments of uncertain chronology were found. More significant are the remains of a probable cistern, standing not far away, along the hill slope, in the locality of Cantinacce or Cisterna del Re. Its building techniques definitely date it to a time horizon predating the medieval period (Figure 2.14). This is indicative of the fact that, already in ancient times, a system existed that made use of this cistern, and of water channels (traces of which, in the form of fragments of water pipes, stones and large tiles, were found during the archaeological survey). These served to convey the waters that flowed from the natural spring, located near the Frassine church, towards the plain, and to Bagno del Re.

It is thought that these places took on further significance thanks to the mooted presence of a baptismal church dedicated to Santa Maria, perhaps situated near the 'King's Baths'¹¹, and also of a church which, at least up until the beginning of the 9th century, preserved the mortal remains of the aforementioned San Regolo.

Another important population centre, somewhere in the vicinity of Gualdo del Re, was associated with this latter church.

This was, indeed, the court of S. Regolo in Gualdo, which can be linked to the modern-day toponym of Podere San Regolo (Figure 2.14), situated atop one of the hills standing immediately to the east of Frassine (Dallai, Fineschi 2006; Ponta 2015, Ponta 2018, 113-120 for all the following information). In this small district, the archaeological survey has revealed a series of interesting contexts bearing witness to the fact that there was a human presence here in the long period between the late Republican era and the entire duration of the Early Middle Ages. This evidence is associated with a possible network of sites, which always remained fairly well-organized. Also, around Podere San Regolo significant quantities of human bones came to light, despite the fact that the plaster facing of the modern-day farmhouse prevents any identification of possible earlier parts of the walls and elevations, which might be attributable to the former church. The court is well-known in the historiography relating to the properties of the bishopric of Lucca, because it is referred to by a series of important and well-studied documents narrating a history that has been reconstructed in detail by Simone Collavini. This well reflects the complex relationship and conflict, between 770 and 790, between the local communities and the bishop himself whose properties, at that time, included this court and its church (Collavini 2007). This is an interesting and in some ways dramatic story, revolving around the management of the church and its relics, which culminated in the transfer of the latter between 778 and 781 to the cathedral church of Lucca, where they can still be found today. The bishop continued to control this court located on the margins of the Bagno del Re until the 10th century when, probably as a result of the transformations

¹¹ The reference is to the baptismal church mentioned in a document from 769 as *ecclesiae sancte Mariae de Cornino*, which Farinelli believes may be located in this zone prior to the construction of the church coinciding with the modern-day Madonna del Frassine (Farinelli 2007, 110). However, according to Ceccarelli Lemut this church may be located lower down the valley, identifying it as the *pieve* standing near Cafaggio, not far from Campiglia, which was later moved to a site near the eponymous castle (Ceccarelli Lemut 2004, 34).

that also affected the coastal area, the return of this property into the orbit of the *publicum* rendered much of its history invisible until at least the second half of the 11th century (Collavini 2007; Farinelli 2007, p. 83).

There was more than just a little at stake along the possible boundaries of these public properties. In addition to the important court of San Regolo, we find a highly important resource a handful of kilometres further north-east. This resource could explain a further royal interest in this territory (in addition to the thermal baths, and good arable land): the alunite quarries at Buca dei Falchi (Monteleo locality) (Figures 2.14-2.17). Fig. 2.15 shows clearly that these quarries lay at a relatively short distance from the plain where the Bagno del Re stood. This whole area has been thoroughly investigated over the years, especially by Luisa Dallai, and, as well as the field survey, extensive archaeological investigations have been undertaken at the quarries themselves.

Excavation of the large-scale productive facilities for alunite processing dating to the modern era, which have emerged during research at Monteleo (Figure 2.18), has brought to light only a few pre-existing traces. Moreover, these are associated with activities connected to the processing of copper-bearing minerals in the 15th century (Dallai 2020).

This is not enough to claim with certainty that this resource was exploited in the Early Middle Ages too. However, its importance for this historical phase as well could be indirectly borne out not only by its proximity to the Gualdo del Re public area, or the fact it may have been part of it, but also by the location of the other important site in this area. This is situated on the small hill that looks out onto the quarry area, less than a kilometre away from it, to which it was connected by an ancient road: Castiglion Bernardi (Figures 2.14-2.19). On this hilltop, which unfortunately is hard to investigate owing to the fact a large electricity pylon stands here, the archaeological survey enabled the identification of occupation dating as far back as the Republican period. The site is commonly known by the place-name Castellione. It is mentioned in documents as early as the 8th century, and its long period of occupation suggests there were important pre-existing features there. Indeed, this would also be borne out by the toponym, used generally in early medieval documents to refer to the presence of older fortifications (Farinelli 2007, sheet 27.3). During the archaeological survey (Ponta 2018, 121-129 for all the information that follows) the ruins were identified of the late medieval castle's original outer walls. The castle is attested to in the mid-12th century as Castelione Bernardi. Also discovered were parts of its internal inhabited area, as well as the remains of a tower, along with pottery finds that testify that the site was frequented in early medieval phases, too. We know from documents that, between the 8th and the mid-10th century, the site was under the control of the bishop of Lucca, via his court of S. Regolo in Gualdo. The strategic importance of this place can indirectly be inferred from the Lucca bishop's attempts to regain control over it, after the site, like the court of S. Regolo presumably once again entered the public sphere, following an overall reorganization starting in the second half of the 10th century, becoming one of the properties under the direct royal jurisdiction of Gualdo del Re.

No written source documents the link between Castiglion Bernardi and alunite mining in the quarries below, nor whether the site's importance may be linked to it in some way.

However, the use of alum in a plurality of fields (medicine, metal-working, art etc) does not exclude a possible interest on the part of the *publicum* in its extraction and possible processing, although it is commonly believed that the alum used in the Early Middle Ages came from the East. As we have stated in a recent article (Bianchi, Tomei 2020), for the exploitation of the local alunite, in the political and economic context that we have just described and linked to the public and royal sphere, there would have been no lack of metallurgical skills, specialized manpower, and organizational abilities (one need only look at what was happening at the tail-end of the 10th century in the Vetricella plain, and in the royal court of Valli, as regards iron production).



Figure 2.20 - Panoramic view of Monterotondo Marittimo.



Figure 2.21 - Bird's-eye view of Rocca degli Alberti, showing excavated areas (Photo: P. Nannini, SABAP-SI).

At the same time, the frequent mention of various alums in one of the famous early medieval recipe books known as the *Compositiones Lucenses*, copied in Lucca between the 8th and the early 9th centuries, bears witness to the general familiarity with this raw material in and around Lucca. However, on top of this, the reference in the text not only to Egyptian and Asian alum, commonly used in the Early Middle Ages, but also to alum of unspecified origin leaves open the possibility that it may also have been produced locally (Bianchi, Tomei 2020, 159). Placed in a broader context such as the one referred to above, such clues could support the notion that alunite was mined locally ever since these earlier centuries. This, bearing in mind that the Buca dei Falchi quarry was not the only place where natural alums were mined.

Other diggings were present in the vicinity of both Massa Marittima and Montioni, and in the area around Monterotondo Marittimo. We do not have similar archaeological data for these as we do for Monteleo, but we cannot rule out the possibility that they may have belonged to the wider public sphere connected to exploitation of this vital resource (Dallai 2020, 118).

Continuing beyond the San Regolo court, to the north-east we find more traces of the population that, in this phase, must have still looked to this court. Crossing the heart of the geothermal area, on a low hilltop site stood the village of Paterno (Figure 2.14). This can be located near the present-day farm of the same name. Documents from Lucca illustrate clearly within it the presence of a structured local community. Its existence is still attested to in a series of archaeological surface contexts found near the podere which, as in the case of the other contexts described above, bear witness to a long chronological period of habitation (Collavini 2007; Ponta 2018, 136-142). The archaeological survey in the areas surrounding Paterno has, moreover, revealed the interesting presence of three quarry areas with deposits of high-quality clay (near Podere Baracca, Buriano and the Poggio alle Travi locality). At the time, these findings did not make it possible to go beyond the hypothesis that these clays were exploited in ancient times. Today, by contrast, thanks to the research conducted within the nEU-Med project, we can advance some far more significant hypotheses. Indeed, archaeometric analysis of the clays from these quarries, and an archaeometric comparison with the clay present in pottery found at early medieval sites in this territory, and also in coastal areas (with specific reference to the Vettricella context), show clearly and irrefutably that, between the 8th and the 11th centuries, the clay in this specific area was used for the local production of coarse, fine and 'selezionata' wares. This local ware circulated throughout the Colline Metallifere area all the way to the coast, and also included production of the 'anforette'/small amphoras found at Vettricella, discussed in the previous chapter (Ponta *et al.* 2020). This, then, is a significant trace of a complex productive system linked to a distribution within a larger, macro-territory which, between the 9th and 10th centuries, characterized the material culture of this area, within which clay workings could be seen as one of the most important resources, as stated earlier in Chapter I.

On coming to the top of the hills overlooking Paterno we find, furthermore, precious material evidence which, for this part of the upper and lower Cornia valley, is the only evidence we can use for a more detailed parallel with the transformations occurring at the court of *Valli* in the 10th-11th centuries.

Indeed, not far from Paterno stands what is now the historical centre of Monterotondo Marittimo (Figure 2.20). The upper part of the old town is known as Rocca degli Alberti, named after the aristocratic family to which it belonged during the Late Middle Ages (Figure 2.21). The castle was confirmed in 1164 as belonging to the Alberti by Federico Barbarossa. It has been suggested that the property owned in this area by the family, who had possession of other castles, and who, thanks to a marriage, had become relatives of the Aldobrandeschi family, may have been of fiscal origin, in connection with an inheritance of the property of Matilda of Canossa. In the course of the 13th century the castle came within the orbit of Massa Marittima, and in the following century it came into the orbit of Siena. As such, its fate was similar to that of many nearby fortified centres (Farinelli 2007, 196-197).

The remains of monumental walls, corresponding to parts of the hilltop outer walls and the ‘palatium’-style building, are dated to the 12th and 13th centuries. Although its first documentary mention dates to 1071, when it was not yet referred to as a castle (Farinelli 2000, 142), Monterotondo is one of those sites that conform closely to the ‘Tuscan model’. Indeed, excavations of this hilltop area, conducted between 2007 and 2010, revealed a long diachrony stretching back to the Early Middle Ages.

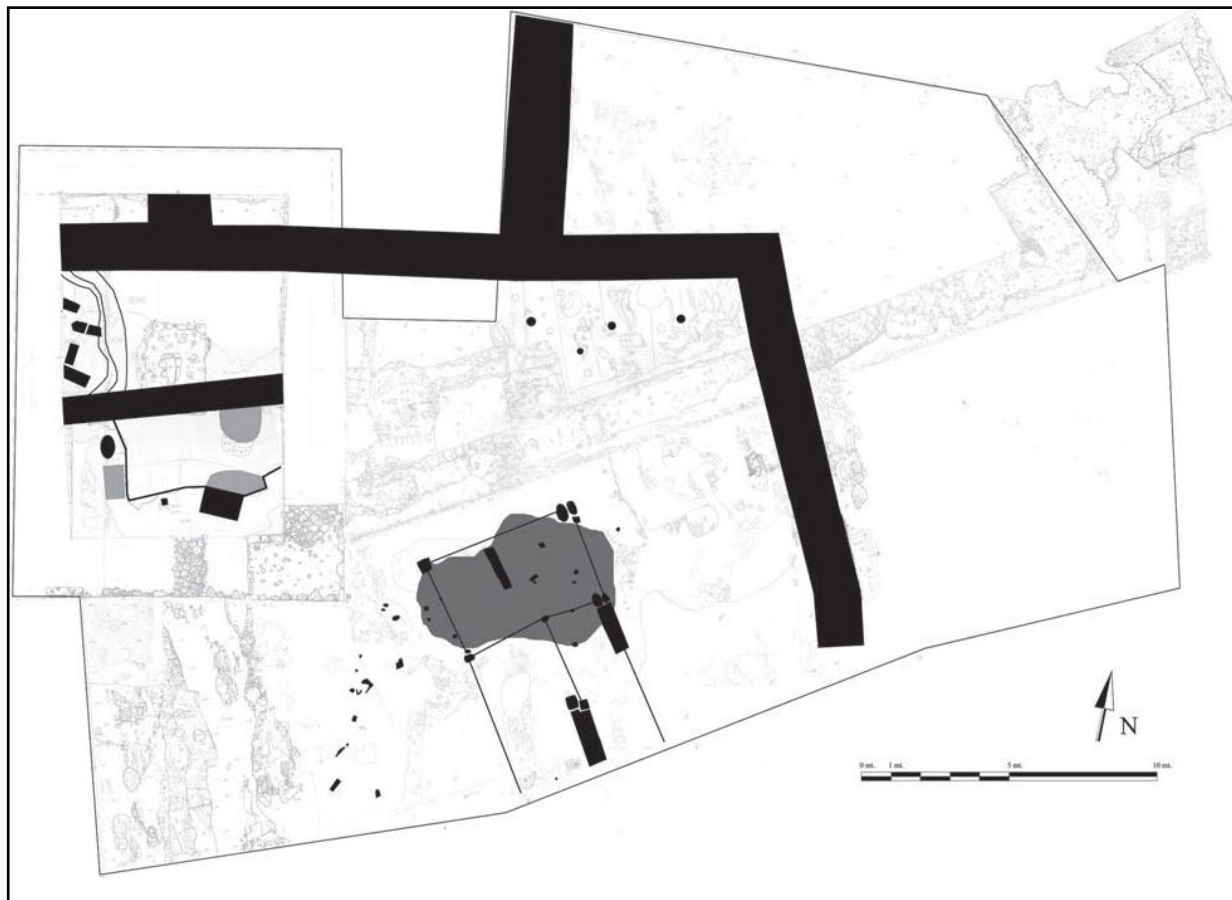


Figure 2.22 - Rocca degli Alberti (Monterotondo M.mo, GR). Plan of excavation area: the black lines indicate the hilltop enclosure walls.

The clearest and most evident occupation phase of the castle, of which only infrequent material traces survive, owing to later 12th and 13th century constructions, is the phase datable to the final decades of the 10th century. Regarding this chronology, it is advisable to stress an important fact at the outset: the archaeological sequences in this context have been published in several different articles as and when, following a periodization based on the dating of pottery finds, and on chronology relating to a succession of archaeological strata characterized by deposits that are often very slight, and disturbed. For the Early Middle Ages, it has been shown that its main vocation was connected to the exploitation of cereal resources in this territory (Bianchi, Grassi 2013), in which open farmland alternated with mixed woodland, comprising broadleaved trees dominated by deciduous oaks, especially Turkey oak, along with manna ash and European hop-hornbeam (Rossi 2014-15). This is known thanks to the finding of many seeds in a certain number of silos on top of which a later structure was built, interpreted as a granary. This construction was designed for the temporary storage of cereals, mainly wheat, testifying to a certain degree of agricultural specialization in this territory, marking a continuity with the tradition dating from the Classical period (Pescini 2012-13). The granary was contemporaneous with massive stone walls which delimited a sort of hilltop enclosure, and parts of two of its perimeter walls have been

brought to light (Figure 2.22). The walls, built in undressed local stone, laid in courses using an irregular masonry technique, were bonded by lime mortar. This was presumably produced using a mortar mixer that was found just outside the enclosure, and that displays the same characteristics as those present at Vetricella, albeit in a poorer state of preservation (Russo 2011).

Together, these findings had led to the suggestion, already in the past, that these transformations might correspond to a time in which the hilltop area was redefined overall, following a greater direct involvement on the part of the political figures that gravitated in the zone. The documents do not provide definite information regarding these figures, apart from the fact that this site probably fell within the wide-ranging possessions which the bishop of Lucca managed at least up until the 10th century in this area, and which came under the court of S. Regolo (Farinelli 2007, 81).

The ephemeral nature of these same deposits, and the broad chronology ascribed, some time ago, to this phase, situated between the late 9th and the mid-10th centuries, prompted researchers, within the scope of the nEU-Med project, to go back to certain finds and subject them to radiocarbon dating. In particular, some of the seeds found inside the granary were dated, and these provided dates falling between the end of the 10th century and the first few decades of the following century¹².

This chronology has interesting analogies with the chronology for the phase when activity at Vetricella was at its peak. Thus, it places us in the period of major changes to anthropic and agricultural landscapes in coastal areas, as verified thanks to the investigations of the paleochannel of the Pecora river, discussed at length in Chapter I.

The stone-built structures, and the presence of the mortar mixer, are further probable markers of a fate that was also met by public estates, or figures with this pronounced physiognomy. However here, unlike at Vetricella, after the destruction of the granary and of the enclosure walls, in the course of the 11th century, this did not lead to abandonment but to a continuity of life down to the modern era.

2. 4 To sum up

Like Valli, the Cornino court takes the form of a compact and fairly extensive public estate, and Hugh of Arles' dower attributes 30 mansi (little farms) to it. Its main centres were the presumed religious pole of Vignale, standing in the area of the former Roman villa, and the economic hub of Franciano, with its castellare, perhaps situated on the Carlappiano dune. The salt-works were the key resource to which the main productive vocation of this royal estate was linked. It is very likely that, in the area where the ancient harbour of Falesia lay, south-west of the lagoon, the court had a main dock of its own, necessary for maritime travel, along with a series of lesser landing-stages in the lagoon itself. Travel by land was possible thanks to the continuing presence of the Aurelia Nova, the main Roman coastal highway, which allowed connections with territories lying both north and south, including the *Valli* court itself. It is possible that, like the latter court, the Cornino court also had several smaller inhabited centres. Unfortunately these have now been made invisible by the large-scale alterations to the landscape, but they probably mainly took advantage of the tops of the various dune systems (as is also to be inferred from the recent research by Poggi 2021).

By contrast, in an attempt to determine the size of this court, we can adopt the procedure used for Valli, namely marking out its borders by reference to private properties that existed as of the very Early Middle Ages around the court. An analysis of the borders of the Franciano court, as far as they can be deduced from the San Quirico monastery Cartulary, could further facilitate a reconstruction of the

¹² Specifically the chronological range extends from 983 to 1051 (samples prepared by the Università della Campania Luigi Vanvitelli, Department of Environmental, Biological and Pharmaceutical Science and Technology, with the collaboration of the National Institute for Nuclear Physics in Florence, Laboratory for Nuclear Techniques Applied to Cultural Assets).

picture, assuming that these boundaries may correspond to those of the former early medieval royal court.

In referring readers to Collavini's text for an analytical discussion of the boundaries that may be identifiable by inference, especially, from the 1121 donation (Collavini 2016, 68), we may now, with a fair degree of certainty, suggest that the dependent appurtenances of Franciano certainly lay along the entire final stretch of the Cornia, including Carlappiano and what is now the Torre del Sale zone (Figure 2.23). The modern-day area of Case Franciana perhaps represented the northern boundary, given that, as already stated, not far away stood the lands pertaining to the court of the Lucca bishop, at Casalappi. The boundaries of the royal court must presumably have then followed the margins of the lagoon area toward the Piombino-Populonia promontory, perhaps extending so far as to comprise part of the area where the ancient harbour of Falesia once stood. Moving further north-east, the borders must have run below the aforementioned Casalappi, identifiable as the court of the Lucca bishop known as Casale Episcopi, attested to as far back as 762 (Farinelli 2007, 84). From there, the boundaries ran to the south, including Vignale and its territory, together with the slopes of the Montioni foothills, where we find sites belonging to other landowners, such as the castle of *Valli* itself, connected to the Aldobrandeschi family, discussed in the previous chapter, or more properties belonging to the Lucca bishop, associated, between the 8th and 9th centuries, with the rural chapel of S. Prospero at Montioni (Farinelli 2007, 84).

In view of these boundaries, which are of course hypothetical and not clearly defined, we arrive at a rough estimate of the size of this estate, namely 5,100 hectares.

Compared to *Valli*, which extends further inland, the Cornino estate was more 'elongated', following the outline of the lagoon, perhaps also as a result of its main economic vocation.

In the case of the Cornino court, too, the earliest large-scale transformations began in the course of the 9th century. Indeed, it is likely that this very reorganization was responsible for ensuring that the court joined the list of the most important royal *curtes*, mentioned in Hugo of Arles' dower of 937.

The material data available to us do not allow us, unlike at *Valli*, to see a major economic acceleration in the Ottonian period. By contrast, the greater, indirect information from the late 11th century outlines a similar fate, with the dismantling of the heart of the court, and with some parts of it being made over to political figures having an established importance in this territory: the Aldobrandeschi; and the Della Gherardesca family, who, originating from Volterra, in the course of the year 1000 began to consolidate their powers across this whole coastal area.

Regarding inland areas, now the early medieval history in this general area no longer seems isolated and anomalous, thanks to the circumstantial evidence that has been compiled by piecing together many individual pieces of information that have emerged from previous or more recent research. Here, in the upper Cornia valley, the great royal property of Gualdo del Re, which probably had its centre in *Balneo Regis*, located in the plain below the modern-day borgo of Frassine, was economically connected to the exploitation of woodlands, farming areas, clay-workings, and perhaps natural alum quarries. The Gualdo was surrounded by properties mainly belonging to the bishop of Lucca. These extended into the very heart of the geothermal area, and, as of the later 10th century, many of them began to gravitate once again in the orbit of the public sphere, perhaps following a further process of property reorganization, which also affected a large part of the nearby mineral-rich landscapes (see Chapter V). If we direct our gaze even higher up, and observe the organization of the two royal courts on the coast, we see that, in both instances, as we move inland, away from the coastal lagoons, after a sort of transitional corridor consisting of possessions held by private individuals who, however, were closely connected to the public sphere, we come to other royal properties. There are situated, moreover, more or less at the same latitude: Gualdo del Re, in the Cornia valley; and Massa Marittima with its *Monte del Re*, in the Pecora valley (Figure 2.24).

THE CORNIA VALLEY AND THE ROYAL COURT OF CORNINO



Figure 2.23 - The Cornino estate, showing its possible size (marked in red), and other important nearby sites.



Figure 2.24 - Location of general areas of public properties in the coastal zone and hinterland.

These strongholds marked the start of territories rich in important raw materials, and represented the area of trade and exchange between inland areas and the coast, thanks to a network of roads that followed the two valleys.

In both cases, as we see in the coastal area too, the political fate in the crucial transition from the 11th to the 12th century followed the same trend. Indeed Gualdo del Re, with its satellite possessions, was also broken up between several political entities. The Aldobrandeschi family could not fail to be included among these, and several properties from Gualdo became associated with them, including Castiglion Bernardi itself (Bianchi, Collavini 2018, 150).

Chapter III

The Grosseto Area

Turning our attention a little to the south of the court of Valli, we find ourselves looking at another low-lying area of flat land. Here stands the modern city of Grosseto, bordered to the north-west by the hills of Giuncarico, Vetulonia and Buriano, to the east by the hills of Grosseto and Rispeccia, and to the south by the Monti dell'Uccellina (Figure 3.1). Flowing through the plain are the Ombrone and Bruna rivers which, thanks to their valleys, provide connections between the coastal area and inland parts. This landscape was originally very similar to the landscape described in the case of the lower Cornia valley and the Pecora valley: a large coastal lagoon, called Lake Prile in the Roman era, with the two rivers flowing into it. The lagoon was separated from the sea by a thin ribbon of land, with a coastal hinterland dotted with a large number of natural springs, which mainly fed into the Ombrone basin (Figure 3.2). The fact that the river Bruna had a smaller volume of water than the Ombrone meant that, in the Middle Ages, this expanse of brackish water continued to exist for longer in the north-western part, where it formed the wetland known in the medieval period as Stagno, which has borne the name Lago di Castiglione in the modern era (Arnoldus-Huyzenveld 2007, 41; Mordini 2007, 55). A relic of this ecosystem, after land drainage operations, remains today in the Diaccia-Botrona wetland zone lying near Castiglione della Pescaia (Figure 3.3) (Guarducci 2021).

Another general feature, which is shared in particular with the court of Cornino, is the presence in this area of an ancient city with roots in the 8th century BC: Roselle (Figure 3.1). This stands in the immediate hinterland, on one of the first foothills. At the end of the 5th century it is mentioned as a bishop's seat (Collavini 1998, 51-56), but in the central Middle Ages the seat's location underwent changes. However, unlike Populonia, these took place in a smaller geographical context, as we shall discuss later.

This territory has been the subject of study for some time now, with a considerable intensification of archaeological research as of the first few years of the 21st century, also following the sequence of urban excavations in Grosseto. We shall refer in the text to these numerous and important works, often of a multidisciplinary nature, as occasion arises. Overall, this huge amount of literature denotes a major interest basically in two precise moments in time in the chronology of these landscapes: the transition from Late Antiquity to the early centuries of the Early Middle Ages; and the Late Middle Ages, which mainly saw Grosseto take on a lead role as the new urban centre that was a major reference point. The phase we are interested in, between the 9th and the 11th centuries, is often compressed within a longer periodization, stretching from the Carolingian era right up to the 12th century.

The very issue of public estates, addressed in the more or less recent past especially by Carlo Citter (Citter 2005b; Citter 2007a; Citter, Chirico 2018), usually loses some of its vigour with the onset of the central Middle Ages. This coincides with the arrival on the scene of the Aldobrandeschi family, long seen as political players who acted, on behalf of their dynasty, within the macro-process of the general establishment of territorial seigneuries, and of castle formation.

Therefore, in an attempt to find an interpretive key that takes into account parallels with the nearby public courts of Valli and Cornino, it will be as well to set out from the first few centuries of the Early Middle Ages.



Figure 3.1 - The area of Grosseto, referred to in this chapter.

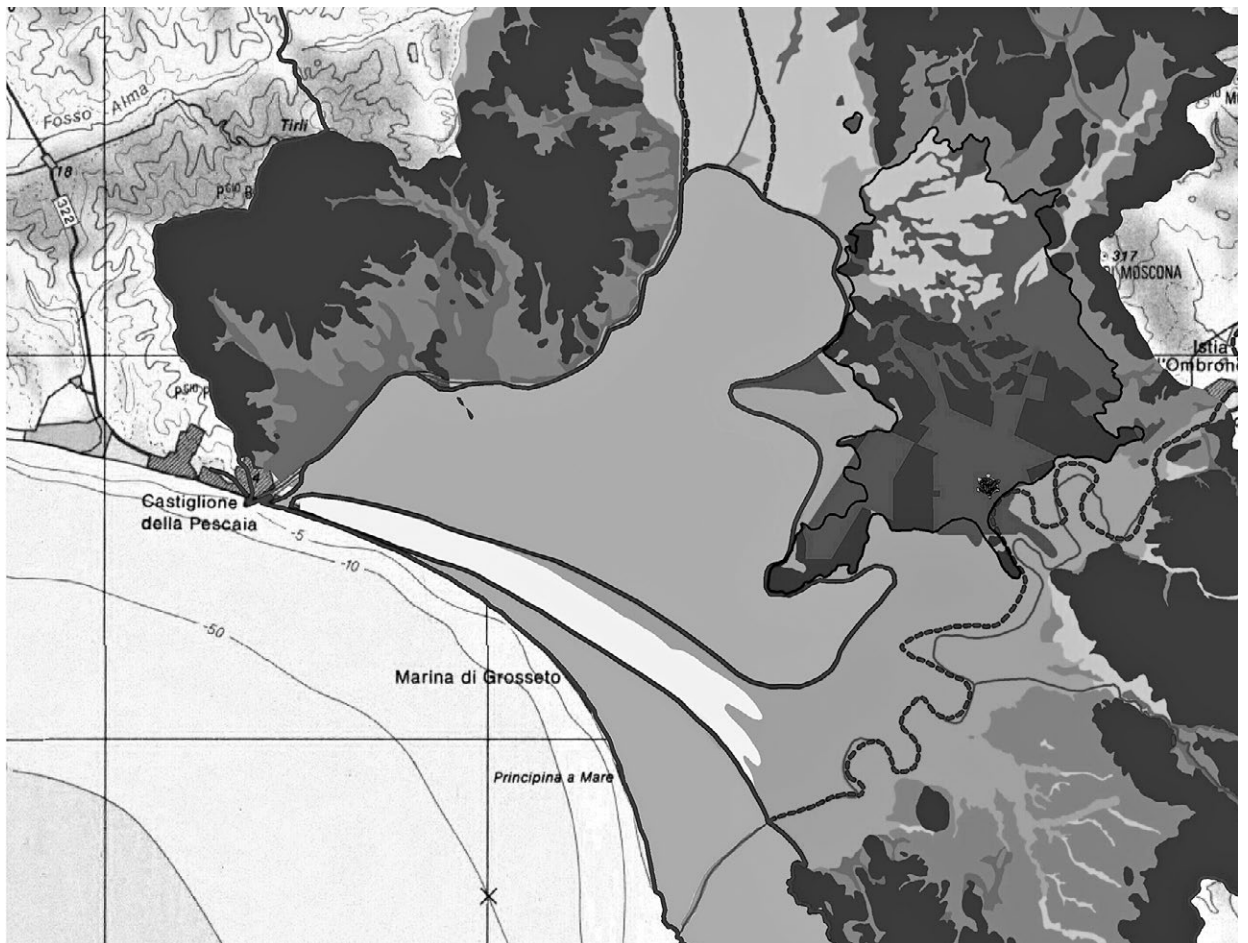


Figure 3.2 - Possible extent of lagoon in the Early Middle Ages, showing system of dunes (in white) (from Arnoldus-Huyzendveld 2007, 57).

THE GROSSETO AREA



Figure 3.3 - Panoramic view from Rocca di Castiglion della Pescaia, overlooking the plain where Lake Prile once stood. On the left can be seen the Diaccia-Bottrona wetland area.



Figure 3.4 - Location of sites referred to in the text.

3. 1 The formation of the new landscapes (7th-9th century)

Every scholar who has dealt with this territory agrees on the fact that, as also for other parts of the Italian peninsula, a slow change is to be seen in ancient landscapes in the course of the 5th and 6th centuries, as villas and rural settlements became more rarefied, and were consequently subjected to a form of selection. Mainly by means of archaeological surveys, in this territory we see signs of site continuity, albeit with changes in their internal organization (Figure 3.4). This can be seen, for example, in the large Aiali villa complex, which stands a few kilometres north-east of Grosseto, in the villa at Casette di Mota, and in the Sterpeto-S. Martino villa, as well as at the site at Le Paduline, north of the former Lake Prile, in the area of modern-day Castiglion della Pescaia (Sebastiani, Celuzza 2015, 359-362; Vaccaro 2008, 231-238; Citter 2007a, 134-135; Campana *et al.* 2005). The very recent investigations at the Vigna Nuova-Salica locality, in other words in the portion of the plain just below the north-west side of ancient Roselle, setting out from detailed and very extensive magnetometry analyses, test excavations, and a multidisciplinary approach¹, enable us to interpret the new phase of habitation in this area as dating to this very period, the 5th-6th centuries. The area was occupied since the 6th century BC by a sort of lake or lagoon covering an area of around 34 ha., perhaps created artificially to provide fresh water for Roselle, which overlooked it, and this whole territory (Campana 2018, 88-107; Campana 2021, 47). This wetland zone may have been partially drained in this phase when a road was built, which has been partially investigated archaeologically, a section of which measuring more than 500m can still be identified. This road was built at a height of around 2m above the surrounding land, by constructing a large trapezoidal causeway. This was 8.5m wide at the base, and 3m wide in the upper part, and it created a new route for land travel, being aligned south-east/north-west, and intersecting at right-angles with the older road that ran along the lower hills leading upland towards Roselle from Lake Prile (Campana 2021, 45-47).

There was a shift up in gear for this latter site too, between the 4th and 6th centuries. This can be seen in the transformations in the organization and functions of pre-existing spaces (Figure 3.5): the 4th century abandonment of the Hadrianic baths building; the reoccupation of the domus with the mosaics by a workshop for recycling and processing metals; and a limited restructuring, between the 4th and 5th centuries, of the shops along the decumanus of the small temple. As regards the notion of seeing widespread traces of fortifications built by the Byzantines in the uncertain and dangerous times of the 5th-6th centuries, Maria Grazia Celuzza suggests these may possibly be present only in the case of the amphitheatre, which stands in a strategic position atop the northern hill, despite the fact that the possible traces are only slight, and their chronology uncertain, and therefore they do not back this interpretation firmly (Celuzza, Cygielman 2013a, 24; for a further overall view see Celuzza 2022). In any event, the earlier construction, after 366, of a new baths complex near the eastern gate, and thus in a peripheral area away from the forum, suggests that the inhabited area had shifted towards the road system, and the external area. This would be in line with the notion of a 'fragmented city' that has been put forward for some time now by researchers dealing with this territory, with the creation of new rural hubs, such as those mentioned above, on the sites of former villas, or in new areas of influence in the plain below.

Despite this, Roselle retained its role as a primary centre. Indeed, just before the end of the 5th century it is attested as a bishop's seat, and its interactions with the coastal area are borne witness to by the continuing influx of imported pottery, despite a reduction in monetary circulation (Celuzza, Cygielman 2013a and, for numismatics, the studies by De Benedetti, Catali 2013) .

¹ This is the Emptyscapes project, directed by Stefano Campana. Within this project, the nEU-Med project has contributed to this research thanks to the advisory role of the geomorphologist Prof. Pierluigi Pieruccini and of the archaeobotanist Dott. Mauro Buonincontri, as well as funding for four radiocarbon dates for some of the excavated contexts.

For well over a decade now Carlo Citter has been proposing that we look at this period of transformations as a reorganization of public estate properties, mainly imperial in nature (Citter 2005b; Citter 2007a, 136; Citter, Chirico 2018). This would be the context in which the 5th century phase of the settlement that would later become Grosseto is to be linked to the Sterpeto-S. Martino Roman villa (Figure 3.3), which he interprets as a public mansio. This early settlement is thus seen as a centre that was dependent on the villa, perhaps being of a seasonal nature, and mainly being linked to this area's chief resource throughout the Middle Ages, namely salt.

Citter also argues that this phase of recovery only lasted for a limited period, between the start of the 5th century and the Gothic War, and did not have a continuing impact after the war, despite the Byzantine reconquest (Citter 2007a, 135).

In any event, for the 7th and 8th centuries, when this territory had become part of Lombard Tuscia, what little archaeological data there are suggest continuity of occupation on the plain (Citter 2007a, 138). The urban excavations in Grosseto did not reveal features of a clearly recognizable settlement, but they did unearth important traces of possible structures made of perishable materials, as in the case of the wooden building identified in the excavation inside the church of S. Pietro. This building can be



Figure 3.5 - Panoramic view of archaeological site of Roselle (from Celuzza, Cygielman, 2013b, 26).

dated to the full 8th century (Citter 2005b). The fact that this evidence is rather faint and ephemeral does not prevent us from seeing greater vitality in Grosseto as of the 7th century, when the Sterpeto-S. Martino Roman villa, as Citter puts it, “lost its role as a central place”, despite the fact that it was still frequented, albeit on a reduced scale, throughout the Middle Ages (Citter 2007a, 140). A little to the south of Grosseto, archaeological surveys, remote-sensing and exploratory excavations have led to the identification of two inhabited sites, also on the plain (Figure 3.3): Podere Serratone and Casa Andreoni-Podere Laschi, both certainly frequented between the 7th and the 9th centuries. The former features a more centralized inhabited area compared to the latter, with settlement phases dating as far back as the full 6th century (Campana *et al.* 2005, 470).

There are burial areas here that have already been studied in the past, in the area of Castiglion della Pescaia and around Roselle (Citter 1995; for a recent overview see De Marchi 2021). To these we can now add the burial area found in the cemetery on the plain at Vigna Nuova/Salica, datable to the early decades of the 7th century (Campana 2021, 49-50). Their presence is a further index of human frequentation in this part of the plain. Nevertheless, only in the case of the Casette di Mota villa, the remains of which the cemetery was created on top of, and the village of Le Paduline-Castiglion della Pescaia, can we suggest a possible correlation with previous inhabited sites, despite the fact that these had been transformed and had lost their original function (Citter 2007a, 139-140).

In Roselle, for this phase, the most important finding involves the changes associated with the presence of the new bishop’s seat. Indeed, a date soon after the Lombard conquest, between the late 6th and early 7th centuries, can be ascribed to the construction of the only church which can as yet be definitely identified in the urban area, and which is interpreted as a bishop’s church (Figure 3.5). The building, with a nave and two aisles (31 x 16m), was created by adapting parts of the baths built during Hadrian’s reign, using the earlier walls for three of its perimeter walls, while the facade was totally new (Celuzza, Cygielman 2013b, 35). Around the building a cemetery area formed that remained in use up until the 12th-13th centuries, when the cathedral was relocated, as we shall discuss later (Celuzza *et al.* 2021, 88-89; Celuzza 2022, 258)². Fragments of sculpture found in a secondary deposit, that can be associated with later additions to the cathedral’s decorative architectural scheme, including fragments of an archivolt for a ciborium, and parts of altar rails, have recently been reinterpreted. This has led to them being dated earlier, to the late Lombard era (Betti 2021, 81-83) rather than to the Carolingian era, as had previously been thought (Ciampoltrini 1991b, 62-63). Regardless of these varying dates, there is no doubt that, at the end of the 8th century, Roselle was situated within wide-ranging circuits involving skilled master-builders who likely travelled from the urban context of Lucca to this part of the Maremma region, as has been found to be the case for other sporadic decorative sculptural elements found at Populonia (Gelichi 2016, 347-349).

Taken together, these individual pieces of information yield a picture of a territory that was ‘on the move’, in one way or another, in terms of its population dynamics. This corresponds to the picture that can be inferred from the few documentary sources from this period, which describe it as still being at the centre of the interests of powerful figures and bodies.

In Lombard-era documents from Rome, compiled by Cardinal Deusdedit at the end of the 11th century, which we have already referred to at length when writing about the Cornino court, we can identify interesting references to this area. Among the fiscal royal complexes that were assigned, at the start of the 8th century, to Pope John VII and Pope Gregory III, and which were later confirmed in the Carolingian

² According to Citter’s suggestion, another church was created at some unknown, later time which must have been after the 6th-7th centuries, reusing part of the small temple of the Augustales (Citter 2008, 261). This notion is rejected by Cygielman, who regards the possible apse wall as being connected to the later phases when the area was abandoned (Celuzza, Cygielman 2013b, 35, n. 123).

era, there was also the court of Piscaria, corresponding to modern-day Castiglion della Pescaia (Tomei 2020), standing on the north-western side of the former Lake Prile (Figures 3.4-3.6).

From a later document, dating to 814, corresponding to a pseudo-document of Louis the Pious on behalf of the royal abbey of S. Antimo, we can get a description of it, although the description is rather like a single ‘snapshot’ referring more to the 10th century, when the forged document itself was probably drafted. The document shows a very compact estate complex, complete with boats, the salt-water inlets, and the eel farms of a large part of Lake Prile. It should be remembered that, during the Early Middle Ages, the lake was gradually shrinking towards the portion close to the coasts of this estate (Figure 3.2) (Tomei 2020, 25). We know from 8th century documents that this whole area linked to Castiglion della Pescaia was under the influence of the city of Chiusi. Salt was probably the common element that connected these territories to each other, and the interests that were concentrated in them. However there is never any explicit mention of salt-works until the central Middle Ages, despite the fact that 8th century maps mention the transportation of salt from this area to Chiusi by land (Tomei 2020, 27).

In these grants that shed light on the resource redistribution circuit activated by the *publicum* towards important players, such as the papacy itself, it is at the start of the 9th century that two important political players are first attested to.

The first is the bishop of Lucca who had important property as early as the 8th century, and who controlled equally important religious centres in the Cornia valley. The second consists in members of the Aldobrandeschi family, who started their rise from this very territory and from its political contexts. The histories of these two sets of figures in this area are initially intertwined. Indeed, in 803 the bishop of Lucca granted property to a member of the family in the form of an agrarian contract. This was a church dedicated to S. Giorgio, located in Grosseto, along with its property, and Caliano, a site later described as a court, which can be located as standing at the mouth of the Ombrone, which we shall return to later. These properties were granted by the bishop to Hildebrand I, a highly important figure, as was his son, Eriprando I, who, with his political career, marked the shift to the great rise of the Aldobrandeschi in major political scenarios, representing the *de facto* founder of the dynasty (Collavini 1998, 38-48).

Grosseto and Caliano were not the only properties made over by the church of Lucca to the Aldobrandeschi family in this period. Indeed, a few decades later we learn of homes and huts being granted to Roselle (between 837-43), and homes and huts being made over to Istia di Ombrone in 862 (Collavini 1998, 67). These places were certainly important, but, as already pointed out by Collavini, they did not represent, by themselves, the sole foundations for the construction of the family’s immense wealth in the Roselle area, as mentioned in documents between the 10th and 11th centuries.

Clearly this wealth was formed thanks above all to the *comitatus* post held by Hildebrand II, the first family member to hold this post, in 857 (Collavini 1998, 51). The relevant *comitatus* must have comprised the former *iudicarie* of Populonia, Roselle and Sovana, and the Aldobrandeschi family’s control over it, as of the mid-9th century, basically made them the most important political figures acting on behalf of the *Regnum* in this territory. I believe it is useful to dwell on these documentary references, since they are necessary to underscore, in line with Collavini’s broad-ranging historical reconstruction, the extent to which the Aldobrandeschi’s sphere of action was always located within a public framework, at least until the mid-11th century. Moreover, this framework looked to the higher authorities, represented by the emperors and by the Margraves of Tuscia.

It is important to bear in mind this fact because it helps us to remember that, in this period in the Early Middle Ages, while the Aldobrandeschi family continued to pursue their goal of expanding their dynasty’s power and the properties, they were still the simple intermediaries, supporters and enforcers of a plan for the royal management of this territory. Thus, the material traces that we see on the ground are a testimony to this broader plan, and not, or not only, of the process of formation of one of the most powerful local seigneuries in the Italian peninsula. Taking into account both roles played by this



Figure 3.6 - Castiglion della Pescaia. The Rocca can be seen in outline in the foreground.

aristocratic dynasty certainly complicates the picture a little more. However, it is necessary, so as not to relegate this family to a more ‘shadowy’ zone compared to the one occupied also in recent historical reconstructions by other entities of a public nature, namely the papacy and the monastery of San Salvatore on Monte Amiata, and the monastery of S. Antimo (Figure 3.1), which I will turn to in chapter IV.

Accordingly, in the mid-9th century, also in the Grosseto area, as in the Cornia and Pecora valleys and at Populonia, we have an important shift, which may have brought larger-scale transformations: the comitatus of Roselle broke away from the Populonia comitatus (Ceccarelli Lemut 1985, 20-24). From now on, it formed a close bond with the Aldobrandeschi family, whose members went on to hold the title of Counts in both comitati, along with the comitatus of Sovana. In the Roselle area, as early as the mid-9th century, thanks to the grants by the bishop of Lucca and perhaps also of the Margraves of Tuscia or the emperors, the latter secured direct control over the whole area around Roselle, and over the associated part of Lake Prile and the mouth of the river Ombrone itself. By contrast, in the middle of the century the north-western part of the lake was still in the hands of the papacy, which kept control over this northern sector of the lagoon³ at least up until the late 9th century, if not for the entirety of the 10th century, even⁴, while other large-scale properties were connected to the bishop of Roselle.

We shall now try to link the material evidence to this phase of change, although the archaeological record is somewhat scant.

Thanks to excavations in the city, Grosseto is the context that has the greatest amount of such evidence.

³ In this reconstruction, as is clear from the contents of chapter II devoted to Cornino, we follow the interpretation by Tomei (Tomei 2020), who identifies the other papal court mentioned in the scroll document, called Flacianum, as situated in the lower Cornia valley, rather than the notion advanced by Citter, who locates it in the area north-east of Lake Prile, where the site of Casoni del Terzo stands (Citter 2007, 136, n. 54), or the suggestion made by Farinelli, who identifies it with the nucleus of properties associated with the church of S. Giulia, situated at the foot of the Poggio Cavolo hill (Farinelli *et al.* 2008, 193-194). In this way, at least as regards the documents, the papal presence would be limited to the area of what is now Castiglion della Pescaia, and not spread, in line with the suggestions made by the two scholars, around the whole area of the lake.

⁴ Tomei suggests that it came into the ownership of S. Antimo between the reigns of Louis II and Otto III (Tomei 2020, 25).

Between the end of the 8th and the start of the 9th centuries, on the site of the previous remains made of perishable materials, the first church dedicated to S. Pietro was built. This building had a single, small apse (12 x 5m), and the lower parts of the perimeter walls, at least, were stone-built. Indeed, it is thought that stone was used also for the upper section of these walls, too (Figure 3.7). In a small section of walling a masonry technique is used featuring stone elements laid in a kind of herring-bone pattern, and this has led archaeologists to suggest influences from the technical sphere in Lucca, where this method of stonework, certainly applied more systematically, is present in religious and non-religious buildings. In Lucca this masonry technique is datable to this period (8th-9th century) and relating both to urban and rural contexts (Vanni 2005, 24).

The church of S. Pietro, which Citter has claimed came under the papacy (Citter 2005b, 81), would be added to the church of S. Giorgio, which indeed was granted by the bishop of Lucca to the Aldobrandeschi family. No physical traces of this latter church have been found, but it has been suggested that it stood some distance away from the former church, on one of the terraces situated to the south-west. Nevertheless, both religious buildings were located on the margins of the early medieval inhabited nucleus, which, by contrast, in this phase, was concentrated on the flat land higher up, east of the churches themselves. Evidence datable to this phase has only been found in 10 exploratory trenches out of the 98 that have been dug. This figure conveys just how ephemeral they were, and how few in number, a fact that makes it difficult to advance detailed suggestions regarding the site's actual appearance. It may still have been sparsely inhabited, like the site layout imagined for the full 8th century phase (Citter 2007c, 432). However, it is worth underlining a particular observation as regards the material culture associated with this phase, namely no sherds of Forum Ware or sparse-glazed ware have been found. Also absent is red-painted pottery, or fragments of *pietra ollare* jars, whereas there is a homogeneous presence of coarseware (Citter, Vanni 2007, 336).

As regards Roselle, if we had to push back the overhaul of the sculptural decorations in the episcopal church from the Carolingian phase to the late Lombard phase, unfortunately we do not have many other material findings which might, for example, support a 9th century reuse of pre-existing buildings with residential functions, perhaps connected to the renewed role as a *comitatus* centre which could be associated with a specific material culture, as is believed in the case of the Acropolis of Populonia (Gelichi 2016, and Chapter II). However, the fact that a Carolingian *denaro*, struck by the Milan mint, was found in the 1964 excavations of the Forum and of the areas more or less near the cathedral, the only such find (from an archaeological context) made anywhere in Tuscany, along with the two *denari* from the mints of Tours and Orléans, found in the excavation at Borgo S. Genesio (De Benedetti 2013, 77), does nevertheless suggest, albeit cautiously, that Roselle was inscribed within wider Carolingian circuits. We hope that in the future these will be testified to by new material findings, following renewed archaeological investigation strategies⁵.

In the valley below the north-western slope of Roselle, at the Vigna Nuova/Salica locality (Figure 3.4), a burial area existed since the start of the 7th century, as well as traces of two settlement sites whose chronologies are still uncertain. These bear witness to a gradual shrinkage of the wetlands and lake environments which had been features of the valley up until Late Antiquity, as noted earlier. The nearby large villa of Aiali does not seem to display signs of having been frequented, thereby prolonging a long absence of life, stretching from the 7th to the late 9th centuries (Campana 2021, 44-45). At the same time, some of the sites on the low-lying plains which we have already referred to, such as those identified at Podere Aione and Podere Serratone, continued to be frequented at least up until the end of the 9th

⁵ An investigative project is currently under way that was started in 2018, and directed by Andrea Zifferero together with Stefano Camporeale (University of Siena). Within the nEU-Med project, the review of pottery from the recent excavation of a residential block situated on the northern hill above the episcopal church, conducted by Elisabetta Ponta and aimed at identifying possible finds datable to the Middle Ages, has so far not identified evidence from this period.



Figure 3.7 - Plan of church of S. Pietro, highlighting masonry parts of the church dating to the second half or early 8th century (in dark grey) (from Vanni 2005, 23).

century. At this latter site, the archaeological survey and geophysical analyses have led to the suggestion that there was a pottery kiln making standardized forms, including amphora-like vessels that have close parallels with the ‘small amphoras’ found at Vetricella (Russo 2021). These finds have been interpreted as containers for transporting solid or liquid agricultural products. This is thought to be confirmed by an analysis of the organic remains in one of these vessels, which has yielded traces of oil. It is claimed that the pottery produced at Podere Serratone was distributed to the surrounding areas, as would be testified by the fact that similar forms were found at the Casa Andreoni site, which, when subjected to thermoluminescence analyses, reportedly gave a date of 850±65 (Vaccaro 2011, 203-213).

The abandonment of Podere Serratone has been placed in relation to the development of a nearby settlement that has great importance in our narration, namely Poggio Cavolo (Figure 3.4). This saw considerable development in the 10th century, but, in a secondary context, a small bronze cross was found that has specific parallels with Carolingian crosses found in burial areas in Westphalia, datable to the first half of the 9th century (Campana *et al.* 2005, 479). This would lead one to speculate that that a settlement of a certain size may have been present at Poggio Cavolo already in this phase, despite the fact that archaeological excavations have not managed to provide clear evidence of this, apart from the possible remains of a hilltop church datable to a period prior to the mid-10th century. This building had stone walls, and perhaps a polygonal apse (Farinelli *et al.* 2008).

Thus, to try to sum up: with the Carolingian era (9th century) we begin to see transformations in this area, corroborated by a certain number of archaeological findings, although these are discontinuous

and, in some cases, not very clear. Most of the settlement remains (also in view of those attested to by documentary sources which have a specific, corresponding place-name) seem to appear in a broad belt around Roselle, with the village of Grosseto and the site of Poggio Cavolo on its south-western fringes.

3.2 Between the 10th and 11th centuries

However, it is only during the 10th and part of the 11th centuries that this settlement pattern seems to become richer, and more definitively established, displaying substantive connections with the Cornia and Pecora valleys.

This is especially evident in the landscapes of low-lying plains and low hills around Roselle, where, on the other hand, we continue to see only slight evidence for this phase (Figure 3.5). A tower, currently dated by scholars to between the 10th and 11th centuries (although a date of ‘around’ the 11th century has recently been put forward, Celuzza 2022, 258), was built against the facade of the cathedral, accessed from the cathedral itself. The tower, of which only a few small sections of masonry remain, was built using stones of differing sizes, in many cases reused, laid in quasi-horizontal courses. Another tower, now invisible owing to the dense vegetation, was built, perhaps in the same phase, on the southern hill. Celuzza has claimed that these interventions are to be ascribed, along with a number of walls built to fortify the amphitheatre, to possible plans for the overall fortification of Roselle (Celuzza, Cyegelman 2013a, 24).

On the plain below Roselle on the western side, investigated by Stefano Campana, it is tentatively believed that there may have been a more widespread land drainage scheme at this time, involving the whole area where the river Salica flows. This would have been made possible by means of a complex system of water channels, traces of which have been found thanks to intensive magnetometry, which have also been explored with small test trenches. These channels would have made it possible to divert some of the run-off waters towards the north-west, passing via the narrower area marked by the slopes of the Moscona and Mosconcino hills, respectively (Figures 3.7-3.8). The consequence of this land drainage phase was the more structured layout of a site, in the north-eastern zone, which may have pre-existed in part, standing on an area of around 2 ha., which was slightly higher and of ovoid shape, surrounded by a ditch (or moat). This important finding was also identified by means of intensive magnetometry, and the pottery found from the field-walking survey confirms that this increased exponentially at this same time, between the 10th and 11th centuries. This testifies to the fact that, in this phase, the site saw major development as a settlement, although, in the absence of extensive excavation, it is hard to hypothesize how this was translated in terms of material evidence (Campana 2021, 47).

This was not the only inhabited site in the area with such topographical peculiarities. Just on the other side of the narrowing of the plain where the river Salica flows, where the Moscona and Mosconcino hills stand, traces have been found of a low quadrangular mound, again surrounded by a ditch. This has been identified as the site known as Brancalete (Figure 3.9), first mentioned only in 1262 as an abandoned castle belonging to the bishop of Roselle (Farinelli 2007, 139, n. 202). The multidisciplinary investigations conducted at this site have verified the origin of this layout as of the 10th century, as well as the existence of contemporaneous agricultural paleo-soils, and subsequent traces of possible farmland divisions (Campana 2021, 50).

Dating to this period is the resumption of occupation of the large Roman villa of Aiali, after the long hiatus from the end of the 7th century. This is evidenced by pottery finds made during field-walking, although only excavation would enable us to specify the forms of this new site (Vaccaro 2011, 186-187). Aiali and Brancalete stand either side of a road leading inland from the area of the plain to the Salica valley. Just north of Aiali, at the site of Casoni del Terzo (Figure 3.4), 10th-11th century pottery found



Figure 3.8 - The foreground shows the Salica valley, Loc. Vigna Nuova. In the background, on the left, stands Poggio di Moscona, with the Mosconcino hill on the right.

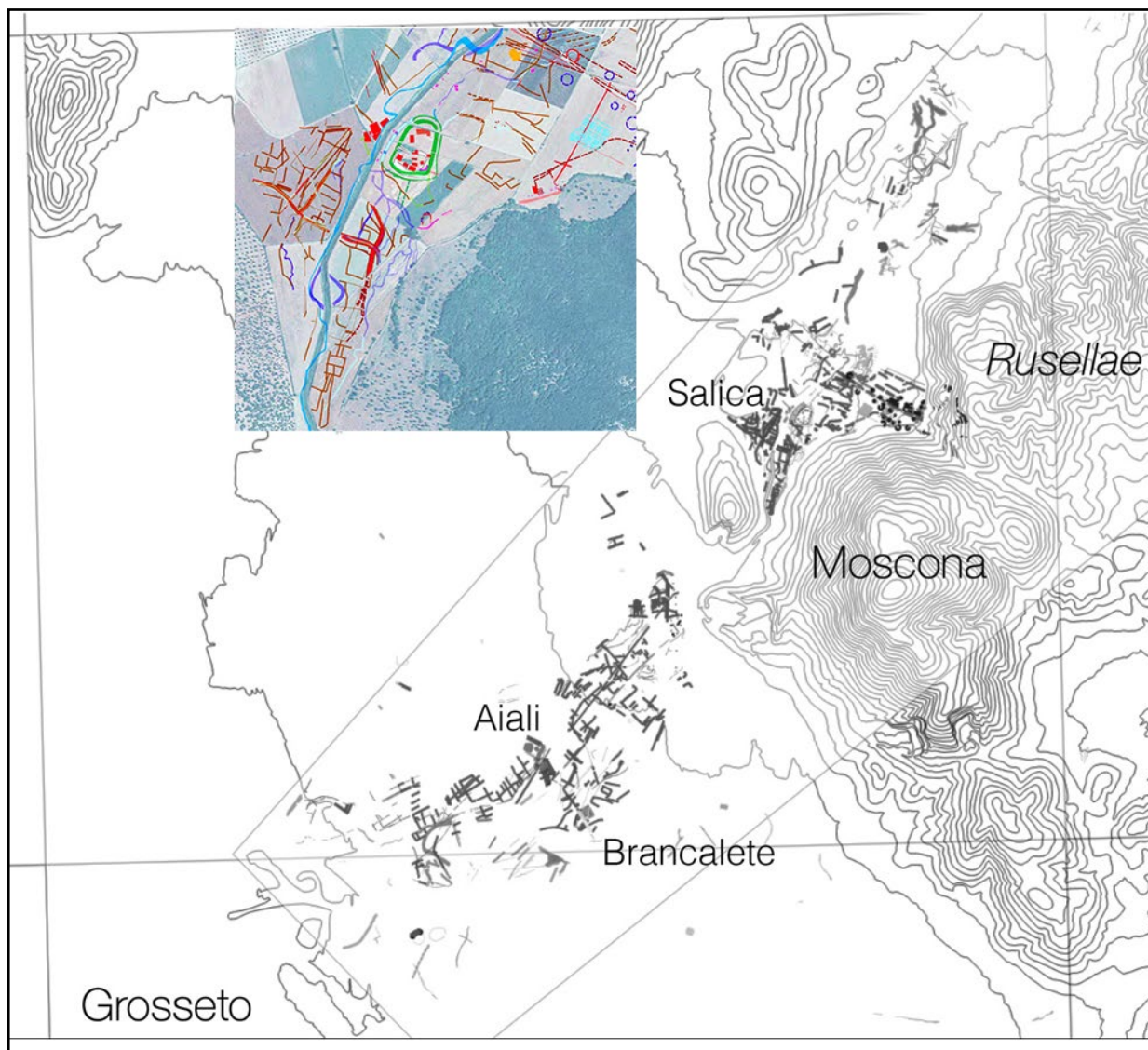


Figure 3.9 - Plan of valley at Loc. Vigna Nuova, with features identified by means of remote sensing surveys (from Campana 2021, 42).

during the survey enables the reoccupation of this likely former Roman farm to be dated (Vaccaro 2011, 251).

As a result, what we see taking shape with greater certainty in this north-western section of the lands around Roselle is a sort of ‘nucleus’ of sites. This is clearly observable also when we note the location of these aforementioned sites, in Figure 3.9. Starting out from the areas lying near the main Roman roads, namely the Aurelia and the Emilia Scauri, these were arranged almost symmetrically and identically as regards the road leading to the Vigna Nuova/Salica plain, which presumably continued north-east in the direction of Paganico.

It is also clear from Figure 3.9 that, where the Salica/Vigna Nuova valley opens out, there is a sort of narrowing, overlooked by the hill of Moscona (the higher of the two) and the hill of Mosconcino (Figure 3.8). Anyone who wades through the considerable number of studies, both recent and past, on medieval Grosseto and the Roselle area sooner or later finds themselves wondering what once stood on the top of these hills, at least as of the 12th century. Taken together, we might call these two hills a veritable ‘elephant in the room’, in other words an anomaly. No complete and exhaustive explanation for it has ever been given in the general reconstruction of settlement dynamics.

What are the facts?

On Mosconcino hill there is a church with a Latin cross floor plan, having a single, semi-circular apse (Figures 3.10-3.11). The church, partially excavated between 1988 and 1990, is 53m long and 20m wide, widening to 33m for the transept (Farinelli, Francovich 2000, 153-155). Its size is remarkable, and abnormal, making it one of the largest churches in Tuscany, far larger than Grosseto’s own late medieval cathedral.

Of all the interpretations of this ‘anomaly’ in the abundant literature on the subject, the most well-argued and plausible seems to me the one given by Mauro Ronzani in a 1996 article (Ronzani 1996, also for a discussion and bibliography of previous studies). According to the scholar, the building was erected by the bishop of Roselle at the start of the 12th century with the function of a cathedral church, in the context of its first relocation from the ancient city of Roselle where this had been situated as of the late 6th century, as mentioned earlier. Ronzani argued that the bishop’s decision to move the cathedral to the hill below Roselle was mainly determined by the fact that the ancient city was now only marginal in the new political dynamics that mostly involved the low-lying area, as has now been verified archaeologically, too. It is argued that its function as a cathedral church was lost when Pope Callixtus II decided to officially remove the bishop’s seat to Grosseto, in 1138.

However, it is claimed that the large church on Mosconcino hill was still active, as was the canonica (clergy house) associated with it, although only by virtue of the castle that stood on the same hilltop, which also came under the bishop of Roselle, as attested to in a document from 1179 (Farinelli, Francovich 2000, 153).

The recent archaeological survey and associated diagnostics have identified the remains of buildings in the area around the cathedral and the castle, which stood on the area of flat ground above the cathedral, perhaps encircled by a double set of outer, defensive walls (Cirigliano 2020). These suppositions have been confirmed by findings made in the small test trenches dug during excavations in the late 1980s. These revealed a small section of outer walls, remains of internal spaces, and a cistern, bearing witness to the fact that the area was frequented intensively especially in the Late Middle Ages (Poggesi 1998, 178-182). This comes as no surprise, given that written documents refer to the existence in the castle, in the second half of the 13th century, of a sizable community that had its own rural comune, a bishop’s residence (palazzo), and a castle chapel (Farinelli, Francovich 2000, 153).

The Moscona hill displays an even more surprising anomaly. On the highest point of the hill there stands a perfectly round fortification with an internal diameter of around 30m (Figures 3.12-3.13), in a strategic



Figure 3.10 - To the right Poggio di Mosconcino, among the olive trees, the arrow points to the remains of the church's bell-tower. On the left, on Poggio di Moscona, the Tino fortification (Poggio di Mosconcino).



Figure 3.11 - The remains of the large church on Poggio di Mosconcino (from Cirigliano 2020).

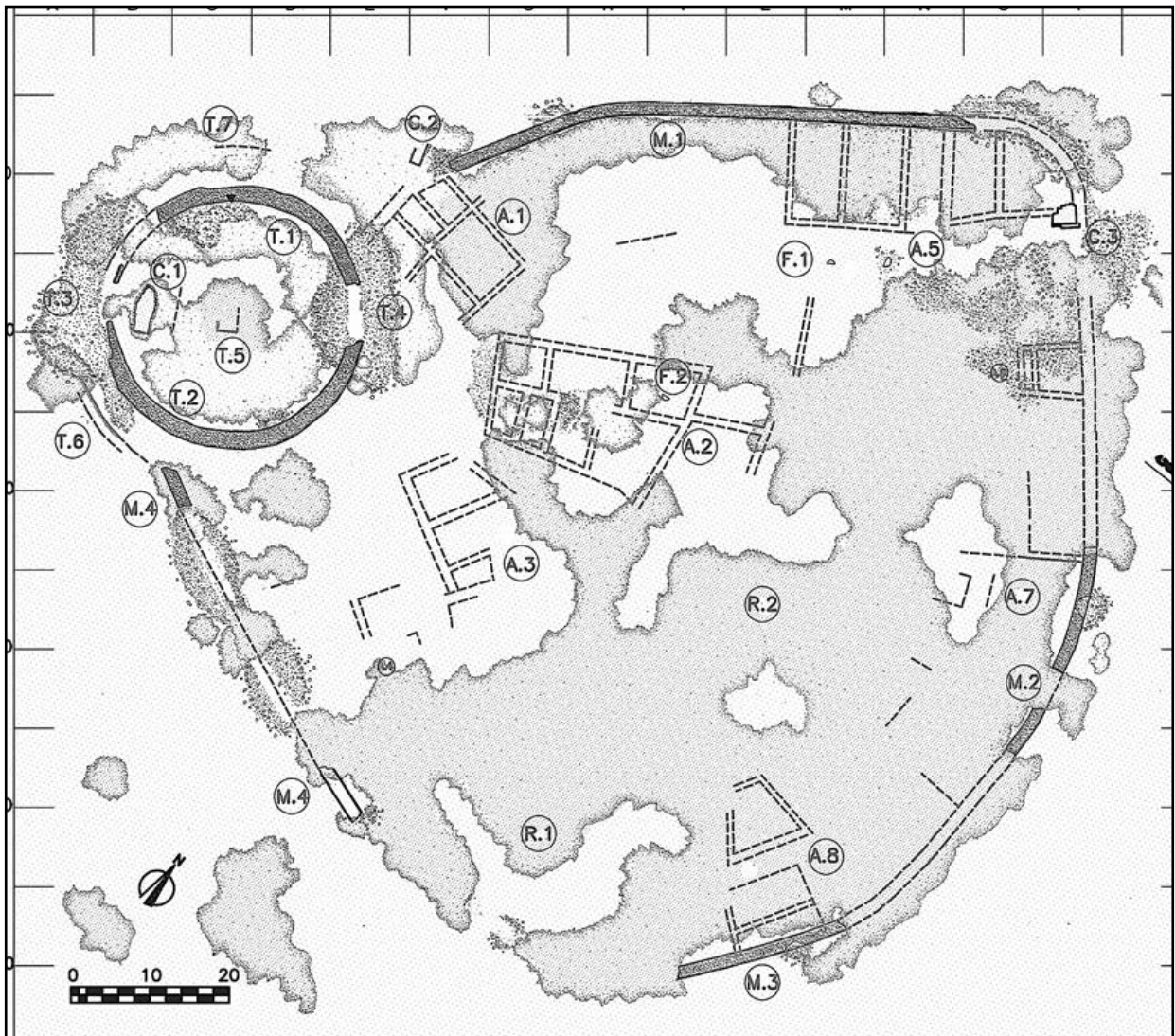


Figure 3.12 - Plan of the Tino di Moscona (from Mangiavacchi 2015).



Figure 3.13 - Exterior view of the Tino di Moscona.

position commanding not only the plain below, and much of the coast, from the Gulf of Follonica to Monte Argentario, but also the valleys to the north-west and north-east. This stone-built walled circuit, today known as the Tino di Moscona, is still preserved in several places to a height of around 8.60m, with a thickness of almost 2m (Figures 3.12-3.13-3.14). The history of this site links it to the construction of the castle of Montecurliano, sponsored by the Aldobrandeschis in 1179 with the intention of founding the new Grosseto, after these lands were granted by the bishop of Roselle (Mangiavacchi 2015). The plans were later dropped, and Grosseto continued its urban development around the new bishop's seat, which was moved there as early as 1138, and the castle of Montecurliano continued to be inhabited down to the end of the Late Middle Ages (on the urban physiognomy of Grosseto, see Mordini 2007). It is thought that the circular structure enclosed the strictly seigneurial area, occupied during the 13th century by six or seven dwellings, as attested to in the Tavola delle Possessioni in 1320 (the Comune of Siena's census of properties in its contado) (Mangiavacchi 2000, 149; Angelini, Farinelli 2013 also for the reconstruction illustration). Meanwhile the borgo, still visible in the form of several surviving sections of the outer walls of the houses, stands on the flat ground on the hilltop, and seems to be laid out as if radiating away from the round structure. Findings from the recent survey allow us to suggest that this hilltop site may have been even larger (Cirigliano 2020). Much of the population that still resided within the ancient city of Roselle may have moved here, and, following these plans, Roselle itself became a sort of appendage to the new castle centre. In the recent past, this episode was seen as a clear example of the new foundations that took place in the so-called 'second' period of castle formation (Farinelli, Giorgi 2000, 244).

In this overall picture, however, there are some points that have not been entirely clarified. First and foremost, the real reason behind the decision of the Aldobrandeschis to move the new urban site here, from what had been a long-standing possession of theirs, namely Grosseto. Indeed, in 1179, not only did Grosseto already boast the bishop's seat, it also had no fewer than five other churches (Citter 2007a, 145). Moreover, it stood near the main routes of passage by river and land, and above all near the precious salt-works. The aim of reasserting seigneurial powers over Grosseto, by means of this project, and having a fortified site of great strategic and military importance, is not entirely satisfactory as the main motive.

Secondly, there are a number of considerations and resultant doubts that arise from an observation of certain pieces of material evidence. Unfortunately no extensive excavations have been undertaken at the Moscona site. Nevertheless its buildings have been studied in detail, although without analysing them using the methods of the archaeology of architecture within the context of previous research, prior to a programme of restoration and consolidation, although these interventions did not invasively



Figure 3.14 - Interior view of the Tino di Moscona.



Figure 3.15 - Detail of north-west interior section of the Tino di Moscona, showing coexistence of differing masonry techniques, featuring smaller and larger stones laid in courses of varying regularity.



Figure 3.16 - Detail of interior masonry of the Tino di Moscona, showing differentiated masonry techniques. The lower and upper sections are divided by two courses, forming a sort of levelling band. Also visible in the lower and upper sections are two different construction phases.

alter the well-preserved masonry features, which are still clearly visible today (Mangiavacchi 2015). In very recent times, as stated earlier, surveys have verified pre-existing Hellenistic features, already highlighted in the past, which some authors claim were used as the basis for reconstructing the circular fortification itself in the Middle Ages (Mangiavacchi 2015, 153).

Observing the walls and elevations, one notes at least two differing construction methods. In many places small and medium-sized stones, only barely worked or shaped, are laid in very irregular courses, or in some cases without any courses at all.

By contrast, in other parts of the masonry structure, stones worked either roughly or more carefully are used. These stones are of variable sizes (from small to larger), and are laid in more regular courses (Figure 3.15). These alternating techniques are clearly visible in the outer and inner walls of the fortification, and in most cases it is very hard to understand (without detailed analysis of the mortars used) whether the use of the more irregular technique corresponds to reconstructions, or whether we are seeing alternating but contemporaneous building techniques, indicating builders having a differing set of technical skills. This latter possibility would seem the most likely, especially for the interior wall of the Tino, where the use of the more irregular technique is alternated with the other technique. This would possibly be in keeping with progress during the construction process itself, in which work proceeded both vertically and horizontally (Figure 3.16) (Boato 2021 for an interpretation of the separate builds as indicating the building work completed on a single day, or natural pauses in the construction process itself).

In the various studies on the Tino of Moscona, this collection of wall masonry techniques and practices has never been viewed as part of a general technical context that was contemporaneous with it, with the aim of a comparison with other masonry techniques present in this territory in the second half of

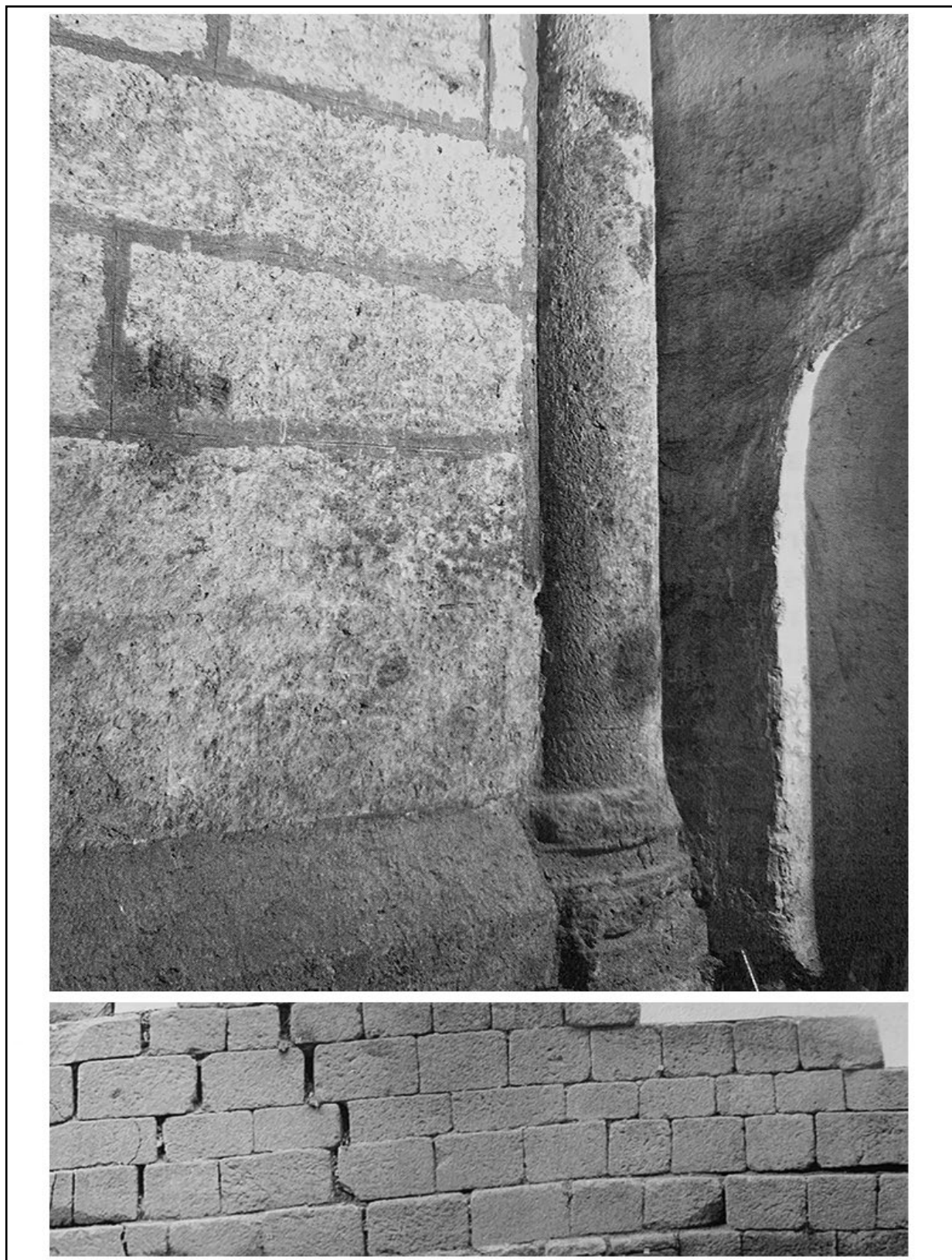


Figure 3.17 - Examples of masonry techniques found in the Grosseto area in the 12th century. Above, the masonry technique adopted on the right-hand side of the church of S. Pietro in Grosseto (from Gabrielli 2007, 261). Below, the technique used in the tower of the Aldobrandeschi castle at Sassoforte, Grosseto (from Fichera 2009).

the 12th century, when it is believed the structure of the Tino was built. The summarizing illustration (Figure 3.17) with pictures of masonry techniques adopted in the 12th century in nearby Grosseto and, in the same period, in one of the castles connected to the Aldobrandeschis in this territory, reveals a highly mature level of technical knowhow for this geographical area. Here, at the end of the 12th century and for much of the following century, the practice of using stones cut into squared blocks was commonly adopted not only in religious buildings but also in castles in the area. In several publications it has been stressed that, in these decades, stones that were squared, or carefully shaped, and laid in regular courses, were the norm in the criteria of self-representation, especially in the case of rural seigneuries (most recently Bianchi 2021) Thus one is slightly baffled by the Tino di Moscona, and by the decision there to use such techniques, moreover in connection with a project that was grandiose to say to the least, for the construction of such a symbolic building, visible from several different points of the compass.

Accordingly we are led to frame the following series of possible hypotheses: part of the fortification that is visible today was built prior to the date when the new Grosseto was founded; the fortification was built as of 1179, as per the current dating; or the Tino is a reconstruction, or a construction later than the end of the 12th century, since such techniques could also be ascribed to a date around the end of the 13th and the 14th centuries, in this territory. Let us therefore begin by discussing the last of these hypotheses. A chronology later than 1179 seems scarcely plausible, in view of the fact that at the beginning of the 13th century the castle must have been inhabited by a community that was not especially large, represented by only 25 men who had sworn to be guarantors of a commitment entered into by the Aldobrandeschis with the commune of Siena, which the community submitted itself to in 1304 (Farinelli, Francovich 2000, 150). Also from documentary sources we infer that the castle was already abandoned by the mid-14th century. Thus, imagining such a construction project in the course of the 13th century, when, after the plans for the ‘new Grosseto’ came to an end, the fate of the site seemed already to be headed for early abandonment, is a hypothesis that is hard to embrace.

We now turn to the second hypothesis. The justification of the adoption of the aforementioned techniques for the construction, commenced shortly after 1179, of Montecurliano/new Grosseto, could lie in the need to complete a work in a very short space of time, as required by the project. We cannot rule out this possibility, even though, in order to find a possible parallel, but still only for the more irregular technique, we have to look a considerable distance away from this geographical area. Indeed, we need to head south, and observe in particular the outer walls of the castle of Capalbiaccio, which recent studies have also claimed was rebuilt in the course of the 13th century itself, by the Aldobrandeschis themselves (Acconcia *et al.* 2009; Hobart 2023). A preliminary dating of the anthracological remains in samples of lime mortar taken from the wall of the Tino gave a Cal AD1 sigma date of between 1026 and 1160 (with a lower percentage of reliability), and a Cal AD2 sigma date, with higher percentages of reliability, of between 977 and 1225⁶. This latter chronological span clearly does not resolve the problem, but it nevertheless leaves open the possibility, pending new archaeometric dates, of the first hypothesis, namely that part of the Tino may have been built prior to 1179.

Indeed, the technique that features more regularity in the way the stones are laid, and in how they are squared, could have parallels in the technique found in the church at the site at Torre di Donoratico (datable to the later 10th century) (Figure 3.18)⁷.

⁶ The analyses, not yet published, carried out as part of the nEU-Med project and coordinated by Carmine Lubritto, were conducted at the Department of Environmental, Biological and Pharmaceutical Science and Technology at the Università della Campania Luigi Vanvitelli.

⁷ The church of Donoratico is connected to the large-scale construction process that led to the total renewal of the site, with the construction of a defensive outer wall with an internal fortified emplacement with a tower. In Bianchi 2020a I presented a date for these features, dating them to the second half of the 10th century, rather than a generic late 9th-10th century date that had been suggested earlier, thanks to the new radiocarbon dates for the mortar, conducted under the nEU-Med project.



Figure 3.18 - Details showing range of different masonry techniques in the Grosseto area and further north, linked to similar masonry techniques present between the late 10th and early 11th centuries. Above, left: nave of church at Loc. Torre di Donoratico (LI). Above, right: the outer walls of the same site. Middle: outer walls of mining site of Rocchette Pannocchieschi (GR). Below, left: the masonry technique of the six-apsed church at Loc. Canonica, Montieri (GR). Below, right: the technique present in the facade of the abbey church of San Salvatore al Monte Amiata (SI).

THE GROSSETO AREA

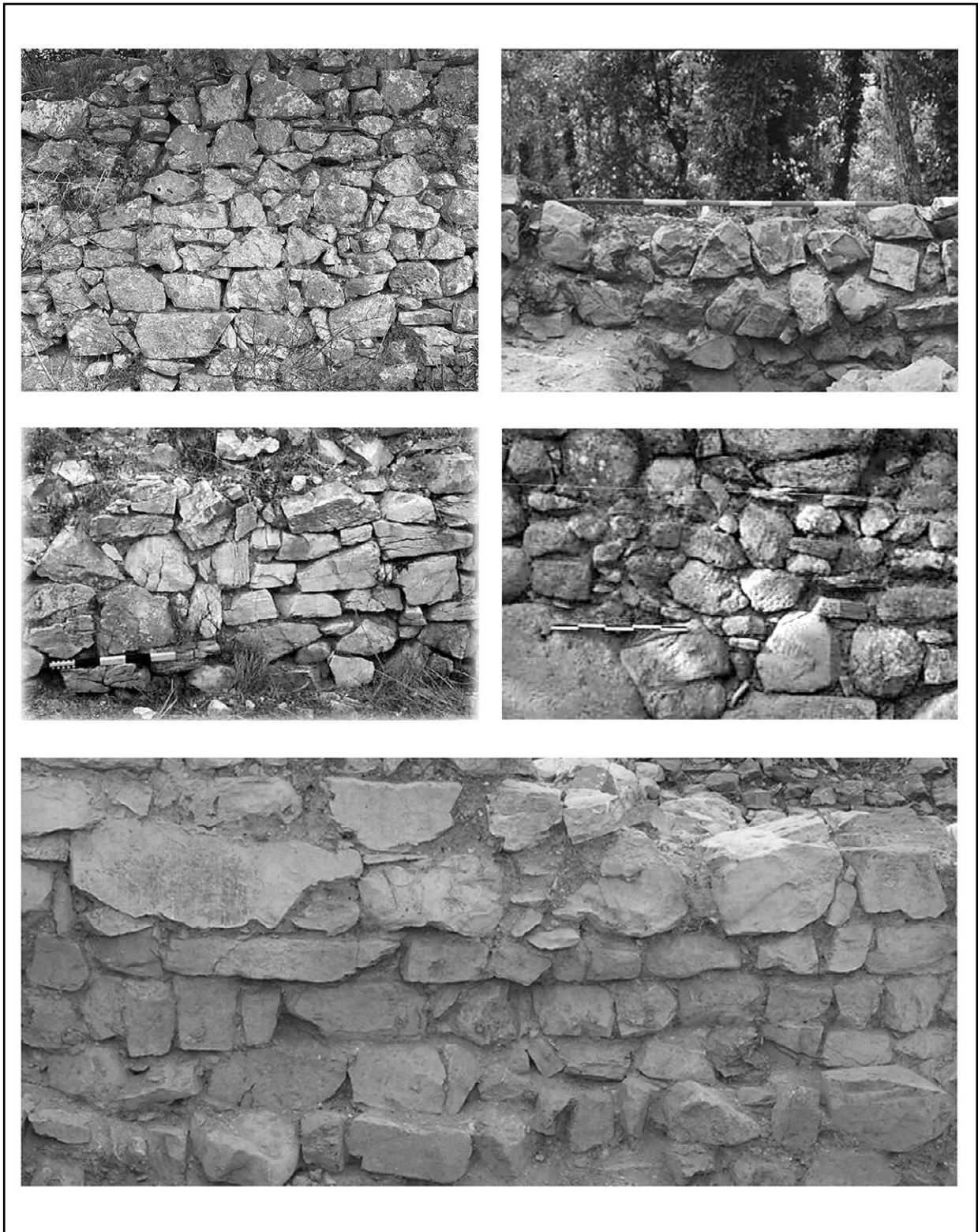


Figure 3.19 - Details showing range of different masonry techniques in the Grosseto area and further north, linked to similar technical circles present between the late 10th and early 11th centuries. Above, left: detail of masonry technique used in the walled circuit that ran along the hilltop from the Tino di Moscona. Above, right: a remnant of the outer wall of the mining village of Cugnano (GR). Middle, left: the older defensive wall of the village of Rocca San Silvestro (LI). Middle, right: the outer wall of the site at Località Torre di Donoratico (LI). Below: the technique in the nave of the church at the site of Poggio Cavolo (GR).

On the other hand, the more irregular masonry technique has more immediate parallels in parts of the outer walls of Donoratico itself, which are contemporaneous with the church (Bianchi *et al.* 2011). A particularly close parallel is to be found in the section of the upper defensive walls at the mining site of Rocchette Pannocchieschi, datable to the first half of the 11th century, and in a wall abutting these, which can be associated with a structure belonging to the same phase, where one finds roughly shaped stones laid diagonally, similar to those seen in the Tino circuit wall (Fichera 2013, 91-102).

These parallels prefigure fairly specialized construction techniques in this territory already between the 10th and 11th centuries, and that had varying outcomes both in terms of masonry techniques and architectural solutions (Figure 3.18). As I shall discuss in more detail in chapter IV, between the 10th and 11th centuries, not far from the Tino di Moscona, in the same southern sector of Tuscia, the following were built: the abbey church of S. Salvatore, on Monte Amiata, with towers in its facade, and carefully squared stones; the unique church with six apses at the locality known as Canonica di Montieri; and much of the monastic complex of S. Antimo, which today we can only appreciate in part, in the surviving sections of the oldest phase. Accordingly it might not be such an anomaly to ascribe to this same phase the construction of the Tino di Moscona, too, which may have been built on pre-existing Hellenistic features, and which was perhaps subjected, as of 1179, only to partial restorations of its interior and exterior walls.

The fact that this fortification was designed as an important building can also be deduced from its shape, for which there are no contemporaneous parallels not only in this particular geographical area, but anywhere else in Tuscany. Moreover, such a scarcity of parallels was already highlighted also for the 'official' period of foundation of the Tino, namely the final decades of the 12th century. Indeed, scholars have had to go looking for suitable candidates in late medieval contexts in French or Anglo-Saxon areas (Mangiavacchi 2015, 153).

Possible support for the claim that the circular structure existed prior to the plans for a new Grosseto also comes from the fact that it is in this very territory, on the other side of the Monti dell'Alma, that we might find one of the parallels closest to its architectural forms.

In chapter I we described the complex transformation phase at Vetricella, between the end of the 10th and the early 11th century, with the filling in of the inner defensive ditch, and the gradual creation of a sort of paved area that followed the circular perimeter of the former ditch, and on which a wall may have been built, made of masonry or perishable materials. This layout was an echo of the former design of the site, datable to the second half of the 9th century, with the excavation of three concentric defensive ditches. Worth noting is that the inner ditch had a diameter of around 40m, a size not very different from the circumference of the Tino di Moscona (approximately 30m). Thus, is it possible that Vetricella and the Tino di Moscona both underwent a contemporaneous transformation between the 10th and the 11th centuries, and that they were both the products of a single construction strategy?

To try to answer this question, with plausible explanations, we will have to make reference to the whole historical context of this territory, or at least to the reconstruction that I am attempting to put together, piece by piece, in this section. Accordingly, I will return to this point in the final pages.

But there is more to be said regarding the Tino di Moscona. Indeed, there are walls leading away from the circular structure, on each side of the flat area on the hilltop. These belong to a defensive circuit, forming a perimeter that is almost in the shape of a shell (Figure 3.11). Within it one can still glimpse today the remains of dwellings, interpreted as the building plots created on the occasion of the 1179 plans for the new Grosseto, the same date as that of the circuit wall itself (Mangiavacchi 2015).

Now, if we move on to a detailed analysis of the masonry technique of the defensive circuit, in the parts where it is well preserved (Figure 3.19), the same considerations apply as stated for the Tino.

THE GROSSETO AREA

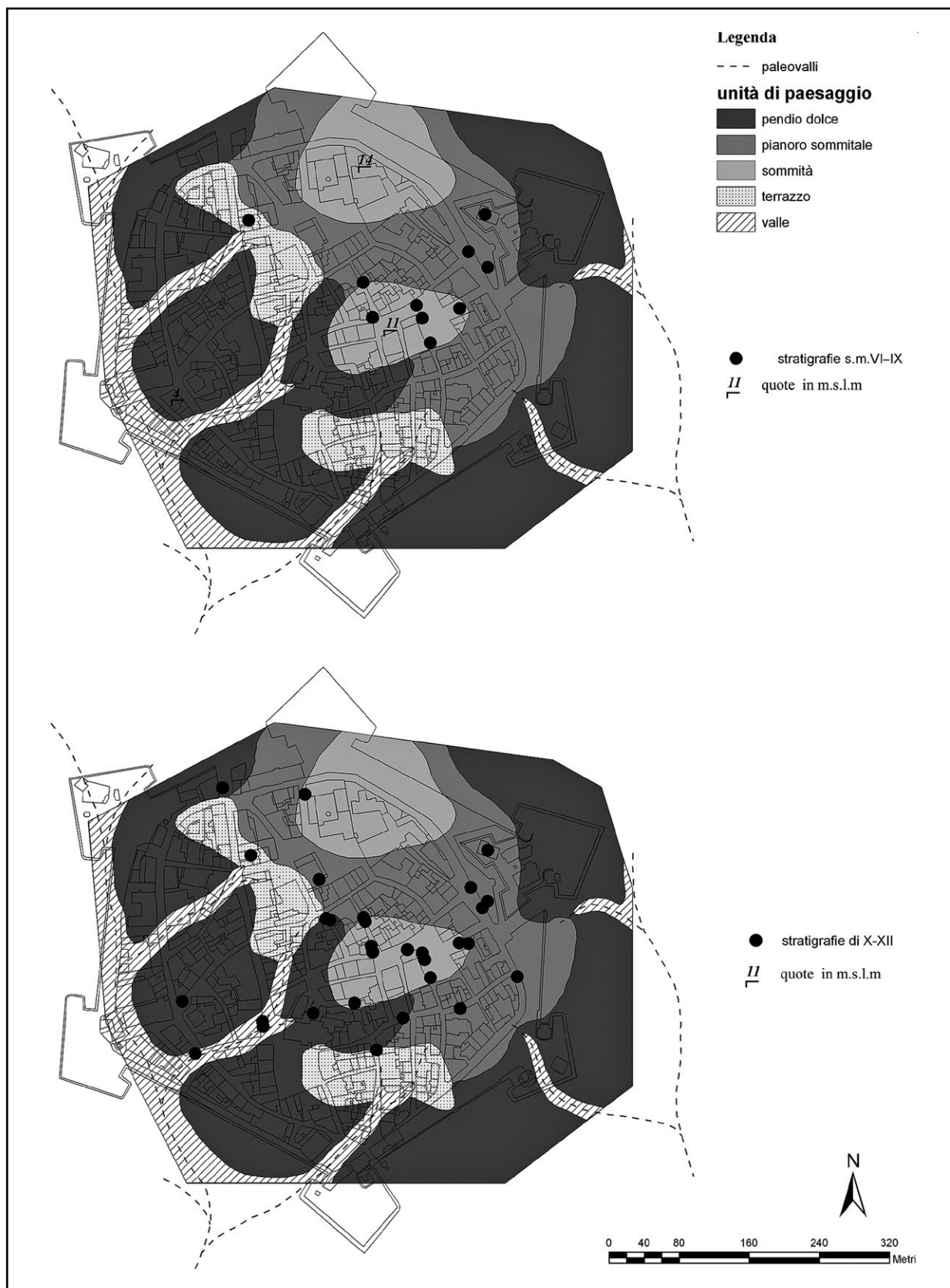


Figure 3.20 - Plan of Grosseto's old town centre. Above: the black dots indicate the presence of archaeological stratigraphy between the 7th and 9th centuries. Below: the location of 10th-12th century archaeological sequences (from Citter 2007c, 433).

A defensive wall built using that technique, in this territory, would not have been built either at the end of the 12th century or in the course of the 13th century. In this case, too, parallels with late 10th and early 11th century stone-built walls for this territory exist, and we do not have to look very far, either: Poggio Cavolo, and the technique for the church aisles, is a site in this area that I will be describing very shortly; the 11th century outer walls of the mining village of Cugnano (Fichera 2009, 219-224); and parts of the defensive circuit of Donoratico, again, and of the older defensive walls of the well-known castle of Rocca San Silvestro. However, as stated earlier, a similarity with this technique can also be found in the castle of Capalbiaccio, in stone-built walls that are currently dated, purely on the basis of an analysis of the wall construction technique, to the 13th century.

Thus, one needs to be very cautious with regard to the hypothesis that the Tino di Moscona was a crucial and highly symbolic place in this area between the end of the 10th century and the 11th century.

The settlement sites attested archaeologically in the plain immediately below the Tino have already been mentioned at the start of this section. So let us see what was happening in Grosseto in this phase.

Archaeological investigations clearly show that, as of the 10th century (although the exact chronology is often hard to pin down, owing to a scarcity of more precise dating information), we see an increase in the vitality of this site (Vanni 2007, 336; Citter 2007a, 146-147). The archaeological evidence, now no longer limited to the eastern sector of the terracing, seems to be uniformly distributed also in the western part, despite the fact that the large date range, from excavation periodization, often does not make it possible to detail the various activities (Figure 3.20). Surviving patches of floor and ground levels, and post-holes of uncertain function, often owing to the limitations imposed by urban excavation, are the most common remains. Within these features one can make out an area situated in the former western sector of the village. Here, at the top of the terrace, what is taken to be the processing of iron-bearing minerals has been identified, perhaps involving ore reduction. This is also witnessed by the presence of a heap of hematite from Elba (Magazzini *et al.* 2007, 364). The abandonment of this context is dated by radiocarbon analysis to between 1040 and 1090, the same date that is given for a possible structure positioned nearby, designed for the storage of cereals, and which was destroyed perhaps owing to a fire (*ibid.* 362-364). In the nearby area of Piazza della Palma, and thus also within the confines of the older village, a series of stratigraphies appertaining to wooden structures, and their phases of use, were obliterated by a ground-levelling and ground-raising operation that took place no later than the first few decades of the 11th century, while other features also attest to the presence of a silo for storing grain harvests (Magazzini *et al.* 2007, 373).

Meanwhile, in the vicinity of Via Saffi, on the eastern fringes of the former area of flat ground, traces of structures made of perishable materials seem to be present uninterruptedly from this phase until the end of the 13th century, along with a possible section of paving made from pebbles, perhaps relating to a road surface (*ibid.* 399). Other possible parts of residential buildings, identified in Via delle Carceri, in one instance associated with a storage feature for cereals, seem to display contemporaneous abandonment and obliteration in the course of the 11th century (*ibid.* 405). In 973, in the well-known document listing the various Aldobrandeschi family possessions in Grosseto, a *castrum* is referred to. It is hard to speculate as to its construction date, in the absence of previous mentions in documents (Farinelli 2000). Unfortunately the numerous archaeological test excavations have not intercepted remains of this structure, but they have been able to exclude its presence on the site of the future Magazzini del Sale, where in the past it had been suggested as having possibly stood (Magazzini *et al.* 2007, 373). No material evidence has yet been found to confirm the other location for it, which is commonly accepted (Farinelli 2000, 193), at the former Palazzo dei Priori (between what is now Via Manin and Piazza San Michele). This is despite the fact that this would situate it, in line with the reconstruction of the paleo-environment, not in a dominant position on the uppermost terrace, but along its slopes (Arnoldus-Huyzendveld 2005).

Thus, in the 10th to early 11th centuries, Grosseto took the form of a centre of a certain complexity, given that within it, as well as the church of S. Giorgio cited in 803, and the church dedicated to S. Pietro, which was extended where the apse stood between the end of the 9th and the start of the 10th centuries (Vanni 2005, 25-26), there also stood a *pieve*/plebs, mentioned in 1015 and dedicated to S. Maria. This church was reconsecrated in 1101 perhaps already with the function of *concattedrale* (co-cathedral), before the seat of the diocese was relocated here from Roselle in 1138 (Ronzani 1996, 179-181). Despite this, findings from archaeological research provide a picture of a material culture that is not particularly variegated. Indeed, the 50,000 pottery finds that were retrieved document the prevalence of coarseware, and a very small percentage of semi-levigated pottery, while Forum Ware, sparse-glazed pottery, or 'red-painted' pottery is almost absent. By contrast, worthy of note is the presence of amphora-like containers, which for the Grosseto context are called 'water jars' (Valdambrini 2006; Citter 2007c, 150). These are discussed earlier, in chapter I, dedicated to Vetricella, as regards the large amount of pottery belonging to this type, referred to as 'small amphoras', that was found there, which, indeed, has an immediate parallel with pottery present in the Grosseto area. South-east of Grosseto, beyond the Ombrone, there stood another site, Poggio Cavolo (Figure 3.21), already mentioned several times in the previous pages. This site saw considerable development in the course of the 10th century, and especially in the Ottonian era (Farinelli *et al.* 2008, for all the following information on the site). It is worth giving detailed consideration to these features, unearthed by archaeological excavation, and to describe them, albeit in summary form. As is known, the site stands on a hilltop, encircled by stone-built outer walls. In the second half of the 10th century, the supposed previous church on the flat part of the hilltop (see above), perhaps associated with the Carolingian period (9th century), was obliterated by the construction of a new religious building that used the outer walls of the pre-existing aisle, extending the final section with the construction of a semi-circular apse (Figure 3.22). The new church, which had a *cocciopesto* floor and an altar built of masonry, is reliably dated to the final decades of the 10th century, thanks to the fact that a coin of Otto II was found in the preparatory layer for the floor. The remains of the building's walls enable us to identify two different construction techniques: the one seen in the walls of the aisle, featuring medium-sized and small stones that were only roughly split or shaped, without any surface finish, laid in courses which are kept horizontal by the frequent inclusion of smaller fragments of stone (Figure 3.19); and the technique seen in the apse, in which more carefully cut stones were arranged with greater regularity in horizontal, parallel courses. The relationship between this church and the defensive walls is hard to determine, and in recent articles it has been suggested, in contrast to claims made in the past, that the church was built by abutting it against the outer defensive wall. Thus archaeologists have deduced that the latter wall predated the church, perhaps dating back to the Carolingian period itself. The circuit wall is built with stones arranged in accordance with an irregular masonry technique. If the suggested date were correct, then this would be the oldest stone-built defensive wall in this whole territory (especially after the new 10th century date for the outer wall at the Torre di Donoratico site), and the only example of its kind in the 9th century. This is possible, but it is equally plausible that the relative chronology, whereby the date of the church is later than that of the outer wall, does not indicate a different absolute date, but similar, close dates, albeit with a certain hiatus, as the product of a single construction episode. If this were the case, then the Poggio Cavolo outer wall would be among the group of new defensive walls made of stone, or stone with mixed materials, dating to the 10th-11th centuries, found in this territory. It would also be associated with this larger group on the basis of the similarity of the masonry technique: this is the case with the outer walls at the mining site of Cugnano at the beginning of the 11th century, and also with parts of the outer wall at the site of Donoratico. Moreover, in a hypothetical dynamic of matching characteristics, there would be many similarities with the walled circuit associated with the Tino di Moscona (Figure 3.19).

Around the church, in the spot where a tower would later stand in the course of the 12th century, a series of stratigraphies and post-holes denote a certain human presence in the area, again datable to between the 10th and 11th centuries. Also highly interesting are the findings made in the area to the east of

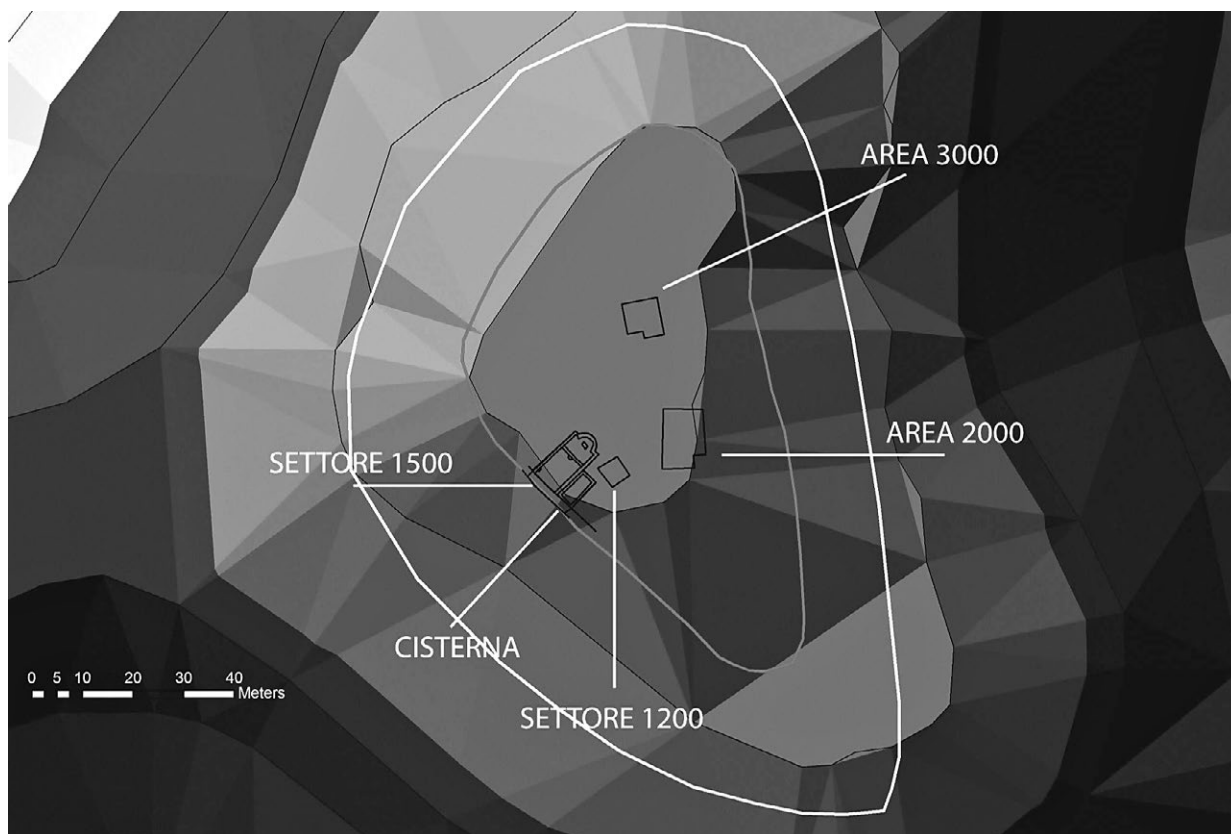


Figure 3.21 - Poggio Cavolo site plan (from Farinelli et al. 2008, 172).



Figure 3.22 - Church of Poggio Cavolo. The later cistern and tower structures are visible on the right (from Farinelli et al. 2008, 179).



Figure 3.23 - Remains of the three crucibles found at Poggio Cavolo (from Farinelli et al. 2008, 187).



Figure 3.24 - The river Ombrone, showing part of the hamlet of Istia di Ombrone (on left). Right: detail of the masonry technique of the older outer walls of Istia d'Ombrone

the tower. Here traces of metal-working have been found, thanks to a furnace dug partly into the rock, and partly in the ground, the sides of which feature much reddening. In the infill inside this small pit, as well as the remains of fuel, reduced to ashes and carbon, three crucibles were found. It was possible to reconstruct the forms of two of these almost completely, and they have close parallels with those found in the Piazza dei Cavalieri (Pisa) excavation in late 10th-early 11th century contexts (Figure 3.23). Archaeometric analysis of the residues in one of the three crucibles, conducted by Laura Chiarantini and Marco Benvenuti (Florence University), was reported in Farinelli *et al.* 2008, 187. The tests led to the discovery of drops of silver and copper. These finds led to the suggestion that the crucibles were used for smelting and casting more than one kind of metal, including the aforementioned silver and copper. In any event, this is an exceptionally important find for this chronological horizon, given that no evidence of crucibles, or places where finishing processes of these metals were conducted, has ever been found, even at sites in the heartland of the Colline Metallifere mining areas.

This site's exceptional nature is further underlined by the finding of three Pavia denari in the name of Otto I/Otto II, datable to between 962 and 963. At present this is the largest such find in this general area, after Vetricella (Vaccaro, Salvadori 2006). As for the possible political actors connected to Poggio Cavolo, the suggestions put forward thus far, namely that it was possibly linked to the bishop of Roselle,

are not supported by documentary evidence for this period, whereas we know from written sources from the early decades of the 12th century that the site was linked to the Alberese monastery (Farinelli *et al.* 2008, 176). In this small galaxy of sites we should also bear in mind settlement continuity at some sites, first and foremost Caliano, at the mouth of the Ombrone, which is still invisible archaeologically (Campana *et al.* 2005).

This was mentioned as far back as the 803 document, and in the list of Aldobrandeschi family property compiled in 973 it is found to have had a tower.

Another such site was Istia di Ombrone (Figures 59-79) where, in 1032, a market is mentioned, perhaps one of the earliest in a rural context in Tuscany at this time (Citter 1995). Istia's location was well suited to this function, since it stood near the important river course connecting the coastal area to the hinterland.

Unfortunately there are no excavation data for Istia that might verify pre-existing features dating to the early medieval time horizon. However, as already highlighted by Citter (Citter 1995), one could ascribe to this phase part of the upper hilltop outer walls, in which large sandstone blocks are used. These were probably reused from elsewhere, along with smaller blocks of the same material laid in more regular courses (Figure 3.24). This masonry technique has similarities with the technique adopted in the outer walls of Donoratico (see Figure 3.18), where, however, reused stones are equally evident in the lower part. This comparison would lead one to posit a later 10th century date, placing this circuit of walls within the general construction phase of many sets of stone-built outer walls throughout this case study territory.

Turning now to the north of the lake, we should remember that perhaps it was during the 10th century, as already stated earlier, that the Piscaria court once again became the property of the royal monastery of S. Antimo. This is no minor detail, given that at least as of 937 the monastery was added to Queen Adelaide's properties, along with the courts of Cornino and Valli, after its probable conversion to a royal abbey as far back as the Carolingian period.

3. 3 Public lands in new (possible) historical scenarios

In the previous pages we have compiled a large amount of data relating to various historical periods and material evidence, also seeking connections between them, and documentary evidence. Reconstructing an overall picture is certainly nothing new for this territory, seeing as how others, well before this small synthesis of mine, have done so in much more detail, and with great skill, in studies from which I have drawn much of the information referenced so far here, and without which it would indeed not have been possible to try to glimpse new, possible interpretations.

However, the time has come for a summing-up, and to reassemble the various pieces in this particular jigsaw, and venture a number of final considerations which, especially for the 10th and 11th centuries, serve to draw a comparison with parts of the Cornia and Pecora valleys.

As often stated, this area saw a general shift up in gear in the Carolingian period (9th century). This very closely parallels events in the nearby valleys, where, it will be remembered, there was a new comitatus seat at Populonia, a reorganization of the Cornino court, the transfer of the bishop's seat from Populonia, and the creation of a site with three concentric ditches (Vetricella), with associated transformations of the anthropic landscape of the Pecora valley. In all three areas these transformations involved large holdings of fiscal origin, in many cases dating to the imperial era, as has been underlined by Citter also for the Roselle area (Citter, Chirico 2018).

Alongside the public powers and, albeit to a lesser degree, the papacy, the other most eminent protagonists, beginning in the early 9th century, were above all the Aldobrandeschi family. Their presence on the scene, for the Grosseto area, especially as of the 10th century, has been seen as a sign of the start of

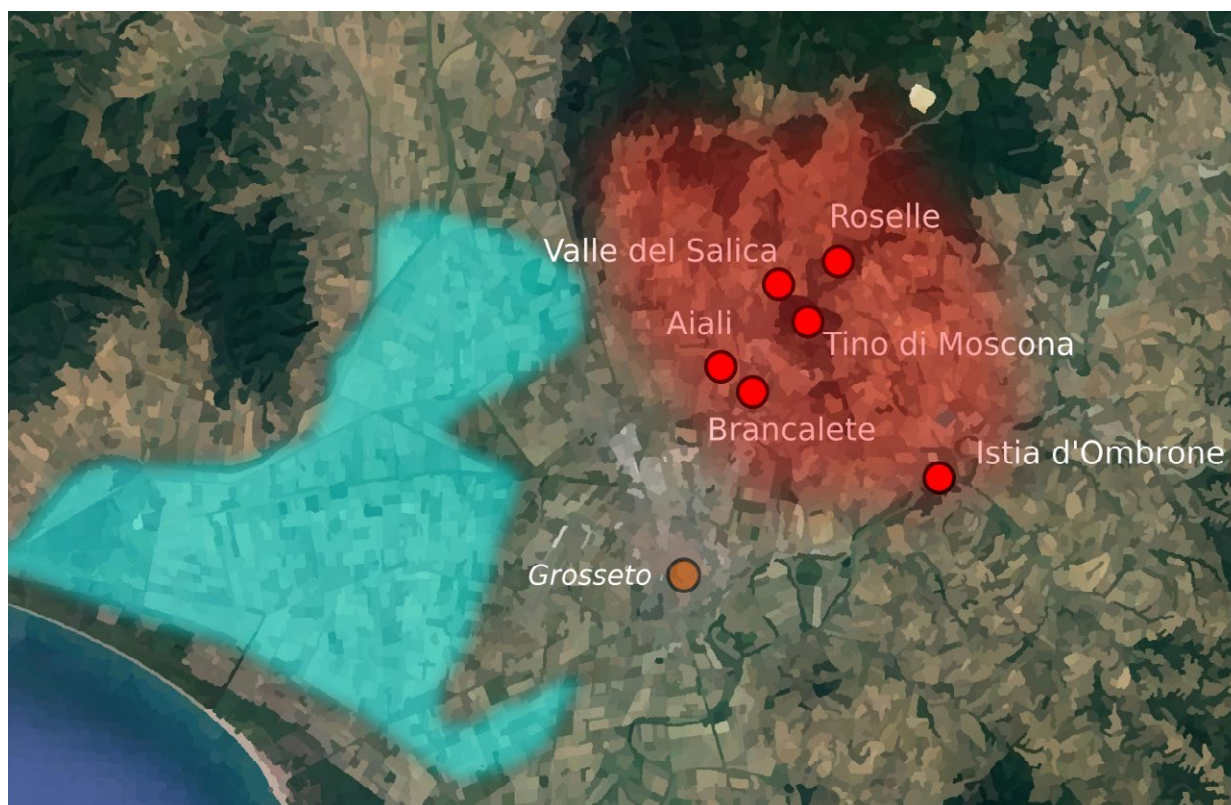


Figure 3.25 - The area in red indicates where public/royal properties in the area of Grosseto and Roselle may have been concentrated.

the rise to prominence of seigneurial rights within a gradually more privatized administration of their possessions. However, in previous pages I stressed, following the points made by Simone Collavini, that, up until the later 11th century, the sphere of action of this family, whose members followed on from each other as leaders of the county/comitatus, was always placed within a public setting that probably also made the Aldobrandeschi family both the executors and supporters of a larger plan.

So let us try to outline this plan, especially for the period for which we have the most material data, namely the 10th to early 11th centuries.

Up until today, the central place in the whole plain and its salt-water lake has been identified as Grosseto. This is also by virtue of the fact that the lack of an excavation strategy at Roselle aimed specifically at the early medieval period has meant that only a handful of findings are available for the whole period, relegating this site to a marginal role. Nevertheless, Roselle must have had a certain importance, as it was the seat of the diocese and of the county/comitatus, a role it continued to hold throughout the Early Middle Ages.

Thus it does not seem to me to be an unrelated fact that, in light of the very recent discoveries at Vigna Nuova/Salica, and observing the positioning of all the archaeological sites in this phase (Figure 3.9), we cannot fail to notice the presence of a compact and large nucleus in the immediate radius around the ancient city, on the side facing the lagoon, with a particular concentration on the western side (Figure 3.25). This, as we have stated, was where the two sites encircled by ditches or moats stood, one at Vigna Nuova/Salica and the other corresponding to Brancalete. Here we also see the reoccupation of the Aiali villa, and here magnetometry and test excavations have detected a complex system of agrarian partitions, and especially water channels, perhaps designed to further drain the valley through which the river Salica flowed from the marshy waters that were a feature of it up until Late Antiquity. This latter operation was on a considerable scale, and was considerably important, and it reminds us of the

cuttings in the calcareous tufas in the upper Pecora valley to drain the valley higher up, below Massa Marittima, which was very much encouraged in the course of the 10th century itself, coinciding with an increase in fires, which eventually opened up areas to be used for growing crops and grazing livestock (Pieruccini *et al.* 2021; Buonincontri *et al.* 2020a).

The fact that a certain importance still attached to Roselle, or at least to the hills on which it stood, would be shown, if the notion of the pre-existence of the Tino fortification is correct, by the existence of an important feature on the higher hill, Moscona. If the Tino, namely that extraordinary fortified set of circular stone walls, comparable in form and size to Vetricella's inner ditch, was indeed built or rebuilt on top of earlier features, between the 10th and 11th centuries, then we would be looking at an extraordinary and highly visible distinctive feature in this specific territory. A highly effective symbol that also controlled movements into and out of the Vigna Nuova/Salica valley, marked on the opposite side by the lower hill, Mosconcino.

The area occupied by this collection of low-lying sites in the plain had the highest number of thermal springs, providing drinking water (Arnoldus-Huyzendveld 2007, 49-50) and, if the location of the early medieval salt-works is correct, as suggested by Arnoldus, it would not have stood very far from those positioned in the north-east sector of the lagoon itself (Arnoldus-Huyzendveld 2007, 54-55). Moreover, this block of lands stood near the Roman Via Aemilia Scauri, on the basis of its recently reconstructed route (Celuzza *et al.* 2007), to which it was connected by the road that passed along the Vigna Nuova/Salica valley. This road must have continued north-east not only in the direction of the Siena area, but also, crossing the river Ombrone at Sasso d'Ombrone, in the direction of Monte Amiata, via a road that passed through Cinigiano. This latter route is also certainly attested to in the Classical period thanks to the recent archaeological finds for this period, primarily the villa and thermal complex of S. Marta, which in turn was probably also connected to the road that led to Campagnatico and Istia di Ombrone (Campana *et al.* 2019; Campana, Felici 2020; for a further summary of road connections).

The areas of Siena and Montalcino, and Monte Amiata, were the sites of the monasteries of S. Salvatore al Monte Amiata and S. Antimo, the two royal monasteries, the courts of which were donated in 937 by Hugh of Arles to Adelaide, whose properties extended as far as the coast of Grosseto. At least as of the 10th century, on the basis of the pseudo-diploma of Louis the Pious dated 814, S. Antimo owned the rights to the Piscaria court, and thus over the northern part of the lake, with its salt-works (Tomei 2020).

We only get a mention of the properties of San Salvatore in the course of the 12th century, when the rights to the salt-works were shared with the Aldobrandeschi family on the southern edge of the lake, at the place called Squartapaglia-Querciolo, which was the probable general location of the late medieval salt-works, until they were moved definitively to La Trappola in 1386 (Arnoldus-Huyzendveld 2014, 38; Caprasecca 2014, 54-55)

Furthermore, it is possible that this hypothetical royal area also included Istia di Ombrone, given its strategic position along the course of the river, and its connection to Roselle via a back-road that already existed in the pre-medieval era (Citter 1995). At Istia, as already noted, a market is probably documented in 1032.

In this phase, the Aldobrandeschi family certainly maintained their dominion over Grosseto and Caliano, but there is no information to support the view that this occurred in the course of the later 10th century for Istia d'Ombrone and Roselle itself, where, by contrast, mid-9th century documents mention the fact they owned homes and huts (Collavini 1998, 67). This would appear to be confirmed by the fact these sites are not mentioned in the list of Aldobrandeschi family property in the 973 sale deed agreed between Lamberto, son of Count Hildebrand III, and the priest Ropprando, a clearly bogus action designed to claim rights over properties controlled up until then by the Aldobrandeschi family on the basis of their public posts (Collavini 1998, 80-84).

Similarly, there is no documentary information in this phase for Poggio Cavolo, apart from the unusual archaeological finds: the Ottonian period church, the metallurgical processing area with the three crucibles, coins, and an interesting material culture.

Thus, in the 10th and much of the 11th centuries darkness shrouds written documentation regarding this belt around Roselle, turning this area, just like the two other royal estates examined, into a sort of black hole. In the view of some scholars, this takes on a possible, specific historical meaning, often becoming indicative of the presence of public properties (Collavini 2019).

It is only in the course of the later 12th century, in the year 1179, that a new chink of light appears, when not only Istia but also the moated site of Brancalete (by then abandoned) are said to belong to the bishop of Roselle, along with the Mosconcino and Moscona hills (Farinelli, 2007, 138-139). On the basis of these latter references, some scholars would back-date this ownership to the previous centuries, as at Poggio Cavolo, although its connection to the bishop of Roselle is entirely hypothetical.

This information leads us to suggest that, in this period, direct dominion by the Aldobrandeschi family as a landed seigneurship, and not as Counts acting on behalf of the *publicum*, thus remained, with Grosseto and Caliano, in an area situated de facto on the south-west margins of this large nucleus of sites close to Roselle.

Presented with this picture, the possibility immediately arises that the real public holdings, directly belonging to the king, were concentrated in this very area around Roselle, or at least that this space had been organized as such, in an intensive way in the course of the 10th century (in view of the chronological indicators), perhaps hand-in-hand with the reorganization of public properties in the full Ottonian period that had such an impact in the transformations at Vetricella and its territory. However, this reorganization apparently began at a time when the Aldobrandeschi were sidelined by the monarchs, following their role in Berengar II's policies of opposition to Otto I, as can be inferred from their absence at the placita of Rome and Ravenna, as well as those of Tuscia (Collavini 1998, 79).

What, then, might this nucleus have been? Did it have a name?

In the 12th century the only certain toponyms in this area are the castles of Poggio La Canonica where the great church stood (on Poggio Mosconcino), and Montecurliano, coinciding with the hill where the Tino di Moscona stood, referred to at length earlier on.

In one of Paolo Tomei's unpublished studies, conducted as part of the nEU-Med project, in placing this territory in its historical context, the place-name Corduliano is identified as being an important place in the geography of the powers in this zone⁸. Indeed it is there that, in 1038, a very important assembly took place. This was attended by Count Hildebrand IV or V Aldobrandeschi, the abbot of the Sestinga monastery founded at the start of the 11th century on the hills behind Castiglion della Pescaia, and the imperial missus of Conrad II, Altomo. As Tomei emphasizes, given that the Aldobrandeschi family member acted here in his official capacity as Count, the setting where the assembly was held must have been fairly prestigious.

This place-name occurs again in the pseudo-diploma of Louis the Pious from 814 on behalf of the monastery of S. Antimo (as mentioned earlier), setting out the boundaries of the Piscaria court. To the east, the estate boundary began at the lake, passed through campum Sancti Petri (possible papal properties) and thereafter per medium montem super Cordoliano, returning, at the end of the description, to the point where the lake meets the sea, and from there to the terra Sancte Laurentie, ie. belonging to the bishop of Roselle. In the interpretation followed by many scholars, the estate lay mainly on the western shores of the lake, and this notion also derives from the identification of Cordoliano with Cordigliano, the

⁸ I am grateful to Paolo Tomei for discussing and sharing these findings with me, giving me the possibility of publishing them here on a preliminary basis.

right-hand tributary of the river Bruna. By contrast, Tomei wonders whether ‘St. Peter’s field’ and the ‘lands of S. Lorenzo’ may have extended towards Grosseto and Roselle, and, if so, whether the *montem super Cordoliano* may coincide with the *Montecurliano* referred to in late medieval texts, mooted the possibility that the estate place-name may refer to this space⁹.

If these suggestions are correct, namely that *Corduliano* and *Montecurliano* are to be identified with each other, then at least as of the 10th century the site would thus have been a place of great importance (as seems to be shown, for that matter, by the material evidence). Moreover, were it not a significant place, then I believe it would not have been chosen by the *Aldobrandeschi* family to found the new Grosseto in 1179.

This notion is obviously connected with the suggestion already set out earlier, namely that the *Tino di Moscona* and its outer walls are features that were built, or rebuilt, at this very time, ie. between the late 10th and the early decades of the 11th century. In this context, the hilltop site would have stood at the centre of a large area referred to, in the aforementioned 9th-11th century documents, by the name *Corduliano*, a place-name that later indicated the actual hilltop castle.

Furthermore, it is not so hard to visualize some areas that formed part of this hypothetical area of public properties, given that much of it remained a dependency of the castle of *Montecurliano*, and was recorded as such in the 1320 *Tavola delle Possessioni*, once this territory came under *Siene*se dominion. According to the calculations put forward by *Mangiavacchi*, who used these same 1320 documents to reconstruct the landscape around the castle, this area included within it the hill of *Roselle*, the whole low-lying area below it, where the *Salica* flows through, and the area near *Batignano* (*Mangiavacchi* 2015, 146)

In 1320 the outer belt, beyond the *Salica* valley, had already left the orbit of the castle, as had probably never been the case before, ever since its new foundation in 1179, given that, as already stated, *Istia* and *Brancalete* are referred to as episcopal properties in that very year.

The plausibility of this reconstruction, which shifts the focal point of the central locations of power from Grosseto to *Roselle* and the plain below it, coinciding with a major presence, never seen before, on the part of the public powers, and a management strategy that seems to accelerate in the course of the 10th century, could also be seen in what happened after this period of transformations. Indeed, it is precisely in subsequent events that I believe we see a kind of proof of this.

Rather like developments at *Vetricella* and *Valli* (and also at the *Cornino* court), after the death of *Otto III*, and of *Hugh* of *Tuscany* and the civil war between *Arduin* of *Ivrea* and *Henry II*, a new period began which, starting especially in the mid-11th century, led to the gradual break-up of public possessions, which largely ended up in the hands of the political figures linked to these territories (a scenario already discussed by *Collavini*, in *Bianchi*, *Collavini* 2018). Whereas in the case of *Valli* the *Aldobrandeschi* family remained somewhat on the fringes of this process, this was not true of the court of *Cornino*, given that the most important nucleus in the royal estate, *Franciano*, was acquired by the family before being donated to the monastery of *San Quirico di Populonia* (see the relevant section of Chapter II, with bibliography). It is hard to imagine that, in the *Roselle* area, from their important base in Grosseto, the *Aldobrandeschi*s did not also advance claims over those neighbouring lands, which it is suggested here belonged strictly to the public sphere, although they may have been confronted with similar claims by the bishop of *Roselle*.

Perhaps this very climate of rival claims by both contenders provides the justification for the whole series of events, anomalous to say the least in the history of these decades, which thus far have been seen

⁹ For the suggestion that the *Piscaria* court may have extended to the southern shore of the lake, see also the suggestion put forward by *Citter* in *Citter*, *Arnoldus-Huyzenveld* 2014b, 82.

as eccentricities, whereas in actual fact they served as a prelude, in my opinion, for the final outcome of this history. The outcome in question is even more bizarre, namely an immense church on a hill near Roselle, and the idea of relocating the city of Grosseto.

However, to get a better understanding we will have to start from the beginning.

In the second half of the 11th century itself, Ugo Aldobrandeschi was responsible for a very grave action, one so serious that the then Pope, Alexander II, intervened in the question. In 1062 the Count imprisoned the bishop of Roselle, Dodone, for three months. The tensions continued even after Dodone's release, and were such that they went on to involve both the new Pope, Gregory VII, and Matilda of Canossa and her mother, Beatrice (Ronzani 1996, 14). It was, thus, a rather complex matter, in view of the political standing of the external figures involved in the dispute, who took turns in their efforts to maintain a balance toward one or the other side. However, no document mentions the reason for this dispute, and I think that Ronzani was right to suggest that these tensions were mainly connected to the move of the seat of the bishopric from Roselle to Poggio di Mosconcino, with the consequent construction of the new, large church. Indeed, Ronzani also states that during the second half of the 11th century Roselle was the property of the Aldobrandeschi family, and perhaps this event led the bishop to make this decision, also acquiring rights over the castle connected to the new cathedral, which had a canonica (clergy house) (Ronzani 1996, 17). If we interpret this series of episodes in the awareness that we are witnessing a dramatic and even violent phase involving the division of the remnants of public lands, we can understand better both the involvement of the Margravine of Tuscia and of the Pope (ie. all the powers formerly associated with this territory, with important properties), and also the fact that the mooted relocation of the cathedral was probably only one aspect of this dispute, which actually affected a larger territory.

Viewed in this light, everything falls into place as regards subsequent events. In response to the all-pervading control by the bishop of Roselle over the hills close to Roselle, and consequently over possible territories below, the first action taken was an attempt by the Aldobrandeschi family, with the support of the Pope (who stayed in Grosseto in 1132, and again in 1137), to shift the focal centre of the powers from Roselle to Grosseto, thanks to the decision, in 1138, to make it the new seat of the diocese. The beneficiary of this measure was not the college of canon priests of Roselle (which remained located on Mosconcino hill), but the priestly college linked to the church of S. Maria in Grosseto, consecrated in 1101, which the Aldobrandeschi family regarded themselves as having founded (Ronzani 1996, 27-29).

Clearly, this important relocation was not enough for the Aldobrandeschi family who, it may be imagined, in order to assert their complete dominion also over the former complex of royal lands around Roselle, took the unusual decision, in 1179, to build the new Grosseto in the place which, more than any other, represented those lands, namely Moscona hill with its circular fortification, and the possible fortified settlement. This, of course, if the suggestion I have drawn up holds, namely that the Tino and its outer defensive wall existed since at least the late 10th century, and that they were built on fiscal lands.

Indeed, up until today, the idea that this place was deserted and uninhabited has always been supported by the description of it in the property transfer deed drawn up, in 1179, between Martino, bishop of Roselle, and Hildebrandino VII Aldobrandeschi, who on that occasion acquired a large tract of land between Istia and Roselle, including the *montem magnum Cornelianus (aridum et infertilem)* (Mangiavacchi 2015, 144). In exchange, the bishop himself apparently received lands, and acquired the right to build the cathedral in the new city on the hill. In view of the previous conflicts between the two figures, it is no surprise that the bishop described in these terms one of his properties which he found himself ceding to the Aldobrandeschi family perhaps reluctantly, and as a result of force majeure.

However, it may also be the case that this place was indeed partially abandoned at the time. Indeed, this is the other point I am keen to underline, because it would have parallels with what we have seen both at Cornino and at Valli, namely a general process of abandonment of the presumed public lands, which

may also have been a feature of the Grosseto area, or at least of this structure (Tino di Moscona), which, perhaps having been abandoned in the course of the 11th century (as at Valli/Vetricella), obviously appeared in the condition described by the document in the second half of the 12th century.

In the Roselle area the material evidence does not show signs of continuous occupation beyond the 9th century at the site (with defensive ditch) at Vigna Nuova/Salica, at the Aiali Roman villa, and at the site of Brancalete, referred to as a *castellare* owned by the bishop. The most significant case is Poggio Cavolo, where, during the 12th century, the Ottonian church was completely dismantled, and on its ruins a layer was deposited that may have been a vegetable garden, with occasional heaps of cereals (Farinelli *et al.* 2008). The same end was met by Vetricella in the 12th and 13th centuries, which has similar stratigraphy rich in cereals (most recently Bianchi, Collavini 2022).

Little seems to survive of these key royal-owned sites in this geographical area, and the site of Poggio Moscona may also have met the same fate, had the Aldobrandeschi not resolved to create the new Grosseto there.

These plans, as outlined earlier, failed to achieve their main objective, but they did allow the Aldobrandeschi to gain control of the whole area, as well as a possible resource that up until now has been somewhat overlooked in the historical narration of these places: the mines in the district of the castle of Batignano, mentioned as of 1178 (Farinelli, Francovich 1999, p. 478)¹⁰.

3. 4 To sum up

To sum up the hypotheses formulated thus far: following an initial reorganization as of the Carolingian period (9th century), in the Ottonian period (second half of the 10th century) the area around Lake Prile was apparently distinguished by a nucleus of Aldobrandeschi-owned properties including Grosseto and Caliano, situated along the final part of the Ombrone river, near the route of the Roman Via Aurelia (as reconstructed by Celuzza *et al.* 2007). Geomorphological analyses have confirmed that the Ombrone was navigable in this very section, namely between its mouth and in the vicinity of Grosseto. Thus the properties owned by the Aldobrandeschi family may have proved crucial to ensure control of this riverine transportation route, and for the traffic connected with it, for example the arrival of hematite from Elba that was found in the archaeological sequences in and around Grosseto (Arnoldus-Huyzendveld, 2007, 55-56).

Alongside this nucleus it seems there lay the larger nucleus composed of royal lands that, in my reconstruction, would have included Roselle, the valley which the river Salica flows through, and the plain lying outside this wide valley, with some of the sites standing along the Roman Via Aemilia Scauri: Aiali, Brancalete, and also Poggio Cavolo which, given its unusual material evidence, could be interpreted as the southern entry point to this public district, to which Istia, with its early 11th century market, must also have belonged.

Another public hub was the Piscaria court, owned by the royal monastery of S. Antimo certainly as of the 10th century (Tomei 2020).

All three nuclei could have had access to this territory's main resource: the salt-works, whose location on the north-east boundary has been suggested by paleo-environmental considerations, while it is

¹⁰ Very little indeed is known about these mines, and a study of surviving evidence of them has never formed part of the mining archaeology projects which have been such a distinctive feature of the Colline Metallifere area. From a preliminary analysis of the ore-bearing seams, it does not appear that they were particularly rich in silver. If anything, they were rich in lead. What is clear is that they are mentioned both in 12th century documents relating to Aldobrandeschi-owned properties, and in 14th century documents. This may be a possible line of research to identify at least one of the possible explanations as to why there was such a strong interest in this valley system, from the 10th to the 14th centuries.

documented at least as of the 9th-10th centuries in the case of Piscaria, and as of the 12th century for the area near the mouth of the Ombrone, where the main late medieval salt-works at Squarciapaglia would later be located.

If this reconstruction is valid, then this section of coast, rather than the Cornino and *Valli* courts, would represent the largest complex district, the real pulsating heart of royal property, also because it is clearly connected to its two most important inland monasteries, for which it acted as the outlet to the coast, namely S. Antimo and San Salvatore al Monte Amiata which, in turn, constituted the gateway to the hinterland from this coastal, public macro-district.

However, what happened at these two monasteries, especially between the 10th and the first half of the 11th centuries, and whether their history can be linked to that of this coastal area, will be addressed in the next chapter.

Chapter IV

The religious centres in the hinterland

In the previous chapter, I stressed the presence of the monasteries of San Salvatore al Monte Amiata and S. Antimo, in the Starcia valley, in administering a number of areas around Lake Prile, where the two monastic institutions owned lands and salt-works, to the south and north of the lagoon, respectively. The importance of this monastic presence on the coast in the Early Middle Ages has already been highlighted in the past by several authors, although they explored this aspect as part of a narrative that was often separate from the overall history of these monasteries.

At the site of Montieri, too, the unexpected discovery of a church with six apses, endowed during the foundation ceremony with a remarkable and stunning piece of jewellery, has always been seen, by this author, as an exceptional and rather unique episode, divorced from any wider context.

In this chapter I will attempt, therefore, to place these three religious centres within a single narrative, and within a single political, economic and cultural context. However, in order to do so it will be necessary to briefly go back over their complex history.

4.1 The royal court and the monastery of San Salvatore al Monte Amiata

The massive outline of Monte Amiata is clearly visible from whatever angle one approaches it. On a clear day its unmistakable profile, of volcanic origin (1,738m a.s.l.), can even be seen from Siena, if you know where to look for it between the rooftops of the city centre (Figure 4.1).

As one approaches its lower slopes, one may see its majestic peak wreathed in a thick blanket of cloud, within a landscape dominated by woodlands, springs, and thermal phenomena linked to the volcanic nature of this context. Thus, it is not so hard to understand why, ever since antiquity, a sacred status was ascribed to these places, a status which, ever since the archaic era, led to the mountaintop being frequented for ritual purposes. This is attested to by the fact that, during excavations at the abbey of S. Salvatore, remains of a sacrifice were found datable to the second half of the 6th century BC. Similarly, a sanctuary was present at Seggiano (late 6th to early 5th century BC) (Cambi, Dallai 2000, 201-203). Indeed, there is a continuity in the deeply significant meanings attributed to Monte Amiata. These can be seen in the worship of pre-Roman chthonic deities, and later in Jupiter-worship (Cambi, Dallai 2000, 203), prior to the monastic centre, the final important chapter in the religious geography of these places¹. The long continuity of frequentation, and the complex medieval history, featuring important architectural remains as well as rich documentary sources, has given the Monte Amiata district, or parts of it at least, a central place in research by many scholars. This is despite the fact that still today there is no overall work that systematically brings together all the information now available from all the various kinds of sources. Among the many research works relating to the exceptional archive sources, worthy of note are those by Kurze (Kurze 1982), and papers forming part of the proceedings of two important conferences held between 1988 and 1989 (Kurze, Prezzolini 1988; Ascheri, Kurze 1989b), in addition

¹ Excluding the most recent case, dating to the late 19th century, of the foundation of the church of the religious movement known as Giurisdavidismo, with its centre on the slopes of Monte Labbro near Arcidosso, founded by Davide Lazzaretti, the so-called Cristo dell'Amiata ('Christ of Mt. Amiata').

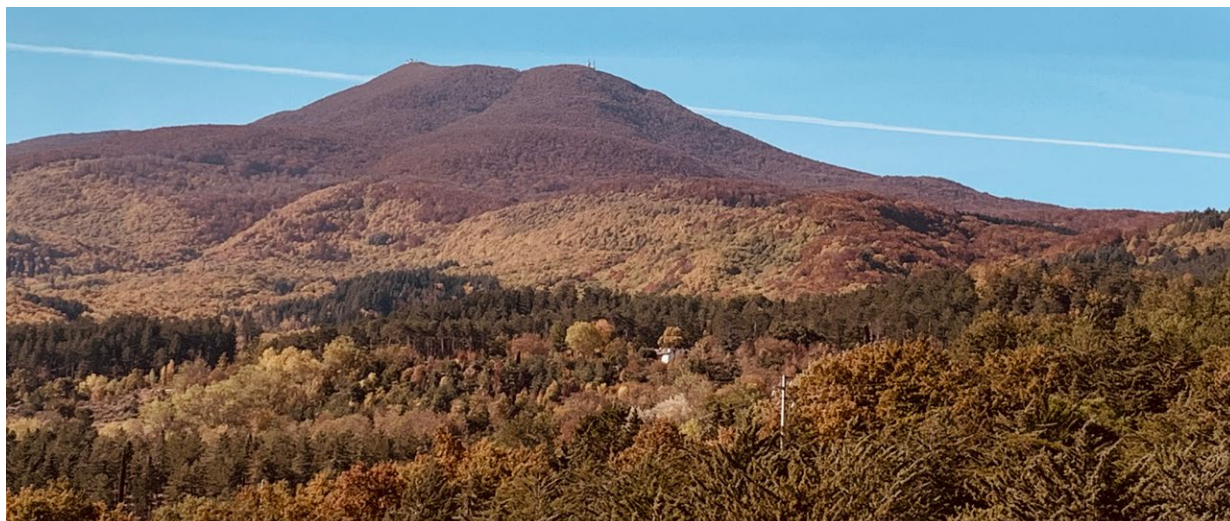


Figure 4.1 - Panoramic view of north-west side of Monte Amiata.

to the recently published monographic work by Mario Marrocchi (Marrocchi 2014). As for material evidence, the *Carta Archeologica* of the Abbadia San Salvatore territory, edited by Franco Cambi, which came out in 1996 (Cambi 1996), was followed by the publication, in 2000, of the investigations at the monastery carried out between 1991 and 1997 (Cambi, Dallai 2000).

Also dating to the late 1990s are the excavation campaigns at Rocca di Selvena, linked to the University of Siena's department of Medieval Archaeology, along with the results of archaeological surveys (Citter 2001), as well as a series of unpublished degree theses produced in the first few years of the new millennium². On the other hand, Florence University's department of Medieval Archaeology is responsible for the recent archaeology of architecture research studies aimed at exploring construction methods and forms of habitation in the Amiata territory, with deeper analysis of specific cases, such as Arcidosso (Figure 4.2) (among the various contributions, see Nucciotti 2008; Nucciotti 2010; Nucciotti, Pruno 2011). In addition, the archaeological excavations at the Castel Vaiolo site have unearthed important evidence from the 10th-11th centuries (Nucciotti 2007), and there is also more evidence from the investigations at Podere La Pieve, near Stribugliano (Nucciotti *et al.* 2015). Furthermore, events involving the monastery and other places in and around Monte Amiata have been included in larger studies regarding the monastery's history, and the history of aristocratic families. This is due both to the monastery's importance, and also to the fact that this area was one of the most important settings for the consolidation of the seigneurial powers of the Aldobrandeschi family. To try to find a common thread able to link the coastal area and the territory that revolved around this royal monastery, in a possible homogeneous historical and economic context, it is thus necessary to set out from a critical interpretation of the findings made during previous research studies.

Accordingly, I would like to go back over this complex history not so much by outlining a narrative in which the events are placed in order, in terms of themes and chronologies, but trying to bring out discontinuities, anomalies, similarities or parallels. As we shall see below, the traces and remains will not be sufficient to prove specific hypotheses with any certainty, but they will be enough to formulate a paradigm based on circumstantial evidence.

Thus, we shall set out from the chief and best-known event that altered the history of this territory, namely the foundation of the monastery.

² It is worth noting that the History of Medieval Architecture department at Siena University has gone on to produce further articles on buildings in this district (Moretti 1990).

4.1.1 The monastery: from its foundation to the Ottonian era

The monastery (Figure 4.3) was erected on one of the flat areas at the top of the mountain around which Castel di Badia formed and expanded. It is now the fine borgo of Abbadia San Salvatore, through which one passes to get to the peak.

The monastery is thought to have been built between 762 and 770, at the initiative of Erfo, a member of the Friulian aristocracy, with possible support from King Adelchis (for this interpretation, see Marrocchi 2022, 151; by contrast, for a link between the monastery and King Astolf, and an earlier date for its foundation, see Kurze 1989b, 357-360). From documentary sources, we can infer that a large bloc of public lands was donated to the monastery. These consisted in the woodlands on the eastern slopes as far as the hill of Radicofani, including the fertile Paglia valley (Figure 4.2). A very extensive territory, that in turn formed part of large public properties, some of which were later donated to the monastery (Wickham 1989, 113).

In the Carolingian era, when it is believed, with greater certainty, that the monastery had been added to the list of royal monasteries (Marrocchi 2022, 151), there was a further phase of growth to the south, and towards the Chiana valley. In the mid-9th century (853), thanks to a presumed donation by Louis II, the monastery began to gradually expand its sphere to the west, too, with control of the courts of Mustia,

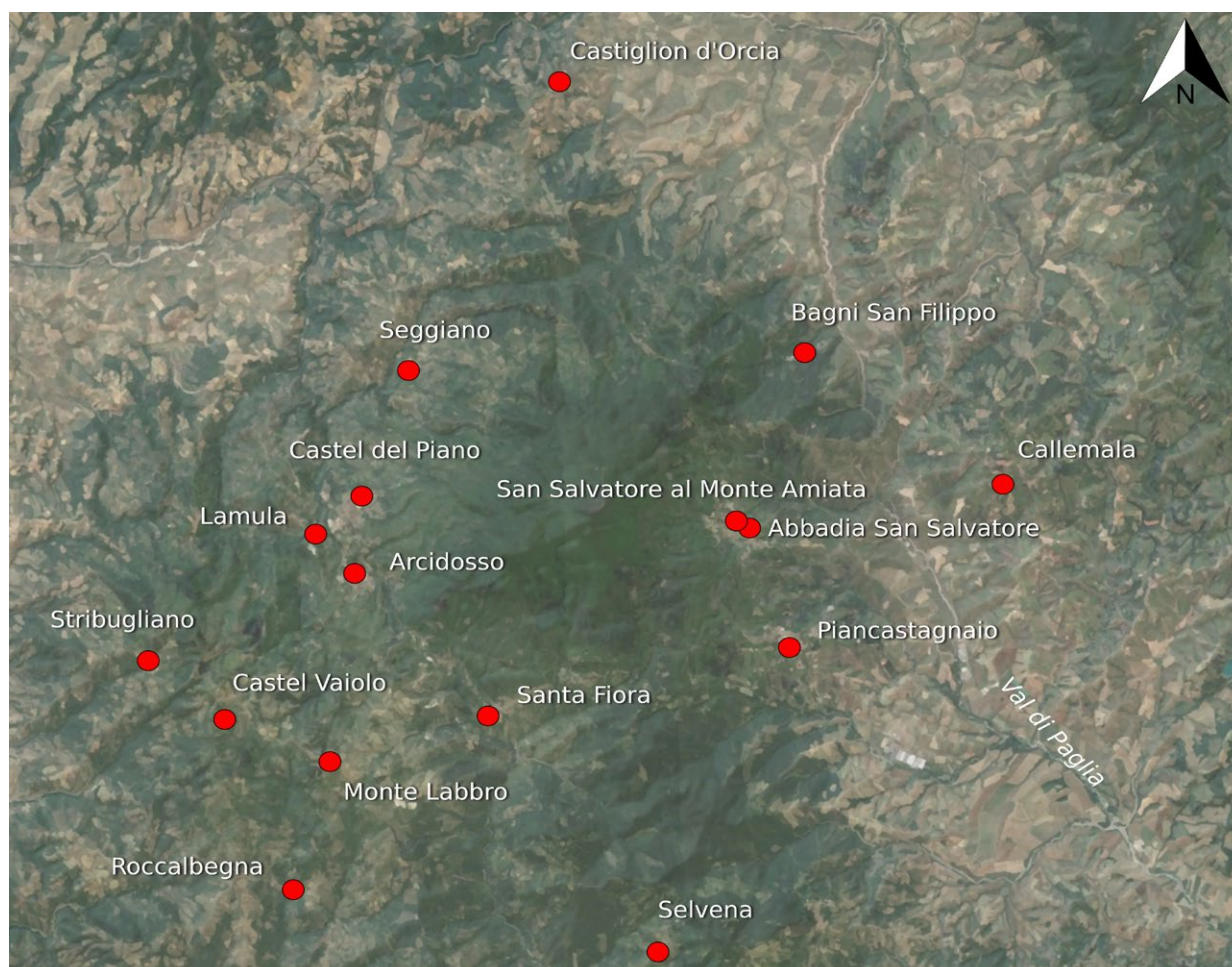


Figure 4.2 - The Monte Amiata area. Locations referred to in the text.



Figure 4.3 - The monastery of San Salvatore (Abbadia San Salvatore).

Lamula and Montecchio (the last of these may already have belonged to the monastery since the start of the 9th century) (Wickham 1989, 106 and n. 10).

The possible grant of the court by the Emperor was only a very small part of a larger scheme that led to the definition of the political frameworks of this territory in our case study thanks to two important decisions: the granting, in 857, of the title of Count to Hildebrand II Aldobrandeschi for the territories of Roselle, Sovana and Populonia, which marked the beginning of the rise of the family in this geographical area, especially on the coast (discussed at length in chapter III); and the granting ad regendum of the

monastery to the Margrave of Tuscia, Adalbert I (Collavini 1998) although the phases when it was entrusted to the Margrave remained limited to episodes concentrated in the first half of the 9th century, and in the early years of the following century (Marrocchi 2020, 64).

As illustrated in the previous chapters, these decisions were part and parcel of a general context of thorough transformation of the whole coastal area in our case study, as is clear from the history of the courts of *Valli* and *Cornino*, and of the *Grosseto* area. However, it is clear that in the *Monte Amiata* area Louis II wanted to keep the monastery outside the direct range of action of the *Aldobrandeschi* themselves, albeit within a single framework of public possessions.

With King Hugh of Arles, the monastery came under direct royal control again, in view of the fact that, in the now well-known dower of 937, its court was made over to the future Queen Adelaide, in whose possession it remained until she retired from the political scene, at the end of the 10th century. We know from the dower that 500 mansi (farms) belonged to the monastery, a considerably higher number than the 50 mansi in the court of *Valli*, and the 30 at the *Cornino* court. This figure conveys an idea of the size of the patrimony, and its importance (Vignodelli 2012). However, Collavini writes that it was only under Otto I that the support of the central power was such as to give an incentive for more exclusive domination by the monastery of the territory. Nevertheless, under Otto II the surrounding political forces regained a certain vigour, as is shown by the long-drawn-out dispute between the monastery and the bishop of *Chiusi*, in connection with the prerogative of tithes in areas under monastic influence (Collavini 1998, 86).

Unfortunately there are not many documents which, after 950 and up until the early 11th century, shed clear light on the history of the monastery. Here, too, this absence creates one of those documentary 'black holes' that are such a feature of the history of the coast. However, this very absence would suggest a period of intense activity on the part of this royal court, within a larger programme that did not leave a trace in the documents, as found in other cases, too (Collavini 2019, for an overview of the problem)³.

For that matter, the correct historical perception of the Ottonian phase is the most ambiguous one, depending on how the same, few archive sources are interpreted. We have already seen the view taken by Collavini. However, in most published research studies reference is made to a supposed phase of decline, suggested by Kurze, which the monastery allegedly underwent under the first two Ottos (father and son). This interpretation has its origin in the Imperial diploma of 964 issued by none other than Otto I. This stripped the abbey of its possessions especially to the west of the peak, granting it instead property much further away, in *Siena* and *Acquapendente* (along the *Via Cassia*), and leaving it with its property along the route to *Tuscania*, and on the *Tyrrhenian* seaboard (Kurze 1989a, 43; 1989b, 362).

After approximately 30 years of near-total silence on the part of archive sources, it is claimed that this phase of decline came to an end thanks to the support of Margrave Hugh of Tuscany, when, with Abbot *Winizo*, the monastery saw a renewed period of splendour which resulted in the reconstruction of the monastery's church, consecrated in 1039.

However, in this hypothetical series of ups and downs in political and economic fortunes, there are a number of aspects to be borne in mind, which make the interpretation of the 964 document less simple and straightforward.

One of these aspects is that, as already stated, as of 937 (and probably even earlier), the monastery was definitely part of one of those economically and politically strategic royal courts of the fiscal patrimony, made over in 937 by Hugh of Arles to Adelaide. Moreover, in 964 Adelaide herself had already been married for around ten years to her second husband, Otto the Great. It is thus more than a little tricky to

³ Regarding the possibility of a form of administration of public properties, mostly consisting in the foundation endowment, rather than wealth accumulated by virtue of private sector transactions, Marrocchi 2020, 62-63.

understand why Otto the Great should have created difficulties for a monastery that was so strategic to the Crown, and which, moreover, long remained connected to his wife, and was probably administered by her, albeit indirectly, a wife who, in turn, was mother and grandmother to the future Emperors Otto II and III.

Despite the strong support of Margrave Hugh of Tuscia, in such a supposed decline of the monastic institute one struggles to locate the foundations for the major financial investment which, a handful of decades after this negative phase, led to the construction of the large monastic church, and the monastery's general overhaul.

Instead, albeit in the general policy of equilibrium sponsored by the Ottos, it seems more likely that the 964 document marks the start of a very precise political programme which envisaged direct royal administration of some of the monastic properties, as part of a general reorganization that saw the monastery more projected towards controlling the main road routes along the valley floor, where the Via Francigena wound its way down to northern Lazio. For that matter, this was the area where, ever since its foundation, the monastery's largest properties were concentrated, and where, from the 9th century onwards, along the Via Francigena itself, those borghi and open villages formed, including large ones, traces of which, in the case of Callemala, have even been found archaeologically. Thus, the 964 document might represent neither a fall-back device, nor a punitive step, but rather a decision, perhaps even a joint or consensual decision, resulting from an overall reorganization plan of a public nature.

But what was it that was to be reorganized?

4.1.2 Mining resources

The answer as to what made the western heights more attractive and interesting to royal power, compared to the fertile Paglia valley, traversed as it was by a vitally important road network, could be sought in the existence of mineral deposits. Although this resource has been clearly borne in mind in articles published by archaeologists ever since the 1990s, the absence of a wider investigation strategy connected to mining and metallurgical archaeology, as well as the lack of clear evidence in the few excavations conducted in this geographical area, has unfortunately always left the subject of mines slightly neglected in the framework of the general economic dynamics in the area.

Added to this is the fact that only as of the early modern era do we have explicit documentary reports of mining for minerals in the Amiata area. Indeed, from 16th century texts we learn of mines present on the southern slopes of Monte Labbro, and in the territory of Roccalbegna (Figure 4.2), where manganese and copper oxides are reported (Farinelli 1996, 39). Near Stribugliano there were the copper mines of Monte Buceto and Terrarossa. Mineral seams were also present at Arcidosso, while in the area surrounding the monastery, and to the south of this side of the mountain, lie the important deposits of cinnabar that was mined extensively in the industrial era, also associated with veins of copper, antimony and iron. Iron is found to be very present in the upper Lente valley, between Castel del Piano and Arcidosso, where there are outcrops of siderite and iron hydroxides, and where, according to Farinelli, the continuity of the iron-working tradition, down to modern times, has now exhausted the deposits to the extent that it is hard to assess how rich they were, and to evaluate the volume of mining (Farinelli 1996, 41).

In the eastern part (Figure 4.2) we know of the presence, around Bagni San Filippo, of cinnabar, sulphur and antimony workings, and also of copper and silver mines towards Castiglion d'Orcia. However, the real heart of the mining district undoubtedly coincided with the area around Abbadia, with the western slopes in the area between Arcidosso and Castel del Piano, and with the south-eastern slopes, where the cinnabar deposits were located.

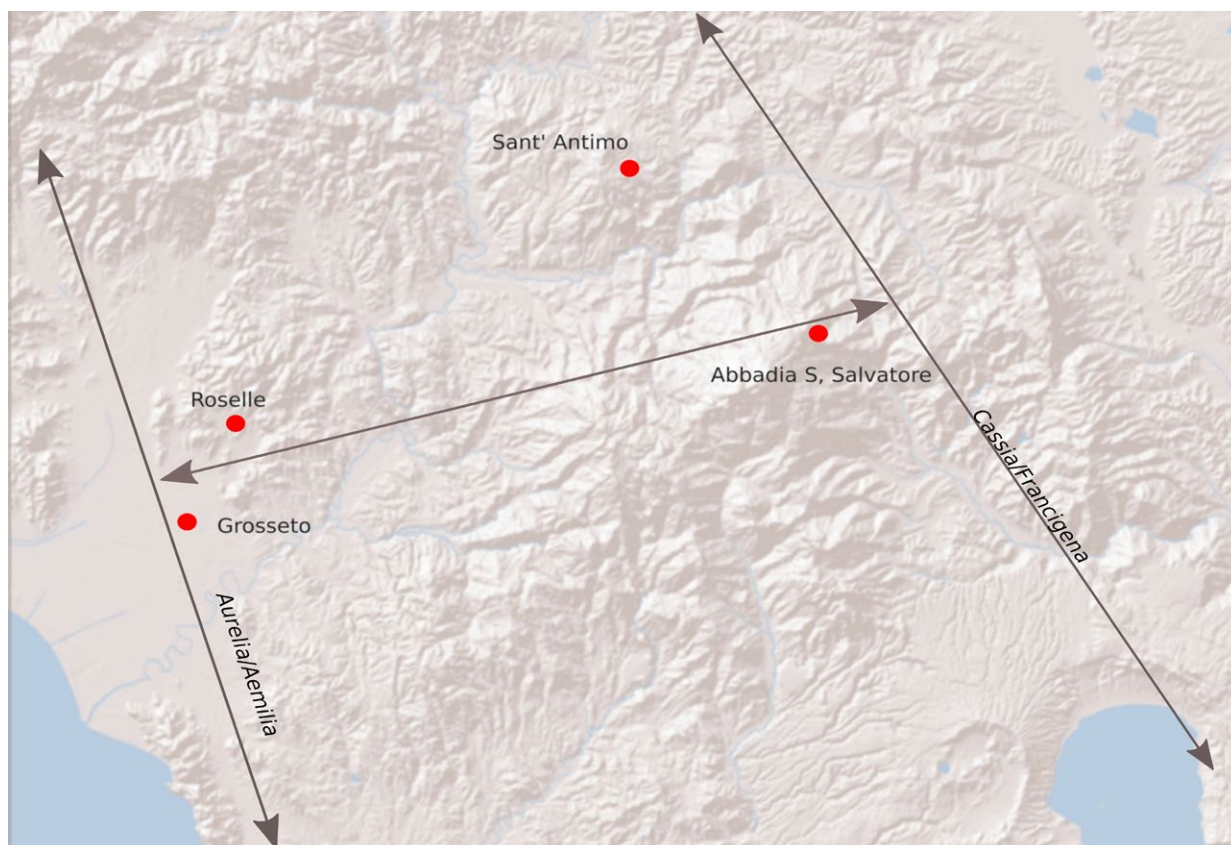


Figure 4.4 - Diagram of main roads to which Monte Amiata was connected, by means of back roads.

The Amiata context was definitely an ideal environment for such mining activity: large amounts of fuel thanks to abundant woodlands; several springs located in a band all around the area near the mountaintop where the monastery stood, with a series of water-courses that could provide the support needed for metallurgical operations, powering the hydraulic works, referred to as being fairly numerous ever since the Early Middle Ages, as we shall see; and centrality within an important road system (Figure 4.4), connecting the eastern side with the Via Cassia and the Via Francigena (first mentioned in the 9th century) and the western side, with the road along the valley floor, going all the way to Cinigiano and continuing on to Sasso d'Ombrone or towards Campagnatico⁴, connecting it directly to the Grosseto plain and to the Via Aurelia and Via Emilia (a route that was already important in ancient times, as shown by the considerable evidence of the villa/mansio of S. Marta (Campana *et al.* 2019; for roads, see Campana, Felici 2020).

A little earlier we wrote that there were many minerals present on the slopes of Mt. Amiata, but cinnabar is the mineral one immediately thinks of as the main resource also for the Middle Ages, precisely because it was worked heavily in the industrial era. However, there are no definite references for the medieval period in this connection (Farinelli 1996, 40), despite the fact that, ever since the 9th century, the abbey undertook to create a nucleus of properties for itself in the Selvena area, in other words within one of the districts that was richest in this resource. This monastic patrimony is documented down to the final decades of the 11th century, when Selvena was on its way to becoming one of the main castles in the hands of the Aldobrandeschis (Bianchi *et al.* 1999, 147).

⁴ At Sasso d'Ombrone a bridge is documented known as 'Ponte del Sasso'. It is mentioned in a 1220 text, and may be identified with those physical remains that are still to be seen further downstream from the modern-day bridge, proof of the existence here of a crossing-point over the Ombrone that presumably dated from a much earlier time (Farinelli 2009, 53-53).

Cinnabar is a mercury sulphide, and so it is generally mined in order to extract its mercury, and it ranges from cochineal to brownish-red in colour. It is a fairly common mineral, but it is rare to come across deposits that are large enough to extract mercury from it. The most significant deposits, in the historical era, were located in Spain, at Almadén in New Castile, and here, at Monte Amiata. It is thus the only place in the Italian peninsula that has the most important deposits of this mineral. As well as for mercury extraction, cinnabar had various other uses: in the production cycle of precious metals, such as gold, to purify it by removing impurities; and as a primary dye with its fine, distinctive red colour, used in its natural state, or else by making the mercury react with sulphur, in line with a practice already known in the Early Middle Ages (Tolaini 2003).

On the other hand, as regards iron, general discussions of this resource usually claim that, for the Early Middle Ages in Tuscany, there was a general fragmentation in its processing. This was allegedly mostly geared towards self-sufficient consumption, without the possibility of looking to organized and complex iron-making businesses such as those that employed Pisan smiths in the Late Middle Ages on Elba, and on the coast on the nearby mainland (most recently Cortese 2014). This seems to apply even more so to Mt. Amiata, where there are no clear documentary mentions of major mining and ore-processing activity in the Early Middle Ages, apart from an occasional reference to a metalworker at the start of the 9th century, but active between Montepulciano and Pienza, and thus far from Monte Amiata, or reports in 890 and in 920 of payment of annual rents to the monastery in the form of iron ploughshares, or other kinds of metal hardware (Farinelli 1996, 41-42). We also know that the monastery itself made purchases giving metal articles in exchange, or precious metals, as happened in 873 when buying properties in Selvena (Francovich, Farinelli 1994, 452).

However, despite this, it is undeniable that iron-working has, up to the present day, been one of the manufacturing activities that best define Monte Amiata, and that traces of these activities are very clear, and numerous, as of the 12th century, when administration of the western side was in the hands of the Aldobrandeschi family. The area in the upper Lente valley, between Arcidosso and Castel del Piano (Figure 4.2) where, as we have already stated, mining lasted until the modern day, was called *Plana Ferrara*, as can be seen from documents dating to 1188 and 1198 in which Pope Clement III and Pope Innocent III, respectively, underscored the monastery's rights over this sector of territory (Farinelli 1996, 41). It can also be seen from a mandate of Frederick I to Count Ildebrandino Aldobrandeschi in 1163, in which the monastery's properties are protected, and where this place-name is mentioned for the first time (Marrocchi 1997-98, 119-120).

Also, prior to 1078, the Aldobrandeschi founded the abbey of Montecalvo near their castle at Santa Fiora, which we know had a smithy in the 12th century that was able to make cutting utensils, specifically knives (Farinelli 1996, 43).

In the early 14th century, in the granting by the Aldobrandeschi family to the Commune of Siena of a number of workshops located in this same area, specifically at the castles of Arcidosso and Castel del Piano, one deduces that the entire production process took place in these workshops. This ranged from ore-reduction to semi-finished pieces (perhaps iron bars for subsequent distribution to the various smiths), or finished products. Furthermore, we know from documents that there was a distinction between sites set aside for reduction, and those intended for processing. Accordingly, they were all part of a full-scale production system that was well organized (Farinelli 1996, 46).

The 1434 Statute of the Commune di Abbadia San Salvatore refers to special protection for blacksmiths, and the development of iron production and iron-working is borne witness to both by anvils and horseshoes carved on the lintels of medieval and modern homes (Nucciotti 2006, 188-189), and by the present-day tradition of making blades (Farinelli 1996, 45).

But was this iron from Amiata of high quality? Well, from writings on geology we find that the iron must have been quite full of impurities.

In this connection, as far back as 1996, in citing the De la Pirotechnia treatise by Vannoccio Biringucci (1540), Farinelli stressed that, in order to give strength to blades and sharp tips, it was important to ‘mix the steel’ (namely the coarsest iron-bearing vein that also contained the most impurities, as the Amiata iron-bearing minerals were likely to be) with the ‘sweet’ iron of Elba. Indeed, thanks to the ease with which it could be smelted, this hematite lent itself more to soldering and, in the case of objects that had blades, it had to be combined with harder iron. We have already mentioned this process of ‘mixing’ in iron metallurgy for production on the plain at Vetricella. This is also supported by archaeometric analyses of iron slag, which proved the existence of these two systems of provision as far back as the 9th century onwards (in the case of Vetricella, using iron from the Colline Metallifere). For that matter, this was what the ‘Pisan smiths’ did in the Late Middle Ages, who were under an obligation to combine these minerals (Farinelli 1996, 47).

Just as Farinelli suggests, it is possible that this also happened at the iron-making facilities on Monte Amiata. We are certain of this at least in the 13th century, during the time when the Cistercians were running the monastery, when iron from Elba was brought to land at the port of Talamone, where the monastery had property (also Farinelli 1996, 48). We do not have documentary, archaeological and archaeometric certainties for previous centuries. Viewed from this perspective, however, a certain significance could attach to the fact that a considerable amount of hematite from Elba was found in 10th century stratigraphies excavated in Grosseto’s city centre, referred to in chapter III. Indeed, Grosseto may have been the point of arrival of cargos of this material, and the purpose may have been to process it on a preliminary basis, before then redistributing it, perhaps sending it to Monte Amiata along the road which, ascending from Salica-Roselle to Paganico, or from Istia and Campagnatico, led to the western slopes of Monte Amiata. On the other hand, following the example of Vetricella, iron from Monte Amiata may have been sent to the coast, travelling along the same road, to be used in the various production cycles along with hematite. Could iron, therefore, be the resource that was to be exploited more systematically on the western slopes of Monte Amiata in the Ottonian period (and perhaps also earlier)?

The answer to this question would be no, if we were to go looking for that answer in previous studies, given the near-total invisibility of this production in the Early Middle Ages. But, then again, this was what was also thought for the Colline Metallifere area and for the coast, until the new evidence from the royal court of Valli. Thus we need to dig a little deeper, since there are inconsistencies in this narrative that are hard to explain.

4.1.3 Old and new protagonists in a renewed economic system

As already mentioned, the first and most glaring inconsistency is how it was possible, after the period of major decline identified by Kurze during the reigns of Otto I and II, for the monastery to regain economic vigour under Otto III, to the extent that it could embark on such a large investment that led to the construction of the monastery church.

For those unfamiliar with the building in question, it should be emphasized that it was a disproportionately large project that was unique not just for this particular territory. Also thanks to the excavations in the 1990s (Figure 4.5) it has been possible to assert that the facade we see today, and much of the church itself, along with the crypt, belong to the reconstruction dating to the first few decades of the 11th century (Dallai, Cambi 2000; Tigler 2016, 331-333; for an analysis of masonry techniques, see Chiovelli 2020). Remains of the three original apses that encircled the perimeter of the church, with its single nave, were found during the recent excavations themselves, along with clear traces of features relating to the construction site, including a furnace for making bells and a mixer for making mortar (Figure 4.6) (Dallai 2003), with characteristics and sizes similar to those at Vetricella, dating to the same period

THE RELIGIOUS CENTRES IN THE HINTERLAND

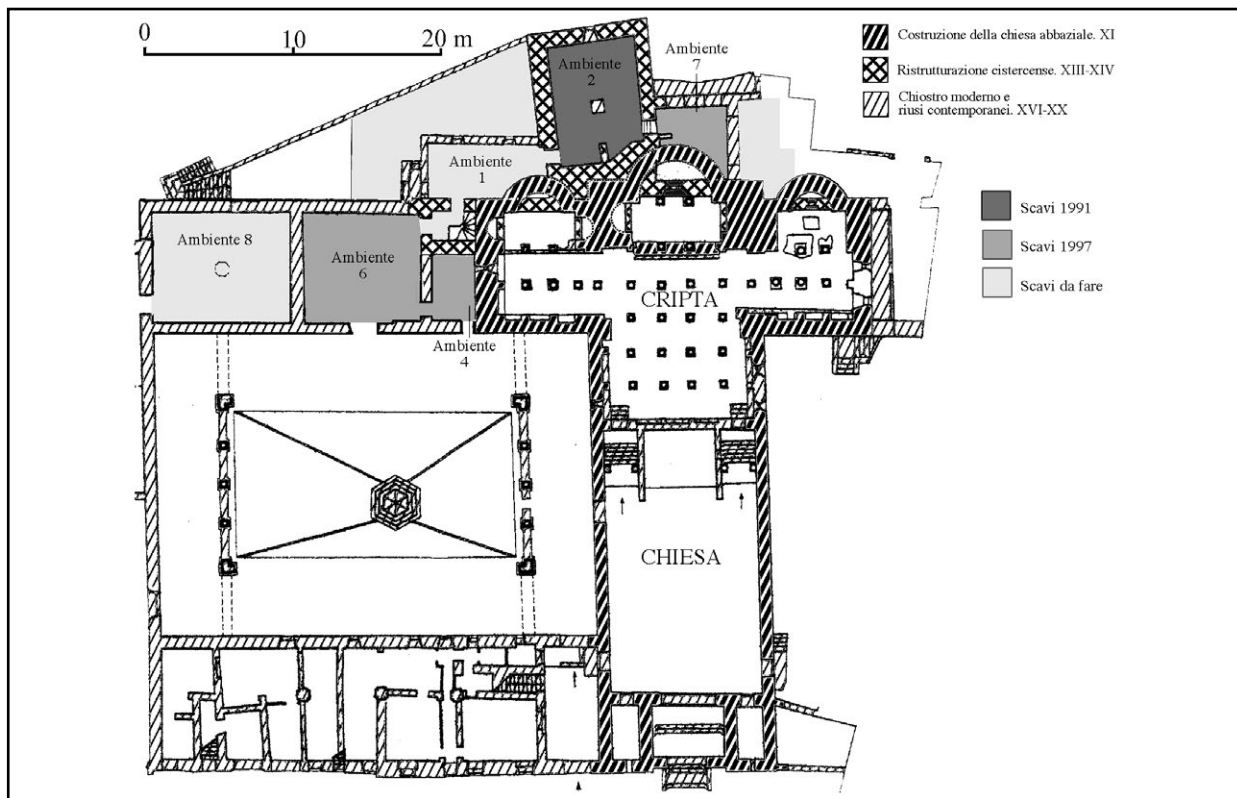


Figure 4.5 - Monastery of San Salvatore: plan of church showing the various building phases (from Cambi, Dallai 2000, 195).

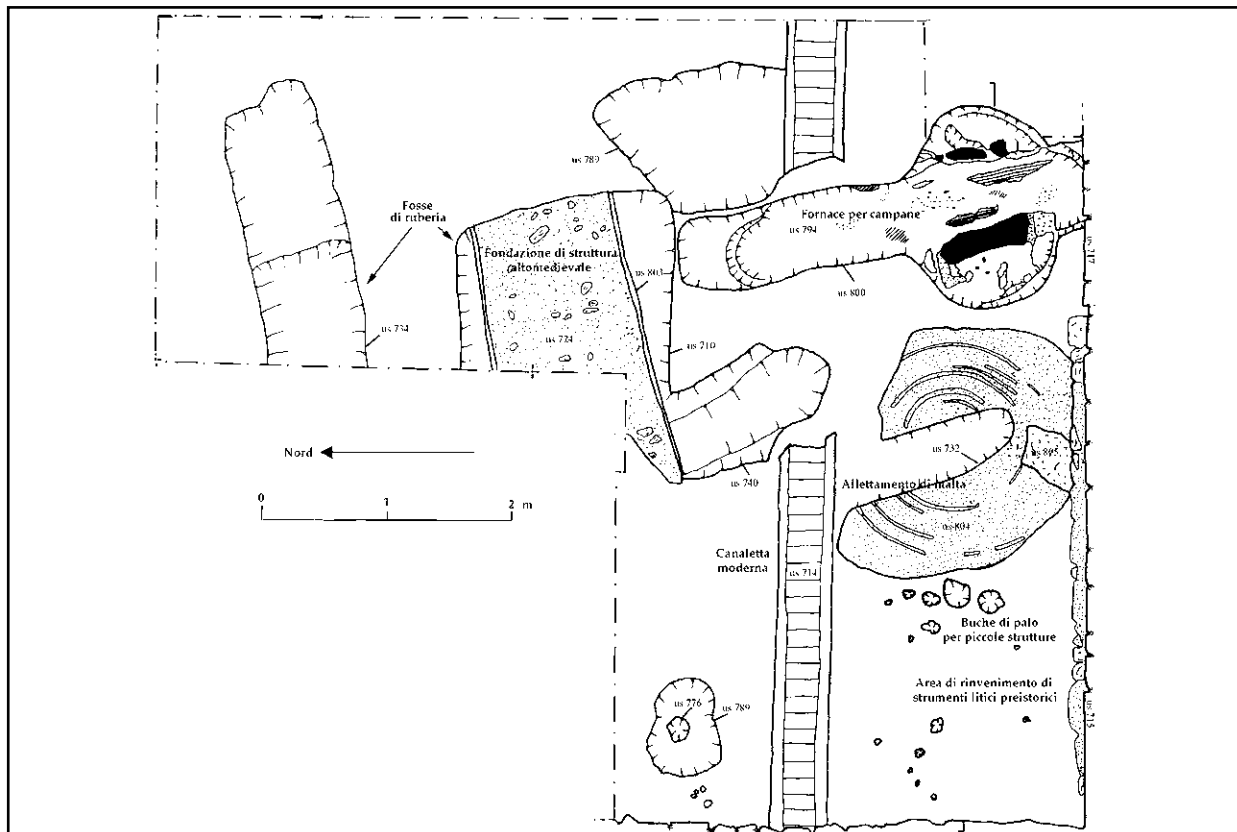


Figure 4.6 - Monastery of San Salvatore, features that emerged in the excavation of the chapter house (from Cambi, Dallai 2000, 203).



Figure 4.7 - Monastery of San Salvatore. The facade of the church of San Salvatore.

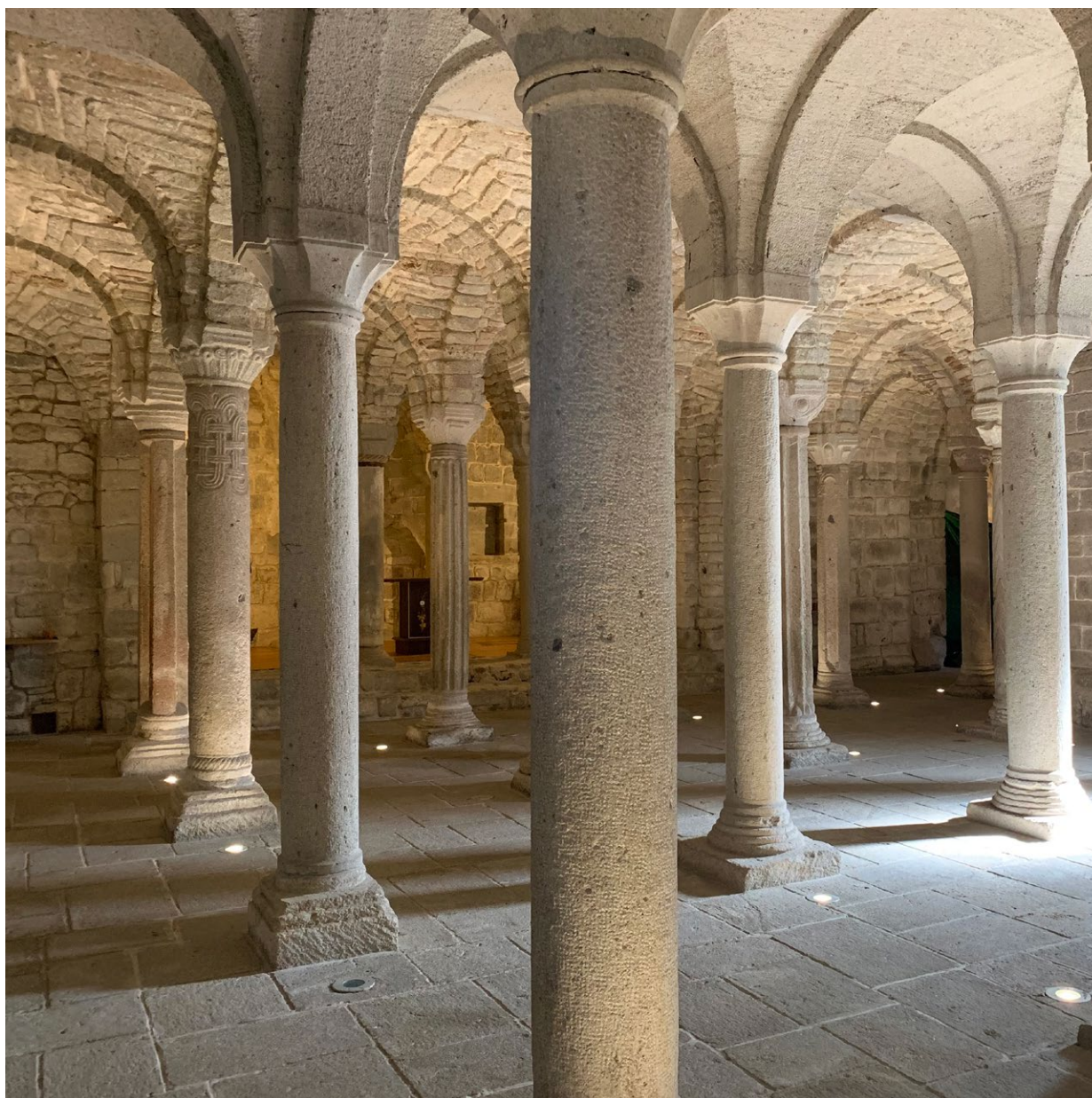


Figure 4.8 - Monastery of San Salvatore: the crypt.

(Bianchi 2021). The facade (Figure 4.7) had two towers at the corners, along the lines of the northern European Westbau, much in use in Ottonian architecture (Gabbrielli 1995, 24-28; for parallels with the small number of other Italian examples, including the Montecassino abbey church, see Tosco 2014, 134; Tigler 2006, 333). The ‘oratory-style’ crypt (Figure 4.8), which extends the length of the transept, is one of the largest anywhere in Europe. There are similar cases north of the Alps, for example the cathedral of Speyer in Germany (Gabbrielli 1995, 24), although, according to recent interpretations, this also betrays eastern influences (Tigler 2020). The other major new feature of this building is the fact it was built using ashlar masonry, with medium-sized and large squared blocks of well-dressed trachyte. For this period (not long after the year 1000) in Tuscany, but also throughout the Kingdom of Italy, such stone masonry was a fairly isolated phenomenon, in a scenario that still mainly featured unworked stone masonry, laid in fairly irregular courses.

This, too, is to be seen as a reflection of the major investment in the overall building project which, like the building's layout itself, was in line with those trends that were developing in the German and Saxon area, as well as in central France, as regards the adoption of walls made of well-finished stone, devoid of plaster facing (Bianchi 2021). The fact that the organization of the construction process itself had its place within a wider international context, involving the circulation of building skills and construction solutions, is a good reflection of the cultural climate that characterized the abbey at that time.

The abbot involved in this complex operation was, as already stated, Winizo. Recently, in supporting the veracity of an episode narrated by Pier Damiani regarding a group of five monks in the final years of the 10th century, exiled from the Cassino abbey owing to disagreements with the abbot, Tomei has suggested that Winizo may have been a member of this group (Tomei 2016)⁵. By agreement with Hugh of Tuscia and Otto III, in 995 Winizo was installed at San Salvatore, along with his fellow-monk Maione, although he was then assigned to the other royal monastery of San Salvatore, at Sesto (near Pisa).

Tomei argues that Winizo's scriptorial expertise reflects a level of culture only found in individuals in contact with the great intellectuals of the reformist élite at the time, influenced by the Cluniac model, and closely linked to the Empire. It is argued that, within this framework, Margrave Hugh of Tuscia and the newly-crowned Emperor Otto III acted in agreement in the context of joint plans to reorganize the public patrimony by scaling up the Imperial abbeys (Tomei 2016, 360-364). Winizo would thus have been one of the leading figures in this project. He managed to successfully accomplish it, albeit with the difficulties that followed immediately after the deaths, in 1001 and 1002 respectively, of both Hugh and Otto III.

After the civil war, when Henry II's party established itself in Tuscia once and for all, Winizo, as well as the reconstruction of the church, also had a string of ambitious projects under way which placed the monastery in a circuit of broad-ranging cultural exchange (as shown by the characteristics of the building project itself). Winizo increased the patrimony of properties, encouraged donations, and set up an important scriptorium in the monastery, along with a library. This library received and conserved one of the best-known medieval manuscripts, the Codex Amiatinus, the oldest example of the Vulgate, produced at the Northumbrian monastery of Monkwearmouth-Jarrow in the time of Bede (Marrocchi 2014, 256-290; Tomei 2016, 370).

This all points towards the possibility that the 'heyday' under Winizo may perhaps be interpreted not as an extraordinary episode which saw the monastery regain dynamism, after a troubled period of decline, but as the effect of, and continuation of, a more complex Ottonian Imperial economic policy. Within this policy, at the initiative of Hugh of Tuscia and Otto III, a major role was given to the royal abbeys in lending new substance to Imperial authority in the symbolic construction of Ottonian power. However, this new role had its place within what was already a consolidated position on the part of the monastery, which was of prime importance in the administration of this upland territory. In my opinion, this status continued uninterrupted throughout the Ottonian period, and this also enabled those large-scale material transformations which continued, with the abbacy of Winizo, even under the Salian dynasty.

The main political actors themselves in this geographical area, if looked at again in the light of the most recent research, do not stand opposed to each other. Rather, they all form part of a unified picture. Margrave Hugh of Tuscany, long regarded as the leading figure in the monastery's rebirth, ever since his installation in 970, and thus already under Otto the Great, the man blamed for the period of decline, was a vital point of reference for the Emperor, both as an intermediary between the Empire and the various comitati of Tuscia, and for strategies for the control of southern Italy. After Otto the Great's death, Hugh saw completely eye-to-eye with Adelaide (who, it is worth underlining again, was the owner of

⁵ For the suggestion of Winizo's local origin, and the fact that he may have had dealings with the exiled Cassino monks, without being a member of their group, see Marrocchi 2020, 64.

the monastery's royal court). He was loyal to Otto II, and, as we have already stated regarding Winizo, was one of the most important supporters of Otto III's political programme (Puglia 2003; D'Acunto 2002; Renzi Rizzo 2010).

Accordingly it is hard to see Hugh's actions as divorced from those of the Ottos, and the same is true, at least up until the mid-11th century, for the other prime actors, the Aldobrandeschi family.

Back in 1998, Collavini already stressed that relations between the monastery and the Counts of Roselle, Sovana and Populonia emerged with greater clarity as of the last quarter of the 10th century when, prior to 988, Rodolfo I and his grandson Hildebrand IV defended the property of the monastic cell of Ofena against a certain Ertini, who wanted to take possession of it (Collavini 1998, 86).

Similarly, the role of the Aldobrandeschi family, involving a kind of control over sectors of the monastery's patrimony, and, so to speak, custodianship of it, is also very clear precisely in the most difficult period of Winizo's abbacy. This was in the complex period of civil war, which saw the confrontation between Arduin of Ivrea and Henry II. After Henry II first set foot on Italian soil, Winizo found himself having to confront the bishop of Chiusi, Arialdo, who was levying his own tithes on monastic property. Between 1004 and 1007 Winizo wrote to Count Hildebrand IV asking for his help in the question (later resolved by Henry II), placing himself under his protection until the Emperor returned to the peninsula (Collavini 1998, 101; Tomei 2016, 367).

At this point in our story, all this is not so very surprising.

In the previous chapters we noted that the sphere of action of the Aldobrandeschi, at least up until the mid-11th century, always had its place in a public context that looked to the policies of the Emperors and of the Margraves of Tuscia. The Aldobrandeschi supported these policies, and in several cases also probably put them into effect.

We have supposed this above all for the Ottonian period, in the Grosseto area, where the family's most important administrative centre stood, near what is thought to have been the large nucleus all around Roselle that was managed directly by the royal hand (see chapter III). Similarly we have suggested the same for Valli, where the royal court was dominated, controlled, and perhaps defended by the castles of Valle and of Scarlino (chapter I). In the case of Populonia (chapter II), we shared the hypothesis of a new Aldobrandeschi comitatus existing on the actual acropolis, on the promontory that also overlooks the territories of the Piombino lagoon, where later, during the 11th century, the Aldobrandeschi family had large properties.

Therefore it might not be so anomalous to think that the same family and its Counts, who with Grosseto and the court of Caliano also controlled traffic by sea, across the lagoon, and along the river Ombrone (and thus including the likely arrival of that hematite from Elba that has been found in the archaeological record, in the excavations in Grosseto), were involved in a joint enterprise with the public power to exploit Monte Amiata's mineral resources.

In the past, Chris Wickham already stressed the different nature of the western side of the mountain compared to the eastern side (Wickham 1989, 106): fewer monastery-held properties; a sudden increase, between 950 and the early years of the 11th century, in references to those small free land-owners who are testified to in the course of the 9th century, and who later seem to disappear, their place taken by the new, early 11th century fortified centres; and faster castle formation compared to the eastern side.

These features, at least as of the Ottonian period, when many of the processes associated with the exploitation of natural resources seem to speed up on the coast, too, were perhaps the result not so much of the political difference of the figures involved, but rather of the greater involvement of the *publicum* on this side, with the agreement and support of the Aldobrandeschi family. This economic interest on the western, mining-rich side, where the main iron seams were found, could be the very

reason behind a number of facts: the resumption, under Otto the Great, of direct administration of some of these territories that had earlier been managed by the monastery; the likely, resultant silence of archive sources regarding the monastery; and the form of political organization that this side of the mountain later acquired when action by the public power declined drastically as of the mid-11th century.

Regarding this last point, what happened in this part of Monte Amiata is the same as per our reconstruction of events in all the territories under public influence that we have examined so far. When public plans over areas involved in them started to become weaker, the Aldobrandeschi family were always the ones who stepped in and took over the most significant parts of them. They took over parts of the courts of Valli and Cornino, and claimed the entire area of Grosseto, despite strong resistance from the bishop of Roselle. Ultimately, they even hatched the ambitious plan to rebuild a new Grosseto at the mooted former royal centre at Montecurliano.

The same was true of the western and southern sides of Monte Amiata where, starting in the 11th century, the most important family castles were to be found: Santa Fiora, Arcidosso, Monticello, Castel del Piano, and Selvena (Farinelli 1996, 46)

Whereas, also in the course of the 11th century, the family's policies led it to move away from the Pecora and Cornia valleys, where Aldobrandeschi-owned properties were gradually ceded, the main road between Grosseto and the western side of Monte Amiata (to which, of course, other fortified centres in the eastern area were added later on, such as Radicofani and Campiglia; Wickham 1989, 122) continued to remain firmly in the family's hands. They clearly regarded it as more strategic than their other coastal properties to the north.

4.1.4 Anthropogenic landscapes



Figure 4.9 - Panoramic view of the old town centre of Arcidosso. The summit of Monte Amiata is visible behind, to the right.



Figure 4.10 - Arcidosso. In the foreground, the great defensive tower incorporated in the Rocca Aldobrandesca. The photo also shows the wall elevation in which the main entrance to the building was located.

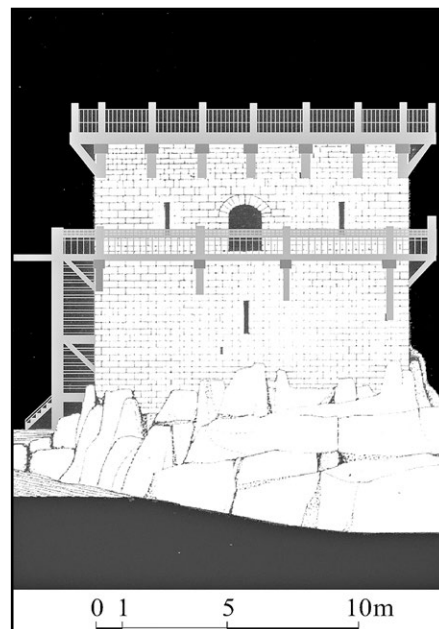


Figure 4.11 - Arcidosso: Rocca Aldobrandesca. CGI reconstruction of its original appearance (from Nucciotti 2010, 515).

As mentioned above, the strong public hand seen in the management of the western side of Monte Amiata seems to have a consequence also in the formation of the new landscapes that are a feature of the central Middle Ages. Indeed, it is on this side that, from the 11th century onwards, we see the early presence of agglomerated, fortified sites, many of which would later become the future Aldobrandeschi castles.

At one of these sites, Arcidosso (Figure 4.9), mentioned for the first time in a document dating to 860 (Kurze 1989b, 379-380), we find one of the few, but very significant, pieces of evidence datable to between the Ottonian phase and, probably, the first few decades of the 11th century. It cannot be a coincidence that it is located in the western micro-district that is richer in iron deposits.

The evidence in question takes the form of a building now incorporated within the Rocca Aldobrandesca (Figure 4.10). According to Nucciotti, who studied it, in its original form its plan was almost quadrangular, with its outer sides measuring 12 x 12.5m, possibly rising to a height of just over 9m (Figure 4.11). Each floor of the two-storey building was 77 sq. m in size, and its entrance was probably raised, perhaps accessed via a raised wooden walkway (Nucciotti 2010, 127).

The building's complex construction process, which used rough blocks of trachyte dug from quarries not too far away, lasted no more than two years, according to Nucciotti's calculations. It is dated to somewhere between the 10th and the start of the 11th centuries. This is mainly on the basis of the building type, and the masonry techniques, which feature stones laid in fairly regular courses. The date is also reaffirmed by the new, later 10th century chronology, as proposed for the masonry techniques at the Torre di Donoratico site (Bianchi 2021). These are cited by Nucciotti as one of the most plausible parallels for the techniques adopted in the Arcidosso building. According to the scholar, the size, scale, and early date of this stone building, in a wider context that still featured the use of wood and mixed materials, would justify its interpretation as a margravian palatium (Nucciotti 2010).

After analyzing the whole coastal context, and also taking an interest in buildings in other geographical contexts, I am inclined to formulate a more prudent interpretation of who the building was built for. Rather than a palatium, I would call the Arcidosso building a remarkably large fortified tower (torrione),

along the lines of those buildings that used to be found in the main administrative centres in the period in question, standing within public properties, or belonging to owners with a markedly public physiognomy.

Not far from here we find similar examples, although slightly smaller in size, at the following places: in the tower made of mixed materials at Vettricella itself; in the tower at the site located at Torre di Donoratico, controlled by the monastery of S. Pietro in Palazzuolo, at Monteverdi; in the tower at the court of Lattaia, near Grosseto, owned by the Aldobrandeschi family; in northern Tuscany, in the tower of Gorfigliano connected to the Obertenghi; and other examples in the north of the Kingdom of Italy, such as Trino Vercellese, Taneto, Broili and La Brina (Bianchi 2021 for a more detailed analysis of this building type, and for a reference bibliography). For these examples, the material culture often indicates that these structures had a residential function, for temporary or very brief stays on the part of royal or margravian emissaries, as in the case of Vettricella itself. Thus, in these early appearances in rural areas, towers were strong indicators of ‘public quality’ (I borrow this term from Bordone, Sergi 2009, 115), i.e. part of a broad-ranging programme for territorial reorganization, managed by the central powers.

It is in this sense that I would interpret the great tower of Arcidosso, without going as far as to identify it as a palatium connected to margravian power. Indeed, as I have tried to explain, this reconstruction of the identity of the people for whom it was built would be made difficult precisely by the great extent to which the various spheres of power were interlinked. Being in the centre of the area richest in ferrous minerals, Arcidosso was the location best suited for public management of these mineral resources, and that building made sense there, and in no other place, just as did the tower of Vettricella in the Pecora river valley.

We may perhaps deduce the centrality of Arcidosso and its strategic value also by tracing the fate of the nearby court of Lamula, one of the monastery’s properties which, in 964 under Otto II, came under direct royal management, before later being confirmed once again as belonging to the monastery by Otto III, in 996 (Kurze 1989b, 377-380).

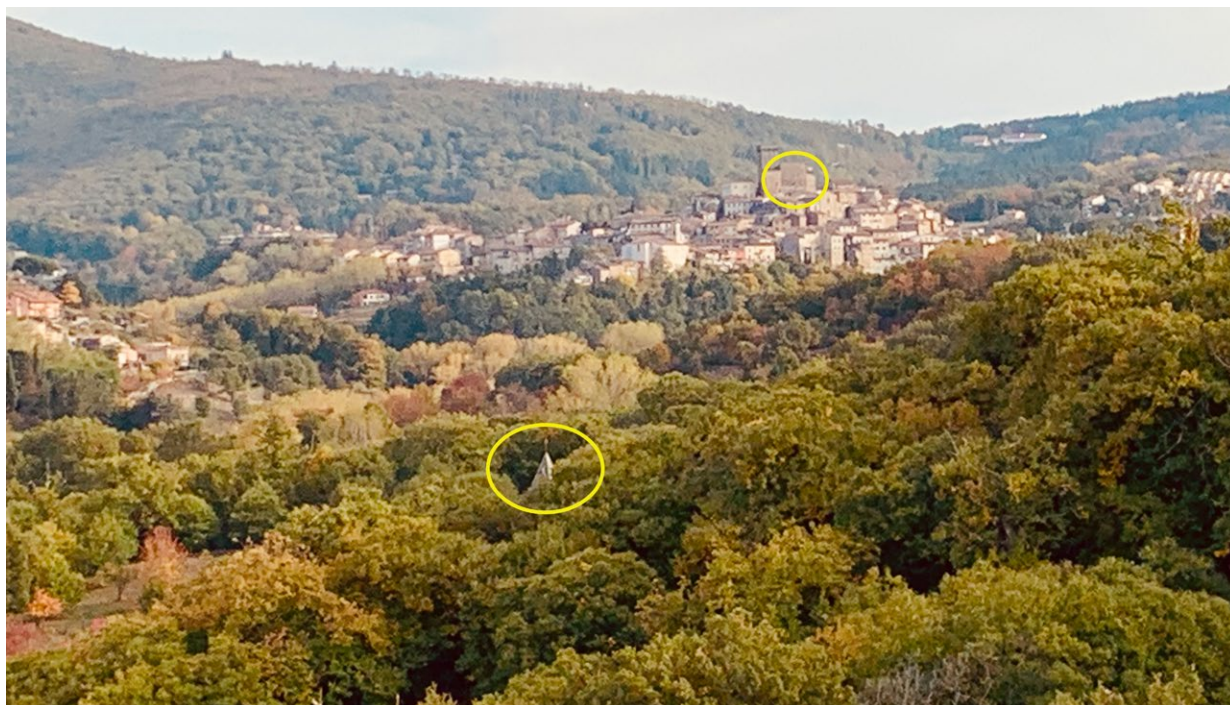


Figure 4.12 - Panoramic view showing the belltower of the Lamula parish church (circled), and hilltop tower of Arcidosso (in background), with access side facing the church, and the road that is thought to have connected the two sites.

Lamula's geographical position is far from ordinary (Figure 4.2). It stands a very short distance away from Arcidosso (Figure 4.12), a little to the north, along the road which, from Cinigiano (and thus from the Grosseto area), and also from the north, led to Arcidosso. In 1004 associated with Lamula is the castle of Montelaterone. As of this time, the castle became a population centre under the monastery that was an alternative to Lamula itself, although Lamula remained an important administrative centre at least up until 1070 (when the entire pre-existing order changed as a result of the new political pressure by the Aldobrandeschi family). Later Lamula is referred to as a parish church (Figure 4.13), but the interesting detail is that Lamula is mentioned in 1240 as the location of a market (Wickham 1989, 108). Nucciotti returns to this point, informing us that, since the 12th century, as we deduce from a dispute between the monastery and the Aldobrandeschis, the market was held under the joint jurisdiction of these two political entities (Nucciotti 2006, 184).

On the basis of this rather scanty information, we do not know whether this market was established only in the Late Middle Ages, or whether it was the continuation of an older tradition. Nevertheless, it is interesting to note the special function of this place, which in the area of Grosseto and Roselle we find mentioned at an early date, as stated earlier in chapter III, at Istia di Ombrone in 1032.

Thus, although we can only draw up hypotheses based on weak clues in the case of Lamula, in the medieval phase, we have more archaeological evidence in relation to the only remains of a hilltop site, partially investigated as regards its 10th and 11th century sequences.



Figure 4.13 - The parish church of Lamula as it appears today, after renovation of its facade.

This site is Castel Vaiolo (Figure 4.14), an agglomerated site on one of the upper flat areas above the slopes of the calcareous hill system of Monte Labbro (i.e. still in the area around Arcidosso). It may have been fortified, or at least this is the interpretation given, by the archaeologists who excavated it, to the dry-stone walls standing near its boundaries, along with a possible ditch. The site is named as such on a 1295 map, although it is described as already abandoned. In a 2015 article there is a fleeting but intriguing reference to Castel Vaiolo being connected to the exploitation of limonite seams present on the same flat hilltop site (Nucciotti *et al.* 2015, 451). However, what is really of interest at the site are the exceptional archaeobotanical finds made there.

Indeed, one of the excavated areas has been interpreted as a processing site for agricultural products, especially the roasting of various cereals (two varieties of wheat, barley, oats, spelt and millet), as well as legumes (broad beans, chickpeas, peas), blackberries and chestnuts. Regarding chestnuts, the find is truly exceptional: 60 complete chestnuts, and around 100 in fragmentary condition, a true rarity and, given the relevant chronology, definite proof for central-southern Tuscany that chestnut trees were used as a food source in Tuscany. This has previously only been suggested, for the 10th-11th centuries, in the area of Siena and the Colline Metallifere, where for this time horizon there was more evidence for the exploitation of wood and timber (Buonincontri *et al.* 2020a). On top of this, also significant is the consideration of the archaeologists regarding the characteristic soil of this site, namely an alkaline terrain that was ill-suited for growing chestnut trees. This led them to suggest that, in this phase, there was a specific agricultural policy in favour of selecting and growing this species of tree in an area that was ill-suited, and where today chestnut groves have receded, giving way to species more suited to these soils, such as oaks (Nucciotti 2007, 667).

This finding, although interesting, might remain a mere detail involving the history of the chestnut tree itself. However, if we associate it with the farming policies that we have hypothesized on the basis of the multidisciplinary investigations in the Pecora river valley (controlled fires, draining marshy areas, opening up new spaces for crops, changing the course of the river; see chapter I), or in the Grosseto area below Roselle (possible new water channels for growing crops, and also to further drain the Salica valley plain, west of Roselle; see chapter III), then the presence of these roast chestnuts could be a further element in a large-scale rationalization of resources within an area under public control.

I believe that the aforementioned examples from the other territories in the case study clearly illustrate that the exploitation of the two main resources, salt and iron, went hand-in-hand with an ongoing, overall redefinition of natural landscapes. This same process may also have been true in the case of Monte Amiata, proceeding in step with alterations to the anthropic landscapes.

Regarding this last theme, on re-reading publications produced between the 1980s and the 1990s, and in the light of what has emerged in the very recent archaeological investigations of the coastal area, we note that in this inland area too, i.e. on and around Monte Amiata, there was considerable site variability. Albeit with a gradual tendency towards agglomeration starting in the 9th century, we find recorded evidence from the 8th century onwards (including in the archaeological record) of low-lying open villages in the Paglia valley and along the Via Francigena (the most well-known example being the borgo of Callemala), as well as on the eastern slopes of Monte Amiata (e.g. Piancastagnaio), together with possible scattered settlements (Wickham 1989; or, against the notion of a scattered site pattern, see Farinelli 2007, 50-56), and hilltop villages such as those identified in the archaeological surveys of the 1990s, situated in a kind of ring all around the abbey (Cambi 1996b).

Despite this, as already stated, on the west side the process of castle formation was more rapid compared to the eastern side (Wickham 1989, 106-112). The actions of the Imperial-margravian power, together with those by the Aldobrandeschi family, may perhaps have had the effect of a greater push towards the formation of agglomerated, fortified centres. It is thought that these centres, although interspersed with other possible forms of sites, were predominant, and that, starting in the later 11th century, they



Figure 4.14 - The hill where the site of Castel Vaiolo stands and, in the distance, the low-lying plain adjoining the area of Roselle (from Nucciotti 2007, 665).

were the basis for the formation of the Aldobrandeschi seigneurial properties, which may have been followed by a selection of these same centres in favour of those that were more strategic as regards resource management. This would have led to the widespread abandonment of other sites, as in the case of Castel Vaiolo itself. For that matter, as verified by an analysis of medieval anomalies from aerial photos throughout the Monte Amiata area (Caprasecca 2001-2002; Caprasecca 2013), the western side, and in particular the area between Arcidosso, Castel del Piano and Seggiano, is the area that has a far higher number of sites than the territory around the abbey itself, or the south-eastern area. This may be a sign of a higher anthropic concentration, perhaps also in relation to policies on exploiting its mining resources, and the scale of this exploitation, in the course of the Middle Ages.

On the eastern side, reduced political pressure led to a certain continuity of that settlement variability which only in the later 12th century, if not the 13th century, took the shape of a major shift towards fortified agglomerated sites, especially in the direction of the three main castles linked to the monastery (Figure 4.2): Castel Badia, Piancastagnaio and Radicofani (Wickham 1989, 120-133).

In areas at higher altitudes, near the monastery, the same survey in the municipality of Abbadia San Salvatore identified 40 sites, standing mainly at altitudes of above 800m, and between 300 and 400m, while the 400m to 600m band would seem to have been less populated (Cambi 1996a, 193). The area closest to the monastery was characterized by agglomerated sites, referred to by Cambi as open villages that formed a sort of ring around the abbey centre, often located in flat upland areas overlooking the

monastery. This is the case, for example, with the sites (Topographic Units) identified near Podere San Lorenzo, and at the Minestrone locality.

As already noted, around the monastery there were important ore seams, and this institution clearly played a part in the general context of the systematic exploitation of these resources. Situated at the same altitude as the other centres (e.g. Arcidosso, Santa Fiora, Castel del Piano) along the line of the many natural springs, it could thus rely on a considerable source of water to supply hydraulically-powered industrial sites (Figure 4.2). The earliest reference to a hydraulic system at the site of Callemala itself dates to 903, while as of the late 10th century we see an exponential increase in references to water mills also in the areas closest to the monastery, in particular on the north-western side, where the



Figure 4.15 - Some of the basins cut into local rocks and boulders (from Pruno, 2018).

river Vivo flowed. This was a fairly large river, and also featured natural falls that could be exploited to supply power for the various hydraulic mechanisms (Farinelli 1996, 43). At the end of the 10th century there is a reference to three water mills along the river Vivo in the falsified document of the donations made by Ratchis and Astolf to the monastery. This certainly recorded an existing situation, while six mills, including fulling mills and water mills, belonged to the monastery at the end of the 13th century (Farinelli 1996, 43, n. 58). Farinelli's article lists many other references to industrial workshops in this territory, and indeed the author suggests that hydraulic power itself may have been harnessed for metallurgical processes, to operate hydraulic hammers to process iron bars (Farinelli 1996, 42). In the early 15th century the seasonal streams close to Abbadia were the location for at least one iron-works. Accordingly it may be possible to agree with Farinelli's suggestion of an earlier relationship, perhaps as far back as the 11th century, between hydraulic mills and metallurgy, and especially iron-working, in the area associated with the monastery (Farinelli 1996, 43; for an opposing view, see Cortese 2003, 332).

Another possible physical indicator of metallurgical activity here, and also in the territory of Arcidosso and Castel del Piano as well, comes in the form of certain much-debated physical features now found in woodland parts, that have been interpreted in various different ways: the basins carved into erratic boulders, generally more numerous above 600m (Figure 4.15). These cavities are composed of single basins, or sometimes multiple basins connected to each other.

Cambi has suggested that their use may have been connected to grape-pressing, and thus to wine-making (Cambi 1996b, 183, as well as Caprasecca 2001-2002, 476-480). More recently Elisa Pruno has suggested that their function was linked to collecting water for use in operations involving the quarrying of trachyte, at least for such basins found near the quarries themselves (to wet the ropes used to lift the blocks, and the wedges, or to cool down extraction tools; Pruno 2008, 150). However, I agree with Luisa Dallai in supposing that the water collected in these basins may also have been used in metallurgical activities, which must have been numerous in various areas on the slopes. Corroborating evidence of this may be the finding of no fewer than six basins on Poggio alla Pertica, the location of a site overlooking the monastery. The presence of the basins, some multiple and having an outflow hole, is also associated with slag heaps, for which X-ray diffraction analysis has revealed the presence of fayalite and lead carbonate, within an area also featuring outcrops of limonite (Cambi, Dallai 2000, 208).

We do not have a definite chronology for any of the basins, including the Poggio alla Pertica examples. However, the fact that they are never associated with late medieval sites leads Cambi to suggest, at least for the ones found in the municipality of Abbadia, a generic early medieval date, or at least a date in the central Middle Ages (Cambi 1996b, 183).

4.1.5 Narratives for suggested hypotheses

On the basis of the general picture described thus far, we must therefore imagine, between the 10th and 11th centuries, that a large part of the Monte Amiata area had a strong connection between the territories pertaining to the religious centre and territories probably under direct royal control on the western side of the mount.

Regarding this context, which is basically unified and coherent, let us try to summarize the narrative discourses that may help to draw up hypotheses for the best documented phase, the 10th to 11th centuries, not so much in order to arrive at a precise reconstruction (impossible with the paucity of clues that we have), but rather to guide us towards a new interpretation of the facts relating to this chronological timespan.

First narrative: the 10th century to early 11th century phase, in other words the Ottonian period, may have featured an important time of reorganization in the Monte Amiata area. This suggestion is



Figure 4.16 - To the right: the abbey of S. Antimo. Upper left: the small town of Castelnovo dell'Abate.

supported by the supposed resumption of direct royal control, in particular of the western side, with Otto I, in 964, in line with a fairly common custom in the context of territories characterized by extensive fiscal properties, often granted to other institutions, and which in certain periods later returned to the royal or margravian orbit. We have also suggested these processes in this phase, for example, in the Gualdo del Re area. This reorganization could be connected to the broader plans that were under way on the coast, in those very decades, aimed at exploiting iron and salt, physical traces of which remain in the form of the transformations at Vettricella and its territory, and, in the Grosseto area, the new sites of Vigna Nuova/Salica, Brancalete, the reoccupations of the villa of Aiali, the Poggio Cavolo church, the sequences in Grosseto etc.

Second narrative: a comparison with events occurring in the coastal area leads to a reassessment of the importance of Monte Amiata's mining resources. The combination of hematite from Elba with iron from Monte Amiata was a practice certainly attested to in the Late Middle Ages. For Vettricella such an operation has been proven archaeometrically, at least at the end of the 10th century. We cannot exclude the possibility that this happened at Monte Amiata already in the late 10th to 11th century phase, given that the western side was connected to the road network extending to Roselle and Grosseto. Also, in Grosseto itself, stratigraphies for this phase have been found that are rich in hematite from Elba, which, from here, once having undergone initial reduction, could be transported inland (in a single, connected public system). The result of combining these two raw materials together may have been the production of many objects similar to those found at Vettricella (including the knives, produced on Monte Amiata, at the Montecalvo monastery in the 12th century). Arcidosso and its neighbouring territories may have been the main centre of iron exploitation on this side, and the great defensive tower, contemporaneous with many others present in possible public areas, may bear witness to this. Certainly the existence of a market at nearby Lamula in this period (although only documented in the Late Middle Ages) would fit this scenario very well.

Third narrative: the monastery was associated with both iron-working and also perhaps the exploitation of cinnabar, since it had a property nucleus in the areas to the south-east of the upland slopes where the

richest seams were located. We have already stressed previously that Monte Amiata was the location of one of the richest deposits not only in Italy but anywhere in the West. In one of my recent articles I underlined the fact that, not only in this territory, the Ottonian phase featured incentives for the exploitation of specific resources, creating extensive geographical areas set aside for this purpose (Bianchi 2020 citing the example, in the Appennines, of one of these areas linked to the extraction and processing of steatite). Is it possible, then, that this phase was also associated with a more systematic exploitation of this resource?

Cinnabar was the basis for one of the most commonly used pigments also for writing, and for decorating scrolls. Is it only fanciful to think that the choice of Winizo as the monastery's new abbot, made by Hugh of Tuscia and Otto III to boost one of that era's most important and advanced schools of writing for books and documents (Marrocchi 2014, 115), was also connected to the exploitation and availability of cinnabar (perhaps including the export of this to other monasteries) and also of other natural pigments that could be obtained from these volcanic soils and earths⁶?

Fourth narrative: the history of Monte Amiata after this phase of major reorganization bears close comparison with the fate of coastal territories with the same vocation. Shortly after the public, royal project was rolled back, i.e. before the mid-11th century, the Aldobrandeschi family took over as the main political figures in the area of the western slopes. Thus far, as in the Grosseto-Roselle area, here they had been supporters of the royal and margravian plans in their role as Counts in association with the monastery and, up until that time, not in opposition to it. The public reorganization which the family took part in was the main driver for them becoming established in the Monte Amiata area, and for the development of their castles, with the resultant dismantling of the equilibrium with the monastery, that had been maintained up until then, leading to an increasingly conflictual relationship with the Aldobrandeschi family as of the end of the 11th century.

Fifth narrative: the construction of the abbey's new church, involving a very great economic investment, and featuring unusual technical and construction choices, and an unusual design, could be seen as the final important episode in this major phase of transformation, and not as a rebirth by the monastery, following a period of major crisis. The continuity of this public programme would itself have justified the financial effort lavished on the project.

This whole series of narratives, if backed up by a greater amount of material evidence than the amount available to us now, would undoubtedly place the larger Monte Amiata district within a single historical, political and economic context. Just as seen on the coast, which it would have been connected to, this context would have had its moment of maximum development between the Ottonian dynasty and the Salian dynasty.

Can we test for the same hypothesis at the other religious centres?

⁶ It is worth remembering the rich presence in the Monte Amiata territory of boles (earths containing natural pigments), iron-rich clays and clays rich in arsenic and iron, used as natural pigments ever since Etruscan times, from which colours are obtained ranging from pale yellow (yellow ochre is called 'Terre di Siena') to chestnut (Nucciotti 2006, 193).

4. 2 The royal court and the monastery of S. Antimo in the Starcia valley

The abbey, nowadays located within the municipal area of Montalcino, is set amid one of the finest landscapes in Tuscany, in the upper part of the Starcia valley, in a small depression overlooked by the hamlet of Castelnuovo dell'Abate, the former castle pertaining to the monastery itself (Figure 4.16).

This monastic institution and its territory have been the focus of a series of studies conducted in the last 15 years. These have brought previous research up-to-date, which focused mainly on the history of the abbey itself, especially as regards its architecture⁷.

We will be referring to these studies to try to focus better on events relating to the monastery in the period we are concerned with, always with an eye to linking its history, directly or indirectly, to the history of the two other religious centres discussed in this chapter, bearing in mind the question at the end of the previous section.

One of the main problems regarding this abbey, which is also clear from the amount of space devoted to it in this section (although this is far shorter than the space given to the two other religious hubs), is the loss of its archive, and the dispersal of the few archive sources relating to it. As underlined by Frati (Frati 2008a, 51), this has led, especially for the early medieval period, to considerably fewer studies on this monastic institution as a *Reichsabtei*, i.e. an Imperial abbey. Consequently, although recognized by Kurze and other scholars, this abbey's international status has always been slightly overlooked, compared for example with San Salvatore al Monte Amiata itself. The recent excavations conducted within it (Angeloni 2008) were unfortunately unable to make up for this shortage of written documentation (as was possible, by contrast, in the case of Montieri, discussed in the following section).

However, in collating the available information, the very high standing of this religious entity becomes apparent, shining through the few, small windows into its history.

4.2.1 *The history of the monastery*

As for the earliest phases, according to Berengar II's diploma of 952 in favour of the abbey, the abbey was founded before the mid-8th century by Abbot Taone, or Taio, in common with the abbey of S. Tommaso in the Pistoia area (Frati 2008b, 75, for the details reported hereafter, and also for the reference bibliography). Thus, as also argued by Schneider, the monastery was apparently constructed in the Lombard period, and is thought to have been linked to the presence of a source of water with therapeutic properties, known as Arcangela. It is claimed that the strategic position of the monastery itself, near the Via Francigena, was another element in favour of this foundation.

The diploma of Emperor Henry III, issued in 1051, reports that the monastery was however founded by Charlemagne himself, despite the fact that, as Frati suggests, this information is perhaps to be connected more with the construction of the church, and to the reorganization of the existing monastery community.

Regardless of the various hypotheses, the abbey's formation fits well within the general historical context of this territory. The vast amount of epigraphic evidence, including from the Early Middle

⁷ Worthy of note among the most recent works are the volume edited by Adriano Peroni and Grazia Tucci (Peroni, Tucci 2008), and the details on the architectural complex in Tigler's volume on Romanesque Tuscany (Tigler 2006). In addition, individual articles by Fabio Gabbrielli have investigated the structures that existed prior to the 12th century church also by means of a broader comparison with examples outside our region (Gabbrielli 2008; 2020). In the volume devoted to the Archaeological Map of the municipality of Montalcino (Campana 2013a), the abbey and its local district have been placed within a larger territorial context, and interpreted by means of a multidisciplinary study of its natural and anthropic landscapes, with an extensive review of previous studies on the abbey itself, too.

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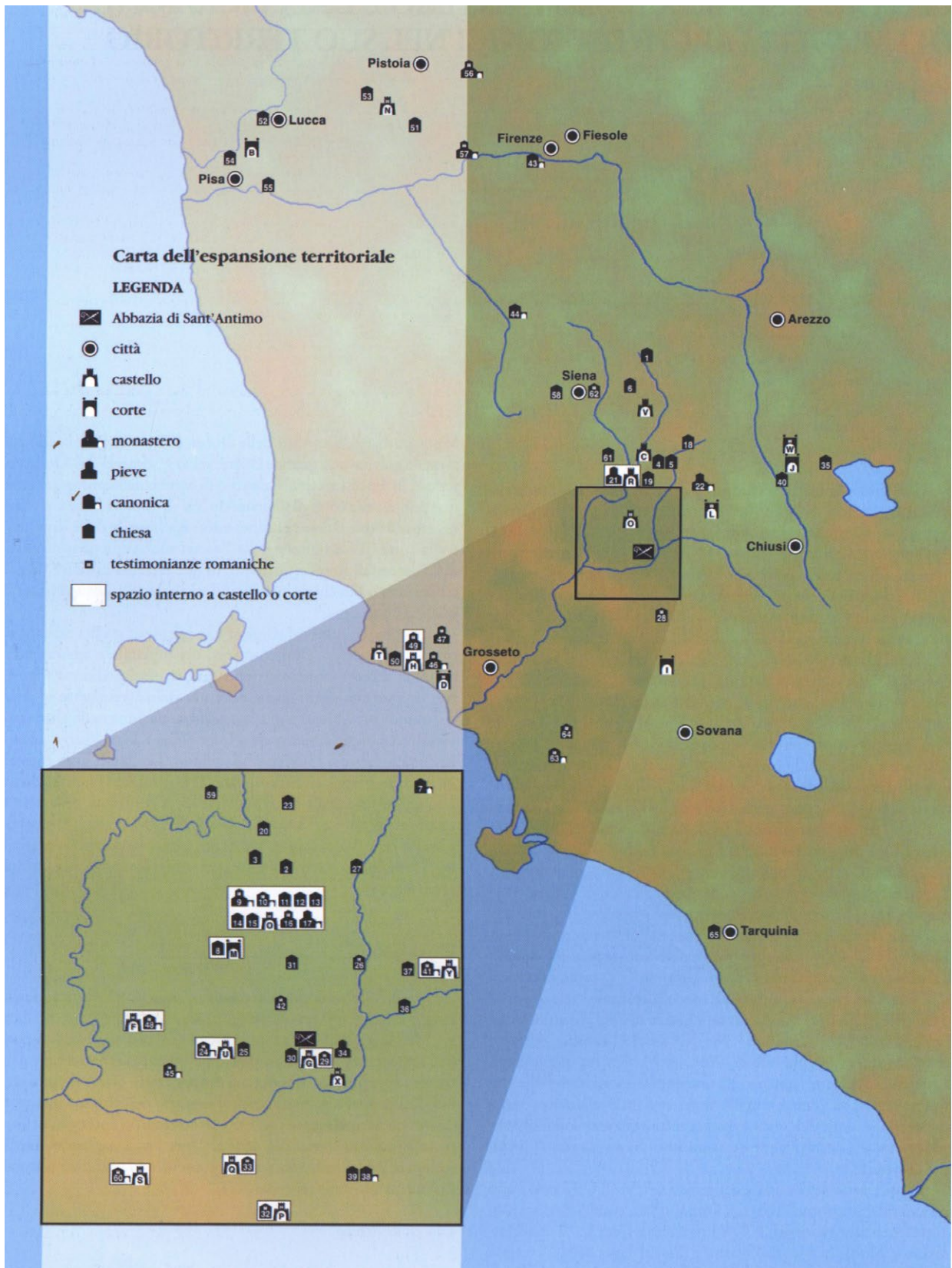


Figure 4.17 - The zones in which the properties of Sant'Antimo were distributed (from Frati 2008a).

Ages, displaying heterogeneous paleographic characteristics, suggests that the major monastery was a scriptorial centre of regional standing (Farinelli 2019). The importance acquired by the institution is also clear from its sizeable patrimony, presumably deriving from gradual donations of fiscal lands. One of these is found in the pseudo-document of Louis the Pious, falsely dated to 814, but probably compiled during the 10th century (Tomei 2020, 25), naming the donation of two courts: the first in the territory of Montalcino, with its centre at the parish church of Santa Maria Mater Ecclesiae, and the second, already referred to in chapter III, located on the north-west side of the former Lake Prile, corresponding to a



Figure 4.18 - S. Antimo: panoramic view of abbey church.



Figure 4.19 - Monte Amiata viewed from apses of abbey church.

very compact estate complex, also belonging to which were the boats, the basins of brackish water, and the eel-farms in a considerably large part of the lake.

However, the statistics in Hugh of Arles' dower give us a real perception of the property held by this abbey, compared to the figures for the other courts granted to Adelaide in 937 in this territory: 30 mansi for the Cornino court; 50 for Valli; 500 for San Salvatore al Monte Amiata; and no fewer than 1000 mansi for Sant'Antimo. This figure is comparable only to the 2000 mansi of the other royal monastery, San Salvatore di Sesto, also granted to Adelaide under the dower (Vignodelli 2012, 33).

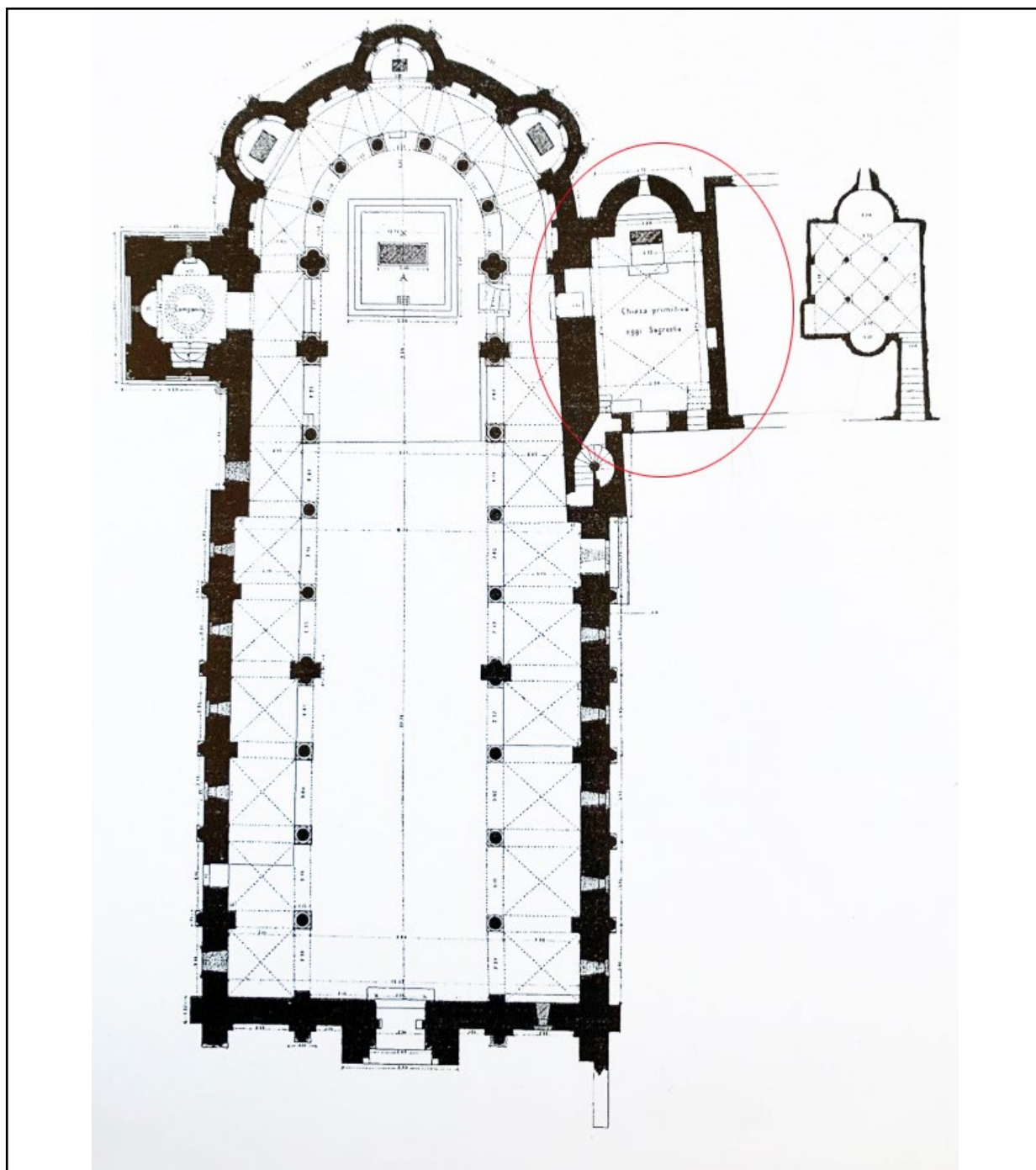


Figure 4.20 - Plan of abbey church. The part now used as a sacristy is circled, with plan of crypt beneath shown alongside (from Canestrelli 1912).

Its assets continued to grow via the donations of Berengar II and Adalbert in 952, with the courts of Andrina and Fabrica (Fрати 2008a, 51). Henry III's diploma states that the abbey was endowed by all three Ottos, and this phase also saw the consolidation of relations with the abbey of Reichnau which, as we know, was one of the most important monastic hubs in early medieval Europe. This series of donations, and the favourable political situation, made it possible to create or reinforce blocs of property around the monastery in the direction of Siena, Chiusi and the coast at Grosseto, which were joined by a major system of roads that was able to connect up the internal territories traversed by the Via Francigena with the coastal territories, as at Monte Amiata.

In the 12th century, when the abbey received important donations, especially from the family of the 'Counts of Siena' (Cammarosano 1979), its 16 castles and nine courts, as well as being sited in a compact manner around the monastery, were also situated around the former Lake Prile, in the Montalbano area on the border between the dioceses of Lucca and Pistoia, in the upper Ombrone valley in the diocese of Arezzo, and in the Chiana valley (Figure 4.17). In the Late Middle Ages the 65 religious institutes that came under the abbey were distributed across no fewer than 11 dioceses, with churches in the largest cities in Tuscany and along the main roads leading to the Apennine and Alpine passes, as well as roads leading to Rome. This confirms the closely interlinked network of inter-regional relations created thanks to the abbey's long-standing ties to the Germanic Emperors (Fрати 2008a, 51).



Figure 4.21 - The interior of the so-called 'Carolingian crypt' (from Gabbrielli 2008).

The different scale in this monastery's history is also reflected in its fortunes during the central Middle Ages.

In this connection, the weakening of the central and royal powers, especially during the second half of the 11th century, coinciding with the Investiture Controversy, as I have underscored many times in previous chapters, did not lead here to a marked change in trajectory compared to its economic heyday, experienced especially under the Ottonian and Salian dynasties.

Indeed, as noted by Tigler (Tigler 2008, 20), Sant'Antimo is one of the few Imperial abbeys that saw a further period of growth and development in the course of the 12th century. Unlike the church of San Salvatore al Monte Amiata, and unlike Farfa and Pomposa too (and one could also add the church of Montieri, which we shall come to in the next section), which did not see major new reconstructions after the large-scale building programmes of the first half of the 11th century, the church of Sant'Antimo was the only one to be lavishly rebuilt (the only other case, as Tigler argues, being the church of the Nonantola monastery). Between 1120 and 1150, the church was completely redesigned in forms that are clearly reminiscent of a French origin. This is apparent, for example, in the radial ambulatory, the pilasters with a quatrefoil section, and the *matronea* (Figures 4.18-4.19), despite the fact that recent studies have observed an autochthonous local character in the execution of the building design, both in terms of the architectural parts and the decorative sculptural scheme (Tigler 2008, 20).

Whether or not this reconstruction was connected to the need to create a sort of 'buffer state' vis à vis the surrounding territorial seigneuries themselves, for which both the Emperor and the Pope acted as guarantors, as suggested by Tigler (Tigler 2008, 20), the very scale of this major project, perhaps designed to transform this church into a centre of European pilgrimage (Tigler 2008, 22), led to the almost total destruction of the pre-existing church (or churches).

If, then, we wish to try to reconstruct what happened at the monastery and in its territory between the 10th and 11th centuries, to seek a parallel with the two other religious hubs discussed in this chapter, we have to do so with reference to a smallish number of material pointers. These we shall now describe.

4.2.2 The architectural sequences

On the basis of recent interpretations, no traces of the monastery's Lombard phase can be identified, whereas some decorative elements datable to the 8th-9th century Carolingian phase can be seen, where they have been reused in the 12th century cloister and church (Fрати 2008b, 75). In particular, three column capitals, with pulvinos, appear to bear witness to the presence of an iconostasis belonging to a large-sized church. However, no traces of this appear to remain, given that, in the latest studies, it is claimed that the hypothetical, well-known 'Carolingian chapel' may be part of a later architectural scheme that would date to the late 10th or early 11th centuries, or to the first half of the 11th century.

This, clearly, is a fact of great interest for our narration, and one that merits further discussion.

Indeed, regarding the dating of the late 10th to 11th century phase, there are more or less diverging opinions, although these all set out from the chronology of the 'Carolingian chapel'.

This chapel is situated below a room that stands alongside the surviving 12th century church, now used as a sacristy (Figure 4.20). It is a small crypt with square plan layout with three aisles divided by four columns and two opposing semi-circular apses of differing diameters (2.68m and 1.52m). The space has a cross-vaulted ceiling, with reused support columns surmounted by simple capitals devoid of decoration (Figure 4.21).

The chronology and original appearance of this room, previously ascribed to the Carolingian era (hence the name), has been debated by many scholars, well before Tigler, Gabbrielli and Frati who, in their most recent articles, have returned to previous hypotheses, either refuting them or adding to them.

These latest interpretations could be summarized as follows:

1. In the view of Frati (Frati 2008b, 73-76), this is a space that belonged to a single construction moment dating to the same phase as the sacristy above, and the chapter house, which we will come to shortly (Figure 4.22). Picking up on several previous studies, Frati believes that the crypt and the sacristy corresponded to the protruding right-hand transept of a church, perhaps having a raised presbytery. Regarding its chronology, on the basis of a number of indicators, a date is suggested ranging between the 970s and the 980s, justifying this also by reference to the abbey's network of international political and cultural relations in the full Ottonian period. The former underground space corresponding to a large crypt (which today we can only see part of) allegedly extended as far as the left-hand transept. The difference in masonry technique between the northern wall of the crypt, built with stones that were only roughly squared, laid in fairly irregular courses, and the rest of the perimeter walls where large squared blocks were used, was purportedly linked to the differing chronology of the walls (Figure 4.23). Indeed, it is claimed that the construction of the northern wall took place at the time of the construction of the 12th century church, when the crypt was largely destroyed and reduced in size, and the end wall itself was used as a foundation of the church above (Frati 2008, 75-76). By contrast there is no comment on the reasons for the different techniques used in the crypt, which has large squared blocks, compared to the stones in the upper parts of what is now the sacristy, including the external apse (Figure 4.24).
2. In 2006 Tigler (Tigler 2006, 193-196) had no hesitation in dating the construction of the crypt and of the modern-day sacristy to the first quarter of the 11th century, suggesting that both these interior parts were originally part of the central nucleus of a church that pre-existed the 12th century church. Basically he claims that the building, later almost completely destroyed, had its heart, the presbytery area, in the very place that corresponds to the crypt visible today, and the space above, within a probable Tau cross plan. In this study we find no reference to the differences in masonry techniques between the various parts of these pre-existing features, nor to the stratigraphic relations between the various builds.
3. By contrast, Gabbrielli pays special attention to the characteristics of the masonry techniques (Gabbrielli 2008; 2020) and to the stratigraphic sequences. In going back over previous studies,



Figure 4.22 - The abbey cloister. On the left, the facade of the sacristy, with the chapter house building alongside it.



Figure 4.23 - Detail of the masonry technique (with large dressed blocks) in crypt below sacristy. Note absence of breaks in the wall at the point where the doorway is situated, showing that the doorway leading to the sacristy's facade is contemporaneous with this room.

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Figure 4.24 - The apsidal section of the abbey church. The oldest apse, in phase with what is now the sacristy, is circled.



Figure 4.25 - Detail of apse



Figure 4.26 - Exterior of aisle of abbey church, abutting the facade of the sacristy, and next to it the interior parts of the chapter house.



Figure 4.27 - The facade of the sacristy, on the side facing the cloister.

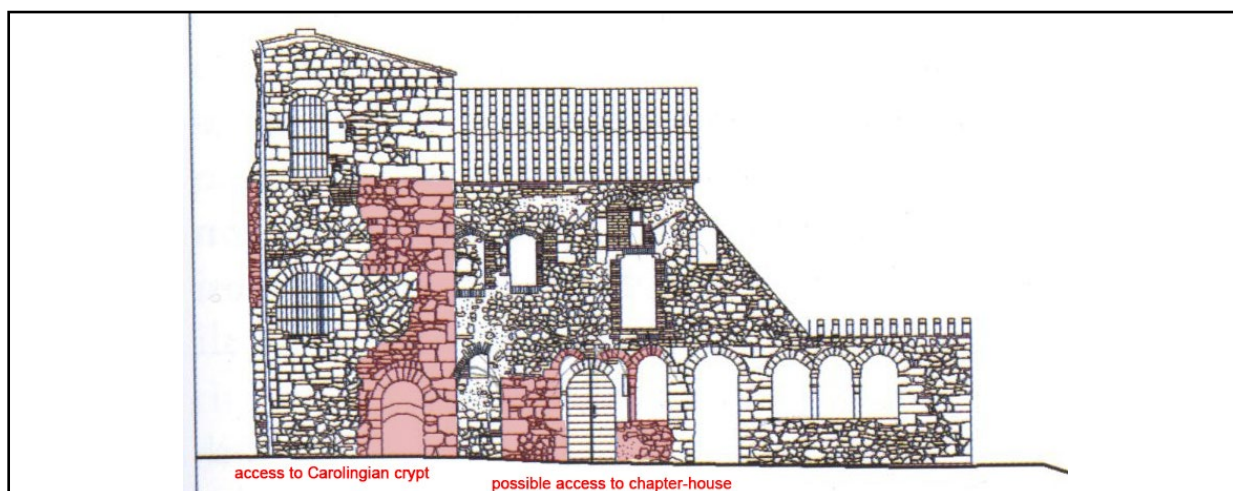


Figure 4.28 - Elevation of facade of sacristy and chapter house, showing sections thought to belong to the original phase (in red) (based on an illustration in Frati 2008b, 75, drawing by A. Angeloni.)

especially in the 2020 article, the scholar prudently assesses all the possible and more plausible alternatives. In not ruling out the possibility that the crypt may belong to the Carolingian phase, he offers this as an explanation for the difference in technique seen on the north side, and also in the upper sections of the walls with large stone blocks (visible only in photos before the invasive restoration work). On the other hand, if we are dealing with a single construction phase, which would presuppose that the crypt and the room above belong to the same phase (as claimed by Frati and Tigler), this difference in technique could be ascribed to variations in the stone-working ability between the different masons employed, and also perhaps to a limited supply of worked, dressed stones, deriving from pre-existing structures, discussed by Fatucchi (Fatucchi 1989), which, given their small number, were possibly used only in the crypt. Meanwhile, regarding the date of the church, to which the sacristy that we still see today, and the rear apse, definitely belong, Gabbrielli puts forward the hypothesis of a chronology dating to the first few years of the 11th century. Gabbrielli also does not rule out the possibility that this part of the building, consisting of the two interior spaces, may have been part of the transept of the earlier church.

The positions of all three scholars (which sum up and pick up on some critical analysis) are thus different, but not totally divergent. Aside from the precise dating of the crypt and its former position within the older church, it seems to me that they all agree that there was a major, organized construction programme that was set up between the 970s and the 980s (Frati), or between the late 10th and early 11th centuries (Gabbrielli), or in the first quarter of the 11th century (Tigler).

To try to find grounds for backing one of these suggested dates, here, we shall need to delve further with our analysis.

Accordingly, we shall return to the space above the crypt, now used as a sacristy.

This room has a rectangular plan, and is accessed from the southern aisle of the church via a doorway with reused Carolingian elements in the door-jamb, and Ottonian parts in the architrave (Frati 2008b, 73). The room has a semi-circular apse at one end with internal plaster facing and with late medieval frescoes, while externally the stones are still exposed (Figure 4.20). The masonry technique of the outside of the apse (Figure 4.25), which has been reworked over time, involved the use of medium-sized and also smaller, rough-hewn stones, made of local sandstone alternating with rough-hewn stones in local limestone. An attempt was made (not always successfully) to ensure that the courses were laid more or less horizontally, often by using filler stones. The original splayed monofora (single-light



Figure 4.29 - Photo of south side of church prior to 1961-65 restoration, showing sacristy (circled) which at the time was much higher, and with pitched roof. (Fondazione Monte dei Paschi, Archivio Malandrini CM-052-03652-POS, from Gabbrielli 2020, fig. 9).



Figure 4.30 - The facade of the former chapter house.

window), created using more regularly squared stones, is crowned by a cornice supported by moulded sills, which Frati finds a parallel for in the window of the church of Pieve di Castello, near Monteriggioni (Siena), which also displays a similar masonry technique (Frati 2008b, 73).

In the facade of the sacristy (Figures 4.26-4.27), overlooking the cloistered area, later interventions only make it possible for us to distinguish a limited number of surviving parts that can be related to the original masonry. These include the ones corresponding to the lower part of the right-hand corner section (Figure 4.28), featuring the use of large, fairly well-dressed squared stone blocks (similar to those seen in the wall of the apse behind). In the opposite corner section, other surviving parts can be identified at the point where it meets the aisle of the 12th century church that abuts onto it, thereby confirming that this part of the building is earlier. As can be seen in figure 4.27, the facade of what is now the sacristy is definitely a case of stratigraphic sequencing (never studied in detail as yet), made particularly complex by a whole series of transformations. Viewed broadly, I would say that these transformations have involved the restoration of many parts of the wall facing, as well as the definition of the two windows in the centre. Meanwhile, the small side door, which gave access to the crypt, would seem to be in phase with the corner section that it is bonded to, as also argued by Frati (Frati 2008b, 73). However, this observation raises a series of considerations linked to the construction sequences.

If this access door seems in phase with the crypt, which all previous studies seem to be taken more or less for granted, and as I have established for myself on the basis of the stratigraphic relationships, then this would also be true of the facade of the sacristy, albeit with all its transformations. If, in line with the suggestion made by Tigler and others, the crypt and the room above it formed the central part of this older church, how are we to explain such a facade, which should instead be a large-scale plugging wall in an interior space?

The most logical explanation in terms of stratigraphy is that originally this facade was indeed the side of a former protruding transept (as argued by Frati, Gabbrielli and others) in which the access to the crypt was along the side. A photo predating the 1961-65 restoration work (Figure 4.29) seems to show that this section of the building consisted in a large volume (later reduced in height) which, as also stated by Gabbrielli (Gabbrielli 2020, 47), suggests it was a transept. However, we have to imagine that in this phase the cloister partially covered this side, where the small access could have served as an entrance to the crypt from the interior of the monastery itself.

Regarding the other unit that gave onto the cloistered area, we can only refer to studies of the one adjacent to the sacristy, identifiable as the chapter house (Figure 4.30), given that the major restoration work prevent an interpretation of the other building unit, coinciding with the possible refectory (Frati 2008b, 74).

In Gabrielli's view, the stratigraphic relationships of the external walls of this interior space show that it was later than the sacristy/former transept (Gabbrielli 2020, 45). On the other hand, Frati believes that the remains of a series of aligned squared stone blocks (Figure 4.28), present in the lower left-hand part of the facade, indicate the presence of the former corner section of this part of the building. This feature leads the scholar to suggest that there was once a narrow corridor between the sacristy and the chapter house, and that this was later sealed off, with the resultant destruction of the continuation of the corner section in the upper part (Frati 2008b, 73-74).

If we take a close look at the characteristics of the small brick arch that surmounts these features, the result of a later intervention, I would propose a further interpretation. Namely that the corner section actually corresponds to the former jamb of a door that gave access to the chapter house, matching (in an opposite position) the door that led to the crypt (but standing slightly above it). For the other door-jamb, use would have been made of the corner section of the sacristy/transept, where, in the same position as the possible springer of the former arch, presumably made of stone, a moulded stone block is also visible (Figure 4.28). Indeed, the modern-day access to the former chapter house corresponds to a

later action, that involved the partial destruction of one of the two pairs of three-part windows in phase with the masonry, the second of which can still be traced clearly.

According to Frati, the former access to the chapter house corresponds to the door positioned in the middle of these two sets of three-part windows, and all these features are in phase with the church, which he dates to the Ottonian period (Frati 2008b, 73-75).

Given the high number of interventions in this wall, as well as to the pair of three-part windows themselves, it is hard, arguing on the basis of stratigraphy, to be so certain that all these actions might belong, in their current forms, to the former construction. Nor can we exclude, without an analytical interpretation of the stratigraphy, and also perhaps a detailed analysis of the mortars, the possibility of a later reworking, in particular of the right-hand three-part window, which is contemporaneous with the central window, with which it shares the use of stone blocks that are dressed and squared better than those used in the left-hand three-part window. This central window may have later replaced the former window, which I suggest was adjacent, and bonded to the corner section of the sacristy (Figure 4.28).

In any event, definitely datable to the original phase are the remains of at least two single-light windows on the upper floor, probably used as a dormitory. These features confirm that, even in the presence of major renovations of the outer surfaces of this facade, its former volume has largely been preserved.

I have dwelt much on the stratigraphic interpretation of these sections of building, and I have even gone as far as to propose alternative hypotheses regarding the system of access to the chapter house (which would presuppose a stratigraphic link between it and the sacristy) in order to underline a hypothesis which, although discordant in a few points, confirms what Frati had previously written, namely that what is now the sacristy (the former right-hand transept of the church), the external apse, and probably also the crypt (given the link with the access door in the facade of the sacristy) and the chapter house were part of a single construction operation.

Thus, going back to the masonry techniques used, if this were the case, we would be looking at the use of well-dressed blocks only in the crypt, while blocks with well-finished corners would only have been used in the corner sections of the walls, in the door- and window-jambes, or in the arch voussures. The rest of the masonry parts would feature the use of less finished stones of varying sizes, laid more or less regularly, often in line with pseudo-horizontal courses (as can be seen in the facing of the apse wall). At the start of this chapter we stressed that this monastery was certainly the richest in the local area, with a patrimony of properties far greater than that of the monastery of San Salvatore al Monte Amiata, and with a highly prestigious history connected to a foundation ascribed to none other than Charlemagne himself, as recorded in Henry III's 1051 diploma. Therefore one cannot help wondering how it is possible, if this former complex was built in the same years as San Salvatore al Monte Amiata, as Tigler argues, that no well-squared blocks were used anywhere in its masonry parts (not just in the case of the crypt), in common with the Monte Amiata monastery. The same considerations would apply even if its date were to be between the late 10th and early 11th century (according to Gabbrielli's proposal), given that (as we shall write in the next section) the church of Montieri, which is not far away, was built in the same period using fairly well squared stones (Figure 4.31).

If, on the other hand, we push back the date of this construction programme to the 970s and 980s, as Frati suggests, there could be a justification for this incongruity. Indeed, this type of masonry technique, featuring more regular courses, and the use of both squared and unsquared stones, would represent a unique example of its kind in the panorama of surviving buildings from this period, not only in Tuscia but also throughout north-central Italy, in which the use of an irregular technique was predominant, or else featuring more regular courses but with the use of unworked stones. This uniqueness would be explained by the importance and prestige of this monastery, a bridging site between inland territories and a broader coastal geographical area, and also of the hinterland, which was seeing major renewal,

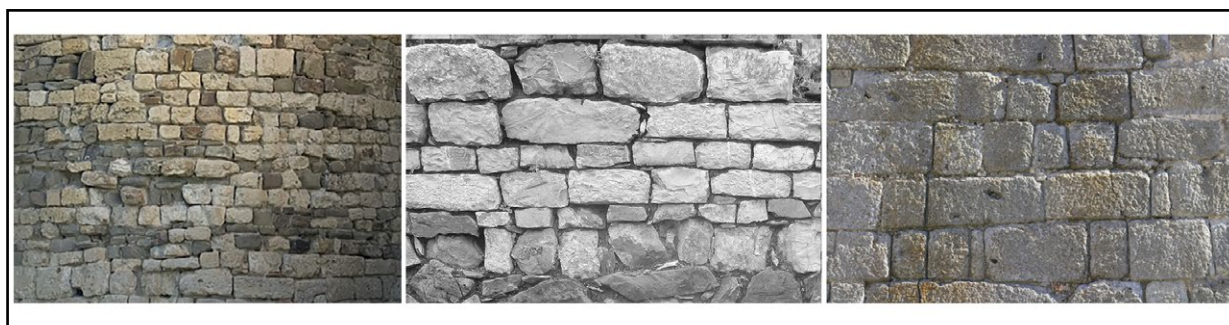


Figure 4.31 - Comparison between masonry techniques, showing earliest apse at Sant'Antimo (first on left), the Montieri church (middle), The abbey church of San Salvatore al Monte Amiata (right).

starting in the early Ottonian period itself. The techniques in the Ottonian phase at Sant'Antimo would thus represent an initial experimentation of a way of building that was later gradually more standardized over the following decades at the two other religious centres, ultimately taking the shape of the large squared blocks used at the Monte Amiata monastery.

All the conditions for this experimentation were in place: the monastery's major political and religious standing, and considerable wealth. We gave a summary description of this patrimony at the start of this section. I shall return to this point in order to underline one consideration. For this monastery, unlike the two other religious hubs analyzed in this chapter, there does not appear to be a clear association with specific, vital resources. Indeed, this territory lies outside mining areas, and we can believe that perhaps one of the main resources was connected to agriculture itself, and also to the numerous woodlands, as seems to be underlined by archaeobotanical investigations, too (Di Pasquale, Fratteggiani, Prieto 2013). The thousand mansi made over to Queen Adelaide would seem to confirm this picture, which again leads us back to the initial hypothesis, namely that the monastery was so important to the Ottonian dynasty above all on account of its prestigious history, and for its position as a linchpin between inland areas and the coast, with particular reference to the Grosseto area where, according to our hypothesis, a large bloc of public properties stood around Roselle, and where this monastery itself had a court with its own salt-works. Unfortunately the important period of field-walking surveys, remote sensing surveys and excavations in the municipality of Montalcino (Campana 2013a), also owing to the extensive woodlands, does not provide much information to link the history of the monastery to that of its territory.

An examination of documentary sources not pertaining to the abbey itself, the archives of which, readers will recall, were later lost, have yielded numerous mentions of monasteries, courts, villages (*vici*), and generic population sites, also with one reference to a *castrum*. Regarding this last site, mentioned in a document dating to 715, it has been suggested that this may coincide with the site of Monte Caprile, although the possibility is not ruled out that this same *castrum* may be a pre-existing part of the later site of Castelnuovo dell'Abate, which was rebuilt in the mid-13th century. This, then, gives the picture of a fairly complex set of sites for which, in the case of this territory too, the hypothesis applies of a gradual trend, in the Early Middle Ages, towards an agglomeration in the context of upland sites, as well as sites located on medium-sized and low hills, often connected to roads, or previous occupations dating to the Classical period (Campana 2013b, 282-291). For that matter, on the basis of erratic, reused elements (the columns of the crypt, and perhaps the large squared blocks in its walls) have in the past been tentatively identified as pre-existing features, also in the case of this same monastery (Fatucchi 1989). As already stated, the monastery's centrality for the Imperial and papal powers nevertheless remained considerable, and lay at the foundation of the large-scale 12th century reconstruction which did not lack support from the local seigneuries, in particular the 'Counts of Siena'.

This is a fairly unusual epilogue, which in part also characterized, albeit with differentiated outcomes, the last case to be examined, namely the religious complex of the Canonical Church of Montieri.

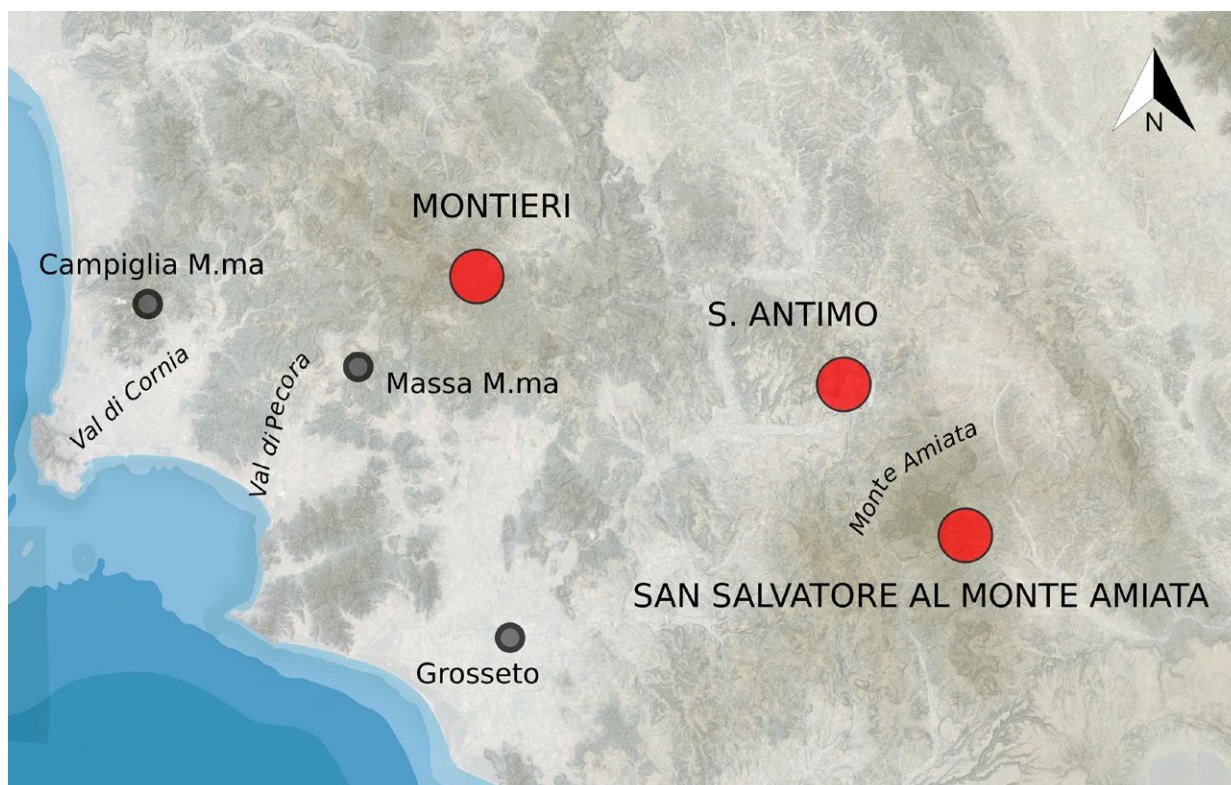


Figure 4.32 - Location of Montieri and monasteries of S. Antimo and San Salvatore al Monte Amiata.

4.3 The Canonical Church of S. Niccolò, Montieri

Returning to the heart of the Colline Metallifere Massetane, we come to the third religious centre which, lying almost on the border with the Sienese area, could be thought of as the northern border of the territory of our case study (Figure 4.32). The site of the Canonical Church is situated on a large artificial terrace on the north-eastern lower slopes of the hill (Poggio) that overlooks modern-day Montieri, a small town (Figures 4.33-4.34) whose roots are to be found in the mining castle built during the central Middle Ages (see chapter V).

Thus, this religious centre came into being in the heart of a mining landscape with rich mineral seams, from which copper, lead, silver and iron were extracted, many of which were present along the slopes of this same, towering Poggio (see chapter V). In fact, we can say that research at this site was initially linked to this issue, given that the few ruins visible among the dense vegetation stood not far from what had long been regarded as a probable mine entrance (Figure 4.35). Accordingly, field research at the Canonica di Montieri⁸ was conducted as the conceptual continuation of previous research at the castles of Rocchette Pannocchieschi and Cugnano, offering the possibility of analyzing the relationship between a religious institution, first mentioned in the 12th century, as we shall later see, and the resources in its surrounding territory, within a historical context that is particularly well-known thanks to the studies of Gioacchino Volpe concerning the society at Montieri linked to the late medieval castle (Volpe 1961).

As I shall illustrate in chapter V, the investigations at the Canonical Church were actually only one of the themes of our research in this territory, given that, with the aim of a general multidisciplinary study of the cultural heritage, several working groups (which later constituted the basic nucleus of the nEU-Med project team) were engaged, between 2009 and 2013, in work on the material dimension of several

⁸ The archaeological excavation was conducted by myself, with coordination in the field by Jacopo Bruttini.

THE RELIGIOUS CENTRES IN THE HINTERLAND

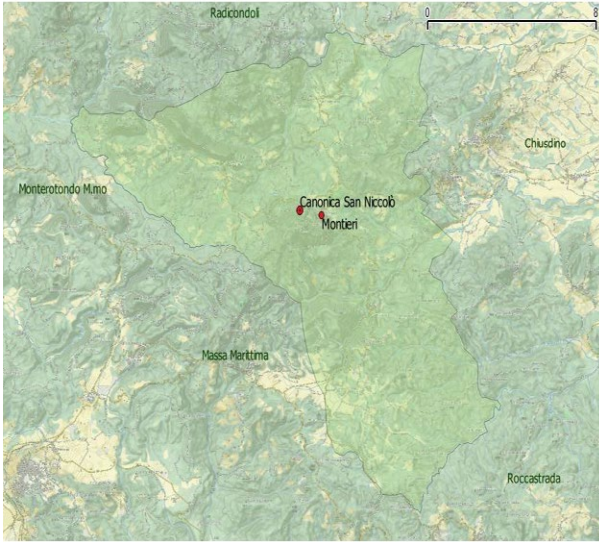


Figure 4.33 - Location of the Canonical Church with respect to the hamlet of Montieri.



Figure 4.35 - The Canonical Church. The presumed mine entrance.



Figure 4.34 - The modern-day hamlet of Montieri, with the hill ("Poggio") above it.



Figure 4.36 - The site as it appeared in its various phases of investigation. From top to bottom: at the start of fieldwork, and after three seasons of excavation (photos: University of Siena archive).



Figure 4.37 - The site at the end of the final excavation season (photo: P. Nannini, SABAP-SI).

different aspects of the history of this geographical area: from the archaeology of architecture at the modern-day borgo of Montieri, to an excavation of one of its urban buildings; from the survey on the Poggio aimed at recording mining features, to chemical analysis of local soils; and from archaeobotanical studies to archaeometallurgical studies. All this within a long diachrony stretching from the Early Middle Ages to the modern era (the many articles include: Aranguren, Bianchi, Bruttini 2007b; Bianchi, Bruttini, Grassi 2013; Benvenuti *et al.* 2014; Bianchi, Ferdani 2015).

In this overall context, the Canonical Church represented a fundamental historiographical question to be analyzed. While Vatti believed that the church was located in a portion of the existing church of S. Michele (Vatti 1930, 13), and Moretti and Stopani (Moretti, Stopani 1990, 16) thought it was to be identified with the church of S. Giacomo, the excavation verified the widely-shared view that the few ruins visible in the vegetation prior to the excavation on the slopes of the Poggio (Figure 4.36) were in fact parts of this very church. Documentary sources first mention the Canonical Church, dedicated to San Niccolò, in 1137, in connection with the bishop of Volterra (Volpe 1961, 340), who had significant interests in mines in the Montieri area. These interests were the cause of major clashes with Siena, between the 12th and 13th centuries, for control over them.

The church was the first building to emerge during archaeological investigations. Once freed from the vegetation, and large-scale collapsed material, we found, to our amazement, that alongside the first apse there were other apses, forming an unusual six-apse perimeter, with a sort of small building annexed to

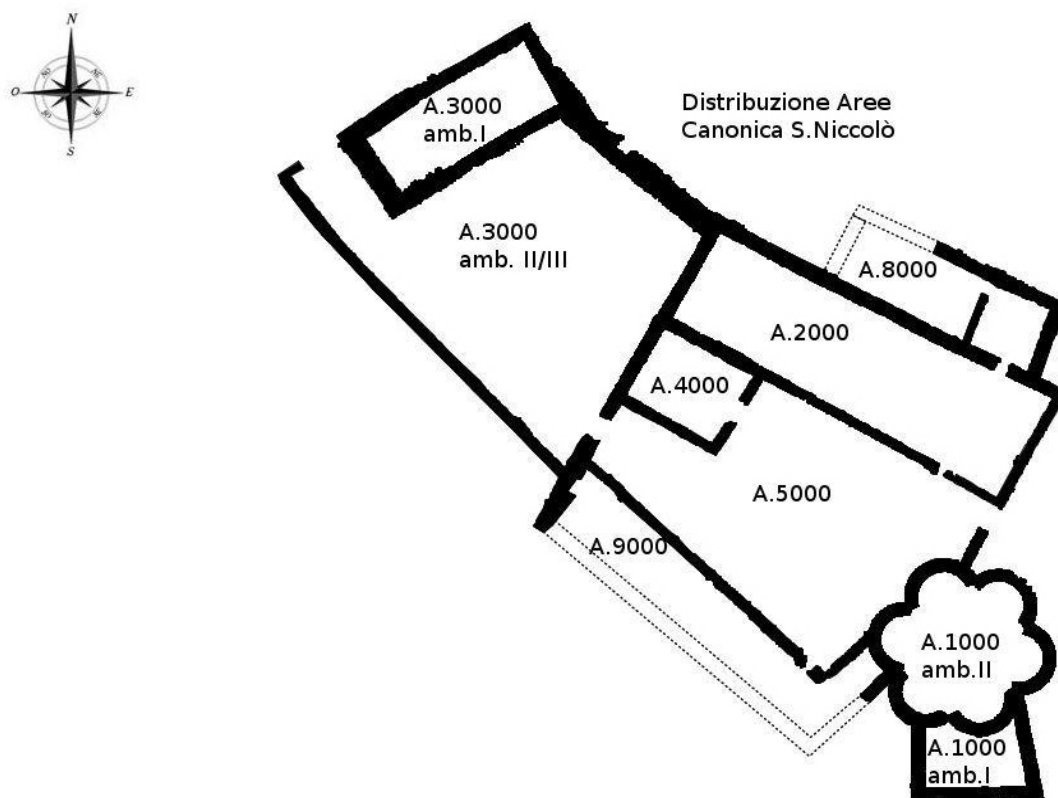


Figure 4.38 - Site plan, showing excavated areas.



Figure 4.39 - Examples of late medieval multiple, stone-lined burials found in the internal area of the Canonical Church (photos: University of Siena archive).



Figure 4.40 - Building annexed to the church, Area 1000, Room I. The burial later incorporated within the church annex before and after excavation. One can see the stone-lined grave, and, above in each photo, the two fragments of the large stone slab that sealed the tomb.

the side further up the hill (Figure 4.37). Later, the surrounding structures were unearthed: two buildings in the shape of elongated rectangles (Area 2000 and Area 9000, Figure 4.38), arranged so as to border a central open area. In this area, on the south-west side, there stood a smaller building (Area 4000). All these individual buildings were linked by a thick stone wall, forming a sort of fortified enclosure. Access to this small complex of buildings was possible both via a doorway to one side of the church, and also via a doorway in the opposite side, which in turn allowed access to a further open area, where a rectangular building stood, along with remains of other structures (Area 3000). The archaeological investigations enabled the determination of the chronology of the construction of the aforementioned structures (Bianchi, Bruttini, Grassi 2013). Specifically, it was established that the church and its annex were the first episodes of a construction project, as I shall specify later, that was active between the late 10th century and the first few decades of the following century. Only in the course of the 12th century were the two long interior spaces built, and the connecting walls with their respective doorways, to be identified with the structures of the episcopal Canonical Church mentioned in 1137. By contrast, the small room also standing within the enclosure dates to the later 14th century. The 12th and 14th centuries saw the definition of the outer structures, located in Area 3000, in use until the whole complex was abandoned once and for all, during the 15th century.



Figure 4.41 - Building annexed to the church. Marked in red is the curve of the apse below which, in section, one can see the stratigraphic levels deposited after the grave was created. Also visible is the low wall added to the former apse, but not bonded to it.

Since the second half of the 11th century a cemetery area began to take shape around the church and its annex, and, in the 12th century layout, it was structured in a more organized way in the central space delimited by the two long buildings. The archaeological investigations unearthed more than 300 burials (as yet unpublished) of children, men, and women (Figure 4.39). These individuals were certainly members of the Montieri community who chose this place of burial, between the 12th and 14th centuries, rather than the cemetery around the parish church of Montieri dedicated to San Paolo⁹. For obvious reasons, linked to the chronologies discussed in this volume, I will not dwell on the (albeit important) site phases dating to the central and Late Middle Ages, relating to the formation and development of an unusual rural Canonical Church.

By contrast, what we must focus on, in order to follow our narrative thread, are the events connected to the church's construction.

⁹ The remains of this, located 2 km south-east of the town, are thought to date to the second half of the 12th century (Moretti, Stopani 1970, 15).



Figure 4.42 - Plan of church and annex, showing internal apse, to emphasize the close similarity in size with the measurements of the church apses.

4.3.1 Designing a place of worship

The church was not built in an isolated spot. Surviving stratigraphy, albeit now limited, and pottery fragments in secondary deposit indicate that here, between the 8th and the early 10th centuries, a population context must have existed, as deduced from the material culture (Briano 2010-11). Traces of a possible small defensive ditch, with post-holes inside it, in the western sector of the flat area (Area 3000), together with post-holes found in the space inside the church, and prior to its foundation, are truly minimal remains for determining the nature and vocation of this inhabited site, as well as its size. Thus it is not possible to formulate plausible hypotheses, but we can compare it to the small sites existing in the mining district of this hinterland area, where, at the sites of Cugnano and Rocchette Pannocchieschi, we have greater material evidence (see chapter V). This is despite the fact that the association with the mining seams of the Poggio is not clearly indicative of a site's mining vocation in this chronological horizon, given the lack of indicators of metallurgical production.

However, the fact remains that, in the course of the early 10th century, traces of abandonment are found. The ditch-like feature was filled in, as were the post-holes. Being unable to assess the size of this



Figure 4.43 - Above: the apse inside the annex. Below: detail of foundations of one of the apses in the church.

site, we do not know whether this abandonment involved the whole site, or only the remains that were excavated.

In any event, the transition to the following phase brings us closer to the formation of the religious centre. These events, as shown by the radiocarbon analysis mentioned below, took place within a very short space of time, and in the same chronological range: the last 20 years of the 10th century and the first few decades of the following century.

In this space of time, a male individual, who died at around the age of 50, was buried here (Figure 4.40)¹⁰. Anthropological and paleopathological analysis of his remains indicate an individual with a slender skeletal structure, and an anatomical stature (158.5cm) below the average for males in the Middle Ages. The pathologies of the joints, especially along the spine, are compatible with his age, but they were also caused by poor posture throughout his life. The clear hypertrophy of the nasal conchae was also a

¹⁰ Radiocarbon dating of his bone remains provided an 1sigma calendar age located in the 981-1033 date range (100%), and a 2sigma age (84% accuracy) of between 947-1049. The analyses, coordinated by Carmine Lubritto, were conducted at the Department of Environmental, Biological and Pharmaceutical Science and Technology, University of Campania Luigi Vanvitelli.



Figure 4.44 - Sampling the layers of earth brought in to raise the ground level, prior to the foundation of the church.



Figure 4.45 - The holes associated with the burial of the brooch, during excavation. The brooch is starting to appear in the hole in the bottom left photo.

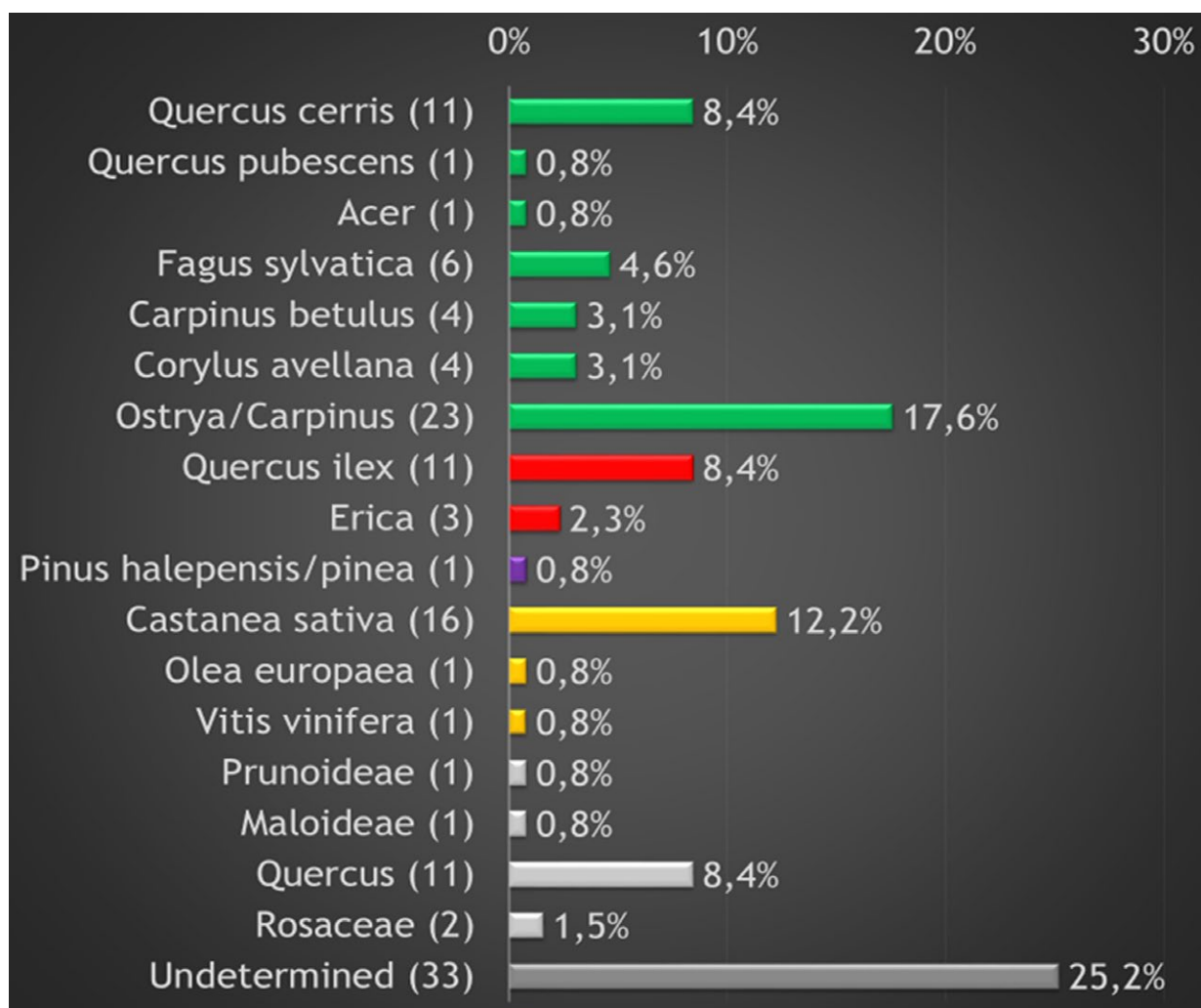


Figure 4.46 - Table showing types of essences, and their amounts, found in the anthracological remains in the fill of the hole containing the brooch (from Buonincontri et al. 2015).

direct result of this, probably aggravated by the fact he lived in cold, damp environments. The presence of hypoplasia of the tooth enamel is evidence of episodes of malnutrition or debilitating pathologies during infancy. Occupational markers suggest non-intensive but repeated physical activity, such as walking over uneven terrain. The perimortem injuries (broken cranium and femur), which were both still in the process of healing, could have been caused by a single traumatic episode (a fall?) which may perhaps have led to death, although this occurred some time after the accident¹¹.

This individual was buried in the eastern part of the flat area, in a stone-lined grave, in an empty space, covered over by a large slab of local clay schist. After excavating inside the church and in its immediate vicinity, as well as inside the whole 12th century Canonical complex, I think it may be argued, with a fair degree of certainty, that this is the first burial in the area. I will come to the question of the possible identity of this man later on, because what I now wish to narrate is the sequence of events as reconstructed from the stratigraphic deposit.

After the burial, the church was built. It is very hard to quantify how much time elapsed between the two actions (the burial and the building) because, as I will state later on, the date of the building's

¹¹ This individual's remains were analyzed at an early research phase by Cinzia Mantello. I thank Serena Viva (University of Siena) for this information, still unpublished, which is the result of the renewed investigation of bone remains.



Figure 4.47 - Reconstruction of the church (3D modelling by Daniele Ferdani; from Ferdani, Bianchi 2015).

construction (another radiocarbon date) brings us almost to the same chronological range as the death of the individual himself, i.e. the late 10th to the first few decades of the 11th centuries.

Was this a short space of time? A handful of years, or a few decades?

The stratigraphy seems to suggest a close proximity between the two moments, since the foundations of the church's southern apses were later cut into the thin strata that obliterated the grave. However, its construction was marked by complex and difficult building processes which did not allow us as archaeologists to immediately understand the exact, objective sequence of events. I will try to sum this up briefly.

As an initial action, resting on the first stratum covering the grave, a semi-circular apse was planned (Figure 4.41) of which only the foundations are preserved (or perhaps only the foundations were built), and which, in an initial stage of excavation, was interpreted as the remains of an earlier church. Unfortunately it was not possible to establish the real stratigraphic relationship (bonded with/resting on) between this apse and one of the adjacent apses of the church (owing to later reconstructions that cannot be removed, as can be seen in Figure 4.41). Despite this, later on it was suggested that the apse (Figure 4.42), probably never completed, was initiated at the same time as the start of construction work on the whole church. Indeed, its measurements are very close to those found in the church (the internal radius of which varies between 1.60 and 1.40m, compared to 1.40m for the radius of the apse within the annex). Moreover, all these foundations (Figure 4.43) display the same masonry technique (stones of various sizes from the local sandstone arranged irregularly), and also feature very similar mortars, mostly of a clayey type, with low portions of calcium carbonate (Chiarelli *et al.* 2015). It is hard to explain what this apse signifies: a change in the building plans, when perhaps the intention was to include the



Figure 4.48 - The interior of the church in various phases of excavation. Top left: the layer cut by the hole to enter the brooch, which is still shown filled in in the photo. Right: one of the fill levels. Bottom two photos: the remains of the paved floor. The photo on the right, at the top, the two apses where the raised presbytery area stood.

burial within the church? The need to erect the building lower down, owing to the morphology of the terrain? Or the original idea of creating a forceps-shaped atrium, similar to a number of buildings that parallel this church closely, as I shall suggest shortly?

In any event, as also shown by geomorphological analysis, the difference in height between the natural ground level, measuring almost a metre, between the point where the grave was located and the adjacent area in which the church was built, was filled in by means of an artificial infill of earth that was then compacted, as can be deduced from geomorphological analyses (Figure 4.44)¹². This is the level that the church's foundations were built on. It is on this stratum, and thus on the occasion of the first phase of construction, that the foundation rite was performed.

A sub-rectangular hole was dug off-centre compared to the middle of the internal circular perimeter defined by the six apses (around 9m). Inside this hole a further, smaller, round hole was dug in which the large brooch, discussed below, was laid (Figure 4.45). No preserved find associated with this item of jewellery gives us any indications as to possible containers, made of fabric or wood. In the upper, shallower hole (Figure 4.46) were found the anthracological remains of 18 plant essences, plus 33 others that were not determined (Buonincontri *et al.* 2015).

Along with these was a fragment of a colourless carenated glass, which has parallels with similar examples found in French contexts datable to between the 10th and 11th centuries (Briano 2010-11,

¹² I am grateful to Pierluigi Pieruccini (Department of Earth Science, University of Turin) for the findings, as yet unpublished, drawn from the geomorphological analysis of the strata relating to the church's foundations, in what was our first collaboration prior to the nEU-Med project.

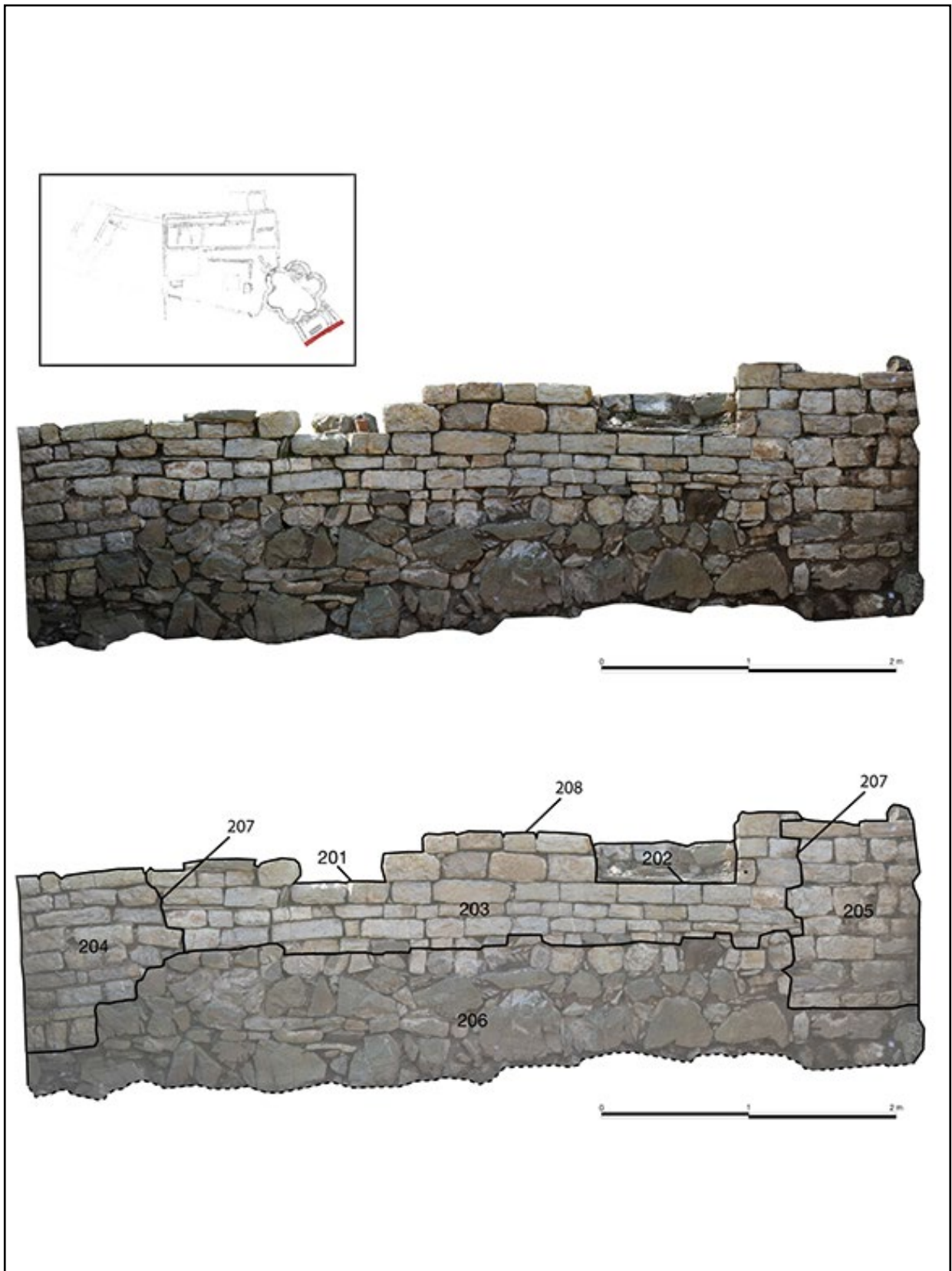


Figure 4.49 - Photogrammetrical survey of exterior of long side of church annex, with stratigraphical analysis in which USM 207 indicates possible doorway, and USM 203 shows its fill.

144). These finds are to be placed in relation to the foundation liturgy itself, for which, so far, no useful matching parallel cases have been found. Nevertheless, the radiocarbon date of these anthracological remains, i.e. the late 10th and first half of the 11th century, has provided the chronological range in which the building was constructed, almost coinciding with the date when this particular individual died¹³.

Subsequently the wall elevation was built using stones of local limestone, fairly well squared and laid in regular courses. It is possible that the apses had windows, probably single-light. The fact that ledges and archivolt were found in the church and in the adjacent space seems to confirm this plausible hypothesis (Falleri 2010-2011). The building's roof must presumably have featured a drum, above the level of the rounded tops of the apses, but it is not possible to establish its form, but only to suggest how this may have appeared, as can be seen in the illustrated reconstruction (Figure 4.47). The lack of any conglomerates in the collapse layer, and the fact that small slabs of clay schist were almost the only material found in the stratigraphies inside the building, suggests that it had a shingled roof resting on a system of wooden beams.

Inside the church the floor was created, after an artificial infill layer that obliterated the hole containing the item of jewellery, (Figure 4.48). The only remnants of this are small patches consisting of slabs of grey schist. We may speculate that ever since its origin the presbytery area corresponded to the location of the two eastern apses, where a raised level existed which was accessed by two steps. There are no material remains such as to hypothesize with any certainty the presence of one or maybe two altars, thereby preventing us from determining the type of liturgy practiced here.

In the original plans, the church had two entrances, which were aligned: the first was created in the north-west apse, and the second in the south-east apse. The latter was necessary in order to provide direct access between the building and a rectangular stone-built annex that was constructed at the same time as the church, so as to enclose the burial within it, and the remains of the apse. There were design changes to this annex, too, while it was being built. Indeed, the stratigraphy of the wall elevations reveals that, on the long side of the annex, a large aperture (more than 2m in size) was blocked up, perhaps turning this unit into something like a large portico (Figure 4.49). Remains of this can clearly be seen in parts of the jambs that are still visible. The masonry technique used to block up the opening, as well as a certain similarity in the mortars (Chiarelli *et al.* 2015), seems to prove that this change occurred as it was being built, even before completing the section of walling, closing off the annex itself on all three sides, thereby defining an enclosed space, a sort of chapel that was only accessible via the church.

Inside, several layers of earth raised the floor level to the height of the threshold of the door, thereby covering over the grave. However, this infill layer was set in place in such a way as not to obliterate the levelled remains of the former apse, which were left exposed, almost as if serving as a sort of marker of the burial itself. The addition to the apse of a small, low wall, resting on the south apses of the church, further accentuated this spatial delimiting of the burial place (Figure 4.41).

Two rectangular liturgical niches served to house artificial lights, perhaps representing the only source of light in a room that probably had no other windows. Unfortunately, later transformations to this space, up until the time of its abandonment, have compromised the older deposits, preventing us, for example, from finding any remains of a possible stone-paved floor, which would have been in keeping with the church itself.

The church, and its grave, acted as a powerful magnet, given that, not many decades after the end of the construction programme, burials started to appear in the space adjacent to the west side of the

¹³ The dating provided a 1sigma calendar date somewhere in the range 964-1041 (87% accuracy), and a 2sigma date (with 83.4% accuracy) in the 893-1053 range. The analyses, coordinated by Carmine Lubritto, were conducted at the Department of Environmental, Biological and Pharmaceutical Science and Technology, University of Campania Luigi Vanvitelli.

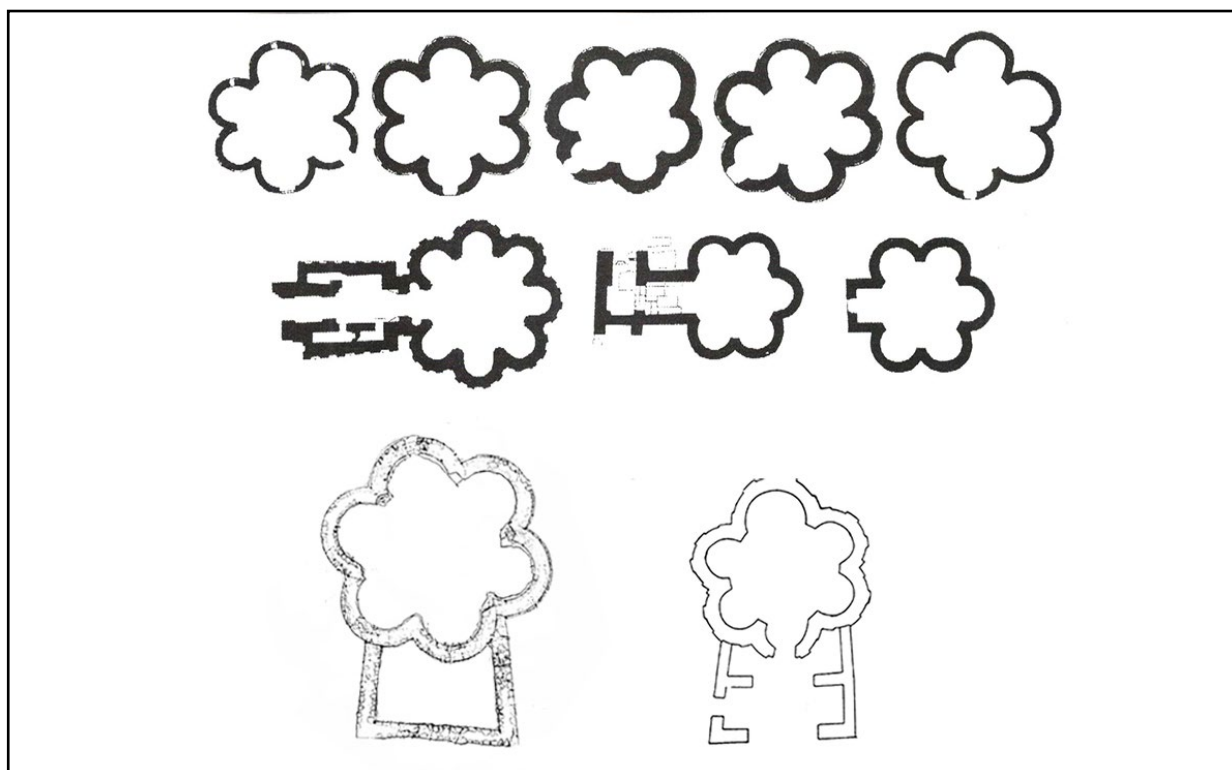


Figure 4.50 - Comparison chart with plans (not to scale) of churches in Croatia and Dalmatia. Below: comparison between plan of Montieri church and its annex, and plan of St. Michael, Pridraga (drawings to scale).



Figure 4.51 - The Church of Holy Trinity, Split.

annex itself, datable, from radiocarbon analyses, to the second half of the 11th century. At this time the space around the two building units must still have been free from other constructions, whereas other constructions were built only in the course of the 12th century, forming the late medieval Canonical complex¹⁴.

The power of attraction of this religious centre did not decline in the Late Middle Ages, either, as shown by the more than 300 burials brought to light, which are to be seen as only as a portion of the number actually contained in the internal open space within the Canonical complex. Perhaps the creation of the new doorway in the south apse, at some point in the 13th century, was connected to a certain influx of worshippers, since it would have allowed direct access to the church from the space outside the Canonical precinct. The building was frequented on an ongoing basis, until probably the later 14th century, when it was abandoned, along with the whole of the Canonical site.

4.3.2 *A church, a brooch, and a possible hermit*

These, then, are the facts as they can be reconstructed solely on the basis of the sequence studied, since there are no written documents that might enlighten us regarding this complex and unusual history: a religious building with a particular, unique layout, built near a pre-existing burial that was later included inside the annex to the church; an equally unique and unusual foundation ritual with a piece of jewellery of great value and symbolism being interred; and the formation of a context of worship and devotion that attracted numerous burials in a long diachrony stretching from the late 11th century to the 14th century.

It is clear that we are looking at a very unusual case, and this overall uniqueness has led me to place the history of this site in the context of the case study analyzed in this volume.

Accordingly, I would like to analyze the individual aspects of this ‘otherness’.

We shall start from the choice of the floor plan. The central, six-apse plan definitely has parallels with an extensive series of examples, although these are associated with the Late Antique period. Some of these have specific points of similarity with the Montieri church, such as the Sepolcro dei Calventii in Rome (Spera 2004, 267-272), while other comparisons are less immediate, such as in the case of the room with six niches at the Aiano-Torraccia di Chiusi Roman villa (San Gimignano; Siena, Cavalieri 2019) which, moreover, is not too far from Montieri.

There are no close parallels with the chronology of the Montieri building either in Tuscany itself or in the rest of Italy. The best comparable examples, also as regards size, are found in a group of churches situated in the former principate of Croatia and in Dalmatia, in the area between Zara and Split (Figure 4.50). We are referring specifically to the churches of: St Thomas (Mastirine) at Kašić; St Michael, at Pridraga; St George at Škabrnja; St Mary and St Chrysogonus, Zadar (Zara); St Mary at Bribir; St Mary at Trogir (Traù); the Holy Trinity in Split, the only one that is still almost totally preserved (Figure 4.51); and St Michael at Brnaze (Jurković 1996; Jurković 2001; Jakšić 2005; detailed notes in Marasović 2008, 229-233, 243-249, 331-335, 365-367, 471-475). Most of these buildings feature six apses with an external diameter generally varying between 9 and 12m (the Canonical Church measures 11.74m). Only at the two churches at Zara (St Mary and St Chrysogonus) was a vestibule added, with a bell-tower, in place of the sixth apse, while a similar annex in the case of Brnaze, Pridraga and Kašić was added outside the six-apse plan. In the case of the church of St Michael at Pridraga, the similarities with the form and size of the unit built against the Montieri church are considerable, with the external short sides measuring

¹⁴ The presence of a long wall later incorporated in one of the long rectangular buildings (Area 2000) does not rule out the existence, already at that time, of a sort of enclosure of the area in this phase.



Figure 4.52 - The Montieri brooch. Below right: reconstruction by Alessandro Pacini of the fastening system (photo of brooch by SABAP-SI, from Bianchi et al. 2015).

6m and the long side 6.65m (as opposed to 6.30m for one of the short sides of the Montieri church, and 7.50m for the long side). The Oslje church is the one with the most elaborate plan, with no fewer than eight apses, although a narrowing was created inside the eighth, in turn leading into an atrium. The dates of these buildings, ranging from the 8th to the 11th centuries, is debated, because they are often deduced from fragile grounds, such as architectural decorations in secondary deposit, which could also have been reused from elsewhere. Most of these churches are private chapels for memorial or funerary purposes, pertaining to aristocratic families or monasteries (Jurković 1996, 254-255; Jurković 2001, 169-172).

Of course, these churches and the Montieri building are geographically remote, whether measured by land or sea, and it is truly difficult to find connections between them, in view of the very fact that the

builders, or the people who commissioned the building, could also have drawn inspiration from the many Late Antique examples in Rome, or in other parts of Italy.

Thus it is very hard and risky to speculate regarding the process of the genesis of this project.

However, I cannot fail to underline a series of affinities that may represent a clue, while being fully aware that it is as weak as it is evocative, in outlining a common thread that could unite the Croatian churches with this territory, or at least with Tuscany.

One end of this thread begins again in Montecassino, and that small group of five monks, studied by Paolo Tomei, who in around 993 were exiled from the abbey there, as described earlier in the section dedicated to San Salvatore del Monte Amiata (Tomei 2016). Indeed, this group included none other than Winizo, who was destined to become the abbot, and who was associated with rebuilding of the Monte Amiata monastery. According to Tomei's reconstruction, this group of monks had very strong links with both Hugh of Tuscia and Otto III, in a context in which the new monasticism was in tune with the reorganization of the fiscal patrimony, in a very closely interlinked relationship between political dynamics and the spiritual dimension. Two of them were placed in charge of large royal abbeys: Winizo became head of San Salvatore al Monte Amiata, and Maione became head of San Salvatore di Sesto. In Tomei's reconstruction, Maione and Winizo are the monks with the highest level of scriptorial skill in the group, which can be traced to a high level of culture and learning as befits figures who are in contact with the great intellectuals who belong to the contemporary reformist elite.

In reconstructing the background of Maione, whose writing displays Benevento-style characteristics (Tomei 2016, p. 363), he is hypothetically identified by Tomei as the prior of S. Liberatore alla Maiella, a highly important monastery in the reformist climate of the time. If this identification were correct, then that Maione, who was later abbot of San Salvatore di Sesto in Tuscany, before his departure from Cassino, would have been entrusted, in 986, with the priorate of St Chrysogonus of Zara, which became a place which spread Benedictine monasticism in Dalmatia (Tomei 2016, 377 n. 39). This information might still be a long way away from the history of the Montieri church, were it not for the fact that the church of St Chrysogonus itself belongs to the group of churches the plans of which feature multiple apses. Indeed, the plan of the Croatian building that was destroyed has been reconstructed thanks to a picture of it on a contemporary map, thanks to which we can see five apses, and a quadrangular atrium that gave onto the church, with a burial function, from which come fragments of Carolingian liturgical furnishings. Owing to the importance of the dedication (St Chrysogonus is the patron saint of Zara), it is thought that this church was taken as a model for the construction of the other buildings with six apses (Jurković 1996, 254).

Tomei reiterates that the monks continued to give and receive mutual solidarity, helping each other in various times of difficulty, especially after the almost contemporaneous deaths of their patrons, Hugh of Tuscia and Otto III. This does not mean, of course, that thanks to these contacts Maione was the means of transmission of this singular floor plan, since the identification itself between the Maione who was abbot of San Salvatore di Sesto, and the monk Maione who was made prior of St Chrysogonus in Zara, is based on the hypothesis recently formulated by Tomei, even though it is backed up by solid circumstantial evidence.

However, this series of proposed narratives and related hypotheses could definitely not be formulated if the cultural and political context of the day had not been so marked by highly numerous and often closely interconnected circuits of knowledge between places that could sometimes be a long way away from each other, although within a complex network with links to the Imperial court, to the Margrave of Tuscia, and to major abbeys and great churchmen. The very complexity of these circuits makes it truly hard to formulate definitive hypotheses regarding the floor plan of the Montieri church, and we shall have to make do with pointing up the best-fit parallels, and sketching out a possible common thread that has led us from Montecassino to Zara, and thence to Tuscia.

The Montecassino abbey itself, which Maione and Winizo left as exiles, returns anew when we turn to the other element of otherness in this story, namely the item of jewellery that was interred in the foundation ritual, which it is now time to address (for all the following summarized references to the brooch, readers are referred to the study by John Mitchell, in particular, and to the study by Alessandro Pacini, both contained in the following contributions: Bianchi *et al.* 2015; Bianchi, Mitchell 2017).

This is a large hemi-spherical disc brooch, generally used to fasten garments or cloaks, and it was worn by both men and women (Figure 4.52).

A description of it gives an idea of how precious and sumptuous it is. It can be admired in the Pinacoteca in Siena, where the brooch is temporarily on display. A sheet of gold hammered into the shape of a sphere, with only a small flat edge, forms the main structure of the piece. Its diameter is 6.4cm, and in the centre it bears an oval almandine garnet worked using the cabochon technique, set inside a small, eight-pointed plaque, enamelled using the cloisonné technique. All around there is filigree decoration divided into three bands, comprising pale amethysts alternating with opaque glass beads.

On the back, the presence of two small cylinders suggests that the brooch had two pins, one long and the other shorter, to hold the first pin in place, and make it more secure. It could also be used to hold a chain, so that the brooch itself could also be worn as a pendant.

Brooches of this type can be recognized in depictions of many Emperors (Otto II, Otto III, Henry II, Conrad II and Henry III), showing how much in vogue they were among the upper echelons of the secular world and the church, especially in Ottonian and Salian Germany. Also associated with this kind of brooch were women such as Queen Kunigunde, and Abbess Uta of the Niedermünster monastery, portrayed in a late 10th century image.

In the poem called the *Ruodlieb*, composed in Bavaria in the 11th century, which narrates the experiences of a member of the aristocracy, written by a person who lived both at court and in a monastic community (Gamberini 2003, XXXII), we read that, when the protagonist left the king who had given him hospitality to return to his native lands, among the many gifts given to him by the king was a large brooch that had belonged to the queen, and others that were lighter, to be used as pendants, and an even smaller one to be used as an everyday shirt fastener (Gamberini 2003, 59). In actual fact we do not know whether these luxury objects donated to *Ruodlieb* resembled the Montieri brooch, but their lengthy mention in the text shows generally that decorated brooches were regarded as precious accessories between the 10th and 11th centuries, and also that examples of different sizes existed suited to different kinds of clothing (and perhaps for differing social classes), and could also be worn as pendants (as may also have been true in the case of our brooch, as would seem to be suggested by the shorter of the two pins).

The brooch from the church seems to belong to the highest level of artisanal production of objects of this kind, given that similar examples, by size and quality, are very rare.

To encounter items comparable to this find, one has to look to the large disc brooch that forms the central piece of the so-called Mainz Treasure of Empress Gisela or Empress Agnes, the so-called Townley Brooch, currently in the British Museum, which is of similar size (5.9cm), or a fragmentary brooch, from a treasure found in Hasselt, Limburg, in eastern Belgium, all datable to within the 11th century. In addition, there is the disc brooch, densely decorated with intricate gold filigree work with gemstones set into it, from the so-called Montecassino Treasure, found at the end of the 19th century at the abbey, which also includes 29 gold coins.

However, according to Mitchell's analysis, in its composition the Montieri brooch does not have close parallels with these four examples, and generally it does not have a clear and evident place in the production of sumptuary goods in the central Middle Ages. These considerations apply to the filigree decoration and also to the decorative motifs and elements, for which Mitchell identifies possible comparisons with rings, covers of Gospel books, and wall decorations that in some cases are datable to

before the 11th century, and to decorative motifs drawn from Islamic art, as well as to the repertoire of Italian artisans. Thus, the brooch could have been created by a jeweller open to various complex influences. Mitchell is inclined to identify the maker of the brooch as an Italian artisan, a fact which has to do with the tradition of making cloisonné enamels in Italy. The most famous examples of these, in northern Italy, in the 11th century, were the cover of the Gospel book of Aribert of Intimiano, and the so-called 'Chiavenna Peace'.

This analysis, leaving aside the place of production, confirms that the owner of this brooch was certainly a very high-status individual. The traces of its prolonged use lead one not to rule out the possibility that the piece may have changed hands before it was buried underground on the occasion of the foundation ritual.

Usually the meanings of such ritual deposits may be of various kinds: association with a supplication to a saint; being the physical equivalent of an ongoing prayer; and representing an invisible but personal gift of benefit from a patron (Gilchrist 2012, esp. 334-336 for the reference to the Anglo-Saxon area). The last of these could be the most plausible meaning of the burial of this object which, as a result, leads us to address two important questions: who commissioned the construction of the church, and what were the motives underlying this complex operation.

4.3.3 Patrons and sponsors

To try to answer the first question, we can set out from words written at the start of the last century by Schneider, who imagined a fiscal origin for the Montieri district (Schneider 1975, 268-269). In the light of the most recent research presented in this volume, this conjecture acquires greater solidity. Montieri is not far from Massa Marittima, which in the first chapter of this volume we interpreted as the former fiscal property, the Monte regis referred to in documentary sources, a point of intersection toward the mining landscapes of the hinterland setting out from Vetricella. Also, the church is not very far from the Gualdo del Re properties in the upper Cornia valley (see chapter II), as well as being situated in the centre of an important mining district rich in seams of lead, copper and silver, resources which later marked the rise of Montieri castle. Frederick I claimed rights over this castle and its mines in the early Swabian era (Volpe 1961, 122), and this claim may be related precisely to regaining former fiscal rights that had entered the ownership of various others since the central Middle Ages.

The chronological range in which the construction of the church may have taken place, the last decades of the 10th century or the first 30 years of the following decade, fits well in the context of the general reorganization of this territory in this period. As I have tried to show especially for the Monte Amiata area, this process would seem to have an initial phase that focused more on the general reorganization and encouragement of exploitation of the local resources, and a second phase in which the Imperial and margravian government actions (under Otto III and Hugh of Tusciana) were more integrated with the system of major royal abbeys.

It is well-known that, also in the spiritual sphere, which was closely connected to this political trend, and in the new climate linked to reformist movements, there existed that numerous world consisting of hermit-monks, charismatic members of which were associated with the development of monasteries. Examples of these, in the case of Tuscany, were Romualdo for S. Salvatore di Camaldoli, and Bononio



Figure 4.53 - The large fissure in the rock seen from the interior of the Canonical Church.

for S. Michele di Marturi (Tabacco 1965; D'Acunto 2007, 1-25; Kurze 1989b). In other cases, spontaneous devotional phenomena may have been involved, of which there is no surviving trace in the documentary sources. These individuals were later intercepted and 'guided' by the main secular and ecclesiastical authorities.

Could this be true of our religious complex, of which there is no mention in written sources before 1137?

This question takes us back to the individual who was buried in the church annex. On the basis of the stratigraphic sequence there are no doubts, I believe, that the subsequent buildings were designed with an eye to that burial. Equally, there is no doubt concerning the importance of this religious centre, in view of the precious object buried during the foundation rite, and which it continued to have.

The technical language used in previous pages to describe the physical characteristics of this individual lead us to imagine a short, fairly fragile person, who was malnourished in infancy, and was subject to particularly debilitating illnesses. Having arrived at the threshold of 50 years old, it is possible that this individual sustained a serious injury as a result of a disastrous fall, fracturing his cranium and breaking a femur. It is likely that this accident did not cause immediate death, although this occurred at a slightly later time.

Can we imagine these remains as being those of one of these same charismatic figures who lived as hermits in this territory? However, if this were the case, where did he live, in other words why was he buried in the very place where the previous site seems to have been abandoned?

The hypothetical answer could be found by turning our gaze away from the church and towards the artificial terrace immediately above, where a large cavity is still visible today, intriguingly. In the first phase of our investigations, this had been tentatively interpreted as the entrance to a possible mine (Figure 4.53).



Figure 4.54 - Reconstruction of the possible shelter above the Canonical Church (reconstruction by Mirko Buono, Giulio Poggi, from Poggi, Buono 2018).



Figure 4.55 - An atmospheric view of the church, following one of the frequent snowfalls.

To explore its real nature, in response to the new questions that had arisen during the excavation, methods from several disciplines were deployed. After having established, by analyzing the rocks, the absence of typical marks left by mining, and also the absence of mineral formations, by means of geological analysis of the rock faces, following the natural stratifications, and analyzing the modern-day collapses of large blocks of rock and tracing their original position prior to becoming detached, an attempt was made to reassemble, as in a sort of Lego construction, the original rock face. In this we made use of three-dimensional modelling which held and processed this data according to philological principles¹⁵.

The result was the reconstruction of a full-scale shelter of a certain size, roofed with a natural canopy, in which what now appears to be a fissure represented only one of the rear parts, and probably a further cavity in the rock where shelter could be sought (Figure 4.54). The thick deposits of soils eroded from higher up by surface run-off water, as well as the large blocks of fallen rock themselves, which now occupy the area, have prevented an extensive excavation from being conducted. The few areas of stratigraphy investigated, mostly consisting in strata deposited from elsewhere, have not yielded significant information.

Thus the suggestion I have made remains an alluring hypothesis corroborated by a series of circumstantial clues. However, it is undeniable that this sort of former shelter dominated the terrace where the church was built, and later the Canonical Church.

We could imagine the context in which this possible hermit lived in his shelter, in common with the lives of many others, which we can also see, in broad terms, in the case of a saint who is much better known than this individual, because the place of worship dedicated to him, which moreover is not far from this church, has survived down to the present day, namely San Galgano (Susi 1993). The chapel of Montesiepi, built during the 12th century, is dedicated to him, and preserves the well-known 'sword

¹⁵ The investigation, as yet unpublished, was conducted by Maurizio Negri as regards the geological component, while the three-dimensional reconstruction was drawn up by Mirko Buono and Giulio Poggi (Poggi, Buono 2018).

in the stone'. These individuals lived in the woods in precarious conditions, and tested their bodies by exposing themselves to hardships, especially in the cold, damp winters on this north side of the Poggio (Figure 4.55).

This man's almost sudden death would thus have represented an important occasion to manage the spontaneous cult devoted to this figure, and to channel popular worship of him in an official form of devotion. In turn, this would have enabled the creation of an important religious centre in an area that was rich in resources.

In the absence of documentary sources, we can imagine the Imperial and margravian powers as being heavily involved in this operation. Owing to the sumptuary nature of the item of jewellery, it could definitely be linked to former owners of such standing that it was not unusual for them to make important gifts to religious institutes. In Tomei's work, which I have often had occasion to refer to, we find a report that in 999 Hugh of Tuscia and Otto III, during their journey to the south, and passing through Montecassino, made a gift to the monastery of two silver crowns (Tomei 2016, 361). However, similarly, we could also see the abbots of the two royal monasteries of S. Antimo and San Salvatore al Monte Amiata as being involved in the undertaking. From documents relating to the Monte Amiata monastery comes testimony to the fact that the circulation of brooches was common, given that, at the start of the 11th century, there is a mention of a gold brooch being granted by the monastery, worth 100 solidi, in exchange for a donation of part of the castle of Reggiano (Kurze 1989b, 365). For that matter, the fact that the church was part of the possible territorial system and material culture of this general area is proven by the presence at this site of the same items of blue glass as found in the Vetricella excavation. These were originally part of those reliquary-cups or lamps that were widespread in several different contexts in northern Europe, and which we have already discussed regarding the court of *Valli* in chapter I. Archaeometric analysis has proven the exact same composition of the glass finds from both contexts, confirming incontrovertibly that the objects, presumably made in central-northern Europe, had the same origin¹⁶. As was the case with other important royal initiatives in this area, it is possible that the new Montieri project also had the support of other strategic political players: as well as the mooted support of the abbots of the nearby royal monasteries, this also perhaps included the backing of the bishop and the Counts of Volterra (linked to the Gherardeschi family), who were both supporters of Ottonian policies, and whose members, in 967, gave hospitality to Otto I and his retinue, at the Monte Volterraio castle (Figure 4.56), for the drafting of a well-known placitum (Puglia 2001, 14-15).

At the same time, in view of all the uncertainties and changes of plan in the organization of the construction of the church and its annex, we cannot rule out the possibility that the project was set up shortly after the man's death, with the definition of the foundations of the buildings, and then completed subsequently, after a short interval of time. The differing composition of the mortars of all the foundations compared to the walls could be proof of this (Chiarelli *et al.* 2015).

However, the bishop of Volterra definitely won the day in the struggles for dominance over these mooted fiscal properties.

The cult of this individual, the workings of the church, and of the system of burials was managed, as of the 12th century, by the clerics of the episcopal Canonical Church, one of the few Italian examples that existed in a rural setting, which probably came into being in order to meet the requirements of controlling a place of great importance, but of which, after the Middle Ages, all traces were lost. A vital place for the penetration of the power of Volterra's bishop in these lands that were so rich in important metal-bearing deposits.

¹⁶ An analysis of the blue glass from Montieri was conducted, at the same time time as analysis of the finds from Vetricella, by Bernard Gratuze at the Institut de Recherche sur les ArchéoMATériaux, Centre Ernest-Babelon, UMR 5060, CNRS/Université d'Orléans. While the findings for the Vetricella glass have already been published (Gratuze 2020; Gratuze *et al.* 2023), the findings for Montieri are still unpublished, and so I thank Gratuze for providing me with this information.

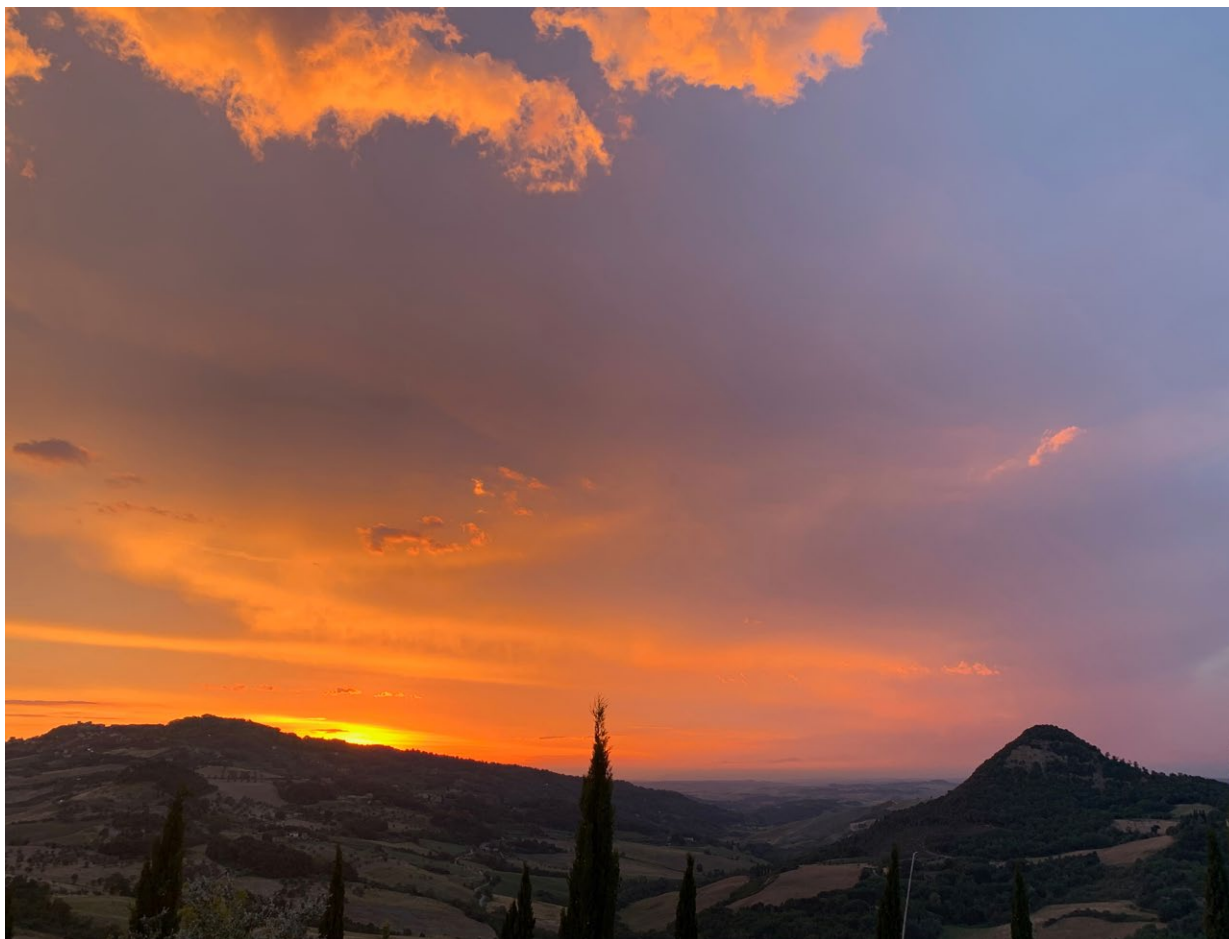


Figure 4.56 - Monte Volterraio on the right, with Volterra on the left, in the distance.

4.4 To sum up

It is clear from the history of these three religious centres that the two monasteries, in particular, as well as the Montieri church, in some respects, were important bridging locations and vital linchpins between the coastal area and other possible public areas in the hinterland, perhaps featuring the same complexity in terms of administration as that which I analyzed in this context. Nevertheless, the fact remains that all three hubs were very closely linked to the broader area chosen for our analysis and, in the case of San Salvatore al Monte Amiata and Montieri, particularly connected to local mining resources. Moreover, all three seem to have their place, between the second half of the 10th century and the first few decades of the 11th century, in the same political and economic strategy that featured a strong religious significance.

There are also significant points in common especially in the timing of transformations of preceding layouts, or in their foundation, despite the fact that the dates in question are slightly staggered over the years.

At S. Antimo, and here I agree with Frati, it is thought that the new church, as well as the monastic complex, was rebuilt in the early Ottonian period, in the reign of Otto I or Otto II, and thus between the 970s and 980s. Thus, the renewal of these building parts would seem to run in parallel with the major reorganization that was under way both in the coastal area (with what was happening at Valli-Vetricella, and probably in the Grosseto area) and in the Monte Amiata area, at a time when we have

imagined that the resumption of direct control of the western side, by Otto I, coincided with a policy of encouraging the exploitation of mineral-bearing seams in that area, with special reference to iron. In this phase of reorganization, the monastery of S. Antimo, located in a central, strategic position both within the Monte Amiata area and within the Colline Metallifere, would have represented, owing to its important history, the main religious pole in this general area extending toward the hinterland, as an example of that profound integration between the religious and secular spheres that was a key feature of the entire Ottonian period.

It is believed that deeper interaction between these two spheres took place during the reign of Otto III, with the support of Hugh of Tuscia. It is in this phase that, with the arrival or return of Winizo to Monte Amiata, the plans took shape to overhaul San Salvatore, with the construction of the great church that was consecrated in 1039. As I have stressed at several points, under Otto III and Hugh of Tuscia the interlinking relationship between the Imperial government and the system of the major royal abbeys reached its peak, and this went hand-in-hand, as can clearly be seen in our case study, with the continuation of specific economic policies.

The foundation of the church of Montieri, built in connection with the cult of a possible hermit between the late 10th and early 11th centuries, was probably part of this context, when the creation of religious centres, in the reformist climate of the day, helped to give new substance to Imperial authority, and to reinforce systems of alliances with the local powers. In the case of Montieri with the bishop of Volterra, and perhaps also with the Counts of Volterra, represented by the other great family in Tuscia, the Gherardeschi. The complex system of connections created in those decades also led to the subsequent fate of the three religious hubs. After the great phase connected to the abbotship of Winizo, and to the boost provided by the Imperial and margraval powers, the San Salvatore monastery saw no further developments, including as regards its architectural layout, and it continued its existence in the 12th century within a local policy that was engaged in a dialectical relationship with the Aldobrandeschi family, the main protagonists in the Monte Amiata area.

At Montieri, the bishop of Volterra gained the upper hand in the running of the new religious hub. He was one of the sponsors of this operation, and, in the course of the 12th century, he struggled more than a little to maintain control of this area, along with its resources, in the face of a powerful offensive by Siena.

By contrast, S. Antimo is the only monastery that continued to enjoy Imperial and papal protection, although, in the course of the 12th century, it was caught up in the new dynamics involving the assertion of territorial seigneuries. Indeed, as I have already stressed, it was the only one that saw an important programme of architectural renewal, with the complete reconstruction of the church, and probably of part of the monastery's premises.

Chapter V

A world apart? The mining areas

In the previous chapters the subject of mining resources, and their exploitation, in ways that may or may not be so clear today, has always been present. In the case of the Monte Amiata area, the suggestion that iron-bearing seams on the western side of the mountain were exploited on a more accentuated scale has been used to overturn an overly pessimistic vision of the history of the monastery, in the early Ottonian period. Since this has already been discussed, it has no place in this chapter.

However, the time has come to focus more on these issues for a series of reasons, all of them related to each other. Indeed, the archaeology of mining and metallurgy represented one of the main areas of research developed by Riccardo Francovich in the 1990s, and it is still one of the current research themes connected to the department of Medieval Archaeology at Siena University, and to one specific laboratory within that department¹. Moreover, within the nEU-Med project, special attention was paid to themes connected to the exploitation of these resources, and these have been the subject of investigation in two specific project tasks, as well as the one involving numismatic research aimed at determining the provenance of the relevant raw materials.

All this research, both previous and ongoing, focusing especially on the Colline Metallifere area, has produced a considerable mass of data that can be inferred both from the extensive excavations at mining sites, and from the numerous multidisciplinary surveys in large sectors of the local geography, as well as from specific archaeometric analyses. As yet there is no single publication that sums them up entirely, although this is anticipated in the near future among the ERC project publications. However, there are a great many articles published so far, as well as a large number of degree theses and PhD theses².

The aim of this fairly short chapter will not, therefore, be to draw up an exhaustive picture of metallurgical production in the Middle Ages in this territory. Instead, as in previous chapters, I will focus on the Early Middle Ages, concentrating more on the 10th and 11th centuries. In order to extract detailed information that will help to flesh out the interpretations set out in previous chapters, I will necessarily have to concentrate on the settlement sequence at the four mining sites in the Colline Metallifere investigated so far: Cugnano, Rocchette Pannocchieschi, Montieri and Rocca San Silvestro.

Nevertheless, this interpretation will also consider the information that can be derived from the mining archaeology investigations in the surrounding territories, for which I will refer to published findings, and in one case unpublished findings, because they have been compiled as part of the nEU-Med project. Thus, I will seek to piece together a new overall vision of the individual contexts, engaging in a critical rereading of the data acquired thus far. Thus, focusing on the early medieval centuries, before mining castles enjoyed their heyday, the aim will be to try to bring together fragments of history, placing them more clearly within the context of a phase which in the past was perhaps too hastily seen only as a prelude to the actions of the local seigneurships.

On top of this mainland context, we shall also discuss the island of Elba, which is certainly the hardest to address because it has been the least explored for the centuries we are interested in.

¹ This is the Laboratory of Topography of Mining Territories (LTTM), coordinated by Luisa Dallai.

² It would be a hard task indeed to sum up, in this footnote, all the writings produced over time. Therefore I refer readers to two recent general articles which contain an exhaustive bibliography on the subject: Benvenuti *et al.* 2014; Bianchi, Dallai 2019.

5.1 Rocchette Pannocchieschi

Like the sites of Cugnano and Montieri, the site of Rocchette Pannocchieschi stands in the area of the Colline Metallifere Grossetane (Figure 5.1), an inland geographical area that features a landscape of mounts and hills of great beauty, because in many parts it still displays a low level of anthropization, along with extensive wooded areas and, to the north, hydrothermal phenomena, already discussed in chapter II when we wrote about the Gualdo del Re area, in the upper Cornia valley. Passing through these places, lying off the beaten track as regards mainstream tourism, and still so little known, it is not hard to imagine the former landscape in which those small groups who settled in the various mining areas in the Early Middle Ages went about their daily lives.

As regards Rocchette Pannocchieschi, the site stands within an area known as “Piastraio” in the 14th century mining statutes of Massa Marittima (Baldinacci, Fabbretti 1989, 151-153). This area covers around 60km², and previous archaeological surface surveys here identified more than 250 extraction points, identifiable as the remains of tunnel entrances, sinkholes or subsidence depressions (for a summary Bruttini 2014, 51; Dallai 2022). Although there is no precise dating information for all these features, it is clear that they were frequented intensively for extraction since the pre-medieval period. From mineral formations of galena, chalcopyrite, sphalerite, tetrahedrite and iron-bearing hydroxides, various metals could be extracted: silver, copper, lead and iron (Mascaro *et al.* 1991, 84, scheda 60).

The mineral formations are included in the cavernous limestone, ie. the predominant bedrock in this territory, which gave rise to the numerous karst phenomena such as dolines (sinkholes) and caves (Dallai 2005, 17)



Figure 5.1 - Location of site of Rocchette and other sites referred to in this chapter.

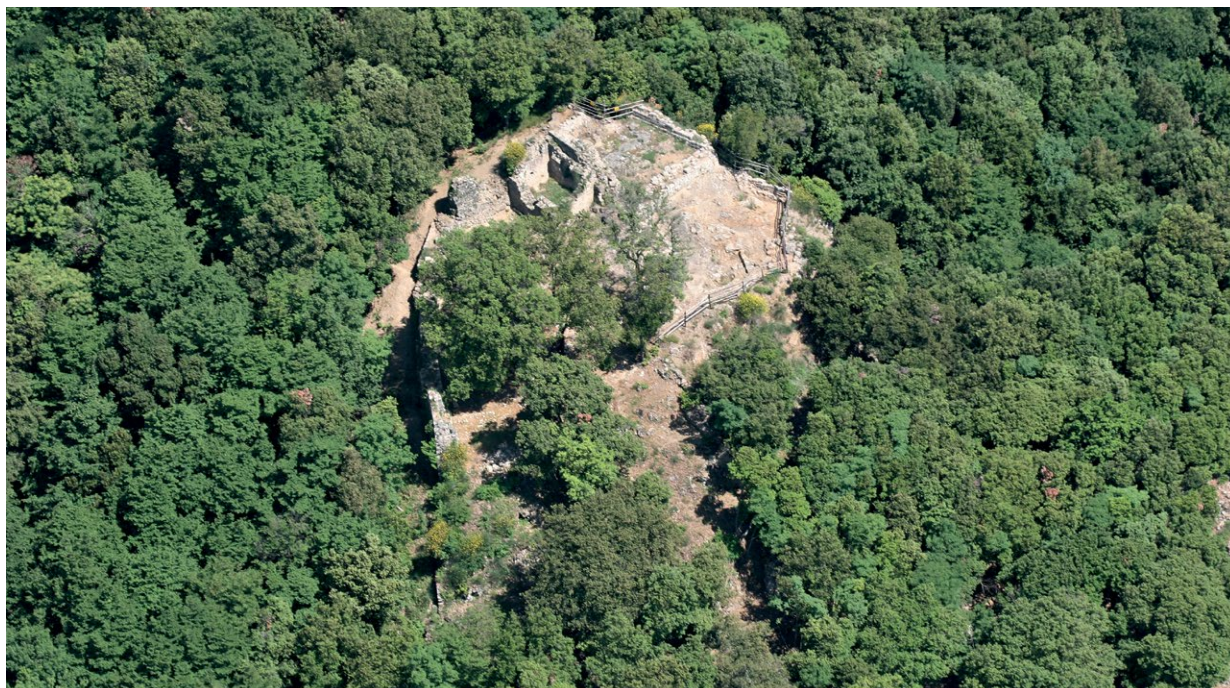


Figure 5.2 - Aerial photo of hilltop area of site of Rocchette Pannocchieschi (Siena University photographic archive).

Rocchette thus stood at the centre of a series of areas with a high potential as regards mining, including the very place where the site itself was situated, on the southern slopes of Poggio Trifonti (Figure 5.2), on the side facing the gulf of Follonica and the Pecora valley.

The site stands on a hill between four large dolines of varying sizes, although all of them are large, having a maximum diameter of around 100m, and being 20m deep (Figure 5.3). These cavities are the result of the impact of anthropic action on existing features of natural origin. The human action involved expanding or extending the depth of these natural geological features (Figure 5.4), as I shall discuss below, perhaps in a search for mineral-bearing seams, or else to extract the raw materials used for the purposes of construction, especially the 12th century castle.

Indeed, the 12th century features are those that have shaped the modern-day, visible appearance of the site. It covers an area of around 2500m² inside a set of outer walls that are trapezoidal in design, enclosing a hilltop area, which was the seigneurial sector in the Late Middle Ages, consisting of a sort of palatium, a tower, and a cistern, while the actual borgo was laid out along the artificial terraces below. The main entryway was in the south-east corner, located in the area between dolines A and B (Figure 5.5).

The need to expand the number of homes between the 12th and 13th centuries led to the construction of several buildings built up against the outer walls on the west side, and on the fringes of the eastern edge of doline B. Meanwhile, a group of interior spaces between dolines A and B have been interpreted as the location of artisanal activities connected to metallurgy, as has the group of buildings between dolines B and C, connected to the final phases of life at the site, dating to the later 14th century, when the castle stood in the lands of Massa Marittima. The function of the structures present between the dolines is confirmed by the presence of huge amounts of slag, found during investigations both within doline A and doline B (Grassi, Fichera 2013, 36-37).



Figure 5.3 - Rocchette Pannocchieschi. Plan of site showing the four dolines, and the excavation areas (from Bruttini 2014, 434).

The site was extensively investigated by means of no fewer than seven excavation areas inside and outside the late medieval defensive walls³.

Archaeological investigations, and an analysis of the standing remains, enabled the reconstruction of an early medieval sequence of life, which would be hard to determine from the scant documentary information.

Indeed, only one written mention seems to refer to this context, and the place-name Trifonte is associated with it. This is mentioned in a document dating from 826 as the place of residence of a certain Sasso, to whom the administrators of the court of San Regolo in Gualdo (see chapter II) granted a house by contract. Farinelli associates this reference with the presence of a village on a hilltop site now known as Poggio Trifonte, below which, on one of the slopes, the site of Rocchette Pannocchieschi later

³ The excavations, under the scientific direction of Riccardo Francovich, were conducted between 1991 and 2003, although the final publication only appeared in 2013 (Grassi 2013a). I myself took part in the early years of the research, and in the preliminary edition of the investigations.



Figure 5.4 - Rocchette Pannocchieschi. View of inner northern face of doline C during vegetation clearance (Siena University photographic archive).

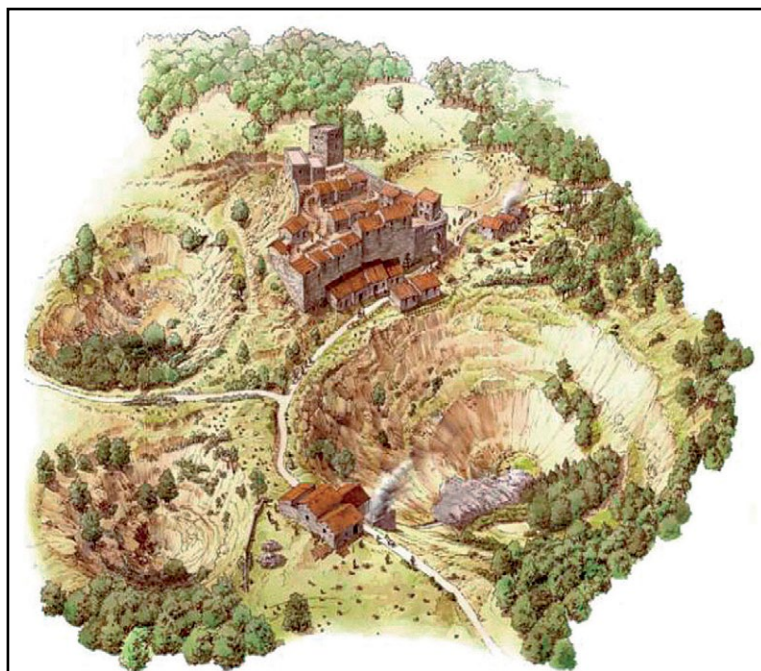


Figure 5.5 - Reconstruction of castle of Rocchette Pannocchieschi in 14th century (illustration: Daniele De Luca).

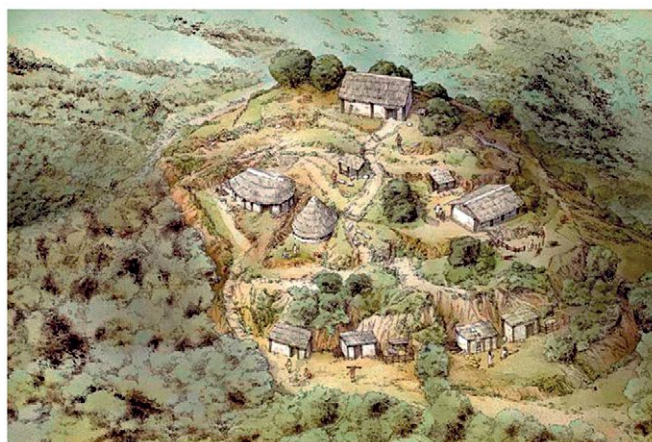
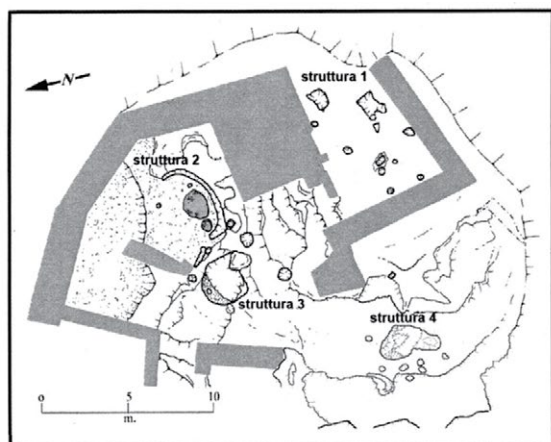


Figure 5.6 - Rocchette Pannocchieschi. left: plan of hilltop area showing Period I features (from Grassi 2013a, 40). Right: reconstructed view of the hamlet in this phase (Studio Inklink Firenze).

developed (Farinelli 2007, 82). Whereas Farinelli believes that the identification of the Trifonte village with the early medieval site of Rocchette is not a given, Grassi takes the view that there is little doubt over this fact, since archaeological surveys across all of Poggio Trifonte lead one to exclude the presence of other sites apart from Rocchette Pannocchieschi (Grassi 2013b, 198, n. 55).

On the other hand, the modern-day toponym derives from a seigneurial family, the Pannocchieschi family, that we know was linked to this fortified site definitely as of the 12th century, when the same family, perhaps originally from Volterra, was greatly involved in the exploitation policies of these mining areas, controlling several other castles also thanks to the office of bishop in Volterra, which was held continuously, between 1150 and 1223, by three members of this family.

The earliest physical traces of this village were found on the hilltop area (Areas 300, 500, 600 and 4000 Figure 5.3), which was later occupied by late medieval seigneurial buildings. These consist in the

remains of two huts made of perishable materials, and two other structures, perhaps not for residential purposes, associated with small holes in the ground for cereal storage, possibly for use by one family. There do not seem to be traces of boundaries or enclosures around this small site, unless it is possible to associate with this phase, despite the absence of clear dating evidence, the presence of a sort of ditch defending the eastern side (Figure 5.6).

When the definitive results of the excavation went to press, in 2013, the findings made as of 2016 with the nEU-Med project, which added to the interpretation of this period between the 8th and 9th centuries, were not clearly available. The data was scant, but suggested the possible existence of a small-scale site. Nevertheless, the 2013 volume underlined the importance of the evidence, and it was associated with the exploitation of the mineral seams present in the outcrops found inside the dolines, or in the surrounding territories.

In the absence of clear archaeomining evidence, the site's inhabitants were identified as having been involved predominantly with mining and extraction, positing that ore processing activities took place elsewhere (Bianchi 2018b). As for which minerals were exploited, copper or lead were both suggested, also on the basis of analyses of the slag that was presumably produced in processing cycles that took place in the central Middle Ages (Bruttini 2013).

Today there seem to be firmer grounds for such a hypothesis for the 8th and 9th centuries, thanks to isotope analyses of the lead used for the production of the glazes present in 'sparse glaze' pottery found at the site of Torre di Donoratico. These analyses show that this glaze was made by combining lead from mining areas in central and northern Europe (specifically from the area of Melle in France, and from the Harz region or Rhine Massif in Germany) with other lead extracted from the mixed sulphide deposits in the Colline Metallifere (Briano 2021, 151).

Although there is no proof that the lead extracted from the seams around Rocchette was exactly the same lead that was used in the glazes on the jugs from Donoratico (which have yielded a broad-ranging isotopic signature, identifying the Colline Metallifere generally), we can nevertheless imagine that, at least as of the first half of the 9th century, this kind of extraction and processing was organized in this general area. This certainty over chronologies derives from thermoluminescence dating of the sparse glaze pottery found at Donoratico and, albeit in smaller quantities, at other sites in this territory, including Rocchette Pannocchieschi, which indicates a similar chronological horizon (Briano 2021, 151).

This new, unexpected dating of this pottery (production of which has always been dated between the late 9th and the later 10th centuries) provides us with further pointers to appraise the socio-cultural context of our site in this period.

Indeed, in the 2013 publication, in keeping with the chronologies put forward up until then for sparse glazed ware in Tuscany, a connection was seen between its presence at Rocchette and the later period of habitation at the site, corresponding to the 10th to early 11th centuries.

By contrast, according to the new findings, it is to the early phases of the life of the site that we are to date circulation of this pottery ware, which, in the first half of the 9th century, was produced in the area around the site of Donoratico.

For this period other elements of material culture, which are anomalous for a small community of possible miners, were also found: glass fragments decorated with applied filaments, from the sides of cups or drinking horns that circulated between the 7th and 8th centuries (Grassi 2013b, 198-202). Grassi added to this unusual context the presence of two-handled, amphora-like vessels, pottery which we got to know well from studying it as part of the nEU-Med project, calling them 'small amphoras'. No fewer than 232 individual examples of these were identified at Vetricella (Russo 2021).

The best knowledge that we have today about the history of this territory, and of the broader case study area presented in this volume, allows us to locate the small site at Rocchette within a context of major transformation, as of the coastal areas, which definitely led to a more large-scale resumption of mining exploitation on the part of the public powers.

The result of this was the formation of a more interconnected system linking the coast with the hinterland. This also indirectly gave rise to the circulation of these 'small amphoras', of sparse glaze pottery, of glass, and of other pottery that displayed a certain artisanal complexity, such as use of the fast wheel (Grassi 2013b, 199).

In this system, the most anomalous features of this material culture could be explained in two different ways. On the one hand we could be looking at a society of farmers-cum-miners with social differentiation (as Grassi argues, although she stresses that this diversification was not visible in the characteristics of the homes, or in diet). On the other hand, these features could show the occasional presence of an emissary from the public powers, in order to control production, and certain unusual finds may be traces of the fact this emissary spent periods of time here. Following the former interpretation means lending more weight to the role and social composition of these small rural communities. By contrast, the latter interpretation focuses attention on the overall organized system for mining as controlled by public emissaries, while not excluding the indirect benefits of this system, that may have had repercussions on the small community itself.

These two interpretations differ from each other but, in a way, they are also partly converging, and they agree on one point, namely the plausibility of a resumption of exploitation of the local mineral deposits in the course of the 9th century, albeit on a scale, and with a form of organization, that are hard to gauge with the available information.

For the following periods, namely the 10th and 11th centuries, the question becomes more complex, and there is scope for advancing new hypotheses. Without going into excessive detail, I will try to sum up the main points.

In Grassi's reconstruction of the sequence, we have a 10th century or early 11th century phase which she believes coincides with the formation of the earliest castle. Indeed, it appears that an initial set of outer stone walls was built in this period, and a small section of these still survives (Figure 5.7), serving to delimit the hilltop area where activities seem to be still concentrated (Grassi, Fichera 2013, 47). Here two of the previous huts situated at the highest point remained in existence, while an artisanal space was set up in the sector below, featuring a reduction furnace (Figure 5.8). A negative trace of its combustion chamber can still be seen, as can the pit into which the slag flowed, as well as fragments of the side wall, made of scorified porphyry (ibid, 48). Although the first description of this structure makes mention of interesting parallels with furnaces used for iron reduction, in the other texts in the 2013 excavation edition, in sections written both by Grassi and by Bruttini, any link between our furnace and this kind of metallurgy is laid aside in favour of a connection with lead and copper processing. I think that the absence of indicators of production, which did not align with a uniform interpretation, inclined scholars to adopt this interpretation, taking it for granted that the production of copper and lead, which was certainly under way in the late medieval castle, was in continuity with earlier production. But this is by no means a given.

The furnace was connected to a canopy which was in use, according to radiocarbon dating, in a period between 984-1024 (Cal AD 1 Sigma)/ 950-1040 (Cal AD 2 Sigma) (ibid, 46). A sort of small palisade separated this sector from the part to the north where, following the elimination of the height difference by levelling, a structure was found that has been interpreted as a possible storage facility, abutting the outer walls on one side, and with the southern perimeter wall comprising a large stone socle, with the upper part of the wall consisting in perishable materials (Figure 5.9).



Figure 5.7 - Rocchette Pannocchieschi. The hilltop defensive wall showing the part interpreted as the oldest outer wall (in red) (from Bruttini 2014, 435).



Figure 5.8 - Rocchette Pannocchieschi. Left: remains of reduction furnace. Right: reconstructed view of furnace (illustration Studio Inklink Firenze).

Between the end of the 10th century and the early years of the following century, a general abandonment of these features can be seen. This was perhaps in part connected to the possible collapse of the stone-built defensive walls. The sequences show an obliteration of the existence of the canopy, the possible storage facility, and also the reduction furnace. The defensive walls were later rebuilt, and a new room was built on the abandonment layers of the possible storage facility. This had stone foundations, with another structure alongside it, although, like the first structure, only a few surviving masonry parts of this remain (*ibid*, 49-56) (Figure 5.10).

It is in this assemblage of remains that we can find clues able to direct us towards a different interpretation.

My considerations begin with the reconstruction of the defensive walls. As also stressed by Fichera, who has studied the wall elevations, the masonry technique of the new walls, and the technique used for the pre-existing parts, have a great many features in common (Figure 5.11), and they would be almost completely indistinguishable if, in the most recent section, cavernous limestone had not been used more as a building material (Fichera 2013, 92). The resemblance is such that the scholar himself suggests that master builders with the same set of skills, working in fairly close time periods, were employed for both structures.

We also have radiocarbon dates for the possible proximity in time between the 10th century events and the developments which Grassi dates to the following century. The period of use of the canopy associated with the reduction furnace, as stated earlier, would be between 984-1024/950-1040. On the other hand, the abandonment of the hypothetical storage facility connected to the furnace appears, thanks to analysis

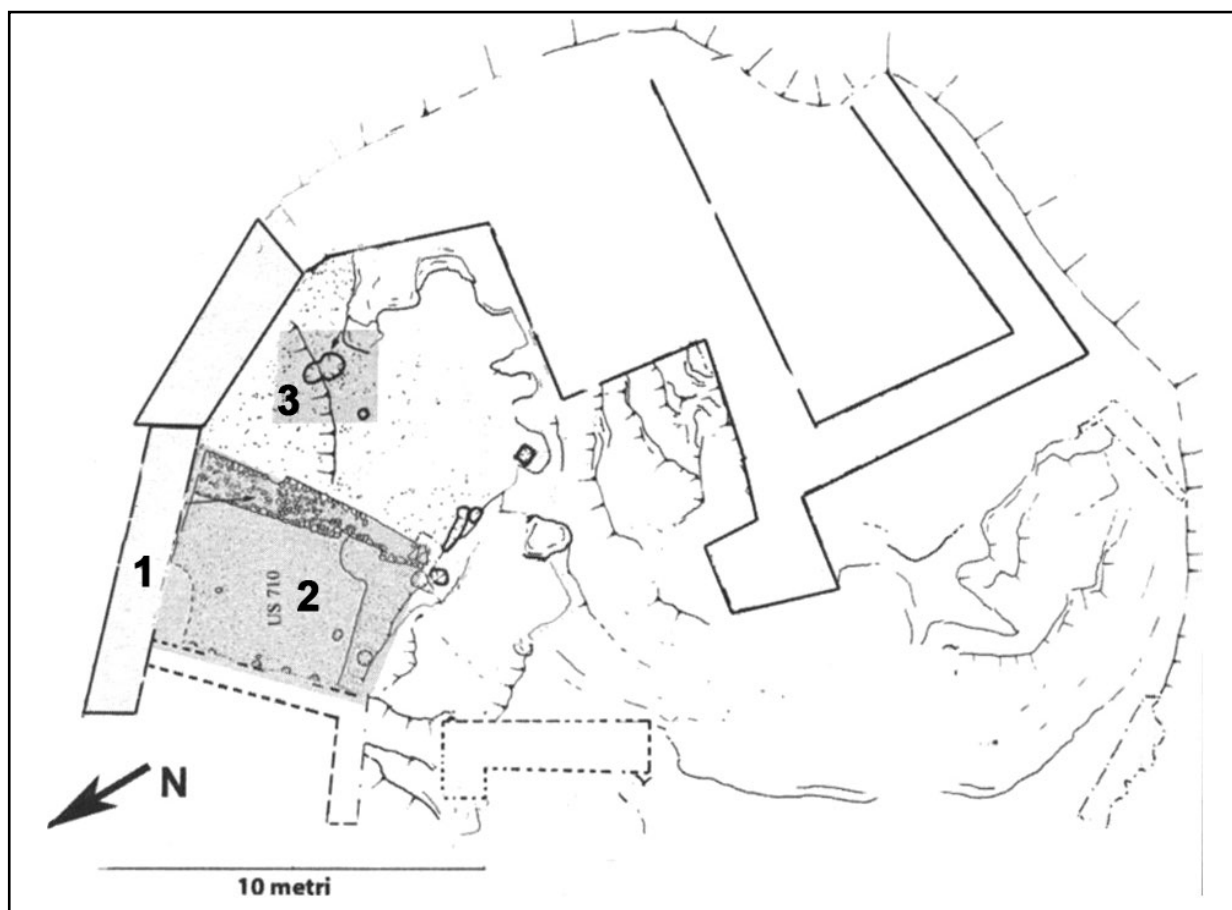


Figure 5.9 - Plan of Rocchette Pannocchieschi, showing the structure possibly to be interpreted as a storage facility (2), and reduction furnace (3) (from Grassi 2013a, 47).

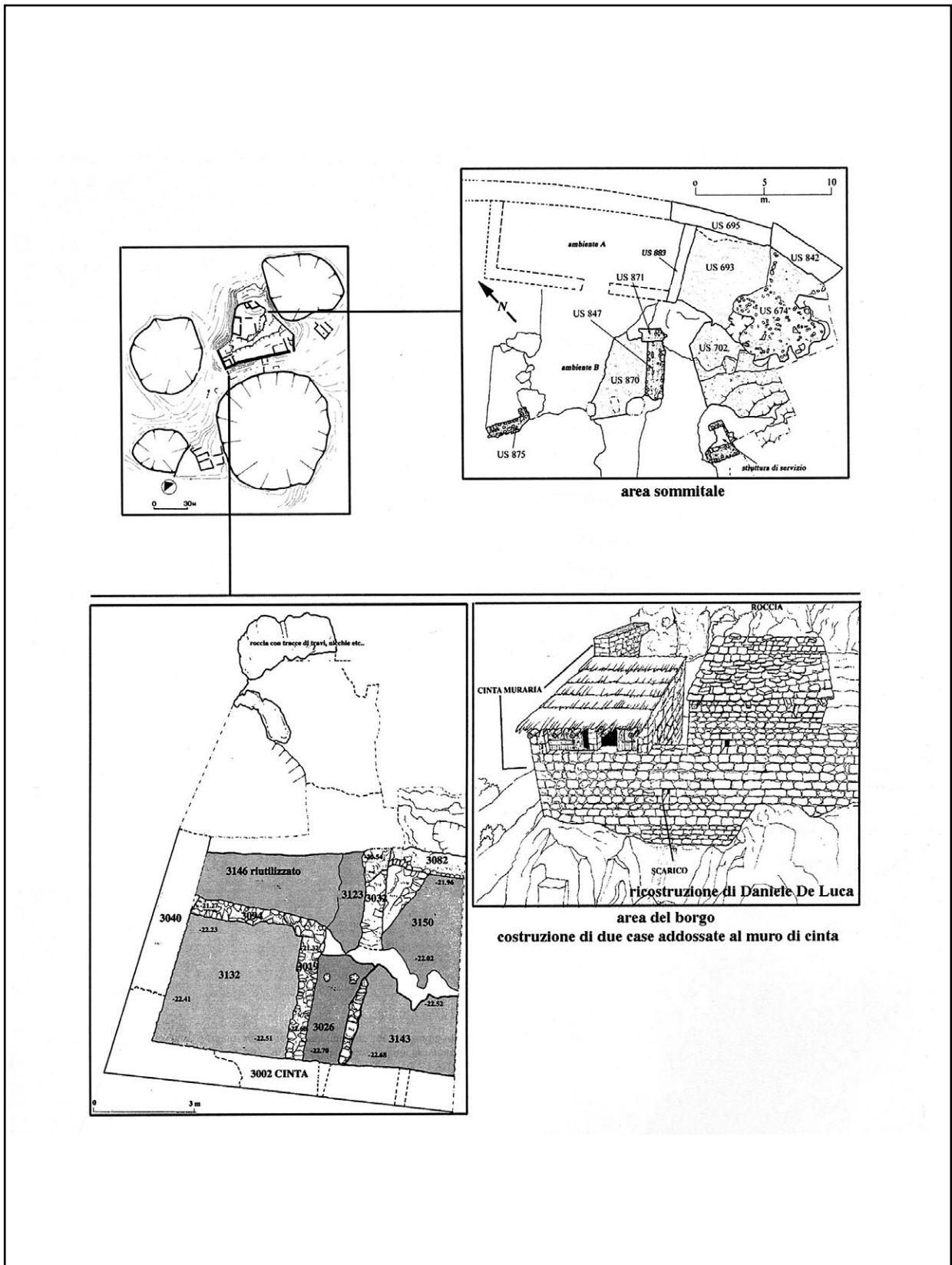


Figure 5.10 - Rocchette Pannocchieschi. Top right: plan of hilltop area showing the two new possible rooms, called A and B. Below: remains of outer walls of homes in the borgo below, with a reconstruction of how they appeared (from Grassi 2013a, 53).



Figure 5.11 - Rocchette Pannocchieschi. The defensive wall, showing its former course (in red), and what is interpreted as a later reconstruction of it (in blue) (from Bruttini 2014, 443).

of one anthracological sample, to have occurred between 960-1050 (Cal AD 1 sigma)/890-1170 (Cal AD 2 sigma), and for another sample between 935-980 (Cal AD 1 sigma)/860-1020 (Cal AD 2 sigma) (Grassi, Fichera, 50). Thus, on the basis of these chronologies, within a fairly short timespan, contemporaneously with the use of the canopy, the nearby storage facility was apparently obliterated. The situation becomes more complex if we analyse the radiocarbon date for the abandonment of the furnace, which, in the case of the first sample analysed, puts us in the 1040-1110 (Cal AD 1sigma)/1030-1220 (Cal AD 2sigma) range, and, in the case of another sample, between 1060-1090 (Cal AD 1 sigma)/1030-1110 (Cal AD 2 sigma) (ibid., 50). Thus, these chronologies seem to indicate that the furnace was abandoned later on compared to the other features.

Basically, what I would like to propose, on the basis of a limited number of chronological indicators, is that the sequence illustrated in the excavation publication (period I, phase 3: 10th century structures; phase 4: abandonment of 10th century structures; period II, phase 1: new 11th century interventions) is overly fragmentary, and artificially distinguishes a series of actions that may perhaps be grouped within the same period.

Put more clearly: the interventions generically datable thus far to the 10th century could, first, be dated to the second half of that century (as shown by the radiocarbon dates); the supposed abandonment phases, also dating to the second half of the 10th century, or the very early decades of the following century, should, by contrast, be seen as transformations occurring in a narrow space of time, with the renovation or perhaps completion of the stone-built outer walls (which may have partly collapsed), and the creation of two new possible dwellings; in this context, the furnace would have continued to function, given that its destructuring appears to have taken place only towards the mid-11th century, as clearly indicated by the radiocarbon date.

Thus, in my proposal, there would be no period I or period II, but rather a single period with two phases, marked by transformations or expansions that were close together in time, dating to the second half of the 10th or early 11th century. The actual abandonments would have taken place starting in the 1040s, the date when the furnace ceased to be used.

It may occur to some readers that they have come across just such a sequence before. Indeed, there are strong parallels with events at Vetricella/*Valli* in the same timespan. At this latter site, too, a greater number of radiocarbon dates compared to those from Rocchette (with chronological ranges that are often surprisingly identical between the two sites) have prompted us to take a different view of changes in the sequences. Indeed, rather than being indicators of the site's occupation, prior to abandonment, followed by a new habitation phase, they seem instead to show a continuity of occupation with occasional, intense alterations, occurring very close together. These sometimes led to the destruction of features that in some cases were only created a short time before. The same kind of frenzy of occupation that was a distinctive feature of Vetricella in the Ottonian period, with the inner ditch being filled in at different times, and with activities associated with construction, such as the two different mortar mixers (see chapter I), would be echoed at Rocchette in the renovation and/or completion of the stone-built defensive walls, and in the various forms of the hilltop area structures which, at least until the first 30 or 40 years of the 11th century, would have comprised a reduction furnace. But that is not all.

During the first few decades of the 11th century, this renovation phase would also have included the part of the site that stood below the hilltop area.

Indeed, the renovation or continuation of the outer circuit of walls also involved the construction of the section of walling, or a large part of it, built to retain the terraces below, following a perimeter that was also adopted afterwards by the subsequent later 12th century defensive walls (thereby making it no longer visible in many sections). The excavation enabled the identification of two buildings abutting



Figure 5.12 - Rocchette Pannocchieschi, Area 3000. View of the two buildings dating to the first half of the 11th century, during excavation (University of Siena archive).

this same outer wall, situated in the northern sector of the site (Figure 5.10; 5.12). These interior spaces were bordered by stone-built walls, perhaps low socles for upper parts made of wood, and they may be interpreted, on the basis of finds found in the sequences, as homes (ibid, 56-57). The lack of other definite remains of homes datable to this phase does not allow us to posit with any certainty the presence of a large borgo, like the one which would only become established on these terraces in the subsequent period.

The material culture of this phase, once the circulation of sparse glaze pottery has been back-dated to the previous period, looks to supply areas mostly connected to a consistent production zone situated around Monterotondo Marittimo and Roccastrada, as proved by the recent research as part of the nEU-Med project (Ponta *et al.* 2020). From these ateliers, which served quite an extensive geographical area, stretching as far as the coast, came both the so-called 'small amphoras' (still circulating in this period), which can be seen in large numbers at Vetricella and in the form of a few fragments at Rocchette (Russo 2021), and cooking and storage vessels, made of coarseware and levigated fabric, displaying a constant use of the fast wheel, and as well as greater standardization of forms and of occasional decorative details (Grassi 2013b, 204).

The abandonment of both the hilltop area and this latter habitation context dates to the second half of the 11th century. It is only later on, in a broad period between the 12th and the first half of the 13th centuries, that the castle was rebuilt in the form that can still be seen today.

Thus, in concluding this rapid overview of the site, we shall try to isolate the salient events in its history.

Between the 8th and 9th centuries there was a site located on the hilltop between the two dolines. It is thought to have been small, and was perhaps inhabited by individuals engaged in work involving ore extraction. In view of the findings from archaeometric analyses of the sparse glaze, there are grounds for suggesting that already as of the mid-9th century lead was processed in areas situated outside the site itself, or further away. All this would have taken place thanks to the fact the site was included within a system of exploitation that was already connected to the public powers. The fact it was included in this wide-ranging circuit is apparently indirectly corroborated by the fact that sparse glaze pottery, and the remains of particular glass objects, were found in its stratigraphy.

In my proposed revision of the sequence, it is between the second half of the 10th century and the first few decades of the 11th century that the site saw a series of major transformations: the construction, in more than one stage, of a stone-built defensive wall which eventually enclosed not only the hilltop area but also the terraces below; the formation of accessory internal spaces in the hilltop area connected to a reduction furnace, later replaced by two other enclosed spaces with masonry perimeter walls; and the presence of two dwellings in the northern part of the lower terrace, and therefore of a possible inhabited area further down.

Thus the definition of the fortified site would apparently belong to the actual Ottonian phase proper. Accordingly, this would have occurred in the same decades as when, as we shall see in the following sections, similar changes are seen at other mining sites. The form of the reduction furnace has parallels with furnaces designed for processing iron-bearing minerals, despite the fact that thus far it has been linked to the processing of copper and lead, mostly owing to an interpretation based on continuity with the site's vocation in the Late Middle Ages, rather than on any real evidence.

It is hard to express an opinion on this point, except to say that, with the data recorded at Vetricella and in the Monte Amiata area, exploitation of iron, as well as lead, would have a certain plausibility also for Rocchette, as part of a broader programme organized by the public powers.

Thus, the strong role of the public powers that is assumed in this phase, dating to the later 10th century and part of the 11th century, helps to flesh out the interpretations put forward thus far (including by this author) that this moment coincided with the earliest affirmation of the seigneurial powers which,



Figure 5.13 - Cugnano. Plan of site showing excavated areas (highlighted) (from Bruttini 2014, 365).

for Rocchette, can moreover be identified with the Pannocchieschi family only in the late 12th century. I do not completely disown such an interpretation, but on the basis of the general picture that I am trying to outline in these chapters, I am inclined to argue that if this initial rise to prominence did indeed take place, it only did so thanks to the fact that these actors found a place for themselves within the more general and complex public programme of exploitation of mineral resources. But we shall return to this point later.

5.2 Cugnano

Not far from Rocchette Pannocchieschi is the site of Cugnano (Figure 5.1), situated on a low hill (456m asl.) below which flows the river Milia, with some of its tributaries. The archaeological investigations, which began in 2003 and ended in 2012, were conducted under the joint direction of the University of Siena (Unisi) and the University of the Basque Country⁴. The excavation of around 35% of the total surface area of the site clearly revealed the layout that is visible today, and which took shape in the late

⁴ For Unisi, up until 2007, the scientific director was Riccardo Francovich, with myself taking over later on, whereas there were no changes as regards the scientific direction of the University of the Basque Country, which has always been held by my colleague Juan Antonio Quirós Castillo.

medieval period (Figure 5.13). As at many other castles in this territory, between the later 12th century and especially the 13th century, below the hilltop area reserved for the seigneurial family (consisting in a tower and two large, later buildings standing inside a walled area) lay the borgo, with a series of houses situated mainly on the southern terraces. On the northern terraces stood rooms and spaces set aside for metallurgical processes, and these lower parts of the site were also encircled and defended by strong outer walls, with access provided by an entryway on the south-west side.

As at Rocchette, there are not many documentary references to the site prior to the Late Middle Ages, apart from a possible mention, in a deed dating to 1038, in which a member of the so-called 'Lords (signori) of S. Miniato' sold to Tederico, son of Hildebrand, lands situated in loco qui dicitur Cugnano. In 1150 there is also a reference to a local aristocratic group, whose name derived from our site itself. Indeed, in that year a certain Ildebrandino da Cugnano took part in the drafting of accords over this territory, together with the Pannocchieschi Counts (referred to above, in connection with Rocchette) as well as the bishop of Volterra, the Aldobrandeschi family, and the Commune of Siena. By contrast, we do not know whether Pelagatto da Cugnano descended from Aldobrandino's branch. Pelagatto was connected to the local bloodline that exercised seigneurial rights over the castle at the time when, as of 1208, it became part of the Aldobrandeschi properties, or at least is referred to as belonging to them, until, in 1266, it was included in the sphere of Siena (Farinelli 2005, 9-13).



Figure 5.14 - Cugnano. Location of main mining deposits attested by archaeological surveys (from Bruttini 2014, 359).

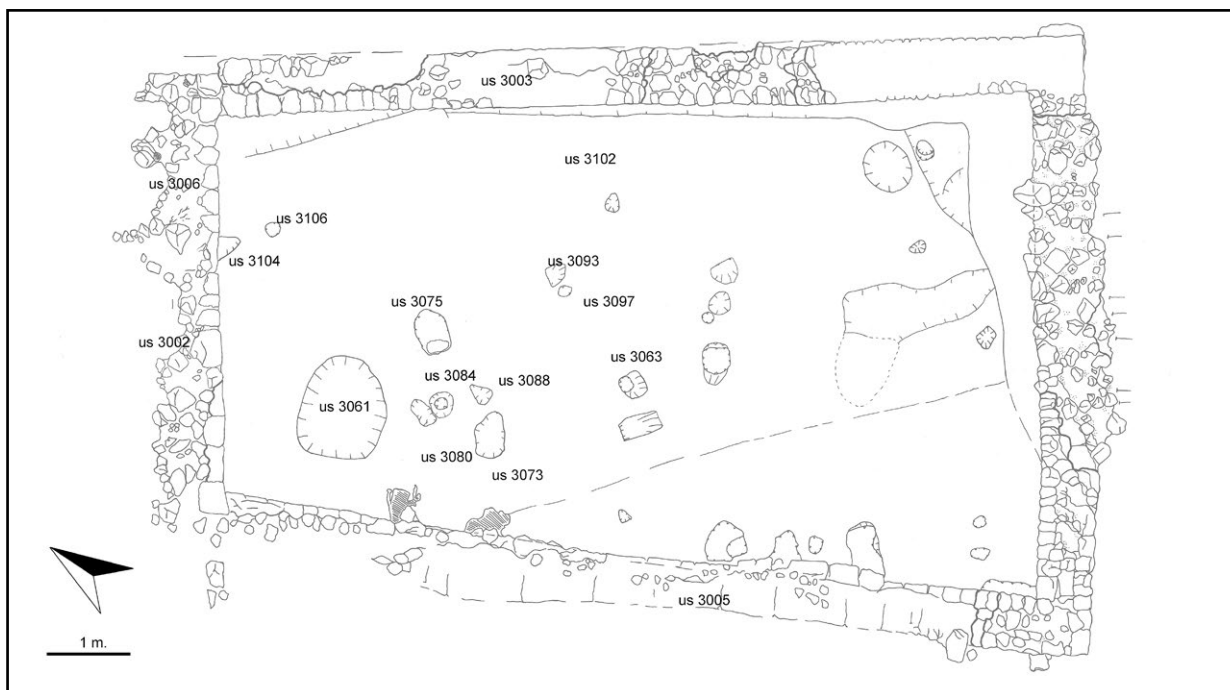


Figure 5.15 - Cugnano. Plan of Area 3000 showing early medieval post-holes (from Grassi, Quirós Castillo 2005, 49).



Figure 5.16 - Cugnano. Part of the defensive ditch, found in Area 1000, after removal of its infill (University of Siena archive).

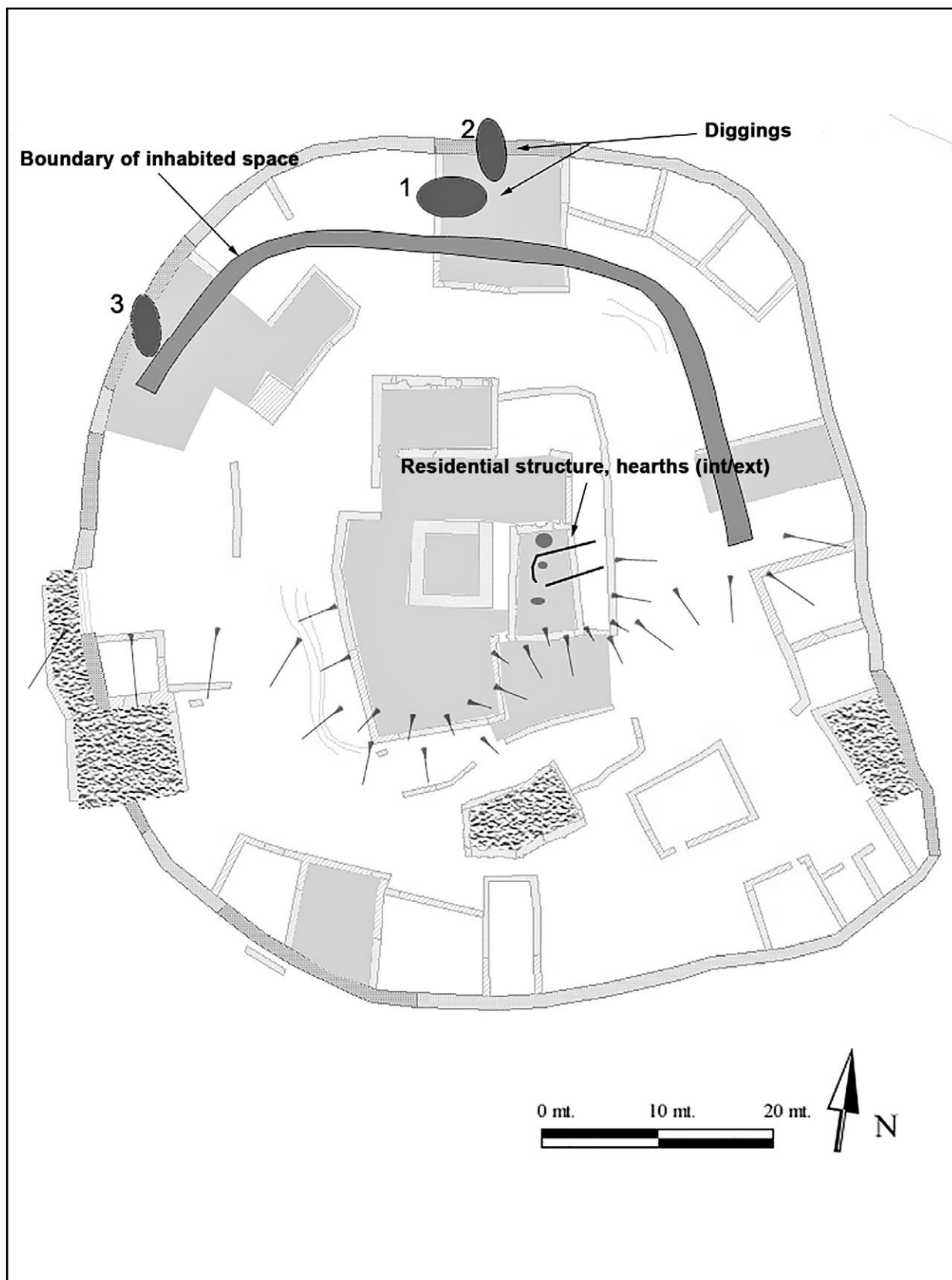


Figure 5.17 - Cugnano. Site plan, showing structures relating to the period prior to the late 10th century (based on Bruttini et al. 2009, 307).

In common with Rocchette, Cugnano was also abandoned fairly early on, during the first half of the 15th century.

Mineral deposits within the extensive area known as Piastraio (see above) are found in areas immediately adjacent to the site, where archaeological surveys have found subsidence cavities, and small dolines (Figure 5.14). Other possible areas of exploitation situated less than a kilometre from Cugnano, as the crow flies, are present along the Ficarella gully and in the area called Campo ai Frati (Bruttini 2014, 58-59, also for the relevant bibliography).

Also in the case of Cugnano excavations have made it possible to identify an initial, long-lasting period of life between the 8th and the 10th centuries (founded on the limited remains of pre-existing features dating from the Hellenistic period).

Evidence for this long phase in the hilltop area survives in the form of 28 post-holes (Figure 5.15), dug into the rock. These can definitely be ascribed to at least one hut, used as a dwelling, if not to several structures made of perishable materials. The use of these structures, dated by radiocarbon dating, reveals that the hilltop area was frequented for a long period of time, between the 8th and the first few decades of the 11th centuries. Its chronological range is thus compatible with the chronology of the pottery finds found in the associated sequences (Grassi, Quirós Castillo 2005, 50-52, also for the specific information on the radiocarbon dates). Unfortunately removal of the rocky soil in the Late Middle Ages, and the later masonry structures themselves, prevent a full understanding of how to interpret the sequence.

Below the hilltop area, along the northern slope, traces were also found of a large cut in the bedrock. This was between 1.50m and 2m wide, and between 0.70 and 1.50m deep (Figure 5.16). The cut, the bottom of which was concave, with parallel sides, can be traced for a distance of at least 72m, as can be inferred from its location in at least five separate excavation areas. Moreover, it follows the same circular course, corresponding to a sudden change in the ground level marking the division between the higher area and the flatter areas below (Figure 5.17). Owing to its characteristics, it was interpreted as a ditch encircling the hilltop part, and it may have been even longer than the traces detected archaeologically (Bruttini *et al.* 2009, 306). Over time, a number of interventions, such as the construction of sections of masonry located beside some points along the outer cut, attest to probable ongoing maintenance.

Also belonging to this period are two important features associated with the site's mining vocation.

Not far from the outer limit of the ditch, in Area 1300, two large, deep cuts were found, dug vertically directly into the bedrock, consisting of cavernous limestone. The first of these cuts (1 in Figure 5.17) continues beyond the limit of the excavation, and was in part obliterated by a section of the late medieval castle's masonry. The detectable part is around 3.30m by 3.50m in size, with a maximum depth of 2.40m, and on the upper side it has small holes (Figure 5.18).

Near this there was another, elliptical cut (2 in Figure 5.17), part of the edges of which were destroyed by the construction of the later defensive walls. It is estimated to have been between 2.60m and 2m wide, with a maximum depth of 2.20m (Figure 5.19). In the final excavation campaign a further cut was found (3 in Figure 5.17), which is thought to be contemporaneous with the other cuts. This was around 6.80m by 4m in size, and about 1.40m deep (Figure 5.20), and had oblique sides (Bruttini 2014, 70).

Measurements made using a portable XRF device on the rock face of the first two cavities described⁵ revealed low percentages of both silver and copper, by contrast to the significant presence of lead, recorded in quite high concentrations in both cuts, especially in the upper part. These findings lead us to interpret these features, or at least the first two cavities analysed using XRF, as the remains of mining

⁵ The measurements were carried out as part of the Ar.Chi.Min project, which saw the involvement of Siena University's Department of History and Cultural Heritage, and the Department of Biotechnology, Chemistry and Pharmacy.



Figure 5.18 - Cugnano. Cut 1, after removal of part of its infill (University of Siena archive).



Figure 5.19 - Cugnano. Cut 2, after removal of part of its infill (University of Siena archive).



Figure 5.20 - Cugnano. Cut 3, after removal of part of its infill (University of Siena archive).

a seam of mineralized rock, with quantities of lead that are high in the part closest to the surface, but that tend to diminish deeper down, which could be the reason why the diggings themselves were abandoned (Bruttini 2014, 72).

The fill of these cavities, containing pottery finds datable to the 10th century, provides a valuable *terminus ante quem*, and confirms that we are looking at a very rare, archaeometrically proven, example of early medieval mine workings. The remains of post-holes around the first two diggings can be interpreted as possible perishable structures erected for the purposes of these same activities (Bruttini 2014, 72).

At Cugnano too, in these initial phases of life, there is an absence of traces of structures for reduction. As a result, the same suggestions apply as have been formulated for Rocchette Pannocchieschi, namely that the community that resided in the space enclosed by the ditch, at least to the north, was mainly involved in the extraction of minerals, which were later processed elsewhere.

The water-courses near the site, and the dense surrounding woodland, consisting of oak, chestnut, ash and hop-hornbeam (Buonincontri *et al.* 2013; Rossi 2014-15), which were able to supply good fuel, certainly created the kind of favourable conditions found throughout the wider territory for such metallurgical activities.

The evidence consisting in part of the ditch, and in a group of wooden dwellings in the upper sector, does not allow us to formulate too many hypotheses concerning the size of the group of people residing at the site, although it was probably composed of a small number of people, as imagined for the nearby site of Rocchette. Another thing it has in common with the latter site, at least for the 9th century, is a similar material culture, with a range of pottery that includes sparse glaze ware, the presence of which was connected to the same circuits of exchange between the hinterland and the coast (see above).

However, it is possible that, in the course of the 10th century, the site was considerably expanded. The evidence for this hypothesis is indirect, and comes from the fill inside the three aforementioned cavities, and from the fill in the ditch, which dates to the following period. Indeed, these stratigraphies yielded much pottery material datable to the 10th century, and all this material, in secondary deposit, suggests that, in order to level the ground surface in the following phase, at least in this part of the flat area, a certain number of residential structures were destroyed, along with their habitation levels.

As for the site's vocation, the XRF results suggest an association with lead. Accordingly, in this case too, its exploitation seems again to have a place in the oldest history of these sites. Thus, whereas in the case of Rocchette Pannocchieschi the site's connection with the exploitation of this resource has only been suggested, in the case of Cugnano we have direct evidence for it, although it is difficult to quantify its scale, and its continuity over time.

However, the stratigraphic sequence, and its finds, date the total abandonment of this initial site layout fairly clearly to a chronological range that keeps recurring in these chapters, namely the final decades of the 10th century and the first few decades of the following century.

It is in this period that the site underwent a profound transformation, just as we have argued for Rocchette. The clearest outcome of this is the construction of a stone-built outer wall (Figure 5.21). This was designed with a circular plan, following a perimeter of 267m, enclosing an area of 5503m². Like the perimeter itself, the size of this area was not changed in later centuries, not even when the outer wall was rebuilt in the course of the 12th century.

The surviving parts of the outer wall, in various stages of preservation (Figure 5.22), indicate a thickness that suggests that the entire elevation was made of stone. Stones of local limestone and sandstone were used for its construction, in some cases only cursorily prepared by being split, or else being totally unworked. They were laid both in pseudo-horizontal courses and, in other points along the circuit, in

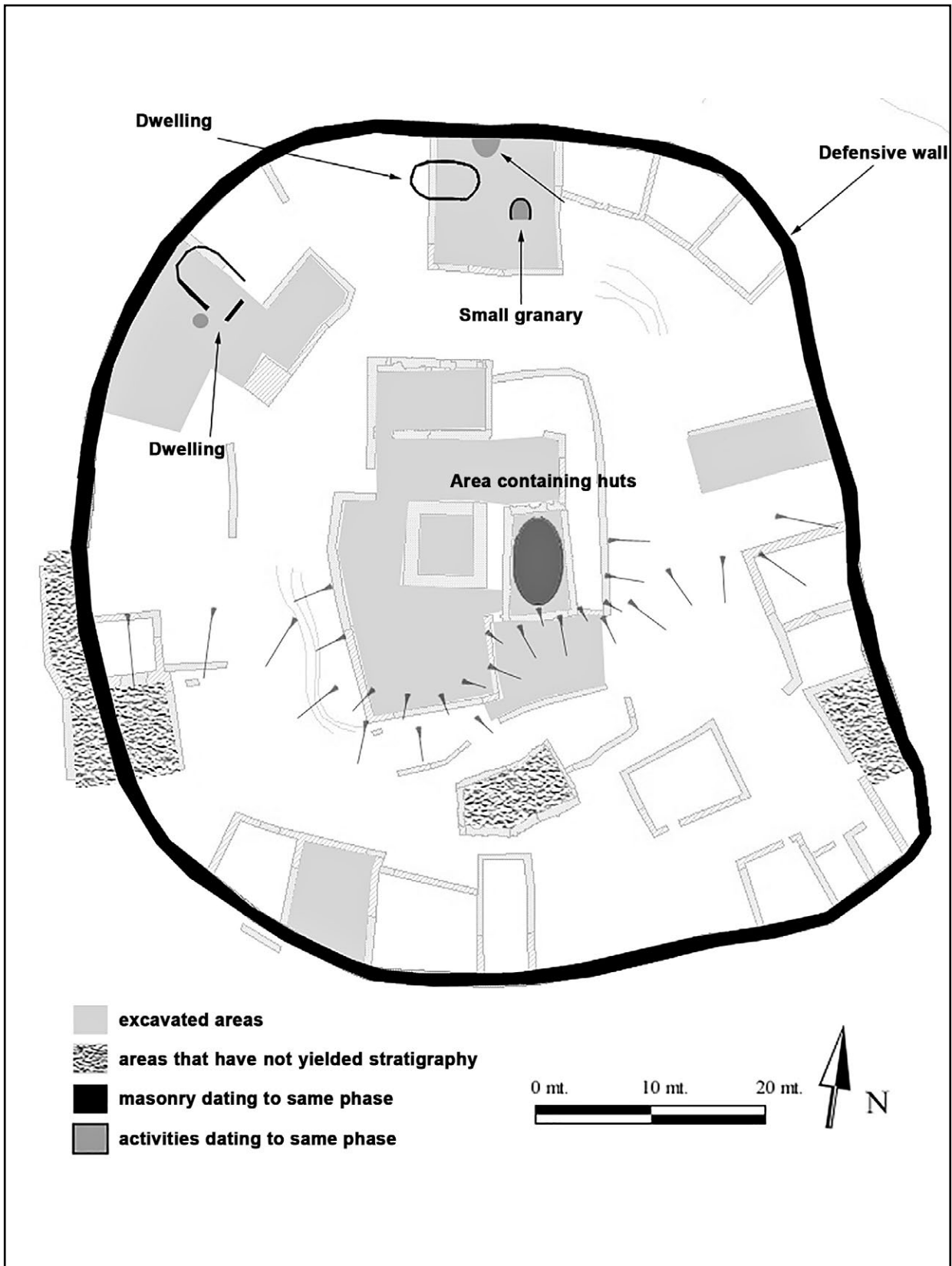


Figure 5.21 - Cugnano. Site plan, showing the late 10th-early 11th century defensive wall (highlighted), and structures dating to the same phase (based on Brutini et al. 2009, 307).



Figure 5.22 - Cugnano, view of one of the best preserved sections of the late 10th-early 11th century defensive wall.

accordance with a wholly irregular arrangement, and using a lime mortar with a low bonding agent component (Bruttini *et al.* 2009, 308).

Unlike Rocchette, there are not many other possible features that can be associated with this phase. In many cases these were destroyed by the major late medieval interventions, that included the construction of numerous residential plots.

In the lower terrace section to the north, coinciding especially with Areas 1000 and 3000, we know that the construction of the outer walls involved a major operation to level the ground surface, or to fill in previous structures, with the obliteration of the ditch and of cavities used to search for mineral deposits. In this sector of the site, structures made of perishable materials were built, but in one case these had a stone socle, for residential use. One of these had a small granary for the use of one family (Belli 2005b, 33-36; Bruttini *et al.* 2009, 308). In other areas inside the perimeter, in particular coinciding with Areas 10000 and 5000, parts of masonry walls were found, suggesting the presence of structures possibly having a residential function. Some, or all, of the perimeter walls were stone-built, perhaps with a possible upper section made of perishable materials. We know from radiocarbon dates that occupation of part of the hilltop area, with buildings made of perishable materials, continued also in this period, in forms that are hard to determine owing to later destructions.

No clear and certain production structures can be associated with this period, unlike the situation found at Rocchette Pannocchieschi. Indeed, the evidence is too weak to assert with certainty the presence of possible furnaces for reduction, or for ore transformation.

Of course, this does not mean that these were absent, because we cannot rule out the possibility that such features did exist in parts of the site that have not been excavated, or, given their insubstantial nature, that these remains were obliterated by later interventions.

From certain pointers that emerged during a series of research activities conducted as part of the nEU-Med project interventions, and not yet published, we can infer indirectly that there were possible activities involving wood clearance in the vicinity of Cugnano, prior to the 11th and 12th centuries. This forest clearance may have been conducted in the wake of metallurgical activities.



Figure 5.23 - Ficarella. The red arrow indicates the direction of travel of the presumed landslide.



Figure 5.24 - Ficarella. Section showing the conoid (below, delimited by the red line) consisting of earth, rocks, and gravel.

Around 150m north of the site, in a small flat hollow near a place bearing the toponym Ficarella, field-walking surveys revealed three separate surface contexts (Topographic Units, or UTs), where Roman pottery datable to a period between the mid- or late Republican period and the first half of the 7th century was found. This pottery attests to the fact that this area was frequented over a long period of time (see Figure 5.14) for its location). While the pottery from two of these UTs is the result of the erosion of sequences relating to a site context situated on the small hill behind them, a third UT is connected to a site present in the hollow with a specific metallurgical vocation. This vocation is borne witness to by the presence of irregularly shaped pieces of rock greatly altered with iron mineralizations, also found by analysis by portable XRF (Dallai, Ponta 2009; Ponta 2019, 149-150). Thus we are looking at a production site connected to iron-processing, which seems to cease completely around the first half of the 7th century.

The presence of these indicators is what drew our attention especially to this area when work began nearby to construct an Enel GreenPower power station. Under archaeological surveillance, earth-moving operations for the preparation of the building site revealed a series of sections, some of which, higher up the valley, proved worthy of closer analysis.



Figure 5.25 - The borgo of Montieri with the Poggio above (photo: Jacopo Bruttini).

Indeed, as found in the course of the geomorphological investigation conducted during the nEU-Med project, the alluvial deposit of a conoid was visible in these sections. This conoid seems to have formed following an event that, from the slopes above, apparently triggered a large landslide consisting of earth, gravel, small pieces of stone and fragments of rock (Figure 5.23). According to geomorphological analysis⁶, this major landslide may have taken place as a result of heavy rains on bare valley slopes that had been heavily deforested. To identify a possible chronology for the event, a sample of charcoal found on the top of the alluvial deposit was analysed by radiocarbon dating (Figure 5.24). This was dated to between 1020-1155 (Cal AD 1Sigma 94%)⁷, giving a preliminary terminus ante quem for the event.

The deforestation must have eliminated the vegetation along the slope of the hill, and this very position would lead one to exclude, albeit not completely, the possibility that these actions were linked to an effort to obtain land that could be farmed. Given the presence of a number of mineral outcrops, it would seem more plausible to suggest that the vegetation was stripped so as to meet the need for fuel for the various metallurgical activities that we have suggested took place not so much at the site itself, but rather away from it, in a place or places that may have been close or at a distance from it.

The chronological range by means of which charcoal is dated obviously does not allow us to suggest with certainty how long prior to the year 1020 the deforestation took place, and thus in the period when the Cugnano site was organized with the construction of the new defensive walls.

Although we lack metallurgical indicators, we cannot, for that reason, rule out the possibility that this large-scale felling of vegetation may be an indirect sign of the acceleration in metallurgical activities at the site, or in its immediate vicinity, which did take place precisely in the period straddling the 10th and 11th centuries, and which is thought to have later caused the landslide between the first half of the 11th century and the first few decades of the following century.

This acceleration is also confirmed by the pollen sequences studied in Lago dell'Accesa, the lake that is quite close. These sequences bear witness to a gradual intensification of the retreat of local tree cover (especially deciduous oak, and in particular Turkey oak), starting in the mid-9th century, with an intensification from the middle of the following century, contemporaneously with an increase in spaces that were either farmed or left fallow (Drescher-Schneider *et al.* 2007; Buonincontri *et al.* 2020a).

Thus, the Ottonian period continues to return constantly to our tale, and we shall set out from this same period for a brief discussion concerning the mining area that looked to Montieri.

⁶ The investigation was carried out by Pierluigi Pieruccini and Davide Susini, with the collaboration of Luisa Dallai and Mauro Buonincontri.

⁷ The radiocarbon analysis was conducted by the Beta Analytic Testing Laboratory.

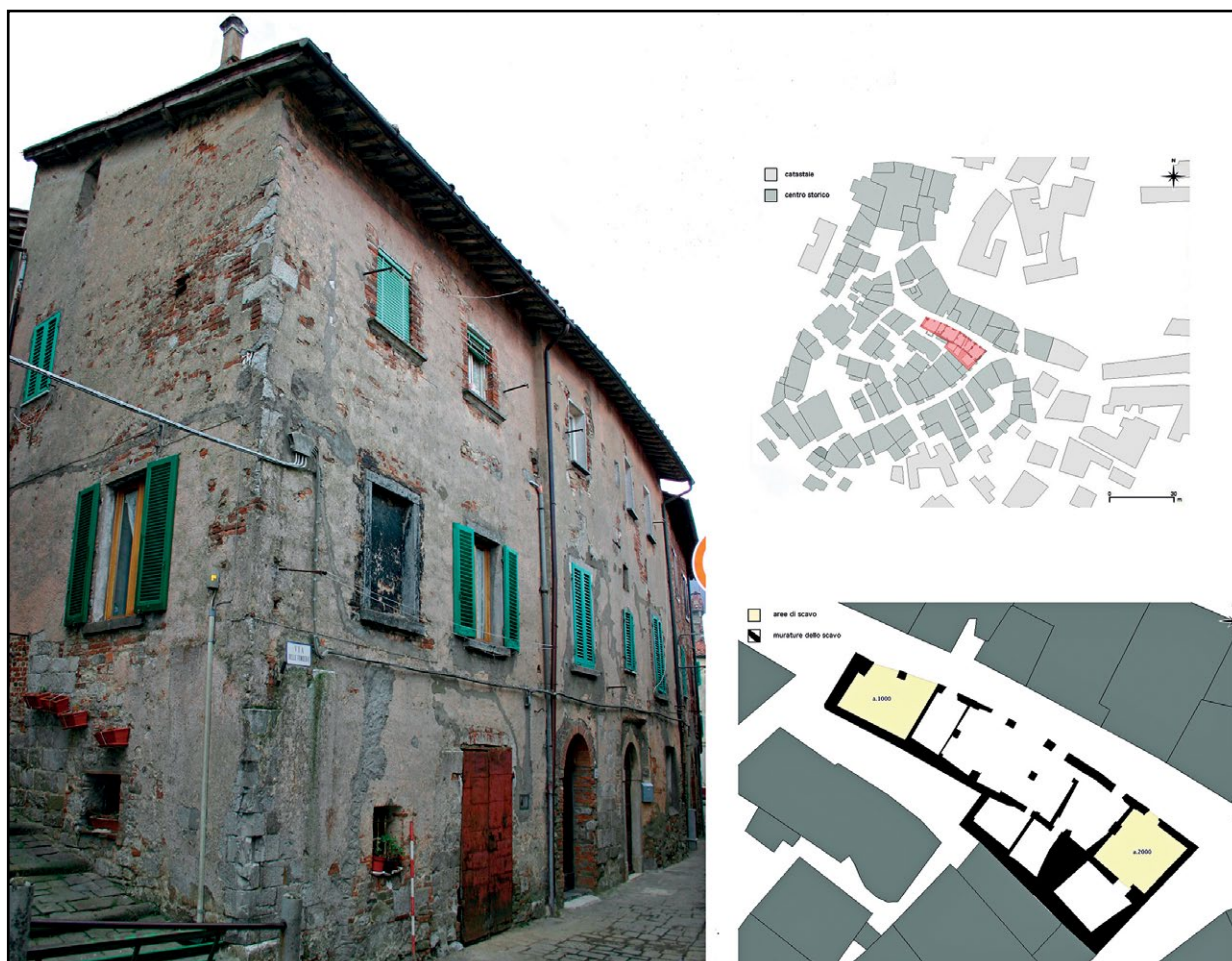


Figure 5.26 - Montieri. The Le Fonderie building, and its location in the borgo (top right) (from Bruttini 2014).

5.3 Montieri

As it appears today, the borgo of Montieri, which arose atop a pre-existing castle mentioned in 1133 (Volpe 1961, 340; Farinelli 2007, scheda 21.9), stands on the last foothills of the Colline Metallifere Grossetane, bordering on the area that came under Siena (Figure 5.1). It is located on the eastern slopes of the larger hill that towers over it, known as Poggio (or Poggio di Montieri), not far (as the crow flies) from the site at the Canonica locality (Figure 5.25). The need to isolate and underline the foundation of the early medieval church, and of the associated religious hub, led to the latter site already being discussed in chapter IV.3, artificially separating its history from that of the mining territory. Here I will expand on that earlier description, to explore its characteristics, although, as we shall see, the context is to be viewed as a unified whole.

Indeed, Poggio di Montieri, standing in the centre of a larger and highly important geographical unit characterized by minerals, features deposits of mixed sulphides, including sphalerite, galena, pyrite and silver-bearing tetrahedrite. The mineral veins and seams embedded in limestone (the Calcare Massiccio formation), the predominant rock in this territory, were extracted by following their course, or else by digging vertical shafts close to each other, designed to intercept them. On Poggio di Montieri this extraction method has left numerous traces in the form of subsidence hollows marking the position of shafts that have since become blocked up, or access points to the subsoil, taking advantage of natural fissures, and then digging down beneath the ground surface. The presence of these signs of extraction activity has attracted many scholars, and ever since the late 1990s research studies have been undertaken

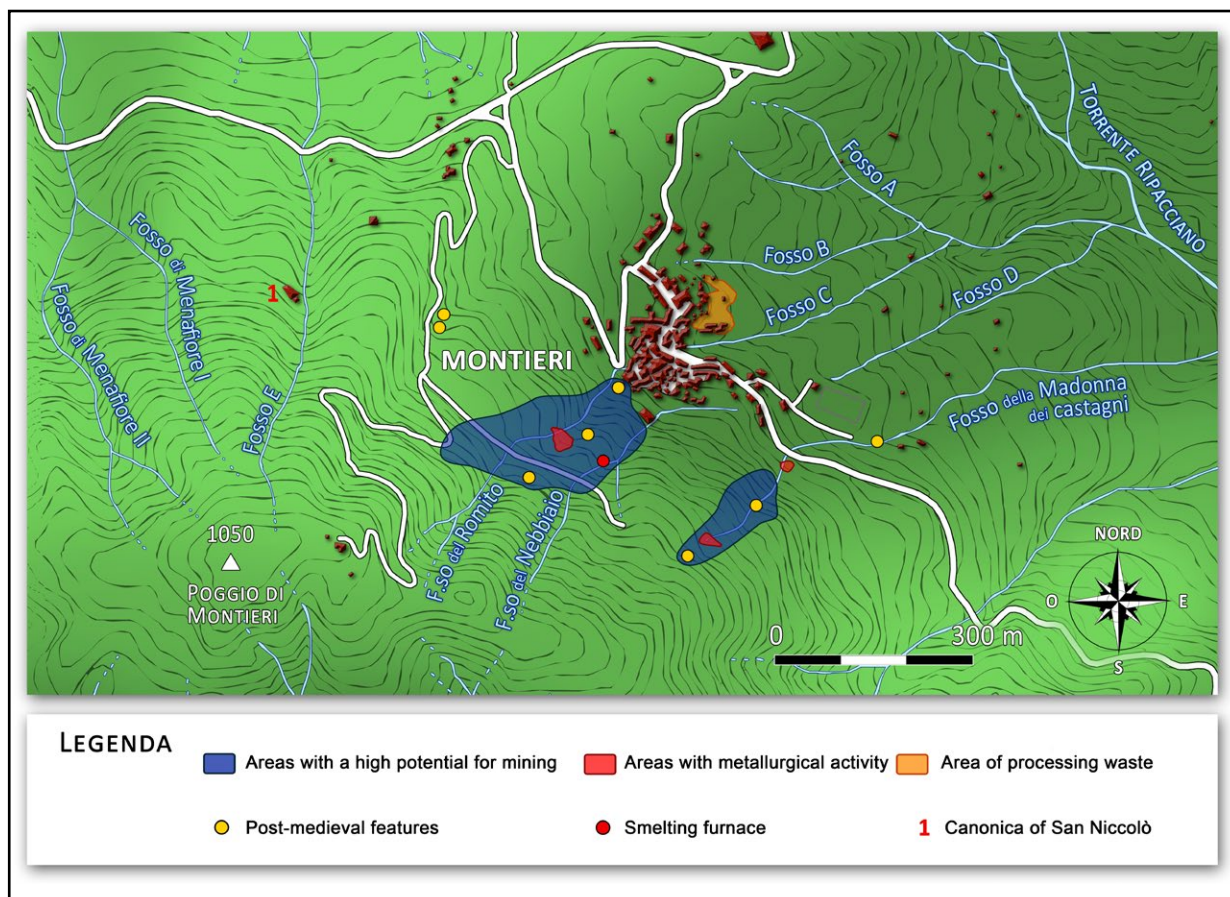


Figure 5.27 - Poggio di Montieri, showing all archaeomining features (from Trotta 2013-14).

by the Universities of Siena and Florence, by systematically recording these features, suggesting possible periods of use (see, for example, the technical records dedicated to the Montieri area in the Patrimonio Minerario e Naturalistico inventory; Cuteri, Mascaro 1995, 120-130). These investigations already revealed a long tradition of exploitation which, after an intensive phase, between the 12th and 14th centuries, was resumed between the 18th and 20th centuries.

More recently, between the years 2007 and 2013, a series of projects connected to the University of Siena, centring on the medieval period, have looked at three different but complementary investigation contexts: the hamlet itself, with the excavation, in collaboration with the Archaeological Superintendency, of some of the former parts of the large building (Figure 5.26) known as 'Le Fonderie' (Aranguren, Bianchi, Bruttini 2007b), and with an analysis of the numerous well-preserved medieval buildings (Ferdani, Bianchi 2013); the area of the hill overlooking the hamlet, where multidisciplinary field surveys were conducted (Figure 5.27) aimed at identifying features connected to mining activity (Dallai *et al.* 2012; Benvenuti *et al.* 2014; Bruttini 2014); and excavation of the Canonica complex, which we discussed in chapter IV.3. The findings made were added to by those that emerged from rescue excavations directed by the Superintendency near the Nibbiaio gully (Figure 5.27-5.28), situated just outside the hamlet, on the lower slopes of the Poggio (Baranguren, Grassi 2012), as well as from excavations in the streets inside the hamlet coinciding with work to install district heating (for a preliminary report, see Bruttini 2016).

Information regarding the history of Montieri deriving from material sources has in part filled in the void that existed as regards the periods prior to the end of the 12th century, and the 13th century, which are the best known, thanks above all to the historian Gioacchino Volpe, who made Montieri an exceptional case study centred on the relations between politics, society and the economy (Volpe 1961).



Figure 5.28 - Montieri, Fosso del Nibbiaio: the circle indicates one of the reduction furnaces found.

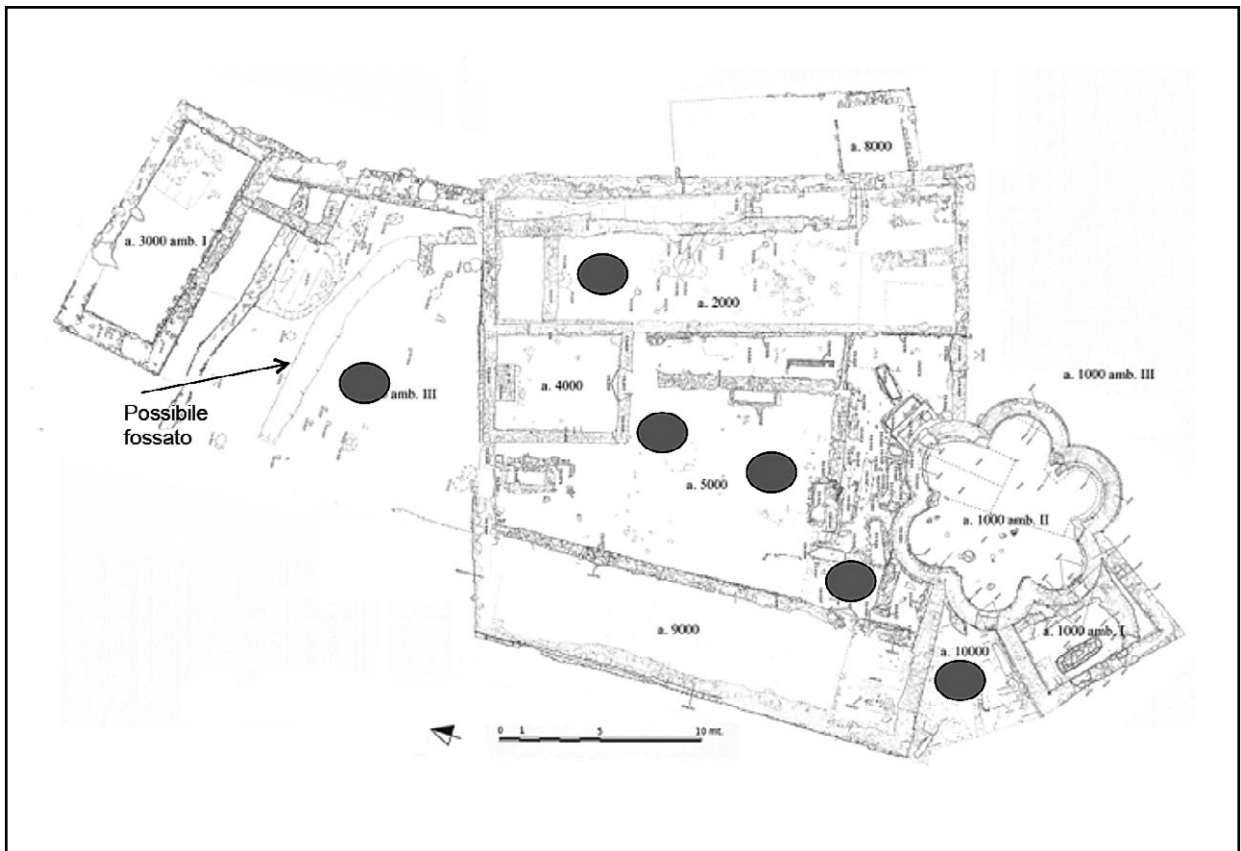


Figure 5.29 - Montieri, località Canonica: site plan. The circles show the findspots of ancient pottery finds; the arrow shows the cut for the possible defensive ditch.

As I have stated, the gap in our knowledge has only been partially filled in because, unfortunately, for the centuries discussed in this volume, there is not a great deal of information available.

Accordingly, let us try to summarize what we do know, setting out from the site we excavated at the Canonica locality.

Indeed, without going into the same details already described in chapter IV.3, it is here that we find the earliest physical traces of the whole history of Poggio di Montieri for the medieval period, a territorial district that Schneider had already suggested was of fiscal origin (Schneider 1975, 268-269).

On the terrace where the Canonica complex would later stand, a series of post-holes for wooden stakes that may have been the supports for huts were found. These date to a period between the 8th and 10th centuries. These features are located in: the open space corresponding to Area 3000; in Area 2000; and in the earliest sequences of Area 1000 where the church was later built. The same areas where, in the associated stratigraphies or in secondary deposit, pottery was found datable to between the 8th and 10th centuries, indicating a material culture belonging to a site designed for habitation⁸. These remains, considered all together, are more numerous within the space bordered by a negative feature of a certain size (around 1.50m), but of limited depth. This feature, cutting part of Area 3000, seems, after turning a kind of corner, to continue along the contour line of the terrace on which the building in Area 2000 was later established, which to all intents and purposes obliterates the cut itself (Figure 5.29). This large digging in the natural ground was interpreted as the remains of a possible ditch which, as seen in the case of Cugnano, must have encircled a probable village. It is possible that this ditch was only erected around the part downhill, not the uphill section, where the rocky height to the rear could have formed a natural boundary. In any event, the later, large-scale transformations, which erased much of the evidence that could be related to this phase, do not allow us to formulate clear hypotheses as to the characteristics of this initial settlement, and its possible economic vocation.

Thus the site's connection to mining activities may only be suggested by its proximity to a large number of metalliferous seams on this side of the Poggio.

Some clues (the fill of the post-holes, and the infill of the ditch itself) suggest that, in the course of the 10th century, the site was abandoned, and it is precisely in this same landscape, which perhaps was no longer frequented, that it appears that the phenomenon of hermits began, taking advantage of the natural cavities found hereabouts. The man who was later buried in the annex adjacent to the church would seem to be connected to this same phenomenon, as we suggested in chapter IV.3.

Unfortunately no evidence emerged in the excavations in the historic centre of Montieri of phases dating to the Early Middle Ages such as might allow us to suggest that this inhabited nucleus may have been relocated to the site where the castle later arose, or else whether this abandonment took place in the context of a continuity of habitation, in a possible multi-site system of scattered smaller sites across the slopes of the Poggio.

However, what we can reconstruct with some certainty, on the basis of a sizable amount of evidence, is the complex operation that took place here starting at the end of the 10th century, namely the construction of the church and of possible annexes linked to the functioning of this religious pole.

The plans to create this pole on land that may have been of fiscal origin, as already mentioned, were probably devised by the public authorities by agreement with, and with support from, the bishop of Volterra, to whom the later Canonica complex belonged. However, it may also have the property of the Counts of Volterra themselves. For the bishop it was certainly the first important step towards control of the mining resources, and towards the process of appropriation of rights to sensitive resources such

⁸ I am indebted to Arianna Briano for the information concerning the study, as yet unpublished, of the pottery finds from this phase.



Figure 5.30 - Reconstruction of Montieri castle in 13th century (illustration by Daniele Ferdani, from Ferdani, Bianchi 2013).

as mineral resources (Bianchi, Collavini 2017), which were so crucial for the construction of the bishop's future 'princely' power (Paganelli 2021). The role of the bishop certainly emerged from this stronger, also thanks to the fact he exercised a religious-cum-social control over the communities residing in this area, by means of the fact that he managed such an important place of worship which, as stated in chapter IV.3, continued to attract burials all the way down to the Late Middle Ages.

It is thus possible that, in the course of the 11th century itself, the vocation of the habitation centres on the Poggio became more clearly defined, and better organized, with the more structured formation of what was later to become the castle of Montieri.

Unfortunately, however, the material and documentary data available to us are unable to dispel the mist that envelops the possible mining activities managed by the bishops between the 11th and early 12th centuries, in the years when the Canonica complex first took shape and was developing. Where these activities were located, how they were organized, and on what scale, are questions that remain unanswered, and they are unlikely to be answered directly.

In the case of Rocchette Pannocchieschi and Cugnano, these phases certainly coincided with mining activity, and, for Rocchette Pannocchieschi, with ore reduction too, although being connected to larger-scale and more complex processing at sites outside the habitation site itself.

It is possible that this happened also at Montieri, despite the fact that, in the central medieval phases, Montieri differs considerably from the organization of the other mining castles, including Rocca San Silvestro, which I shall turn to in the next section.

First and foremost on account of its position.

Montieri stands on the slopes of a hill, not on a hilltop site, in a location that seems designed to facilitate the arrival of minerals and ore from the higher hills overlooking the Poggio to the site that stands at a lower altitude (Figure 5.30).

This location is very much in keeping with the organization of the production process that we know of for the late 12th and 13th century phases, in other words with the whole cycle being conducted inside the castle, or just outside it, from reduction to the striking of coinage. The existence of a mint at Montieri is connected to the minting of Volterra denari by the bishop, who officially held the right, which he received from Emperor Henry VI, to mint coins in 1189. However, several authors take the view that the production of denari by Volterra began at least around the mid-12th century. We might also perhaps associate the start of the activities of the episcopal mint of Montieri to this same period (for a summary of the question, readers are referred to Cicali's article in Bianchi, Cicali 2019). The notion that the mint's location was the building now known as Le Fonderie, in the centre of the borgo, could be true, on the basis of the evidence gathered during the excavation of its lower levels, although the evidence is not numerous enough to support it with certainty (again Bianchi, Cicali 2019).

The idea of considerable metallurgical activity is supported by the fact that, during the excavation to install district heating infrastructure, large amounts of slag were found in many parts of the borgo (Bruttini 2016), although without clear chronological dating evidence. This activity must have also been situated along the gullies just above the castle, in the direction of the Poggio, where remains of smelting furnaces have been found (Aranguren, Grassi 2012). In addition, this activity is proven by the immense slag tip that can be identified in the gardens of the modern-era houses built along the eastern slopes immediately outside the medieval outer walls (Figure 5.27). Recent chemical analyses of the soils, also measuring the level of contamination of the small water-courses flowing down this side of the hill, have made it possible to delimit an area of slag covering more than 7500m², with a depth of between 4m and 10m (Dallai *et al.* 2015). This feature indirectly demonstrates the considerable metallurgical activity that took place here, in all likelihood, in a period prior to at least the 14th century, when mining work was greatly scaled down, also owing to the depletion of the seams (Bianchi, Cicali 2019).

Indeed, after a very active period of intensive exploitation of mining deposits, in a sort of 'Montieri silver rush', spanning just over a century, these same mines were exhausted, leading to a slackening of the multifarious interests that went hand-in-hand with political events. There were variations in the extent to which these events were in favour of the Volterra bishop, as we are also told by documentary sources themselves.

The major development of the hamlet in this period, with the construction of important buildings (towers, palazzi, public fountains), which transformed the castle into a 'quasi-town' (Chittolini 1990), is further confirmation of the above suggestion.

However, it is hard to say what the castle was prior to this economic boom. The scant number of definite remains datable to the 12th century does not enable us to reconstruct the size of a site that was destined to be expanded not long afterwards. By working backwards from the late medieval evidence that we have just described, one is inclined to think that this early castle must perhaps have had a political and physical physiognomy of a certain importance also in the 11th century phase. This characteristic is very much in keeping with the power that controlled it, namely the bishop of Volterra, up until the later 13th century. We cannot go further than that, and thus prudence dictates that we should stop there.

5.4 Rocca San Silvestro

For Italian medieval archaeologists of my generation (and others too), Rocca San Silvestro is definitely the best known castle of all. Indeed, it was the first fortified site excavated completely anywhere in Italy, following a specific research strategy aimed at shining a light on the economic dynamics underlying mining exploitation on the part of the nascent territorial seigneuries. This was a totally new theme in the Italian academic world when the archaeological investigation began, in 1984. More than the other early castles excavated by Riccardo Francovich (Scarolino and Montarrenti), Rocca San Silvestro was both a training ground for many archaeologists, and a place for testing out a multidisciplinary approach which was truly innovative at the time. As well as in the site's excavation (where a vital contribution was made by archaeometallurgy experts, anthropologists, archaeobotanists and archaeozoologists), the excavation led to the drafting of a protocol of local area field research for mining archeology surveys, which was later tried out in other contexts. These have since become refined more and more in their methodologies. Moreover, thanks to the initial collaboration with Tiziano Mannoni, specific archaeometric analyses on remains of metallurgical production began to be applied to an archaeological context in a historical perspective of major importance.

The significance and originality of the results, which echoed internationally, together with Francovich's determination and managerial skills, and his extraordinary ability to establish a complex network of relations with local and regional institutions, underpinned the transformation of this castle as it became Italy's first Archaeomining Park, which was opened in 1996, after the excavation ended. Rocca San Silvestro is, thus, inextricably associated with Riccardo Francovich.

Thus writing about this site again, to put forward new hypotheses concerning its initial phases of life, instils a certain fear even in someone like me, who, in my own small way, setting out from an analysis of its built structures, made a modest contribution to the original interpretation of the site in the far-off 1990s (Bianchi 1995).

However, it is necessary to do so, because the findings that have emerged, thanks to the research carried out under the nEU-Med project, require answers to be found to new questions.

Indeed, the remarkable history of this place in the central centuries of the Middle Ages, and its magisterial reconstruction, especially in the well-known joint article by Francovich and Wickham (Francovich, Wickham 1994), have in some ways crystallized an interpretation that has been revisited many times over by a multitude of scholars, like visitors to the Archaeomining Park itself. Within this process of sharing and perpetuating a narration, a number of pieces of information that emerged in the early years of the excavation have, as a result, been relegated to the sidelines by a history that centres around a seigneurial family that founded its castle to mine metals suitable for use in coinage, namely copper, silver and lead.

Accordingly, to write this brief section, I had to go back and reread both published and unpublished writings, especially in site reports dating further back in time, instead of relying on the many overviews compiled over the course of decades by Francovich himself (especially Francovich 1991) and by many others (including myself).

However, we should start at the beginning. To begin with, for the benefit of readers who may not be familiar with the site, we should describe it, and place it in its local context (Figure 5.31).

Rocca San Silvestro, situated on a ridge wedged between the Lanzi, Manienti and Temperino valleys, is overlooked by two higher hills, Monte Calvi and Monte Rombolo (Figure 5.32). The whole area around the site features bedrock of massive limestone within which are found seams of porphyry associated with skarn, namely a dark metamorphic rock containing sulphides such as chalcopyrite, galena, sphalerite, cassiterite, limonite and hematite, in other words the minerals from which iron, copper, lead, silver



Figure 5.31 - The Rocca today, seen from the muster point for visitors to the Park. Top right: a photo from the same viewpoint during the period of the archaeological excavations.

and tin are extracted (Francovich 1991, 24). As in the landscape around Rochette and Cugnano, the combination of rainwater and the predominant calcareous rock has given rise to karst phenomena such as caves, tunnels and sinkholes. When the surface outcrop of mineral ores was not sufficient, these natural underground cavities were explored, being expanded and adapted for mining the underground deposit. This has been verified archaeologically, for example, in the case of the Manienti mine (Figure 5.33), in the valley of the same name below the castle, active from the 13th century and featuring various tunnels and shafts (Francovich 1991, 80-81)

The castle as it appears today is the result of construction activities carried out mainly between the 12th and 13th centuries (Figure 5.34). Strong outer walls with a main access point on the south-east side enclosed a borgo with a complex layout consisting of stone-built houses, most of which had an extra storey added during the 13th century (Figure 5.35). The houses, standing on a series of terraces specially constructed by making cuts in the bedrock, were linked to each other by a system of main streets and back alleys. The network of streets departed from an open space which was accessed from the main gateway (Figure 5.36) and proceeded towards the hilltop area where a church stood, with a cemetery attached. Continuing on, one came to the seigneurial zone, which in turn had its own defensive wall enclosing a sort of low fortified tower (the residence proper) with a stone-paved open space, overlooked by a small tower (Figure 5.37).

The borgo had a series of shared structures, such as a bread oven, an olive-press, and a kiln for pottery. On the north-west terraces below the seigneurial area stood the spaces set aside for processing minerals

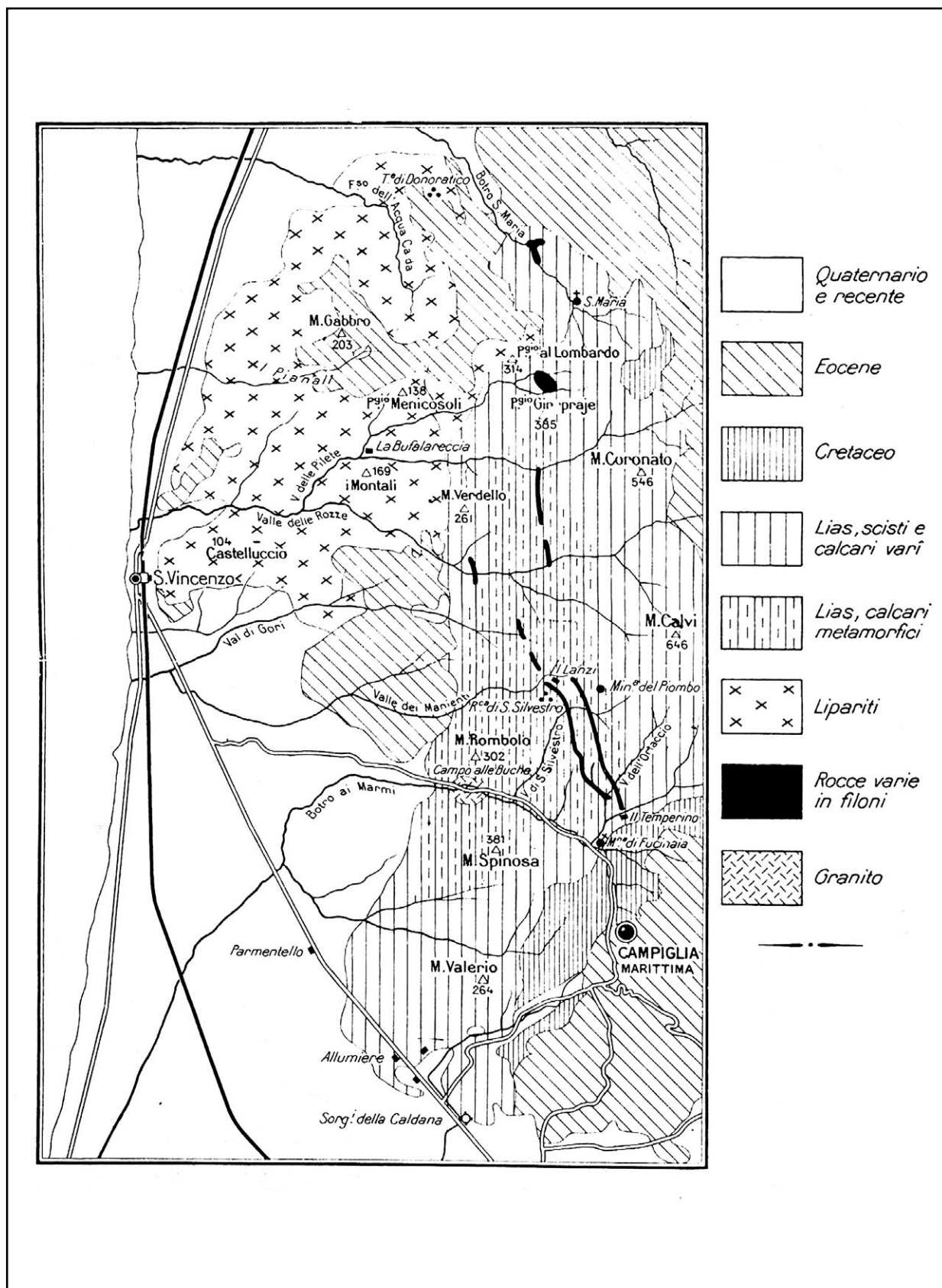


Figure 5.32 - Geological map of territory around Rocca San Silvestro (from Franconich 1991, 24).

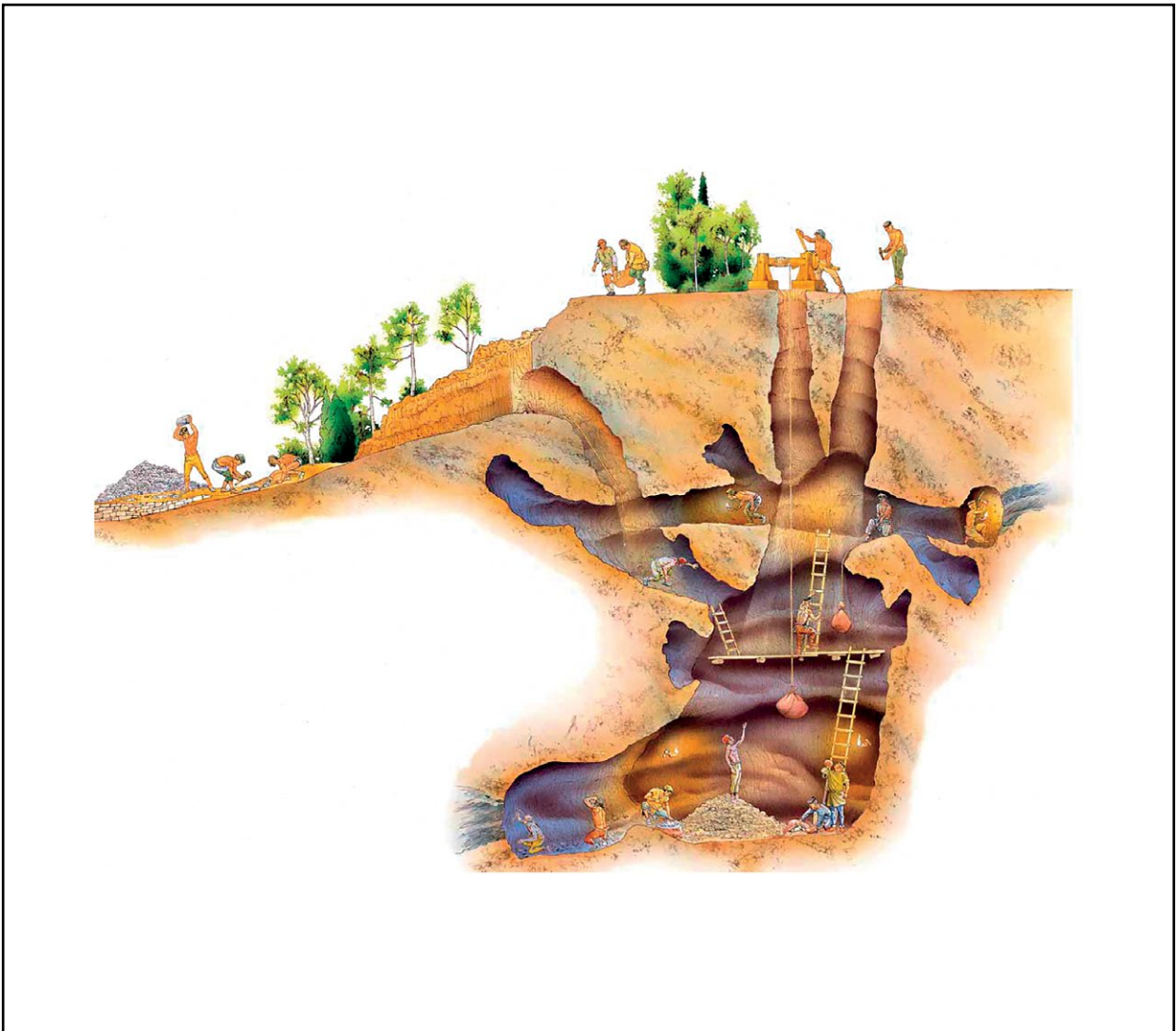


Figure 5.33 - The medieval Manienti mine, in a reconstruction by Studio Inklink Firenze, (Parchi Val di Cornia archive).

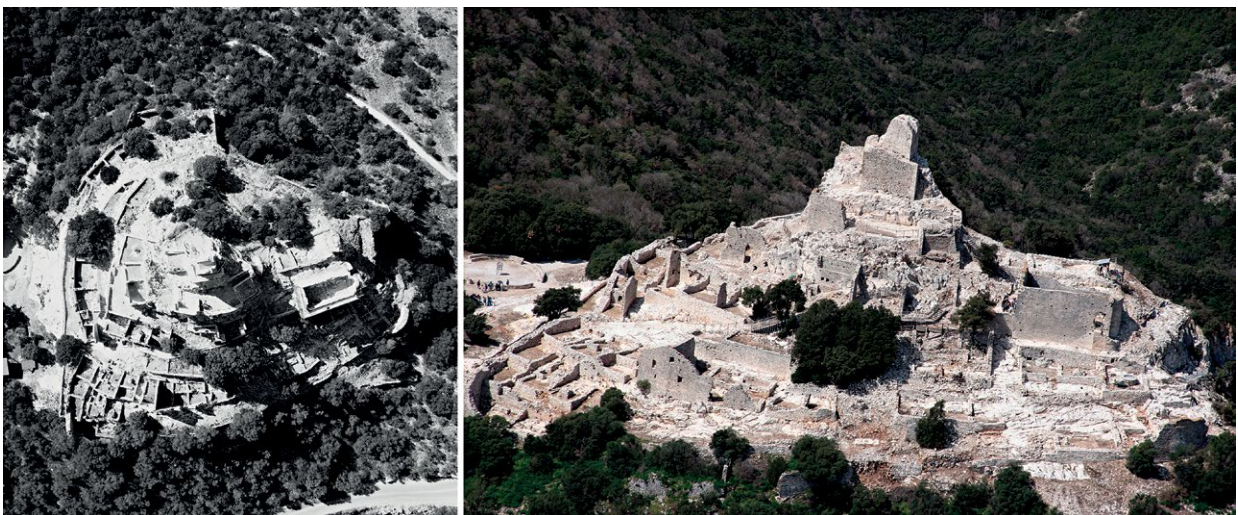


Figure 5.34 - Aerial photos of the castle (from Arrighetti 2017).

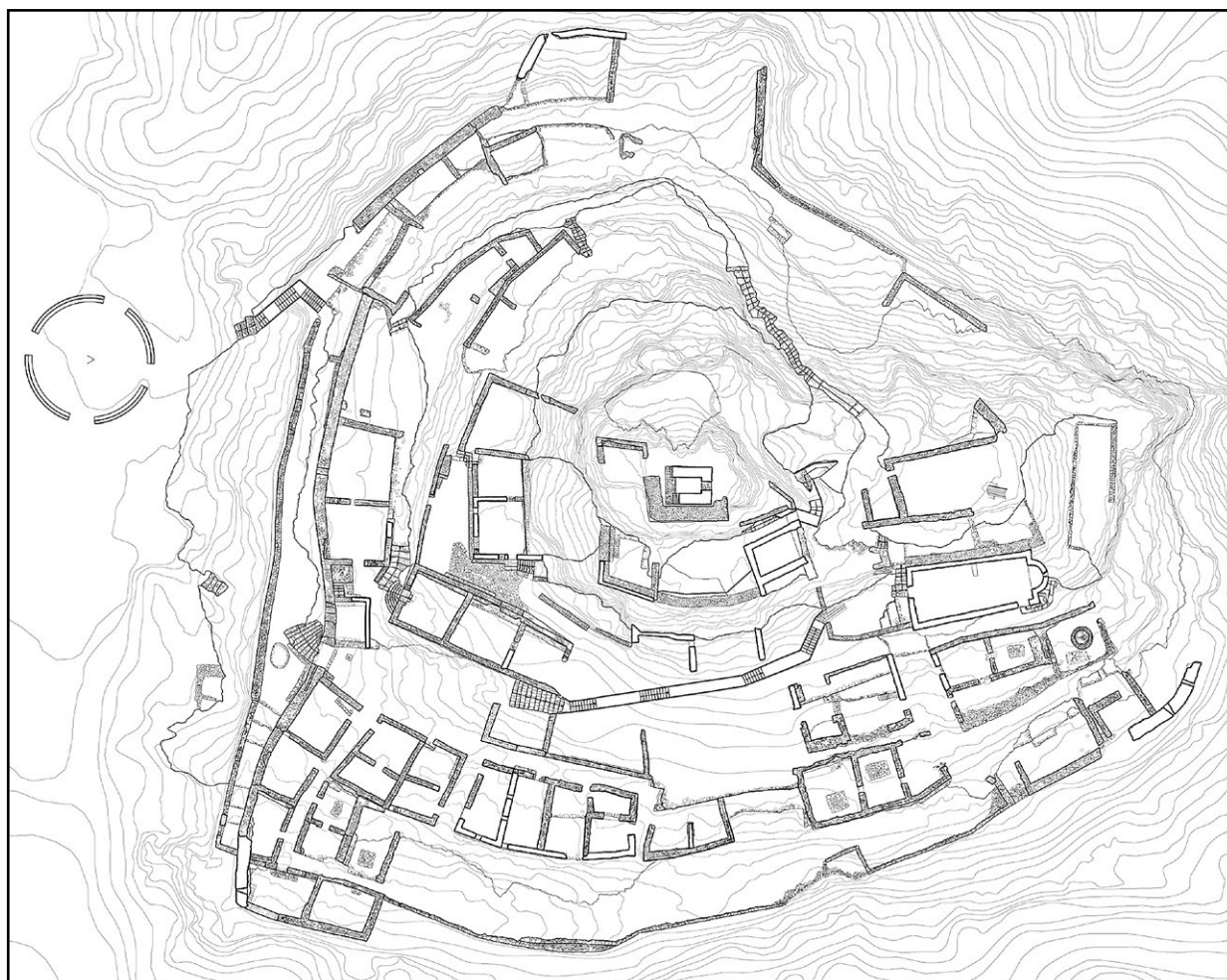


Figure 5.35 - Survey of castle, using 3D Laser Scanner (from Arrighetti 2017).



Figure 5.36 - The open space accessed from the main entrance to the castle.

(Area 2200, Figure 5.38), as testified to by the fact that, during the archaeological excavation, reduction furnaces for copper and lead were found, active in the course of the 13th century.

As in the case of the other mining castles, there are not many written documents for Rocca San Silvestro that shed light on its history. No mention that can be related to the Early Middle Ages, and only at the start of the 11th century do we have a possible first mention of it. This documentation introduces a major public power onto the scene, namely the Counts of Volterra, a title which in that year was held by the important Della Gherardesca family. We have already come across these political players, when I formulated the hypothesis that they were involved, along with the bishop of Volterra, in the foundation of the church at the Canonica di Montieri locality (see chapter IV.3)

In the same period, to be precise in 1004, Count Gherardo II and his wife Willa made an endowment to the Benedictine monastery of S. Maria di Serena, which they had founded in the Merse valley, granting a long series of properties listed in the document in question. These included properties in the Cecina valley, around Lake Bolsena, and also a nucleus of castles (the term used in the document) in the Cornia valley: Campiglia, Biserno, Acquaviva, Castello Novo and Montecalvo. The first in this list coincides with the town of Campiglia Marittima, where the Rocca (castle) has been excavated and studied in detail (Bianchi 2004). The second is a site which was tragically lost after the creation of the San Carlo quarry, just above the modern-day town of San Vincenzo. Acquaviva must have been located on the western slopes of the hill where Campiglia was located. It was probably abandoned early on, as at Castello Novo, which is hard to locate, but which already features in the confirmation of the monastery's properties by Henry II, in 1014, being described as a *castellare*, and thus probably in an abandonment phase (Ceccarelli Lemut 2004, 2-3). According to Ceccarelli Lemut, Montecalvo is to be identified as Rocca San Silvestro, which was later referred to in a document dating to 1191 by the name Rocca a Palmento (perhaps owing to the presence of the olive-press). Only in the modern era, after its abandonment, was it called San Silvestro, taking its name from the saint to whom the church was dedicated (Francovich 1991, 31).

One may reasonably suppose that the properties in the Cecina and Cornia valleys probably originally belonged to the royal or margravian fiscal patrimony, and that they were presumably managed, at the dawn of the new millennium, in that hybrid form whereby the Gherardeschi Counts exercised public prerogatives within patrimonial contexts which, in that same period, were beginning to be gradually privatized, in keeping with a dynamic we have got to know quite well in the same period in the case of the Aldobrandeschi family.

In any event, these collections of properties constituted the basis for relocating the interests of the Gherardeschi family from the area of Volterra to the coast, where the various branches of the family were established by means of their control of both castles and monasteries (as we have seen, for example in the case of the later phases involving the Cornino site, see chapter II.1).

In 1108 Montecalvo, later Rocca a Palmento, was one of the properties held by Hugh II, son of Tedice III Della Gherardesca, the ancestor of the powerful Counts of Donoratico who, in what perhaps was no coincidence, oversaw Pisa's exploitation of the Sardinian mines in the course of the 1200s (Ceccarelli Lemut 2004, 30).

In the course of the 12th century, however, administration of the castle passed to possible visdomini under the Gherardeschis. These family groups were known by the surname Della Rocca, and were possible *milites et fideles* of the family, being still closely connected, in the 14th century, with the Counts of Donoratico, lords of Pisa.

We find the Della Rocca family once again in 1281, as representatives of the local community in their capacity as visdomini (Ceccarelli Lemut 2004, 30) at the time when the castle took on the appearance that we see today, with the maximum expansion of the borgo, thanks to the general addition of one storey to the existing houses, which accommodated the residents, numbering between 150 and 200

inhabitants (Figure 5.39). As was the case in the other mining castles, the site was abandoned at an early stage, due to a combination of factors which we shall not dwell on here.

The archaeological excavation proved that this abandonment took place as early as the later 14th century, although it was frequented sporadically throughout the modern era.

As already stated, in the historical narration drawn up over the years by Francovich, along with other scholars, the site is the most enlightening example of the close link between the process of castle formation and the exploitation of natural resources, in this case mineral resources, on the part of a burgeoning seigneurial power that expanded its economic power on the basis of its close, all-pervading control of the production processes for copper and lead. This was also thanks to trade in these raw materials, which were needed to make coinage, with Pisa and its mint. This control, although exercised as of the 12th century by its visdomini, can be seen not so much in archive sources, which are few and far between, and which make no mention of the site's mining function, but rather in the form of physical evidence.

The major definition of the site in the course of the 12th century, with the reconstruction of the castle in stone, following a precise planning of the spaces, devised and executed by skilled, specialist builders assisted by the inhabitants themselves, is a tangible manifestation of a clear political and economic strategy on the part of the Della Gherardescas (Bianchi 1995). The relative scarcity of remains of production facilities, such as those found in Area 2200 (dating to the 13th century), was put down to the ephemeral nature of these features, which were customarily destroyed after use. A more than plausible explanation, given the continual presence of remains of furnace walls, baked earth, and charcoal found very frequently in many excavated areas, especially in the western sector. However, these are hard to associate with specific metallurgical activities, as can be seen from unpublished excavation reports. The equally low number of pieces of production slag, datable mainly to the 12th century, has been ascribed to the fact that tests were only carried out within the castle itself. These were designed simply to assess the quality of the ore-bearing seam, whereas it is thought that the rest of the production cycle was conducted on a larger scale outside the castle, although archaeological research has not identified these places. Alternatively, it has been suggested that the local seigneurship only dealt with trading the mineral (Francovich 1991, 81; and especially Guideri 1996, 78)

It is believed, also by referring to the earliest documentary mention, that the castle was founded between the end of the 10th century and the start of the following century. The many historical narrations concerning this site do not attach great importance to this initial period. In the aforementioned article by Francovich and Wickham this phase is cursorily described as 'not coherent', unlike the 12th century phase, in which there clearly emerges a major element of 'central planning' also in the organization and planning of the spaces (Francovich, Wickham 1994, 19).

Accordingly, in Francovich's 1991 work (Francovich 1991, 31), and also in Italian historiography, Rocca San Silvestro is depicted as an example of a typical castle that follows the Pierre Toubert model, with a foundation at a site with no pre-existing features, linked to a 'strong' territorial seigneurship in the context of its economic expansion.

Yet on closer inspection this was not the case in the initial excavation publications.

If we read carefully, especially the 1987 volume (Francovich, Parenti 1987), written seven years before the 1994 article in the *Archeologia Medievale* journal, we see that in the overall excavation periodization, which is followed by all the contributions, two phases were ascribed to Period I. This period is defined as 'pre-Romanesque' and, in phase 2, it contains all the evidence that can be related to the foundation of the first, late 10th century castle. By contrast, belonging to the earliest phase are the numerous post-holes dug into the bedrock, found in excavation Areas 8000, 8400, 8700 (Cucini *et al.* 1987), and 3000 (Agrippa *et al.*, 1985, 350-363), and many other rock-levelling operations, as in the case of the creation



Figure 5.37 - The seigneurial area after the 2017-18 restoration, showing access way (in foreground) and the small hilltop tower (above).

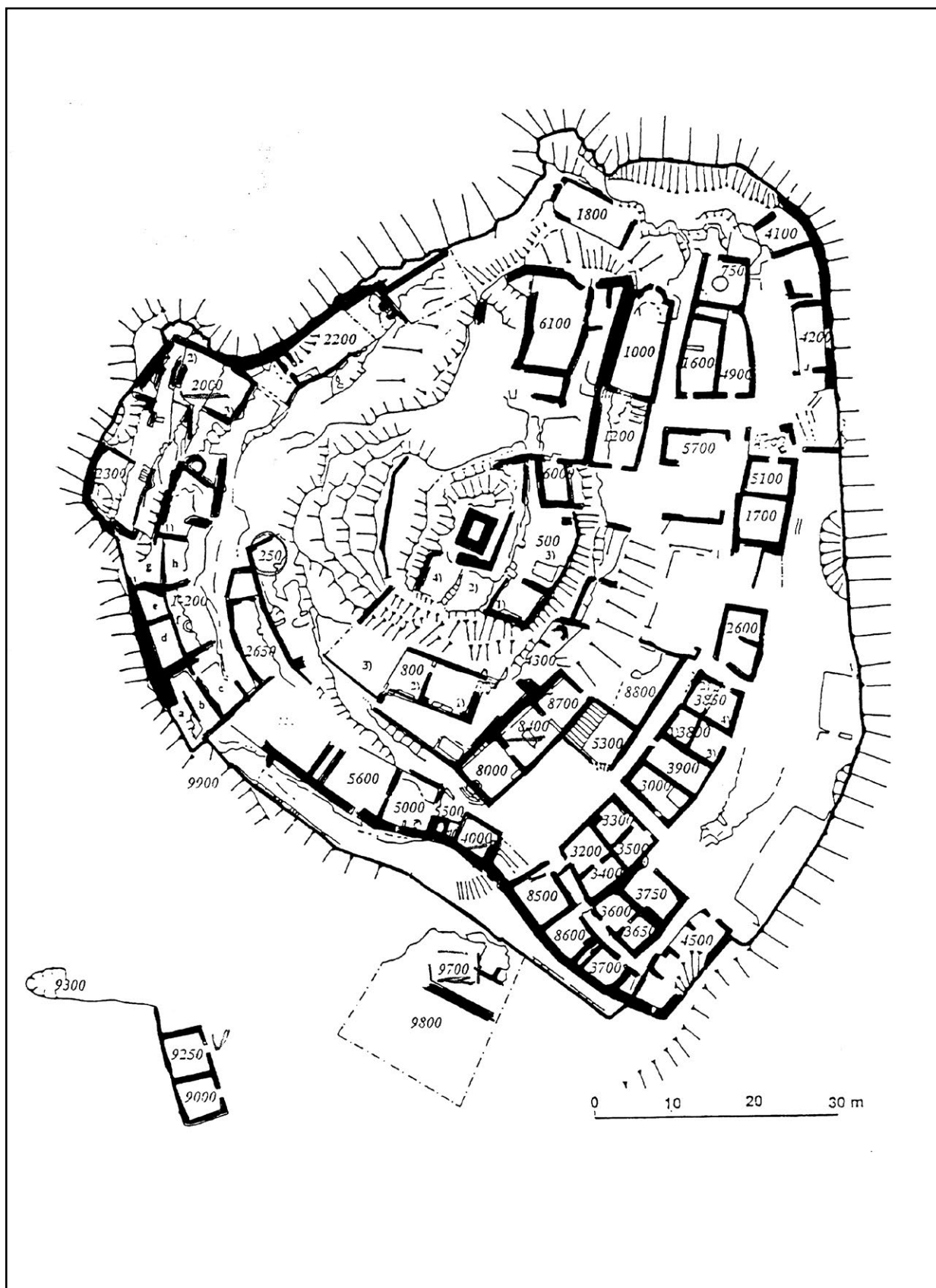


Figure 5.38 - Site plan showing the areas explored, and their respective numbering (from Boldrini et al. 1997, 103).

of the extensive level area present on the hilltop, corresponding to Area 6000 (Capelli, Casini, Paolucci, Valenti 1987) (Figure 5.38 for the location of the areas). Later on the view of the significance of these features was definitely influenced by the brief description of them given by Parenti in 1990, in the form of a few short lines, in which he dismissed them as traces of scant importance (compared to the cases of Montarrenti and Scarlino, analysed in the same article) (Francovich *et al.* 1990, 64). Greater attention was paid in the 1991 publication (Francovich 1991), although later the 1994 article (Francovich, Wickham 1994) marked the beginning of the process whereby this earlier life of the site fell into oblivion, a process that became definitive with the subsequent academic and general interest publications.

Let us try, then, to understand whether, with the information acquired in more recent years, we can approach the question in a new way.

In many sequences, often residual, both on the hilltop area and in the borgo, fragments of Forum ware and sparse glaze pottery were found. In Arianna Briano's volume (Briano 2021, 118-123, for all the information reported hereinafter), the product of her doctoral thesis conducted in the framework of the nEU-Med project, one whole chapter is devoted to these finds. This pottery was found in secondary deposit in four areas located in the borgo (8400; 4000; 9700; and 2000, Figure 5.38). A spindle-whorl, also decorated with sparse glaze, was found in Area 4000. As part of her research, Briano also analysed two sherds, not present in the publication: one piece of Forum ware, from Area 2000, and a sporadic find of sparse glaze ware. In conclusion, the total number of fragments amounts to 11 pieces, six of which are Forum ware, and five sparse glaze sherds. Since it was not easy to locate these sherds in the storage facilities, it was not possible for Briano to analyse them together, and for the Forum ware sherd she had to rely on the only description of it, given in the 1987 volume, which described it is an atypical fragment dated to to between the mid-10th or early 11th century. It was suggested already in the past

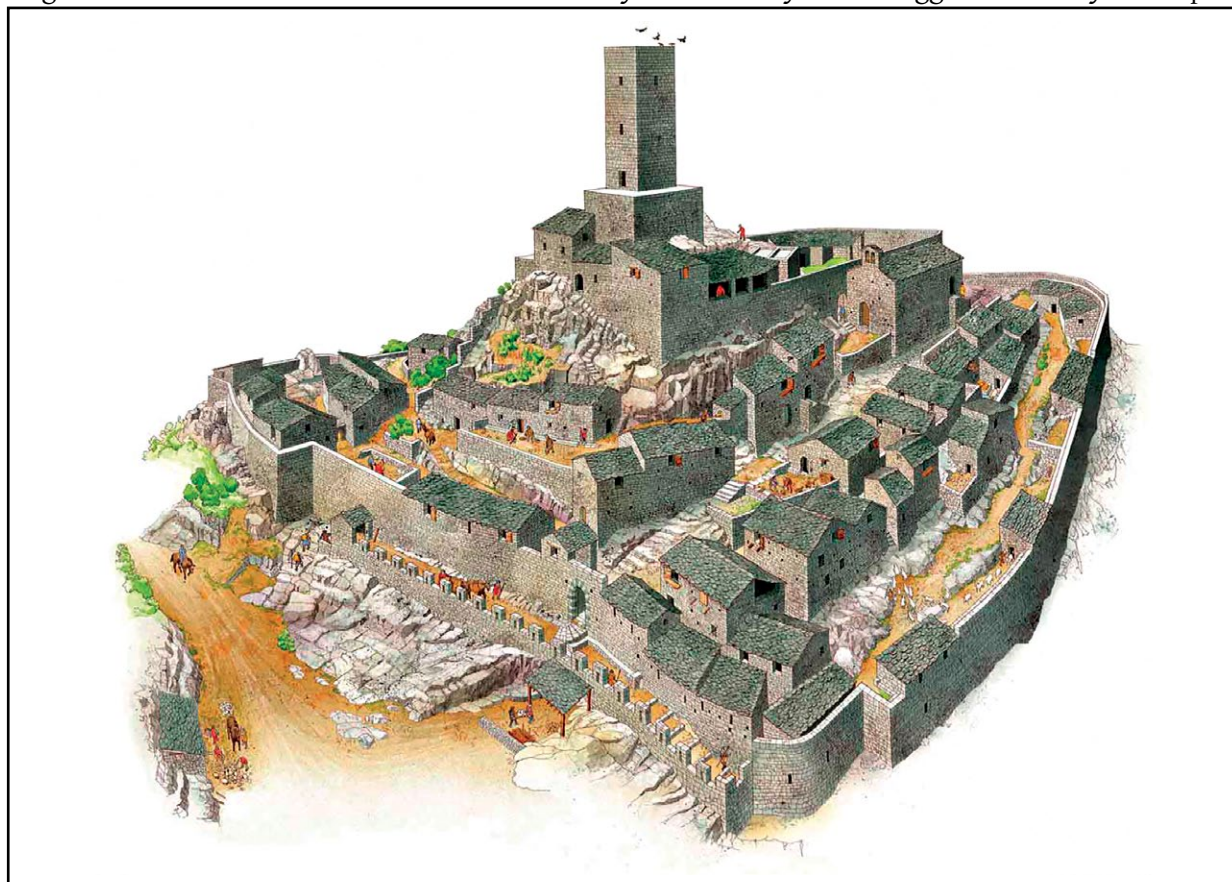


Figure 5.39 - Reconstruction of the castle in the 13th century (illustration by Paolo Donati).

that it derived from a form of local production. From an examination of the published account, the three sherds of sparse glaze ware, fragments of a jug, have direct parallels with a similar form found at Campiglia. On the other hand the spindle-whorl would have similarities with those excavated at the Torre di Donoratico site. Briano's work focuses on this latter site, given that a large quantity of this type of pottery was found here. The major new finding in her research, connected to an extensive series of archaeometric investigations backed by the nEU-Med project, is that it found, within the site or in the vicinity of it, a local production of sparse glaze pottery that was then distributed across surrounding areas, in a wholly unexpected period, namely the first half of the 9th century. The period of production of this pottery ware would thus be contemporaneous with the period when ateliers in Rome were producing Forum ware. A series of thermoluminescence dates confirm the chronology of this local sparse glaze ware production which, in Briano's study, is reaffirmed by the date obtained also by thermoluminescence, namely the first half of the 9th century, of the same ware found at other sites as well as Torre di Donoratico: Campiglia Marittima, Arezzo, Vetricella, and Rocca San Silvestro (Figure 5.40). For this last site, this is a major new element, since up until now the presence of this pottery ware had been thought to be contemporaneous with the foundation of the late 10th century castle.

The mid-9th century date, in the work by Briano, of a fragment of Forum ware probably produced in Rome (as attested to by OM-Sem petrography analysis), and of a fragment of sparse glaze ware of local production, and the similarity of the sparse glaze jug with those from Rocca di Campiglia, and of the spindle-whorl with the one from the Donoratico site (in both cases dated to the mid-9th century), as well as a handful of post-holes dug into the rock, prior to the full 10th century phases, are definitely not sufficient to claim with certainty the existence of a phase of life at the site already in the Carolingian



Figure 5.40 - Location of places of origin of sparse glaze pottery, dated using the thermoluminescence technique.



Figure 5.41 - Rocca San Silvestro. The masonry technique used to build the late 10th–early 11th century defensive wall.

period. However, the fact that they were found in several areas of the excavation located on the lower terraces and, in two of these areas, curiously connected to later metallurgical activities (Area 2000 and Area 9700, where the iron-working forge would later be located), are facts that give pause for thought. Especially if viewed in a general context, the reconstruction of which today is very different from the one that could be produced in the 1990s, when the most important writings on this site were produced.

I believe that today it would not be so anomalous to think that, like Rocchette Pannocchieschi and Cugnano, Rocca San Silvestro was also populated by only a small number of dwellings, and that it was connected to mining activities in the 9th century, all the more so given that the lead used in the sparse glaze ware from Donoratico itself partly came from the local Colline Metallifere, as proven by isotope analyses (Briano 2021, 151). I have already asserted several times, in previous chapters, the extent to which this was a period of general reorganization of this territory both along the coast and in inland parts. Moreover, we cannot exclude the possibility, a priori, that the area of Rocca San Silvestro belonged to those fiscal properties which only just over a century later were administered, probably by agreement with the central powers, not by a relatively nondescript political personage, but by the Counts of an important city such as Volterra. The same Counts who, in 967, together with the city's bishop, welcomed Otto I for the drafting of a placitum at nearby Monte Volterraio (Puglia 2001, 14-15). The same Counts who, as I have already underlined, probably backed the decision to create an important religious and devotional pole near the important ore-bearing seams of Montieri, despite the fact that, later on, it came into the hands of the bishop (see chapter IV.3).

If this hypothesis were correct, we should thus expect to find in the subsequent phase, i.e. the height of the Ottonian period, when it is believed the castle had officially been founded, pointers connecting us to the general picture that we have outlined up until now in the previous sections with reference to other sites.

If, on rereading old writings, we carefully compile all the evidence studied in the course of archaeological investigations and during subsequent reworkings, the first phase of fortification does not seem to display any lack of coherence. First and foremost, we have the construction of a double, powerful outer wall: a circuit encircling the hilltop area, and another that enclosed the lower areas of level ground. The construction technique is not very different from some parts of the defensive wall at Rocchette Pannocchieschi, in particular the lower set of walls, or else from the walls built in the same period built at Torre di Donoratico: stones of local massive limestone, often foraged in their natural state, unworked, and of various different sizes, laid in irregular courses (Figure 5.41). The bonding agent was a fairly firm-setting lime mortar. The excess mortar from the body of the wall was spread around the edges of the stones themselves, forming a sort of irregular facing layer (Bianchi 1995).

The upper and lower perimeter enclosed an area that was never later expanded, not even as part of the major 12th century planning scheme. The lower defensive wall delimited a space that was probably not inhabited as intensively as it was from the central Middle Ages onwards. In any event, published features from this period are found both in excavated parts of the borgo, ie. Areas 8000, 8400, 8700 and 3000 (post-holes, in one case associated with a stone-built wall), and on the hilltop area, Area 6000 (post-holes and possible dry-stone walls). In addition, a surviving section of masonry in Area 500 has led to the suggestion there may have been a building that existed prior to the small defensive structure that served as the seigneurial residence, built in the course of the 12th century (Figure 5.38 for the location of the areas).

The existence of a town with a fairly small population could be inferred from the number of pottery sherds datable to this period, often in secondary deposit, which have been studied by sample areas by Francesca Grassi: 44 fragments of coarseware and 57 fragments of fine ware (Grassi 2010, 128).

After discounting the sparse glaze pottery, because it is to be associated with the previous phase (after Briano's research), these mostly take the form of locally made pots (*olle*), *testi* and cooking pans, while she had already posited the possibility that the fabric of the putative jugs made of fine, undecorated pottery came from specialized ateliers. It is not easy, as Grassi notes (Grassi 2010, 129-130), to tell the phase dating to the first half of the 11th century from the phase dating to the following fifty years, when, for example, some types from the previous phase continue to be present among the pots. Also appearing now are types with more pronounced rims, already seen in the Rocca di Campiglia excavation, in later 10th century sequences. An analysis of the pottery fabrics seems to show, however, that they gradually became more ornate, perhaps a sign of new ateliers in the local area. Thus, given the frequent secondary deposit of the pottery, it is hard to work out whether some of the 5000 pottery fragments dated to the second half of the 11th century may be associated with the 101 fragments from the earlier phase.

However, Pisan-made fine ware is definitely to be ascribed to the second half of the 11th century, especially jugs, which from this time on marked an increasingly close connection with the city, which later became stronger in the course of the 12th century.

Despite these possible adjustments, the 8000 pottery fragments studied by Grassi for the phases relating to the 12th century and the first half of the 13th century, compared to the just over 5000 fragments from the previous century, are definitely proof of greater activity at the site, and of how the 12th century planning became reflected in the resultant material culture.

In this revision of the late 10th-11th century phase, archaeometallurgical evidence warrants a chapter to itself. Up until now the copper and lead contained in the mixed sulphides of the mineral seams around Rocca San Silvestro have been regarded as the main raw materials connected to the site and to its economic dealings with the outside world. On the other hand, iron reduction furnace and the nearby forge, both positioned in the south-eastern area just outside the outer walls (Figure 5.38), have always been interpreted as structures designed to meet the needs of the population of the 12th century castle itself (Francovich 1991, 58-63).

However, there are findings in the published stratigraphy that merit attention.

Thus, let us describe these material features in more detail (from Agrippa, Bernardi 1987, 91-96). In a zone previously used as a limestone quarry, located just outside the south-eastern section of the outer walls, Areas 9000 and 9250 were created. These were given different names because the later construction of two masonry-built rooms led to the subdivision of a space that had previously been a single space, made level with a continuous sub-floor layer of small stones to protect against damp. In Area 9000 was located the reduction furnace, consisting of a baked clay floor and a low wall that protected the hand-operated bellows from the heat. The housing for the supports for the bellows were found in slits in the rock (Figure 5.42). A canopy covered the area where the ore was kept prior to being placed in the furnace. Traces of compression on the rock have been interpreted as the point where the anvil was set up for hammering the bloom. Not far from the furnace (inside Area 9250) a large hole in the ground was also probably connected to unspecified metallurgical activity, containing fragments of hematite in its infill (Figure 5.43). The use of this production feature is testified to by charcoal-rich layers with slag, as well as by layers of pulverized ore (Figure 5.44).

The dismantling of this feature coincides with the destruction of the low wall that protected the bellows, and by a series of levelling layers that covered the entire area. The general abandonment is also marked by the presence of a male burial in an unlined grave. This was later obliterated by the construction, at some point in the 13th century, of two masonry-built rooms which it is suggested were designed to shelter animals. These rooms were abandoned in the course of the first half of the following century.

It is on the chronologies of the abandonments that we have to focus our attention. The 1987 publication states that pottery finds dated the abandonment of this iron-working complex to between the late 11th century and the first decades of the 12th century (Agrippa, Bernardi 1987, 96). This was mainly on the basis of the presence of two fragments of painted and glazed pottery bowls, which have parallels with pottery found in Salerno and Naples (the sherds were later published in Boldrini *et al.* 1997, 105). Accordingly, this date presupposes that the production facility operated if not prior to the late 11th century then at least prior to the early years of the following century. Indeed, in the 1987 publication it was posited that the iron production complex dated to the first phase of the site's layout, i.e. the 10th-11th century phase, despite the fact that in the conclusions to the article this phase is stated as being between the 11th and 12th centuries (Agrippa, Bernardi 1987, 102). In the 1991 volume the use of the iron-working facilities is dated to the 12th century. From this time on, the production facility has always been identified with the 12th century phase of the castle, and this is what we read today also on the visitor information panels at the castle, within the Archaeomining Park.

There is another important fact to consider: the arrival of hematite from the island of Elba. The archaeometric analyses of the slag found in phase with the period when the iron furnace was in use (Cucchiara *et al.* 1987) identified the presence of ore from Elba, although it is believed that this was used along with iron extracted from the limonite outcrop found in the seams around the site (which is also present in the slag analysed). For this medieval iron-works, the archaeometric analyses come to the same conclusions as the tests conducted on slag from Vetricella, namely the simultaneous use of 'good' iron and 'bad' iron, to obtain a more resistant metal that was suited to produce stronger blades and tips, for example, since the iron-bearing seam containing more impurities compensated the 'soft' iron from Elba. I have already referred to this process in discussing not only Vetricella, but also Monte Amiata.

Also unearthed near the iron-works were the remains of a forge, inside Area 9700 (Figures 5.38 and 5.45). In the 1991 volume this is described fairly accurately: belonging to an initial phase of life datable to the 11th century (as reported in Francovich 1991, caption to fig. 43, p. 60) is a lime platform enclosed by a dry-stone wall, in the middle of which stood the small round furnace connected to a small channel, and to a large stone, the remains of the probable manually-operated bellows mechanism. Later on, conceivably in the course of the 12th century, although the date is not specified in the volume, the forge

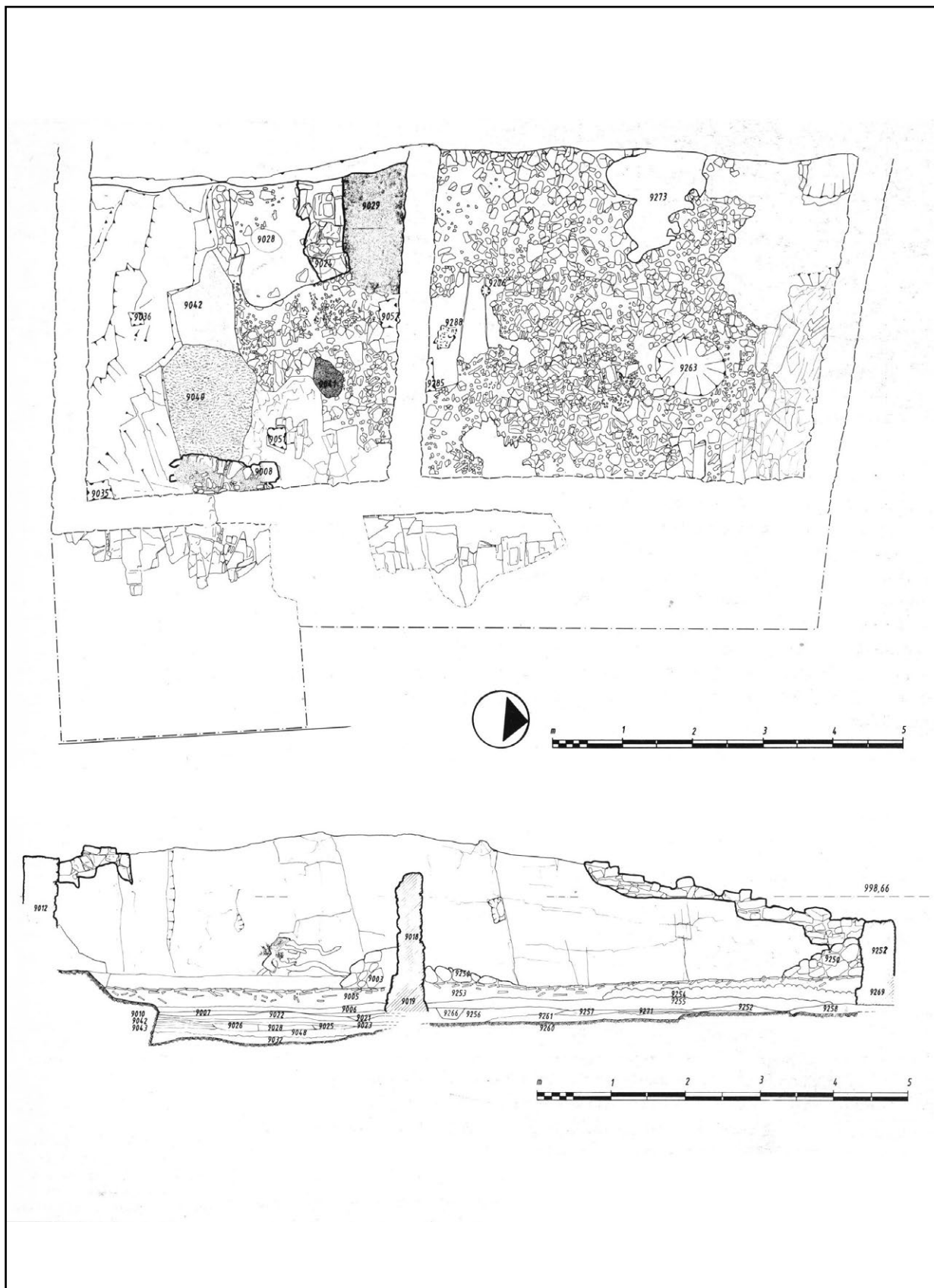


Figure 5.42 - Rocca San Silvestro, Areas 9000-9250: plan of the excavation areas, and section (below) (from Francovich 1991, 59)



Figure 5.43 - Rocca San Silvestro. The remains of the reduction furnace (from Francovich 1991, 60).

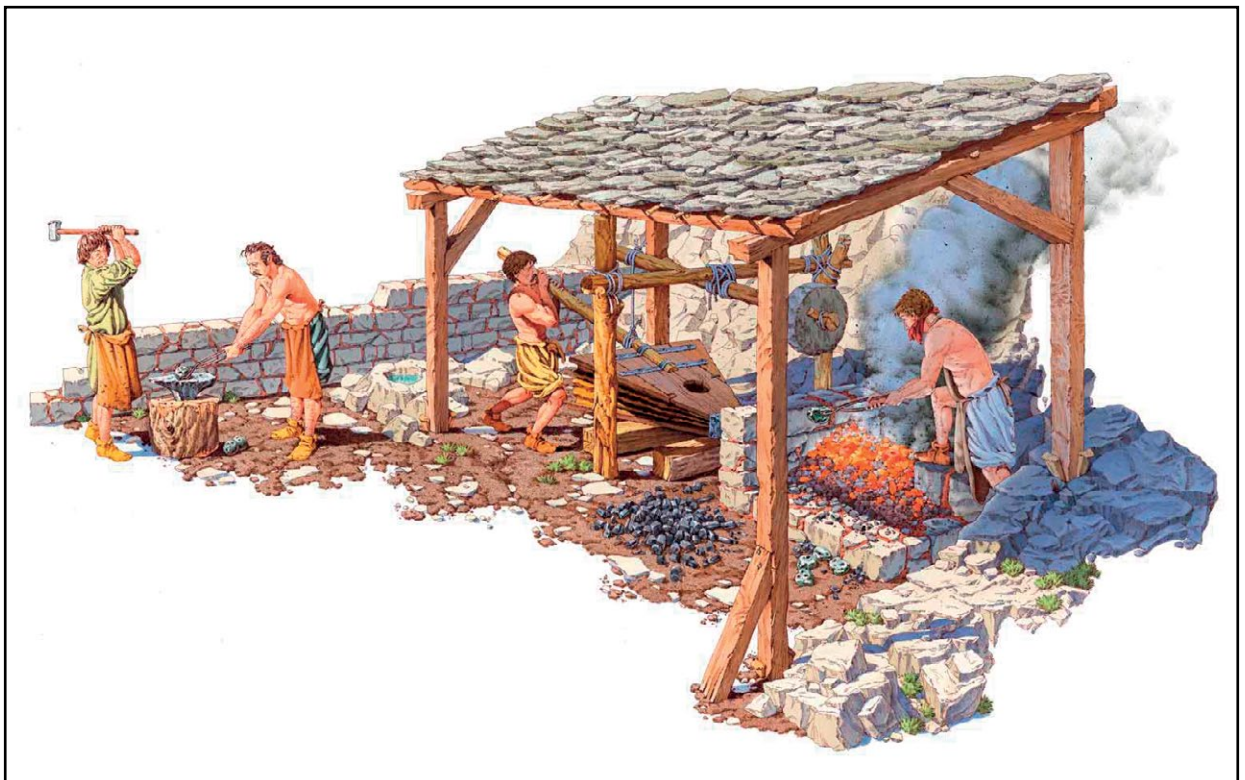


Figure 5.44 - Rocca San Silvestro. Reconstruction of the iron reduction facility excavated in Areas 9000 and 9250 (illustration by Studio Inklank Firenze, Parchi Val di Cornia archive).

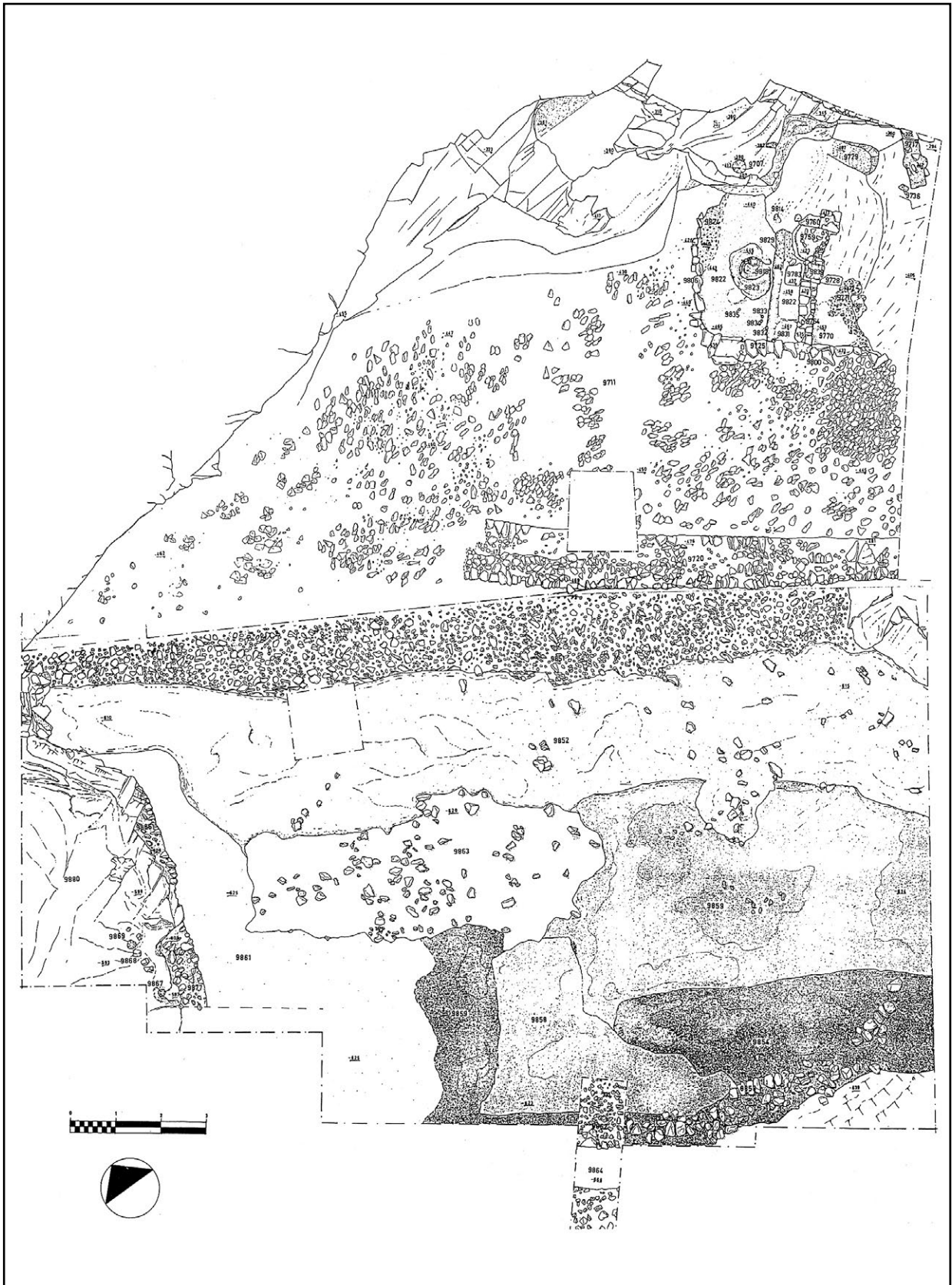


Figure 5.45 - Rocca San Silvestro. Plan of Area 9700, showing the forge (top right) with the stratigraphy connected to its phase of use (from Francovich 1991, 60).

was restructured with a new level of red clay for the furnace, with a mouth for the bellows, plus a series of small round bases that could be the remains of possible reduction furnaces, rather than the remains of a forge, also given the presence of blocks of hematite from Elba. This manifold use could be determined by dismantling the nearby iron-works which, as a result, could no longer provide semi-finished goods. Unlike the iron-works, it is thought that the forge was abandoned during the 13th century (Francovich 1991, 60-62).

The date of the use of the iron-works becomes an important piece of information for describing or defining the earliest fortified site. On revising the published documentation, and above all the section of Areas 9000 and 9250, it is clear that the two fragments of glazed bowls, respectively present in US 9257 and US 9258, undoubtedly belong to the stratigraphies which, over time, became accumulated on top of the layers from the period when the iron production features were in use (Figure 5.42). So, if we wanted to date the iron-works to the 12th century, we have to imagine that it was used shortly before abandonment. As such, it was probably used only in connection with the construction phase for the new castle, assuming that its reconstruction took place in the first few decades of the 12th century.

But what scenario would take shape if we were to shift the date of the iron-works to a time before the date of the pottery relating to its abandonment, imagining it as operating in the course of the 11th century, and thus in phase with the first castle?

This would definitely not alter the hypothesis that the reduction facility served to produce iron implements intended for activities connected with the site itself. Furthermore, this conclusion could be reinforced if we were to think of the forge in Area 9700 as also being connected to this phase, in its earliest incarnation (where, moreover, in what is a unique instance at the site, I recall that the two fragments of Forum ware and sparse glaze ware were found).

An iron reduction furnace (and perhaps a forge) in this time period would constitute the logical continuation of a possible exploitation of the local mineral seams which, in the present volume, we have supposed may already have been in existence at least as of the 9th century, thanks above all to the new date for the sparse glaze ware.

The production of iron utensils, probably also intended for mining, could be proof of the existence of a site, just before the dawn of the 11th century, that was already well-structured in terms of its community and vocation.

The arrival of hematite from Elba at this site, in an earlier time period, and no longer at the height of the 12th century, would by no means be an anomaly within a well-devised and well-organized system linked to iron production, as material evidence shows us for Vetricella and all the surrounding area in the low-lying plain (as well as the system that may or may not have existed in the case of Monte Amiata, too). This presence would be proof that Rocca San Silvestro was located within a macro-circuit connected to the royal and margravian powers, and to the most important political posts, the posts held by the Gherardeschi family, to whom the castle was connected ever since the start of the 11th century.

We will return to these considerations in the final section, after addressing the last mining district which we have continually referred to, namely the island of Elba.

5.5 The island of Elba

From the bay of Follonica-Piombino and from the promontory of Populonia, on clear days the island of Elba, with its jagged profile dominated by Monte Capanne, seems so close to the mainland that you feel you could almost reach out and touch it (Figure 5.46). Yet, despite the fact only a channel of sea separates it from Piombino (Figure 5.47), and from a territory rich in archeological and archive findings, there are still gaps in our knowledge of its history, especially as regards the period we are dealing with in this volume. Gaps that are so large that it is quite possible to discuss the whole island context in a single sub-section.

This seems anomalous considering, first and foremost, the precious resources found in its subsoil.

In the coastal band between Monte Calendozio and the Calamita promontory, on the eastern side of the island, the numerous iron oxide mineral formations are found (Figure 5.48). These are mainly magnetite and hematite, along with other iron sulphides such as pyrite. Meanwhile the intrusive and volcanic rocks within granite formations present in the central and western part of the island can yield wonderful crystals of beryl, quartz or garnet.

The quantity and quality of the mineralizations definitely made iron the main mineral resource on Elba. The far less numerous copper mineralizations, although present in several parts of the island, were indeed mainly exploited in pre-Roman times. As far as we know today, precious crystals, especially in the areas of S. Ilario in Campo, S. Piero, Seccheto and Cavoli, also began to be extracted continuously between the 18th and 20th centuries (Pagliantini 2019, 18-21).

By contrast, iron mineralizations saw continuous exploitation throughout a long period stretching from the 6th century BC (Corretti, Firmati 2011, 230) to the mid-1st century BC, when the fact that it tailed off has been linked to an increasing disinclination on the part of aristocratic families in this kind of investment, compared to the major mining operations in Spain or central Europe (Cambi 2009). For the Late Antique period, on the other hand, it has been supposed that activity was resumed, tentatively linked to the needs of Lucca, as I shall stress later on.

Then our sources fall silent. Throughout the Early Middle Ages and part of the central centuries there is no trace, either in the few excavations carried out over the years, or in archive documents. A single great shadow that is only illuminated again as of 1066, when the papal privilege issued by Alexander II on behalf of the bishop of Populonia-Massa Marittima refers to the tithes applying to the diocesan territory, with specific reference to mining, which took place within the confines of the island of Elba (Corretti 1991, 12; Farinelli, Francovich 1994). In the subsequent decades signs of penetration by Pisa began to be seen along the coast facing the island, linked mainly to the Opera della Cattedrale and to its archbishopric which in 1138, by will of the Pope, led to the bishopric of Populonia-Massa Marittima and its diocese (this including Elba) being included within the metropolitan province of Pisa (Ceccarelli

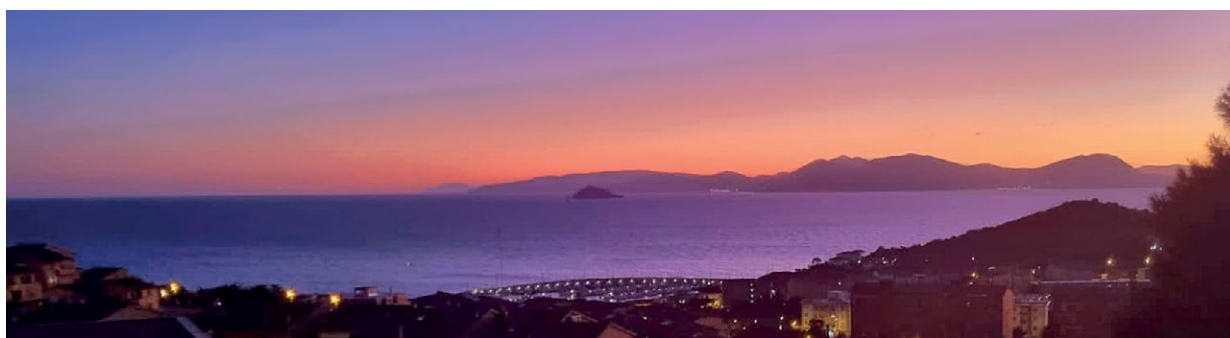


Figure 5.46 - Island of Elba seen from Piombino. In the foreground are the hills of the mining area of Rio Marina and Rio Elba (photo by L. Barsotti).



Figure 5.47 - Island of Elba and its location with regard to the coast.

Lemut 2004, 59-61). This is no surprise, because the bishop of Pisa's interests in the island, and in its mines, were clear as early as 1095, when bishop Daiberto gave his protection to the smiths from Pisa who went to the Tuscan coast and islands on a seasonal basis, and who every year devoutly offered 20 soldi to the Opera della Cattedrale. The solemnity with which the privilege was issued by the bishop is indicative of the importance of this category of workers, although it has been stressed that in this period the group of smiths mentioned in the document may have included others apart from artisans specializing in iron-working (Cortese 2008, 333).

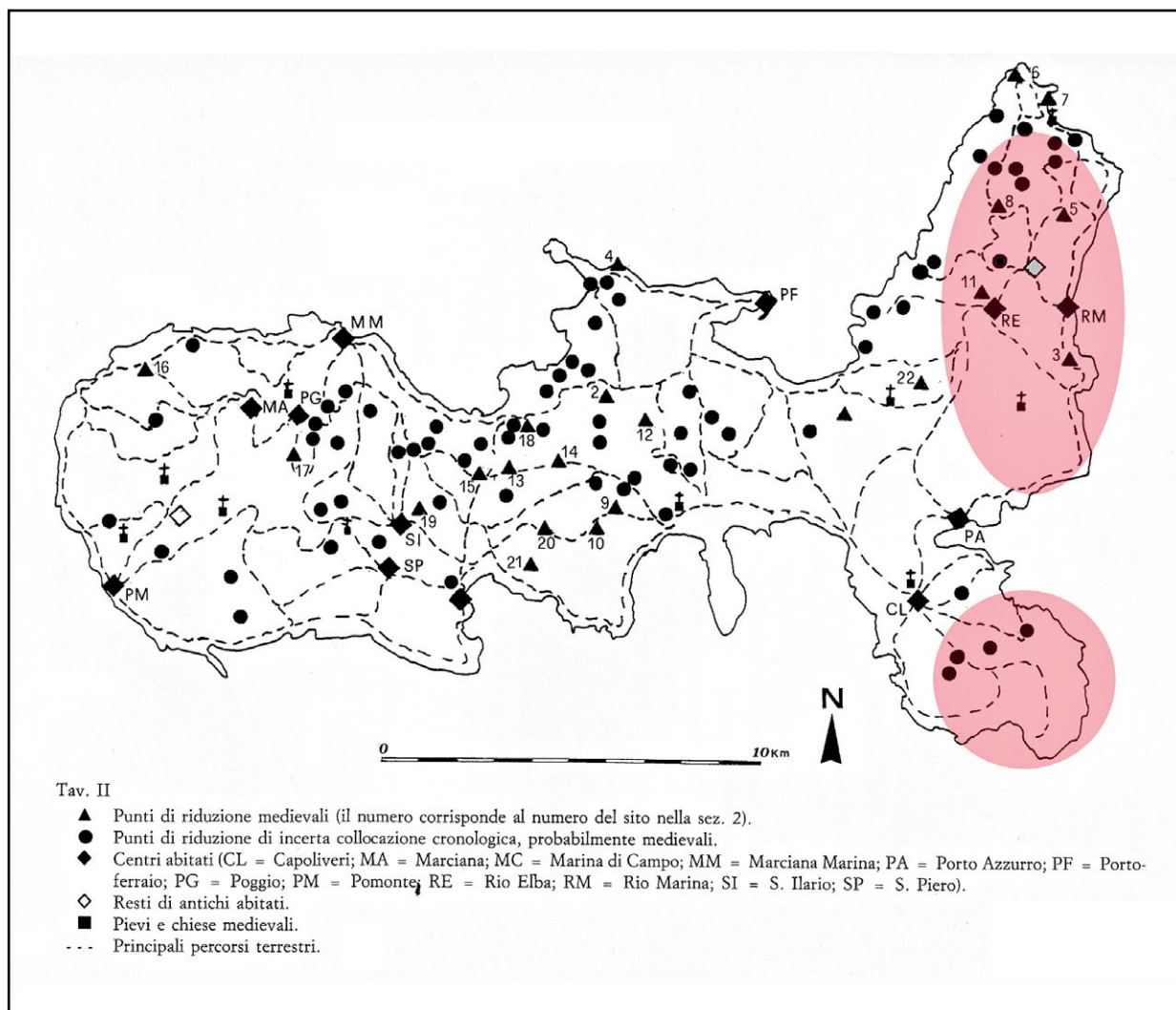


Figure 5.48 - Evidence of medieval archaeometallurgy on the island. The red circles indicate areas rich in iron oxide mineralizations (based on Corretti 1991, 25, pl. II).

Whatever the case, this written evidence well underlines the fact that, from the end of the 11th century, exploitation of iron from Elba was under the control of Pisa. For that matter, Pisa also had control in the political sphere, given that, when rural communes became established on Elba at an early date, documents from 1162 and 1164 mention that it was the Commune of Pisa that appointed the local consuls (Ceccarelli Lemut 2004, 71). Thus the context was one of overall control, that was definitively endorsed in 1191, by Emperor Henry VI, who gave Pisa full dominion over Elba and its mines (Cortese 2008, 336).

A contribution to a greater understanding of this fully medieval phase, in relation to iron exploitation, was made by Alessandro Corretti's 1991 work (Corretti 1991) which made it possible to identify sites of metallurgical activity on the island thanks to a survey of all known slag heaps in primary deposit, or lost (Figure 5.48). Over the following years, thanks also to the activity of the Aithale multidisciplinary project (for a description of the project see Pagliantini 2018, 52-54), a series of other features were added, in every case datable mainly to a period spanning the 12th and the 14th centuries (Corretti, Firmati 2011; Corretti *et al.* 2012). In the 1990s surveys and excavations were conducted in collaboration between Riccardo Francovich, with the University of Siena, and the British School at Rome. The investigations covered the Monte Serra district, situated north of the town of Rio nell'Elba, in the heart of the mining

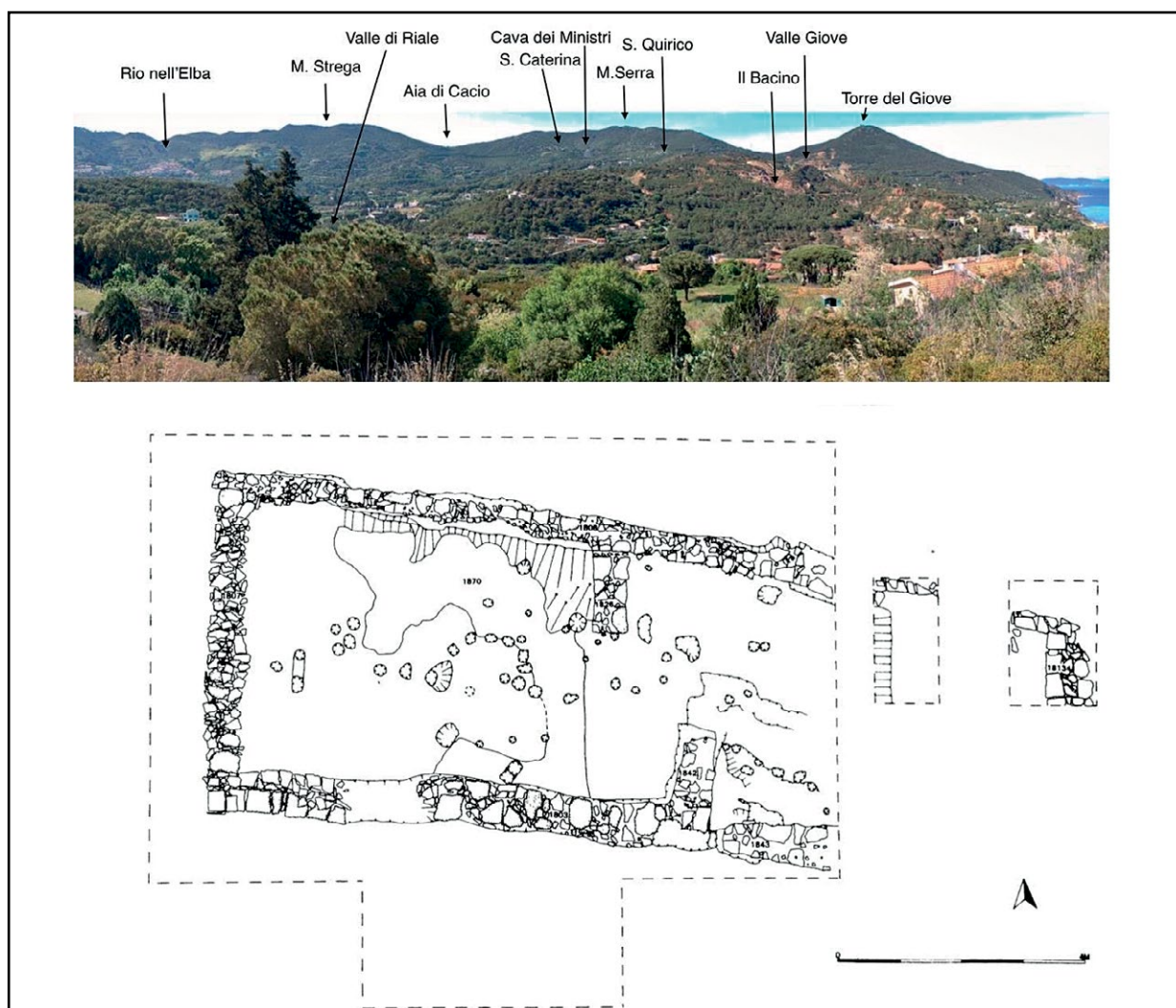


Figure 5.49 - Above: panoramic view of part of the island's eastern mining district, showing Monte Serra and Monte Strega (from Monni 2020-21). Below: plan of metallurgical atelier on Monte Serra (from Martin 1994).

district of iron from Elba, the site of the medieval village of Grassera, the exact location of which is still unknown today. Field research along the slopes of Monte Serra located seasonal iron processing sites, and also traces of a full-scale metallurgical works (Figure 5.49), featuring masonry-built buildings. Here the whole production cycle took place, from ore-crushing to reduction and forging, in a period between the 13th and 14th centuries (Martin 1994). A very recent, unpublished review of these investigations (part of which took the form of a degree thesis, Monni 2020-21), enhanced by new multidisciplinary surveys and analyses, directed by Luisa Dallai, has made it possible to arrange previous findings in a unified system, and to specify more clearly the characteristics of the production cycles that took place in this area (Dallai, Volpi 2022).

The intense activity that took place here during the period of domination by Pisa is also testified by the features found on the slopes of the nearby Monte Strega, investigated in 2007 as part of the Aithale project, corresponding to the remains of iron reduction furnaces and slag heaps. These lead one to posit both iron reduction and forging activities in this area, too (Corretti *et al.* 2012).

However, taken together, the findings deriving from previous and new surveys show that, at least in the Late Middle Ages, these production cycles were not concentrated only in the heart of the ore seams, ie. on the eastern side of the island: they were also situated in zones far from mineral deposits. In



Figure 5.50 - Island of Elba. The church of S. Giovanni in Campo.



Figure 5.51 - Island of Elba. The church of S. Stefano.

particular, as can be seen from their map locations, they are also concentrated in the central area of the island, often on low hills, generally near water-courses and along main thoroughfares or back roads (Figure 5.48). The amounts of slag and their range of dispersal reveal the presence of temporary, non-permanent production sites, where the ore was taken by land, definitely near areas rich in fuel (Corretti 1991, 236). The distribution of these production sites, perhaps connected to production also partly for the purposes of local needs, indirectly indicates the areas of greatest population density on the island, and it is no coincidence that at least three of the four parish churches, representing the ecclesiastical districts into which the island was divided in the central centuries of the Middle Ages, are situated in this central-eastern area: S. Giovanni in Campo (Figure 5.50), on the hills towards Monte Capanne; S. Lorenzo a Marciana, below Monte Capanne itself; and S. Michele di Capoliveri. There were also several other suffragan buildings coming under these parish churches: 11 churches, some of which can still be clearly seen (Figure 5.51), representing extraordinary evidence of 12th and 13th century religious building (for an overview, Belcari 2009, especially pp. 21-23).

However, all these parish churches, other churches, production sites, and the few civilian buildings (because these were largely erased by later reconstructions of old town centres) seem to appear suddenly, because nothing helps us to reconstruct what happened earlier. Nevertheless, it is hard to imagine that such an organization of work, and of worshippers, in a territory so rich in resources, came about all at once. For that matter the aforementioned 1066 document, handing tithe rights to Elba's mines to the bishop of Massa-Populonia, is proof that something must have existed beforehand.

Yet at the moment every material and documentary trace stops with Late Antiquity, if not before.



Figure 5.52 - Island of Elba. Location of the villas referred to in the text, and of the cave of S. Cerbone (based on Pagliantini 2019, 219).

On the basis of the latest syntheses, as early as the second half of the 3rd century AD the population contracted, as shown by a downturn also in material evidence in the island's main urban centre, Fabricia, modern-day Portoferraio, although sporadic frequentation is known of until the late 4th to early 5th centuries AD (Pagliantini 2019, 219 with bibliography). Abandonments at the end of the 3rd century AD are also seen at the Roman villas of La Linguella, Le Grotte and Capo Castello (Figure 5.52) where, however, remains of structures made of perishable or mixed materials, sometimes associated with burials, attest to later frequentation down to the later 6th century. In any event, finds of imported African wares, and Spanish and Provençal pottery, both from these contexts and from the port tip of Porto Azzurro, bear witness to a certain vitality of harbours on Elba, and the fact they were connected to maritime routes continuously throughout much of the 6th century.

We do not know whether this vitality was linked to the possible resumption of mining which I have just referred to, in connection with the metallurgical activities of the Imperial workshops in Lucca for the production of weapons (Citter 1998). Unfortunately, all the slag deposits, predating the Late Middle Ages, recorded on the island in the past, as well as in the more recent excavated evidence, are dated to a period that does not go beyond the 1st century BC.

With a view to this, there may be significant interest in the fact that a 4th century AD date was obtained from the C14 analysis of a piece of charcoal encased within a piece of hematite reduction slag from Elba, found in secondary deposit in the stratigraphy of the site of Vetricella. Despite the fact this is a limited sample, this would definitely attest to the arrival of ore from the island, and indirectly to mining activity, although on a scale that is not quantifiable (Volpi *et al.* forthcoming).

For that matter, Sauro Gelichi recently also linked the well-known episode of the flight of the bishop of Populonia, Cerbone (who later became the patron saint of the diocese), to the subject of the resumption of mining on Elba in Late Antiquity. Indeed, at the arrival of the first waves of Lombards, Cerbone, who lived around the third quarter of the 6th century, according to hagiographic tradition fled Populonia to take shelter on Elba. He stayed there until his death, when his body was taken back to Populonia for burial (Susi 2005). While the decision, as suggested by Gelichi, to establish a bishopric at Populonia, which was certainly already active at the start of the 6th century, may have been closely connected to the strategic position of the promontory and of its harbours with regard to Elba, as a result Cerbone's own legendary escape from Populonia to Elba could be connected not so much to fear of the barbarians, but rather to a need for direct control of the subsoil resources, with a view to the continuation of mining and metallurgical activities (Gelichi 2016, p. 361). Once he arrived on the island, Cerbone took refuge in a small cave on the slopes of Monte Capanne, where today one can still visit the so-called Grotta del Santo, which is actually just a small shelter. This location seems to be inspired by the hermit tradition, although, in that period, this was more a feature of the other islands in the Tuscan archipelago such as Capraia, Gorgona, Pianosa and Montecristo. Indeed, the absence of traces, especially in literature, relating to the presence of hermits or monks on Elba would lead one to suppose, as stated by Sodi, drawing on a study by Scalfati (Sodi 2005, 106), that, owing to its strategic and economic importance, the island barely felt the influence of the phenomenon of island-based monasticism, requiring more extreme forms of solitude. If this were the case, perhaps we could really imagine, on the back of Gelichi's suggestion, a sort of 'construction' of a hagiographic tradition aimed at not revealing the real reasons for a presumed flight on the part of bishop Cerbone.



Figure 5.53 - The mainland sites where, in early medieval archaeological sequences, traces of hematite from Elba have been found.

But what happened afterwards?

We do not have material and documentary evidence until 1066, but what we can do is to indirectly reconstruct a picture which, although not extensive, may be a valid testimony to the activities connected with early medieval mining on Elba.

First, we shall set out from an important piece of archaeometric data, which I have not dwelt on in the previous chapters for the very reason that I wanted to discuss it more exhaustively here, in this section. An expert eye can immediately recognize hematite ore empirically, despite the fact that no precise compositional characteristics have been identified up until now. With the Aithale project, a geochemical study of iron-bearing ore was undertaken, and this made it possible to identify a sort of 'digital footprint' of hematite mineralizations from Elba. Indeed, their unique nature, compared to other mining contexts in Europe, consists in the fact that inside they have a high, specific concentration of tin and tungsten (Benvenuti *et al.* 2013). Consequently, this fact makes it possible, by means of these geochemical trace elements, to determine archaeometrically the definite provenance of ore from deposits on Elba.

Some of the same academics from Florence University who made this discovery worked on the nEU-Med project, in the archaeometallurgy task. This meant that it was possible to verify, first and foremost, the certain provenance of the hematite, in the form of both ore and reduction slag, and forge slag from the site of Vetricella. Subsequently, similar analyses were carried out on reduction and forge waste found in other contexts, in some of which it had already been supposed, empirically, that hematite from Elba was present, although without specific laboratory analyses. Setting out from these findings, the traces of hematite in the form of minerals, or as a residue in the slag, form a continuous, thin thread which, by tracing movements of raw materials or semi-finished goods on the mainland, indirectly reflects what we are still unable to see on the island (Figure 5.53).

Let us start out from Vetricella, going back over the main points contained in the first chapter.

Vetricella and all the surrounding plain serves as a major hub where iron ore arrived, was reduced, and was then worked to make a whole range of objects (utensils, knives, spurs, horse-trappings, nails for shoeing horses etc etc). These were then stored in the central part of the site, surrounded by the system of ditches. We can posit that this system may have been active ever since the second half of the 9th century (when the concentric ditches were created), but we have greater proof of it operating on a larger scale as of the final decades of the 10th century until the early decades of the following century. The traces of unmistakable metallurgical activity (possible forges, red patches in the earth) bear witness to them being present at the site already in its probable form in the 8th century, or the first half of the 9th century. In any event, forge waste and reduction slag were only found in association with the 9th and 10th-11th century phases. Geochemical analyses show that hematite from Elba was used as a raw material, in several cases mixed with iron ore from the Colline Metallifere (Volpi *et al.* forthcoming). Moreover, it was already known that hematite had been found at several sites found in the plain around Vetricella itself, from Podere Aione to other archaeological sites recorded recently by Lorenzo Marasco (see chapter I).

Vetricella and its surrounding area is not the only example, for the period between the late 10th and early 11th centuries, of the presence of hematite. We find it at the Torre di Donoratico site (where the medieval castle would later stand). During excavation of the sequences connected to the building site itself (Bianchi *et al.* 2011), associated with the construction of a stone-built outer wall with a tower and a church (with large-scale use of mortar mixers), pieces of slag with traces of hematite were found in a forge which served the needs of the builders (Panichi 2009-2010).

In chapter III it was emphasized that in the urban excavations in Grosseto a pile of hematite from Elba was found, associated with an area that was probably set aside for ore reduction, in a period prior to the second half of the 11th century (Magazzini *et al.* 2007, 364).

In this chapter, in the section dedicated to Rocca San Silvestro, we suggested that the furnace for reducing hematite from Elba, mixed with local iron ore, may also be dated to the construction period of the first stone-built castle, namely between the late 10th and the 11th century.

However, not only was the coast caught up in the circulation of this raw material; what is more interesting is that the urban contexts of Pisa and Lucca were also involved in its circulation.

In the Piazza dei Cavalieri excavation in Pisa, recently reviewed by Alessandro Corretti also in light of the new urban archaeological findings (Corretti 2018), an extensive series of indicators of metallurgical processes, also involving hematite from Elba (scorch marks, tuyères, crucibles and slag) attest to a continuous activity definitely as of the late 9th century and down to the Late Middle Ages, with a peak of evidence in the first half of the 11th century.

In Lucca excavation of the sequences beneath a tower annexed to the Loggia dei Mercanti revealed a series of structures interpreted as possible furnaces operating between the 10th and 11th centuries (Abela, Bianchini 2002, 24). With the nEU-Med project, analysis of samples of slag from this context not only confirmed the presence of reduction activities, it also identified forge slag. Furthermore, in the case of two of these samples the presence of hematite from Elba was identified⁹.

Thus, from this brief but significant review it becomes clear that hematite was extracted from mines on Elba at least as of the second half of the 9th century.

It appears that only limited traces bear witness to mining activity on the island further back in time. Indeed, the excavation of the borgo of Vicus Wallari/San Genesio nel Valdarno unearthed reduction furnaces and forges datable to the 7th century. In the slag associated with these production features, hematite from Elba was still found to be present, although in the relevant publication no specific reference is made to archaeometric analyses (Cantini 2015, 506).

Thus, the end of the 10th and the first half of the 11th centuries seems to be the period that saw the greatest diffusion of hematite, or at least the greatest amount of material evidence, despite the fact that there are hints of its circulation earlier on, as of the later 9th century.

As I have already noted, unfortunately at present there are no corresponding physical traces on the island that can be associated with these periods. This is definitely connected on the one hand to an almost totally absent archaeological research strategy aimed at shedding light on these historical phases and, on the other hand, to the well-known ephemeral nature of metallurgical evidence, and evidence of settlements for these precise centuries. This is also in view of the continuity of habitation of the smaller historic centres, where, in many cases, the buildings that stand today are probably built on top of possible, earlier structures and features.

However, I want to end this section with a hypothesis concerning one of the churches on Elba.

The church of S. Pietro (otherwise known as S. Pietro e Paolo; San Nicola) in S. Piero Campo (Figure 5.54), later partially incorporated in the 15th century fortifications, once stood outside the town situated on the south-west side of the slopes of Monte Capanne. The church is first mentioned in the list of tithes paid to the diocese of Massa Marittima in 1298 and in 1302-03 (Belcari 2009, 136). In actual fact the characteristics of the construction techniques of part of the left-hand aisle that is visible today (Figure 5.54) are related to a definite construction phase datable to the 12th century, dating the building to the broader construction period associated with the Pisan presence on the island (Belcari 2008, 136-139). The building has long prompted a certain interest among scholars owing to its unusual layout and design, which originally featured two apses (later demolished and replaced by a flat wall), with the interior divided into two aisles, and the original facade demolished and rebuilt slightly inset, to

⁹ The analyses, as yet unpublished, were conducted by Laura Chiarantini (Department of Earth Sciences, Florence University) with the collaboration of Vanessa Volpi (Department of Biotechnology, Chemistry and Pharmacy, Siena University).

make space for an atrium at the front (Figure 5.55). Part of the wall made of well-squared, dressed stone blocks, which characterizes part of the left-hand aisle, and the lower section of the entrance to the atrium (ie. the former facade), is usually ascribed to the original phase. By contrast, the end part of the same left-hand aisle in the direction of the apse has often been ascribed to a reconstruction that took place during the transformations at a later time (Moretti, Stopani 1972, 41-43). In actual fact this section of walling does not seem to feature reused material. Instead it has a homogeneity of construction all of its own, with a technique that features the use of small and medium-sized, roughly shaped stones laid in courses kept fairly horizontal and parallel to each other. Stratigraphically, it is clear that the upper section has been rebuilt, as has the lower section (Figure 5.56). However, the most interesting element is found in the vicinity of the half-pilaster between the rear part and the part that can definitely be dated to the full 12th century. Where the wall meets the half-pilaster we note that the later portion of the wall, bonded to the same half-pilaster, is in contact with (ie. rests on) the underlying facing of the wall (Figure 5.57). This sequence thus seems to reveal that the rear wall is earlier. Moreover, as I shall discuss shortly, the technique used in the rear wall is not very different from the techniques used in buildings predating the 12th century. Inside, where they are visible, the construction techniques used in the church point us in the direction of the 12th century phase in the arches of the two apses, and in the pilasters supporting the sequence of arches that divide up the aisle. By contrast, in the two jambs on which the left-hand arch rests we find roughly-hewn stones, worked in a way that is similar to the outer wall facing of the part that is presumed to be older. Figure 5.58 clearly shows that these roughly shaped stones are considerably different from the workmanship of the dressed stones present in the right-hand apse, which are perfectly squared.



Figure 5.54 - Island of Elba. The church of S. Pietro in S. Piero in Campo. Facade and side of church.

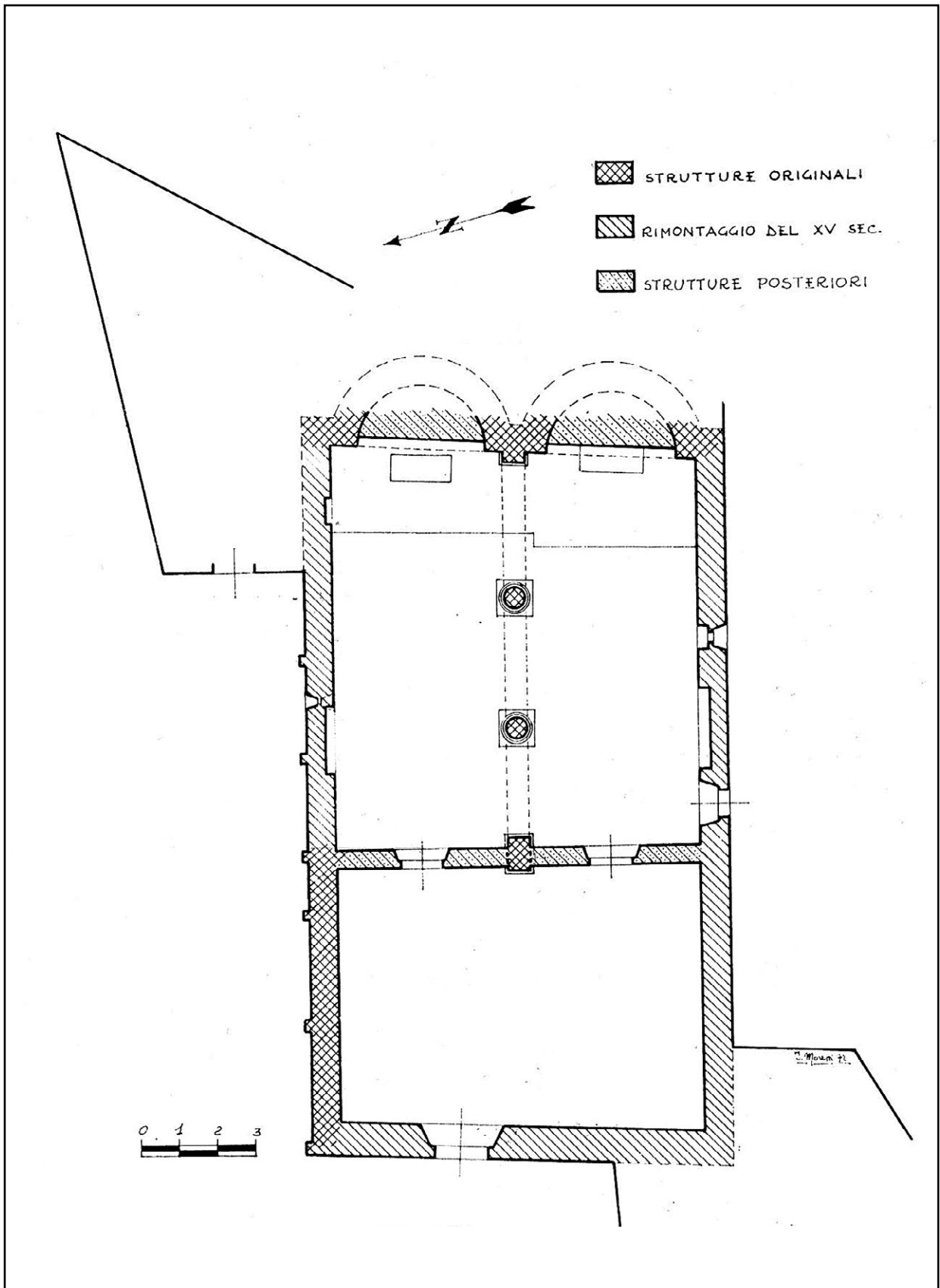


Figure 5.55 - Island of Elba. Plan of church of S. Pietro in S. Piero in Campo (from Moretti, Stopani 1972, 43)

On the basis of these findings we could put forward a hypothesis, namely that the stratigraphically earlier part of the aisle corresponds to the perimeter wall of an earlier church with a single nave, and a single apse, the facade of which would have stood where the facade stands today, after having been restored and rebuilt in the modern era (Figure 5.59). In the course of the 12th century the facade of this earlier, smaller church was apparently expanded, and the church was doubled in size with a second apse. It appears that the system of internal dividing columns were installed on top of the levelled remains of the perimeter wall of the earlier church.

There is no lack of comparative data for such a hypothesis, but it springs from a consideration of the considerable analogies in masonry techniques and construction sequence at another church, which I know very well because it was unearthed during an excavation directed by myself, namely the church present at the site situated at the Torre di Donoratico locality (Notardonato 2004, 33-36).

Accordingly, let us make use of those findings to better visualize the suggested phases I have proposed for the building on Elba.

At the site of Donoratico, on the occasion of the major construction operation, now better dated to between the second half of the 10th and the early 11th century, already discussed with reference to the presence of hematite from Elba, a church was built, as well as the outer defensive walls and a tower. This original church consisted of just a nave, with no side aisles, and an apse. It was 13.60m long and 6.55m wide, while the apse was 3.25m wide. It was built using a masonry technique that was more carefully executed in the apse section, with the use of roughly shaped stones arranged in fairly horizontal courses. A half-pilaster divided the internal facing of the left-hand perimeter wall. According to the excavation periodization, between the 11th and the 12th centuries the church was increased in size, with a smaller aisle, similar to the size of the second apse, although maintaining the same original length. Only during the later 12th century was the facade expanded by around 3m (Figure 5.59).

There are remarkable analogies with the earliest, hypothetical church of S. Piero in Campo. First, the masonry techniques, which are very similar, both in the case of the wall facing and in the case of the half-pilasters (Figure 5.60). It is worth noting, moreover, that this technique also has parallels in other religious buildings dated to the same period discussed in the previous chapters, in particular with the apse of the earlier church of S. Antimo, and with the Montieri church.

Furthermore, the dimensions of the church on Elba are very similar indeed to the Donoratico church: 13.50m long by 6m wide, while the half-dome of the apse has a diameter of 3.20m (the measurements are taken from the floor-plan published in Moretti, Stopani 1972). Later events in its construction history also seem to mirror those at the other church, with the addition of a second apse and an extension of the facade, albeit on a greater scale compared to the Donoratico church. Thanks to recent, careful surveys (Belcari 2008), I can state, with a fair degree of certainty, that there are no such close comparisons for any other example of religious building.

Unfortunately, however, without archaeometric dating of the bonding agents in the church on Elba we cannot advance this hypothesis with more certainty. In any event, in view of the stratigraphic relationships, and a close parallel with a context that, after all, refers to a site of such great importance as Donoratico, already put forward as one of those sites caught up in the major transformations that took place in the Ottonian period, I believe it is significant.

If this hypothesis were to prove correct, this would constitute valuable testimony of a construction activity linked to technical circles active between the 10th to 11th centuries in our case study area. S. Piero in Campo is one of the small towns situated in the central part of the island, a link point between the northern and southern sides. A pre-existing community there, in this time period, would be plausible in an island context from which the bishop of Massa-Populonia was already receiving tithes on mining activity as far back as 1066.



Figure 5.56 - Island of Elba, church of S. Pietro. Left side of the church, showing the outline of the macro-phases. Modern and contemporary interventions are shown in red; the 12th century reconstruction is shown in light blue.



Figure 5.57 - Island of Elba, church of S. Pietro. Detail of upper portion of left side, at the point where the masonry bonded to the 12th century half-pilaster rests on the masonry below.



Figure 5.58 - Island of Elba, church of S. Pietro. Interior of church, with recessed apses blocked up by a later wall.

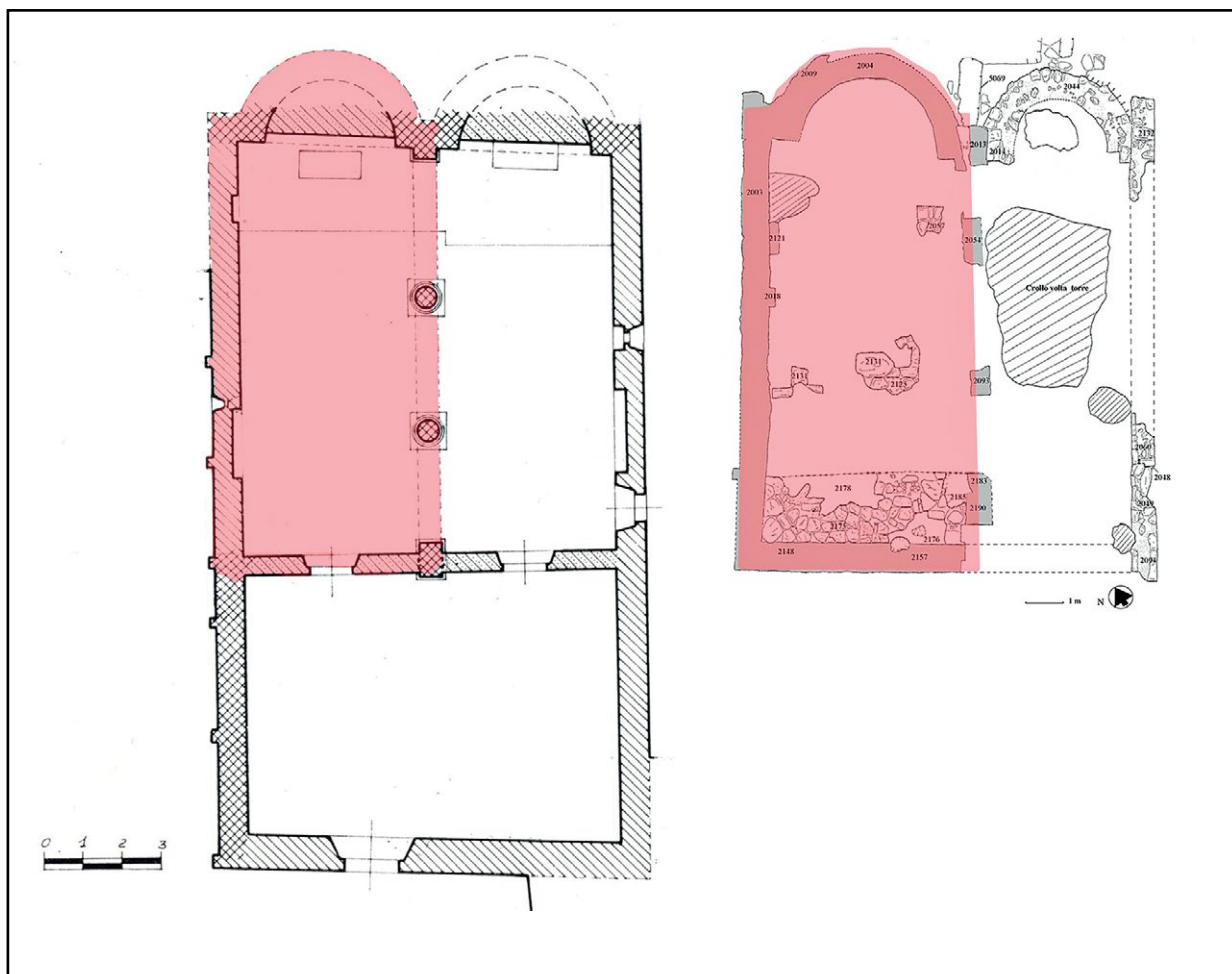


Figure 5.59 - Left: plan of church of S. Piero in Campo showing possible perimeter of the earlier original church (in red) (based on Moretti, Stopani 1972, 43). Right (to same scale): plan of the church with two apses at the site at Torre di Donoratico, showing the older building (in red) consisting of a single nave (based on Notardonato 2004, 35).

5.6 To sum up

As of the mid-9th century, at the latest, we can posit that there was a general resumption of mining and metallurgical activities in the broad area of the Colline Metallifere. This view is supported by the fact there were small nuclei of huts at Rocchette Pannocchieschi and Cugnano, situated in the centre of important deposits of mixed sulphides. In addition, there is the Canonica di Montieri site, the specific nature of which is hard to determine, which preceded the construction of the church with six apses, and the supposed early medieval phases at Rocca San Silvestro linked to the presence of fragments of sparse glaze pottery (now dated to the mid-9th century, thanks to thermoluminescence analyses; Briano 2021), and traces, in negative, of possible buildings made of perishable materials. This activity involved the extraction of lead-bearing minerals, at least, from mixed sulphides. Proof of this are the small open-air diggings at Cugnano, predating the 10th century, where XRF analyses have revealed the presence of lead in the rock walls, and especially the use of lead from the Colline Metallifere in the mix used to produce the glaze for sparse glaze pottery, made in the area of the Torre di Donoratico site. It is possible that the lead was also used for other purposes which we are currently unaware of, as was copper and silver.

Regarding iron, we can state with certainty that the extraction of hematite on Elba had recommenced by this time period (it was already present in the 7th century at San Genesio). We find hematite within forge waste and reduction slag at the site of Vetricella and in its surrounding territory, as well as in the iron-making zone in Piazza dei Cavalieri in Pisa.

Nevertheless, in general, the size of mining sites in this phase, and the associated physical evidence that is currently available for them, give us grounds for supposing that we are looking at a resumption in mining and metallurgy, although perhaps still on a limited scale.

A great leap forward seems evident between the 10th and 11th centuries. Rocchette Pannocchieschi, Cugnano, and Rocca San Silvestro are given stone-built defensive walls, and ore reduction facilities begin to make an appearance: the furnace, perhaps for iron reduction, within the outer walls at Rocchette; and the iron-working structure outside the outer walls of Rocca San Silvestro, if we agree with the aforementioned notion that this feature is to be dated earlier, to this time period. At Montieri the creation of the religious centre with the church and the burial falls within the same system of operations linked to the control of mining resources.

For this historical period we have no references to production structures for lead and copper at any of the sites investigated. Meanwhile isotope analyses on the lead in coins minted at Lucca, and at other mints in the Kingdom, indicate that the lead came from deposits situated probably in the Germanic area. Moreover, only in a small number of coins does it seem to be mixed with lead from the Colline Metallifere (Chiarantini *et al.* 2021).

Thus, in this phase, iron seems to have a lead role as the raw material that was exploited most, both in the case of hematite from Elba, present on the coast and in Pisa and Lucca, and also in the case of ferrous minerals found in the Colline Metallifere, which were certainly used together with this same hematite at the court of Valli/Vetricella and at Rocca San Silvestro.

The documentary mention in 1066 of tithes relating to mines on Elba which were paid to the bishop of Massa-Populonia is a key indicator that, at least at a time just before that date, and thus in the first half of the 11th century, the exploitation of ore seams must already have been organized. The fairly universal diffusion of hematite, and above all the great production centre connected to the court of Valli, give some idea of the scale of production, which must have been fairly large-scale and well-organized, with strong links to Elba. Indeed, a network of habitation and religious sites must have developed on the island, and, in the case of most of its hubs, this has remained unchanged down to contemporary times. One small clue to this may be in the shape of the supposed 10th and 11th century phases of the church of S. Pietro e Paolo at San Piero in Campo, perhaps the only surviving, standing building to be seen today from that period.

Thus, regarding iron metallurgy, the picture that takes shape, at least for Elba and the Colline Metallifere (to which we should perhaps add, hypothetically, the western side of Monte Amiata), is very different from the picture that has thus far been mapped out even in more recent overviews and syntheses, in which the supposed fragmentation of exploitation was mainly ascribed to a very reduced scale of production, for the purposes of purely local use (Cortese 2008; 2014).

The major hub of Vetricella at the court of Valli, as I have perhaps improperly described it, displays a concerted effort at organizing the production cycle, and the existence of an interplay between the mining landscapes of the hinterland and mining landscapes on the island. This interplay was in turn connected to a system that was clearly linked to the leading public actors, namely the Emperors and the Margraves of Tuscia, the only figures who could lay claim to rights, in this chronological period, over subsoil resources (Cortese 2014, 140). In doing so they were assisted by figures who had a very pronounced public physiognomy, such as the bishop and the Counts of Volterra (in the cases of Montieri and Rocca San Silvestro, respectively). Pisa should probably be added to this small group of key figures,



Figure 5.60 - Centre: the remains of the apse of the church at località Torre di Donoratico. Top right: detail of the church's masonry technique. Bottom right: detail of masonry technique at church of S. Piero in Campo. Top left: detail of internal half-pilaster at the Donoratico church. Bottom left: the half-pilaster on the outside of the nave of the church of S. Pietro.

for the transportation of the hematite itself to the north, and to Lucca, with its growing political importance, thanks to which, between the late 11th and the 12th centuries, it stood as the true, great heir of this system of exploitation between the coastal area and the island¹⁰.

¹⁰ Regarding Pisa and its economic growth, also in connection with the exploitation of iron, see the recent considerations in Wickham 2023, 557-590.

Chapter VI

Reconstructing the complexity of the case study: clues to a puzzle

Having got this far, after the previous chapters focusing on single contexts, we now have to move on from individual historical and archaeological details, the necessary humus for cultivating new possible interpretations, to an overall view that may allow us to place the events and the evidence, described thus far, within a broader, homogeneous interpretation. To make this task easier, I have divided this chapter into four sections in which all the facts concerning our case study are arranged into themes, and larger contexts, within which continual references to the preceding chapters will reduce the number of bibliographic references.

6.1 The actors involved

Actions that can be associated, by means of the material evidence, to some of the political players that operated in the territory examined thus far clearly fall in the overall picture outlined up until now by the documentary record. This overall scenario has recently been summarized for the aristocracies of Tuscany by Maria Elena Cortese (Cortese 2017), and has been explored in the case of Lucca by Paolo Tomei (Tomei 2019), picking up on, and expanding on, themes explored in previous research ('fundamental' studies include: Wickham 1996; Cammarosano 1998; Provero 1998; Collavini 1998).

However, the material evidence allows us to supplement those segments of history that the documentary sources have so far been able to shed little light on, and to bring them into sharper focus. I refer in particular to the ways in which fiscal properties were managed financially, and to the relationship, seen in this light, between the central powers and the various levels of the aristocracy, as well as to the role of these aristocracies and rural elites, and of the communities themselves. These are the players that we will be concerned with in the following pages.

Before the end of the 8th century, it is fairly hard to see material signs of a strategy of action in a territory where the only material remains (as well as documentary sources) relate to the initial phases of life of coastal and inland hilltop and low-lying sites, to early transformations of the natural environment, and to the exploitation of local resources (I will return to these last two points in the following sections). The documents give us only partial information regarding the actors already having an interest in this area: the papacy (for the courts of Flacianum and Piscaria), the bishop of Lucca (in the Cornia and Pecora valleys), the bishops of Roselle and Populonia, the *excertitales* resident in Chiusi (in the Pecora valley and in the Grosseto area), and the aristocracies probably connected to the foundation of the monastery of S. Antimo in the Val di Starcia, and the monastery of San Salvatore al Monte Amiata.

These signposts may be few in number, but they help to shine a light that is bright enough to connect them to the gradual rise in the political and economic importance of the central powers in this macro-area.

With the shift to Frankish domination, the arrival in Lucca, from the Germanic area, of figures who were loyal to the emperor, and who formed a small group that was set to hold high positions of power (Cortese 2017, 65), did not prevent some of the most important aristocratic families that took shape in the Lombard era from being projected to the top positions of power, or from holding on to those positions. This is despite the fact that there is still some debate over the peaceful continuity of this new political scenario (see Tomei 2019, 370; unlike the claims made by Cortese 2017, 80). For these new

arrivals, in the early Carolingian period, the bishops in Lucca were nevertheless the main actors who were looked to in political and administrative terms, and it is in this phase that the latter entered 'the game of clientelism, with their own entourage and their own circuits' (Cortese 2017, 85). In this scenario the bishops found ideal conditions for expanding into territories far from Lucca, turning to those areas regarded as being more in their interests, and more promising in terms of their resources or their centrality as regards roads and highways.

Some parts of our case study zone are included in such areas. Indeed, in this phase we have the first mention of the two most important courts in the Cornia valley that belonged to the Lucca bishops: the court of S. Vito al Cornino, referred to at length in chapter II, section 1, and which it is suggested (thanks to the survey findings) was situated on the margins of the future royal court of Cornino; and the court of San Regolo in Gualdo, discussed in chapter II, section 2, with the church containing the remains of the saint. The representatives of the local elites were suddenly stripped of authority to manage this court by Bishop Giovanni, an event that has been reconstructed in detail by Simone Collavini in one of his articles (Collavini 2007).

In addition, references to other properties held by the bishop also date to this early Carolingian period. Their location is also supported by the findings of our field-walking surveys (the upper Cornia valley, and the Montioni area) in what was described in chapter I, section 4, and in chapter II, section 3 as a sort of transit corridor between the coastal royal courts and public properties in the hinterland (Gualdo del Re and Massa Marittima). Indeed, the fact that these episcopal holdings had a marginal location vis à vis royal properties suggests two things: the expansion of the bishops into this part of the Maremma took place as a possible consequence of a distribution of the fiscal patrimony; and whereas for the inland area we were aware of their presence (see the reference to Gualdo del Re in 754, Farinelli 2007, 67), in the coastal area we can now suggest the possible existence, as far back as this period, of a nucleus of public properties of a certain importance, from which smaller or larger parts were detached or 'peeled off', as in the case of the court of Flacianum, owned by the papacy, which covered much of the Piombino lagoon (Tomei 2020).

In the Grosseto area, as well as the bishop of Roselle who is attested to since the end of the 5th century, and who was still established in the ancient city, we also see the presence of properties belonging to the Lucca bishop. Indeed, his holdings were concentrated in the zone of the mouth of the Ombrone, namely in the portion opposite the earlier lagoon of Lake Prile, where the papal court of Piscaria stood at the time. These holdings included the church of San Giorgio in Grosseto, granted in 803 to the Aldobrandeschi family with its assets, along with the court of Caliano (Collavini 1998, 67). This transfer brought onto the scene in this area the family that was one of the undisputed protagonists in its history, who made Grosseto itself one of their main centres from which to spread their influence outwards.

At this time, however, the Aldobrandeschi were not yet able to boast a very high profile, and they sought to carve out a place for themselves in the new political panorama that followed the Frankish conquest. Accordingly their attention was directed towards the bishop, namely the most important political figure in Lucca, or the personage who, at any rate, was able to support their social rise at the time. Therefore the Aldobrandeschi family implemented a series of strategies, especially by means of a series of donations by Ilprando I (Cortese 2017, 77), in return for which some members of the family received important posts from the bishop. These posts allowed the family to expand their horizons of power beyond the confines of the diocese, in this instance towards the Maremma. Examples of these handovers are appointments to rectors of important churches (including the church of S. Regolo in Gualdo in 826, Collavini 2007), or grants in the form of episcopal property (as in the case of the aforementioned church of S. Giorgio in Grosseto).

Within this aristocratic circle in Lucca, which the Aldobrandeschi belonged to, the next step to expand their range of action beyond the city itself, or to establish deeper roots in the territories in which an

initial expansion had already begun, was to secure a place among the ranks of the royal vassals. This is what happened in the case of the Aldobrandeschi. A crucial step towards this came in the decade beginning in 930, when Eriprando I became a vassal in the entourage of Emperor Lothair. This post projected the family into a regional political dimension, thereby bestowing great prestige on it. The effects of this were seen shortly afterwards, as we shall see, when one of its members was made a Count (Cortese 2017, 77-79).

However, the repercussions of the events in the early Carolingian period, the main setting of which was Lucca, where the aristocracies were still well rooted, have left only faint traces in tangible terms in our territory. These are mere ripples on the surface, a prelude to more powerful tumults which began to manifest themselves as of the mid-9th century.

As of 884, with the start of the reign of Louis II, loyal followers from the Germanic area arrived thick and fast, as part of a royal programme whose aim was to reinforce Frankish dominion in Italy. With a view to an overall reorganization, the sovereign's attention focused mostly on fiscal holdings, and bishops' properties and monasteries (Cortese 2017, 69).

In our case study, the effects of this strategy, which was also contemporary with the formation of the March of Tuscia which had its fulcrum in Lucca, were previously viewed in the shape of two important measures: the formation of the comitatus of Roselle and Populonia, which was entrusted to Hildebrand II Aldobrandeschi; and the granting *ad regendum* to the Margrave of Tuscia of the San Salvatore monastery on Monte Amiata (Collavini 1998, 85).

Thanks to archaeological findings and multidisciplinary research, it is possible to add more details to this picture, and to make the full complexity of the action of the public hand more visible in this area, an area thus far regarded as being fairly marginal compared to the political and economic heart of Tuscia, which has always been located in the northern and central part of the region.

The sequences excavated on the Acropolis of ancient Populonia (Figure 6.1), after this spot was largely abandoned in Late Antiquity, suggest that some of the pre-medieval built structures were reused in the 9th century, for the site of the new comitatus. This, as stated earlier, was established in the mid-9th century, and was perhaps used only occasionally, unlike the corresponding institution in Roselle. This suggestion, an entirely plausible one, was formulated just recently, partly on the basis of evidence of a material culture that is completely disproportionate to the rest of this geographical district (Gelichi 2016).

Below the promontory of Piombino, near the lagoon where the river Cornia flowed into the sea, it is possible that, in the same period, the royal court of Cornino was starting to take shape, in the same spot where the papal court of Flacianum stood (chapter II, section 1). Indeed, the fact that this court is not mentioned in Carolingian scrolls, in the mid-9th century, as one of the sources of revenue of the pontiff (perhaps identifiable as Pope Benedict III, who ruled between 855 and 858), is what suggests that it returned to the hands of the royal fisc (Tomei 2020, 26), on the basis of those dynamic characteristics of every grant involving public properties that occasionally meant they could be revoked (Collavini forthcoming).

In chapter II, section 2, I explored the possible features of this reorganization, and later on I will return to this point, making reference to the two possible main hubs of the court, namely Vignale and Carlappiano. In the same chapter I also stressed that it may not be a coincidence that in the middle of the century the original bishop's seat, mentioned since the end of the 5th century, was transferred from Populonia to the Cornino estate. In this connection, I also suggested the possibility that, instead of referring to the local area linked to the river of that name, as always maintained up until now, this place-name may correspond to the royal court, which was being reorganized, where the transfer of

an episcopal seat, which Sauro Gelichi recently claimed was rural (Gelichi 2016, 345), may have been a plausible occurrence (chapter II, section 2).

However, rather than in the Cornia valley, the actions of royal power are visible in material form especially in the Pecora valley. This is because, as clearly shown by radiocarbon dating of the archaeological sequences, the creation of the three concentric ditches with the tower in the centre, at the site of Vetricella, the heart of the future court of Valli, dates to the mid-9th century. Also dating to this century are some of the Topographic Units (small sites) discovered in the multidisciplinary surveys, identifiable as small satellite settlements in the centre of the court.

Also in chapter I, section 2, we referred to the work by Aldo Settia to suggest that this site may have played a role in controlling the coast, in the context of the general reorganization of the coastal defences under Louis II. However, the presence of iron slag leads us to think of it as an important site, already in this early phase, also for the management of what was to be the main economic vocation of the court, just over a century later.

Geomorphological and archaeobotanical findings tell us of significant changes compared to the 7th-8th century phases in the woodland and farming landscapes in the immediate hinterland of the Pecora valley. It may already be possible to place these changes in the context of a large-scale transformation plan, although this appears more pronounced in later periods (chapter I, section 2).

In the Grosseto area (chapter III, section 1) the material signs are less evident, but nevertheless present, pointing to a reorganization of the low-lying area around the lagoon, and around the hill which Roselle stood on (Figure 6.1). As regards Grosseto, on the site of pre-existing wooden huts the church dedicated

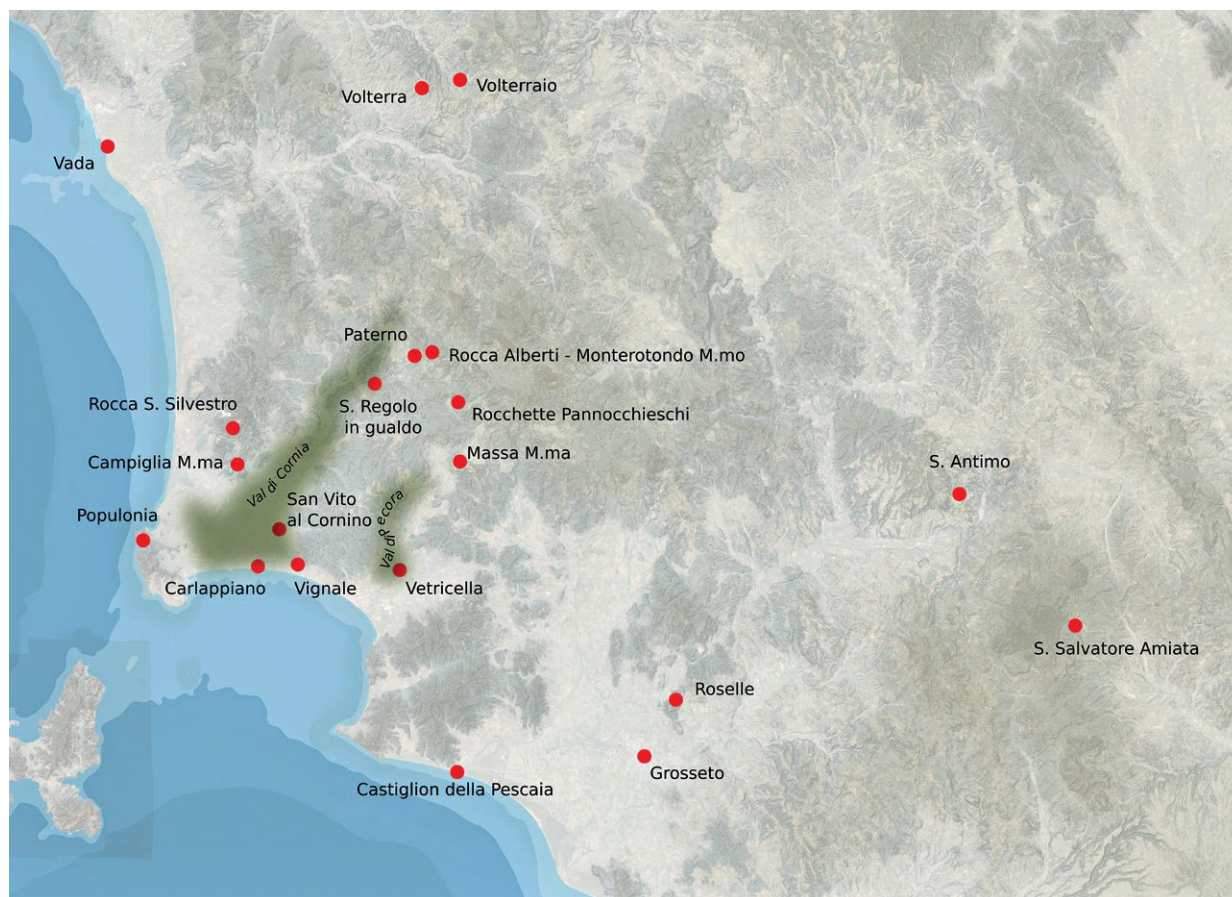


Figure 6.1 - Location of sites referred to in the text.

to San Pietro was built. To this we must add the findings from the archaeological sequences found in the 10 exploratory trenches, out of 98 carried out in all, during the campaign of urban excavations. Podere Aione and Podere Serratone were sites in this low-lying plain that were frequented throughout the 9th century. Also dating to this same period are the earliest phases of use of the Poggio Cavolo site, with the remains of its first church. The pivotal point of this area, controlling the precious salt-works, continued to be the ancient city of Roselle, with its episcopal church (chapter III, section 1). It is to be hoped that future investigation campaigns, featuring a precise research strategy focusing on the early medieval period, may provide information regarding how this comitatus seat was structured. In this connection, the finding of a Carolingian denaro here, issued by the Milan mint (although in a secondary deposit), along with parts of architectural decorative features, holds out the hope there may potentially be new information. Indeed, the aforementioned evidence may well represent only the tip of the iceberg.

Regarding the monasteries in inland areas, unfortunately the strictly Carolingian phase (when it is assumed that they acquired the status of royal abbeys) has not left material traces in the walled structures such that might give an indication of the possible economic effort involved both in the construction (or reconstruction) of the abbey church of S. Antimo, and in the hypothetical church of San Salvatore al Monte Amiata (chapter IV, sections 1.1 and 2.1).

The reorganization linked to the actions carried out starting in the reign of Louis II probably remained unaltered in the period that followed the Carolingian phase, and the prominence now acquired by this territory was perhaps what lay behind Hugo of Arles' decision to include, in the 937 dower, on behalf of his future wife Berta and her daughter Adelaide, the courts of *Valli* and Cornino (as well as the two monasteries in the hinterland), which were less central than the compact nucleus of the courts made over in the heart of the Kingdom, but which were clearly comparable to them in importance.

In this phase, the Aldobrandeschi family continued to organize their properties and political situation. Still partially anchored in Lucca and to the spheres of power in that city, with Eriprando I they represented the family as margravian vassals, when Eriprando appears in the capacity of signifer of Margrave Adalbert I during a royal expedition to southern Italy (Cortese 2017, 78).

Perhaps this more structured and, in some cases, new landscape of our case study would have remained as it was over time, apparently emerging unscathed by the climate linked to the troubled phase of conflict between Berengar II and Otto I, when the owner of the four royal courts in this area, Adelaide, also suffered the series of well-known misadventures. It is likely that the Aldobrandeschi themselves took advantage of this phase, one consequence of which in Tuscia was a strengthening of the power of the Counts, to do in this area that which they put into effect just under a century and a half later: reinforcing their position, taking over the bulk of public holdings, and becoming the strongest force on the local political scene.

However, this was not to be, and the material record gives us a very clear picture as we attempt to imagine what happened after the definitive defeat of Berengar II and his son, Adalbert, in 963.

Following the visits to Italy by Otto I, and the associated diplomas he issued (Puglia 2001), we learn that the Emperor, after his second arrival in Italy in 961 (his first arrival had been in 951, to liberate Adelaide and marry her) aimed at regrouping his forces together with those of Berengar II, undertook a new journey in 962. On that occasion, before being crowned Emperor in Rome, passing through the March of Tuscany he made a series of grants and confirmations of the property holdings to the most important ecclesiastical institutions, including the S. Antimo and S. Salvatore al Monte Amiata monasteries. The following year, with the siege of San Leo, he definitively resolved the question with Berengar II. Returning from Rome, in 964, Otto stopped off in Lucca where, with the diploma that I commented on in detail in chapter IV, section 1.2, he granted property situated along the main highway to Rome to the monastery of San Salvatore al Monte Amiata, bringing under its direct protection and management much of the western side of the mountain, along with its mineral resources. Following Puglia's reconstruction we

see that, during his stay in Lucca, both during the issuing of the diploma, and at a judicial assembly held a few days later, Otto was accompanied by the Counts of the main aristocratic houses of the March of Tuscia. Puglia suggests that these may have returned with him in the company of other officials and secular figures representing the Regnum, from the Imperial coronation in Rome (Puglia 2001, 13). This proximity with the leading political figures of Tuscia allowed him to get the reorganization of the government of the March under way more incisively, and he probably concerned himself with the matter again in the course of his third visit to Italy, in 966, having been summoned by Pope John XIII.

During this journey to Rome, Otto I stopped at the castle of Vada (Figure 6.1), a site just to the north of the Cornino court, to issue, in that same year (966), a diploma on behalf of the bishopric of Volterra. The following year we find Otto together with the bishops of Arezzo, Fiesole, and Florence and three Counts, including Rodolfo of Volterra, who met at the castle of Monte Volterraio (Figure 4.56, chapter IV), in the 'home of Peter, bishop of Volterra' (ibid. 14). Indeed, the castle stood close to the town of Volterra, but again is not so far from the area of our case study. On that occasion, Otto I chaired a placitum regarding the abbot of a monastery located in the County of Arezzo. Another placitum, also held in 967, this time in Florence, seems to show that these particular years were crucial for the start of the consolidation of the public administration of the Tuscan March. This issue was probably particularly close to the heart of Otto I, hence this series of actions and meetings that took place in zones where he could rely on the support of other leading political figures (ibid. 14).

The appointment of Margrave Hugh, after a troubled period when the post was held by his father Uberto, is also to be seen in this context. The appointment ushered in a period of total accord between the Imperial and margraval leaders.

The material repercussions of this possible reorganization of the territories of the March, begun by Otto I and continued under the following rulers belonging to the same dynasty, have always been insufficiently discussed in previous literature on the subject, which has always stressed its effects in the political and administrative spheres, mainly as regards the bishops, the Counts and above the margraval authority.

By contrast, through our case study we are better able to understand its consequences, especially in economic terms in an area where, furthermore, deep roots had by then been established by one of those families, the Aldobrandeschi, who never appeared at the aforementioned placita, perhaps owing to their previous support for Berengar II (Collavini 1998, 79).

Remaining on the subject of economic history, the historical events involving the royal court of *Valli* are the clearest, and it is no coincidence that this volume opens with *Valli* itself. Indeed there is no doubt that these events have made it easier to investigate all the other cases presented.

In a rapid sequence of transformations, as of circa the mid-10th century, we have seen that, in the space of a few decades, the court acquired its strong economic vocation, connected to iron-working, and Vetricella was transformed into an organized collection site for objects produced in the surrounding low-lying plain (chapter I.3; I.4). The whole plain included within the court was populated by a series of sites, more numerous than in the past. It is probably now that links with the hinterland were strengthened, mediated through the town of Massa Marittima, beyond which one entered the heart of the Colline Metallifere where the small mining villages that have been investigated archaeologically, in this chronological range, were redefined on an important scale (chapter V.1; V.2). As I shall summarize in the following sections, for this period we also see an increase in material evidence of changes to the farming and woodland landscape along the lower and upper Pecora valley.

Still on the subject of iron, as the resource that was of greatest interest for this phase, I have suggested that the switch to direct control by the Emperor over properties on the western slopes of Monte Amiata was connected to a more organized form of exploitation of these mineral deposits (chapter IV.1.2). In the area with the largest deposits of cinnabar in the West, I have not ruled out an interest in this resource,

too, and some of the economic policies of the monastery in question were probably geared towards it (chapter IV.1.5).

In the Grosseto area (chapter III.2), as yet we know little about events and developments in Roselle. On the other hand, the results of archaeological surveys in the Vigna Nuova/Salica valley below show an intense reorganization in this phase, with the development of a large site surrounded by a defensive ditch, with water channels, and the division of farmland into plots. At the same time, in the area around the western reaches of the hill which Roselle stood on, near the furthest extent of the lagoon, new hamlets started to appear, such as Brancalete (also surrounded by a moat). Sites inhabited in the past were also now reoccupied, such as the major villa of Aiali, while others were renovated and adapted, as in the case of Poggio Cavolo.

In Grosseto we find many more archaeological remains with areas standing on the hilltop terrace, designed for the storage of cereals, and metalworking, also featuring the presence of hematite from Elba (see also chapter III, section.2).

In chapter III, section 3, I suggested a possible connection between these widespread transformations and the formation of a large nucleus of public holdings, perhaps the largest found within our case study, revolving around the comitatus centre of Roselle.

In the northern part of the lagoon, coinciding with Castiglione della Pescaia, the court of Piscaria came into the possession of the monastery of S. Antimo. This was the site of one of the royal courts owned by Adelaide who, according to the suggestions of Marco Frati, which I backed in chapter IV, section 2, saw a considerable expansion in the first phase of Ottonian rule, with the reconstruction of a large abbey church, and of the premises of the monastery itself. Limited material evidence survives in the case of both architectural complexes, but it is still significant, and I have sought to highlight this, drawing on the tools of the archaeology of architecture.

The Aldobrandeschi family has not yet made a clear appearance in the narration for this Ottonian phase, despite the fact that I have just hypothesized that the largest nucleus of royal possessions was situated right here, in the immediate vicinity of Grosseto, namely in the spot that was the family's most important settlement along the coast.

In going back over the history of this dynasty, especially through the research by Collavini, it seems clear that it is far from easy to apply ready-made equations in this phase of changes. It is alleged that the family fell into disgrace under Otto I, owing to its support for Berengar II, and this could justify the initial major degree of public activity in this coastal area where, since the Carolingian era, the power of the Aldobrandeschi had been gaining ever more strength.

At the same time, this unfavourable climate was perhaps balanced later on by other events (Collavini 1998, 77). Indeed, at the end of the 960s, Rodolfo II Aldobrandeschi married Willa, a member of the family of princes of Capua that, especially in the shape of Pandolfo di Capodiferro (Willa's grandfather), had formed a close relationship with Otto I in the second half of the 10th century (Collavini 1998, 90). This marriage, Collavini claims, which took place after Otto I's expedition to southern Italy, is possibly to be seen as a potentially successful attempt to bring the family closer to the Imperial power. Indeed, Willa would seem to have had a prominent role in family politics, especially after the death of her husband, in 988, and before her son, Hildebrand IV, gained that experience and maturity which, starting in the early years of the 11th century, made him perhaps the most famous and feared member of the family, being able to project the aristocratic house into a new political dimension. Accordingly a woman, to be precise 'la Capuanese', as she is referred to in the written sources, which make her out to be an almost legendary figure, 'seems to have shorn up the precarious fortunes of the family' (Rossetti 1981, 158). This happened in the decades when the archaeological record attests to the chief transformations in this territory, circumscribed by the public courts which, at this time, are still run, although it is unclear

how directly, by another woman, the even more powerful Queen Adelaide, who retained control over them until she withdrew to a private life.

Moreover, we know that, before 988, Hildebrand IV and his grandfather Rodolfo I acted as defenders of the monastery of San Salvatore al Monte Amiata in a dispute relating to the Ofena cell, and it was the famous Abbot Winizo, at the start of the 11th century, who recognized the authority of Hildebrand, asking him for help regarding his differences with the bishop of Chiusi (Collavini 1998, 86).

All this is a way of saying that, in the Ottonian phase, which began under a less than auspicious star for the family, more incisive royal management in the areas which the Aldobrandeschis gravitated to most, over the years, does not seem to be translated into a relationship of power, instead resolving itself in a possible form of mutual cooperation within a public context. Although with the aim of safeguarding the family's interests, its representatives acted in what may have amounted to the role of supporters and implementers (as was probably the case with the nucleus associated with Roselle, by virtue of their public office, or also with the nucleus situated on the western slopes of Mt. Amiata) of a broader project connected to senior levels of royal power. In so doing, with their estates, they remained literally always on the margins of the major centres of public power, as in the case of Scarlino, the castle of Valle, and Grosseto itself.

It was with Hildebrand IV that this marginal position was left behind, taking advantage of a favourable political situation during the first few decades of the 11th century, as we shall see in more detail in the fourth section of this chapter.

In the absence of written sources, it is very difficult indeed to speculate as to how the family actually interacted in the administration of the public courts, and also, more generally, how royal control was organized.

From the archaeological sequences at the site of Vetricella, we can suppose that the royal representative (perhaps a *gastaldo*, ie a kind of steward, in common with the case of the public court of Marturi, near Siena, Collavini forthcoming; perhaps one of those *actores regi* mentioned as of the 8th century in this area) lived in the tower, but probably not continuously (given the depth of the stratigraphy) with an average-to-high standard of living, drinking wine made in the territory from elegant goblets, and dining on pork from the pigs that were farmed around the site (chapter I.3; I.4). For that matter, the suggestion that the regal representative was only present occasionally was already made also for the *comitatus* seat of Populonia. Nevertheless, this does not mean that, in other locations, this personage was not present on a more permanent basis. Indeed, he could have taken advantage of those new towers, in many cases totally built of stone, which in this phase began to revolutionize the profile of some sites, such as the Arcidosso building already referred to in chapter IV, section 1.4.

Among the leading actors, in writing of Rocca San Silvestro and the church at Montieri, the Della Gherardesca family has also appeared, albeit with less importance than our case study. This is the aristocratic family that, in the Ottonian period, definitely enjoyed a less troubled existence than the Aldobrandeschis, belonging to that group of aristocrats who, together with many Tuscan bishops, represented a reference point for Otto I in his reorganization of Tuscia. Rodolfo, the Count in Volterra, who was in attendance at the 967 *placitum* mentioned earlier, which took place in the presence of Otto I in the Monte Volterraio castle, was identified some time ago as one of the first members of the family to hold the title of Count in Volterra, retaining the role until around the middle of the following century (Ceccarelli Lemut 2004, 4-5). In such a favourable political climate it is no surprise, then, that we find members of the same family linked to an important mining castle, namely Rocca San Silvestro, which was such already as of the start of the 11th century. It is not an anomaly to suggest that they may have had a role in the complex operation involving the construction of the Montieri church, as stated in chapter IV, section 3.3.

In this whole narration, among the actors discussed thus far I have mentioned the Margrave of Tuscia only in passing, and it is now time to dwell in more detail on this personage.

The scope of action on the part of the Margrave of Tuscia, an institution based in Lucca which followed the Lombard duchy, which in the mid-9th century became an organ existing for the political and administrative control of larger territories (Keller 1973; Puglia 2003), is fairly elusive in the area we are examining, at least as regards the period prior to the mid-10th century. Indeed, in this area, he took a more indirect hand in affairs in earlier periods, and, as already stated in the last few pages, this takes us back to the history of the other protagonists. This is the case with the signifer post of Eriprando I Aldobrandeschi, when the latter gravitated among the Imperial vassals during Adalbert I's rule as Margrave, or when Adalbert was granted (ad regendum) the monastery of S. Salvatore al Monte Amiata, control that was exercised on and off, until at least the time of Hugh of Arles (Collavini 1998, 85; Marrocchi 2020, 64).

After the period when the March was likely weakened, following the phase of conflict between Otto I and Berengar II, it is under Hugh of Tuscia, as stated earlier, that the Margrave's activities took on a new prominence. From studies conducted on this political figure, we know that, ever since he was first elected, Hugh pursued a political strategy that led to a considerable strengthening of the Margrave's role as the point of liaison between the Emperor and the assortment of political players in the March, within a body that was not independent, and whose power derived from the Emperor (Cortese 2017, 132).

Hugh, Margrave of Tuscia, the grandson of Hugh of Arles and the son of the ousted Margrave Hubert, was the holder of the post as of 970. In the first part of his mandate he established an administrative organization that was very closely connected to the Viscounts, giving strong support to the bishops of Lucca and Pisa, and to a number of individuals bearing the title of comites linked to bishops in areas that were significant for him (Puglia 2006, 156-159). On Otto II's death, he found himself looking on the political scene without the support of the Emperor, whereas the most important comital families were consolidating and increasing their strength and power. It is in this phase that Hugh of Tuscia bound himself closely to the Imperial court, as an adviser to Theophanu, Otto II's widow, following her on her missions, later remaining at the side of her son, Otto III. This extended to him applying for a residence alongside that of the Emperor at the court of Ingelheim (Puglia 2006; Puglia 2003, XVIII). In the final part of his period in office (Hugh died in December 1001), by agreement with Otto III, a very clear policy was pursued, aimed at assigning a strong role to royal abbeys, with the intention of conferring new substance to the Imperial authority, also by means of a symbolic construction of Ottonian power, and of the March itself.

It is at this point in time that the actions of the two political players interacted with the local territory looked at here. For some time now, especially thanks to the studies by Kurze, we have known that the support of the Margrave and of the Emperor was at the basis of the development of San Salvatore al Monte Amiata, turning it into one of the most important monastic centres well beyond Tuscia itself. This growth culminated in the reconstruction of the large abbey church, consecrated in 1039. Earlier, in chapter IV, section 3.3, I cautiously suggested that this political and religious climate was the cue behind the decision to create the religious hub at Montieri, with the construction of the church on the spot where a rural canonica, belonging to the bishop of Volterra, was later built.

For the Margrave, it was a case of supporting an Imperial policy that he had embraced since the start of his post, but at the same time this action led to the possibility of setting boundaries on the increasingly wide-ranging power of the Aldobrandeschi, in the case of the Amiata monastery (Puglia 2006), while backing the bishop of Volterra in the case of Montieri.

Bearing in mind the general political and economic situation, I have also suggested that, to all intents and purposes, these actions, focusing on religious centres, may set the seal on a brief but highly

intense phase that followed the previous Ottonian period, in which attention was directed more on the reorganization of local territories with a view to the exploitation of their main resources.

For that matter, the second half of the 10th century, and especially the final decades of that century, corresponded to moments of great transformations, contemporaneous with more widespread changes at the various aristocratic levels. Maria Elena Cortese believes strongly in the dynamic effect created among the middle-ranking aristocracy of Tuscia by the phase of greater redistribution of property of public origin that took place in these decades, on the part of the central public powers, both secular and religious, i.e. the bishops themselves (Cortese 2017, 197-198). This enabled a major development of estates, thanks to which the intermediate-level aristocracy itself expanded its range of action, appearing, with their representatives, also in territories lying a long way away from the confines of their diocese. In the context of our area of study, this was the case with the Rolandinghi family, one of the most important noble families in the mid-level aristocracy in Lucca (Tomei 2019, 77), or the Da San Miniato family, who had their roots in the Valdarno area. These families had property between the Cornia and Pecora valleys (Cortese 2017, 227), and we shall be returning to them later on.

Thus far we have written about individuals and groups who, operating more or less directly in our case study area, laid down political and economic strategies, and strove to ensure they were abided by, often in the context of broad-ranging projects and plans. However, we have not yet mentioned the majority who existed on the fringes of these projects, or who implemented them and ensured that they were successful, namely that varied assortment of micro-rural societies that gravitated in this territory. It is truly difficult to give a voice to this vast mass of people, and to reconstruct their social and cultural characteristics, including in an area such as that of our case study, which much written documentation is connected to, mainly associated with episcopal documents in Lucca.

Going through the bulk of the findings made above all in the research by Roberto Farinelli who, for some parts of our territory, focuses on these very same social groups (Farinelli 2007, esp. 47-90), we see a greater wealth of information up until the first few decades of the 10th century. Thereafter, as one moves towards the decades of the Ottonian period, when archaeology shows us the largest transformations, written documentation regarding local actors falls silent, and only starts to yield information again in the course of the later 11th century, by which time the political and social scenario had changed considerably.

In some interesting cases in the Cornia and Pecora valleys, this silence, in the case of properties held by the bishop in Lucca, seems to have been preceded by the possible abandonment of farming plots which, in the course of the early 10th century, seem to be reduced to fundamenta. An anomalous phenomenon, which Farinelli has connected to a possible crisis in the holdings of the Lucca bishop, or to an attraction towards other, alternative centres (Farinelli 2007, 88). This notion holds a certain interest, if it is interwoven with the archaeological interpretation of the large-scale changes in anthropic and natural landscapes in this phase, and if placed in relation to the disappearance of small and medium-sized landowners which is attested to also on the western slopes of Monte Amiata (Wickham 1989, 106), before these came under direct royal ownership.

So, can the material record come to our aid in getting a better understanding of the characteristics and features of these local societies?

Yes, not not completely, because, as we shall see, material sources still leave some room for interpretation. Thus, we shall begin with the first few centuries of the Early Middle Ages, and we will do so first by drawing on documentary sources.

From Farinelli's research, in the coastal area and in the immediate hinterland, what we see between the 8th and 9th centuries are small and medium-sized landowners (Farinelli 2007, 57).

The case of the village of Paterno (Figure 6.1), studied by Collavini (Collavini 2007 for all references given hereinafter) in relation to the question of the church of San Regolo in Gualdo, offers us a chance to take a more in-depth look at these late 8th-early 9th century rural micro-societies. I will not go back over its history as reconstructed by Collavini, whom I have referred to on several occasions in earlier chapters, and who expertly plots the speed with which the power of the bishops of Lucca was able to penetrate other areas and take root, to the detriment of this small-scale local society, in the context of the administration of the church containing the remains of S. Regolo, the fulcrum of the episcopal court. We are in the upper Cornia valley, and the court stood on the fringes of the large property at Gualdo del Re, while the village where the members of this local society lived was situated not far away, at Paterno, sites which have also been investigated by means of archaeological surveys (chapter II, section 3). The term Collavini uses to describe this society, before the major action by the bishop, is pre-aristocratic, in the sense that up until approximately the 770s there did not seem to be a great interaction between these local social circles and the higher-level political players who were already gravitating in this territory. In the case of Paterno, we are talking about a group of small landowners, almost all living in this centralized nucleus, with the capacity to make a cycle of donations to the S. Regolo church between 770 and 790. No great wealth differentiated these free landowners from peasants living elsewhere: little allodial property, often one of those homes (case), referred to in much of the documentation of this area, with assets attached, on top of which there may have been a number of lands not too far from Paterno. After this incisive action by the bishop, written information regarding this community became ever more scarce, finally disappearing altogether after the early years of the 9th century.

It may be that this same trajectory was also followed by other local micro-societies, while it is also possible, on the other hand, that some of these continued a process of greater integration with the political forces which, as of the early decades of the 9th century, were the protagonists of more invasive strategies in the territory analysed here. Relations with royal and margravian emissaries, and with the representatives of the bishops or monasteries, probably set in motion a process of greater social stratification, heightening those differences that can already be glimpsed in the society of Paterno at the end of the 8th century.

In the Tuscan model drawn up by Riccardo Francovich (Francovich, Hodges 2003), much attention was placed on the transformations that occurred in the Carolingian period, which led to a more incisive role on the part of higher-level political players. Meanwhile those material changes (new palisades, and distinctions between hilltop areas and lower-lying zones) at some sites, such as Miranduolo and Poggibonsi, which can also be seen from an analysis of diet or material culture, were apparently connected to the action of these same players, in the form of their representatives (Valenti 2004). All this apparently led, as a result, to a more pronounced internal hierarchy within settlement sites.

For our territory, what we can state at time of writing is that these changes are only moderately clear in the material culture and in the form and layout of sites, where the biggest alterations are largely pushed back until the later 10th century. The documentation offers us a picture, albeit an occasionally blurred one, of human groups that are not large but sufficiently numerous to populate large territories, also featuring a certain dynamism and freedom of movement from one site to another, as shown by some examples cited by Farinelli relating to the Cornia valley (Farinelli 2007, 88).

Perhaps a clearer indicator of their international social differentiation, visible in this case in new items of tableware, could be represented at some sites by the presence of a small number of forms, mostly jugs, of locally-made sparse glazed ware (with its new, mid-9th century date, Briano 2020). However, it is hard to exclude with certainty a link between this evidence and the presence of emissaries of the large landowners, instead seeing this as proof of an internal social differentiation within these rural communities themselves, generated by the process of greater integration with the strategies of the leading political players, and by the possible new administrative roles taken on by local figures.

Moreover, this same pottery is a weak indicator, given that, from the 10th century onwards, it seems to disappear completely from tableware, not only at small hilltop sites, where it had been present earlier, but also from elite tables, such as in the case of the residents of the tower of Vetricella (see, once again, Briano 2020), perhaps following the interruption of its production, as I shall reaffirm in the third section of this chapter.

Indeed, as of the 10th century, pottery wares, especially tableware, was once again composed of local wares made of levigated, unglazed pottery, often decorated with incised wavy lines (Grassi 2010).

This uniformity, a feature of the 10th and 11th centuries, might be the result of the alternative use, on the dining table, of distinctive containers not made of pottery (such as metal objects), or else be compensated by the presence of other items, such as glass goblets, for example (although these are very rare indeed at the sites under investigation, while being numerous among 10th century tableware from Vetricella). Alternatively, it could be indicative of a social uniformity that was merely apparent, a function of the fact that other objects linked to other spheres of daily life were used which were markers of distinct social categories, but which it is hard for us to identify in the archaeological record (eg. clothing).

Nor do we know, for this period, the extent to which the material culture may be a mirror of a social context in which differences were consciously played down, in the interests of a common identity-defining project, in which material culture might have become an active means of constructing a shared social reality. Such a reality may have been felt to be more necessary at a time of major changes in this territory, and for the people living in it (as suggested by Quirós Castillo 2022, 263-264, with considerations that pick up on the ideas expressed by Almudena Hernando, Hernando 2017). Thus, the very perception of these transformations could, perhaps, have led to a strengthening of the idea of the group, as a 'common law of existing together' (Lazzari 2012a, with reference to the definitions expressed in Esposito 2006).

The collection of large storage containers at the top of the site of Rocca degli Alberti (perhaps standing within possessions of the Lucca bishops, located on the margins of the court of Gualdo del Re, chapter II.3), could be interpreted as pointing in the direction of a reinforcement of the community identity. Now dated, thanks to the nEU-Med project, to between the 9th and later 10th centuries, their use for the long-term conservation of cereals seems to meet the dietary needs of a collectivity. Similarly, the processes of site agglomeration, which I shall discuss in the next section, could also be interpreted in the same way.

On the other hand, if we want to offer an opposing interpretation, this uniformity in 10th-11th century material culture could be indicative of even stronger action on the part of the local powers in this territory, and of their pervasive nature. This may have caused a gradual disappearance of the dynamics behind the formation of the internal hierarchies of rural micro-societies.

Accordingly, it is very difficult, and hazardous, to make suggestions regarding the social structure of these rural nuclei. However, they definitely played an active role in these different moments of change between the Carolingian era and the Ottonian period. We are certainly not dealing with minor players, because they, or some of them, were connected to work involved in production processes connected to the cycle of iron production, and salt production, as well as pig- and sheep-farming. Also relevant here are projects to create water channels, and the removal of part of the Pecora river bed. The list could go on, to include several other examples, and I could cite the information given in previous chapters, as well as further details I will give in the following sections.

However, what we know with most certainty, because we have a rich set of material findings to go by, is how one particular category of social players lived between the end of the 10th and the start of the 11th

century. This category consists in those groups that did not reside at the various sites in our area, but who were closely connected to the functioning of a royal court.

An analysis of their bone remains (chapter I.3), found in the cemetery of the administrative centre of the court of *Valli* (corresponding to the site of *Vetricella*), sheds light on the living conditions of women, men and children. Some of the work they did was heavy, manual labour, but, despite being afflicted with B-thalassemia or Cooley's anemia, because they had lived for generations in that marshy environment, they nevertheless had a diet rich in meat, and a fair life expectancy (once they survived infancy, and the risk of dying from thalassemia). Also, at least in part, they enjoyed special attention, given the treatment received by the two men who had suffered invasive traumas: a compound fracture of a femur; and the amputation of a foot.

These are some of the players active in that low-lying landscape of the Pecora valley who were able to ensure the success of that multitude of activities which the archaeological record shows us in all its complexity.



Figure 6.2 - Location of sites referred to in the text.

The complexity of the anthropic landscape here, as in other parts of central-northern Italy, does not exclude the presence of free farmers who owned their own land, and who were thus not dependent on large estates, or forms of patronage. However, precisely owing to the presumed presence of a pervasive economic system, it is possible that even individuals not directly caught up in these major transformations, owing to relations of dependence, still benefited from them. This system certainly stimulated activities and the production and movement of goods, as well as spurring great changes in the natural landscape.

Thus, we can interpret the relationship between local communities and the leading political forces for large parts of our case study area as being mutually beneficial. Indeed, we can interpret it as a possible alternative to the picture of an antithetical, and exclusively conflict-based, relationship between the two sides, with an implicitly passive role, in the main, on the part of these rural communities.

6.2 Landscapes

6.2.1 *Anthropic landscapes*

For archaeologists, an analysis of population formation and development processes has long been the main 'tool' for studying rural populations. This has also been the case regarding groups living in our area, whose possible social characteristics we dwelled on in the last part of the preceding section.

We are well aware that, in the Tuscan model, hilltop sites have been regarded as the dominant form of settlement, especially in this territory.

For the last few years, more recent archaeological research in the area we have examined has revealed that, alongside hilltop nuclei, there also existed a contemporaneous population living in the plain, or on lower hills (for a recent summary, see Bianchi 2015). Today there is much evidence, and this has also been set out in the previous chapters: from the case of Grosseto, with habitation phases as of the later 7th century (chapter III, section 1), and Vetricella with its huts and possible traces of metalworking datable to between the 8th and the early 9th centuries (chapter II, section 1), and including the remains of homes found during field-walking, such as Podere Serratone and Casa Andreoni (chapter III.1). These are just some specific examples that we have already referred to.

Alongside these, we find cases involving the reuse of pre-medieval contexts, such as the large villa at Vignale, later included within the royal court of Cornino (chapter II.1; II.2), at the Podere La Pieve villa in the nearby Pecora valley, and in the Aiali villa in the Grosseto area, again just to cite specific cases (Figure 6.2).

Thus, compared to the features outlined in the Tuscan model, the anthropic landscape in this part of the Maremma area is proving to be richer in terms of the variety of settlement solutions, and at the same time not so very different from contemporaneous rural areas in northern and central Italy.

However, certainly as of the 8th century, the element that links all this variety is a gradual but increasing tendency towards agglomeration, forming solutions that may encompass a hamlet made up of just a few huts grouped together, or else dwellings spaced further apart (as is supposed for Grosseto, for example, or for the sites of Casa Andreoni and Podere Serratone). This was a key point in the Tuscan model, and was discussed several times by Riccardo Francovich in contrast to the previous historiography, which was inclined to see scattered settlements as being preponderant in early medieval rural areas, in Tuscany and in other parts of central and northern Italy (Francovich 2004). This aspect (site agglomeration) not only remains unchanged with the new research, but is further strengthened by our case study.

The material findings which, between the 8th and 9th centuries, help to characterize this site agglomeration, here as in other parts of Tuscany (for example in the area around Siena), consist in

physical boundaries such as wooden palisades or small defensive ditches (as in the case of Cugnano). In the case of Rocca degli Alberti, the presence of the group of large grain storage facilities in the original open area at the top of the site, as well as being attributable to possible collective actions in the sphere of farming (as I already stressed in the previous sub-section) could be seen as an indicator of a polarization of the site itself (chapter II.3). At the mining sites of Cugnano, Rocchette Pannocchieschi and, I would now add, Rocca San Silvestro (Figure 6.2), this agglomeration could be linked to the need to collectively perform specific parts of a complex production cycle, in this instance mining minerals, given the position of these small sites near mineral deposits.

In previous research studies emphasis has been laid on the fact that mentions of courts or habitation nuclei often coincide with the presence of a church (Farinelli 2007, 70), frequently a simple chapel, which can be interpreted as a possible element around which the population can aggregate. The archaeology for our case study shows us this effect in the early centuries of the early medieval period for Grosseto, for example, with the church of S. Pietro, or with the Poggio Cavolo building, also in the Grosseto area, despite the fact that a considerable increase in religious buildings is mainly seen as of the later 10th century.

For that matter, these indicators of agglomeration processes found in our case study (physical boundaries, storage systems, production areas, and locations near or corresponding to rural churches) are also evident in other areas, including outside Italy itself¹, and their connection to a polarization process was also highlighted in a recent article relating to France (Lauwers 2023; for Tuscany, Bianchi 2023).

Over the years, an analysis of the formation of centralized sites, like the formation of hilltop sites, has been addressed by several scholars by adopting a top-down or bottom-up approach. In the Tuscan model, it is thought that hilltop mining sites were formed in the course of the 7th century, at the spontaneous initiative of small local societies. In their earlier studies of the phenomenon of castle formation, Fossier (Fossier 1987) and Toubert (Toubert 1973) linked this process of agglomeration to strategies on the part of stronger political powers that were implemented especially around the middle centuries of the medieval period. Later, Wickham also suggested that, ever since the Early Middle Ages, the centralization of sites could be linked to a continuity of aristocratic control (Wickham 2009a, 549) which in the Tuscan model, by contrast, began to come to the fore beginning in the Carolingian era.

The case of Paterno, along with the other documentary evidence for this area, and material findings, encourage us not to adopt rigid positions. On going over the dataset of material remains, the impression is that diversified dynamics of site formation existed side-by-side in this territory, despite the existence of large-scale, strong forms of patronage, also including sites that arose, or that were at least managed, more autonomously by the local communities, with internal forms of hierarchy (the effects of which we see mostly between the 8th and 9th centuries in material culture).

The implementation, especially in the Ottonian period, of a complex and general reorganization linked to the highest political levels, certainly helped to foster the expansion and increase of these centralized settlements. This is evident in the case of the court of Valli, where already as of the 9th century, coinciding with the definition of the centre of the court, with its three concentric ditches/moats, we see more clearly the presence of small habitation nuclei situated throughout the surrounding area and around the lagoon. The picture is fleshed out in the second half of the 10th century when, with a larger number of material findings, we have the certainty that some of these low-lying, centralized sites, especially in the sector between the centre of the court and the hills atop which stood Scarlino, also had a burial area of their own. It is plausible that this was connected to some kind of religious building (although we do not have archaeological evidence of this), as in the case of UT (Topographic Unit) 17, located near Vetricella (chapter I, sections 2 and 3).

Describing these agglomerated sites as villages and communities is not simple, because this would raise a discussion of the very concept of these definitions, which I do not intend to address here and now. Indeed, this subject is still in part a matter of debate, given that, as recently stressed (Quiros Castillo 2022, 255-256), the concept of community and the resultant notion of a village still displays differences, depending on whether it is enunciated by a historian of material sources, or of documentary sources. In our case, the material clues that I have highlighted in the previous section, indicative both of a social characterization (and of a hierarchy, in some cases), and of a possible collective identity, would lead them, for many contexts, to be called small local communities that interacted to a fairly high degree with the powers-that-be in this territory. However, without going much further, there is no doubt that these people made up the main part of the social fabric.

In the case of the public courts, we can speculate as to what kind of spatial macro-organization this fabric may have been based on.

For Cornino (chapter II, section 2), I have suggested the presence of two distinct poles: on the one hand a full-scale economic and administrative centre in the area of Carlappiano, around which were located the saltworks, the 12th and 13th century remains of which, brought to light by archaeological excavations, bear witness to the major continuity of use of these production sites; and, on the other hand, an important religious pole in the area of the former large villa at Vignale (Figure 6.2). The presence of a building for worship near the villa was already suggested some time ago, and the nature of this building is evidenced by the large number of burials that can plausibly be associated with it (the number is currently estimated as around 100 individuals), and also by their long continuation through time, between the Late Antique period and the 11th century.

Valli had its own production and administrative centre, corresponding to the site of *Vetricella*. It is somewhat harder to identify a dominant, representative religious pole, but this must have existed as an alternative to the small church found at *Vetricella*, which served the purposes of burying its direct dependents. By analogy with the Cornino court, one would suppose that this coincided with the area where a large Roman villa stood, to which is connected a fair number of burials dated between Late Antiquity and the 10th century (chapter I, sections 2 and 3). The local place-name where these finds have been made, *La Pieve*, today coinciding with the modern-day farm, suggests that the church (*pieve*) of *S. Donato di Morrano* stood here. It is frequently mentioned in documents between the mid-10th and the 11th centuries, and was a former rogation site in the Lombard era (Sodi-Ceccarelli Lemut 1994, 35-37).

For the courts of *Valli* and Cornino (chapter I, section 4; chapter II, section 2) I have gone as far, albeit cautiously, to suggest their total size: around 5000ha for both (excluding the lagoons). This is fairly large, if compared to the few *mansi* that were part of them mentioned in the 937 dower by Hugh of Arles (50 for *Valli*, 30 for Cornino), but is in line with their respective economic vocations, that were not focused on farming resources, but on large-scale iron-working for *Valli*, and salt-working for Cornino.

To make these calculations, I estimated their possible boundaries, following a rationale, explained in chapters I.4 and II.4, based on the assumption that areas belonging to the throne were surrounded and bordered by a series of properties owned by private individuals who nevertheless had a pronounced public physiognomy, chiefly the bishop of Lucca and the Aldobrandeschi family. The presence of these properties is linked to the tendency, already referred to in the previous sections, to separate off, over time, some parts of royal holdings, often those standing on the borders, donating them to important political personages, as in this case, before then possibly reclaiming them later on, thanks to the reversibility of these properties, which were generally regulated by mostly oral decrees (Collavini forthcoming). This very fluidity of ownership makes the setting of limits a fairly artificial and risky exercise. Nevertheless, I have tried to ascertain such limits, to get a broad idea of the size of the courts, while being fully aware that, in actual fact, these limits could also become 'porous', encouraging the

formation of more insubstantial boundaries, as in both cases we are looking at. This is what I believe happened above all for the supposed internal boundaries of the courts of *Valli* and *Cornino*, since as we travel towards the two other public poles, namely *Gualdo del Re* in the upper *Cornia* valley (chapter II.3) and *Massa Marittima* in the upper *Pecora* valley (chapter I.4), we can imagine a sort of corridor, in which public properties were alternated with other, scattered holdings of a private nature.

The lack of material and documentary evidence does not allow us to outline a clearer organization of the public properties of *Gualdo del Re* and the *Pecora* valley, around which other courts revolved, often still belonging to the bishop of *Lucca*, and the small population centres, as with *Paterno* and *Rocca degli Alberti*, at *Monterotondo Marittimo*.

It is also possible that large public-owned areas also extended into the heart of the mineral deposits, where the small population centres were located in the midst of outcrops of minerals, inhabited by communities that very likely were actively engaged at least in mineral extraction, as part of a production cycle that I have supposed was very closely controlled by the central authorities, at least until the later 11th century.

A certain degree of guesswork is also involved when it comes to public properties in the *Grosseto* area around the lagoon and its saltworks, where the overall context was definitely more complex.

Here, indeed, the nucleus of the *Aldobrandeschi* holdings, revolving around *Grosseto* and the mouth of the *Ombrone*, coexisted with the court of *Piscaria*, which was first a papal property but which later, in the course of the 10th century, came into the possession of the monastery of *Sant'Antimo*.

Reflecting on the archaeological evidence, I have written that toward the interior of the lagoon stood the largest nucleus of public possessions that probably came under direct royal ownership. I later imagined (chapter III, section 3) that its central part corresponded to the area of *Roselle* and of what



Figure 6.3 - The Torre di Donoratico site between the late 10th and early 11th centuries (illustration by Mirko Buono).

is now Poggio di Moscona. The ancient city was the site of the main religious hub, coinciding with the seat of the bishopric, which was only relocated to Poggio Mosconcino at the end of the 11th century. It is possible that the actual administrative centre was situated elsewhere. In this connection, but with the utmost caution, I have proposed that this was represented in tangible form, at least between the end of the 10th and the start of the 11th century, by the anomalous and grandiose building known as the Tino di Moscona, mainly on the basis of features of its masonry technique, and also on the more general events involving this hilltop site situated not far from Roselle, to stand watch over the plain below (chapter III, section 3).

The organization of public properties towards inland areas is even harder to outline, and we can only do so, albeit with a reduced margin of plausibility, for Monte Amiata (chapter IV.1). In this context, small habitation nuclei, such as Castel Vaiolo (Figure 6.2), with their communities, were based, at least at the end of the 10th century, in the fiscal lands on the western slopes, which under Otto I once again became part of the royal estates, or else in the areas belonging to the San Salvatore monastery. One important centre on the western side of the mountain may have been Arcidosso, which was well-positioned for travel by road to the Grosseto area, and which also stood close to iron-bearing deposits.

Within this new context, regarding settlement and population dynamics, it is as of the later 10th century that we see important changes. Here we shall summarize the indicators that help us to understand this landscape better.

In our case study we have seen (chapter V), for example, that it was in this phase that the stone-built defensive walls of mining sites were erected (Cugnano, Rocchette Pannocchieschi, Rocca San Silvestro). Material remains of dwellings that were contemporaneous with this transformation, both at Cugnano and Rocca San Silvestro, are not such as to suggest that there were also incentives for people to relocate within the new walls. This is in contrast to Rocchette Pannocchieschi, where we have more solid traces of homes built in masonry or mixed materials both on the hilltop and on the low-lying land below. However, the construction of walls made entirely of stone is definitely an important sign of major reorganization of the mining of mineral deposits in the hinterland, which took place in the same decades as when *Valli* and the Monte Amiata area acquired added value in royal properties precisely on account of their mineral resources.

In previous pages I have underlined several times that the second half of the 10th century also coincides with a general, robust reorganization of other royal properties: the transformations at Vetricella, and its heightened vocation for production linked to iron; the appearance of sites surrounded by defensive ditches in the plain of Vigna Nuova/Salica below the hill where Roselle stood and, perhaps, the Tino di Moscona, as well as the numerous features in the other nuclei around the lagoon (Figure 6.2); the important new work on the abbey churches and the monastic complexes of San Salvatore all'Amiata and S. Antimo in Val di Starcia; and the appearance of the religious pole at Montieri with its complex history, which went hand-in-hand with the gradual spread of the powers of the bishop of Volterra in this area, so rich in silver and other mineral deposits.

Turning to our case study, what we see quite clearly are contemporaneous changes even at sites not necessarily located within public holdings. We find this, for example, in Grosseto in the hands of the Aldobrandeschi family, and in the new layout of the hilltop area of Scarlino, a court belonging to them, attested as such in 973 (chapter I, section 3).

Precisely at this time, i.e. in the later 10th century, a large-scale stone outer wall was constructed over the group of storage structures at the top of the Rocca degli Alberti site at Monterotondo Marittimo (Figure 6.2). Within this wall, rooms made of wood and masonry have been excavated that were designed to store cereals (chapter II, section 3). Moving a little further away from the boundaries of our case study area, we find a considerable reconstruction (once again a stone defensive wall, with an internal enclosure, a tower, and a church) at the site at Torre di Donoratico (Bianchi *et al.* 2011), where in the

mid-9th century the sparse glazed jugs referred to on numerous occasions in the previous pages (Figure 6.3) were produced. Such large-scale changes are visible at the Miranduolo site (the construction of a stone-built church, and an outer defensive wall consisting of a lower, stone-built section and an upper section made from perishable materials; Causarano 2011).

For some of the aforementioned sites, these transformations are connected to the same organization of building work. This is clearly seen in the presence of mortar mixers, i.e. construction site features that allowed slaked lime to be mixed more quickly with aggregates (Figure 6.4). This is the case at the sites of Donoratico, Rocca degli Alberti, and Miranduolo, where the mortar mixers have close parallels with those found associated with the construction layers, also dating to the late 10th and early 11th century, at the site of Vetricella and at the monastery of San Salvatore al Monte Amiata (Bianchi 2011b). These mixers were an innovation that halved the time it took to produce lime mortar, and remains of these are first attested in northern Europe, as of the 8th century, at the construction sites of important buildings (royal palatia, monasteries, and cathedrals; Hueglin 2011; Hueglin *et al.* 2019). In our territory, this new feature appeared in this same historical period, i.e. the late 10th to early 11th century, before then suddenly disappearing within the first few decades of the 11th century, in a way that was completely anomalous, given the usefulness of the device. Already in the past this has led to a suggestion that their presence was connected to the circulation of skilled labourers, called in from outside to work on new buildings in Tuscany, and who subsequently left without leaving any technological legacy behind them. Aurora Cagnana had already noted that the presence of mortar mixers was concentrated in central and northern Europe (Cagnana 2011), and I myself have noted that these mixers may be linked to the proximity of those holding power in Tuscany to the royal and Imperial authorities in the Germanic area (Bianchi 2011b). I returned to this point in the first section of this chapter, highlighting the close relations between the Ottonian dynasty and the bishops, Counts and Margraves of Tuscany.

In the context of an overall reorganization of public properties and royal monasteries which I have discussed at length, and in the framework of a complex series of technological and cultural exchanges between the Germanic area and Tuscany (which I shall discuss in section VI.3.2), the arrival of skilled workers from this area, with their own expertise, would not seem now to be a rash suggestion. Their presence, and also their later disappearance, could therefore be a strong indicator in support of the idea that there was a single, unified form of construction site organization, existing for a limited period of time, all as part of one overall planning scheme that fits within the general programme of redefining the anthropic landscapes, as outlined earlier.

However, as I have stated, these mortar mixers are present not only at sites that clearly fell within public holdings, or were under royal patronage. They are also found at Donoratico, Rocca degli Alberti and Miranduolo, which are no ordinary sites. Donoratico was perhaps one of the largest properties owned by the royal abbey of S. Pietro in Palazzuolo, at Monteverdi. The site of Rocca degli Alberti was probably one of the properties owned by the bishop of Lucca located around the royal court of Gualdo del Re, in the upper Cornia valley, and Miranduolo was one of the properties of the Gherardeschi, Counts of Volterra. Thus we are dealing with leading figures who were presumably involved in this royal scheme to reorder the anthropic landscape, and their participation and/or collaboration perhaps led to a similar organization of construction projects. This may have also featured the use of building techniques that were not very dissimilar, from one context to another, with the predominance of an irregular masonry technique, often alternating with more regular courses of stonework (Bianchi 2021).

However, such important transformations, featuring the use of stone and lime mortar, are not present only in building site contexts that include mortar mixers. Indeed, they are also found at other sites, such as the aforementioned case of Scarlino, connected to the Aldobrandeschi. The fact that much pottery datable to the later 10th century would suggest an important phase in this period also at the castle of

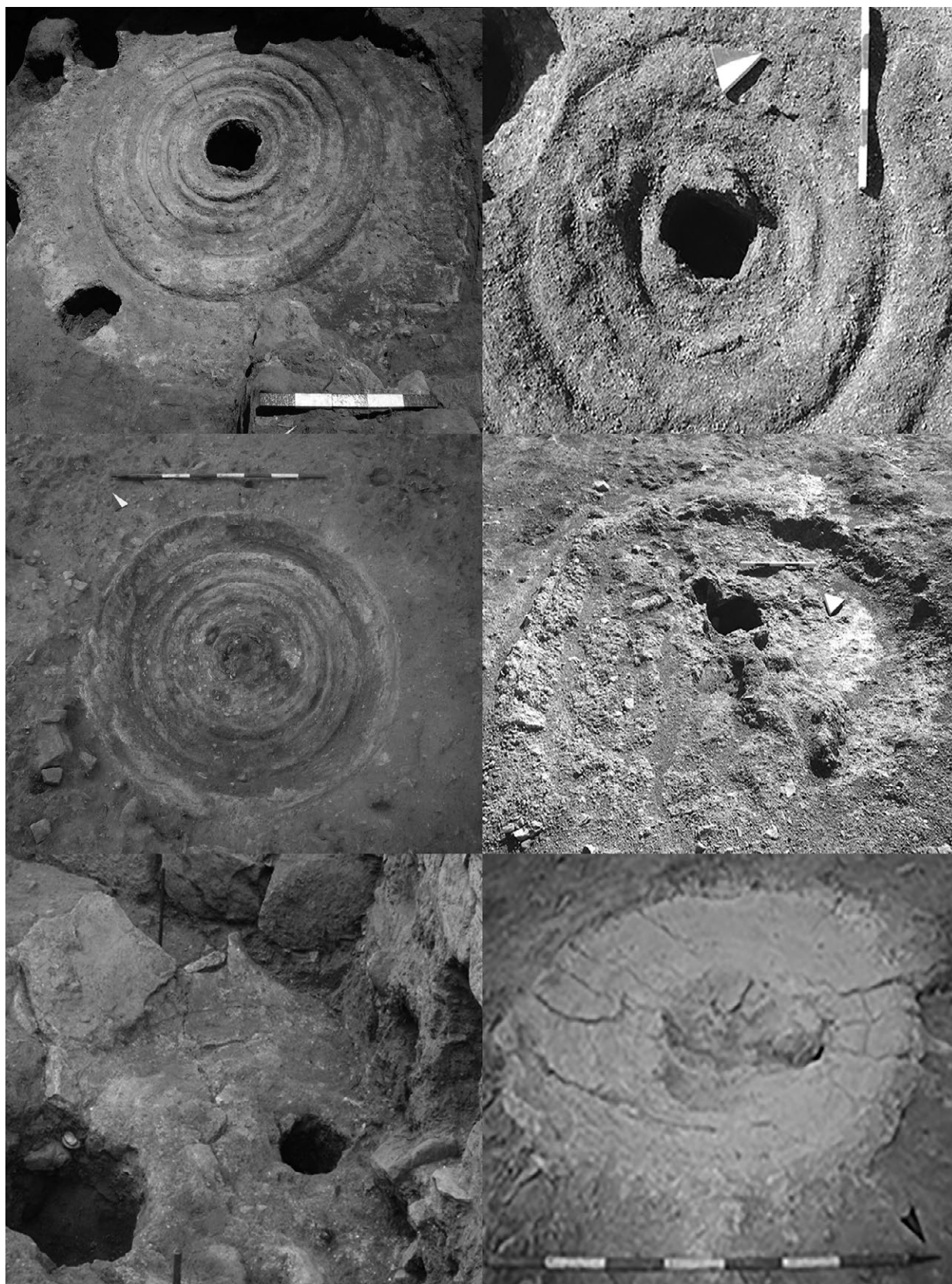


Figure 6.4 - Remains of mortar mixers. Left: the three mixers found at the Torre di Donoratico site. Right (from top to bottom): the two mixers at Vetricella, and the one at Rocca Alberti, (from Bianchi, Collavini 2018).



Figure 6.5 - The hilltop site of Campiglia Marittima in the early 11th century (from Bianchi 2004, illustration by Studio Inklink Firenze). The stone-built defensive wall was added by the illustrators despite the absence of physical evidence for its existence.

Capalbiaccio, situated to the south of Grosseto, which is yet to be investigated archaeologically on an extensive basis (Hobart *et al.* 2009).

Nevertheless we also know of sites where such transformations are not to be seen. An emblematic case is Campiglia Marittima (Figure 6.5), where excavations on the hilltop have revealed, for the late 10th to 11th century phase, a small group of huts with a masonry socle, probably delimited by an outer feature of which no trace was found (Bianchi 2004). In 1004, and thus while these huts were inhabited, Campiglia is referred to as a castle owned by the Della Gherardesca family, at the height of their expansion from Volterra to the western coast. However, according to the suggestion made by Ceccarelli Lemut, the same document mentions the castle of Rocca San Silvestro, which had no fewer than two stone-built outer walls (Ceccarelli Lemut 2004, 2-3). Thus, two sites are described in the sources in the same terms, while having very different tangible features. Also very similar to Campiglia was the hilltop site of Montemassi (Bruttini 2009), whereas 10th century phases are completely absent at the site of Castel di Pietra (Citter 2009), to cite two other cases lying within our case study area. Thus, this narration has led us to a crucial point, namely the way in which the alleged reorganization of public properties is intertwined with the dynamics at the basis of encastellation processes.

In more recent analyses by historians of written documentation, emphasis has always been placed on the fact that the earliest fortified sites were insubstantial in physical terms. Dating especially to the 10th century, they often only have a seigneurial residence and an outer defensive wall (see, most recently, Carocci 2018 and bibliography). Well before the nEU-Med project, I stressed the disparity in terms of physical remains between castles such as Campiglia and Donoratico, to cite the aforementioned examples (Bianchi 2010), which can also be found in other cases in northern Tuscany and the Po valley (which I shall discuss in the next chapter). In the early years of the nEU-Med project, to underline this difference, I adopted the definition ‘out of scale’, to refer to sites subjected to major transformations, compared to those unaffected by such operations (Collavini, Bianchi 2018). How can these ‘out of scale’ sites be described? They are definitely castles, especially where these are referred to as such in the documents. However, in the light of findings for our case study, I believe that these castles acquired their form and layout precisely because they were directly or indirectly linked to this process of top-down reorganization.

I shall try to explain myself even more clearly. As I have stressed several times in the case of the Aldobrandeschi, the involvement of this family in the major transformations especially in the Ottonian period saw them involved mainly in their capacity as Counts, and the transformations that took place at some sites which they owned occurred because they took a direct and willing part in the larger plans that were set in place within a public framework. We could make similar statements for the Della Gherardesca family, and for the bishop of Lucca, as well as for the bishop of Volterra. Thus the lead players in the first phase of castle formation, for those sites that were to be key nodal points for control of territories and of their resources, within the framework of public reorganization, were certainly the nobility. However, the positive outcome of their actions was directly proportional to the involvement of the *publicum* within a single overall scheme in which there was no distinct opposition between the two sides. Obviously not all sites linked to the most powerful nobility were involved in this process, but only those that, as stated above, were supposed to play a key role in controlling certain territories, along with their resources (for example San Silvestro for mining, as opposed to Campiglia, which had a more customary farming vocation, both being connected to the Della Gherardesca family). In these contexts, and in this time period, towers appear for the first time: this was the case at Donoratico, for which we have the physical remains, and also perhaps at Rocca degli Alberti, associated with the new stone-built outer wall, and the bishop’s court of S. Vito in Cornino where, in 996, a similar building is mentioned in the documents.

A tower, within public properties, was a highly distinctive feature. In the case of Valli, the tower standing at the centre of defensive ditches was a prominent feature in the skyline of the whole plain. The tower of Arcidosso stood out on the slopes of Monte Amiata, and in the fourth section we shall see other cases outside this territory.

Accordingly, the appearance of this architectural feature at out-of-scale sites could be seen as a telling sign of ‘public quality’ (Bordone, Sergi 2009, 115), a marker indicating a common policy that was close to the spheres of public power, and lending economic and social prestige to those who held that power.

Thus a tower was able to represent the clearest symbol of a link with the public powers that was necessary in order to allow the aristocratic family to flourish and develop. Such a link was still very significant in the 10th century for the political fortunes of the nobility, and, for that same nobility, it was an important ‘investment in the future that set its sights on autonomy from the central powers’ (Cortese 2017, 199).

If, on the basis of what we have stated thus far, we were to try to imagine the late 10th century anthropic landscape in our study area, we would have to see it as a large-scale network. On the one hand the main nodal points, formed by the large areas occupied by public/royal properties. On the other hand the larger or smaller, more or less fortified settlement nuclei, with a reinforced architectural form depending on their function, linked to episcopal, monastic or secular aristocratic ownership and scattered like

nebulas around public lands. However, all this existed within a macro-sphere controlled by the public powers, that allowed the various parts to be connected together, avoiding excessive fragmentation and fostering contacts also between remoter areas (for example between inland mining sites and the coast). The way this system functioned was closely linked and enabled by the work and the dynamism of the communities anchored to this territory, the social structure of which it is hard to put into focus owing to the lack of specific written documentation.

However, all the major transformations under way, which we have been discussing here, are themselves the very things that describe their activities to us, and this is especially evident when we analyse changes in the natural landscapes.

6.2.2 Agricultural and woodland landscapes

Over the last few decades, as part of excavations at many hilltop sites in this territory, archaeobotanical research has made an important contribution with the study of anthracological remains, and studies of the carbonized caryopses of cereals often found in storage facilities such as silos or granaries. This was the case, for example, at the sites of Rocca degli Alberti at Monterotondo Marittimo, Miranduolo, Donoratico, Rocchette Pannocchieschi, Cugnano, and before them Montarrenti. In this way it has been possible to reconstruct part of the woodlands and agricultural environment connected to the site (for a summary, see Buonincontri *et al.* 2017; Di Pasquale *et al.* 2014). In order to gain a broader view of the use of land and its transformations, in the Grosseto area a series of research studies have been conducted. Setting out from the geological concept of Land Units, these have led to the definition of Land Unit Maps for an analysis of the potential uses of land (Citter, Arnoldus Huyzendveld 2014). By cross-referring Land Unit Maps with historical maps, archaeological findings, the study of place-names, roads, and former land divisions, it has been possible to partially reconstruct the context, although this cannot be securely extended to periods prior to the 13th century. Moreover, despite the quality of the applied methodology, this reconstruction is destined to remain hypothetical, owing to the lack of verification in the field. In the area of Roselle, namely in the oft-mentioned valley of Salica/Vigna Nuova, an earlier assessment was made possible thanks to the Emptyscapes project, by means of an extensive magnetometry campaign accompanied by the use of other remote sensing methods, as well as verification of features by means of targeted trial excavations (Campana 2018). This enabled a preliminary reconstruction of an entirely unexpected anthropic and natural landscape, the physical features of which constituted a major stimulus for the interpretation that I proposed in chapter III.

With the nEU-Med project, geoarchaeological and archaeobotanical analyses were conducted on-site and off-site in the valleys where the two royal courts of Cornino and Valli lay, with special attention to the Pecora valley. On-site analysis took place hand-in-hand with the excavation at Carlappiano and Vetricella, while off-site analysis was conducted by means of targeted exploratory excavations, field surveys of sequences visible without excavation, and natural and artificial sections (in particular the sections of a detention basin for the river Pecora, created in 2015, which cut into the former bed of the same river, 50m wide and 3m deep). In addition to these activities, there was a campaign of geochemical soil analyses, and deep mechanical borings inside or along marginal sectors of historical wetlands, documented right up until the end of the 19th century, with the extraction of 8 continual core samples in the former lagoon in the Cornia valley, and 4 core samples in the Pecora valley, from 5m to 10m long. The work was later enhanced with historical map analyses, aerial photos, LiDAR and DTM analyses³. The chronology of the sedimentation was determined thanks to the numerous radiocarbon analyses of organic remains.

I have dwelt on the various specialists who have worked in the field, and on the type of analysis, in order to give the reader a better idea of how these investigations have yielded a considerable volume

of information that is able to fill in the frequent gaps in our knowledge of the characteristics of early medieval rural landscapes. These findings have been described in more detail in the individual chapters dedicated to the various local territorial contexts. To avoid repetition, and for brevity, I will go back over the most significant results, citing them from the works referred to in note 3, and also offer a general overview.

We shall thus begin with the two royal courts. Both were sited in a lagoon environment that had remained stable since the late Holocene, without seeing any major changes as a result, even in the transition from the Classical period to the Early Middle Ages, as was established via analyses of deep core samples. The main economic vocation of the two courts (salt and iron) may also have derived from a conscious assessment of their respective lagoon environments: the environment linked to Cornino, which was more suited to saltworks since it had large, dry dune systems associated with shallow waters (like the environment in which the site of Carlappiano stood) near the mouth of what is now the Corniaccia (identified as the river Cornia, mentioned in early medieval sources) that could supply fresh water for the salification works; and the environment of Valli, the strategic point of arrival for iron from Elba, with less pronounced and smaller dune systems, but featuring a system of larger or smaller ancient river beds (as well as the Pecora) that ensured a supply of freshwater for use in iron-working, and a supply of wood from the nearby woods, providing the fuel that was needed for the various phases of metallurgical production cycles.

Indeed, the woodlands that stood on the low-lying land near the lagoon of Valli were dominated by deciduous oaks, the main representative of the oak family being the Turkey oak. In this phase, according to the Tuscan model, the plain must have been almost uninhabited. However, intense human activity is indirectly testified to by the transformations that we see in the Turkey oak woodlands. Archaeobotanical analysis shows that the practice of coppicing these Turkey oak woods (Figure 6.6), namely periodically trimming the trees in a regular way to create a stump, allowing smaller shoots to grow from it for use as firewood, while allowing other trees to grow tall and develop large trunks. This also created an environment that was also suited for pig-farming. However, this multiple form of production (grazing animals, and forestry for wood) in Turkey oak groves had the effect of undermining the fertility of the woods, and archaeobotanical data indicates an increase in the depletion of the woodland topsoil in this very period, as of the mid-10th century, just when the court itself is presumed to have reached the height of its activity, especially as regards iron-working (resulting in a peak in demand for fuel). The absence of conditions allowing proper regeneration of the Turkey oak woods led to an intensification of more resistant species such as the ash tree, and indeed its use increased exponentially as of the late 10th century, as is seen in the archaeobotanical record.

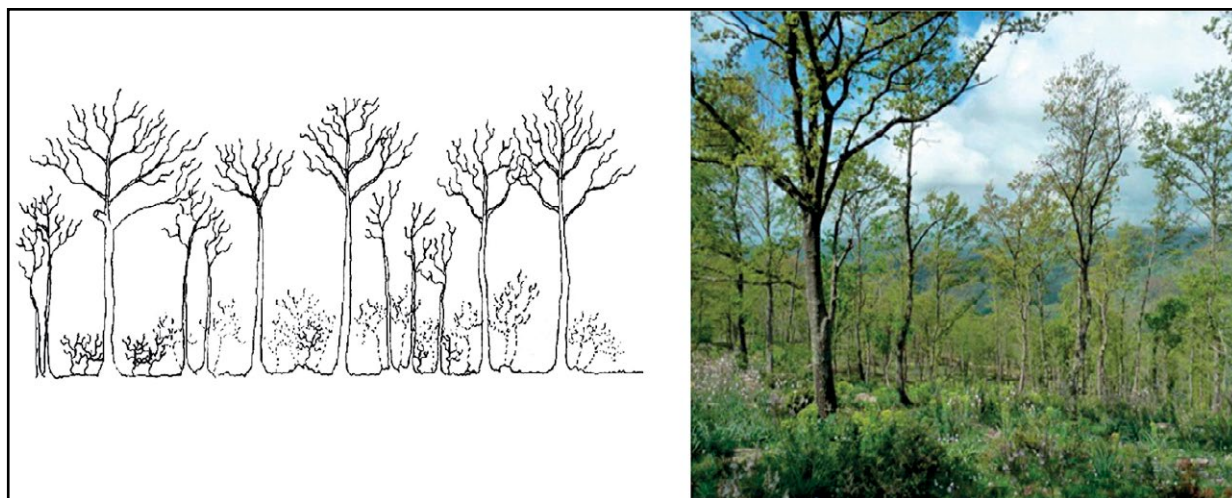


Figure 6.6 - Schematic drawing of coppiced wood, and a photo of a wood with the same characteristics in the Chianti area.

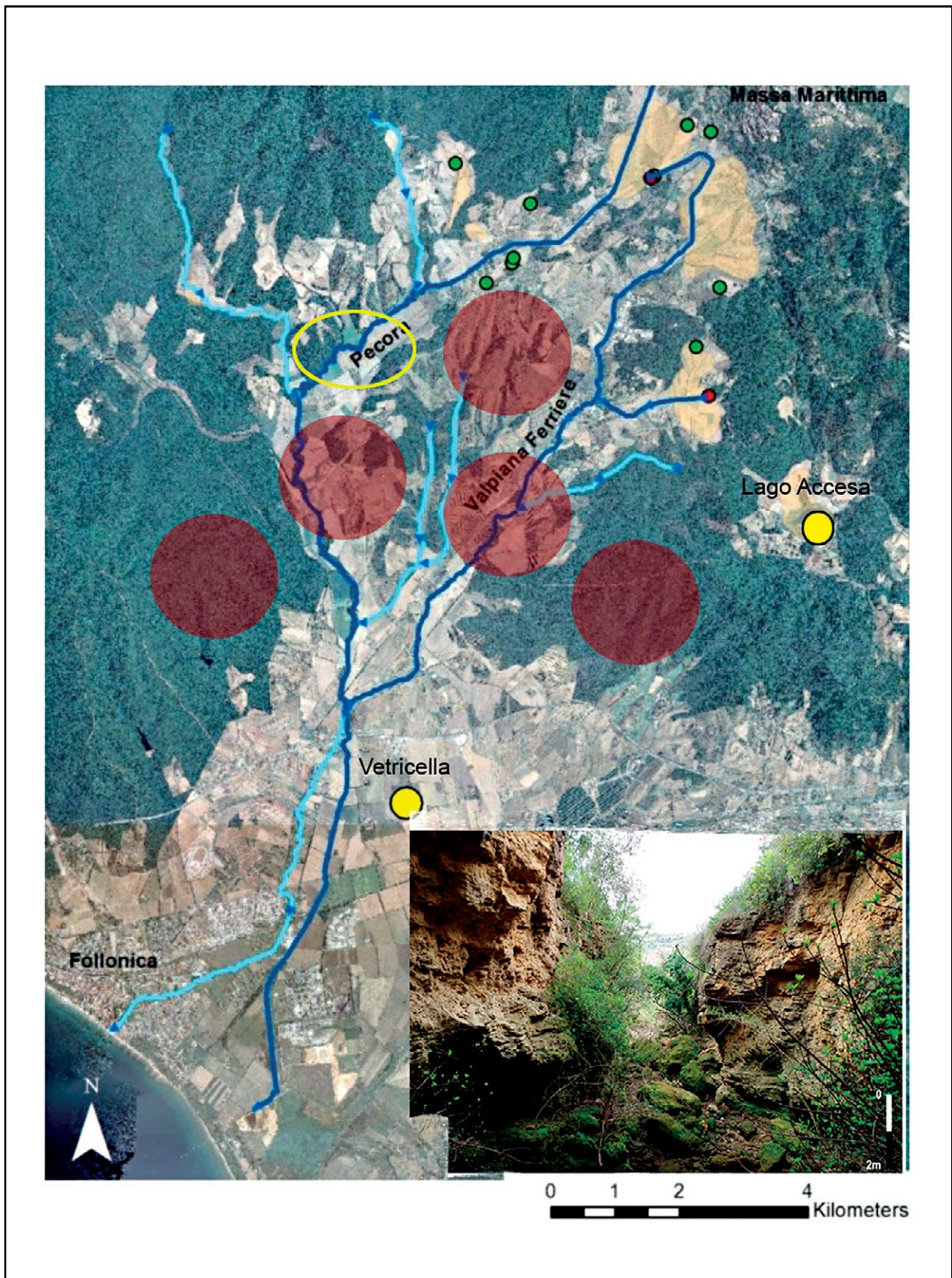


Figure 6.7 - The course of the river Pecora. The red circles show areas with evidence of fires. The yellow circle shows the zone where some of the clearest cases of erosion of, and cuts in, the calcareous tufa are found, such as in the photo (bottom right).

Analyses of the infill of the paleochannel of the river Pecora, the former Teupascio known from early medieval sources, identified in the section of the dry detention basin, is evidence of further effects on the landscape from human actions.

In this case, and exceptionally, multidisciplinary investigation shows us physical indications of a gradual but constant redefinition of the bed of a river and of the surrounding landscape. This process of change increased in the Carolingian period, and became more invasive during the Ottonian period. It is by no means easy to sum up the research process in just a few words, and for more details I refer readers to chapter I, section 2, and especially to the articles by Pieruccini *et al.* 2018, and Pieruccini *et al.* 2021. To start with it is worth noting that the river Pecora originates upland from Massa Marittima before flowing into the lagoon area, where the court of *Valli* was located (Figure 6.7). In its initial section, it flowed through a marshy area of low-lying land to the south and west of modern-day Massa Marittima, featuring a system of natural drops in its level (i.e. barrages) that in several instances created a sort of natural barrier, leading to the formation of pools and waterfalls. Regarding this context, we can sum up as follows: within the infills of the paleochannel found in the detention basin further downstream, fragments of Calcareous Tufa were found. These were recognized as having come from the geological formation upstream, which stretches across the plain below Massa Marittima.

The greater downflow of waters downstream was not caused by variations in climatic conditions, but by manmade cuts and diggings upstream (and the Calcareous Tufa downstream are the main proof of this), which in many cases eliminated natural small-scale falls and obstructions. These cuts (in Figure 6.7 we see one identified by the geoarchaeological survey), and the subsequent infill of the former river course further downstream, with calcareous tufa, began as far back as the later 7th century, and increased considerably as of the mid-9th century, before then growing exponentially as of the mid-10th century. In the case of one of the larger ancient diggings, which went on to create a sort of canyon in the valley, radiocarbon dating of carbonized soil deposited above the artificially cut limestone marks the start of this action, as occurring at a time between 862 and 994.

Why did this happen?

The justification for all this could be seen in a gradual process of transformation in this upstream area which, as already noted, lay within one of those corridors that led from the coastal royal court of *Valli* to the hub of Massa Marittima, and thereafter to the mineral deposits in the *Colline Metallifere*.

It is possible that the various cascades along the river encouraged the construction of watermills, for which we have valuable documentary evidence. In the low-lying area below Massa Marittima we know that land holdings owned by the bishop of Lucca already existed as of 746. In 867 censuses relating to the use of a watermill situated in the same plain all converged on the nearby episcopal court of Casale Longo, in the Cornia valley. The right to construct a watermill was granted by the bishop to a prominent member of the Aldobrandeschi family, namely Ademari, the brother of Hildebrand II (Farinelli 2017, 83-84), first Count of Roselle and Populonia (Collavini 1998, 78). He organized the provision of water for the mill, as stated in the document, by means of a system of water channels presumably excavated in the Calcareous Tufa mentioned above.

As well as indicating how the mill itself was supplied with water, presupposing deep excavation in the natural limestone soil, the documentary reference is significant because it bears witness to this kind of involvement on the part of both an important member of the Aldobrandeschi family, who gravitated among the king's vassals, and the bishop of Lucca. These two personages had a pronounced public physiognomy, and were clearly involved in the transformations in this plain, and it is likely that they were also engaged in the changes involving the fully-fledged royal watermills that we only find mentioned in 1135 (Farinelli 2017, 67).

We do not know the purpose of the activities connected with the watermills. Perhaps they served to grind cereals, but I do not feel able to exclude a connection to metallurgy, at least in the 11th century, when Farinelli cautiously suggests such activity also as regards the mills attested to by the documents for Monte Amiata (Farinelli 1996, 43). For that matter, in chapter I, section 4, I stressed that, in this valley too, below Massa Marittima, and not only in the plain, processing may have taken place of minerals from the Colline Metallifere, and of minerals from the Bruscoline and Serrabottini deposits, located in the nearby hills. We know that these were certainly exploited at least as of the second half of the 12th century (Aranguren *et al.* 2007a, 86; Dallai 2022).

Carving and shaping the rocky ground connected to structures associated with metallurgical facilities that exploited the hydraulic energy of the river Pecora was, for that matter, a practice that continued over time. Indeed, later on, in the 13th century, channels dug into the calcareous tufa, and housings for water-wheels, were connected to the metal-working facilities at Pian delle Gore (Dallai 2014, 75-79). What makes us certain of an incisive partial excavation of palaeosols, especially in the phase between the second half of the 10th century and the first few decades of the following century, are the radiocarbon dates of the most sizable level of infill of the former bed of the Pecora (Figure 6.8) in which, in a deposit 1.5m thick, which formed between 850 e 1050, one metre is occupied by strata containing our calcareous tufa, datable to between 974 and 10505.

However, geoarchaeological research ascribes these earth-moving operations, especially the larger-scale operations, not only to possible water channels designed for watermills but also to the need to ‘open up’ larger paths for the water to negotiate the occasional waterfalls and rapids. The purpose was to make sure that the water flowed more smoothly and efficiently all the way downstream, thereby commencing a gradual process of land drainage in the marshy area below Massa Marittima. This notion is confirmed by another highly important finding, ie. the characteristics of the anthracological finds made together with the pieces of Calcareous Tufa in the dried-up river bed.

Archaeobotanical study of these finds associates their appearance, in the same time period and at the same rate as seen in the case of the Calcareous Tufa, with manmade fires designed to burn off vegetation (Figure 6.7). As of the mid-7th century and up until the mid-9th century, the vegetation affected by the earliest fires were plants growing in wetlands that were seasonally and/or perpetually flooded. Accordingly, fire went hand-in-hand with the first drainage and land-clearance schemes, although these were occasional and had little impact on the system of Calcareous Tufa. By contrast, the mid-9th century coincides with the start of the most significant land-clearance phase, with more extensive tree-felling, in woods dominated by deciduous oak, and larger land-clearance fires to burn off riparian vegetation, which were encouraged as of the second half of the 10th century. The gradual and continual disappearance of tree cover coincided with ever larger spaces being opened up for the purposes of grazing animals, or for agriculture, as is also confirmed by the fact that carbonized caryopses of cereals from rustic species such as *Triticum dicoccum* (spelt) or *Triticum monococcum* (einkorn) were also found in the paleochannel. This trend is also confirmed by the AC3/4 pollen sequence identified at the nearby lake called Lago dell’Accesa (Figure 6.2, Drescher-Schneider *et al.* 2007), later discussed further and linked to the wider territory in Buonincontri *et al.* 2020a.

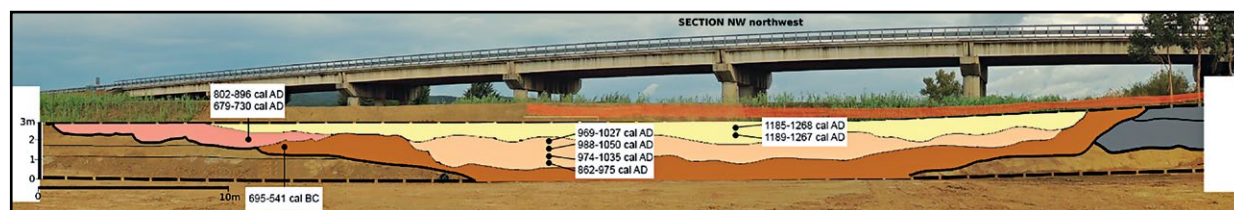


Figure 6.8 - Section of Pecora paleochannel showing stratigraphic sequences and relative radiocarbon dates.

By means of pollen analysis, and similarly to the findings from the sediments of the paleochannel of the Pecora, an increasingly intensive reduction in woodland is clearly visible between the mid-9th and early 11th centuries. By contrast, we see a corresponding gradual growth in pollens associated with herbaceous plants typical of farmland and fallow land (possibly used for grazing and pasture), and of trees grown for their fruit, such as chestnuts and olives. Therefore, after the mid-10th century, land suitable for farming became more widespread, associated with a clear strategy aimed at improving and cultivating new foodstuffs, a prelude to the future agrarian landscape of the middle centuries of the Middle Ages.

Pollen data from Lago dell'Accesa, also as of the 10th century, attests to a more intensive exploitation of woodlands also for mining areas, where a further use of wood would have been for fuel.

I have discussed these findings at some length in order to show that this set of transformations that we clearly see from geoarchaeological and archaeobotanical findings, in other words from tangible data, and not from retrospective interpretations of a landscape, are indicative of their scale of reference. If we put together all the evidence that has been gathered, we find ourselves faced with a total change affecting a large territory, from the coast to inland parts (around 500ha), which took place across a timespan of basically one and a half centuries, at a time when, as we have posited, the royal properties in this territory were subjected to a reorganization that was already significant in the late Carolingian period, but which became greater in their extent in the Ottonian period. Such results, and on such a large scale, could only be achieved by joint action between the royal power by agreement with the secular and ecclesiastical aristocracies that gravitated in these territories, and thanks to the work of the local communities.

Thus, interpreting these processes, too, in terms of two opposing views, either top-down or bottom-up, would certainly mean diminishing their scope and complexity. It was to the advantage of the royal authority to make use of the good level of agricultural specializations within the communities. An example of one such community was at Rocca degli Alberti which, between the 8th and 9th centuries, in perpetuating systems of crop-growing that were typical of the Roman world, stored high percentages of wheat compared to legumes or lesser cereals (Bianchi, Grassi 2013). By the same token, it is possible that these communities, composed of medium-sized and small landowners, derived an advantage from these major landscape transformations, benefiting from the creation of new areas for farming or for pasture. This regardless of the fact that in some instances these changes might trigger mechanisms involving the formation of an accentuated social hierarchy (as is presumed for Miranduolo, Valenti 2008), or that, in other contexts, the nobility were more pervasive in managing harvests, especially as of the later 10th century, with granaries or storage spaces becoming more substantial structures at settlement sites (Bianchi, Collavini 2022). Bearing in mind the overall picture that I have tried to outline for the Pecora valley and its hinterland region, it is definitely more immediate to interpret apparently isolated evidence found in other parts of our case study area, and link them to these findings.

This is the case with water channel systems, and possible agrarian partitions and farming paleosols identified using intensive magnetometry in the Salica/Vigna Nuova valley, which have also been analysed with a number of core samples. These have enabled them to be dated to the phase of maximum development of the two sites with defensive moats, between the 10th and 11th centuries. In this investigation context, in which the same geomorphologists from the nEU-Med project also worked on a preliminary analysis, the presence of the water channels was also linked to the diversion of run-off water in the former marshlands in the Salica valley (which was gradually drained as of Late Antiquity, Campana 2021), on the basis of a *modus operandi* for which there are parallels in the upper Pecora valley. The agricultural palaeosol identified in a section near the site of Brancalete, standing just outside the Salica valley, has a wavy section that can be likened to the ridge and furrow ploughing system

present in early medieval central Europe, which also helped to drain lands that were subject to flooding (Campana 2021, 50).

Heading inland towards Monte Amiata, the exceptional find of 160 chestnuts (some whole and others fragmentary) found at the 10th-11th century site of Castel Vaiolo, and used as food, could also perhaps be linked to the situation that is well documented by the pollen phase of Lago dell'Accesa as regards the second half of the 10th century, when fruit-bearing trees, such as olives and chestnut trees, are found to be more widespread. Since the soil characteristics here make the area less suited for growing this species (Nucciotti 2007, 667), and since it stands within the western slopes of Monte Amiata, which, at that point in time, are thought to have come under direct royal management, this could be an indication of a possible planning of the landscape. Thus, the differing scale of action and political calibre of the players involved, and the differing population dynamics, is also paralleled in the various different levels of action on the natural and agricultural landscape, but within the same overall system.

Similarly, this diversity of levels also seems to be visible in aspects relating to the material culture which we shall focus our attention on in the next section.

6.3 Production and circuits of exchange

6.3.1 Resources and production areas

The link between early medieval public properties and resources is a subject that has also been addressed in recent articles relating to Tuscany. Often, in the absence of archaeological data, and with few documents available, reference has been made to the connection with woodlands and areas having a high potential for agriculture, resources that were fairly widespread in landscapes of this period, which undoubtedly played an important role in decisions by the public authorities regarding the places where they should invest. However, in some articles on this subject (in particular Bianchi, Collavini 2018), the emphasis has been placed on the more complex nature of the relationship between public properties and resources, in an open and dynamic circuit of exchange, in which the public courts must have played an important economic role in managing production processes and processes involving the transformation of a number of more specific resources.

With our case study, in the previous chapters, I have sought to show the scale of strategic decisions as regards specific production cycles, as well as the possible forms of mining, the hypothetical scale of production, and their overall volume of production. I would like to go back over these characteristics in order to reconstruct an overview, chiefly on the basis of physical evidence.

Minerals are the resource that I have focused on most. The majority of the territory under examination (Figure 6.9) was distinguished by the presence of mixed sulphides from which iron, copper, lead and silver could be extracted. We find deposits of these in the Colline Metallifere near Grosseto, in the districts of Massa Marittima and Livorno (and especially in the area around Rocca San Silvestro). Seams of mixed sulphides are also evidenced around Batignano, namely just higher up the Salica/Vigna Nuova valley in the province of Grosseto, as well as along the slopes of Monte Amiata, where important deposits of mercury (especially cinnabar) and iron are also present. Alum quarries existed in the Monterotondo Marittimo, Montioni and Massa Marittima areas. Ferrous oxide formations are known on the island of Elba, and, of these, hematite and magnetite were mined especially, being concentrated in the eastern part of the island.

For the medieval period, the areas that have been investigated best archaeologically are those lying within the Colline Metallifere, along with the zone in and around Rocca San Silvestro. By contrast, no systematic mining archaeology research has ever been undertaken for Monte Amiata, and the Batignano mines. The island of Elba has also been investigated very little. We know a little more about the island



Figure 6.9 - Location of main resources in relation to public-owned areas (shown in red).

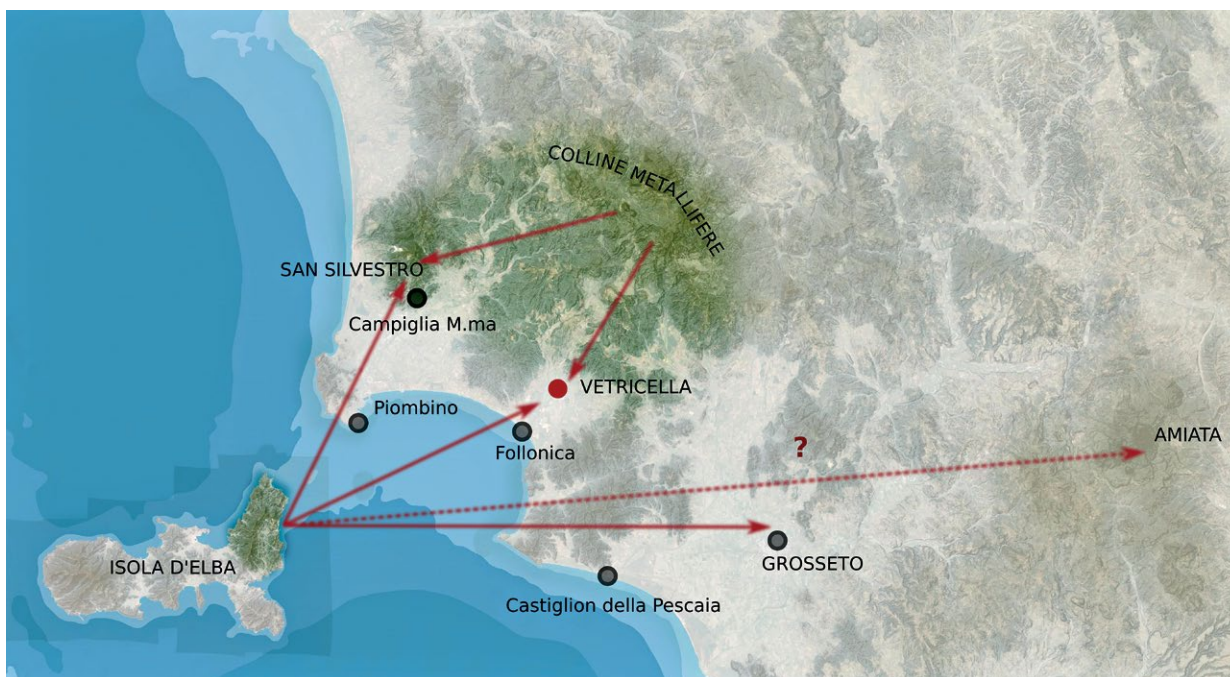


Figure 6.10 - Map showing circulation of iron from extraction sites to processing sites.

for the Late Middle Ages, but nothing for earlier phases, given the absence of systematic investigations here too, unfortunately. Overall, much data has been gathered for the Colline Metallifere, making this the best-known mining district in all of Italy, and one of the most well-known cases in all of Europe.

We must refer to the outcome of this latest research work (reported in the individual chapters) for a chronological framework in relation to the various different production cycles.

Prior to the nEU-Med project, at a conference held in 2015 (later published in 2018, Bianchi 2018b), which was greatly influenced by the historical and archaeological interpretation of the late medieval castle of Rocca San Silvestro, and of its link with mining for metals for striking coinage by the new communal mints (Francovich, Wickham 1994), I proposed for the Early Middle Ages a connection between the inland areas and the coast around Follonica (in particular with the site of Vetricella, which had not yet been investigated in depth) regarding the exploitation of lead and silver. At the time of that conference Vignodelli's article (Vignodelli 2012) had only just been published. This positioned *Valli* and *Cornino* inside the economically strategic royal courts named in the dower of Hugh of Arles, and trade and circulation linked to silver seemed to me to be a valid justification to explain, in particular, the significance of the court of *Valli*. The reasoning was also based on work that had been published up until then regarding iron exploitation in the Early Middle Ages. These works imagined this form of exploitation as having been fragmented, very targeted, often circumscribed in time, and mainly for the purposes of self-sufficiency (Cortese 2008; 2014).

With the European project, our ideas gradually changed, and iron took on increasing significance. Here I shall sum up the reasons for this change of tack. The first piece of evidence comes from finds made during excavation at Vetricella, namely the centre of the court of *Valli*: 1660 fragments, representing 1574 iron objects of various kinds (Agostini 2020). Despite the very high number of finds, this is certainly only a part of those present on the site, given that the excavation covered barely a quarter of its total area. This presence suggests that the items must have been produced in the area immediately surrounding the site. Moreover, the dates for the deposits, and dating of the objects themselves on the basis of typological comparisons, confirmed that most of them were made mainly between the second half of the 10th and the first half of the 11th centuries. The huge disparity between these amounts of finds and the number normally found for these time periods even in large-scale excavations, in this part of Tuscany and in other areas in the region, underlined the altogether significant scale of iron production documented here, which is clearly to be ascribed to activities that exceeded the purposes of mere self-sufficiency. This observation is backed up by the fact that the finds made at the site which may have been designed for farming or forestry (in other words objects needed for the daily activities in the place itself) represent only a minimal percentage of those associated with horse-riding and craft activities.

Archaeometric analyses of slag material (Volpi *et al.* forthcoming), and definitely for 9th-11th century phases, have established the use of hematite from Elba at the same time as the use of iron-bearing minerals from the *Colline Metallifere*. This is evidence of large-scale and well-organized supply circuits. The interpretation of the vocation of this court is discussed at length in chapter I, sections 3 and 4, where I suggest that its centre, corresponding to the site of Vetricella, was a sort of hub which took in articles made in the surrounding plain, where the abundance of fresh water and fuel facilitated the various phases of reduction and forging cycles (which can be surmised from the characteristics of the slag that has been found). This site was also a collection point for pieces that were to be recycled, as well as semi-finished articles.

The series and range of metallurgical processes that took place in this plain, and perhaps also in the *Pecora* valley further upstream, are highly indicative of the processes, still invisible today from written documentation and from the archaeological record, that can be imagined as having taken place contemporaneously on the island of Elba, too. Indeed, in chapter V, section 5, I argued that this is confirmed by the circulation of hematite from Elba, in this period, at other sites in this territory or in neighbouring areas beyond Vetricella, namely in Grosseto, and at Rocca San Silvestro and Donoratico.

By working backwards, in other words by setting out from what we are told by the documentary sources for the Late Middle Ages, I have suggested (chapter IV, section 1) that hematite from Elba also arrived on the slopes of Monte Amiata. In addition, on rereading a series of archive reports and physical evidence,

I posited that, between the 10th and 11th centuries, another iron production zone was located here, specifically on the western slopes of the mountain, whereas just such a production zone is already well documented as of the 12th century.

Thus iron would seem to be one of the fundamental resources in this territory, especially thanks to the possibility of implementing the practice, as referred to at several points in previous chapters, of combining the malleable metal from Elba with the more impure iron from inland areas (both from Monte Amiata and from the Colline Metallifere). This practice is well attested in manuals dating to the modern era (Farinelli 1996, 45-47), and can also be verified archaeometrically with certainty at Vetricella and in the furnace at Rocca San Silvestro (Cucchiara *et al.* 1987). The custom would have ensured improved quality and resistance in the production of certain tools (especially blades or sharp tips).

The other piece of evidence pointing in the direction of this economic vocation, pushing metal production for coinage into the background, are isotopic analyses for the provenance of silver-bearing lead in numismatic finds (Chiarantini *et al.* 2021 for all the following information). The nEU-Med project focused greatly on this research, and financed these analyses on the largest sample of coins ever used for this purpose anywhere in Italy: a total of 120 coins minted between the 8th and the 14th centuries, all coming either from archaeological excavations, collections, or museums. For coins produced in France in the 9th century, these analyses resulted, somewhat predictably, in an isotopic signature referring to mineral fields in central Europe, and specifically the mining area of Melle, the site of the largest mines in the Carolingian era (see the specific articles on the Melle mines in Bompaire, Sarah 2018). By contrast, surprisingly the denari coined in Lucca and Pavia during the Ottonian and Salian periods (24 examples examined) revealed a signature identifying the lead as coming from the mines in the Harz massif, an area that saw major exploitation in the Ottonian era (Chiarantini *et al.* 2021, especially the final technical specifications for individual mining zones, with bibliography; Matzke 2018, 143). This lead displays very different isotopic characteristics from those found in the Colline Metallifere samples, and are therefore easy to distinguish from them. This evidence takes on significant importance that is highly representative, because it was obtained from the screening of a large sample of coins, and it does not exclude the possibility that some of the raw materials, albeit perhaps a very small part, may also have come from the Colline Metallifere. This possibility is suggested by the fact that in 4 of the 44 coins examined, minted between the 9th and 11th centuries, the isotope findings are compatible with a possible mixing of Colline Metallifere minerals and minerals from central Europe.

This finding points us towards the sites of Cugnano, Rocchette Pannocchieschi and Rocca San Silvestro, attested archaeologically as far back as the start of the Early Middle Ages. In all the contexts involved, I have already stressed that a considerable transformation can be identified as of the end of the 10th century. This increase in tangible evidence that can be attributed to more organized site planning may be the result of a greater desire to exploit resources found in the subsoil (e.g. iron), and a greater need to do so. However, in the absence of clear archaeometallurgical remains (we only have a reduction furnace at Rocchette Pannocchieschi, although its production cycle seems unclear), we cannot rule out the possibility of a greater interest in lead and silver, too.

However, as I have noted on several occasions, for the mid-9th century, again thanks to isotope analyses, we have indirect proof of the use of lead from the Colline Metallifere in the glaze that was used to partially decorate pottery made in the mid-9th century near the site at Torre di Donoratico. Indeed, the isotope analyses themselves reveal that in some pottery wares the glaze was made using a mixture of lead from the Colline Metallifere and from northern Europe, presumably from Melle, given that the isotope values fall in the vicinity of those for this area which was a major mining area in the Carolingian period (Fornacelli *et al.* 2021).

At this point, I believe that the findings are sufficient to advance a reconstruction of how metallurgical production may have been organized between the 9th and the 11th centuries.

As regards iron (Figure 6.10), we may posit that it was mined contemporaneously both in the Colline Metallifere, from where it was transported via Massa Marittima and the Pecora valley to the court of Valli, and from the mines on Elba, arriving by sea via the ancient Roman port (Portus Scabris/Portigliani) located at the extremity of the lagoon, and which was still functioning, before being transported to processing points located in the plain. We cannot exclude the possibility that the ore (although not found in large quantities in the plain) may have come from both provenance areas, prior to being subjected to the entire processing procedure, as opposed to semi-finished articles, which only needed to be forged. In the latter case, we have to suppose the plausible existence of reduction activities both on Elba and at intermediate sites among the inland mining villages and the coast, which were naturally predisposed to serve this purpose, being rich in fuel and water.

The material record attests to the existence of these circuits at an early date, as of the second half of the 9th century, when the administrative centre of *Valli* took shape with the three concentric ditches, and when activity there reached a peak at the end of the 10th century, at the height of the Ottonian era.

Only a series of clues suggest a similar process also on the slopes of Monte Amiata, where hematite may have arrived along the Ombrone, via Grosseto (where it is attested in urban excavations), before then being transported by land to the hinterland. This was certainly a shorter and more direct route, originating from Elba, compared to the port of Talamone where, in the Late Middle Ages, owing to the political fragmentation of the territory, hematite arrived that was bound for Monte Amiata and perhaps for the monastery of San Salvatore (Farinelli 1996, 48).

For lead, copper and silver, as stated earlier, there are few traces, but these are significant.

At Vetricella, in the infill of the middle ditch, the remains of two crucibles were found. These items were usually used for the final phase of smelting of these metals. Unfortunately, analysis of the internal residues did not reveal traces of their use⁶. By contrast, the site of Poggio Cavolo, in the Grosseto area, yielded three crucibles dating to the Ottonian period, and these revealed traces of copper, lead and silver (the tests were conducted by Laura Chiarantini and Marco Benvenuti, and are reported in Farinelli, Vaccaro, Salvadori 2008). We do not know the origin of these minerals, but the presence of the crucibles, which are so rarely found, tells us that the final phases of a production cycle took place here, in the context of production involving several different metals.

Thus we can presume that, also in the case of lead and copper, as for iron, there were circuits that brought semi-processed pieces from mining sites to the sites where final transformation took place, situated in the most significant nodal settlements in the territory, and also of likely public ownership (as I posited for Poggio Cavolo).

For the other subsoil resources, referred to at the start of this section, we are unable to say much, except to stress a number of possible associations.

Regarding alum (Figure 6.9), in particular, it is significant to note that the probable centre of the royal complex of Gualdo del Re was located very near the quarries at Buca dei Falchi, in the same way that the Montioni deposits were located in the vicinity of the courts of Cornino and Valli, as well as being close to Massa Marittima. In view of the manifold uses of alum, the metallurgical skills attested to in the area under investigation, and familiarity with the use of alum in Lucca, which is also referred to in one of the recipe books of the *Compositiones Lucenses* copied at Lucca between the 8th and the early 9th centuries, it is appropriate to include this resource among those linked to the public courts in the Cornia and Pecora valleys (Bianchi, Tomei 2020).

However, we cannot state more than this, given that archaeological evidence attests to the fact it was certainly exploited at Buca dei Falchi only as of the 16th century (see most recently Dallai 2020).

Similar observations can be made also for the exploitation of cinnabar in the Monte Amiata area.

In this connection, one is certainly struck by a well-known fact that is often overlooked when this resource is discussed, namely that the Monte Amiata cinnabar deposits are among the largest and richest in Europe, and were exploited in the historical era, along with those at Almadén in Castile-La Mancha. This is no minor detail, in view of the attention that we see in this territory ever since the Carolingian period, and even more so in the Ottonian period, towards investments in areas rich in specific resources, often located in the subsoil.

In chapter IV, section 1.5, among the various uses of cinnabar, I mentioned its use in metallurgy to purify gold, and especially its use as a primary pigment. As such, it was also used in writing, and to decorate parchments, thanks to its bright red colour, which could appear in various different shades. As a result, there may have been an interest in this resource also on the part of a school of writing for the purposes of producing documents and books, namely the school that formed under Abbot Winizo at the start of the 11th century (Marrocchi 2014, 115ff).

At present this is only a suggestion, but I am keen to underline it, pending further studies in the future, since there is no documentary or physical proof that definitely tells us that cinnabar was exploited in the Early Middle Ages, apart from the presence of monastery properties in areas that were rich in these deposits (as in the case of Selvena), and their interest in these areas.

As regards salt and its importance (Figure 6.9), this has already been underlined in many studies dealing with the coastal area under examination. These studies have traced documentary evidence of its exploitation in the Early Middle Ages (connected to Chiusi's link, in the 8th century, with the Pecora valley and Lake Prile; Ceccarelli Lemut 1985, 26; Tomei 2020, 27; and connected to Lucca for Cornino, also in the 8th century: Farinelli, Francovich 1994, 451).

Following the recent investigations in Cornino, it was suggested that an important salt production site may have existed in the part of the lagoon between Carlappiano and Torre del Sale. It was posited that this was associated with the administrative centre that may have been located on the Carlappiano dune itself, where the late medieval saltworks revealed thanks to our excavation (chapter II, section 2) continued to exist.

Despite the existence of a lagoon, it has been presumed that Valli's vocation predominantly involved iron-working, although archaeological investigations have identified traces of saltworks, in this area too, datable to the protohistorical period (Aranguren, Castelli 2006). Prudently, in the previous sub-section I also posited a strategic decision in relation to salt production, following a possible awareness that the geomorphological conditions of the Cornino lagoon were better than those at Valli, as established by our multidisciplinary research.

For the Grosseto area, as well as the saltworks of the Piscaria court, standing on the northern edge of the lagoon, for the Early Middle Ages it is thought that other saltworks stood in the area near the north-western edge (Arnoldus Huyzendveld 2007, 54-55). This is an important piece of evidence, given that this salt production site would have been closer, in that phase, to the possible major public hub that hinged around Roselle-Moscona, and in particular around the sites of Aiali and Brancalete. Indeed, 'white gold' may have been the chief economic resource for this well-defined public area, too.

Thus production processes linked to iron and salt would seem to be those that were predominant within our case study, at the time of maximum activity on the part of the public overlords. Other production processes seem to have existed alongside these, connected to other subsoil resources, such as lead, silver and perhaps copper, alum and cinnabar.

It is nevertheless worth noting that many parts of our territory also featured geothermal phenomena, meaning that there were large areas with hot water springs which could be used to create possible pools for thermal baths. Their connection to royal properties is clear in the case of the upper Cornia valley, where the probable centre of the Gualdo del Re complex coincided with the place-name Balneo

Regis, a low-lying area where a structure called Bagnaccio still exists today. As far as can be seen today, this displays masonry mainly dating to the modern era, but this is superimposed on pre-existing built features of considerable size and importance, which have been partially revealed by a very recent excavation that is yet to be published (chapter II, section 3).

Meanwhile the area around Monterotondo Marittimo, near the former Gualdo del Re, introduces us to another resource, and its associated production zones: clay deposits.

Local pottery production is linked to these deposits. This subject was dealt with by a specific task under the nEU-Med project, with a multidisciplinary approach that involved geomorphologists, geologists, chemists and archaeologists. The aim of the work was to explore and verify, by means of a series of archaeometric analyses, the theories formulated by Francesca Grassi regarding the existence of workshops specializing in the production of pottery wares found at various sites in this territory (Grassi 2010). To this end, the characteristics of the clay beds in the local territory, including those of a well-known clay quarry active since the Roman period near Monterotondo Marittimo (Dallai *et al.* 2009), were compared with the characteristics of the fabric of pottery that circulated between the 8th and 11th centuries (the results of this research are published in Ponta *et al.* 2020, which is the source for all the findings outlined here below). The sites which the sampled pottery came from, which was found by means of archaeological investigation, are the same as those already encountered in previous chapters: Paterno, Castiglion Bernardi and Rocca degli Alberti, sites that gravitated around the public court of Gualdo del Re; Rocchette Pannochieschi and the nearby site of Ficarella; and Vetricella. Also, some of the pottery found in field-walking surveys from the 1980s at Montorsi, near Roccastrada, was analysed again and included within the sampling scheme. Here it is plausibly thought (given the high amount of kiln waste) that there was a workshop active between the 7th and the 10th centuries, for

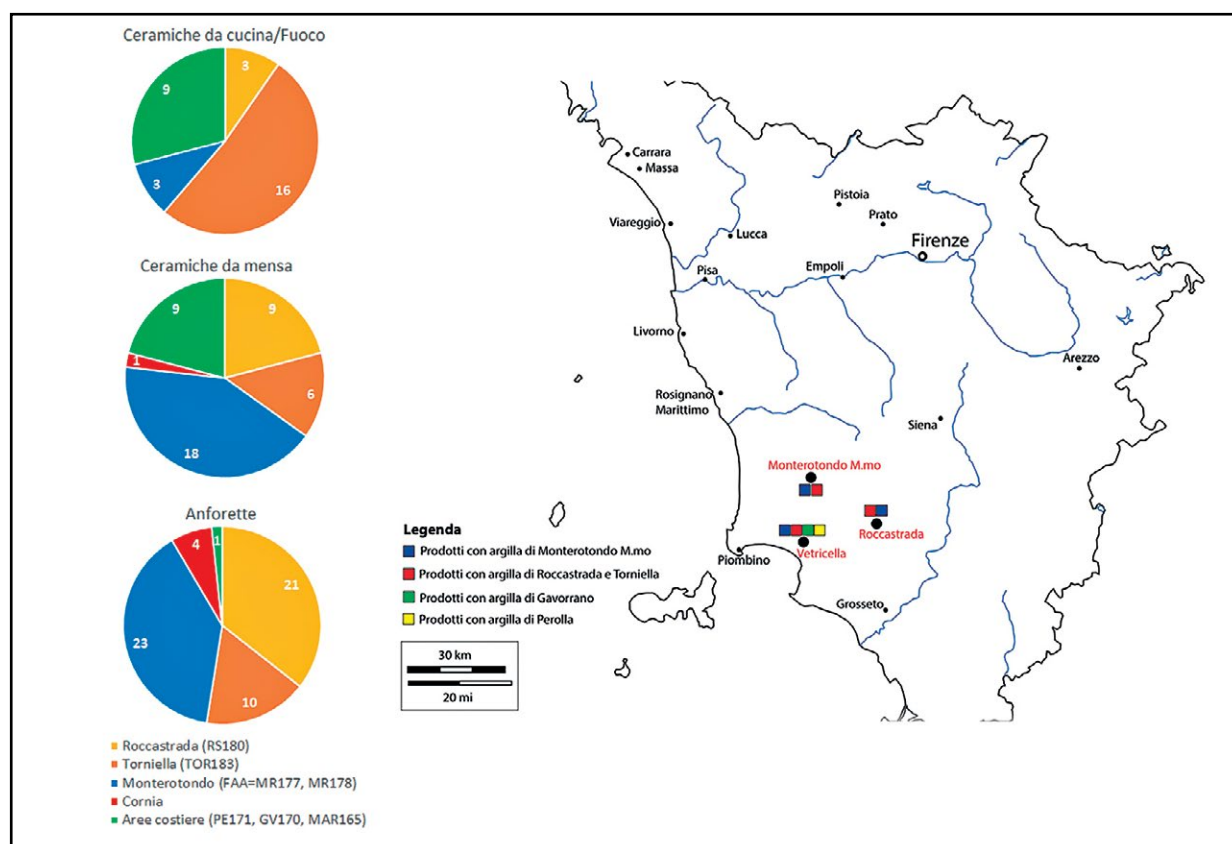


Figure 6.11 - Left: diagrams of provenance areas of raw materials in relation to functional groups of pottery analysed. Right: the presence, in the areas analysed, of pottery products made using the sampled clays (adapted from Ponta *et al.* 2020).

the production of plain, undecorated ware made using levigated clay (Guideri 2001). In these three sample areas, Monterotondo, Vetricella and the Roccastrada area (Figure 6.11), 24 sediment samples were taken, of which only 8 were used for the comparative study, since they were found to be most suited for pottery production, on the basis of their physical and chemical characteristics. Meanwhile 135 pottery samples were subjected to analysis. These were chosen by selecting the most significant forms, as per the findings in Grassi's study, and also on the basis of the most recent investigations at the site of Vetricella. The pottery wares include undecorated coarseware, undecorated levigated wares, and undecorated semi-levigated wares. These were represented by jugs, lids, jars, and a large number of 'small amphorae'. This latter pottery form, which I have already discussed in previous chapters, features a globular body with a double strap handle attached at the shoulder. No fewer than 232 examples of these have been reconstructed with finds from Vetricella alone, and in addition others, found in smaller quantities, come from Rocca degli Alberti and Rocchette Pannocchieschi, and these were also included in the sample.

Collectively, this was ordinary cooking ware or examples of storage vessels. Overall, the archaeometric analyses certainly confirmed the existence of two supply zones: the Monterotondo area, with special reference to the deposit at Fornace, and the Roccastrada zone, the supply area for which consisted in the clay beds near Montorsi, Torniella and Perolla. In addition to these, there are two probable areas that supplied clay from quarries closer to the coastal area and the Cornia valley, but the location of which is still uncertain. As for the repertoire of shapes, which remained fairly homogeneous for much of the Early Middle Ages, in the case of pottery made with clay from the Monterotondo area greater typological variety was noted than for pottery made with clays from the Roccastrada area, which also displayed more simplicity in their forms. These characteristics incline one towards the belief that the workshops were situated near the supply points of the raw materials, as had already been suggested in the past for Roccastrada thanks to finds of kiln wasters.

However, the finding that is of a certain interest with a view to a greater understanding of these production contexts is that pottery produced in the Monterotondo area has been found in the Roccastrada area, and vice versa, while at Vetricella, the collection point for products from various different locations, we find large quantities of pottery made in both the aforementioned areas, and also in the coastal area that is yet to be located with certainty (Figure 6.11). Accordingly, this seems to show a more complex reality, already outlined in part by Grassi (Grassi 2010, 23-24), marked by the presence of household industries (along the lines of those identified by Peacock 1982). These are defined as centralized rural craft centres, sharing the same technological and general processes, and choice of forms of a certain level, operated by part-time artisans. In this more carefully structured system, for the circulation of these pottery wares we could posit possible third sites for trade and exchange between producers and consumers, or else the presence of intermediaries (Arthur 2010, 67).

Unfortunately we do not have such in-depth analyses for the other parts of the case study area analysed here that might allow us to make a detailed comparison with the findings made between Monterotondo and Roccastrada.

For the time being, an important link between these coastal public complexes and pottery production consists in the 'small amphorae' (for a study of these, which the following section refers to, see Russo 2020; 2021; 2023). Their production (Figure 6.12) in the Grosseto area has been mooted at Podere Serratone, at a date around the mid-9th century (850±65, Vaccaro 2011, pl. CVII, Type 2). Other traces of similar vessels were found, in 9th-10th century contexts, for example, during field surveys at Casa Steccaia and Casa Andreoni (Vaccaro 2015), in urban excavations in Grosseto, in excavations at Poggio Cavolo, and during the first surveys at Vigna Nuova and Casoni del Terzo (Valdambrini 2006; Citter 2007a, 150-151). The fact that some kiln wasters were found in the urban excavations in Grosseto does not mean that they could not have been made at this site too (Valdambrini 2006, 474). Compared to the

amphoras from the area to the north, these have slightly different formal characteristics, as are the types of fabric, despite the fact that they can all be ascribed without doubt to the same vessel type (the reference here, again, is to the articles and book by Luisa Russo).

In the case of the Vetricella amphoras, thermoluminescence analyses attest that they were produced as of the 9th century, and that production intensified during the 10th century, and continued up until the later 11th century. These vessels are rather small, being designed to contained between 7 and 14 litres. The few analyses of organic residues (which are therefore not statistically significant) reveal the



Figure 6.12 - Location of findspots of 'small amphoras'.

presence of wine and grape juice, or the total absence of any organic residue (indicative of contents that did not leave traces, such as water or cereals). Similar findings were made by analyses of the internal surfaces of the examples found at Poggio Cavolo (Vaccaro, Salvadori 2006, 480), while an amphora-like vessel found at Podere Serratone displayed traces of oil.

The fact that they were widespread especially as of the mid-9th century would seem to attest to a single, common strategy of long-standing local production, in relation to the transportation of various types of goods in this coastal macro-territory, as well as in the hinterland, in view of the fact that these vessels, found at Rocca degli Alberti and Rocchette Pannocchieschi, are also starting to be recognized from the site of Miranduolo (Nardini 2018, 291).

The presence of good-quality clays in the Donoratico area too is linked to the existence of the other important specialized production hub, previously mooted by Grassi but confirmed and studied in more detail by Briano (Briano 2021), relating to the production of sparse glazed ware. This ware has been discussed at some length in previous chapters, also owing to the indirect information that these analyses have provided for exploitation of local lead. Indeed, the mixture of this locally sourced lead with lead from northern Europe, which was actually used alone in some samples, suggests that some forms of production may have been linked to possible specialist itinerant artisans who may have come from outside local technical circles. These may have been called in by elite figures (the site at Torre di Donoratico has been interpreted as a court of the monastery of S. Pietro di Monteverdi) who were also able to activate trading in raw materials from distant places.

Thus all these forms of production, taken together, viewed overall and above all anchored to the general historical context characterized by the major public and royal hubs in this area, offer a different idea from the picture that has been proposed up until now, whereby areas with a high propensity for production existed only in northern Tuscany, also thanks to their proximity to the major urban centres (Cantini, Grassi 2012, 129). Indeed, the new scenario contradicts an equation (more urbanized areas = more and better production) that had already been called into question in the past (Gelichi 2004, 61-62).

6.3.2 Exchange networks

The subject of transportation routes brings us to the last issue to be discussed in this section, namely trading circuits.

At several points in previous pages I have noted that all the evidence gathered, when taken together, leads one to posit the existence of an extensive, active network, made up of nodal settlements and production sites, also referring (in the case of mining territories) to large, well-defined and distinct areas.

Of all the rivers that flowed through this territory the Ombrone, the second-biggest river in Tuscany, is the largest. However, geomorphological analyses allow us to suggest that it was only navigable between its mouth and just beyond Grosseto (Arnoldus-Huyzendveld 2007, 55-56). Despite the absence of a major river, such as the Arno, that could be used to the full for transportation linked to commerce, the area analysed by us was nevertheless characterized, also thanks to the geography of the landscapes and its accessible valleys, allowing easy travel, by a complex system of roads, with many other roads branching off, allowing the circulation of salt, minerals, pottery, iron utensils, agricultural products and wood.

Indeed, transportation links between different parts of the area were supplied by major and minor roads. Numerous studies have focused on these, and so I will not dwell overlong on them here, preferring instead to sum up only the main details. In the coastal area the two main Roman roads, the Via Aurelia and the Via Aemilia Scauri, which were still usable for the most part, allowed road travel between the public nuclei in the Grosseto area and those at *Valli* and Cornino, as well as affording a route to northern

and southern Tuscia, and the Lazio area (Dallai *et al.* 2006; Celuzza *et al.* 2007, especially 212-219). Lesser roads, traversing the Pecora and Cornia valleys, enabled travel to inland, mineral-rich territories, while a network of roads spread out around the lagoon of the river Cornia, leading to the promontory of Populonia (Dallai 2016). Main roads led off from the consular roads that skirted the Grosseto lagoon, leading inland: one of these, crossing the Salica/Vigna Nuova plain, passed through Paganico, and then split into two roads, one leading to Siena, the other towards the Val d'Orcia. This route joined up with the Via Francigena and, via one of its offshoots, also with the monastery of S. Antimo. A second road probably continued from Istia d'Ombrone towards Campagnatico, arriving at Arcidosso via Cinigiano, and linking up with all the routes towards Monte Amiata (and its monastery) and the Via Francigena (Campana, Felici 2020). Monte Amiata could also be reached by the main road that passed through Paganico, with a deviation to cross the river, probably at Sasso d'Ombrone, then reaching Cinigiano.

The territory also had its own ports (Figure 6.13), largely inherited from the preexisting system of harbours from the Classical period, which have also been the subject of many studies (notable among which are Citter *et al.* 1996; Celuzza *et al.* 2007, 214-221): Falesia, situated at the western end of the Piombino lagoon, invisible archaeologically after being destroyed by the city's industrial development, but documented and active up until the Late Middle Ages; Portus Scabris, referred to as Portigliani

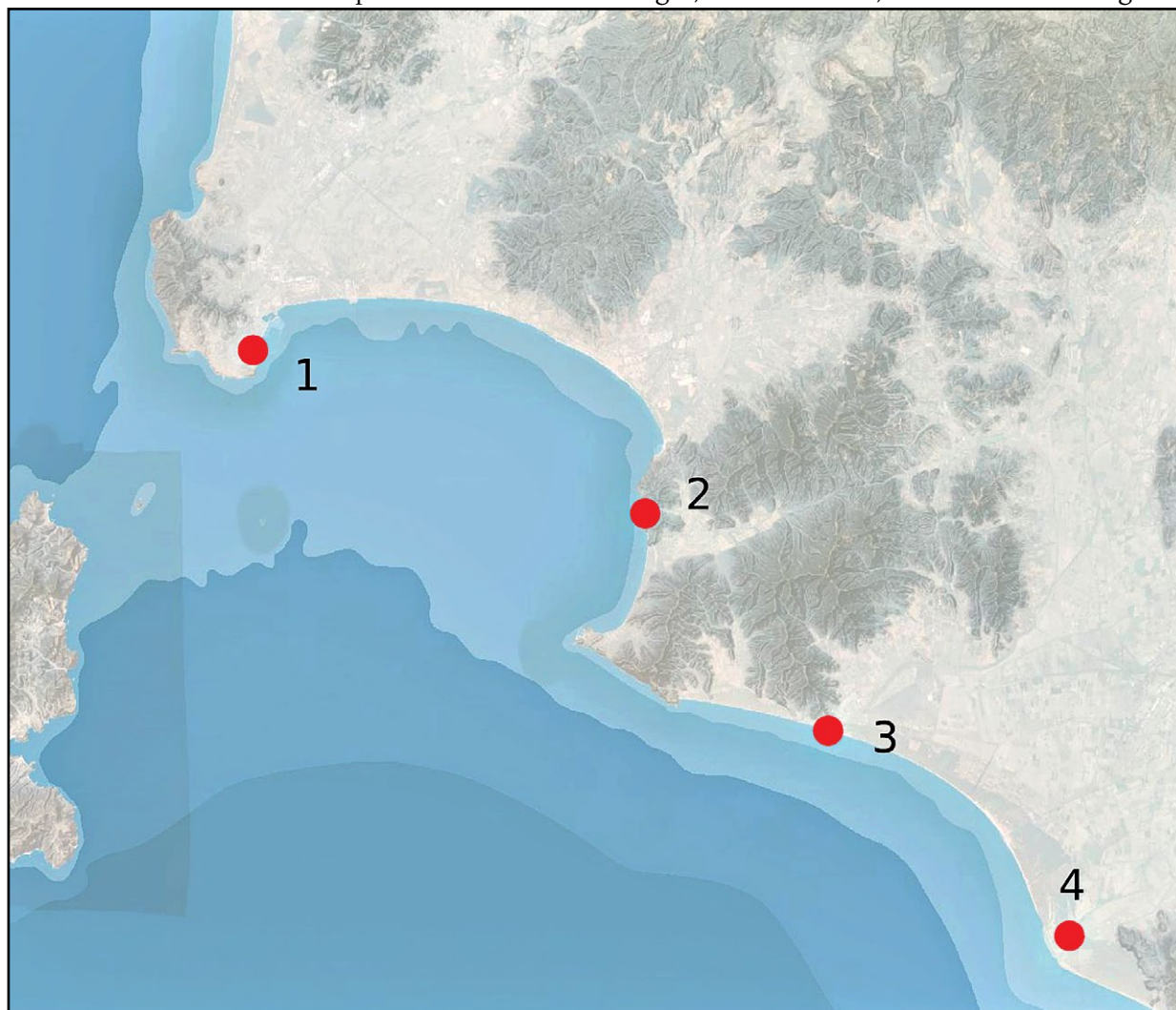


Figure 6.13- Location of areas where early medieval maritime ports stood: 1) port of Falesia; 2) portus Scabris/Portigliani; 3) possible landing-stage at entrance to former Lake Prile; 4) possible landing-stage at mouth of river Ombrone.

(Ceccarelli Lemut 1985, 31); the port of Castiglion della Pescaia, situated at the point where the lagoon meets the sea; and the harbours at the mouth of the Ombrone. Regarding the latter, we know that in the Roman period one was situated near the inlet of Scoglietto and was active, as shown by archaeological excavation here, at least until the 6th century (Vaccaro 2011, 96-103). In the Early Middle Ages the harbour's location changed as a result of coastal advance, and in relation to the new mouth of the river (Celuzza *et al.* 2007, 217), but the presence of an important court, Caliano, controlled since the early 9th century by the Aldobrandeschi family, and lying near the river-mouth, probably marks the continued existence of a working landing-stage. In discussing our case study, the most significant findings come from Portus Scabris itself, thanks to the analytical study conducted by Emanuele Vaccaro on pottery found during the emergency excavations when the new port of Scarlino was constructed (Vaccaro 2018). Analysis of thousands of fragments (and thus a particularly meaningful sample) shows continuity of use of this harbour throughout the Middle Ages (as also attested to, from the 11th century onwards, by written documentation). Having already summarized these findings in chapter I, section 5, here I will simply note that, for a long period of time, between the 8th and the 11th centuries, evidence for the site being frequented comes from a fairly tiny number of basic pottery forms: 5 amphoras in all, 4 of which are datable to the first half of the 8th century. Two of the globular amphoras identified are perhaps of Aegean production and from north-eastern Sicily, while a third globular amphora, dated to between the 8th and 9th centuries, is of uncertain provenance. In addition to the amphoras there is one heavy glaze vessel (Forum Ware), and 1 sparse glazed vessel, made in Lazio. Finally, two vessels have been identified made of undecorated ware with levigated, 'a pasta chiara' fabric, from Lazio. Overall, we are looking at a very tiny number of objects, compared to the quantities of pottery that were circulating in this harbour up until the 6th century.

A few fragments of heavy glaze ware have been found immediately inland from Portus Scabris and Falesia (at Vetricella, Podere Aione, Scarlino, Carlappiano, Rocca San Silvestro, and Cugnano). More significantly, more finds attributable to this pottery ware were found at the Acropolis of Populonia. These two facts suggest that the two harbours, as well as serving as stop-offs along coastal sailing routes from the south heading north, in particular from Campania and Lazio, also acted as a collective distribution point, albeit on a limited scale, for imported pottery bound for sites in the immediate hinterland and along the coast. Some of these sites were particularly important, as in the case of the presumed comital seat of Populonia, which has also yielded fragments of painted pottery from parts of Campania and Lazio (Figure 6.14). This role seems less evident for harbours in the Grosseto area, where only at the site of Poggio Cavolo do we find painted ware from Campania and Lazio. Of course we cannot rule out the possibility that the ports, or at least Portus Scabris, also acted as a channel for incoming luxury goods, such as the glass goblets with long stems and a round foot found in considerable quantities at Vetricella, and in smaller numbers at other inland sites. Indeed, typological and archaeometric analyses of the Vetricella finds have suggested the area of Rome and Lazio were the provenance of the remains of 20 goblets, made between the 10th and 11th centuries by recycling older glass, which have parallels in finds made at the Crypta Balbi excavations (Castelli 2020; Gratuze 2020; Gratuze *et al.* 2023).

On the basis of these findings, I have posited that the strategic role played by these ports, especially the port of Portus Scabris about which we have more information, was connected above all not to goods and to circuits spanning the Tyrrhenian, but rather to the arrival of a specific raw material, namely hematite from the island of Elba, which we have evidence of both in the Pecora valley and in Grosseto. I have also posited that these ports served as exit points for specialist products linked to the royal centres, specifically salt and iron objects or semi-finished goods. The suggestion was already made in my 2018 article with Collavini (Bianchi, Collavini 2018) that these products circulated between one court and another, or between public courts and urban centres, specifically Pisa and Lucca, without excluding the area of Lazio.

Regarding salt, it is clearly and obviously impossible to follow the routes it travelled without documentary support, which, for example for the Cornia valley, we only have in the mid-8th century, finding further references to such transportation only in the Late Middle Ages.

For iron, the physical traces of which are far more substantial, following its entire operational chain is nevertheless problematic from the archaeometric point of view, by using the finished objects to trace the definite extraction and processing sites. The presence of hematite from Elba in deposits connected to the metalworking structures found in Piazza dei Cavalieri in Pisa, and in the Loggia dei Mercanti at Lucca (see chapter V, section 5), only helps us (although this is no small aid) to imagine a traffic in raw materials from the island of Elba, bound for urban centres. Traditional, formal analysis of ordinary, everyday iron objects (knives, nails etc.) unfortunately confronts us with typologies having such limited variations that it is not possible to determine specific areas of production, nor to identify any specific chronology.

Despite the lack of specific information on the traceability of outbound products, the survival of the harbours dating from Classical times, and their use throughout the Early Middle Ages, is evidence of the continuation of maritime connections by ships that hugged the coast, serving specific points along the coast occupied (at least in our case study) by public/royal hubs.

Turning instead to trade within this territory, we must return to the arguments outlined in chapter I, section 4, regarding the anomalous finding of coins during the Vetricella excavation (21 numismatic finds, datable to between the late 9th and the first half of the 11th centuries). Given that these were found in secondary deposit, in order to explain the origin of the primary deposit reference was made to a suggestion by Alessia Rovelli, namely that a treasure-chest held inside the central building was broken up (Rovelli 2020, 89). The idea is certainly plausible for the denari issued in the period of the Kings of Italy, and found inside the tower, but is less arguable in the case of the Ottonian coins deposited in the upper parts of the infill of the inner moat. It was also suggested that these finds might be linked to the payments (*censi*) paid to the administrative centre of the court, since this form of payment in coinage is frequently attested in this territory (Ceccarelli Lemut 1985, 28-31). However, another proposal has not been discarded, namely Alessio Fiore suggestion that the coins found outside the tower, especially those dating to the Ottonian period, may be evidence of the purchase of a production surplus, in the case of the court of Valli, perhaps identifiable in the iron objects (Fiore 2020a, 202) or, we might add, in the objects not of local production (for example the stemmed goblets) that arrived at this court via the more wide-ranging public channels. In this latter event, the administrative centre of *Valli* might, therefore, have been the site of possible commercial transactions, or of a fully-fledged market.

For Tuscia, we have reports of grants of this sort by the Emperor as early as the time of Louis II. One example is a diploma in 851 in which the bishop of Volterra was granted the right to hold two markets perhaps in the city, as well as the one sited near the episcopal church, and another market located at the court of Camporise (Cortese 2017, 110, note 106).

The existence within this network of other markets has also been proposed in the Grosseto area, specifically for Istia di Ombrone, a strategic spot near to both the river Ombrone and the road that led to Monte Amiata and towards Roselle, where the first reference to a market dates to 1032 (Citter 1995).

The supposition of the existence of a market at Lamula, as far back as the Early Middle Ages, on the basis of 12th century documentary evidence (Nucciotti 2006, 184) presently lacks any tangible, physical corroboration. Arguments in support of this hypothesis, which I formulated in chapter IV, sections 1.4 and 1.5, are, I realize, wholly inductive and based on Lamula's proximity to Arcidosso, perhaps the most important inhabited nucleus of all the mining landscapes connected to iron exploitation on the western side of Monte Amiata, as well as on the idea that the late medieval market was a continuation of a market that existed in previous centuries.

The lack of trade with central and southern parts of Italy, despite the existence of maritime routes, did not however exclude the arrival of imported products from circuits that connected this part of Tuscia with other areas to the north, by which I mean northern Tuscany, northern Italy, or Europe itself (Figure 6.14).

Regarding raw materials, as already stated, in the mid-9th century we see lead from the Germanic area being used in the sparse glazed pottery produced at Torre di Donoratico (Briano 2021).

The blue glass found at Vettricella and in the church at Montieri has the same composition as other blue glass objects that circulated in central and northern Europe, suggesting that they arrived in Tuscia and a few other places across Italy from these production centres (where Late Antique glass was recycled) (Gratuze 2020; Castelli 2020).

The finding of the a small lead drive-wheel, part of a drill, from the site of Vettricella, may also be connected to the output of workshops north of the Alps. Indeed, this object, which has an outer ring connected by four spokes to a perforated central cylinder, has various parallels with similar objects found in north-western Germany, dating to between the 9th and 10th centuries: the context in which it was found is particularly interesting, given that other attestations relate by and large to political and economic places of central importance, such as palatia, emporia, or fortified centres (again, see Agostini 2020, 41, for a bibliography on parallels).

A small bronze cross, found in a secondary deposit at the site of Poggio Cavolo (Grosseto province), also harks back to the Germanic area. It is comparable with Carolingian finds datable to the first half of the 9th century, found in burial areas in Westphalia (Campana *et al.* 2005, 479).

Finally, we must mention the brooch (or fibula) found in the excavation at Rocca di Scarlino in secondary deposit. This find consists in a central part occupied by a bird perched on a branch, and a wide decorated edge. In previous publications, this brooch was given a Carolingian date. The most recent parallels found, in association with the development of the nEU-Med project, have found very close analogies between the Scarlino brooch and a similar find from excavations at the Andone castrum fortification, in France. This was founded by the Count of Angoulême in around 975, before being abandoned between 1020 and 1028. The object has been dated to between the end of the 10th and the beginning of the 11th centuries, and is comparable to very similar Ottonian brooches circulating in the Germanic and Anglo-Saxon areas, while a considerable number of similar objects have been found in modern-day Slovenia. In the case of the Andone example, a possible local production has also been suggested, imitating the aforementioned repertoire (Bourgeois, Biron 2009, 125-130). A similar date could also be given to the Scarlino brooch. In this context, and in view of events and developments in the same decades at the royal court of *Valli* below Scarlino, it is possible to place the brooch within the network connected to the circuits of the same royal ownership.

However, the most striking example of physical evidence that points us in the direction of workshops in northern Italy consists in the brooch found in the church at Montieri (chapter IV, section 3). According to John Mitchell, this piece was made between the late 10th and early 11th centuries, perhaps in the artisanal workshops of Milan by jewellers who were open to complex and wide-ranging cultural influences partly connected to northern Europe, where we find almost all the few parallels having the same type of jewel (Bianchi *et al.* 2015; Bianchi, Mitchell 2017).

For all these examples, we are looking at what were basically luxury items, which we could also indirectly relate to the arrival of lead for sparse glazed pottery. However, it is interesting to note that the circulation of such items took place between northern Europe and central and northern Italy, excluding, except for a small number of products, the Mediterranean area and southern Italy.

Meanwhile, as for imports of everyday goods, the range shortens, and is again restricted to central and northern Italy. This is the case with the 14 fragments of 'pietra ollare' (jars) found at the Acropolis

of Populonia, which can be ascribed to 8th-9th century production in the western central Alps (Dada 2011, 401). For plain, red-painted storage vessels, which circulated between the 9th and 10th centuries (found at Scarlino, Vetricella, Rocchette Pannocchieschi, Populonia, Campiglia Marittima, and Torre di Donoratico), it has been suggested, on the basis of a number of archaeometric analyses, that they came from workshops in the Pisan Valdarno (which we shall discuss in the next chapter), although the possibility has not been excluded that they were made locally (Grassi 2010, 20-21).

Additionally, there are other, more complex types of circulation which, rather than involving tangible goods relate to intangible, empirical knowhow. In our territory this is attested to in several fields, and is more clearly manifested in the Ottonian period (Figure 6.14).

One such example consists in the mortar mixers, already mentioned in the second section of this chapter (to which I refer readers for bibliographic references), which clearly exemplify a form of



Figure 6.14 - Provenance zones for objects and knowhow found in case study area.

knowledge closely linked to a historical moment, and certainly imported from central-northern Europe (in particular from the Germanic Empire) by specialized, skilled builders.

Also in the sphere of construction, worth mentioning is the particular layout of the six-apsidal church of Montieri, which is literally found nowhere else in Italy (see chapter IV, section 3, for bibliographic references to possible parallels), or the facade of the church of San Salvatore al Monte Amiata with its corner towers, comparable to the Westbau frequently adopted in the Ottonian period (Gabbrielli 1995, 24-28; Tosco 2014, 134; Tigler 2006, 333).

Elsewhere (Bianchi 2021) I have noted that this latter building is one of the first in Tuscany where well-squared stone was used for the entire elevations, and, once again, the reintroduction of this cycle of preparation of stonework harks back to the Germanic area and to Capetian France, where we find it at an early date already at the end of the 10th century (Tosco 2012), before the practice of using squared stones became more widespread in the Mediterranean area, as of the second half of the 11th century (Cagnana 2020).

In connection with the possible importing of knowhow relating to goods and products, worthy of mention are the thirteen spurs found at Vetricella, which were probably produced in loco (in view of the type of context in which they were found). These have parallels, both typological and chronological (late 10th-early 11th centuries) with similar finds made in Germany, France, Austria, the Netherlands, the Slav area between the Elba and the Oder, and South Tyrol, as well as one example found at Nogara (Agostini 2020, 37, for the bibliographic reference to these parallels). This evidence, if correct, could support the view that not only did workers specializing in metallurgy circulate in this royal estate, but they also had technological knowledge, acquired in workshops north of the Alps, regarding the making of specific articles.

6.4 The timing and rate of change

From the findings set out in the previous chapters, it seems to me that very precise chronological references emerge as regards the timing of the transformations that affected all parts of our case study in a homogeneous way.

Although the Lombard era and the earliest Carolingian period certainly represent a fundamental phase for the shaping of the new landscapes in this part of Tuscany (see, most recently, the contributions in Valdambrini 2022), it is as of the mid-9th century that we start to see much clearer signs of a change which, as well as settlement nuclei, also affected the natural landscape. In particular I have linked this moment, which also corresponded to important institutional events, to the reorganization by Louis II, and to the growing influence of the March of Tuscia as a body coordinating large parts of this new political greater district.

The phase which subsequently left clear physical traces on the ground, allowing us to analyse it in detail, coincides with the reign of the three Ottos, and lasted, albeit more faintly, until the period of Conrad II, i.e. until the first few decades of the 11th century. Thus, these final transformations took place in a short space of time, less than a century, at a truly fast rate, owing to a favourable situation, both politically and in socio-economic terms.

I have already written much on this last period in the previous section, and I will return to the broader significance of these changes in the final chapter.

In this section I would like to dwell instead on the final phases of life of these large public nuclei, to find out whether it is possible to draw conclusions regarding more general trends. In each chapter dedicated to the individual case studies I have already touched on the phases when sites lost their original function

and were abandoned. However, in the following pages I would like to attempt to outline an overall vision because, as I will try to show, the gradual extinction of these public hubs, and above all the ways in which they began to wane, are a perfect indicator as regards the previous phases, and can tell us much regarding subsequent historical scenarios.

The context in which these processes took place has been well described also in recent summaries concerning the history of Tuscany's aristocracies (Cortese 2017).

After the critical phase of civil war between Arduin of Ivrea and Henry II, following the death of Otto III, of Hugh of Tuscia and, a few years earlier, of Queen Adelaide too, the situation stabilized once again, although these events led to the start of general changes in subsequent decades. We have underlined these changes, for example, at Vetricella where in these particular years (the first decade of the 11th century) control of Valli, changed hands several times among figures who were all strongly linked to the public powers: the bishop of Lucca, the Rolandinghi family, one of Lucca's leading mid-ranking aristocratic families; and the nearby monastery of San Bartolomeo di Sestinga (Bianchi, Collavini 2018). It is in this phase that we also start to see the first signs of stronger forms of opposition between these political figures, as shown in 1055 by the document in which the Aldobrandeschi themselves undertook not to damage the properties of Lucca's bishop (Collavini 1998, 116). For that matter, with Henry II the situation was a far remove from the all-pervading presence of the three Ottos in Italy (Roach 2018), and at the same time the new Margrave of Tuscia, Ranieri, focused his interests more in the Arezzo area instead of in this southern central part of Tuscany in which the Gherardeschi and the Aldobrandeschi families operated (Cortese 2017, 200-203). Accordingly, the way was fairly clear for programming their own courses of action, although these still had their place within a public framework. For that matter, as has been clearly underscored by Maria Elena Cortese, in these early decades of the new millennium the dust had almost settled, so to speak. Indeed, the major comital families had already started to consolidate the holdings that they already controlled by virtue of the public offices that they held. These were added to their family-held estates, which were increased, in the final decades of the 10th century, by many other properties, or parts of properties, of fiscal origin. There was a further change to the overall picture in 1027, with Boniface of Canossa's elevation to the rank of Margrave of Tuscia. He organized an administrative management of the March with new officials, as distinct from the administration by the Counts. This led to a greater distance on the part of the comital aristocracy from their previous public offices (Cortese 2017, 203-204), and necessitated further political strategies.

As a result, this chain of events led to a series of changes, also connected to which were important movements and relocations by eminent political figures. As early as the mid-11th century the bishop of Populonia, moving away from Cornino, established himself in the new seat of Massa Marittima, in that Monte regis that was clearly of fiscal origin. The Gherardeschi family shifted the focus of their interests once and for all from Volterra to the coast, founding monasteries and castles, and members of the middle-ranking aristocracy formed stronger ties with the comital dynasties (as in the case of the Lambardi da San Miniato family, who became clients of the Gherardeschi (Tomei 2019, 380), or else preferred to move away from the Maremma region altogether, in response to the growing power of the leading comital families (ibid. 385).

The acceleration of this process is seen from the second half of the 11th century, when, with the conflict linked to the 'Investiture Controversy', the balance between margravial and Imperial power broke down once and for all, culminating in the crisis in 1081, with the ousting of Countess Matilde. All this caused a crisis of legitimacy on the part of these two authorities that represented the *publicum*, and led to a fragmentation of the political space, that was previously held together by the political and economic strategies of the Imperial and margravial powers.

This moment indelibly marked the beginning of the end of an economic and political system that, for the aristocracies, had its centre in the institution of the court, the 'clearing-house for tensions and

conflicts' (Tomei 2019, 383) and the cornerstone 'of the system of legitimation, and of the rural political culture' (Fiore 2017, 264). In this institutional reorganization that no longer had a recognized supreme leadership, the nobility reorganized their investments, and new pacts were entered into between the lords and their subjects, with a resultant selection of, and roles for, the new protagonists.

All this has been clearly set out in more or less recent publications, which I have made reference to thus far.

By contrast, what happened in physical terms to these same public hubs is less well known. Thus we shall go back over the salient features of these transformations, picking up on each aspect covered in the various chapters that precede this summary.

Since the second half of the 11th century the end of this 'traditional' world (Tomei 2019, 383) coincided, also for our case study, with a very marked change of material register, that led to a sort of physical elimination of all those pillars of public power, almost as if to erase evidence (at the height of the Investiture Controversy) that was reminiscent of 'that genetic feature' (Cortese 2017, 142) of much of the patrimony of the political figures in this territory, who came into existence above all thanks to the allocation of fiscal properties.

In the centre of the court of Valli, at Vetricella, we see that, from this time onwards, burials ceased in the cemetery area, and the dynamism of that highly active court was reduced to a shadow of its former self. This is evidenced by the stratigraphies inside the tower, the repurposing of the religious building, and the heaps of cereals that were piled up, as if this place had become a simple convenient place for temporarily depositing crops harvested in the nearby fields.

As of the later 12th century, there are no more traces of human frequentation in all the Topographic Units (sites) in the plain, and by the mid-13th century we see the definitive abandonment of Vetricella. Prior to this, around the mid-12th century, the most symbolically significant act of all took place at the site, namely the complete and systematic dismantling of the perimeter structures of the tower which, since the mid-9th century, had been a dominant feature of the local landscape.

This change of trajectory has a parallel in the type of sedimentation found in the paleochannel of the Pecora which, during the 11th century, displayed a considerable reduction in both Calcareous Tufa (indicative of changes and cuts in the natural soil, and in the paleochannel itself), and in charcoal remains (associated with the burning off of vegetation in order to open up new land for farming or grazing).

Similar changes took place in the Cornia valley. From the documents we know that ownership of the most important administrative nucleus in the court of Cornino, the nucleus corresponding to Franciano (see chapter II), where the saltworks were situated, passed to the Aldobrandeschi family, and in 1094 the latter donated it to the monastery of San Quirico di Populonia (Collavini 2016). Here the sources tell of the existence of a castellare with defensive ditches, a layout apparently similar to the documented appearance of the centre of the nearby court of Valli. However, its name refers to a structure which by then was abandoned and in ruins, which the Aldobrandeschis disposed of when their interests focused on the Grosseto and Amiata areas, while in the Cornia valley the Della Gherardesca family began to be more pervasively active. Despite the fact it had been abandoned, the Franciano castellare, and above all the saltworks associated with the court, probably still a resplendent monument to its glorious past of economic dominance, were such an important donation that it almost changed the course of the monastery's history (Collavini 2016). The 11th century also saw the abandonment of the hub revolving around the former villa of Vignale, in preference to the nearby hilltop castle connected to the Della Gherardescas, if the hypothesis I formulated in chapter II, section 2 is correct.

In the internal area of Gualdo del Re it is hard to perceive this phase of changes in the physical record, but it can be glimpsed from the rapid sequence of changes of ownership of many of the properties already

mentioned earlier: Castiglion Bernardi, San Regolo in Gualdo, and Rocca degli Alberti at Monterotondo Marittimo.

Now that we have an enhanced view of the available signs, some of these changes are fairly recognizable in the Grosseto area too. In the Salica/Vigna Nuova plain, in the 12th century, archaeology has revealed that human frequentation declined throughout the large settlement nucleus, situated on the slopes of the hills of Roselle, composed of the Vigna Nuova site that was surrounded by ditches, the reoccupations of the Aiali villa, and the Brancalete site with its defensive ditch which, like Cornino, is referred to as a *castellare* in 1262, by which time it belonged to the bishop of Roselle (Farinelli 2007, 139, note 202). Subsequently there were no further attempts to reoccupy this plain, and had the intensive magnetometry and remote sensing campaign not been undertaken, this state of affairs would have remained unknown, like Vetricella, which was found and identified thanks to aerial photography conducted in conditions when visibility was particularly conducive.

The site of Poggio Cavolo is also very significant with a view to these drastic changes. Here, atop the 12th century stratigraphy relating to the abandonment of the Ottonian church, a layer of cultivated soil was deposited, with places in which there were piles of cereals (Farinelli *et al.* 2008), in common with the situation found in the same decades at Vetricella.

As regards the major circular fortification of the Tino di Moscona, even more so if its structure dates to the late Ottonian phase, as I suggested in chapter III, documents referring to the hill in the late 12th century as arid and uninhabited unquestionably give a description that is wholly in keeping with what must already have happened to all the royal estates in their central administrative nucleus, in parallel with the gradual abandonment of Roselle.

Exempted from these brusque changes, which were introduced in a timespan that was not especially long, were all those settlement sites already linked to localized forms of power, or else connected to particular, sensitive resources in which investments continued to be made: in the area of the Cornia and Pecora valleys, everything was relocated around the new bishop's seat at Massa Marittima, and in the later 12th century to the inland mining castles. Today Scarlino is one of the most picturesque borghi in the Pecora valley, and Vignale Nuovo survived as a castle until much later, while Grosseto, with its saltworks, remained firmly in the hands of the Aldobrandeschi family until it passed to Siena, becoming the central town in the plain in the Late Middle Ages. Meanwhile the Canonica castle on Poggio Mosconcino, with its church/cathedral, continued in the Late Middle Ages to be an important population centre. Only the Aldobrandeschi family's operation linked to the repopulation of the site of Moscona failed, because it was linked to complex motives that I tried to explain in chapter III, section 3, to which readers are referred.

In the hinterland, on Monte Amiata and especially along the western side of the mountain where, as I have mooted, there was the major investment linked to iron exploitation in the Ottonian era (chapter IV, section 1), the Aldobrandeschi took possession of all the main fortified nuclei including Arcidosso and the Lamula market.

The royal monastery of San Salvatore was caught up in this flurry of transformations, which can be seen in the absence of any further major architectural work, after the large-scale construction project for the abbey church linked to Abbot Winizo. It is also visible in the end of the equilibrium with the Aldobrandeschi, which led to a series of lengthy conflicts and diatribes which are recounted at length by the documentary sources. The monastery of S. Antimo, as a kind of buffer zone still connected to the Imperial powers, was one of the few royal monasteries subject to major transformations in the course of the 12th century, with the reconstruction of the large abbey church which we can still admire today in all its beauty.

No transformation is seen in the case of the six-apse church of Montieri. Here, by contrast, the bishop of Volterra preferred to invest in the construction of the Canonical complex that incorporated the ecclesiastical building. This was destined, notwithstanding, to remain a fundamental site and a symbol in the religious geography of this important mining area, controlled by the bishop himself at least for much of the 12th and 13th centuries.

In the material culture, perhaps the element that most clearly serves as a pointer indicating the end of that public system that I have described is none other than the important guide fossil represented by the 'small amphoras', the small locally-made vessels designed for the transportation of movable goods, at a time when the public centres were at the peak of their vitality. Their circulation seems to slow down visibly in the course of the 11th century itself, although without disappearing completely, perhaps owing to the fact technology had strong roots in this area, since production had gone on here for at least two centuries.

Can we find any parallels that mirror the complexity of this situation, or are we to regard this as an eccentric and fairly insignificant parenthesis in the general history of the Kingdom of Italy?

Chapter VII

Comparisons

In the previous chapters, in discussing material evidence on a case-by-case basis, we have become used to having more success in finding our way around the great penumbra that has long shrouded public lands, and the ways in which they were administered. Adapting our gaze, like cats, to the imagined obscurity of these institutions, we have highlighted their characteristics, and the points they have in common within a historical process in which there are several actors on the scene.

However, trying to find parallels for such a situation is no simple task. In the introduction to this volume, I already noted that in central-northern Italy archaeological research does not have many broad-ranging projects investigating the subject of public properties. Yet it is worthwhile to sum them up briefly, both to assess the amount of the information that has been gathered for our case study, and to better discuss a number of questions which I will address in the final chapter. Individual examples, although interesting, might not be sufficiently representative of more complex organizations. So as to proceed in an orderly fashion, and not get lost in the great mass of material evidence that I have gradually compiled, in this section I will present sets of data that can be grouped in terms of the similarity of their site solutions, and strategies for resource management, or for the management of specific forms of production that bear comparison with what has been found in our case study. As regards Tuscany, I will focus my attention on the Valdarno and Lunigiana areas. Then I will take a close look at a fairly well-defined geographical context, relating to an area situated between Veneto, Lombardy and Emilia Romagna, not far from the capital of the Kingdom of Italy, Pavia, and from other important urban centres such as Milan, which in recent decades has been at the centre of many archaeological investigations.



Figure 7.1 - Location of sites in the Valdarno area referred to in the text.

7.1 Tuscany

7.1.1 The Valdarno

The royal courts of the Valdarno were arranged within a context that was different from that of our case study (Figure 7.1). This area is distinguished primarily by a major, navigable river artery, the Arno, which in turn was connected to rivers of a certain importance, such as the Elsa and the Auser, which, via their valleys, gave access to parts lying further inland. Thus this was a major river plain serving as a linchpin between the sea, via the mouth of the river Arno itself (with its port connected to Pisa) and a territory that stretched as far as the slopes of the Apennines, with its mountain passes towards the Po valley plain. Systems of hills or low mountains stood along the sides of this valley, the largest of which corresponded to the Monti Pisani, standing between Lucca and Pisa. Ever since Roman times the whole Arno valley was traversed by the consular Via Quintia, referred to in medieval documents as the road “to the left of the Arno” (Morelli 2010, 126, n. 5). Since the Early Middle Ages this east-west thoroughfare crossed the Via Francigena, the main north-south thoroughfare. This came from Lucca, crossed the Arno at Fucecchio, and passed through San Genesio, before continuing towards the Val d’Elsa. The other important characteristic of this geographical area was the proximity of important urban hubs: Lucca, the most important city in Tuscia since the Carolingian period, and the administrative seat of all political and institutional offices; Pisa, which throughout the Early Middle Ages was Lucca’s port towards the mouth of the Arno, and which, thanks to this role, gradually acquired importance and autonomy; Firenze; and Pistoia.

In this case, too, to get an overall view of the royal courts, the most significant snapshot remains the one provided by the dower of Hugh of Arles, dated 937 (Vignodelli 2012).

From the location of the properties mentioned in the document (Figure 7.2) it is possible to distinguish three groups of courts: the first was situated in the Valdarno; the second was located around the former lake system of Bientina/Lago di Sesto and the Monti Pisani; and the third lay in the Pistoia area, with the royal court of Pionta, a probable reference to all the fiscal properties of this comitatus (Bianchi, Collavini 2018, 148, n. 3). In addition to these royal courts there were the courts of Pisa, Lucca and Florence, that were directly in the hands of the Margrave of Tuscia.

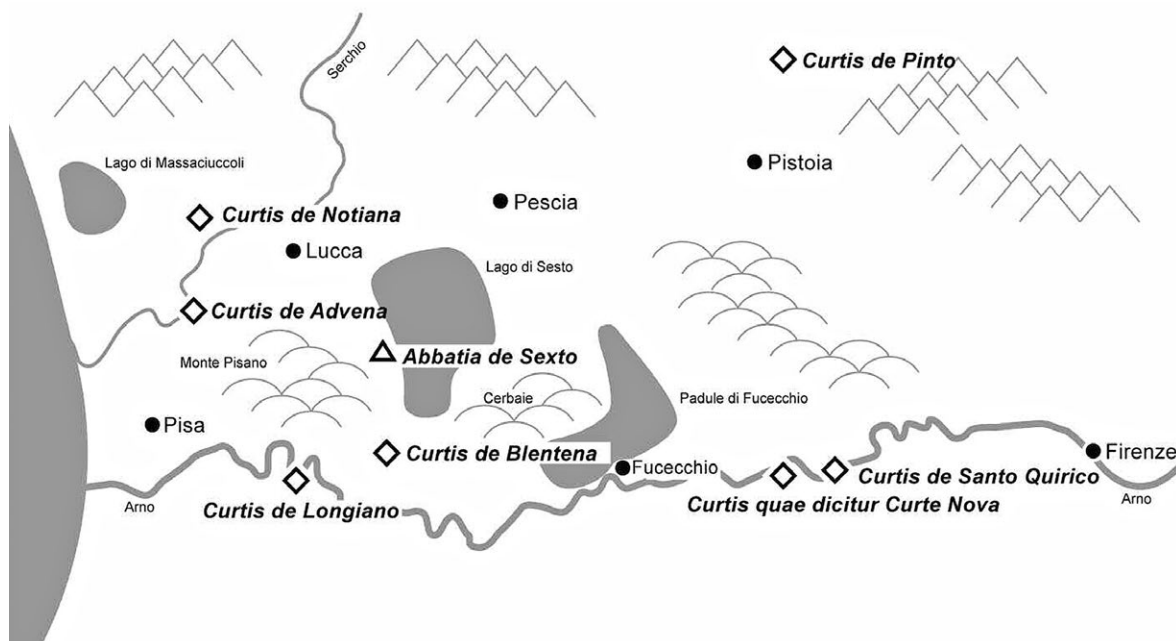


Figure 7.2 - The royal courts in the Valdarno mentioned in Hugh of Arles' dower (AD 937) (adapted from Vignodelli 2012).

These included San Genesio, the only one whose material features have been investigated extensively, in the form of a long-running campaign of archaeological investigations.

As has long been supposed for our case study territory, here too, down to the Late Antique period, we find large properties owned by figures having a considerable political importance. These properties were probably destined to be confiscated and added to the later circuit of fiscal properties.

The best example comes in the shape of the Villa dell'Oratorio (Cantini 2017, for the following information), which was investigated archaeologically in the territory of the modern-day municipalities of Capraia and Limite. This had links to Vettius Agorius Praetextatus, a member of the highest-ranking senatorial aristocracy. In the second half of the 4th century he held the post of corrector of Tuscia and Umbria, as well as praefectus urbi. The villa (Figures 7.1-7.3) was probably built during the 4th century with particularly lavish forms and decorations, and was positioned within a territory that was intensively exploited for wine production. After being expanded, between the 5th and the early 6th centuries, there are no episodes recorded archaeologically that suggest that the site was reused or transformed into any kind of possible habitation.

The villa's very close proximity to Montelupo Fiorentino, in the territory of which was located the royal court de Sancto Quirico, cited in the 937 dower, would seem to confirm that this property was added to public estates. The recent archaeological excavation of the possible main church of this royal estate (Figure 7.1), the building now dedicated to SS. Quirico and Lucia, has revealed the perimeter walls of a small, stone-built, single-apsed structure (measuring around 6.80 x 9.34m). Thanks to radiocarbon dating, its construction has been dated to the mid-8th century, when two high-ranking individuals were buried outside the church inside a larger cemetery that featured stone-lined tombs.

The discovery, during the archaeological excavation, of fragments of an arch and part of a pluteum suggest that its sculptural decorations were overhauled, at least, between the second half of the 8th and the 9th century. The church is the only feature that can presently be associated with this royal court, the possible centre of which was located in an area already frequented in the Augustan period, which was later occupied, in Late Antiquity, by a necropolis with "cappuccina" tombs (Cantini in Bianchi *et al.* 2019, 329-330).

The court of S. Genesio, named Vicus Wallari in documents up until 980, and located not far from the Arno at the point where the river Elsa flows into it (Figure 7.1), took shape within an area that had long been occupied. Perhaps a Roman mansio preceded the creation, in Late Antiquity, of an extensive necropolis around an oratory. In the 7th century a tower stood in the centre of an area previously set aside for processing minerals, in particular iron. Archaeometric analyses confirm the presence of hematite from Elba inside slag from metallurgical activities dating to this phase. In the various published articles it is not specified whether this was waste from reduction, or from iron forging. The reference to the presence of reduction furnaces and forges would seem to bear witness to the fact that much of the production cycle took place at the site. Alongside iron, metal objects were also produced, as appears to be shown by the finding of lead models for moulds (Cantini 2015, 512).

Dating to the end of the 7th century is the construction of a single-nave church that served as a parish church (11.35 x 5.80m), around which a cemetery developed (Cantini in Bianchi *et al.* 2019). However, only at the height of the Carolingian period do we find the main archaeological evidence that best attests to the functions of what was probably the centre of the court. At the end of the century this belonged to the powerful Adalbert II, Margrave of Tuscia, and it is documented as a margravian court in the early 10th century (again Cantini in Bianchi *et al.* 2019, 330).

Near the church was an area designed for production activities. This occupied a space of around 2000m² (Figure 7.4). The production of oil is deduced from the presence of a wooden press operated by a vertical screw, while the production of wine is inferred from the remains of a grindstone and of a wine-press

with a horizontal beam. The area also comprised an iron processing facility, perhaps for ore reduction, or for forging. This is attested to by pieces of slag that are still being studied, and as yet it is not possible to identify the possible signature for hematite from Elba, although this was definitely already being circulated in this phase, as shown by the evidence from Vetricella and also, one may reasonably believe, by the Piazza dei Cavalieri excavation (Corretti 2018).

Also of considerable significance is the discovery of a very large vertical pottery kiln (2.50m x 1.50m), built using reused fragments of Roman brick, along with small pieces of sandstone rock. According to the calculations of the archaeologists, this structure would have been able to produce up to 200 objects with each load. Also associated with this production cycle are sedimentation tanks for clay, and zones where the wasters from the kiln itself were accumulated. The kiln was used to fire jugs and jars

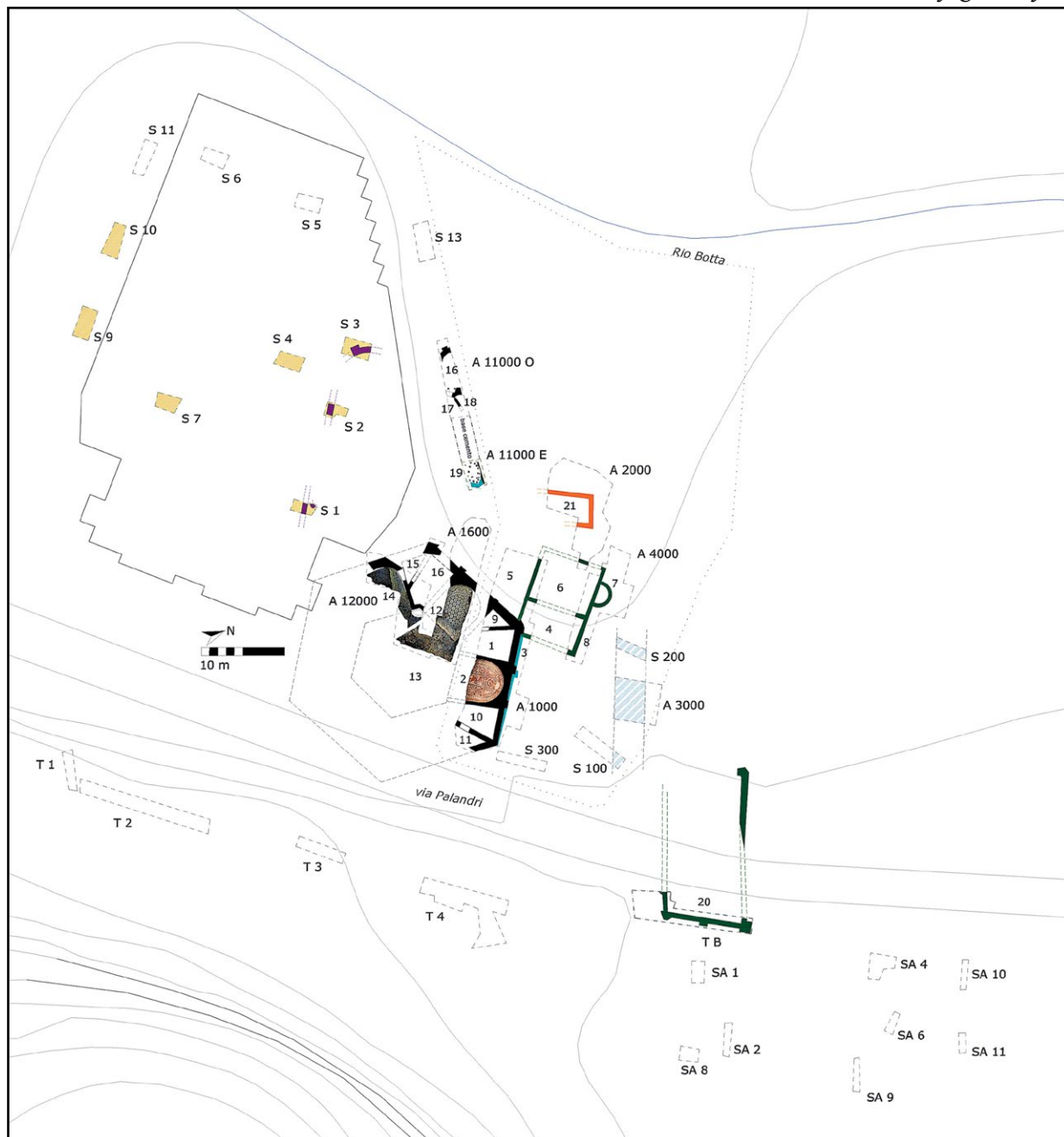


Figure 7.3 - Villa dei Vetti, plan of the excavation areas (from Cantini 2017, 10).

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decorated with brushed strokes and drips of red glaze, and it has been suggested that some jugs, given the absence of a spout, were also used to store the oil and wine produced at the site itself (Cantini 2015, 505). The production of this pottery seems to continue throughout the 10th century and part of the 11th century (Cantini, Grassi 2012, 130).

The presence of this evidence of production is very important for our parallels. This is because it is connected to possible imports, in the 9th century, of this pottery in our case study area (as stressed in the previous chapter), and also because it is connected to a specific resource found in this territory, namely the good-quality clays in the river valleys. Although the courts in the Valdarno have been associated with a predominantly agricultural form of production, including recently (Collavini in

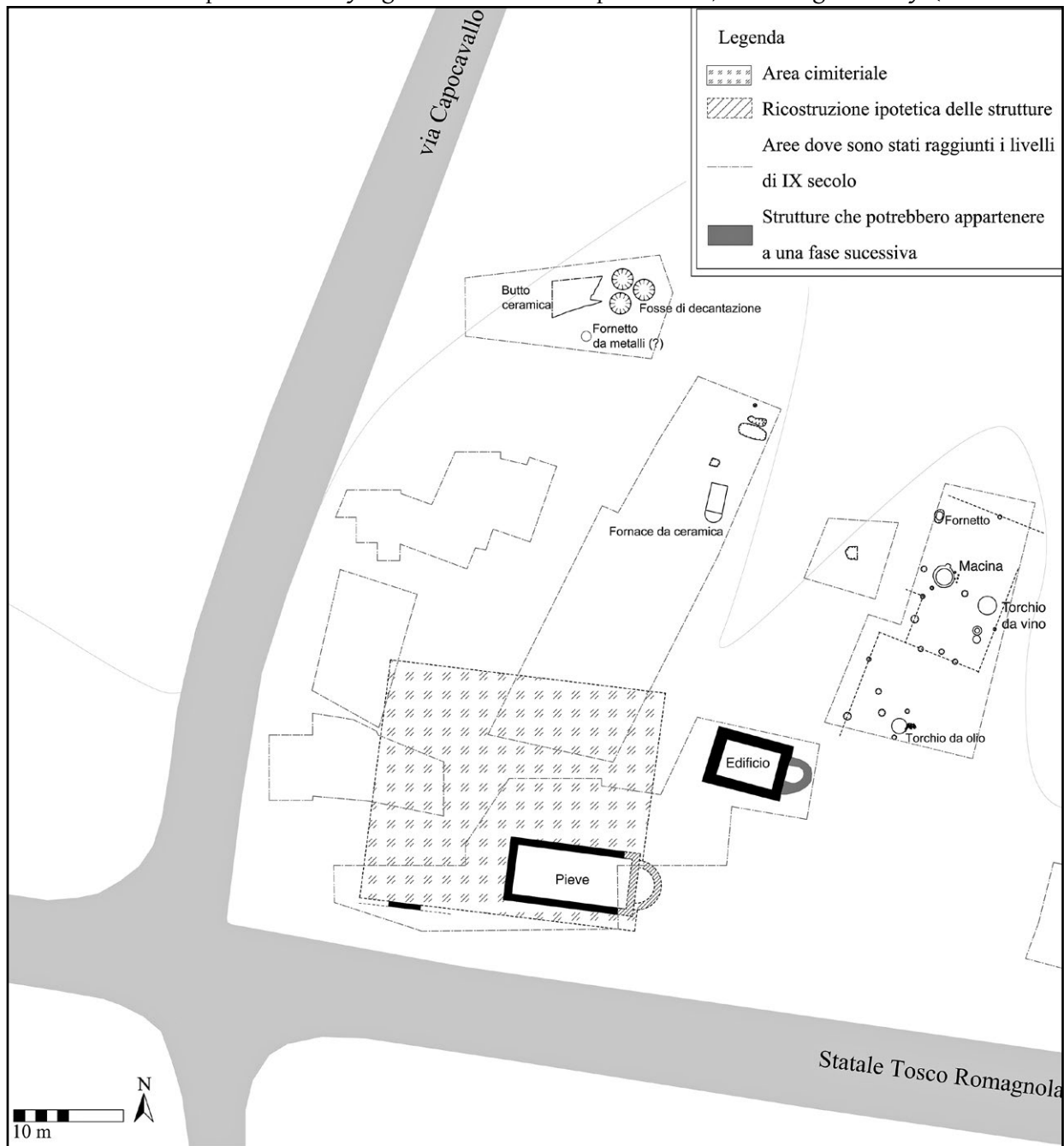


Figure 7.4 - San Genesis: The pieve with cemetery, and the production areas (from Bianchi et al. 2019, 332).

Bianchi, Collavini 2018, 130), we cannot rule out the possibility that one of the other important activities was pottery production, as already emphasized in the past (Cantini 2011, 172). Indeed, archaeological research, together with archaeometrical analyses, show that other ateliers producing the same red-painted pottery were located, in addition to the one at Vicus Wallari/San Genesio, in areas not far away.

This is documented by the kiln wasters found at Stibbiolo, Castellaccio di Soiana, and Cerretello (Figure 7.1), all datable to the later 10th century. A strictly Pisan production has not been ruled out for the period between the 10th and 11th centuries, along with production specific to Lucca (Cantini 2011, 172-173). All these ateliers seem to see a peak of activity during the second half of the 10th century, before ceasing activity at the end of the following century.

It has been suggested that the products made at Vicus Wallari/San Genesio, and also in the areas of Pisa and Lucca, were circulated within a fairly limited geographical area (Cantini 2015). By contrast, finds of red-painted pottery, probably from the Valdarno, in the more remote sites of the upper Maremma region (Donoratico, Campiglia Marittima, Rocchette Pannocchieschi, Vetricella), mentioned in the section above, suggest that they travelled and were spread further afield.

Red-painted pottery was not the only type of ware made in this general area.

Also in the case of sparse glaze pottery, more than one production area has been suggested. These include workshops located north of the Valdarno, between Pistoia and Lucca. This pottery has two different kinds of fabric, which allow it to be ascribed to the differing provenance and production areas (Grassi 2010, 19). Although the chronology of this latter pottery has often generically been dated, up until now, to the centuries of the Early Middle Ages, thermoluminescence dates for sherds found in a number of urban excavations in Lucca (especially during the investigations carried out in the Loggia dei Mercanti), conducted thanks to the nEU-Med project, as part of a broader study by Briano, have meant it has been possible to establish a weighted average of the calendar age corresponding to the year 1085 ± 30. This meant it was then possible to determine a more precise chronological range for its production, although it does not seem to have continued for a long period subsequently (Briano 2020a, 318). The most interesting finding for our purposes is the result given by isotope analyses of the lead used in the glaze itself. This points in particular to the Harz mines as being the provenance, which were up and running in the Ottonian period (*ibid.*, 318-320; for the exploitation of the mines, see the relevant technical data with bibliography in Chiarantini *et al.* 2021; Matzke 2018).

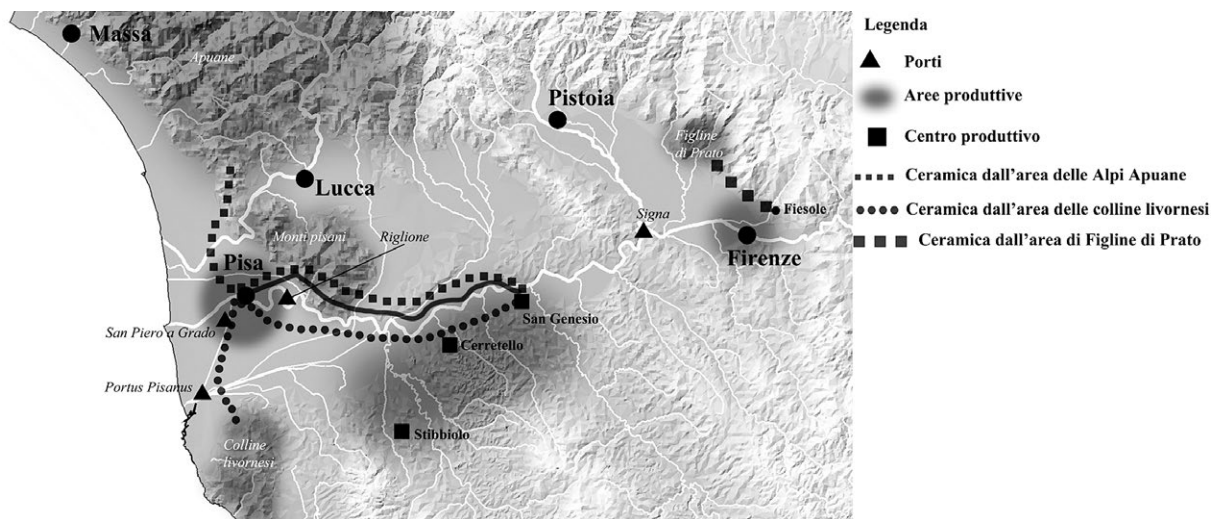


Figure 7.5 - Ports, pottery production areas, and pottery movements in the Valdarno in the 10th century (from Cantini *et al.* 2015, 245).

This indicates, also for the 11th century, imports of this specific raw material which, as we know, we had identified in the glaze used in the 9th century sparse glaze pottery produced in the Maremma area. It is possible that these consignments, at least in the Lucca-Pistoia area, were further facilitated by the arrival of lead from the same mining areas at the mint in Lucca, where it was used to produce coins, from the Ottonian period onwards (Chiarantini *et al.* 2021). This privileged supply channel might justify the exclusive presence, in the glaze, of lead from north of the Alps, without any signature that could be associated with deposits in the nearby mines in the Apuan Alps, or in the Colline Metallifere (Briano 2021, 151).

To stay on the subject of pottery wares, findings relating to the production in the Valdarno of ordinary cooking ware, storage vessels, and tableware are also significant. Thanks to the archaeometric analyses which determined the various supply sites of the raw materials, and thus the differing production areas (Figure 7.5), it has been shown that it was in the 10th century itself that these production areas were increased in number, with larger quantities of these wares travelling from one site to another. At Vicus Wallari/San Genesio, pottery appears that is made from raw materials from the Monti Pisani, from the Apuan area, and from the hills of Livorno. At Pisa, which up until the early 10th century used pottery from the Monti Pisani, pottery arrived that was made in the Valdarno hinterland and, starting in the second half of the 10th century, from the Livorno and Apuan areas (Cantini *et al.* 2015, 244). The circulation of locally-made pottery between one micro-area and another is very reminiscent of the situation that emerged in the case of the Maremma. in the ateliers operating in the area of Monterotondo Marittimo and Roccastrada, where, in common with the situation in the Valdarno and Pisa, the same kind of increase of these circuits is seen, starting in the later 10th century. For that matter, it is precisely towards the end of this period that we see the biggest changes that transformed Vicus Wallari (Figure 7.6). In this latter phase the original church, which had already been expanded on a major scale at the start of the 10th century, with the construction of three aisles with apses, with the facade being extended with the addition of a whole new bay, was given a crypt, with a raised presbytery (Cantini



Figure 7.6 - San Genesio: the site between the 11th century and the third quarter of the 12th century (from Cantini *et al.*, 72).

2012, 521). The new building project also involved the construction of a likely canonical annex, one part of which was a building with a rectangular plan forming the western limit of an open space, bordered by a wall with a well in the middle (*ibid.*, 521). Prudently, the archaeologists have not hazarded a precise date for this phase, which would seem to be somewhere between the late 10th and the first 30 years of the 11th century. One argument in favour of an earlier date could be the site's significant change of name, which between 980 and 991 switched from Vicus Wallari to burgus Santi Genesii (Cantini 2010, 95). In any event, it is in connection with these transformations that the new site was also expanded. Associated with this phase was the formation of the borgo, in the course of the 11th century, with the construction of houses with walls made of packed earth and tiled roofs, arranged within residential plots of similar size (3m x 12m), subdividing bands of land bordered by water channels (Cantini *et al.* 2019, 71-74).

Thus the salient features of this natural corridor in the Valdarno were agriculture and ateliers linked to the production of pottery, mainly for everyday use; however, there were also areas of uncultivated land. Precisely owing to the large-scale presence of royal and margravian courts, this has been referred to as a sort of 'backbone' of public power in Tuscia.

A non-agricultural vocation, more closely linked to a specific resource, has been suggested for the group of royal courts referred to in the 937 dower, and situated all around the Monti Pisani (Figure 7.3). These properties feature a small number of mansi, i.e. farmers (as at Cornino and Valli), located mainly on the western side of the uplands in an area which, at the height of the Middle Ages, was exploited on a large scale for the quarrying of stone for buildings. We do not have direct corroboration, in the form of material evidence, for the hypothesis that these same resources were used at an earlier date. However, according to the interpretation offered by recent articles, the fact that much of the Monti Pisani belonged to fiscal lands, mainly linked to the monastery of San Salvatore di Sesto (made over to Adelaide in the dower), would be a strong clue in support of a link between these properties and the extraction of stone at the local quarries (Collavini in Bianchi, Collavini 2018, 149). Nevertheless, indirect evidence shows that this exploitation dated further back in time than the second half of the 11th century, when it starts to be recorded on a wide scale (Cantini 2021; Tumbiolo 2020). One of the perimeter walls of S. Michele in Foro in Lucca, dated to the 8th century, was built using flint-bearing limestone quarried from this area. Moreover, these provenances become more common for buildings in Lucca towards the end of the 10th century, when we also find an early written record, in 995, of a possible quarry at Vaccoli (Quirós Castillo 2002, 80-81). Similar considerations can be expressed for constructions in Pisa, given that slabs of clay schist from the Monti Pisani have been found in roof collapse layers of structures datable to between the 9th and the 10th centuries, and it is believed that the same material was also used at San Genesio for the roof of the church (Cantini in Bianchi *et al.* 2019, 335-336).

As long as the March of Tuscia remained stable, Pisa and its port did not become detached from the influence of Lucca, and many aristocrats from Lucca moved to Pisa. By contrast, none of Lucca's leading aristocratic families had their origins in Pisa (Tomei 2019, 8).

Thus Pisa was part of this public system, and we need to dwell a little on the possible circuit of trade and exchange at its port, in order to assess its importance in the Valdarno, and to get useful information for drawing parallels with our case study.

Of the sites investigated with excavations and surveys, San Genesio alone has yielded a small number of sherds of Lazio-made Forum ware, and fragments of a mauve glass vessel with applied filaments of white glass, which has formal parallels with similar examples that circulated in the Carolingian area (Cantini in Bianchi *et al.* 2019, 333).

In Pisa (Figure 7.7), as also stressed in a recent synthesis (Meo 2018a, to which I refer for all the findings set out hereafter), whereas up until the mid-8th century the arrival of imported pottery (also including Aegean amphoras) attested to the continuation of relations with more far-reaching maritime routes, the

situation seems to change as of the second half of the century, coinciding with the Frankish conquest. Up until the final decades of the 10th century significant quantities of imported pottery are no longer recorded. Among finds made in urban excavations there are two vessels, specifically a globular vessel and an orciolo (jar). The former is of uncertain provenance, given its state of preservation, but it has morphological parallels with Aegean and Campanian amphoras, while the fabric is more reminiscent of wares made in Campania and Lazio. Meanwhile the orciolo is comparable to the 'pasta chiara' pottery produced in the area of Rome and Lazio. In addition to these forms there are fragments of painted pottery made in the Campania-Lazio area, and a sherd of Forum ware, made in Lazio. The disappearance of Aegean amphoras would seem to be a phenomenon that is common throughout the northern Tyrrhenian, and this absence could be related to the new political situation which, following the Pope's rapprochement with the Franks, appears to have intensified coastal sailing routes for the transportation of pottery from the Campania-Lazio area to ports in Tuscany and Liguria (Meo 2018a, 224).

The recent reviews of the pottery found at Portus Scabris, and the reinterpretation of pottery from the Populonia Acropolis excavations, show a situation that is very similar to that found in Pisa (Figure 7.7). Between the 8th and the 10th centuries, the only difference between the contexts in the Maremma and contexts in Pisa is the presence in the latter contexts of what may be the only known example of a Campanian-Lazio amphora. Thus, between the Carolingian period and the start of the Ottonian phase, there do not currently seem to be substantial differences in the volumes and kinds of imported pottery found at the Portus Scabris harbour, and in the Pisan habitation levels, or in those of the hypothetical comitatus seat of Populonia, where, unlike Pisa, we also find evidence of the arrival of a sizeable number of fragments (14) of pietra ollare vessels (stone cooking pots) from the western and central Alps. Obviously, regarding quantities we have to adjust for differences between the two types of context, in view of the fact that not many excavations in Pisa have reached habitation areas (rather than cemetery areas) predating the 11th century.

The Pisan context and the context of Populonia, at least, would thus seem to display the same level of demand, associated with a fairly differentiated social context, unlike the inland territories of the Maremma and the Valdarno where, by contrast, only a little Forum ware circulated.

Nevertheless, types of pottery and their respective amounts seem to confirm circulation within a homogeneous system that was connected between this part of the Maremma and Pisa.

We shall return to this point in the final chapter, also with reference to the subsequent period, the most controversial one, owing to the different chronologies to which the arrival of some imported pottery wares is dated.

In previous studies, especially by Graziella Berti, it is claimed that the Ottonian phase in Pisa coincided with imports of a certain quantity of glazed and unglazed pottery. This came above all from Sicily, as well as from the Maghreb, from Egypt, from the eastern Mediterranean, and from Spain. It is thought to have been used as tableware, and as a form of architectural decoration on ecclesiastical buildings (Berti, Tongiorgi 1981; Baldassari, Berti 2009; Baldassari, Giorgio 2010; Berti, Giorgio 2011). This evidence is believed to have led to Pisa's first maritime expansion, and later development, being pushed back to this time horizon, thereby marking a clear difference between the urban context, the Valdarno area, and also the Maremma itself, where such imports arrived only as of the late 11th century.

More recently, Antonino Meo (Meo 2018a; 2018b) has placed a new question mark over the early chronology for the larger numbers of imported Mediterranean ceramic bowls, proposing that these be dated later, to the second half of the 11th century (with a later date for the group of churches which feature these vessels in their external decoration). At the same time, Meo has associated the arrival of glazed pottery with different possible circuits, including in chronological terms, as compared to the arrival of Palermo-made grooved amphoras found in excavations in Pisa, which he claims occurred in the full Ottonian period (Meo 2018a, 225-228). In this new scenario, contact with Palermo-based

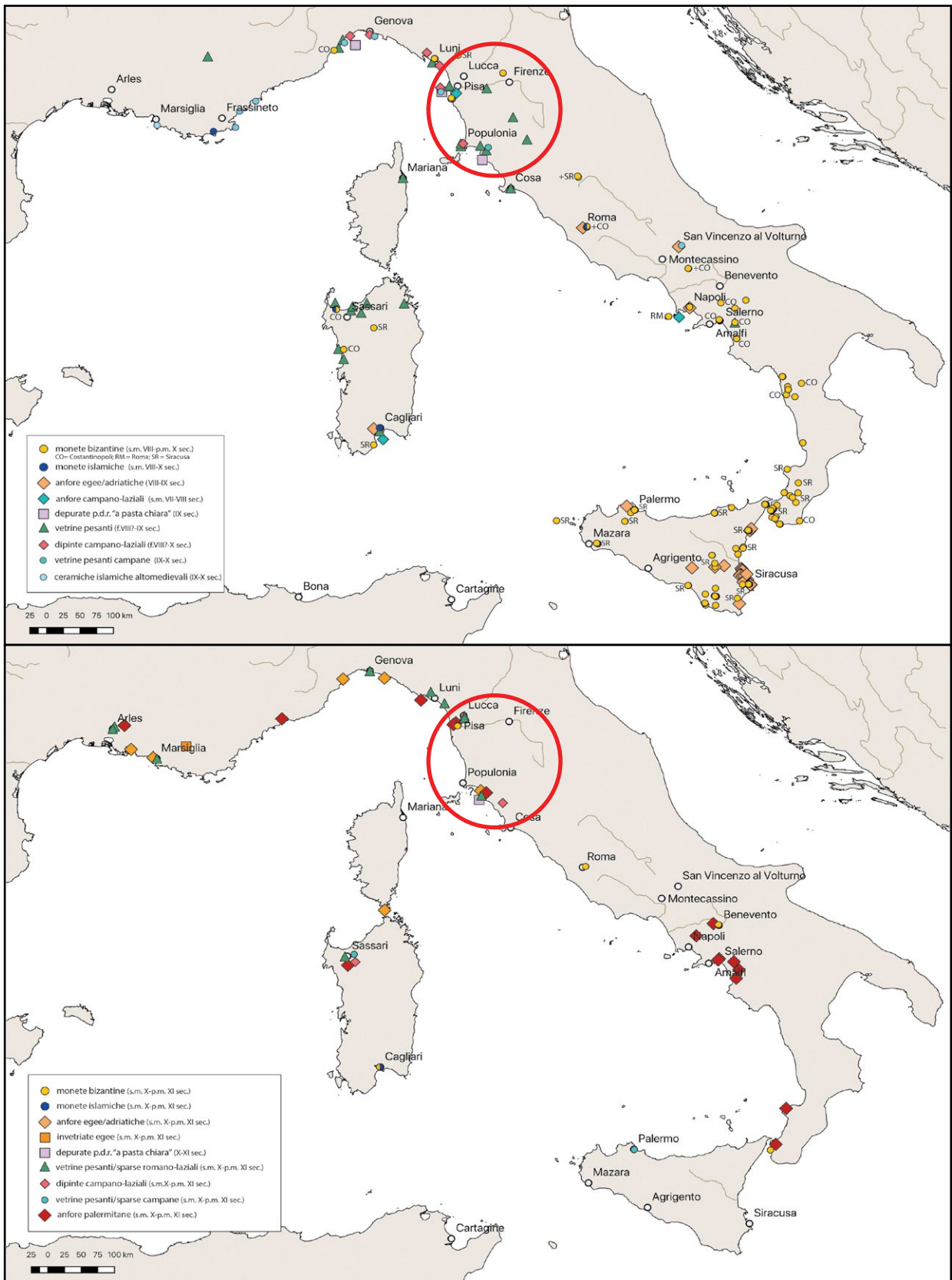


Figure 7.7 - Distribution of imported pottery. Above: between second half of the 8th and 10th centuries. Below: between 10th to 11th centuries. The circle shows the area referred to in the text (adapted from Meo 2018).

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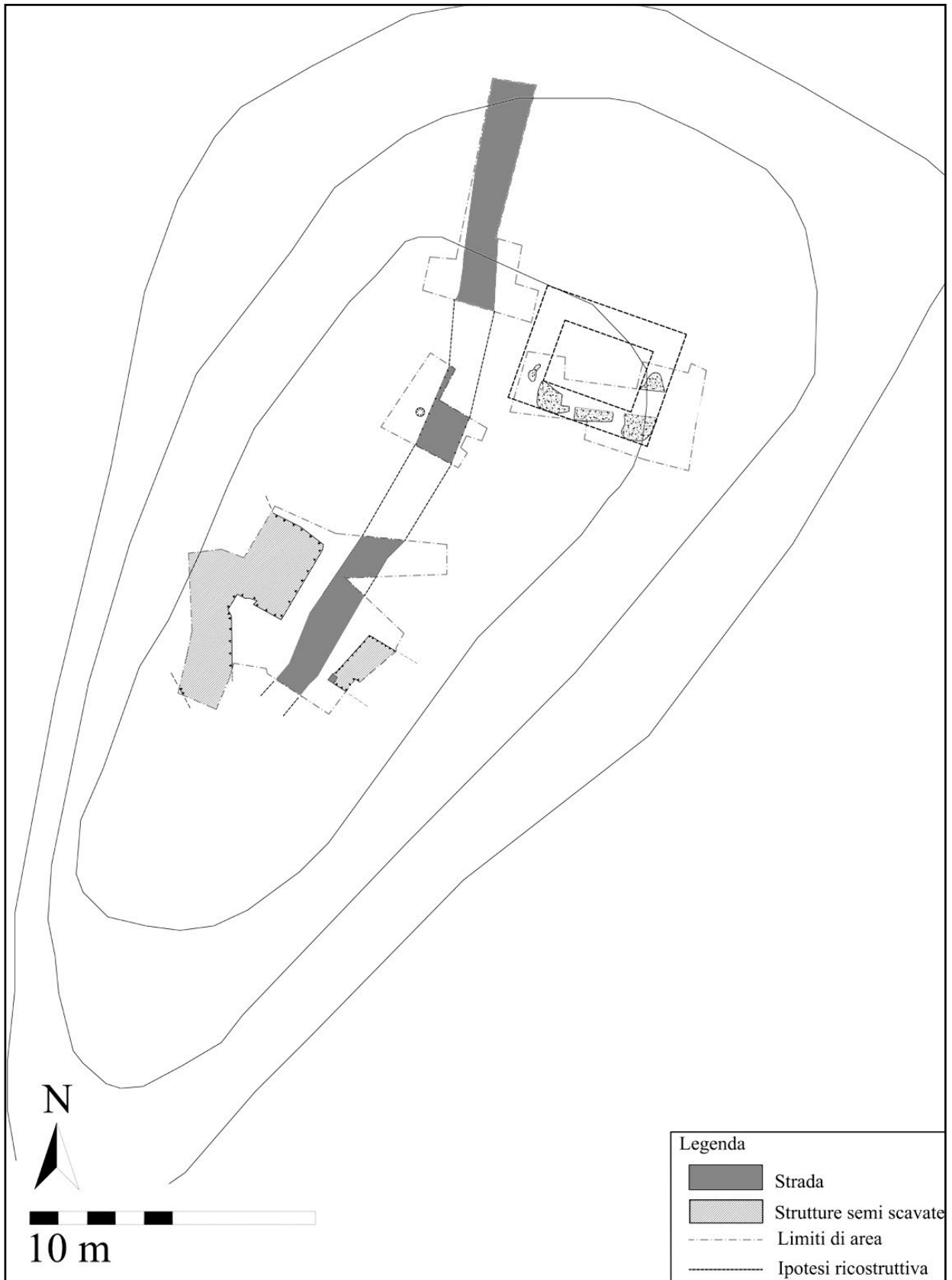


Figure 7.8 - Scopetulo: plan of hilltop area with structures found during archaeological excavation (from Cantini et al., 2016, 132).

distribution circuits to the northern Tyrrhenian would thus constitute a significantly innovatory element in the panorama of imports.

In an article by Catia Renzi Rizzo (Renzi Rizzo 2010), based on the hypothesis formulated by Graziella Berti whereby glazed pottery from part of the Mediterranean basin arrived as early as the late 10th century, this expansion of circuits is plausibly attributed to the importance that Pisa had as the main port in Tuscia for Ottonian policies for control of southern Italy. The close connection between the Ottos and Margrave Hugh of Tuscia further strengthened the role of the March. This political scenario allowed the Margrave himself to activate relations with numerous parts of peninsular Italy, and in particular with the Lombard principates of Capua, Benevento and Salerno, as well as with Calabria, Puglia and Sicily. Relations which clearly benefited both the March and Pisa.

Thus it would be in this period that Pisa became the privileged terminal of the Palermo-made amphoras, and of contacts with Palermo and one of the main hubs of their distribution in the northern Tyrrhenian. According to Meo, the sporadic presence in Pisa of Sicilian and Tunisian glazed pottery would also date to this phase, before this arrived in larger quantities in the second half of the 11th century.

In the same period, the other new element involving Pisan imports is the arrival of *pietra ollare* pots (Alberti 2009, for all the following information), in the form of a certain number of fragments, representing at least 24 complete vessels, mostly datable to between the late 10th and, especially, the 11th century. Archaeometric analyses confirm they were made at workshops in the central-western Alps located in the Valtellina, in the Ticino and Toce valleys, and in Val Bregaglia. The same *pietra ollare* vessels arrived, albeit in much smaller amounts, both in San Genesio (in the shape of a single example), and in Lucca.

Despite the almost total absence of imported pottery, we can reasonably posit that, starting in the same Ottonian period, the Valdarno also displayed a growing vitality. We have already described a number of important indicators: the changes at San Genesio evidenced by the new church, its canonica, and the formation of the new borgo; the growth in the production of coarseware pottery, and the intensification of local exchange circuits; and the gradual increase in mentions of landing-stages along the Arno, which are more numerous especially as of the 11th century (Cantini *et al.* 2015, 247).

On top of these indicators we can add the considerable number of villages, mainly situated in valley floors, that came under the *pievi* (parish churches) distributed across this territory. In the list dated to 991, for example, no fewer than 25 villas looked to the *pieve* of San Genesio, and equally large numbers are found in reference to other *pievi* (for a complete list see Cantini 2010, 100, n.78). On the other hand, for the same phase, there is a lack of published material data on new artisanal areas situated in the very district of San Genesio, nor do we know of changes in the natural, woodland or agricultural environments comparable to the picture that we have pieced together for our case study, such that would allow us to also measure the anthropic impact on this river valley.

Nevertheless, in order to assess the scale of the more general transformations, another indication can be seen in the exponential rise in references to castles, which is documented in the last few decades of the 10th century.

As well as important comital families, we also find many members of the middle-ranking aristocracy (based especially in Lucca) involved in the management of the new fortified sites. Indeed it was still essential, at the height of the Ottonian period, to maintain strong ties to the cities, without losing touch with the public officials who operated in them, given that the identity of the intermediate-level aristocracies, above all, was inseparable from the public system (Cortese 2017, 172-199).

Towards the end of the 10th century all the aristocratic classes that gravitated in this territory benefited from the redistribution of resources of fiscal origin by the imperial, margravian and episcopal powers. Of the most eminent families, notable were the Gherardeschi family. After they moved from Volterra,

we also find them connected in the Valdarno, between 1004 and 1020, to the castles of Cumulo and Vetrignano (Cantini 2010, 106-107). In addition, as of 1151, we have evidence that they controlled Scopetulo, the former property of the bishop of Lucca (Figures 7.1-7.8). Recent archaeological research does not rule out older phases for this site, featuring a tower on the highest point built with smooth stones sourced from river, and enclosed by a palisade (perhaps dating to between the 10th and 11th centuries), while the actual borgo itself apparently stood at the foot of the hill (Cantini *et al.* 2016). In this phase the da San Miniato seigneurship, among the most well-known members of the middle-ranking aristocracy, also associated themselves with fortifications such as Montealprandi and Leporaia (Cantini 2010, 106-107 also for the other references to castles associated with this phase of expansion). However, we also find families involved in the same process who had roots in the local area itself, such as the da Balconevesi family, probably connected to the Montelabro fortification, mentioned in 1030, later associated with the da San Miniato family (Cantini in Cantini *et al.*, 133). All these new fortified centres were largely concentrated on upland ridges bordering both the Arno valley, and the valleys of lesser rivers, as in the case of the Val d'Egola or the Valdera, where similar settlement processes took place, with protagonists having the same political standing (Alberti 2005a; Alberti 2012).

Closer to the Arno, in the area of Fucecchio, stands the castle of Salamarzana (Figure 7.1), linked to another important comital group, the Cadolingi family, holders of that office in Pistoia as of 923 (Cortese 2017, 137). Belonging to the castle, mentioned in documents as of 1034, was the tower situated on top of the hill on which Fucecchio stands. This is identified with the Torre Grossa of the Rocca Fiorentina.



Figure 7.9 - Torre Grossa di Salamarzana: internal elevations with stratigraphic analysis (adapted from Santi 2015, 302).

Thanks to stratigraphical analysis of the standing features, remains of the wall elevations associated with its original construction, dated to between the 10th and 11th centuries, have been identified in the lower wall sections (Figure 7.9). These indicate a building measuring 9m x 12m, built using found or salvaged stones and bricks, together with small, roughly-hewn, quarried stones. The masonry features a somewhat irregular construction technique, but in some places the materials are laid in a herringbone pattern, in line with a technique, and construction methods, that were particularly widespread in these territories (Santi 2015). Apart from this architectural evidence, we do not have other indicators to help us to assess this site. However, given the political standing of its owners, its role must have had a certain importance, perhaps also on account of its possible connection to a nearby landing-stage on the Arno, documented in 1024 (Cantini *et al.* 2015, 247). Nevertheless, there is no doubt that the tower at Salamarzana (like the tower of Scopetulo) may be comparable, in several respects (including on account of its similarity of size), with that group of tower-shaped buildings which, in this very same period, ie. between the 10th and 11th centuries, were erected in the Maremma area at various sites. I have ascribed a powerful symbolic value to these buildings, as representing the fact the people who ordered their construction had their place in a public programme that set out to redefine large territories both politically and economically. Also in the Valdarno, at least starting in the Ottonian period, towers must have marked the presence of an important nodal point within a larger network, as did the construction of significant religious buildings.

One of these nerve centres was Santa Maria a Monte (Figures 7.1-7.10), a site positioned near the valley floor, at the point where the Via Francigena, the Arno and Lake Bientina/Sesto all intersect with each other. In 906 the site is documented as a castle linked to the bishop of Lucca, and a large documentary dossier enables us to reconstruct the formation of this nucleus, which took shape, between the late 9th and early 10th centuries, around the church of S. Maria (Stoffella 2013). The documents mention dozens of houses, as well as a wooden curtain wall with gateways (Cortese 2017, 149, n. 57; Redi 2008, 235). The excavation did not reveal structures relating to the original early medieval fortified site, except for traces of the robber trench of a tower with minimal remains of a small section of the foundation wall. Its date lies somewhere between the initial phase of the site's early 10th century fortification, and the first quarter of the 11th century. Indeed, in common with the situation at San Genesio, this latter phase marks the date of the reconstruction of the church which, around the mid-10th century, acquired the functions of a pieve (parish church). The building operations, which also reused some of the building parts from the previous periods, involved the construction of a structure with a single nave with a transept, and a three-apsed chamber crypt (Redi 2008, 235).

Thus, in the final summary view, we see the royal courts in and around the Valdarno as being located within a system of major and minor land and riverine routes. Especially as of the 11th century, this system of routes was connected to a series of landing-stages located upstream along the Arno from Pisa's port to Florence. In this territory there were highly important nodal sites represented by the royal or margravian courts themselves, as in the case of S. Genesio or the monastery of San Salvatore di Sesto. The only standing remains of these, identifiable today in the buildings that have incorporated them, are mainly datable to the 12th century (Alberti 2005b, 43-45). Alongside these there were other nodal centres linked to major political figures or institutions. These had important stone-built architectural features, such as the castle of Salamarzana, linked to the Cadolingi family with its great tower, or the church of Santa Maria a Monte. Around these centres, in the river plain, stood scattered villages, often called villas in written documents, and they seem to be particularly numerous at least at the end of the 10th century. The natural landscape featured alternating farmed areas and uncultivated lands, within a territory also distinguished by the presence of important marshes such as the Bientina/Sesto marsh, and the Lake Fucecchio marsh. A purely agricultural vocation existed side-by-side with a vocation centred on pottery production. As in the Maremma, these were mainly local forms of production, which as of the 8th and 9th centuries spread to areas that were initially fairly small, becoming increasingly larger

in the course of the 10th century. For the Monti Pisani area only documentary evidence, and indirectly material evidence, allows us to posit the possibility of intensive exploitation of stone quarries. These, it is suggested, were mainly managed by the monastery of Sesto and by its court, with its dependents. The presence of the port of Pisa, which in the Early Middle Ages played an important role as an intermediate stopping-off point for coastal sailing routes from the south to the northern Tyrrhenian, did not lead, especially as of the time of the Frankish conquest, to a distribution of imported products (except for a few rare instances) either in the Valdarno, or in Lucca, Florence and Pistoia.

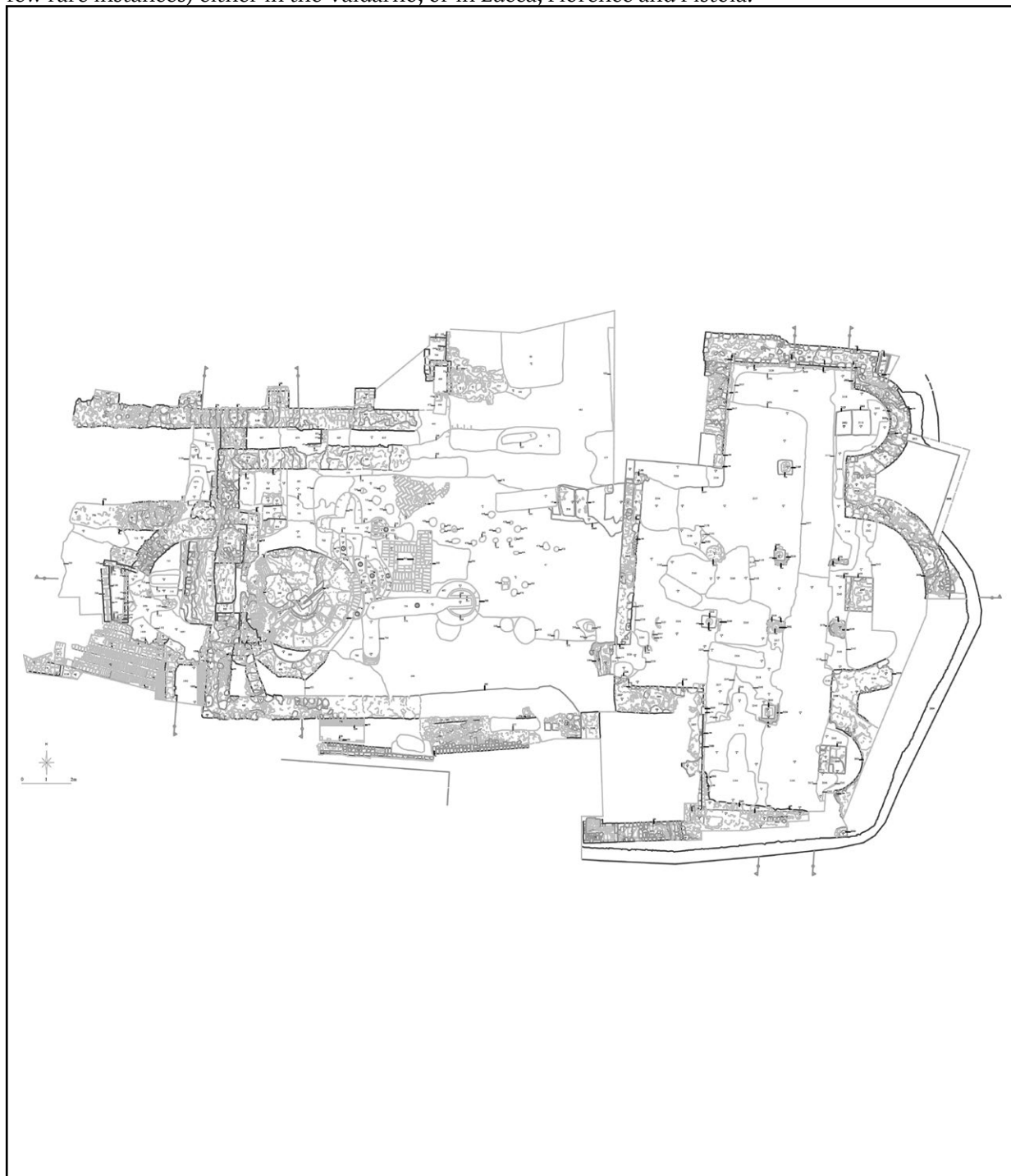


Figure 7.10 - Santa Maria a Monte: plan of structures found by excavation (from Redi 2008, 227)

An exception to this scenario is Pisa, in view of its proximity to the port, although here, up until the Ottonian period, we see the circulation of a very tiny amount of imported pottery, mainly originating in parts of Campania and Lazio.

As in the Maremma area, here too, in the Valdarno, we see that as early as the Carolingian period there was an initial adjustment to the picture that we have just set out, with key production sites such as San Genesio becoming more defined. However, San Genesio seems to undergo a greater transformation in the course of the 10th century itself, and in particular in the decades around the turn of the following century. This emerges from alterations to parish churches (pievi), as in the case of San Genesio itself, or Santa Maria a Monte. It also becomes clear from the increase in local pottery production and circulation, and the growing number of castles linked to the various levels of the aristocracy.

For Pisa's port, this phase coincided with the reactivation of channels to southern Italy, and in particular with Sicily, as witnessed by the fragments of Palermo-made amphoras found in urban excavations.

The fate of the public courts in the Maremma and Valdarno (or at least those that we know best currently) at the time of the break-up of the March was very different, however. The presence in the Arno valley of properties connected to various comital families, or families belonging to the middle-level aristocracy, and thus not only of one or two dominant powers (as in the Maremma), the considerable economic vitality of the valley linked to the main travel and transportation routes, the proximity of Lucca and Pisa, and the definition, at the San Miniato castle, of the tribunal of supreme royal instance, that made it a privileged site for the administration of the Imperial finances of Tuscany and the Duchy of Spoleto (Salvestrini 2010, 59), did not lead here to the widespread phenomena of radical transformation or abandonment that we have found in the case of the Maremma area.

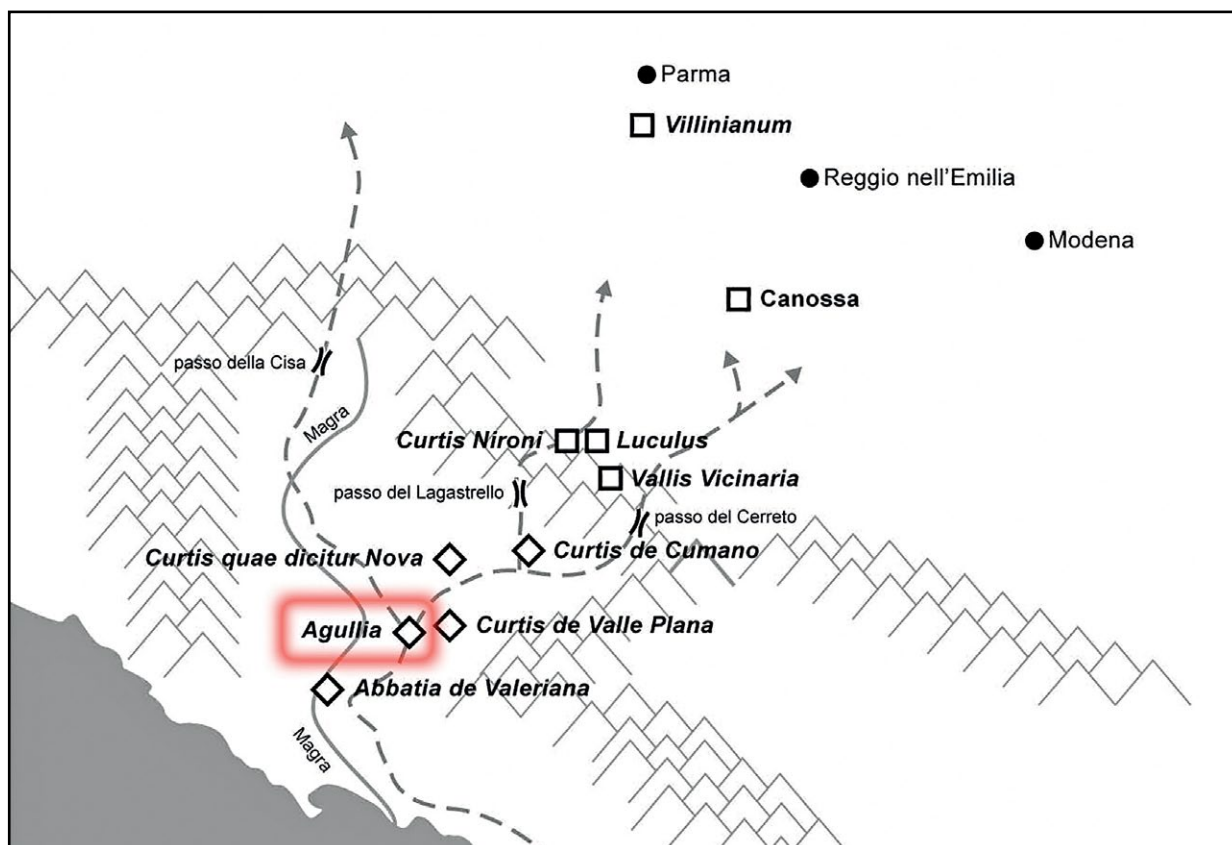


Figure 7.11 - The royal courts in northern Tuscany mentioned in Hugh of Arles' dower (AD 937), highlighting the court of Agullia (adapted from Vignodelli 2012).

7.1.2 The Lunigiana area

It is harder to say much regarding the group of five royal courts located in the Lunigiana area, also mentioned in the 937 dower (Figure 7.11), owing to the small number of extensive archaeological investigations which might have been able to provide useful information for comparison cases. These properties were situated along the road that led to the lesser Apennine passes, and that enabled travel to the Po valley plain and Parma. However, from published findings we can extrapolate grounds to support the hypothesis that sees a phase of transformation and growth as of the Ottonian period, as has emerged for the Valdarno area and for the Maremma.

At Aulla stood the castle founded by the Margrave of Tuscany, Adalbert I, attested to in 884, that featured the presence of houses as well as a hospital (Dadà 2012, 95-96). In 937 this was the site of the royal court of Agullia, and the presence of properties of both figures does not prevent us from positing, as Vignodelli suggests, that Adalbert I's possessions stood alongside a *curtis* that belonged to the *fisc* (Vignodelli 2012, 38).

The archaeological investigations explored the deposits relating to the church and the monastery of San Caprasio inside the margravian court (Figure 7.12). The material evidence made it possible to identify three construction phases of the religious building: an initial phase datable to the beginning of the Early Middle Ages; a second phase linked to the foundation of the castle; and a third phase datable to the height of the Ottonian period. The most important transformations are associated with this last intervention. These changes involved the construction of a larger church with three apses, originally designed to have a crypt, although this was never completed, probably owing to problems involving rising groundwater (Giannichedda 2021, 105). The church (Figure 7.13) was given an important decorative scheme that

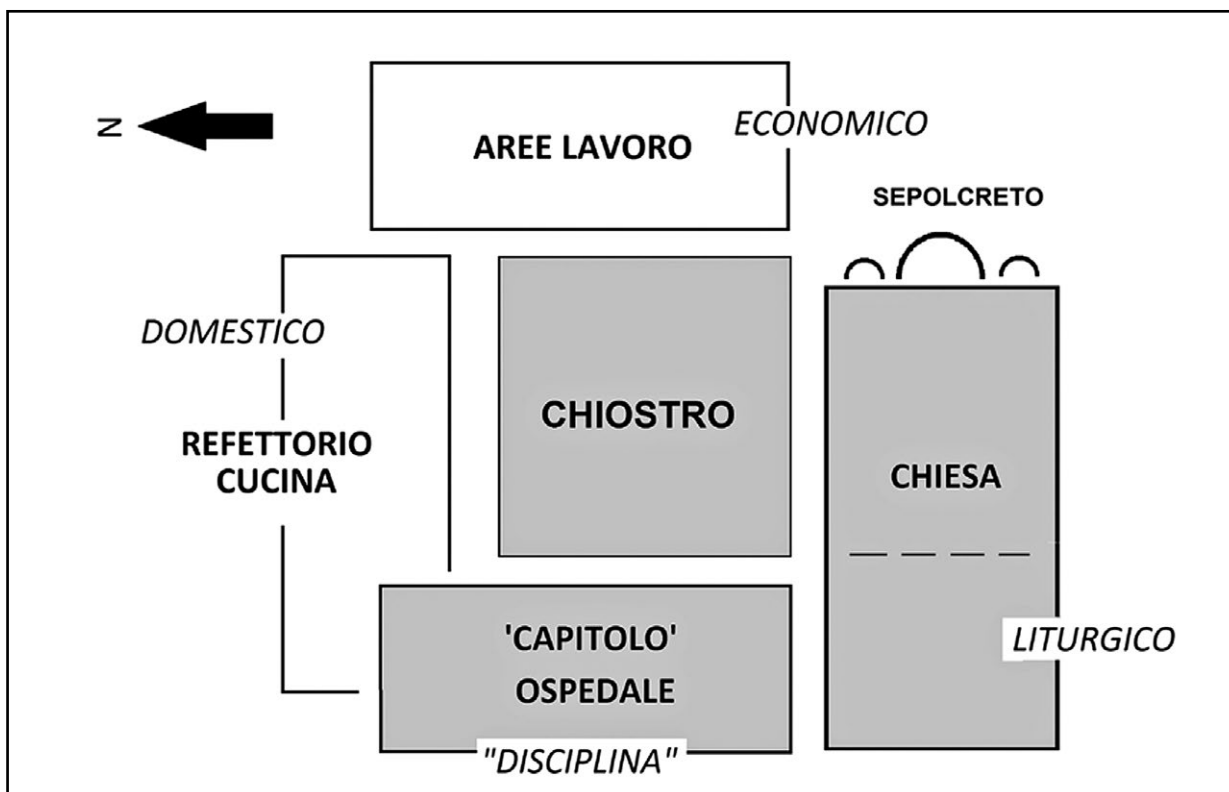


Figure 7.12 - Monastery of San Caprasio, Aulla. Schematic plan of the monastery, with parts investigated archaeologically shown in grey (from Boggi, Giannichedda 2021, 15).



Figure 7.13 - Church of San Caprasio, Aulla. Foreground: the remains of the two earlier apses with the gypsum sarcophagus in the centre. Background: the late 10th to early 11th century apse.

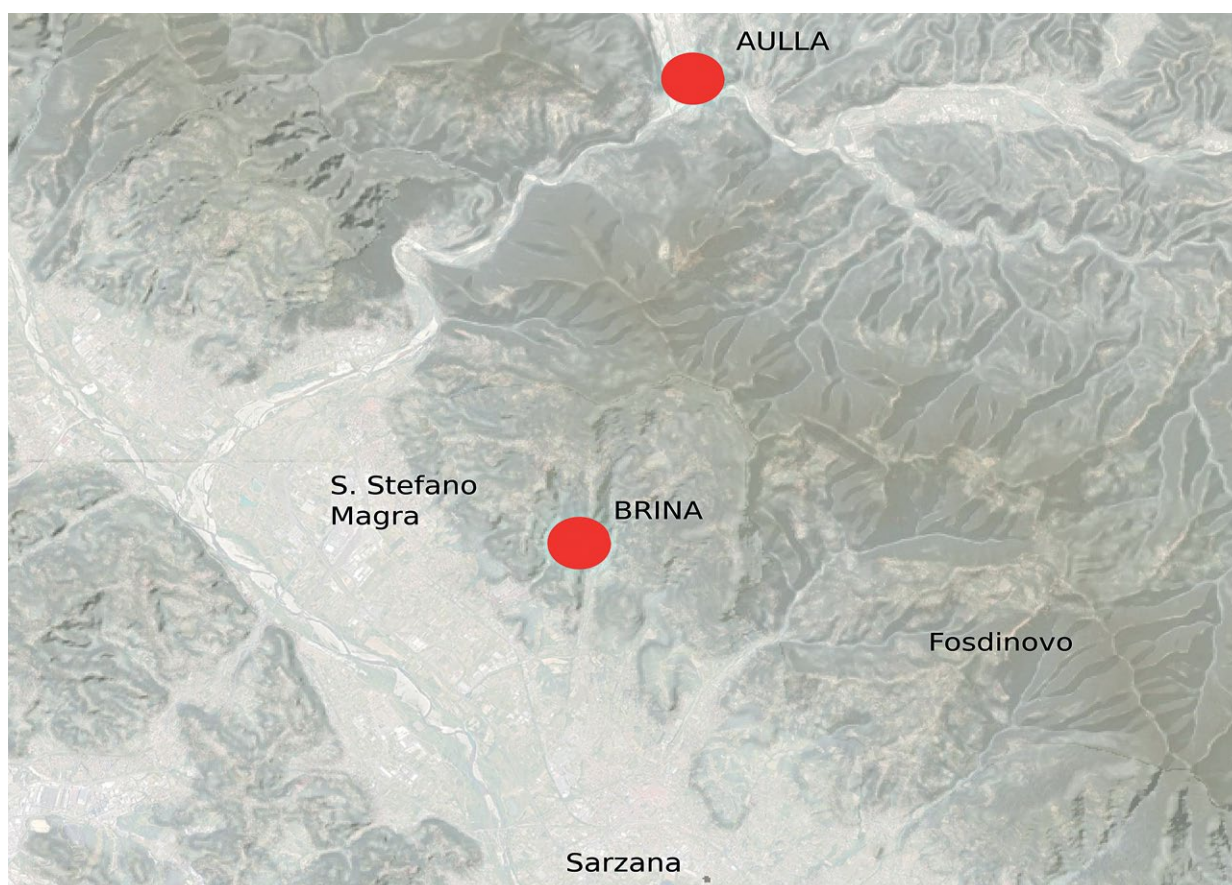


Figure 7.14 - Location of the site of Brina (SP) in relation to Aulla.

included stucco-work and elements of architectural decoration made of stone. It was in this phase that the remains of San Caprasio were buried in a new sarcophagus made of gypsum.

In a previous publication of the excavations, mention was made of interesting parallels (with a view to our parallels) between this sarcophagus and the one made for the Saxon Lothar II, Count of Walbeck, who died some time in the last quarter of the 10th century (Arslan *et al.* 2006, 195). However, the final edition of the research no longer mentions this comparison. Instead, it is stressed that the object may have been made in situ (Giannichedda 2021, 109).

In the Ottonian period, as well as the church the adjacent monastery was also created. The remains of a rectangular part of this complex, divided into three sections, were excavated.

As for the material culture associated with the excavated deposits, in addition to locally-made cooking ware and tableware, imported wares included, for the final, 10th century phase, fragments of a painted cup with underglaze decoration, made in Sicily or Tunisia, and finds made of pietra ollare from the Val Chiavenna and from Valtellina (Giannichedda 2021, 150-151).

Finally, an interesting find consists in numerous coins datable to between the 10th and 11th centuries: three denari struck at the Venice mint, three from Pavia, and one from Milan (the only 11th century example relating to Conrad II). Whereas on the one hand this provenance suggests that these coins belonged to pilgrims who happened to be passing through (Arslan in Arslan *et al.* 2006, 202), on the

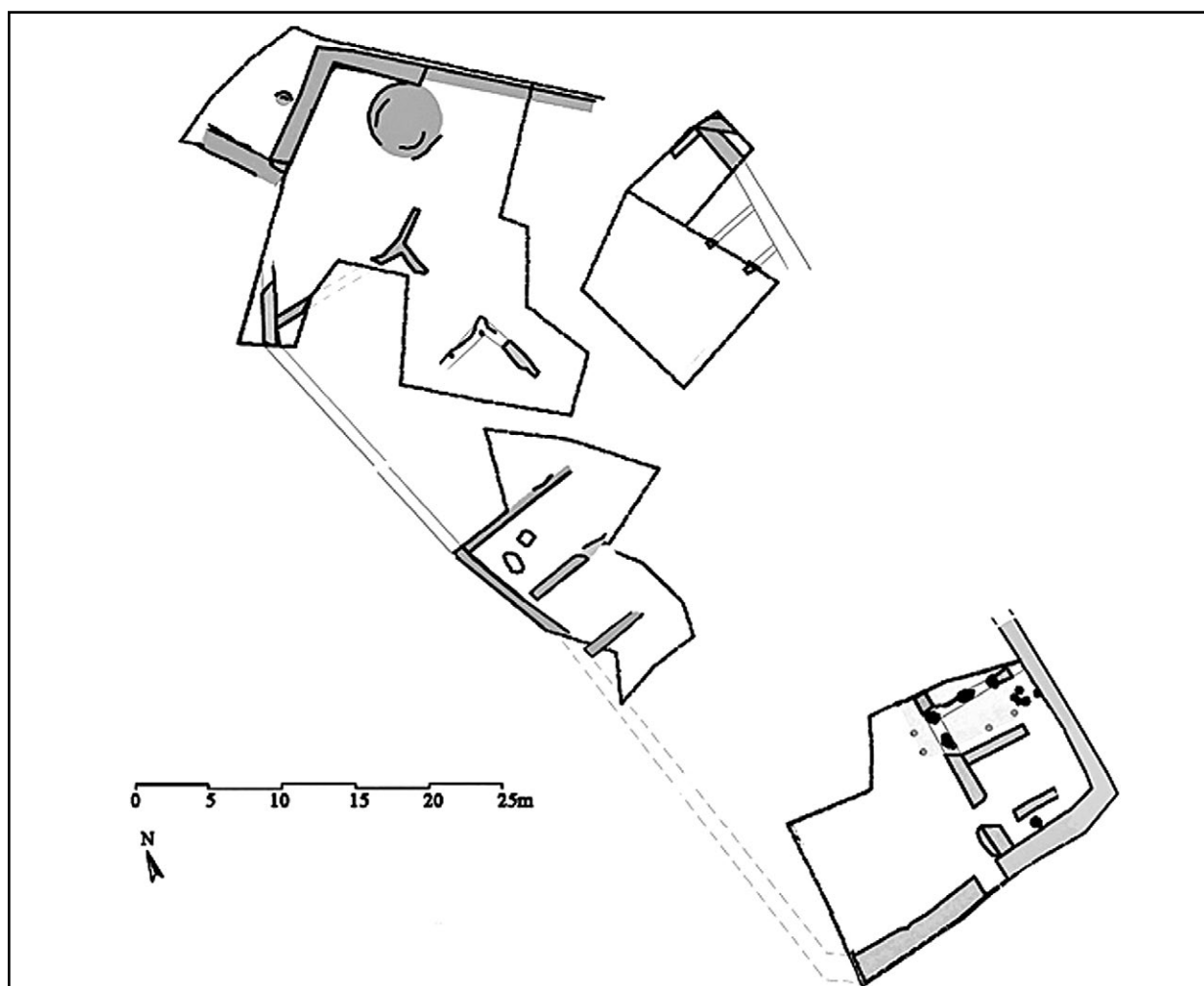


Figure 7.15 - Site of Brina (SP). Plan of hilltop features relating to the 10th-11th century transformation (from Baldassarri, Parodi 2011, 72).

other hand it has led archaeologists not to exclude the possibility that a market area stood north of the abbey, where most of these coins were found (Giannichedda 2021, 154).

We are also confronted by large-scale transformations linked to the final decades of the 10th century by the sequences found within a site located not far from Aulla, perhaps coinciding with one of those fundamental nodal points in the Ottonian-era networks lying not far from large complexes of royal properties (Figure 7.14). This is Brina Castle (in La Spezia province), located on an upland ridge overlooking the plain of Luni and the course of the Via Francigena, along the valley bottom (Baldassarri, Parodi 2011, for the following information). Atop an abandoned early village, with houses made of perishable materials, which probably already existed as of the 9th century, around the turn of the 11th century a construction programme was initiated to build a round tower along with a number of buildings with rectangular plan and stone-built outer walls, which coexisted with huts made of wood, or having masonry socle walls (Figure 7.15). It is possible that this collection of buildings was still delimited by the palisade dating from the earlier phase. A short time later, during the 11th century, a new perimeter wall made of stone was built, along with a building behind the round tower, as well as storage rooms and places for roasting cereals.

This site's interest lies primarily in the organization of the construction activities. Associated with the full Ottonian-era phase, when the round tower and annexed buildings were constructed, is a mortar mixer which is very similar to the ones found in the Maremma, albeit with a smaller diameter than those at Vetricella or Donoratico. However, since it measures 1.50m in diameter, it is close to the circumference of the Miranduolo mixer (1.70m), also dated to the same period (Causarano 2011, 52).

The mortar was used to bond walls built using rough-hewn stones of non-local limestone arranged in fairly regular horizontal courses. However, in the course of the 11th century, when the site was subjected to the aforementioned transformations, a construction site was established that was very different from the one that had been active just a few decades earlier. Indeed, the mixer, by then obliterated, was no longer used, and the mortar was mixed with its aggregates by hand, as is attested to by various points of lime concentration, where this operation took place. At the same time, for the construction of the new built features local peridotite was mainly used. The stones were shaped very roughly, and were laid in a generally irregular technique.

The presence of the mixer, a rarity outside the Maremma, seems to connect this construction site to prominent building schemes designed for key sites in Ottonian restructuring programmes. Unfortunately we are unable to infer much information regarding Brina's history from documentary sources. In 1078 the place was cited as a castle with a defensive outer wall, and a connection is suggested with the Da Burcione family in an area that later came under the control of the bishop of Luni. However, there are some features that make this site truly unusual. Indeed, as well as the mixer and the round tower, an architectural solution that would later prove very successful in this territory in the Late Middle Ages¹, but which has very few parallels indeed for the late 10th century, there are interesting aspects of material culture. For the occupation phase around the turn of the 11th century, along with locally made cooking ware and storage vessels, the excavation also unearthed fragments of sparse glaze pottery from Lazio, red-painted pottery made in Pisa, and fragments of pietra ollare from the Valtellina and the Val Chiavenna. Another significant finding are fragments of amphoras made in Palermo which, as I stated earlier, we find only in urban deposits in Pisa from this time (Meo 2018a, 228). Finally, also unearthed were arrowheads for hunting, parts of decorated furniture, bone handles for cutlery, and steatite spindle-whorls, as well as faunal remains such as the bones of a griffin vulture. Like the rest of the aforementioned material culture, these refer to an especially important social context within a site which, in that phase, was connected to circuits that convey pottery from the mainland and maritime area.

Albeit with extreme caution, given that Brina is situated in an unusual kind of zone, a bridgehead between the March of Tuscia and the Marca Obertenga, we cannot rule out the possibility that it originally belonged to fiscal estates, perhaps managed by the Da Burcione family, which later came into the hands of the bishop of Luni. In light of the situation found in the Maremma, the subsequent transformations at the site, as of the later 11th century, would seem to support this hypothesis. The destruction of the round tower in the course of the 12th century, so as to construct a new fortified building between the late 12th and the 13th centuries, is reminiscent of the events involving the tower at Vetricella. However, I believe that the marked differences between the features of the two construction sites are truly revealing, insofar as we see the disappearance of a specific set of technical skills and knowhow, and sudden, subsequent changes in these, and the abandonment of that public ‘traditional world’ which we discussed in the previous chapter, also represented by a specific way of building, and of designing buildings.

7.2 The Po Valley area

Before discussing the cases in the Po Valley, our sample area, I believe it is important to go back over, albeit briefly, what is known in terms of material evidence concerning the only two royal courts investigated archaeologically in northern Italy. This takes us to Piemonte, and thus outside the area that I wish to analyse in this section, but I think it is useful to give a more detailed picture of findings in support of the following arguments, too (Figure 7.16).

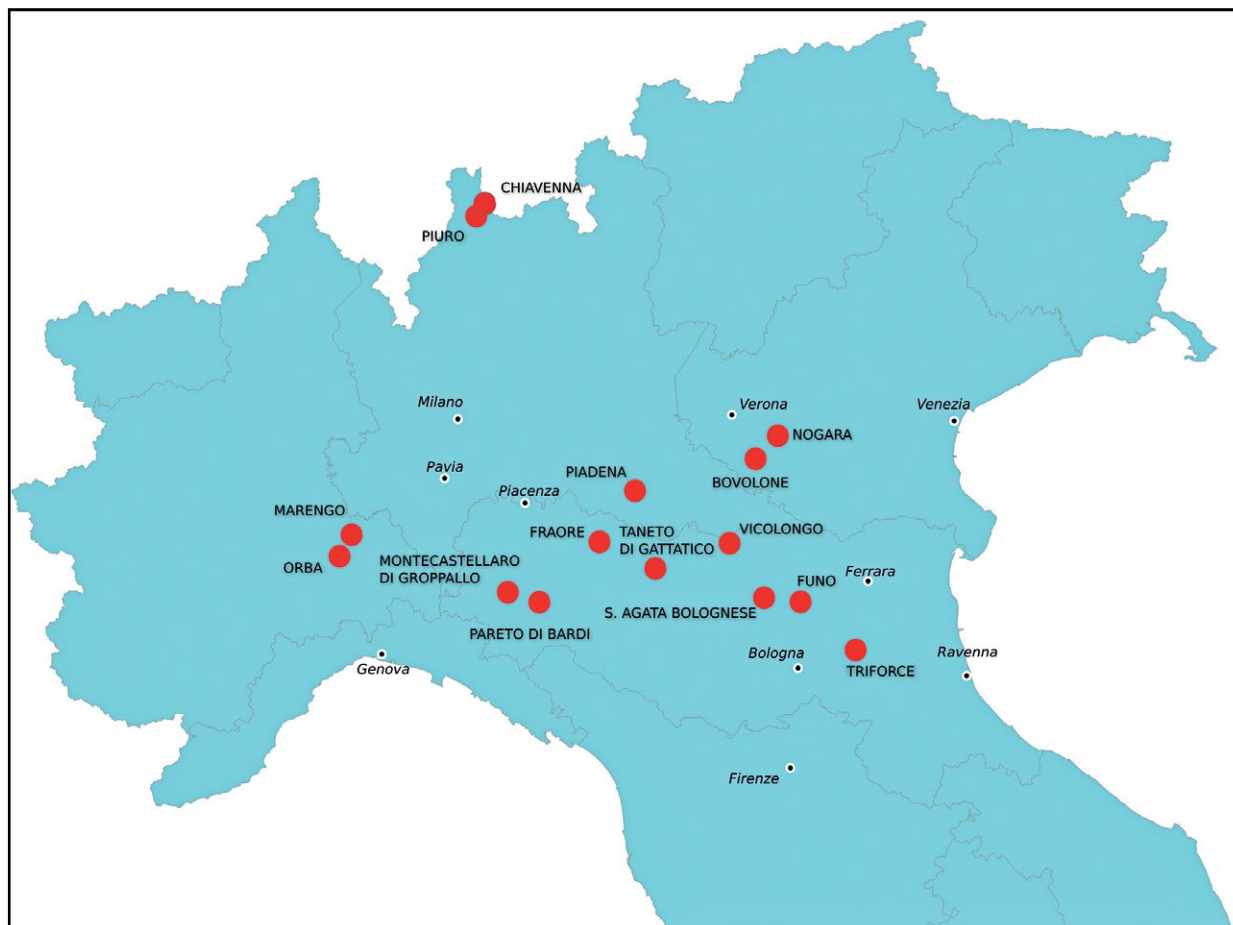


Figure 7.16 - Location of sites referred to in the text.

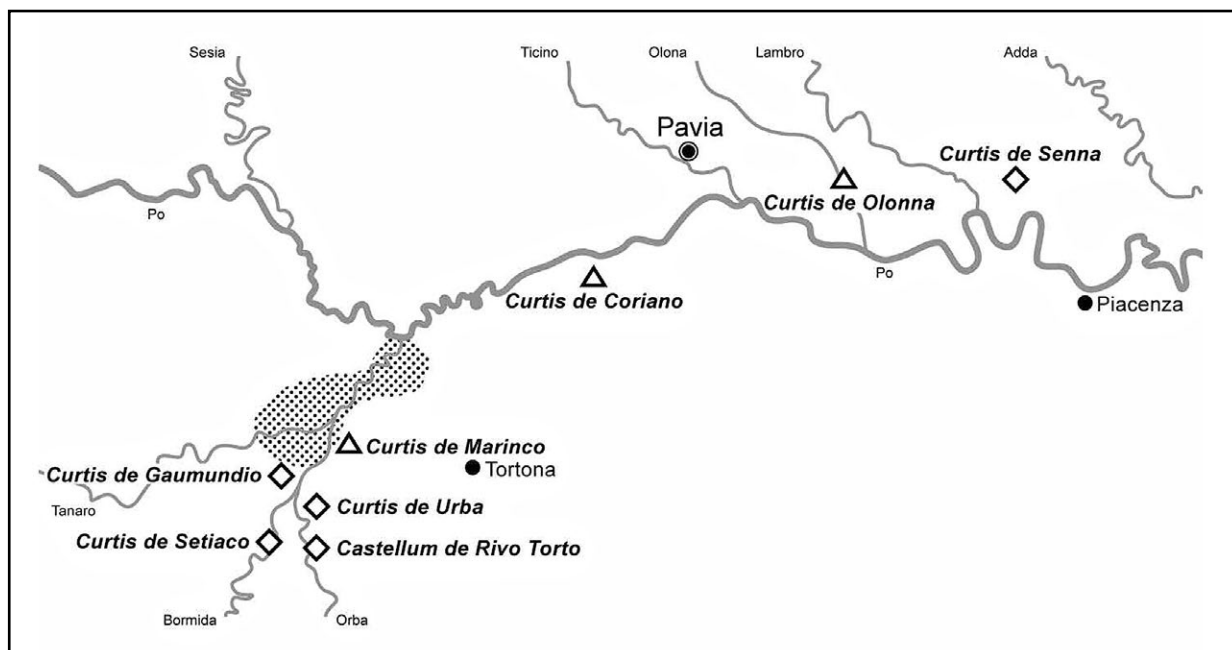


Figure 7.17 - The royal courts in Hugh of Arles' dower (AD 937) located in northern Italy (adapted from Vignodelli 2012).

In the heart of the Kingdom of Italy, where there was a remarkable concentration of royal courts and public lands, as we can see also from the location of the properties present in Hugh of Arles' dower from 937 (Figure 7.17), the courts of Orba and Marengo belonged to a group of royal estates (Corteolona, Auriola, Gardina, Sospiro, Senna Lodigiana, and Marmorio) that were especially concentrated in the Po valley, and that in the Carolingian period were promoted to the rank of palatia (Bougard 2019). Bougard wonders what the reasons might have been for such a choice of places which appear to be situated near the main road arteries, urban centres, or hunting reserves. The scholar believes that the latter example could be one of the main criteria that determined the particularly high status that these sites enjoyed, and this would also explain the close geographical proximity of some of these courts, such as the proximity of Orba itself to Marengo. However, another reason could be the possibility of specific economic vocations existing in these areas, although the archaeological findings are not enough to support this notion. Nevertheless, it is likely that this group of courts was also distinguished by the presence of some special physical feature: a building made of stone, for example, or a reception hall such as the one documented at Marengo, or else a massive building flanked by towers, perhaps present at Gardina (Bougard 2019, 107-109).

For the time being, the physical remains do not help much in resolving these questions, but they are still indicative, and so we shall describe them.

The remains of the court of Orba were identified on the site at the Torre a Frugarolo locality, in the province of Alessandria, during an excavation conducted between the late 1980s and the early 1990s. Connected to Orba was a *silva* (ie. woodland), where the Lombard sovereigns used to go hunting. We know that Emperor Louis II stopped off here (Bougard 1991, 370), and the court features among those made over by Hugh of Arles to his future wife Bertha with the dower of 937 (Vignodelli 2012). Among other documentary reports regarding Orba, there is a reference to a fortification existing at the start of the 11th century, which later became one of the properties of the Margrave of Monferrato, William III. The conflict between William and the Imperial power, first with Henry II and afterwards with Conrad II, led to sieges, and probable destruction. This was clearly not radical, given that the court was mentioned again in diplomas dated 1039 and 1052. After a long silence, the name Orba reappears in 1187, this time as the rural commune of Orba Nuova (Bougard 1991, 370-371).

In terms of material features, the bulk of the evidence unearthed, within what is now a farmstead, appears to correspond to the remains of the late 10th century castrum, built on a raised level standing about 1m above the surrounding countryside (Figure 7.18). A wall built using pebbles bonded with mortar, 1.40m thick, preserved to a height of around 1.50m, formed the outer enclosure of the oval-shaped fortification (with sides around 90m long). This also had a defensive ditch around 3m wide and 1.50m deep. The fortification was built on pre-existing features probably datable to the Carolingian period, and perhaps this phase, or a phase slightly later, saw the construction of a church identifiable as the chapel, or pieve, of San Vigilio. Later on, the religious building dating to the central Middle Ages was created on top of this, and part of its apses were unearthed. Perhaps also dating to the same period as the church, on the basis of similar masonry techniques, are the remains of a tower datable to the 12th-13th centuries. Pottery attests to occupation phases between the second half of the 9th century and the second half of the 11th century, when the site seems to have been gradually abandoned, before being frequented once again at the end of the 12th century. Notable among the finds is a large amount of *pietra ollare* (28% of all the vessels found). This falls into Group B in Mannoni's classificatory system, and thus comes from the upper Ticino valley (Bonasera *et al.* 1993, 338-342).

In the Carolingian period the Marengo court seems to have been a place of residence, and a place where diplomas of the Emperors Lothair I, Louis II, and Lambert were drawn up. As early as 825 it is mentioned as a *palatium regium* (Zoni 2021, 56). In 937 it was among the patrimony of Queen Adelaide, as a result of Hugh of Arles' dower (Vignodelli 2012).

Traces of this important property have been found on the margins of what is now Spinetta Marengo, a town a few kilometres from Alessandria (Figures 7.16-7.19). In a farmstead near the Museo della Battaglia Napoleonica, recent archaeological fieldwork has confirmed the presence of a large artificially raised area with an almost square plan, with sides around 80m long. This is surrounded by a wall made of pebbles, identifiable as a fortified enclosure, that is similar to the one at Orba in its masonry technique (Zoni 2021, 57-59).

In previous years, not too far from the farmstead, other archaeological research campaigns found a series of houses made of perishable materials, or with the lower sections of their walls made of masonry, interpreted as the *pars rustica* of the court (Crosetto 2012, 202). As Zoni stresses, if the area of the farmstead may correspond to the centre of the royal court, and these houses could be dependent properties, then these features would cover a total area of around 4-5ha.

Moreover, a recent article has hazarded a link between the court and the discovery of the so-called "Marengo treasure", which occurred not far from the aforementioned structures (Crosetto 2017). Found

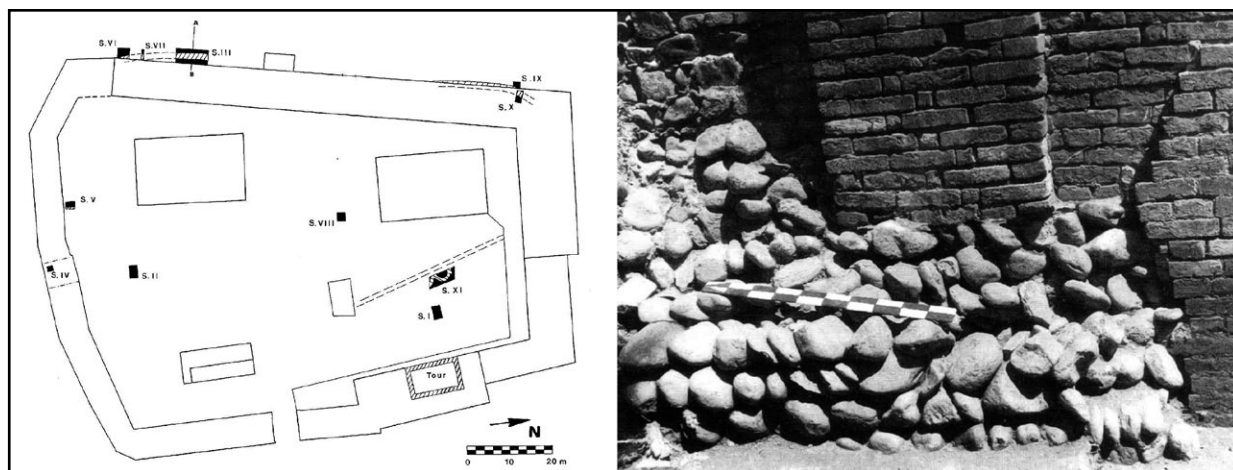


Figure 7.18 - Cascina Torre (Frigarolo, AL). Left: plan showing the modern-day constructions, and location of exploratory trenches. Right: photo of masonry, showing use of pebbles, dating to the late 10th-early 11th century phase (adapted from Bongard 1991).

by chance in 1928 inside a hole in the ground, this treasure consists predominantly of sheets of silver that were found broken, crushed, cut and bent. Hence the possible interpretation that it was not an intentional hoard, to conceal or preserve the objects, but a deposit of precious metal destined to be melted down and reworked, after probably being taken from a 3rd-4th century AD Imperial shrine. However, the idea that this valuable material may have been accumulated within the royal court, prior to being converted into other objects, is set to remain mere speculation, without further archaeological investigations to unearth areas set aside for metallurgical processes. Nevertheless, this is an interesting proposal with a view to the presence of skilled workers specializing in metallurgy, perhaps in relation to a specific economic vocation of this court.

Estate centres of a certain importance, and possible specialized forms of production, are some of the characteristics that these two royal courts share with the examples from our Po valley-Appennine sample area, which I shall describe shortly. These sites (Figure 7.16) were mostly connected to high-level aristocracies, often coinciding with public officials or with bishops, whose landed wealth was very likely linked to the complex systems whereby parts of fiscal properties were ceded by the central powers. On the basis of the type and scale of their layout, and the particular aspects of their material culture, these sites have more or less direct parallels with the main nodal sites that formed part of that network that were controlled by the major public properties that I have sought to describe in previous chapters in the case of Tuscany.

The case that is certainly the richest in terms of findings is the site discovered at the Crocetta di Sant'Agata Bolognese locality (in Bologna province). The context is so rich that it is difficult indeed to



Figure 7.19 - Marengo (AL), aerial orthophoto and Lidar renderings of farmstead identifiable as the former *caput curtis* (from Zoni 2021).

place it among the nodal sites in this hypothetical network, rather than to associate it with an actual public possession.

In the published findings of excavations at the site, which is not mentioned directly in documentary sources, the site is placed in connection with the geographical space known as Pontelongo, which in 993 was later associated with a castrum. Linked to Pontelongo was the Walcheri family, which recent studies connect to the Obertenghi family. After coming into the possession of family groups that gravitated in the orbit of the Canossa family, as of 1014 Pontelongo became one of the properties of the abbey of Nonantola, and thereafter it disappeared from written sources altogether (Gelichi 2014b, 401).

As illustrated in the case of the Vetricella site, material traces reveal that the site had a short life, being situated in a limited timespan. Two concentric defensive ditches were dug into a series of pre-existing features datable to the protohistoric period, at a time which can prudently be dated as prior to the 10th century, or to the early part of that century. These ditches were sub-rectangular in form, and enclosed an area where traces of a fairly small number of structures were found. One of the buildings, in particular, was subdivided internally, separating off the habitation parts from spaces set aside for a craft workshop, or a stable. Meanwhile another building has been interpreted as a granary. Also present at the site are traces of forging. This evidence, and the associated material culture, indicate a site with a vocation for farming without a great degree of social differentiation, as one also infers from the characteristics of the excavated buildings made of perishable materials (Gelichi 2014b, 404). The picture could be filled out more if we redate to this period the creation of a space measuring around 300m², standing a few dozen metres from this aforementioned area, which was enclosed by a double defensive ditch. Inside this area, in the central part, there must definitely have stood some type of building of which no traces remain, owing to the various moments of destruction prior to excavation, due to the fact a multi-municipal rubbish tip was created in this area. This layout has been likened to that of a possible motte, and its presence would definitely confer a greater degree of complexity, including social complexity, on these early phases of the site's life.

The presumed motte was certainly present in the following phase, the phase of maximum expansion which occurred between the second half of the 10th and the 11th century (Figure 7.20). In this narrow space of time, on the west side the site was skirted by a river, while on the other sides it was enclosed within a new, large defensive ditch around 12m wide and perhaps a couple of metres deep (Librenti, Pancaldi 2014, 111). It is particularly interesting to underline the suggestion that the water-course that flowed just past the site in this phase may be the result of a possible anthropic intervention, aimed at diverting water from a nearby river. The purpose of this would have been to improve river-borne transportation in this area, possibly indicated by a jetty for a landing-stage situated along the eastern side of the ditch itself. At the centre of the site we find a series of dwellings standing next to each other, forming a sort of single building, almost 50m long. These were built of perishable materials using horizontal timbers to which the elevations were anchored. The interior spaces were divided up for separate functions, with a living space (often with wooden flooring) and a space set aside for domestic activities. Road surfaces, created using timber planks, formed the streets, making circulation freer in what was certainly a damp and muddy environment (Gelichi 2014b, 406). One particularly significant aspect of this site is its material culture. The presence of several spindle-whorls (Nepoti 2014a) and tools for wood-working and metal-working (Librenti, Cavallari 2014) attest to the fact that the site had a vocation for weaving and various artisanal and metallurgical activities (mainly involving iron), as well as farming. This can be deduced also from the large number of fragments of millstones that have been found (which can be ascribed to at least six working pairs, for mills possibly operated by hydraulic power, Mannoni *et al.* 2014). The presence of blocks of unworked glass, ie. semi-finished goods from northern France (Nepoti 2014b), as well as stone mortars (Gelichi 2014a), also suggests the existence of specialized forms of craft production at a site that was certainly at the centre of a complex network of trade and exchange. This is further shown by the large-scale presence of pietra ollare (97% from Chiavenna, 2%

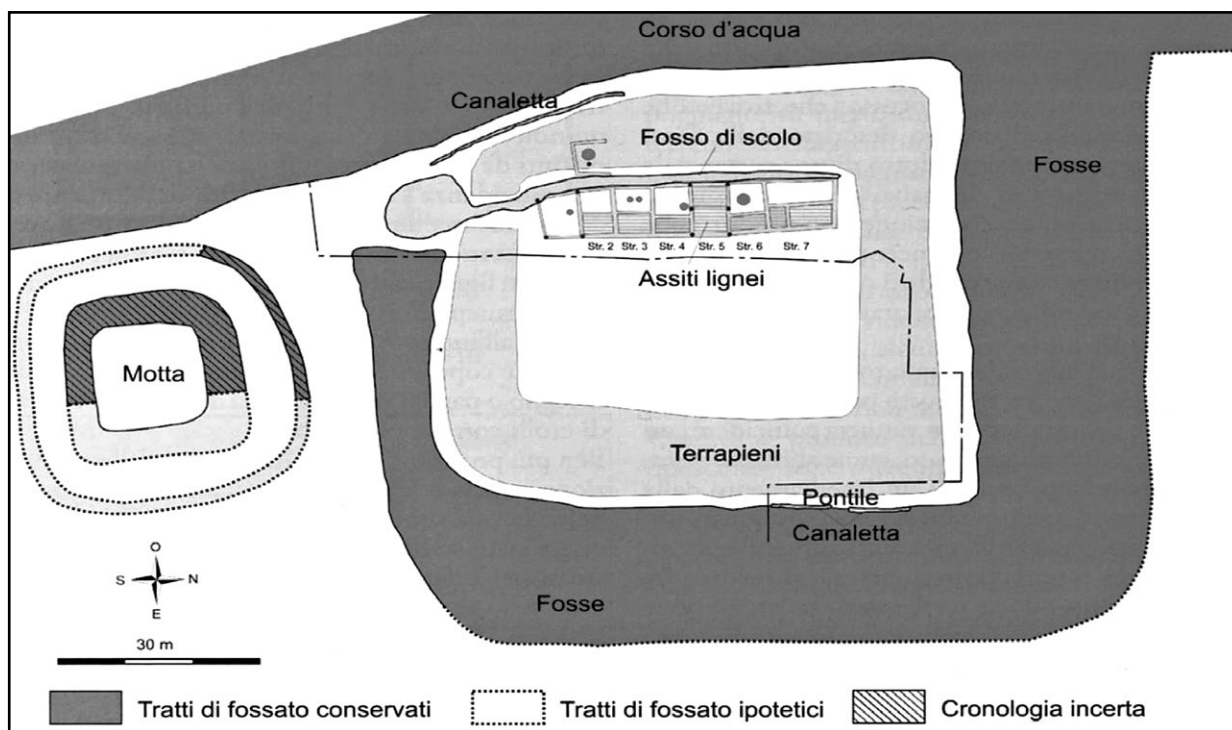


Figure 7.20 - Crocetta S. Agata Bolognese (BO), plan of late 10th-11th century phase (from Gelichi et al. 2014a).

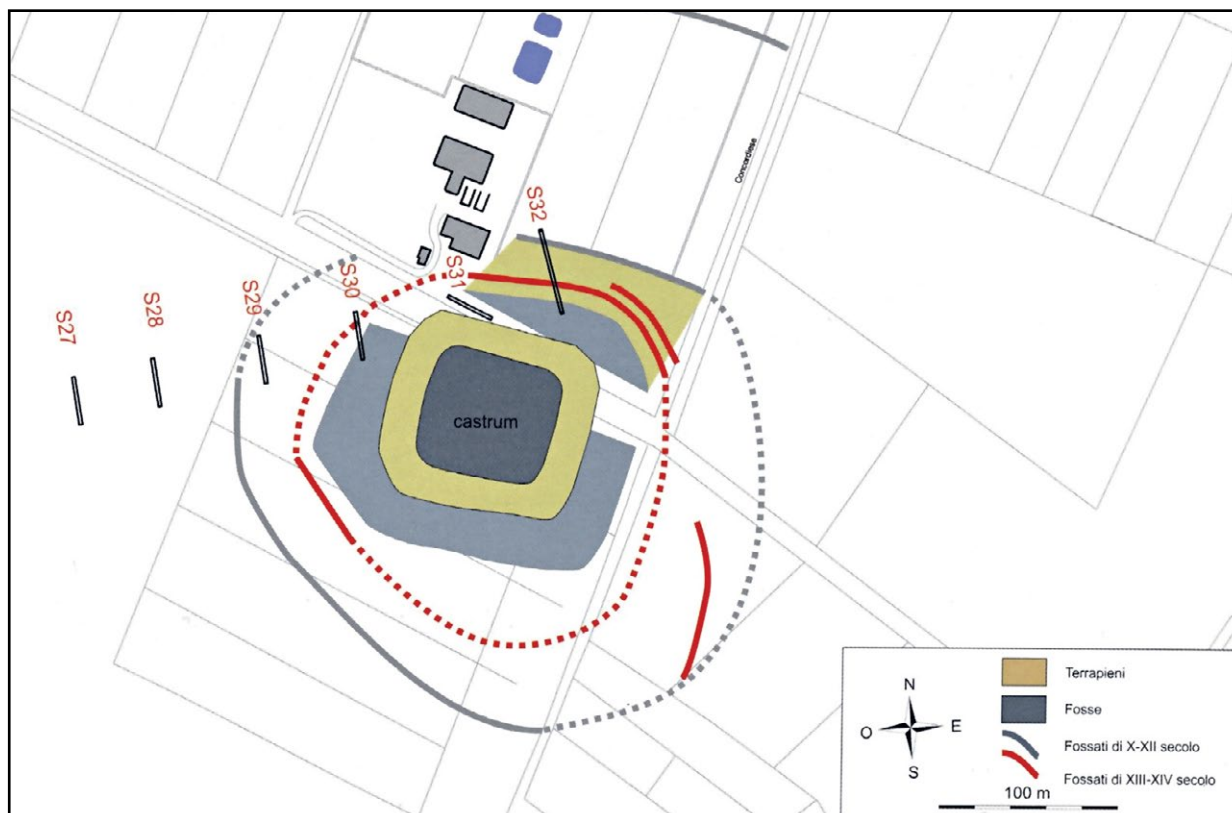


Figure 7.21 - Novi di Modena. Site plan showing location of exploratory trenches, and features that can be inferred from analysis of aerial photographs (from Campagnari et al. 2018; by kind permission of the Ministry of Culture-Superintendency for Archaeology, Fine Arts and Landscape for the city of Bologna and the provinces of Reggio Emilia and Ferrara, no unauthorised reproduction for profit, including indirect financial gain).

from the Rhône valley, Alberti 2014), as well as by millstones made of garnet-mica schist from the Aosta Valley, and 10 fragments of long-stemmed goblets with round foot (Stiaffini 2014), some of which are directly comparable to the goblets at Vetricella (especially type 2 with twisted stem, Castelli 2020), and a small lead flywheel for a drill that is identical to the one found at Vetricella, also comparable to finds made in much of northern Europe (Agostini 2020). All this, together with the considerable investment in the planning of the site (the only example of its kind found anywhere in Italy), and the anthropic alterations to water-courses, and also the fact that the site was short-lived, makes this site very unusual, and very similar indeed to the site excavated at Vetricella.

Even the epilogue to the site's history is almost identical to that of the Maremman site. Indeed, after all this frenzied activity, at some point in the course of the 11th century the place was completely abandoned, and some of the buildings were totally removed. The full surface area of the site was given over to farming, and was thereafter only frequented sporadically. This state of affairs would have continued if the area had not been covered over with alluvial deposits in the course of the 12th century. These deposits were likely due to flooding by the nearby water-course, created artificially, since it was no longer maintained after the site's abandonment. Thus one of those "black holes" was formed that was destined to remain such, had an emergency excavation not shed a little light on it.

In the excavation publication, which appeared in 2014, all the thinking relating to our case study, and the issue of public estates, was still at a preliminary phase, since the nEU-Med project only began at the end of 2015. At that time the Crocetta site was linked to the manifestation of nascent seigneurial powers who were first connected to the Obertenghi family (with the Walcherii) and later to two family groups who gravitated in the orbit of the Canossa dynasty (Gelichi 2014b). Throughout these years Sauro Gelichi has had no qualms in engaging in fresh discussion of this site, and viewing its history from new angles, as the history of Vetricella gradually took shape, and I know I can rely on his support in rereading today this extraordinary context as a probable nerve centre in a network that was closely connected to the



Figure 7.22 - Aerial photo of site where the castrum of Triforce stood (from Grandi 2010).

public powers. To better clarify and test these new possible historical interpretations, as part of the nEU-Med project a series of archaeometric analyses were conducted, relating to specific categories of finds. These involved especially isotope analyses carried out on the glazes used on sparse glaze pottery from the site, as well as mineralogical analyses of the forge waste relating to the 10th-11th century phase². In the first instance, the isotope signature of this ceramic ware, made between the 10th and the 11th centuries, probably in the Adriatic area (Sbarra 2014, 176), reveals the use of raw materials from the Harz mining area. The same result was found in the case of the same type of pottery, with the same date, found in Lucca. Moreover, the Crocetta examples are very similar to these in terms of their forms, especially in the case of the jugs (Briano 2020 and Ch. V, section 2, above). In the second case, 10 samples of forge waste, attributable to the 10th-11th century phases, were subjected to geochemical analysis, following the protocol drawn up to reveal the presence of hematite from the island of Elba (Benvenuti *et al.* 2013), which we discussed in chapter V, section 5. Of the 10 samples, only one has clear traces of this provenance. Not much in statistical terms, but still a finding which, in my view, we can set out from to develop further arguments as regards the areas that were supplying the raw materials. Thus, pending further study, we cannot wholly exclude the possibility of the circulation of 'soft' iron from Elba in this area, too, perhaps in the form of semi-finished articles, perhaps designed to be combined with other iron-bearing minerals from closer sites, such as the Bergamo area (Cucini, Tizzoni 2001). This would have resulted in the same process of ore mixture that has been seen, in this same time period, at both Vetricella and Rocca San Silvestro. Accordingly, if the site at the Crocetta locality could be seen as an important administrative centre, we can also identify other sites, in the same territory of Emilia, where the material evidence, although less rich, has some features in common with it. This is the case, for example, with the castrum of Novi di Modena (Modena province) (Figure 7.16), excavated as part of investigations prior to the construction of the Cispadana Regional Motorway (Librenti 2018, for all the following information). Unfortunately the characteristics of the sequences found do not allow them to be given a clear chronological seriation, especially for the older phases.

Despite this, it is believed that in the course of the 9th century a vicus existed on this site, attested in documentary sources as Vicolongo, a rural village linked to the pieve (church) of Santo Stefano. This vicus was transformed at the start of the 10th century into the castrum that was the property of the bishop of Reggio Emilia, ie. an individual with a highly political profile. In this phase, which, for the aforementioned reasons, has a very broad periodization, ranging from the 10th to the 12th centuries, two concentric defensive ditches were added to the site. These were of differing widths, and were fortified by embankments and palisades, enclosing dwellings made of perishable materials (Figure 7.21).

It is interesting to emphasize that associated with the phase when the vicus was inhabited, presumably dating to between the late 9th and early 10th century, was a kiln, or furnace, with a sub-circular plan, the precise function of which cannot be specified owing to a lack of processing waste. Equally noteworthy is the fact that fragments of pietra ollare vessels were found, as well as fragments of uniform glass blocks that are very similar to those found at the Crocetta site. As for the chronology, on the basis of the unusual features of the sequence, it was not possible to determine in more detail the archaeological events and their relationships, especially for the 10th century. However, we do know that there was continuous habitation here until well into the Late Middle Ages.

Switching to the eastern part of the territory of Bologna, it is interesting to reread, in this new assemblage of evidence and hypotheses, a text published fully 12 years ago which posed the right questions regarding the origins of a large site found during survey work, in a territory where historiography saw a delay in the processes of castle formation, which did not take place until the 11th century (Grandi 2010, esp. 47-50). Specifically, for the site of Triforce (Castel Guelfo, Bologna province), the existence was suggested of a large quadrangular motte with a defensive ditch, around 1ha in size (Figure 7.16-7.22). The wealth of material collected during the survey, much of which, especially pottery finds, pointed to a 10th century horizon, evidences habitation phases with which are associated glass articles, iron slag and

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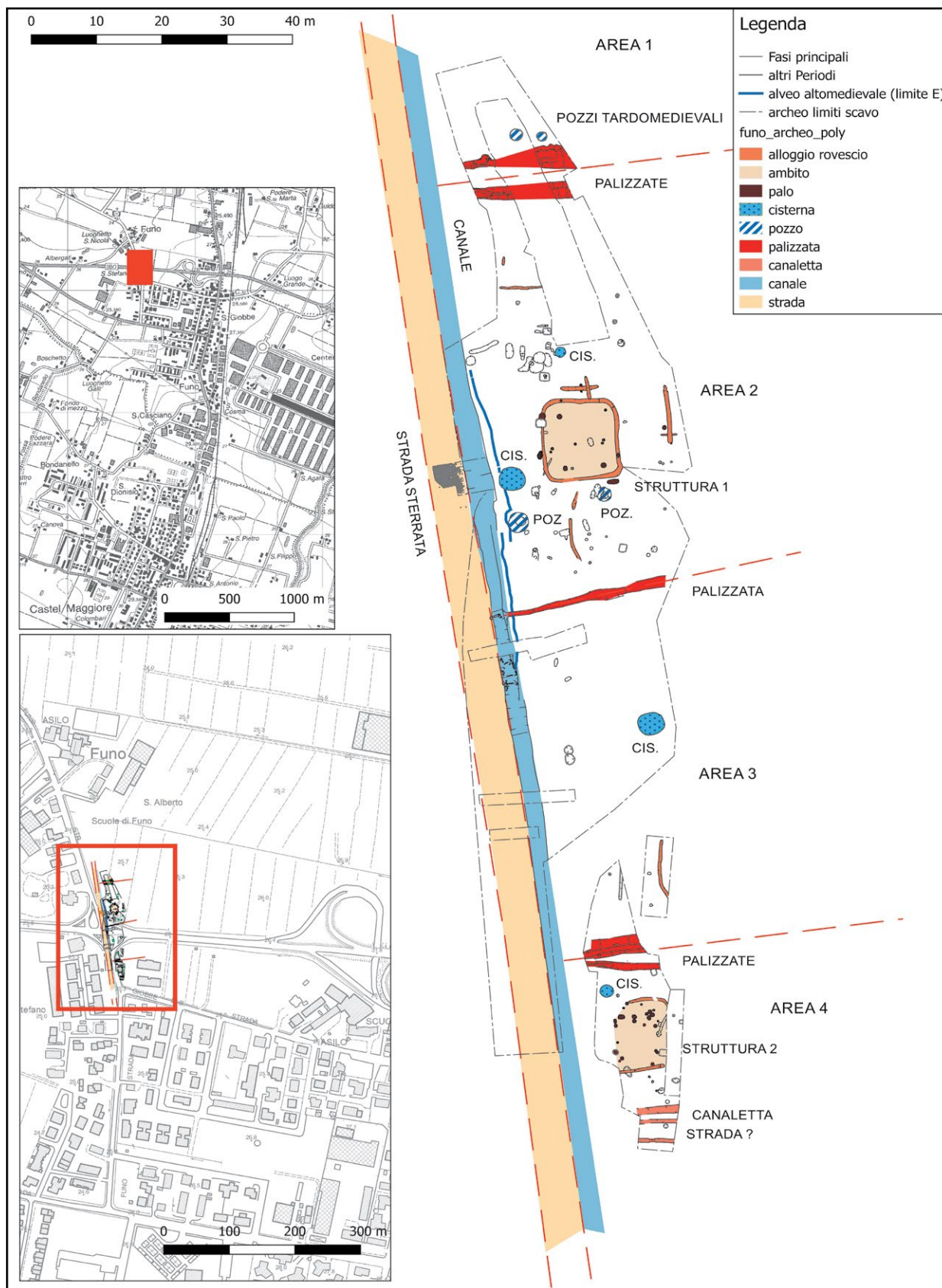


Figure 7.23 - Funo, Argelato (BO), plan of excavation showing the main medieval features (from Negrelli et al. 2018).

iron semi-finished goods, spindle-whorls, and many fragments of *pietra ollare* and of plain, undecorated pottery, especially coarseware. In an area which lacks references to feudal lords, Elena Grandi associated this site with the archbishop of Ravenna, a powerful political player. He may have been the sponsor of the formation of Triforce, at some point in the 10th century itself, although the site's first mention in written sources only occurs as of the mid-11th century.

On the margins of a well-known fiscal district, Saltopiano, in the western Bolognese territory, to be precise at Funo (Argelato, BO), a rescue excavation in the context of the construction of a provincial road unearthed considerable evidence in the form of a number of structures made of perishable materials situated along the side of an artificial ditch (around 4m wide and 1.50m deep) (Negrelli *et al.* 2018, for the following details). Massive wooden structures similar to palisades divide this zone along the bank into at least three areas, each occupied by a large building with associated accessory features, such as wells, grain storage facilities, and internal access ways (Figure 7.23). The buildings had a residential function, but they also (in two cases) perhaps served as barns or stables, and display diversified construction techniques, in contrast to the relative paucity of material culture. Whereas Triforce may have been typical as the centre of a possible episcopal estate, in this instance it is thought that the structures are a fairly rare example of a well-planned, diffuse site, perhaps part of a vicus or a *massaricio* (the *pars massaricia* of an estate) but standing within public properties, or at least on the boundary of them, given the proximity of the Saltopiano fiscal district. However, here too the phases of life again take us to the 10th century and later to the 12th-13th centuries, with a fairly widespread abandonment phase throughout the site. There were also numerous robber trenches, despite the fact that two of the original structures continued to be inhabited until the area was entirely given over to agriculture alone.

Near Parma, at the small frazione of Fraore (Figure 7.16), an excavation in the early years of the new millennium directed by the local Archaeological Superintendency (SABAP PR-PC) led to the discovery of a site situated on the raised bank of a river, in an area already frequented in the later Roman period. The archaeologist who studied it (Catarsi 2018, for all the following details) notes that the site was mentioned in 835 as *Fabrure*, when Queen Cunigunde donated the court to the monastery of S. Alessandro, in Parma. This ownership was confirmed by Otto I in 962 and by Otto III in 989. The archaeological remains refer to the phases that came after this donation when, in the later 10th century, the court gravitated around the monastery, but probably still had to retain the genetic features that linked it to the fiscal estates. The material culture seems to point to this very context. Indeed, five buildings were excavated (one built on horizontal foundation timbers, as in the buildings at Crocetta di S. Agata Bolognese). These were square or rectangular in plan, and were laid out in an orderly, regular arrangement, and also associated to their habitation layers were pits for the storage of cereals (wheat, barley, chickpeas), and many articles made of iron. The toponym *Fraore* has been interpreted as possibly referring to the work

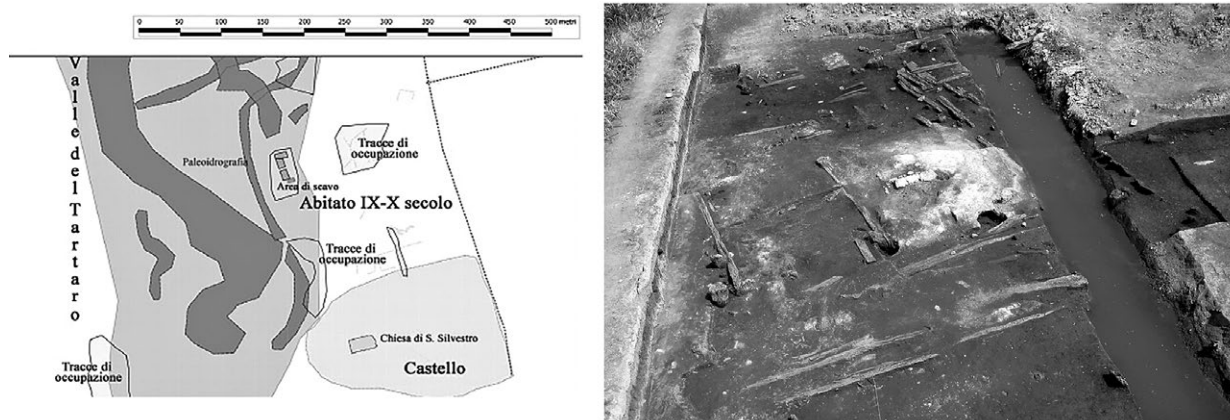


Figure 7.24 - Nogara (VR). Left: site plan, showing interpretation of features. Right: remains of 9th–10th century buildings (adapted from Saggiaro 2019).

of metal-smiths. Indeed, in this connection an open area was found that had baked earth floors and a large amount of charcoal. Here it is thought that ironworking may have taken place, to make several tools which might also have been intended for use in crafts and farming, such as axes, hoes, iron keys, and long knives, found during excavation. The circulation of *pietra ollare* vessels is also found at the site. The published findings do not provide details of the date when the site was abandoned, or the circumstances of its abandonment.

Moving further north, to Verona province, the multi-year excavation carried out between 2003 and 2008 at the site of Nogara (Figure 7.16) (Saggiaro 2011a) has unearthed the remains of a site that is plausibly believed to have been part of a royal estate. This is in view of the fact that in 906 King Berengar I authorised his faithful deacon, Audiberto, to build a castle in that place with the right to levy the *ripatico* and the *teloneo* (taxes), and the right to hold a market. Two years later, after the castle had been built, half of it was donated by Audiberto to Anselmo, Count of Verona. This was a prominent political figure who had close dealings with the King, and a few years later he in turn donated these properties to the monastery of Nonantola (Castagnetti 2011, 15-16/21-22). Thus, the investigated context represents a good example of a public estate located within a larger fiscal district, considering the two nearby *villae* as coming under the royal estate of Tilloano and Due Roveri and the comital property of Rovescello (Saggiaro 2019, p. 236).

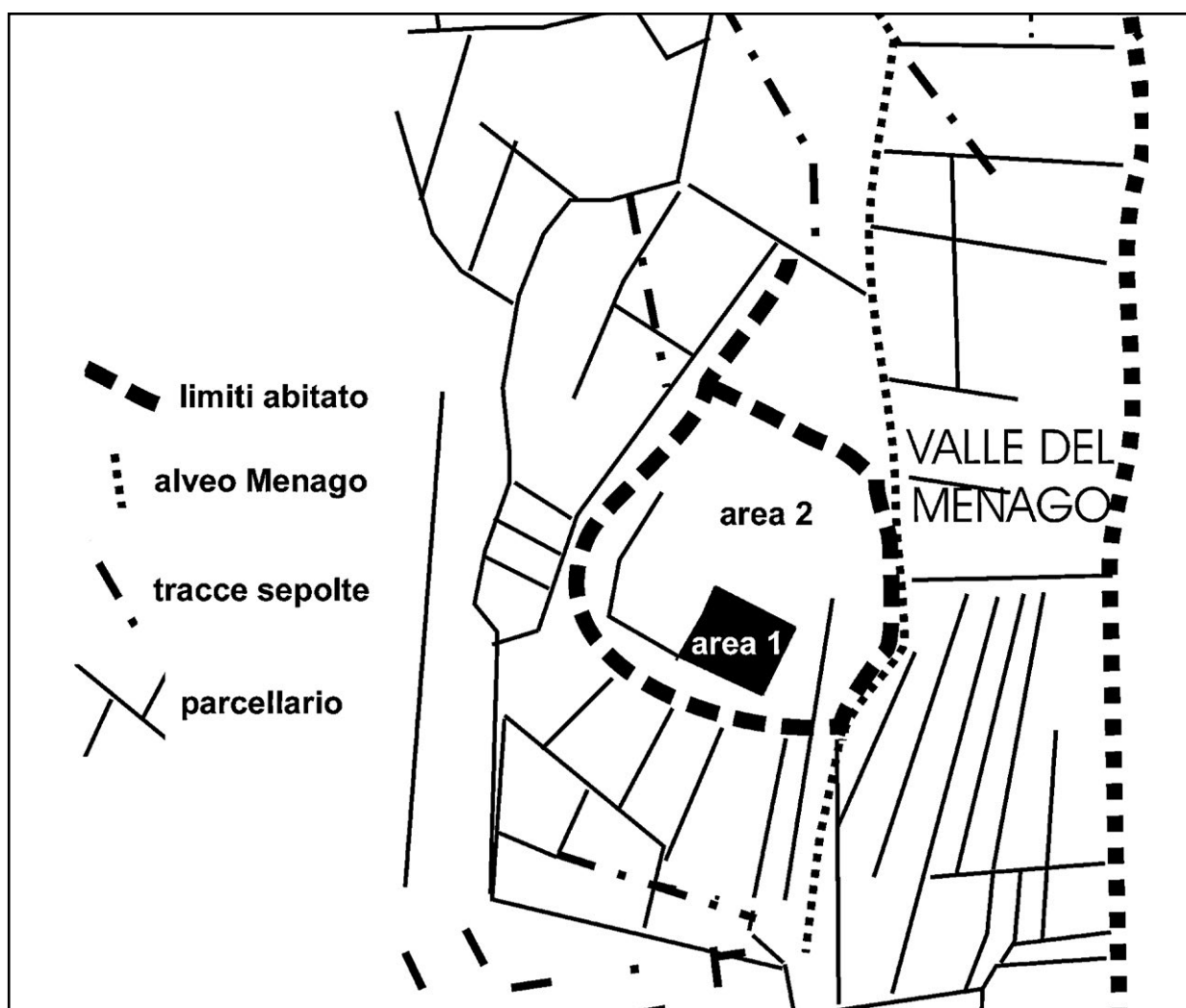


Figure 7.25 - Schematic plan of site of Bovolone (from Saggiaro 2010).

Dendrochronology dates attest to the fact that between 804 and 814 one of the banks of the river Tanaro was reorganized, with the drainage of a large marshy area using waste material, accompanied by simple wooden formwork (Saggiaro 2011b, 328-329). This made it possible to build at least four buildings on the bank (Figure 7.24), two of which having a residential function, divided by fences or by a road (Saggiaro 2019, 237). Later on, north of these structures, an artificial terrace and a ditch were created. These were necessary for regulating water flow, while small jetties serving as a landing-stage date to the late 9th century. The material culture for this phase does not display particular distinctive features, apart from a few fragments of sparse glaze pottery, despite the fact that the site was in contact with wider-ranging circuits, as witnessed by the presence of a considerable number of fragments of *pietra ollare* datable to between the first 30 years of the 9th century and the late 10th centuries (Malaguti 2011). This nucleus continued to be inhabited at the same time as the nearby castle took shape and developed. This is located on an embankment to the south-east, but has only been investigated archaeologically via a small number of exploratory trenches.

In the second half of the 10th century there were further changes that led to the abandonment of at least one of the buildings, and the formation of a levelling layer that obliterated the previous ditch. The presence of forge waste suggests the existence of some activity connected to metallurgical processes. It is in this phase that archaeobotanical analyses find greater anthropic activity, with an increase in the felling of the surrounding oak woods, in order to free up spaces for growing cereals, hemp and vines, while the presence of meadows/pastureland, for raising livestock, remained constant (Marchesini *et al.* 2011, 174). The area saw later, more sporadic frequentation between the 12th and 13th centuries, until being definitively abandoned.

Not far from Nogara, still in the Verona plain, we come across the site situated near the Crosare di Bovolone locality (Verona province). Here an excavation has revealed the sizeable remains of an early medieval site standing on top of a raised river bank near the river Menago, previously occupied in the Bronze Age (Figure 7.16). Specifically, this site may be subdivided into two areas (Figure 7.25), the first corresponding to a possible fortified zone for which no archaeological data is available, and the second to a space outside this zone, around 1ha of which has been investigated (Saggiaro *et al.* 2004, 173). For the purposes of our argument, of particular interest is the suggestion that two channels may have been dug, generically dated to the medieval period, one of them created reusing a pre-existing feature dating to the Bronze Age, which may have delimited the presumed fortified zone that was not involved in archaeological investigations, and which probably corresponded to the actual central nucleus of this rural site, later referred to as the castle of Bodoloni in a document dating to 1179 (Ibid., 185, n. 45).

As regards the excavated area, on the other hand, in the published findings one perceives the difficulty in identifying a precise chronological seriation of the sequences, owing to their poor state of conservation. Aside from this, it is important to stress that, after a definite initial 9th century occupation, faint traces of which have been found, this portion of the site saw major development datable mainly to the 10th and 11th centuries (Ibid., 185). The buildings found within the area were thinly spaced out, covering a total surface area that has been estimated as being around 6ha, and they seem to be distributed on the basis of their function. One area with a more strictly residential function was distinguished, also by means of a ditch, by a space set aside for craft activities. Within this space pits with traces of combustion, and charcoal, were found, leading to the suggestion that ore treatment processes (roasting) took place here. If so, then the water from the nearby channel would have been necessary in the various phases of the production cycle (Ibid., 174). The residential buildings featured the use of a range of differing techniques, with huts built with stakes set vertically into the ground, or on horizontal foundation timbers. In terms of their plan and size, these have parallels with examples in France and northern Europe, as well as with Nogara, Fraore and Crocetta di Sant'Agata (Saggiaro 2010, 77-79). The use of this latter technique seems to be associated with a building around 20m long and 7m wide, consisting of two adjoining parts, one of which was maybe intended for artisanal functions, given the presence of objects that formed

parts of looms for weaving. Another type of remarkably large dwelling (10.2m x 10.4m) had a masonry lower section and a probable wooden elevation (Ibid., 77-79). The material culture, especially as regards pottery finds, features the presence of a fair number of fragments of *pietra ollare* (corresponding to a minimum number of around 70 vessels), datable to between the 10th and 11th centuries, from the central Alps.

We have no reports of this site prior to a reference to it as a castle in 1179, at a time when its decline was already visible. Indeed, the material evidence shows that after this phase of major development, between the 10th and 11th centuries, the area was gradually abandoned before being converted into farmland, which in the Late Middle Ages covered most of the buildings (Saggiaro *et al.* 2004, 185). Without having to stray too far from Bovolone, we come across a further case study that is very well-known in the archaeological historiography of the Middle Ages because in its sequences, excavated in 1984, one of the first examples of a rural early medieval site in central-northern Italy was found.

This site lies north of the modern-day town of Piadena (Cremona province) (Figure 7.16), originally situated on a raised riverbank within a bend of the paleochannel of the river Oglio. The size of this site is estimated as being around 9ha, and its life was linked to the existence of the castle of Pladena, with a *tenimen*, referred to by that name in 990, at the time when ownership of it passed from the bishop of Cremona, Olderico, to the monastery of S. Lorenzo, founded by Olderico himself. In 1019, following a further change of ownership, which signals its fiscal nature, the castle came into the ownership of the Canossa family, and in 1022 Boniface of Canossa, the future Margrave of Tuscia, donated it once more to the bishop of Cremona, Landolfo (Brogiolo, Mancassola 2005 also for all the following information).

Since it was an emergency excavation, many of its features were found in a precarious state of conservation. However, this did not prevent a site continuity from being recorded down to the 13th century, with a particularly important phase between the 9th and the first few decades of the 11th centuries. The most distinctive feature of Piadena is the distribution of the buildings, which, at least as of the 9th century, seem to be spaced out at fairly fixed distances, parallel to each other, drawn up along the sides of a sort of straight road set into the ground, in order to allow water drainage (Figure 7.26).

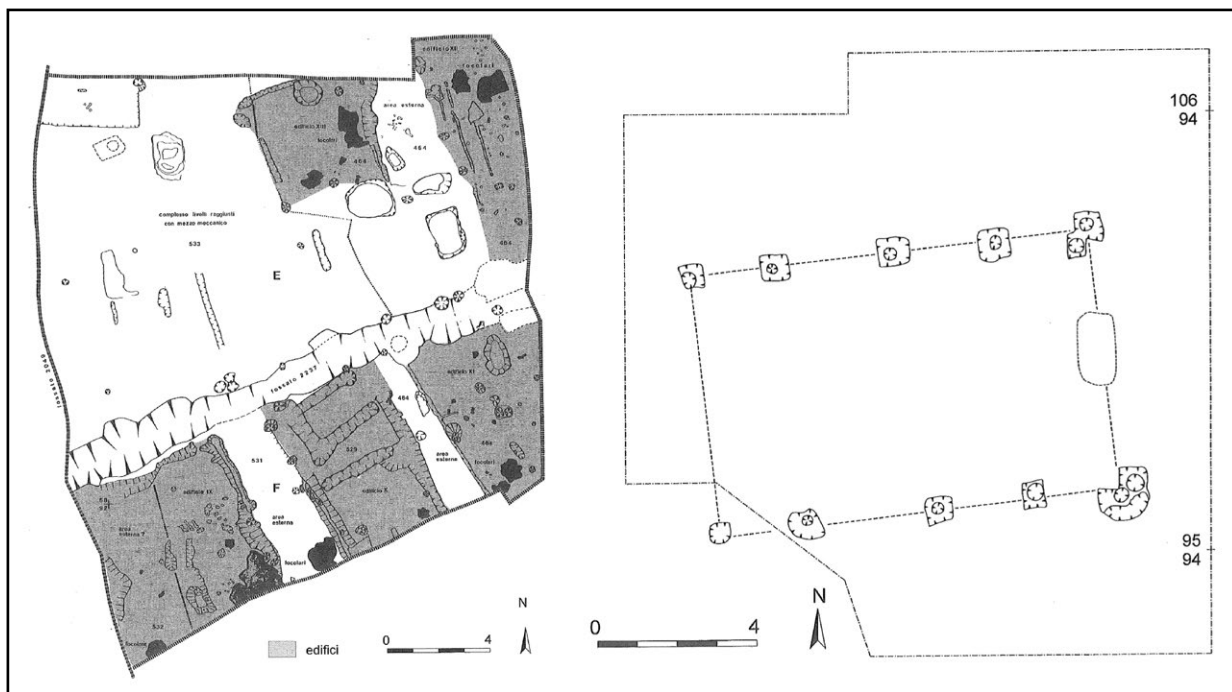


Figure 7.26 - Piadena (CR). Left: plan of early medieval site. Right: the 10th-11th century building (from Zoni 2021, adapted from Brogiolo, Mancassola 2005).

This layout can be seen more clearly for the phases around the turn of the 11th century, when a number of buildings were restructured or, as in one instance, replaced with a large structure (11m x 7.5m) built using horizontal timbers to which the wall itself was anchored, with possible wooden flooring.

This group of houses has been interpreted as an inner portion inside the castle, designed as dwellings for the serfs who worked for the domocoltile centre. Proof of this interpretation, according to the excavators, would come not only from the physical characteristics of the dwellings, but also from the numerous traces of artisanal activities that must have been conducted in this space: millstones for wheat; spindle-whorls; and a certain number of pieces of slag, but unassociated with any production feature.

Nevertheless, the material culture reveals more than one affinity with the other sites discussed thus far: the presence of a fair amount of *pietra ollare*, especially for the 10th-11th century phases (Alberti 2014, 181); glass articles that bear close comparison with those found at the Nogara excavation (Mercante 2011); considerable amounts of coarse, undecorated cooking vessels including *olle* (pots), flat pans, and lidded bowls, with such a wealth of repertoire of forms as to justify a specific type, known as the 'Piadena type' (Brogiolo, Gelichi 1986, 296-300), also used later to classify pottery from other sites excavated subsequently.

Thus far, among the sites that looked to the world that revolved around the *publicum*, we have mainly analysed the areas set aside for artisanal activities, with little discussion of the material culture of the people who lived in the spaces designed as housing for the owners or their emissaries.

For this specific aspect, within the specific area we are analysing, there is only a glimmer of light in the case of the site of Castellazzo di Taneto, located a few kilometres from Taneto di Gattatico (Figure 7.16), in Reggio Emilia province (Storchi, Pansini 2018; Storchi 2019 for all the findings given below). Here an excavation was carried out within a territory which in the course of the 9th century was the subject of claims, of an almost dynastic nature, by the Supponidi Counts, but which later, at least as of 962, came into the possession of the powerful Count Adalbert Atto of Canossa. In particular, the archaeological investigations revealed the presence of sections of a possible extensive enclosure built using stones and pebbles sourced from rivers. This was rectangular in shape with long sides measuring around 100m and the short sides 75m, and connected to it was a quadrangular plan with an outer perimeter of 12.10m x 7.60m (Figure 7.27).

The archaeologists assume that the layout of the circuit may be dated to the mid-9th century, as would seem to be indicated by the radiocarbon date of one of the stakes used to consolidate the ground beneath the fortification itself. The period around the turn of the 11th century would seem to be the date of the construction of the tower, which had large-scale foundations built using river pebbles bonded with mortar, laid in fairly defined and regular courses. The top of all the walls is at exactly the same height, and this fact could be related to the presence of a possible upper section made of perishable materials, perhaps fixed to wooden timbers laid directly on the tops of the walls, or else it might otherwise be explained by the fact there was a systematic destruction. This latter hypothesis could be linked to the presence of a dark layer rich in charcoal, with finds subjected to high temperatures, which sealed the habitation layer of the tower itself, following a possible fire. In this layer, the finding of a coin datable to the reign of Otto III allows us to place the final phases of the building's life in a narrow timespan, prior to its destruction, which is perhaps to be attributed to the turbulent phases that saw the Canossa dynasty itself warring with the Imperial powers in the second half of the 11th century.

In the deposits excavated inside the tower, dating to the late 10th to early 11th centuries, the material culture is distinguished (as well as by the presence of pottery fragments, loom-weights made of steatite, and an enamelled platelet) by an exceptional assemblage of specific objects. These consist in a series of ivory elements that can be identified as chess pieces, and a playing counter that may have belonged to a "tavola reale", the precursor of the game now known as backgammon. Regarding the chess pieces,

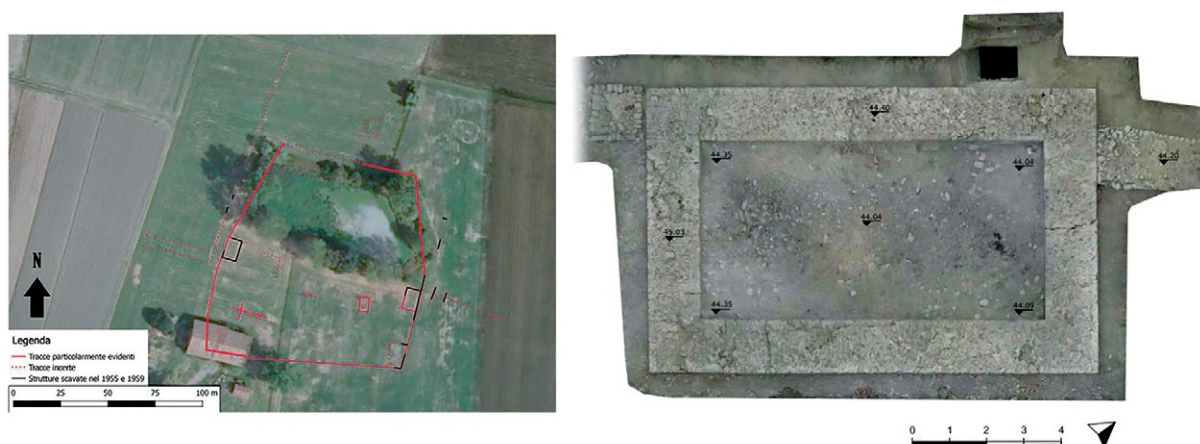


Figure 7.27 - Castellazzo di Taneto. Left: possible fortification perimeter. Right: orthophoto of the tower (adapted from Storchi, Pansini 2018).



Figure 7.28 - Castellazzo di Taneto. The chess pieces found during excavation (from Storchi 2019).

five pieces were recovered, either whole or that can be reconstructed in their entirety, and three large fragments (Figure 7.28). This group of eight pieces, also showing the effects of the possible fire that struck the tower, represents, along with the chance finding of chess pieces at Venafrò, the oldest evidence of this game ever found in Italy. Regarding their place of production, an eastern provenance has been suggested, perhaps as far away as Iran. As Storchi notes, drawing on a series of studies on this subject, the game of chess spread to southern Europe starting in the mid-10th century, and was so successful among the nobility that knowing how to play was considered to be one of the distinctive features of knights. A chess set was regarded as a prestige item, and its discovery in the habitation levels of the tower could be indicative of the social status of its inhabitants, and distinguishes this site, as was imaginable in view of its owner's rank, as a crucial element in the power dynamics of these places connected to the *publicum*. This is all the more true if we consider that Castellazzo di Taneto is located near the river Enza (the former course of which used to flow nearer the site than it does today), i.e. beside a natural transportation route between Canossa and Brescello, two defining locations in connection with the Canossa dynasty, as well as being a natural route between the site itself, the Po, and the heart of the Po Valley plain.

The last two cases I wish to discuss are instead connected to the same vocation for production, despite being located on differing sides of the Appennino Parmense mountain range.



Figure 7.29 - Monte Castellaro di Groppallo. View of archaeological excavation following the 2011 campaign (from Ghiretti, Giannichedda 2013).

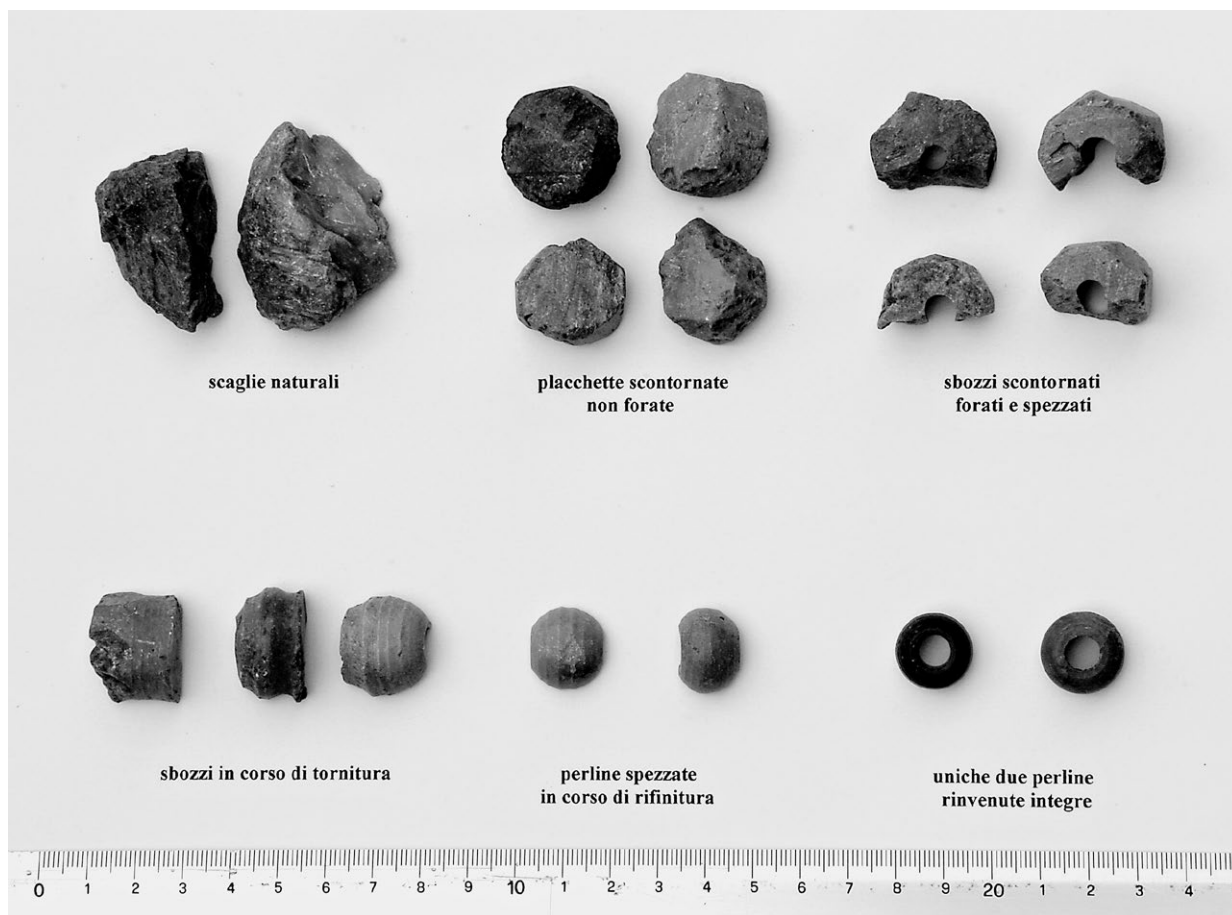


Figure 7.30 - Monte Castellaro di Groppallo. The steatite production chain (from Bazzini et al. 2009).

The first is the site of Monte Castellaro di Groppallo in the municipality of Farini (Figure 7.16), situated in the Nure valley in the province of Piacenza. This area was definitely part of royal lands (which may also have given rise to a nearby modern-day toponym, Montereaggio), given that we have a clear mention of it in 898, when Berengar I made a gift of part of it to a gastaldo, Vulferio, a vassal of the Count of Piacenza. Apart from this brief but significant glimmer of light, we do not have other reports regarding this specific district, which seems to display all the features of one of those black holes that are very much present also in the Maremma area. Only in the Late Middle Ages is a castle attested here, connected to the Da Groppallo seigneurie.

The excavation of part of this site (Figure 7.29), the sequences of which are very disturbed by interventions in the modern era, has nevertheless revealed exceptional material evidence which, in my opinion, has perhaps not enjoyed the attention it deserves (Bazzini *et al.* 2008; Ghiretti, Giannichedda 2013, for all the information reported below).

The site is positioned in a geological context distinguished by the presence of major outcrops of steatite rock, which have been exploited ever since the prehistoric period. The archaeological excavation has allowed the traces of an atelier to be identified on the mountaintop. This atelier made steatite beads datable to between the late 10th and 11th centuries (Figure 7.30). By means of an analytical study of these finds, the various stages in the production chain have been reconstructed, as witnessed by more than 87,000 objects (including finished products, processing waste, and semi-processed items). The study of the finds, recovered from what is a fairly small excavation area, has enabled the identification of repeated operational steps. A number of iron tools found at the site, such as 37 gouges and 4 drill bits, have been associated with the stone-working operations. Connected to this centre were further ateliers distributed across the surrounding territory (at least 11 are estimated).

These were presumably active in the same periods, and they must have increased the overall volume of output, which was already sizeable. Aside from the functional interpretation of the steatite finds (rosary beads vs. spindle-whorls), there remains the fact of a numerically exceptional and very well organized production, concentrated between the 10th and the early 11th centuries. This production was definitely not designed to serve the purposes of purely internal use, but was presumably intended for export. Confirmation of this lies in the fact that such steatite beads, closely comparable to those found at this site, have been found in many contexts not only in the Po Valley plain but also in the Maremma area. In typological terms, the steatite articles from Groppallo have direct parallels, for example, with those (interpreted as spindle-whorls) found at Nogara (Buzzo 2011), Piadena (Possenti 2005), S. Agata Bolognese (Nepoti 2014), Orba (Giannichedda *et al.* 1995) and Vetricella (Russo 2021). The steatite beads were circulated widely and, although not directly compared in the published findings with those from Groppallo, they are also found in the Castellazzo di Taneto tower and at Brina Castle, in Lunigiana.

Also in the Appennino Parmense, not very far from Castellaro di Groppallo, at Pareto di Bardi (Figure 7.16), other traces have been found of one or more ateliers that were still producing steatite spindle-whorls (interpreted as such here by the excavators) (Giannichedda *et al.* 1995).

Despite the fact the number of finds is definitely smaller than those from Castellare di Groppallo (around 3000 pieces, including finished goods and semi-processed goods), we nevertheless find ourselves faced with an exceptional quantity of finds. Indeed, generally no more than 10-20 examples of such items are found at sites in central-northern Italy and in Tuscia. In this instance, the archaeological evidence is weaker for determining a precise date, which is circumscribed between the 10th and 12th centuries, while there are no mentions of the political figure or body who was the owner of this, although they gravitated near to the territories of Parma and Piacenza. Thus we cannot rule out the possibility that Pareto di Bardi, as well as Groppallo, also belonged to the same public district dedicated to working this raw material. On the subject of specific forms of production, I have already referred to the undecorated coarseware from Piadena which, being the first such that was found in such amounts, gave its name to a

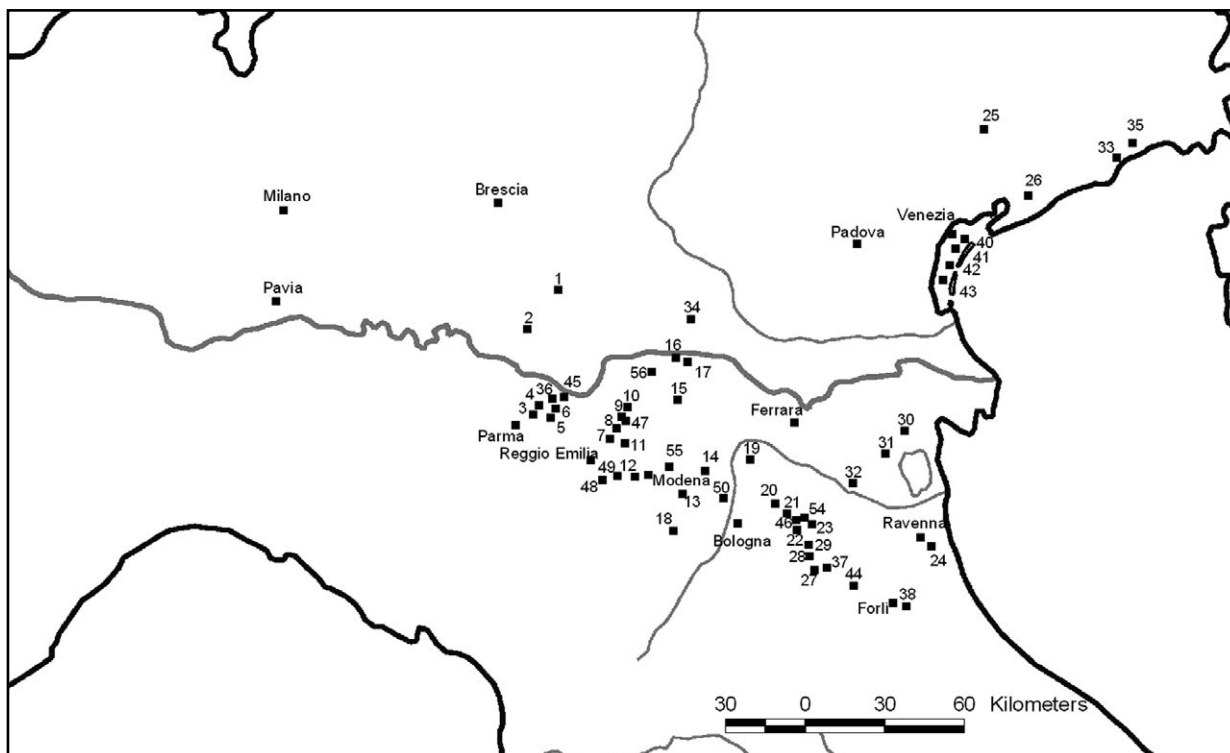


Figure 7.31 - The map (taken from Sbarra 2014) shows the sites that the Author refers to in her text. The illustration can also be used to trace the spread of coarsenare production. Apart from sites near the Adriatic coast, most of the sites in the central area did indeed yield such finds.

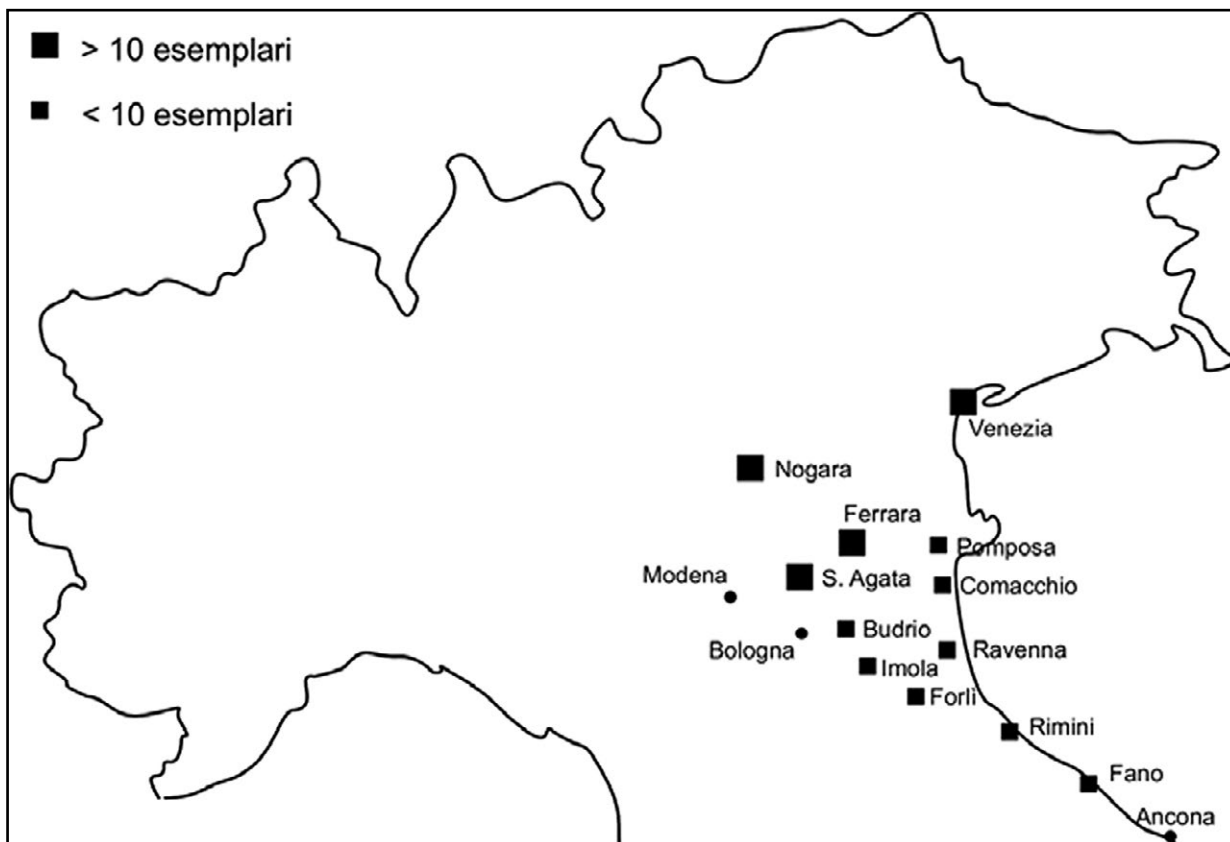


Figure 7.32 - Distribution of sparse glaze pottery (from Gelichi 2016).

typology (the 'Piadena type'). Ongoing research has revealed that, in the area analysed by us, coarseware predominates over fineware (as it does in much of northern Italy, see the summary in Gelichi 2007, as well as the overview in Brogiolo, Gelichi 1986, which is still relevant). The numerous excavations conducted over the last few decades have revealed that 'Piadena type' pottery was widespread at many other sites found more or less in the vicinity, including the sites analysed here. They have also revealed the presence of other types of parallels, such as the 'Savignano type' (from the excavation at Savignano sul Panaro, Modena province, Brogiolo, Gelichi 1986). In the publication for the Sant'Agata Bolognese site, on the basis of the sizeable amount of coarseware that was found, the detailed study by Francesca Sbarra allows a view (Figure 7.31) of the distribution area of this pottery, produced in the 9th century and especially, in larger quantities, between the 10th and early 11th centuries (Sbarra 2014).

In this case, preliminary fabric analyses have revealed that the filler used (veined calcite from dolomitic limestone) points to a supply area situated in the lower foothills, situated along the ridge of the Emilian Appennines (Sbarra 2014, 150).

This finding does not mean that the producer ateliers were located here; they may have stood down in the plain, near some of these sites, or within them. Nevertheless, if some of the raw materials came from here, then it is clear we are looking at a system with a fairly complex degree of organization, also in view of the large-scale distribution area of the pottery, and the fact that the Sant'Agata Bolognese undecorated coarseware is also connected to differing morphological types. Indeed, here we mainly find (in Sbarra's Group A) 'Piadena type' lidded bowls and pans, along with 'Savignano type' olle (cooking pots), while the less numerous Group B comprises lidded bowls, pans (tegami) and olle without specific parallels, and lidded bowls that imitate the ones from Piadena. Meanwhile some pans have parallels in the 'Cittanova type', confirming the provenance of finds also from various different production areas. Albeit allowing for the differences, what we find here, at this site, which in the previous pages we described as a probable prime economic nodal point in this territory, is a situation not unlike the one documented at Vetricella, which saw the arrival of pottery that was produced by exploiting materials from at least three distinct supply areas.

Armed with this information, and in line with Sbarra's suggestion, we can think of this production of coarseware (at least in the case of Groups A and B from Sant'Agata, and perhaps also for the pottery at the other sites) as being connected to ateliers scattered across several different geographical areas, although sharing the same choices as regards the repertoire of forms and the production cycle, with a well-organized system in which each individual component part was in touch with the next. For this type of production, referring to the categories identified by Peacock, Sbarra sees it as a possible example of a (rural) 'household industry'. I believe that this term is indeed a good fit for the characteristics of the case in question: a considerable volume of production; possible centralization of production sites (perhaps at or near supply sources?); the presence of part-time artisans who are also engaged in other activities; a relatively low level of technological investment, although of moderately good quality; and the possible presence of mediators for their distribution across a wide-ranging area (Gelichi 2007, 59-60).

The question relating to the production of sparse glaze ware, found for example both at S. Agata Bolognese and at Nogarà, is more complex. In a recent article, Sauro Gelichi (Gelichi 2016), summing up the state of our knowledge as regards this pottery type, present in the eastern Po Valley area and in the Adriatic area (Venice and Comacchio), departs definitively from the previous hypothesis that saw this pottery ware as produced in the Lazio area. Instead, also on the basis of detailed archaeometric analyses, he proposes that they came from ateliers situated along the coast between Venice and Ravenna, and operating between the 10th and 11th centuries (Figure 7.32). However, the volume of this production was definitely very small, and it is usually referred to as the 'S. Alberto type,' named after the place where it was first found, in Ravenna, which Gelichi now suggests should be called Group II, or northern

Italian CVS (*ceramica a vetrina sparsa/sparse glaze ware*). The most common forms in this group are a jug with a long spout for pouring, and small, one-handled *olle*. Their use is connected with tableware, but also, as Gelichi proposes, with particular liturgical functions, such as baptisms, given their presence also in ecclesiastical contexts. As the article argues, the limited distribution of this kind of pottery type would not lead one to associate it with the activities of a rural household industry, as supposed in the case of coarseware pots, but rather with itinerant skilled craftsmen from outside the local area, who thus were not very established in the territory. They may have relied on existing production facilities to make pottery on an occasional basis, perhaps working to commission. This hypothesis may also apply to the production of heavy glaze ware, also present in this consumer circuit, which is thought to have been produced in the same Adriatic area, albeit in a previous period, namely during the 9th century.

For the Po Valley-Adriatic area, isotope analysis of the lead in the glaze of pottery from the Sant'Agata site, as stated earlier (Ch. VI, section 3), has established that it came from the Harz region in Germany. This would seem to confirm, as is also supposed for the Maremma area, that the period of production was associated with craftsmen from outside, who perhaps travelled or were supplied by non-local raw materials (lead). This production period was by and large intermittent, and for example in the Maremma it ended with the 9th century, and, for the Po Valley-Adriatic sparse glaze ware, it does not seem to extend beyond the 11th century.

On the subject of domestic assemblages, I would be remiss in not referring to another specific production area, not included in the geographical zone that we are looking at, but the activity of which had a major repercussion on the material culture of all the sites mentioned up until now.

This is the area that looks to Chiavenna (Figure 7.16), already an important Roman centre thanks to its position dominating passage along three Alpine passes: Settimo, Maloja and Spluga. In this area no strong seigneurial or monastic powers ever developed, and the formula *Clusas et pontem iuris regni nostris de Clavenna* recurs again and again in privileges that were granted, withdrawn, and later granted again to the bishops of Como and Coira in this area, on a continuously alternating basis (Saggiaro 2019, 252-253). The role of the public power in the administration of this mountain pass area seems thus fairly clear, albeit (as always) in the absence of clear written references, and the *castrum* that stands on the hill overlooking Chiavenna, controlling transportation arteries, represented this in physical terms.

However, both Chiavenna and nearby Piuro were the locations of one of the largest production areas of *pietra ollare* in the whole of the Alps, as already underlined in the pioneering studies by Tiziano Mannoni, and in the more recent studies by Antonio Alberti and Marco Sannazzaro (bibliography in Saggiaro 2019, 252 n. 27, which I refer readers to for brevity). This is the major pottery production that Saggiaro focuses on, in his 2019 article, in order to use it as a possible example of public management and control of an important resource.

Indeed, more recent studies show that between the 8th and the 10th centuries, throughout the Po Valley plain and in the Tyrrhenian and Adriatic areas, type D in Mannoni's classificatory system (corresponding to the extraction area of Chiavenna and Piuro) is the one most present at all excavated sites, with percentages varying between 60%-80%, compared to all production and all the articles from the Western Alps, which were more common in the first centuries of the Early Middle Ages (Alberti 1997, 336). As already stated, specific archaeometric analyses, conducted on finds of *pietra ollare* from Sant'Agata Bolognese, show that 97% of these items came from the Piuro-Chiavenna quarries (Saggiaro 2019, 254). Such a scale of production is justified by the large number of quarries recorded thus far in the latest research projects. These number around 60 between Piuro and Chiavenna, although they are hard to date chronologically, and not all of them can be referred to the Early Middle Ages. One of the largest, the Caurga quarry, is located on the hill of Chiavenna castle, and thus in the heart of the possible public land holdings (Saggiaro 2019, 253-254). The findings of the archaeological excavations at Piuro (Figure 7.33) point to the end of the 10th century. They show that, on top of an initial early medieval settlement,

of which only faint traces remain, buildings with stone lower sections were erected, precisely in the period between the 10th and 11th centuries (Zoni 2021, 56). Moreover, the archaeological excavations in the centre of Chiavenna revealed another important aspect, namely that not only was the pietra ollare quarried in loco, it was also processed in workshops situated near tributaries of the river Mera (Saggiaro 2019, 256). Although this activity, also mentioned in a letter from Peter Damian lascerei in italiano Pier Damiani dated 1064, was controlled from above, it certainly involved the local communities, and created conditions of widespread prosperity. These can be inferred, towards the end of the 10th century, by the high price of property compared to the other minor towns in Lombardy, and by the monetary resources of the inhabitants of Chiavenna (Fiore 2020a, 199).

Having got thus far, I believe that the data is more than sufficient for seeking to outline a homogeneous picture for this Po Valley district.

Taken individually, the examples discussed above, despite their particularity, may not be regarded as all that significant, especially if placed within the narration for the early phases of castle formation, as has largely been the case so far. This is despite the anomalous aspects of some of their histories, which are hard to explain in terms of a linear process of castle formation, at least as we are accustomed to interpreting it. This is the case with the S. Agata Bolognese site, which was so incredibly active, and at the centre of a complex network of relations between the 10th and 11th centuries, and then so rapidly abandoned, and obliterated by layers of horticultural cultivation. But, on closer inspection, we could outline a similar trajectory, although a less evident one, in the case of Bovolone, and perhaps for the small habitation sector of Nogara and Funo. These are sites which often do not seem to be

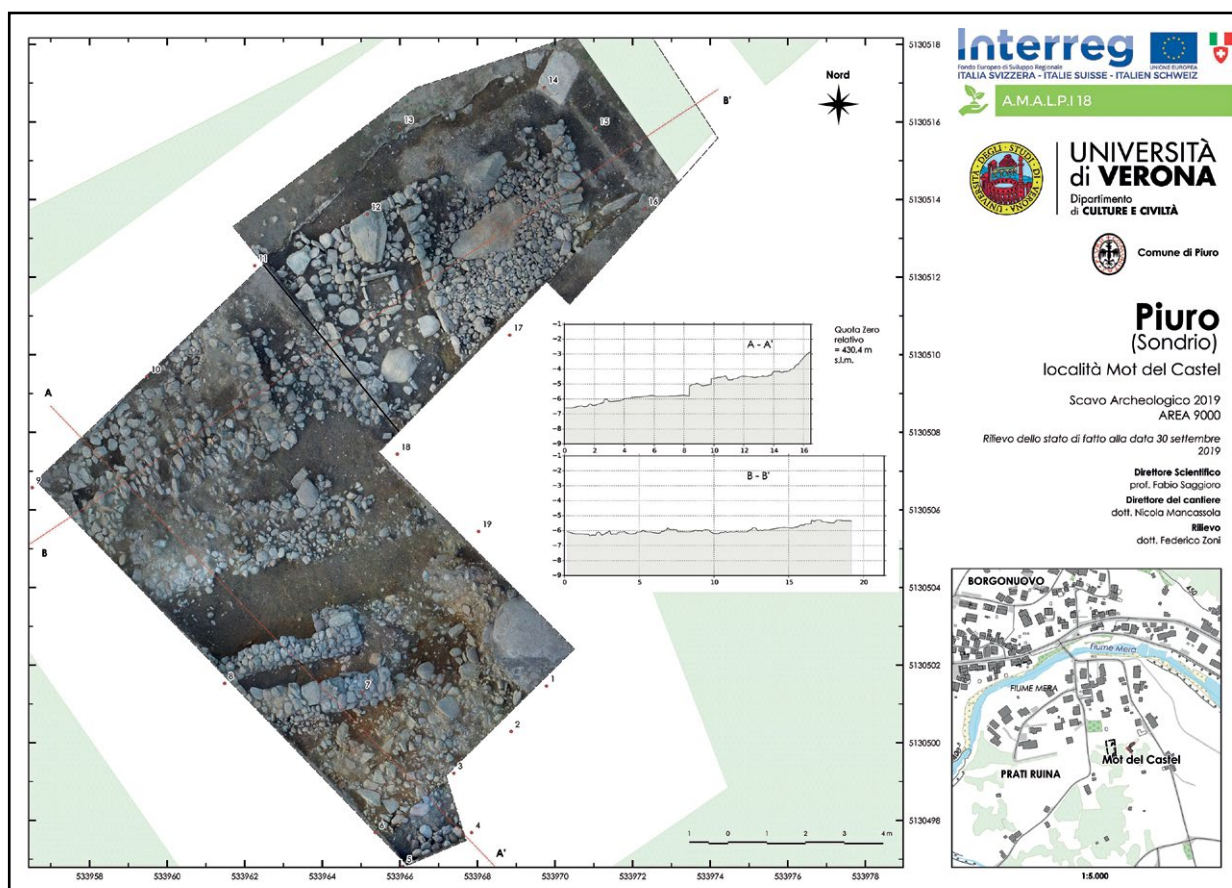


Figure 7.33 - Piuro, località Mot del Castel (SO), general survey of 2019 excavation area (from Zoni 2019).

discussed in any document until at least the Late Middle Ages, despite the fact that they are so large-scale (one need only think of Triforce, or Vicolongo) that they are still clearly visible, regardless of all the transformations that a low-lying area such as the Bolognese plain may have undergone.

Thus it is only in seeking to reconstruct an overall view that it is possible to get a vision that is unified and, I believe, fairly effective. I realize that this picture contains a number of radical differences compared to the Maremma case study, because it refers to territories connected to several different forms of seigneurial estates, despite the fact that these can be associated, in every case, with high-ranking political figures having a strong public physiognomy (and this is an important parameter for me). One might object that this study of mine has only been partial, and that it does not fully reflect the multifaceted political and economic reality of this same territory. This is certainly the case, and I hope that my colleagues who have been doing so much very good work in this area, for decades now, will not hold it against me if I 'smooth out' significant historical nuances, and for probably overlooking important passages in history.

But I believe the criterion that has guided my choice is already strongly indicative, because it is a product of the fact that that these sites still stand out clearly compared to others, and thanks to the light that their history still emanates they have succeeded in capturing my attention. If there is any validity to the interpretation that I am putting forward, then others, who know these territories better than I do, will certainly be able to provide more details regarding these hypothetical worlds existing within a macro-system connected to a form of public administration.

The common features shared in this Po Valley area, in terms of material evidence, have already been underlined for some time. Attention had been placed above all on construction site organization: the presence of skilled woodworkers and craftsmen able to produce, especially between the 10th and 11th centuries, self-standing building frames on wooden timber supports, requiring complex joinery denoting a technical culture that was very different from the kind available locally, linked to the construction of huts that were common to many rural contexts (Gelichi, Librenti 1997; Gelichi, Librenti 2010); and parallels between the buildings created especially between the 10th and 11th centuries and those found at many sites in France, or in northern Europe generally (Saggioro 2010). Furthermore, emphasis had been placed on the fact that the period of restructuring sites on raised river banks, which began in a slightly less obvious fashion already as of the 9th century, had certain common features (defensive ditches, and artificially raised areas, similar to the mottes found north of the Alps, Saggioro 2006). A set of characteristics which might therefore suggest a single, uniform period of changes, with similar construction chronologies, especially between the 10th and early 11th centuries, as well as the same skilled builders. All this had already been sensed, and these arguments, especially with reference to the reorganization of sites, have also been underlined again, very recently, also noting that, starting in the late 10th century, a more numerous presence begins to appear of buildings made of stone or mixed materials, identifiable as towers, or houses consisting of more than one storey (case solariate), as we stated in the case of Tuscany (Zoni 2021).

However, in order to lend weight to the idea that these sites had ties with possible public schemes underlying these transformations, along the lines of the situation outlined in the case of the Maremma (as well as for the Valdarno), we need to add further details, given the absence of specific references to public courts (apart from the case of Fraore). Moreover, for almost all the cases looked at, the remains that have been found relate not to the heart of the rural estate, but to the nuclei of dwellings of those dependents who were closely linked to that central part.

Thus, in addition to house types, we also need to review the ways in which these sites were planned: the creation of the large building plot, measuring almost 50m, at S. Agata Bolognese; buildings laid out in an orderly manner alongside the sunken street at Piadena; huts along the bank at Nogara; functional divisions at Bovolone; and the regular building plots at Funo.

Reference should also be made to the large-scale efforts to adapt the natural features of locations, which were already under way in the 9th century, and which later continued on a large scale in this same period, between the 10th and 11th centuries: the construction of defensive ditches, and their expansion; measures to increase the height of natural ridges; perhaps even diverting waters from major water-courses (as in the case of S. Agata); and alterations to river banks. These works were on a considerable scale, requiring a substantial degree of organization and manpower, on the part of the communities that lived in these places, with free access to essential raw materials, such as the timber needed to build not just the houses themselves, but also formwork elements for land drainage, the palisades, and the internal roadways. Most of these sites are situated in low-lying areas in the plain, usually near important water-courses, which formed a network for travel and transportation that was more important, perhaps, than the road network itself.

At all these sites, precisely because they coincide with the habitation areas of the possible dependents, we always find traces of artisanal activities: above all metallurgy, involving iron especially (in most cases forges, but Bovolone suggests possible ore roasting points too); activities involving spinning and weaving; work connected with agriculture; and, in the case of Sant'Agata, work perhaps involving the production of stone mortars and glass-working, given the presence of ready-made blocks of glass, found also at Pontelongo, albeit in a fragmentary state.

Nothing new, apparently, in terms of the kinds of activities, compared to what we can also see in a number of contemporary polyptychs. In this respect, these possible estates do not therefore appear to be very different from others found throughout central-northern Italy, were it not for their scale of production.

What is very different, on the other hand, is the system which these sites formed part of. Although one cannot identify any production site among these that is similar to Vetricella, with its specific vocation, the fact that we can see metallurgical activity at all these sites, linked to iron, with this activity being ever more evident for the Ottonian-era phases, forces us to ask questions concerning where this iron came from, given that none of the sites are close to mining areas.

For S. Agata we saw that, on archaeometric grounds, the provenance of the raw materials (iron) is multiple, and at present we cannot exclude the possibility that some of the ore may have originated from Elba. On the other hand, for most of the iron in this territory we can presuppose a provenance from the the closest area, i.e. the mining districts of Lombardy (the main ones being Valtorta, Valleve, Valseriana, Val di Scelve, Valcamonica, Valtrompia, and Val di Sabbia; Cortese 2018, 148-149) in which iron deposits were exploited (these were, moreover, rich in good-quality hematite, such as the hematite from the major Piazzalunga deposit in Val di Grigna, Cucini, Tizzoni 2001, 33-34), as well as silver deposits. Here, although not having archaeological data for the Early Middle Ages as such, we know that in the middle centuries there existed important borghi and market places in an economically active context (Menant 2001). Moreover, the bishop of Bergamo gradually began to acquire rights over the local mines as of the second half of the 11th century (Mainoni 2001, 430-432). At Darfo, in Valcamonica, the royal court linked to the extraction and processing of iron, mined in the nearby Val di Scelve, was still active in the mid-11th century. A diploma of Henry III informs us that the inhabitants of the valley were able to trade freely in the iron that was mined, in exchange for a payment of 1000 pounds of iron to the royal court (Fiore 2020a).

Thus, in this specific area of upper Lombardy there must have existed an important, major production area serving the whole of the low-lying area standing in the heart of the Kingdom, with its main urban centres, in particular Milan. Its economy, at least down to the 12th century, despite the fact we lack many documentary sources, and especially archaeological sources, must have been particularly centred around the processing of metals, chiefly iron (Wickham 2015, 435).

In summary, we can no longer underestimate this evidence, by referring to the previous literature, which tended to consign the extraction and processing of iron to a fragmentary context, and one exclusively for the purposes of local consumption. The case of *Valli* shows this very well, and I believe that in the future it would be advisable to adopt a systemic view also when assessing the central Alps, and specifically the ore deposits in the Lombardy area (in this connection, see the recent considerations in Wickham 2023, 590-608).

However, this hypothetical major, specialized production hub was not the only one in northern-central Italy. This very form of organization has already been described, and its main features appear more and more clearly defined, as multidisciplinary research advances. This is the case with the Val Chiavenna and Piuro, which produced that *pietra ollare* which, especially between the 10th and 11th centuries, we find at all the sites analysed (and at many others too, for example at the royal court of Orba), as well as in Tuscia, down to the Maremman territories.

Furthermore, another major hub is the one involving the extraction and processing of steatite, located between Parma and Piacenza. The huge number of beads/spindle-whorls, and of ateliers located especially on Monte Groppallo, as well as at Pareti di Bardo, and the political and territorial system they looked to, show both its link to the public powers and its scale. Moreover, it is also possible to measure this scale on the basis of the pervasive distribution of these finds at most of the sites examined, as well as in the Maremma and the Lunigiana area.

In addition, as in the Valdarno and in our case study, we find highly complex productions of undecorated coarseware pottery. At present, pending archeometric analyses which would be helpful, we cannot identify with certainty the location of the various ateliers that produced this ware. However, their far-reaching distribution demonstrates, in this case too, the existence of a well-organized system, capable of covering large geographical areas. This distribution certainly does not reflect the fragmentation of production sites, but rather seems to meet the need to supply coarseware pottery to habitation sites, between the 9th century and (especially) the 10th to 11th centuries, that were seeing major demographic growth, as clearly evidenced by the expansion of their site layouts.

As in the case of the territories of Lucca and Pistoia, between the 10th and 11th centuries here too, in the heart of the Kingdom, we find the distribution of a kind of product that was certainly more small-scale, and less common, i.e. sparse glaze pottery, presumably made in the Adriatic area between Venice and Ravenna (Gelichi 2016, 300). The presence of lead in the glaze of this pottery found at S. Agata Bolognese (although belonging to these wares) from parts of the Germanic world, and from the Harz mines, would, at least in this case, prove that this raw material was transported. This occurred within a network that also supplied the Pavia mint with the same metal, as proven by lead isotope analyses carried out by the ERC nEU-Med project on the coinage struck there (Chiarantini *et al.* 2021).

Finally, trade between central-northern regions and areas north of the Alps is also evidenced by the circulation of blocks of unworked glass, found at two of the sites examined, at least. In the case of S. Agata in particular, the archaeometric signature of these indicates a provenance in northern France (in common with the blue glass from Montieri and Vetricella).

In short, although with reference to a territory that was not excessively large, we find ourselves looking at a highly complex system, despite the fact it was unconnected to the Mediterranean traffic, and the imports that it brought in. Bearing all this mind, we now come to the final chapter

Chapter VIII

The origins of economic growth

8.1 Preamble

Here, at the conclusion of this volume, and using the numerous facts and findings set out thus far as a platform, I would like to underline the salient aspects of my narration that can be associated with the issue of economic growth at the height of the Middle Ages, in central-northern Italy.

Discussing this issue means referring to a huge bibliography, and it would be too reductive to try to exhaustively go back over the various interpretative lines here, in just a few short pages. Yet fortunately it is not incumbent upon me to do so, since others have already undertaken this task, and produced impressive, complete and systematic overviews¹.

However, I will select, from the numerous previous studies, hypotheses that may help to verify the affinities and divergences between my narration and those put forward by other scholars.

Much has been written regarding the possible timeframe and manner of western Europe's economic development in the Middle Ages, especially by historians of documentary sources. The notion that this may have started as of the year 1000, put forward especially by French scholars, first and foremost Robert Fossier (Fossier 1987) in connection with the well-known mutationist theory formulated by Duby, has been revised in more recent times in favour of this being backdated to as early as the late 8th-9th century. Contributions to this interpretation have come from scholars of the *production model*, as well as from scholars who look to the *distribution model* (to use Wickham's definitions for the ways of analysing early medieval economies, Wickham 2008, but on this issue also the considerations of Hodges 2012, 1-15). With reference to the former model, research by authors such as Verhulst, Toubert and Devroey (Verhulst 2002, Toubert 2004, Devroey 2003; 2006), for example, have reassessed the impact of the large Carolingian estates as regards actions by the aristocracies aimed at extracting value from these properties; this, it is claimed, led to a rationalization of the workforce, more new areas of land being opened up for farming, and new population dynamics, and these conditions were at the foundation of the production of a surplus, and an early form of a trading economy.

The *distribution model*, starting with the writings of Henri Pirenne, pays greater attention to trade, predominantly long-distance trade. As well as the numerous articles dealing with the early medieval economic history of northern Europe, with its emporia or wiks, starting with the work of Hodges (Hodges 1982; Hodges, Whitehouse 1983), for the Mediterranean area the work of Michael McCormick is now a benchmark. Via an analysis of the movements of several different social categories and also of objects, he underlines trade vitality as early as the Carolingian period (McCormick 2001).

In both models, the main actors are the aristocracy, since it is thought that the demand that they generated, and their actions, gave rise to the first changes underlying these early signs of growth. The presence of a wealthy aristocracy as a vital engine for growth is also the main feature of the other major, overarching narrations proposed by Chris Wickham (Wickham 2005; Wickham 2009b). However, he believes that the early medieval system of trade had local and regional significance, while in the case of long-distance movements it involved mainly luxury or near-luxury goods, in much smaller volumes,

¹ Among the various published overviews primarily focusing on Italy, without claiming to be an exhaustive list, I refer readers to Petralia 1998; Molinari 2014; Franceschi 2017; Feller 2017 and now Fiore, Poloni 2024.

which therefore did not become translated into systematic commercial dealings (Wickham 2009c, 610-620).

For an analysis of the economies of the Kingdom of Italy in Italian historiography (for a recent summary Wickham 2023, 473-485) a work that remains highly influential is that by Cinzio Violante, published in 1953 and devoted to a study of Milan and part of the Lombard area (Violante 1953). In the volume, the analysis of documentary sources, starting with the well-known Liutprand Capitulary with the people of Comacchio dating to 715 or 730, leads the author to moot that there was a gradual development of trade and commerce at the regional and extra-regional level already at the start of the Early Middle Ages. He argues that this is visible, for example, in the traceability of merchants, in the frequency of urban and rural markets, and in the variations and increases in the prices of land and homes. Moreover, the increase in prices, between 960/970 and around 1025, is allegedly indicative of a major shift up in gear, suggesting that the true start of the economic boom is to be found in these same decades. Many Italian scholars have adopted this chronology, one of them being Paolo Cammarosano in his recent work on the economy of medieval Europe (Cammarosano 2020, 144-146).

However, in the period immediately after the second quarter of the 11th century, there are clear features of discontinuity, evident in the disappearance from documents of the merchants in Milan starting in 1060 (Wickham 2017, 99), and in the levelling out of land prices and house prices after they peaked between the second half of the 10th and the early 11th century, found by Violante himself.

For Wickham, the findings concerning merchants, along with other findings set out in one of his previous articles, and more recently in his latest volume (Wickham 2017; Wickham 2023, 612-620), serves to point out that the foundations and mechanisms of a certain development between the 10th and 11th centuries in the Po valley area are not to be sought in urban growth, but rather in the system of infrastructure surrounding cities, where particular forms of production could be concentrated. I will explore this hypothesis in more detail in the following pages.

On the other hand, according to Cammarosano price oscillations, and falls in prices too, could be justified with reference to adjustment processes that depended predominantly on the agricultural economy, which in turn was linked to the intensification of rural labour as a result of the more pervasive control by local aristocracies (Cammarosano 2020, p. 145).

The later 10th and 11th centuries seem as a result to still be a subject of debate as regards the chronologies and causes of these micro-phases of growth.

Starting in the 1980s especially, archaeology has also contributed to these questions. The first formulations of the *Tuscan model* (Francovich-Hodges 1990) helped considerably in bringing into sharper relief important signs of growth in rural areas, which can be seen in the reorganization of the population by means of the widespread tendency towards site agglomeration, as of the first few centuries of the Early Middle Ages, when it was still thought that scattered settlements were the predominant solution in the countryside (especially Andreolli, Montanari 1983, 177-200). In the most evolved formulation of the model, dating to the start of the new millennium (Francovich 2004; 2008), the idea of early economic development that can be perceived as far back as the Carolingian era, connected especially to an interest in certain resources, and the idea that they were administered in a more structured way, brought the model into line with the hypotheses drawn up by other researchers, as discussed above.

Archaeologists who have dealt with central-northern Italy also take the view that the main actors on the scene were the aristocracy, with their political and economic strategies, which, as of the 10th century, were hinged around the nascent physiognomies of the new local seigneurships.

Excavation at many fortified sites has enabled us to detail the chronologies of their transformation in relation to the evolution of the seigneurial powers connected to them, to the extent that today we

can suggest a subdivision of castle formation into four periods, spanning the 10th and 14th centuries (Carocci 2018).

The analysis of the material culture linked to movable goods (especially pottery) and immovable property (buildings, analysed with reference to masonry techniques, as well as building types) allows us, however, to state with increasing certainty that the true economic surge occurred on a widespread basis only as of the second half of the 12th century. This is perhaps one of the most important recent discoveries made by archaeology, and it is also borne out in the new reconstructions advanced by historians of written sources².

Thus, for archaeologists the 10th and 11th centuries do not seem to be characterized by a universal economic development in both rural areas and cities in central-northern Italy, despite the fact that demographic research based on material findings confirms the trend towards population growth, linked to a reduction in epidemic pathologies (Giovannini 2002; Barbiera 2002; Dalla Zuanna 2007).

This fairly static scenario, despite the development of early castle formation, is confirmed by recent studies of pottery finds. The circulation, in small-scale areas, of ordinary tableware, and ceramic cooking vessels and storage vessels, although produced in a semi-professional context that was contemporaneous with the activity of occasional specialized pottery workshops, along with the almost total absence of imports not only in inland parts of Tuscany but also in much of the Po valley area, has been seen as proof of a generally localized production economy and rural exchange, in both rural and urban areas, down to the end of the 11th century (Grassi 2010; Cantini 2011; Cantini, Grassi 2012; Molinari, Orecchioni 2017).

Thus, the numerous findings that can be derived from the material sources leave largely unanswered the question as to what the real mechanisms were that underpinned the more pronounced shift towards growth and economic boom as of the mid-12th century. Indeed if, as has been stressed, the first phase of 10th century castle formation was one of the prerequisites for economic development, rather than a result of it (Molinari 2014, 106), then why, one may wonder, did it take more than a century for these prerequisites to set in motion the subsequent developments, from the mid-12th century?

This is one of the questions, perhaps the most important, that I have tried to answer in writing the preceding chapters.

Accordingly, bearing in mind the new discoveries made by research on the subject of economic growth, the time has now come to summarize, as clearly as possible, what I believe to be the main findings of my work.

8.2 An initial acceleration (9th to mid-10th century)

For our case study, material sources offer us greater evidence as of the Carolingian period (a significant fact in itself). In this phase, the transformations across the macro-area in question, both as regards the new forms of institutional organization and regarding the start of changes in the forestry and farming landscape, as well as greater attention to mining resources, point to a reorganization that was already on an important scale. This phenomenon was not restricted only to hilltop villages in mostly inland areas, as per the narration of the *Tuscan model*. Instead it also involved low-lying and uphill landscapes. More broadly, this picture seems to also be confirmed in northern Tuscany, and in the Po valley area discussed in the previous chapter.

² Regarding the economic importance of the 12th century, as assessed by archaeology, valid reference works remain the articles in the monographic edition of the journal *Archeologia Medievale*, Molinari 2010, especially the introduction by Molinari and the conclusions by Chris Wickham and Sandro Carocci. Lastly, see also the points made in the chapter devoted to central-northern Italy in Wickham 2023, 465-620.

The well-dated sequences at Vetricella, and in the infills of the paleochannel of the river Pecora, which are particularly significant inasmuch as they relate to a territory that was already under direct royal control at the time, enable us to date this phase more precisely to the second half of the 9th century, corresponding to the reign of Louis II. This finding is in keeping with more recent interpretations of the chronology for the consolidation of the aristocracies in Tuscany (Cortese 2017). At the same time, via material data, it shows that these redefinitions also involved rural landscapes that were far from cities. In this scenario there do not seem to be clear economic hierarchies between territories that were closer to or further away from urban centres, such as the Valdarno which, also in the most recent literature, has been seen (on account of its proximity to cities) as the most important manufacturing area in Tuscany.

Thus we begin to see, as far back as this phase, the formation of settlement hubs distributed in several rural districts connected to specific forms of production (plain pottery and sparse-glaze ware; lead and iron), although these were not yet on any great scale.

In commenting on this historical phase in the previous chapters, I began to introduce the underlying thesis of my whole narration, namely the active role of the *publicum* in economic dynamics relating to the commencement of these processes. This role was often acquired in areas, as on the coast in our case study, distinguished in the pre-medieval era by imperial properties, or property belonging to major families of the senatorial aristocracy.

I have stressed on several occasions that the action of the *publicum* is clear in the case of the new layout of Vetricella (for all the reasons that I have already outlined at length), and in the reactivation of mining circuits (Colline Metallifere-island of Elba). The impact of a player of this importance on the scene also justifies the arrival in this area (and elsewhere too) of raw materials from Carolingian mines north of the Alps, given the use of lead with this isotopic signature in glazes used for locally-made sparse-glaze ware.

Thus, this important role is evident not only in decisions regarding institutional bodies, and in the importance that this connection with that same public power had in the new developments involving Tuscan aristocracies, but also in processes governing the redefinition of population dynamics in coastal and riverine plains (including in the Valdarno area), as well as in economic strategies for exploiting specific resources, and in the activation of a more wide-ranging network of contacts between the north and south of the Frankish kingdom.

Events affecting small hilltop sites in the hinterland and low-lying sites near the coast bear witness to a growing vitality linked to this redefinition which, as well as the *publicum*, also involved leading members of the higher urban aristocracy who often held important posts. Material finds and documentary references to small and medium-sized property-owners suggest an active role on the part of these rural communities that, although often under forms of patronage, took part in this initial period of changes.

Accordingly, for our case study, as for other parts of Tuscany, we can identify an initial origin of the process of growth already in this phase and, although we do not have sufficient data to prove it with certainty, we can imagine that this process was also continued in the period of the 'Italic Kings', in particular under Hugh of Arles, who had a close connection to Tuscany, and who was responsible for the first mention of the courts of *Valli* and *Cornino* in the 937 dower, a document devised as part of a larger economic reorganization of his properties.

8.3 The beginning of the rise (second half of the 10th-first half of the 11th century)

The picture is filled out more when it comes to the following phase, the 10th-11th century, which I have focused attention on most throughout the volume, thanks to the greater number of available material sources.

In this phase the role of the public powers emerges more forcefully. I was provided with initial tools for understanding the complexity of this feature, which must also be placed in relation to the actions of the various aristocratic families, in a closely interconnected network of relations that are sometimes hard to disentangle, thanks to recent research by historians of early medieval documentary sources.

For Tuscany, in the most recent overviews of the aristocracy much emphasis has been placed on the extent to which the growth of its political and economic status was inextricably linked with the central powers (kings or counts), as stated above. In fact, the close relationship with royal circles appears to have been a vital condition for enabling the rise of important aristocratic groups, thereby creating a mutual, solid bond between these two political institutions (Cortese 2017; Tomei 2019). In the context of the general theme around the relationship between the state and the aristocracy this is not a totally new phenomenon, indeed for some time now, in various research studies, emphasis has been placed on the cooperation and symbiosis between state institutions and the aristocracy, foregrounding the gradual expansions of aristocratic holdings thanks to the continual granting of fiscal properties to individuals who played an active part in this two-way relationship (Fiore 2006, 160-162; for a more general approach Innes 2001). Indeed, on the part of the royal institution the link with local hegemonic groups, and their legitimization and strengthening, was of vital importance, because this was the very thing that gave rise to recognition of the central authority itself, and to the consolidation of the osmotic relationship between the two parties (D'Acunto 2002, 11).

More recently, it has been stated on several occasions that the scale of fiscal estates has often been underestimated by modern historiography. This is owing to the fact that these property holdings are only partially visible in documentary sources, and it is claimed that this also made grants of these properties to third parties all but invisible, owing to the informal manner in which they changed hands, relying chiefly on verbal transactions (Collavini 2019 for Italy; more recently for the Germanic kingdom Bachrach 2022). In previous chapters I returned often to this interpretation which, especially for our case study (and also for the various parallels with it), has enabled me to interpret more clearly certain changes of ownership (linked to these same processes of grants, and also sometimes to royal holdings being taken back). Above all, it has located the actions of the various groups belonging to the nobility, seen thus far as the undisputed protagonists, within a political context that was definitely more complex, featuring several different players.

Material findings have made it possible to add no small amount of detail to this history for which we have little written evidence, making it almost completely invisible to historians of documentary sources. This is especially true in the case of economic dynamics for which, at least in the case of Tuscany (as well as many parts of the Kingdom of Italy), this 'intangible' aspect of documentary sources can, as a result, only lead to hypotheses and speculation regarding the ways in which sensitive resources were managed, such as subsoil resources.

The cornerstone of my interpretation, setting out from the research conducted in the *Valli* estate, stemmed from a recognition of the size and scale of public investment in the local area. Accordingly, this investment makes the public hand a highly active player, not only in making over its properties to others (as we know from previous historiography), but also in leaving its mark on natural and anthropic landscapes and in creating specialized production centres (for iron and salt production, above all, as well as for the production of everyday goods). For our case study, the extent of these actions has been described both for those sites or geographical areas for which there is an established connection with

the network of public estates, and for those contexts in which I have posited a link with direct public management on the basis of arguments I have discussed more specifically in the various chapters.

At the same time, an analysis of the economic policies of the hegemonic members of the nobility present in the area of the Maremma has made it possible to detail more clearly the ways in which this form of established cooperation with the central powers may have been put into practice. In this connection, I have gained a clearer understanding of those disparities in material traces relating to sites that are sometimes connected to the same family, which I had been pondering for some time. The absence of early medieval evidence at some sites, or else the fact that it is so insubstantial (just a few huts) at others, at a time when other habitation sites where large, major transformations were implemented can still be seen, led me to coin the term 'out-of-scale sites' in order to describe them. In this definition I included those sites which, often owing to their proximity to strategic resources, were seen as key places in the overall public scheme of landscape transformation thanks to cooperation with the central authorities on the part of their owners (generally high-ranking officials, or figures having a pronounced public profile). The formation of 'out-of-scale sites' is, thus, a typical feature of our case study, and I believe it may be a distinctive characteristic of territories such as this, which are situated close to strategic resources, but far from the main political hubs, and thus from cities.

Although research in the Valdarno has so far not been as intense as in the Maremma, we would be unlikely to find here a subdivision between out-of-scale sites and others. I think we could formulate the same consideration also for the sample area in the Po valley plain, situated in the heart of the Kingdom of Italy. In these contexts, the majority of sites (or at least the ones considered above all in the area of the Po valley) are sufficiently large and complex to be described as 'out-of-scale', and this is precisely owing to their position in crucial areas of the Kingdom. Thus, this subdivision would not make much sense, whereas it could make more sense in more peripheral areas of northern Italy, such as the Val Chiavenna, the location of the large production centre linked to the exploitation of pietra ollare, or the Appennine area, connected to intensive exploitation of steatite. Future research will confirm or refute my hypothesis.

In any event, most out-of-scale sites (and other sites) were castles, and this term may also be used for many of the sites analysed in northern Tuscany and in the Po valley area (the term is also often used for such sites in documents, too). The so-called initial phase of castle formation, recently more narrowly dated to the period between the 10th and the first half of the 11th century (Carocci 2018), coincided, accordingly, with this time of general redefinition associated with the strategies of the public authorities.

However, the fairly large-scale presence of out-of-scale sites contradicts the hypothesis that this initial phase had a relatively strong impact in population dynamics, and was mainly linked to simpler buildings of reduced size and scale. Castles of this latter type were certainly present both in the Maremma area (and we have also described them) and in northern Tuscany, but alongside these were located those other sites featuring greater complexity that were also population centres, in association with numerous artisanal activities. It is in these very places, which often display the same dynamics in aspects of their construction, that the future architectural language of local lords was first codified, with towers acquiring the greatest significance, as a symbol of the aristocratic powers, while at the same time representing a 'public nature', standing as the link with state powers, having been borrowed directly from royal sites (Bianchi 2021).

The tendency to view the material development of castles as a linear phenomenon, with a continuity of habitation, and a progression toward architectural structures that gradually became ever more complex, does not seem to be fully confirmed in the scenario that I have outlined. Indeed, some of the castles that developed in the context of this public programme also shared the same fate as centres under direct public control, in that they were suddenly abandoned for no apparent reason, or else saw a

drastic scaling-down of their material features and appearance³. This phenomenon can be explained if we imagine it in the context of a close symbiosis between the aristocracies and a public power that was particularly strong, or at least very determined to pursue an ambitious overarching scheme.

This last statement, already stated and discussed at several points in previous chapters, merits further consideration. Accordingly, it is necessary to go back to the problem of chronology in order to clarify which royal power we are referring to.

One product of my work is a more detailed chronology on which we can hang this general and more incisive transformation of rural landscapes. Indeed, the actions of all the figures involved seem to become considerably more intense between the second half of the 10th century and the first few decades of the following century. Regarding this finding, the material evidence is unmistakable. I could compile a long list of anthropic and natural landscapes, and of specific production processes, as well as of royal monasteries or rural churches which saw transformations, reconstructions, extensions and general reorganizations in this space of time, not only in our case study but also in the Valdarno or in the Po valley area we have looked at. The examples are discussed in detail in previous chapters precisely in order to support this statement, and for the majority of them, in a way that may be clear to a greater or lesser extent, all the changes are almost always situated within this timespan.

If these wide-ranging transformations, in geographical areas of the Kingdom of Italy which were also sometimes far apart, took place in the same, rather brief space of time, then somebody, or something, must have altered the rate of change in a process that had definitely been under way ever since the Carolingian period, but that up until then had been taking place at a distinctly more relaxed pace (as shown by its reduced legibility in the archaeological record).

Throughout all my research, the trigger for this sudden acceleration has been found in the political and economic programmes of the ruling powers of the Ottonian dynasty (and of the Salian dynasty too, in part). These programmes seem to spark the shift up in gear since the time of the third journey to Italy by Otto I, in 962, when he was crowned emperor in Rome.

Historiography, especially German historiography, has produced many studies of this dynasty's political and institutional programmes, whereas less space has been devoted to an analysis of the economic consequences of these rulers' actions⁴. The difficulty in getting hold of information on this subject also applies as regards the history of the Ottos on Italian soil, despite the fact that their presence may be viewed as being considerably more pervasive than that of the sovereigns who preceded this dynasty, or that came after it. Apart from a limited number of important exceptions (see D'Acunto 2002; Puglia 2001; 2003), for this period and also for the following period, when members of the Salian dynasty rose to the imperial throne, the actions of the reigning authorities always remained in the background of the history of the aristocracies, and their profile has always been defined on the basis of their changing relations with the aristocracy. This is one result of a clear trend among the tradition of Italian historical scholarship, which, ever since the important studies by Giovanni Tabacco, has tended to adhere fairly closely to this interpretive register, up to and including the more recent works by Paolo Cammarosano (in this connection, see the thoughts set out in Isabella 2012, as well as Loré 2019). For that matter, the increased attention towards public properties in more recent works, the result of new research projects, is only now starting to provide more detailed chronologies for the actions of the various rulers (Lazzari,

³ The failure and abandonment of many first-generation Tuscan castles, although for the most part connected to important figures who instigated their construction, was already underlined in Augenti 2000, 52-54, who also underscored the difficulty in identifying the causes behind this phenomenon.

⁴ See the considerations set out in Keller 2012, 114-116, as well as West 2019, especially 157-160 with reference to the difficulties in assessing the Ottonian economic system itself via documentary sources. Many gaps for the Germanic area have now been filled thanks to the work of Bachrach 2022.

Tabarrini 2023). In this connection, I believe that the archaeological findings set out in this volume may also contribute towards circumscribing the chronology of the various changes.

But why did all this occur under the Ottonians themselves? I think the answer needs to be sought not in one cause but in a whole set of factors, the main ones being: the strong link that this dynasty had with the Kingdom of Italy, also thanks to Queen Adelaide's major influence in its politics (Keller 2012, 57-61); the ambitious programme of these rulers, who aspired to turn Italy into one of the cornerstones of royal power (also by means of its policies of expansion toward its southern parts), going as far as to consider, under Otto III and his programme of *Renovatio Imperii Romanorum*, the idea of making Rome, and Italy, the new centre of imperial power; and the fact that the Italian-based aristocracies had now achieved growth, including economic growth, compared to the Carolingian period, and were thus now able to support the imperial programme more forcefully.

Thus, for the Ottonian rulers the Kingdom of Italy became the base for implementing these programmes, shored up by a strong ideological framework in which political and religious aspects were intertwined. However, achieving these goals, especially military objectives, required further investments that could guarantee the continued, strong backing of the nobility on the one hand, with renewed grants of fiscal property, while on the other hand allowing them to take steps to provide material support for the royal court and its army. However, the time was now right for setting a virtuous circle in motion, one in which the interests of the sovereigns coincided with the aspirations of the nobility to gradually acquire independence from the central power. This they could achieve by increasing their estate holdings. However, the process depended on cooperation with that same central power in order to be successful.

In Tuscany this particular political and economic context was amplified thanks to the profoundly symbiotic relationship with the Ottonian dynasty (and in particular with Otto III) enjoyed by Margrave Hugh, one of the most powerful and influential figures of the day, whom I have discussed at length in previous chapters.

If we stand back to get an overall picture, and consider more closely all the material evidence I have put together and described, both for our case study and for the areas chosen as parallels for it, we see that many features, which initially appear to be unconnected to each other, may all belong to a greater, larger scheme.

Just to mention some of these, this is the lens through which we can view the following events and processes: the major transformations of estates under direct public management; the considerable royal interventions to open up new land for crops or grazing; the creation or encouragement of highly specialized production centres, delimited within areas carefully chosen above all for the quality of their specific raw materials (hematite from Elba, pietra ollare etc); and increased investment by the aristocracy in their properties (or in some of these, such as the 'out-of-scale sites' in our case study) with a view to the exploitation of farming or of specific resources (eg. the rise in the number of granaries in this very phase). All this often brought about as a result of common choices in the organization of large-scale building projects, of specific types of dwelling, or of overall settlement site layouts (eg. the analogies that can be seen with the Po valley area, or the presence of mortar mixers in Tuscany).

As a result, this picture forces us also to reassess contemporary pottery from a different viewpoint, positing local production of this pottery in artisanal systems that were not separate from each other, but connected to each other, because they were designed to meet demand, in a coordinated way, for basic ordinary goods for domestic needs, and that served the numerous artisanal and farming activities required by a population that was continually rising, and that was increasingly engaged in these new production hubs. This, I believe, is the context in which we should view the considerable increase in the production of coarseware that was coming out of various ateliers that circulated within a wide radius in the Po valley area (with the Piadena and Savignano types, and others besides), as well as the production of pietra ollare vessels from the Val Chiavenna that were exported to as far away as southern Tuscany,

or production in the Valdarno and the Maremma area (the “small amphoras” are a further, very good example). In the face of this scenario of management and production, which undoubtedly testifies to a certain economic vitality, it is necessary, accordingly, to push slightly into the background the narration that customarily measures growth also on the basis of the size and scale of long-distance, primarily sea-going trade. ‘The predominantly rustic physiognomy’ (Cantini, Cirelli 2018, 165) of the rural population that can be inferred from this lack of imports into parts of Tuscany and the Po valley may thus not be a wholly accurate reflection of what were more complex economic processes.

For maritime harbours in the local area that has constituted our case study, and also for the port of Pisa, we have found that the Carolingian period itself marked the start of a long period that almost completely excluded the arrival of imported pottery brought in via Tyrrhenian and long-distance Mediterranean routes. Apart from the Adriatic area, we find a similar situation in much of central and northern Italy, despite the presence of locally-made specialized products such as those linked to sparse-glaze ware from the Po valley area and northern Tuscany.

Especially in the Ottonian period, the heart of trade and production lay wholly within the Kingdom of Italy, and the route used to trade luxury goods, as well as empirical knowhow and certain raw materials, was also an expression of a close connection between the Kingdom of Italy and northern Europe, especially the Germanic area, as underlined in section 3.2 of Chapter VI.

The material record leads one to posit an influx of artisans from northern Europe specializing in the fields of construction, metallurgy and the minor arts. The Montieri brooch, and the so-called Pace di Chiavenna, are some of the most extraordinary works that can be dated to this flourishing time.

So, this movement of artisans was also connected to economic development, but in what precise economic context?

8.4 What economic system

At this point, however, we have to ask ourselves how this system operated, and try, at least as regards its peak phase in the Ottonian period, to place the possible consequences of this new political, economic, and administrative set-up within the broader economic history.

An initial reference to the dynamics of this system (Bianchi, Collavini 2018) has been returned to, and expanded on, by Alessio Fiore in his article published in the second volume dedicated to the nEU-Med project (Fiore 2020a for the findings set out below).

Yet before addressing the subject we should remind ourselves of a series of important first principles: land ownership was the vital requisite underlying all power; as a result, the king was the largest landowner of all estate-owners, and for reasons that were both practical and ideological, he aspired more than others to self-sufficiency; and, finally, whereas management of his estates was not too different from the way that other estates connected to private individuals were run, the aspect that made him stand out most from the rest was his range and scale of action (as is well demonstrated by the material evidence).

Within this context, production, both by the State and by private individuals, of agricultural products or goods intended for everyday use (iron objects; salt; pottery), as well as of less common goods made of less readily available raw materials, but which still cannot be classed as luxury goods (eg. objects made of steatite; alum, cinnabar), was designed to be circulated by distribution mechanisms, rather than following a commercial rationale. The more pronounced specific vocations of some public areas analysed in this volume show that this distribution-based economy hinged upon interconnection and the integration of large-scale, diversified forms of production, often associated with resources directly controlled by the *publicum*, such as mining resources.

Fiore's article (Fiore 2020a) cites the example of the mechanisms involving the storage and distribution of one of the possible main nerve centres of this system in north-western Italy: the royal monastery of Novalesa. In a source dating to the mid-11th century, but which relates to the second half of the previous century, there is a detailed description of the fact that agricultural products (in this case wine and cereals) left the monastery's various estates to be taken to the monastery in the train of the dominicalis cart. This could easily be distinguished, as it had a *skilla*, ie. a small bell with a loud ring. The same document mentions that, at the annual fairs held in Italy, merchants did not dare to commence their negotiations and bargaining before the arrival of the cart with the *skilla*.

This report supports the notion that such a distribution dynamic might also have kick-started commercial transactions in locations set aside for that purpose, such as markets, including in rural zones, or urban fairs. We shall now look at how this came about.

The component parts of the system included the main nodal points consisting in the large-scale public areas to which were connected, either directly or indirectly, the secondary nodal points, represented by the large estates of royal monasteries, of bishops, and of nobles who held public office. Revolving around these two hierarchical categories of nodal points were smaller estates that may have been associated with the middle-ranking aristocracy, or else the milites who were loyal to the larger aristocratic actors, and, at a level beyond these, the settlement nuclei inhabited by smaller and medium-sized landowners.

The circulation of goods between these parts of the system was thus based around a larger area that featured a matching political dimension of its own, with a circulation at both the micro- and extra-regional level. One example of this consists in the production and micro-regional distribution of coarseware or levigated pottery (in the Maremma and also in the Po valley area), compared to the production and distribution of pietra ollare, made in the far north of Italy, but which arrived all the way down to southern Tuscany. In this system there was no pronounced one-way, vertical hierarchy, and goods and raw materials could be sent from one estate to another, as need arose. This was the case with hematite from the island of Elba, mined at what were more than likely public estates, and found both at the royal estate of *Valli* and at Rocca San Silvestro, at the 10th-11th century castle connected to the Della Gherardesca family. Similarly, in the 9th century the sparse-glaze pottery made at the Torre di Donoratico site was distributed not only at the court of *Valli* but also at economically less important sites, such as the hilltop village of Campiglia Marittima⁵.

The increase in complexity (including in terms of productivity) of this system between the second half of the 10th century and the early decades of the 11th century was the result of the stimuli and incentives activated in the Ottonian era vis à vis the local aristocracies, also presumably combined with the creation or maintenance of the infrastructure required to ensure it could operate (such as markets, transportation and travel routes, and riverine ports or seaports).

In this system, the sheer scale of production may have encouraged the accumulation of a surplus that the intermediaries of the royal fisc, or of the large landowners, may have purchased also on behalf of other actors, before then redistributing it in an urban or rural market context. For our case study, such a situation might be imaginable for example at the Istia di Ombrone market (documented in 1032) or, as has been cautiously suggested, at the centre of the court of *Valli*, perhaps at specific times of the year, given the large number of ottolini denari found in sequences from the site. Thus this trade was conducted on a partially commercial and non-competitive basis, with transactions administered by the elite, perhaps within an economy that was still integrated between the various social components⁶. In

⁵ In determining the possible characteristics of this system (political size; scale of inclusiveness; trading networks and hierarchies), I cite those identified by Leah D. Minc in 2006, as reported and analysed critically by Richard Hodges with reference to the models of Carol Smith (Hodges 2012, 23-25).

⁶ Regarding the concept of socially integrated economies, and the timescale of their implementation, Hodges 2012, 6-8 and more generally 116-138.

this connection, a highly indicative case involves the inhabitants of the Val di Scalve who, in the first half of the 11th century, were at least in part able to sell on the iron that was mined there, on payment of 1,000 pounds of iron to the royal court of Darfo (Fiore 2020a).

If we consider coinage not so much as the product of an increase in commercial transactions, but rather as a means of measurement needed to establish how those transactions operated, and how they were regulated, it is logical to ascribe an important role to the state authorities in determining a specific monetary policy (Palermo 2017, 192).

During the Ottonian dynasty, this policy reflects their general economic strategy with regard to the Kingdom of Italy, and the picture drawn up some years ago by Alessia Rovelli is highly relevant in this revised interpretation of this historical period (Rovelli 2010). Although we are looking at small amounts of coinage in circulation (bearing in mind, however, that the contemporary economic context still featured a logic based on the principle of redistribution, which therefore was largely separate from monetary and commercial transactions), the Ottonian reign was a time when we see a marked increase in coin emissions, especially from the Pavia mint.

The Pavia ottolini were the first coin series that enjoyed an interregional circulation, since they are also recorded in southern Italian regions that were caught up in the expansionist policy of the Ottos.

On top of this there was the important finding derived from isotopic analyses of ottolini both from Pavia and from Lucca, conducted under the nEU-Med project, bearing witness to the arrival of raw materials from the mines of the Harz region, where mining had resumed on a large scale in this phase (Chiarantini *et al.* 2021). This, therefore, confirms a wide-ranging Ottonian monetary policy, on a par with what was happening, albeit on a larger scale, in the Germanic area, where a considerable number of coin emissions, especially in the regions of the middle and upper Rhine (Spufford 1988, 74-105), was associated with incentives for the purposes of commercial trade (Bompaire *et al.* 1993, 197; Woods 2018, 105-108; for a recent study of Ottonian-era economies in the Germanic area Bachrach 2022). However, in common with this context, the circulation of Ottonian denari in the Kingdom of Italy too, as Rovelli emphasizes, seems to have rapidly come to an end, and once the impetus from the Pavia coinage wore off, along with coins from Lucca, although to a lesser extent, then the production of coinage slowed down, until the new coins struck by comunal mints in the course of the 12th century eventually took hold.

This whole collection of factors described above apparently helped to create ideal conditions for economic growth, and for a more widespread prosperity, and in northern Italy these new phenomena seem to have led to the rise in prices, and the increase in lands, that are described by Cinzio Violante.

This situation definitely benefited not only the higher-ranking aristocracy but also middle-ranking nobles, and presumably that whole social group that revolved around specialized forms of production, redistribution systems, and probably also trade and commerce. It is somewhat harder to posit at what level this favourable economic situation might also have involved peasants or at least free small and medium-sized landowners, who were ever-present in our case study, as they were in many other parts of Tuscany. The opening up of new, large territories for farming (one need only consider the transformations in the 500 hectares and more in the Pecora valley) definitely had a favourable impact on the economies of these local micro-societies, of which the archaeologists often see only the other side of the coin, represented by aristocratic storage depots (especially granaries), which are better preserved and more visible (including in documentary terms). The material culture does not help us to see signs of great change or evident social mobility in small habitation nuclei, and it is hard, with the information available to us, to formulate definite hypotheses, based on material finds, regarding clear cooperation with this system also 'from the bottom up', along the lines of the suggestions made by Frans Theuws for Carolingian Austrasia (Theuws 2008), by Mathieu Arnoux in connection with the laboratoires in medieval France (Arnoux 2012), and by Juan Antonio Quirós Castillo for northern Spain

(Quirós Castillo 2023), or to envisage, on the back of the material record, a more specific economic role on the part of free peasants and landowners, as recently mooted by Wickham for central-northern Italy, setting out mainly from an analysis of written sources (Wickham 2023, 493-501).

Nevertheless, it was a complex system, and one that, for these Mediterranean latitudes, is hard to correlate with the models drawn up, for example in the case of northern Europe, for areas where there is a richer and more structured dataset. Returning to the writings of Dagfinn Skre (Skre 2015, 166), albeit with reference to the economic systems of Scandinavia, the very complexity of relations between society, culture, social norms, and the economy currently prevents, for our case study, specific combinations and modelling, without the support of a larger number of parallels with areas that are characterized by interconnecting micro-histories. This is all the more true if, within this system, we include, especially for the Ottonian period, the high degree of integration between imperial policies and the spiritual sphere in a network of interactions also with particular economic strategies (as in the case of mining areas, and the monastery of Monte Amiata, or the church at Montieri)⁷.

Accordingly, much work remains to be done. Also as regards relations between rural areas and towns or cities.

Indeed, in this system, despite being the location of the most important institutions and the main place of contact and discussion between the central powers and aristocratic groups, cities do not seem to play such a central role in economic terms. In fact, we could say that it is in this very phase that we see the creation, but not the complete implementation, of those requisites needed for them to take off as crucial economic centres, and production centres.

This statement ties in with recent writings by Wickham published in two articles that appeared just a few years apart (Wickham 2015; 2017). In both cases, these stress two specific points: down to the later 12th century the evidence of merchants and productive activities in many cities in central-northern Italy is not so incisive (the author refers specifically to Lucca, Pisa, Milan, and Pavia, with a separate discussion of the case of Rome); and seeking the early signs of important and continuous growth in the 10th and 11th centuries by setting out from a retrospective analysis of economies that were by then in their full development in the High Middle Ages, could be misleading. This last statement takes on greater significance, Wickham emphasizes, in view of the fact that the traces of artisanal activities documented in 10th and 11th century cities are often associated with forms of production that do not coincide with those that went on to mark urban economic growth as of the later 12th century, above all⁸. These considerations have been returned to by the same scholar, and developed at length, in his latest volume in the section devoted to central-northern Italy (Wickham 2023, 465-620).

In these works, Wickham introduces a possible model, the model of infrastructure, which can in some ways be related back to the suggested form of the system which I mentioned above. Indeed, he also takes the view that, prior to the major 12th century growth, it is not so much cities, or not only cities, that we are to view as the main economic centres, but the rural infrastructure system connected to them, represented mainly by specialized production hubs, often coinciding in the case of Milan with small borghi, or also with quasi-cities (or small-scale cities). It is in this 'hierarchy of commerce' which assumed close links between the extraction of raw materials, their processing in rural areas and also in cities, and the circulation of these finished products, in accordance with the logics of distribution or commerce in both directions, that we might be able to see the foundations of true urban development in the High Middle Ages.

⁷ Regarding the role of religious institutions in overall strategies relating to economic processes, I refer readers to the considerations of Hodges 2012 contained in chapters IV and VI.

⁸ This is the case with Milan where, on the basis of written documentation dating to before the mid-12th century, we clearly see an artisanal economy more closely associated with processing metal than with weaving (Wickham 2017, p. 100).

The system of infrastructure mooted by Wickham, especially for the Milanese area, is not strongly supported by the archaeological record, owing to a lack of archaeological investigations. In the hypothesis that I have drawn up regarding the contexts I have investigated, setting out from firmer material data, the system of infrastructure would appear to be even more complex in its composition, and in the geography and hierarchy of main and secondary nodal points that were part of those public/private worlds that are more visible, compared to the past, in rural areas in the Ottonian period.

For our case study, compared to cities, we can recognize the influence of the Ottonian political and economic programme, and the infrastructure developed by the Ottonians, by briefly analysing the case of Pisa, the urban context which more than any other in central and northern Tuscany (and also further afield) saw considerable, early economic development, on the back of the positive repercussions of infrastructure systems present in areas lying even outside the immediate vicinity of the city.

In Chapter VII, section 1, in considering imported Mediterranean pottery found in the Maremman area, and pottery arriving in Pisa from its port, I was careful to insist on the fact that down to the late 10th century there were no major differences between this urban context and the Maremman area (which was now no longer economically marginal). In that phase, Pisa was the port of Lucca, and the influence of the latter city, in common with the 'economic pull' towards the hinterland, remained particularly evident for much of the 10th century. However, it is in the Ottonian period that the shift up in gear seems to take place, coinciding with Margrave Hugh of Tuscia's mandate. From this time on Pisa, more so than in previous periods, became the port used for maritime endeavours and contacts with southern Italy, where the expansionist aspirations of the Ottos were concentrated, and where the Margrave himself (who meanwhile had a palazzo built in Pisa for his personal use) activated a series of important relations, the scale of which can be seen in tangible form, with the arrival in Pisa of amphorae from Palermo, and of the first glazed pottery, albeit still in limited amounts.

However, at the same time, Pisa was the point of arrival for goods produced in public centres on the coast, bound for Lucca, and it probably also played an active part in the maritime transportation of certain important raw materials, such as the hematite from Elba which I have discussed at various points in previous chapters.

Thus Pisa's participation in the public programme, in a leading role and at several levels (across the region and beyond), was vital for the city's economy, also thanks to the activism of the urban elites, who were a lot more numerous than in other urban contexts in Tuscany, which were less involved in estate holdings, and more involved in sea-borne military undertakings (Cortese 2017, 235-239).

This same twin level of alignment with the economic and political strategies of the Ottonian dynasty was the foundation for Pisa's first step towards major growth (Tangheroni 2003, especially the whole section devoted to the medieval period), which became more significant in the course of the 11th century, continuing almost uninterruptedly, also thanks to the experience acquired by the 'Pisans' in handling certain economic affairs, and which involved ever stronger control of the valuable mining areas of southern Tuscany, and especially of the island of Elba⁹.

8.5 The slowdown before a new rise (second half of the 11th-12th century)

However, such continuity of growth was not found in many other contexts, and this subject returns us to the question framed almost at the start of this chapter, which, after what I have stated thereafter, I could reformulate as follows: if Ottonian dominance created favourable conditions for a vigorous push

⁹ Indeed Wickham ascribes Pisa's rise to economic power during the 12th century specifically to its definitive control over the mines on Elba and in the Colline Metallifere (Wickham 2023, 557-589).

towards economic growth, why do we see its material effects mainly as of the second half of the 12th century?

In Chapter VI, section 3, dedicated to the chronology and rate of change, I dwelt at length on the final outcomes of this Ottonian period, and I do not want to go back over them again. All I would like to underline is that the end of that ‘traditional’ world that was closely tied to mutual consensus between the aristocracy and the public powers, where the latter represented a kind of clearinghouse that was needed in order to maintain important political balances, as well as economic and social equilibriums, first began with the death of Henry III, but it coincided mainly with the period of the so-called ‘Investiture Controversy’, the consequence of which was also a delegitimization of the central powers themselves (Fiore 2015; Fiore 2020b). At the same time, already as of the first few decades of the 11th century, the aspirations to greater autonomy on the part of the aristocratic dynasties (as well as on the part of other urban social groups) were coming to a head. The tangible result of this new context, in the Maremma area and elsewhere too (indeed, we have seen that this was the case also in a number of instances in the Po valley), was the literal disappearance of some of the major public hubs, and some of the private hubs connected to them. This would explain the anomalous abandonment of many castles which apparently followed the break-up of that wide-ranging economic system in which they had previously played an active part.

Thus this new world, as of the second half of the 11th century, had to get reorganized, this time without a recognized leadership. By contrast, it now had increased economic might, compared to the past, also as a result of the favourable economic situation which developed during the Ottonian reign.

This reorganization was no simple task, due to the new rules of the game, which hinged upon the relationship between the seigneurships, and between each seigneurship and its subjects. The rise in the level of conflict and negotiation, in a social context that was already highly militarized, was identified as a distinctive feature especially of the phase between the 11th and 12th centuries, in which the very shape and form of the seigneurships underwent a marked, drastic change. This change also affected a reorganization of economic strategies, which were now aimed not so much at the growth of estate holdings, but more at maximizing the economic productivity of existing property.

The suggestion of a breakthrough by local lords, and a break with the more recent past, too, which took place fairly rapidly, is an interpretative approach that is now becoming consolidated (Fiore 2020b), in contrast with the idea of a slow, gradual and linear process when it comes to the formation of the local seigneurships themselves.

Even when local lords took advantage of this crisis to expand their powers and domains, as in the case of the Aldobrandeschi family, the process was marked by major friction, internal renegotiation, and necessary adjustments (in this connection one need only recall the tension in relations between the bishop of Roselle and the family of nobles, which, in 1060, even led to the abduction of the high-ranking Church figure himself).

This context of conflict and widespread tension was a fixed feature common to many rural parts of the Kingdom of Italy between the second half of the 11th and the first few decades of the 12th century, and this certainly did not ensure the smooth continuation of the economic development that speeded up under Ottonian domination.

This certainly enabled the economic basis of the higher aristocracy to become stronger, as it did in the case of the middle-ranking aristocracy, thereby providing the essential means for transforming their aspirations into the achievement of autonomy, but this did not prevent a clear slowdown by the economy. Thus, it took several decades before the results of this change in political and economic standing became manifest. In this intermediate phase there was room for new experimentation in

terms of power, in which those who belonged to the previous political and economic system certainly had an advantage.

We may be able to identify this time of readjustment and experimentation in the following specific aspects of much of the archaeological record: in the reduced stratigraphy, and in the many floor level interfaces which I have occasionally come across at sites I have excavated, interposed between important late 10th century and later 12th century phases; in the abandonment of the earliest reduction furnaces in the course of the 11th century at the mining castles of Rocchette Pannocchieschi and Rocca San Silvestro and, by contrast, in the increase in ironmaking activities documented in the centre of Pisa; in the exceptional nature of buildings such as Pisa cathedral and, on the other hand, in the general adoption of masonry techniques that were still irregular in much of central and northern Italy, including in buildings of complex design; in the anomalous disappearance of storage facilities for cereals that up until then had been found within rural sites themselves; in the downturn in coin emissions; in the transformations seen in forms of everyday pottery vessels, or in the total or near-disappearance of some pottery types or wares that were typical of production contexts that had been very much present in the Ottonian phase, such as the small amphoras from the Maremma, Valdarno red-painted pottery, or sparse-glaze pottery from the Po valley area and northern Tuscany; in the multiplication of fortified sites, whose influence over population dynamics down to the mid-12th century is still debated; and in the depopulation of the coastal plain of the royal court of *Valli*, which had by then lost its original function, in the 12th century itself, and which was indeed now truly abandoned (which did not happen in the 7th century). But as yet these are merely suggestions for further investigation.

In the complex and far from linear process of economic growth, which went hand-in-hand with the equally non-linear process of formation and development of local seigneurships and castle formation, I propose chronologies based in particular on the material evidence, namely: a more clear-cut but gradual resumption of development between the 9th and the first half of the 10th century; a sharp rise between the second half of the 10th and the first half of the 11th century; a slowdown between the second half of the 11th and the early 12th centuries; and a new start which took off at top speed in the second half of the 12th century.

Within this overall scenario, perhaps a future challenge for archaeologists will be gaining a better understanding of how this new world in central and northern Italy, with its rural areas and its urban centres, became reorganized prior to the evident growth seen in the later 12th century, at a time when there was a very real risk that this part of Italy would fail to evolve in what became, by contrast, one of the most important economic areas in Europe.

These are the new ‘truffles’ that I am preparing to track down, and it is wonderful to know that I can do so thanks to a new, stimulating project¹⁰.

¹⁰ I refer in particular to the project entitled *The times of castles. Multidisciplinary researches for a new chronology of the building sites of incastellamento (XI-XII centuries)*, part of the Ministerial Programme for Research Projects of Significant National Interest (PRIN Bando 2020, Prot. 20203YX58R). Thanks to this, along with colleagues from the universities of Turin, Florence and Naples, as of May 2022 we will begin systematic archaeometric dating of lime mortars from a sample of fortified structures, aimed at determining in more detail the chronology of the phase of castle formation between the 11th and 12th centuries.

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Archaeology of Public Estates draws on the results of research conducted in the last few years in Tuscany's Maremma region as part of an ERC-Advanced project, nEU-Med, at the same time as reinterpreting previous findings from the last few decades, with the aim of identifying the material 'markers' of royal properties, and understanding how they took shape and were managed between the 9th and 11th centuries. The theme, public lands and property, which has been of special interest in recent years to historians of documentary sources, and which here is viewed through the lens of material findings.

The results of research seen from a new perspective help to identify a possible key for interpreting historical institutions and agents in this part of the Mediterranean, one capable of generating answers that are bound up with larger issues: the role of the public hand (the *publicum*) in relation to local aristocracies and communities; transformations in the anthropic and natural landscape; the specific features of production and exchange; the timeframe and process of castle formation; and the economic growth of rural areas prior to the great leap forward in the 12th century.

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