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What's beyond the Etruscan bridge?

Analysis and dating of the Vignale plateau

San Giovenale. Results of excavations conducted by the Swedish Institute of Classical Studies at Rome and the Soprintendenza alle Antichità dell'Etruria Meridionale
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Dust jacket: The enigmatic Stone Platform excavated on Vignale in 1959, looking north-west (photograph by C.W. Welin, courtesy of SIR). See p. 183, *Fig. 155*.

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ABSTRACT

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The Etruscan site of San Giovenale has been excavated periodically since 1956. From the beginning the main focus has been the question of settlement remains. However, a fundamental area within the site had still not undergone the inquiry necessary for a complete understanding of the site as a whole. The Vignale plateau, connected to the main site by an Etruscan bridge, was surveyed and partly excavated in 1959–1960, but not published. The Vignale Archaeological Project (VAP) began new investigations in 2006 that aimed to answer the question of "What's beyond the Etruscan bridge?" This publication focuses on the initial investigations of 1959–1960, augmented by new ground- and aerial remote sensing surveys.

The current volume is divided in six chapters. Through an introduction, and geological/topographic and historical/archaeological settings (*Chapters 1–3*), the reader achieves a general understanding of Vignale within a larger framework. The main archaeological studies of various features on the plateau, their function and dating are covered in *Chapter 4*, where Vignale from the Final Bronze Age to medieval times is approached with an emphasis on the Etruscan periods. The study of the latter investigates the connection to Vignale's sister plateau (the Acropolis area), and the plateaus' connection to the surrounding landscape. An intrinsic aspect of Vignale is the association with wine over time. *Chapter 5* therefore elaborates on wild and domesticated vines with emphasis on production, ritual, and material remains, concluding with a summary and synthesis in *Chapter 6*. Two extensive appendices follow, one detailing the material remains and data connected to the southern Bridge Complex, and the other a treatise on the Etruscan awareness of their local mineral salt, alunite.

Keywords: San Giovenale, Vignale, Etruscan, viniculture, viticulture, cisterns, infrastructure, necropolis, remote sensing, LiDAR, aerial, bridge, ram's head, settlement, photography, defence structures, platform, quarry, wine press, alun, alunite

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Chapter 1. General introduction

"Make bricks without straw"

Aims, research questions, and methods

The Vignale Archaeological Project (VAP) was initiated in February 2006.[1] The starting point and initial focus was a prominent height in the Etruscan site of San Giovenale, the Vignale plateau. The project started as a simple enquiry that evolved from early and extensive excavations of an Etruscan bridge, that originally spanned the Pietrisco brook and connected the plateau of the northern part of San Giovenale, including its Acropolis, with the plateau of Vignale. Studying the area closely, a question arose that had already been touched upon during the 1950s, regarding the monumental style of the bridge. Did its physical sophistication stem from the significance of linking the two larger plateaus in San Giovenale, or was the bridge merely a passage to and from the core area surrounding the Acropolis? Perhaps both alternatives are feasible, but most important of all was the enquiry—what was hidden beyond the bridge? The northern of San Giovenale's two plateaus was the extensively investigated Acropolis, while the southern plateau of Vignale was still in need of a more thorough examination. The relatively brief study of Vignale, initiated in the late 1950s and which included trial soundings, was unfortunately never published. Nor were the collected artefacts and pottery processed. Could perhaps this archived material, combined with modern Etruscan studies, paint the Vignale plateau as far more important than was earlier understood? Or did it perhaps possess other qualities of importance? This flat hill, near to the Etruscan settlement of San Giovenale, has qualities ideal for the positioning of various constructions and cultivation activities, and therefore, arguably, comprised a vital part of San Giovenale during the Etruscan period and later. A recent transformation of both cultivation methods and the landscape has taken place over the past several decades. As well as knowledge gained from archaeological endeavours, this alteration also provides an understanding of how the Italian cultural landscape has been remodelled over half a century, depending on local economic prerequisites. An important aim of our project was therefore to place Vignale in a landscape-archaeological perspective, which also had the potential to present San Giovenale as a much larger economic unit than previously anticipated (*Fig. 3*).

The heading "Make bricks without straw" is an allusion to *Exodus* 5:6–19, where brick manufacturing had to be accomplished without the appropriate resource, straw. Today, the saying sometimes refers to performing a task without the essential materials or means, as in writing an archaeological report without having access to all excavated structures. To approach a historical site like Vignale and having only methods and resources available in the form of remote sensing techniques, visible but half-buried structures, and notebooks deriving from limited excavations made more than half century ago, then one might be considered to be missing the straw. However, if one considers indirect resources such as comparable sites with excavated material, already visible infrastructures on Vignale, observable burial-grounds, and crop-marks indicating what's concealed below, as well as the usual stray finds stemming from ground surveys—then a rather revealing picture starts to materialize. Taken together this circumstantial evidence illustrates our project's daily challenges of reconstructing the past. After all the data collection from Vignale undertaken by VAP, we are now convinced that a more comprehensive understanding of a previously rather anonymous area in San Giovenale can be presented.

Thus, the objectives of this study established in 2006 were to identify and relocate the ancient remains previously found in the 1950s, and expand upon these and place them in a landscape-archaeological and historical perspective. In re-examining the early works on Vignale for the purpose of publishing

[1] In 2006 the team comprised Yvonne Backe Forsberg Ph.D., Richard Holmgren ARCDOC, Archaeological Documentation, and Ingela M.B. Wiman Ph.D.

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Fig. 3. Aerial view looking east over the two settlement plateaus at San Giovenale in 2009: Acropolis with its Borgo area (lower Acropolis) at front left; Vignale in the centre, behind (photograph by R. Holmgren).

them, it became clear that a more thorough study based on recent scientific data was needed. This would however involve many years of additional excavations, and thus a need for large financial investments. For some time the study of "old school" excavations has not been prioritized—the depositories at the Swedish Institute of Classical Studies in Rome contain a vast amount of unprocessed and unpublished material waiting to feed the curious.[2] How then could we proceed to both publish and gain new archaeological results without restarting traditional, time- and cost-consuming excavations or trial soundings?[3] One of the solutions and a motivating factor in restarting a more sizeable study of Vignale, including its surroundings, was to incorporate an already owned ultralight aircraft. This aerial approach could make the landscape study practicable in combination with concurrent land surveys.

The aerial remote sensing techniques combined aerial surveys with conventional photography as well as thermal and near-infrared imaging (IRT and NIR). The reason for using a traditional aircraft instead of small unmanned remote sensing alternatives resulted from our use of bulky photographic equipment, especially that of IRT. The choice of a conventional small aircraft was also often made in order to evaluate methods for surveying larger areas where archaeologists could land and make preliminary ground inspections where necessary, such as in vast desert areas.[4] Another remote sensing technique that came to be incorporated in the project

[2] The archaeological material from San Giovenale and its surroundings, Luni sul Mignone included, is now stored at the small town of Blera, 10 km north-east of San Giovenale.

[3] On field survey as a method and landscape archaeology, see Attema *et al.* 2010, 15–16, 19–20.

[4] The aircraft used over San Giovenale was initially acquired by Hannu Kuisma for Richard Holmgren's firm, ARCDOC, Archaeological Documention, for a planned desert survey over the southern Taklamakan area in the Xinjiang province of China. With scattered settlements over a wide area, encompassing a relative flat landscape without obstacles, the ultralight aircraft was the perfect tool for such ventures.

Fig. 4. Richard Holmgren and Yvonne Backe Forsberg in 2006, during the initial phase of Vignale Archaeological Project (VAP). They are pictured in the laboratory of the Swedish Institute of Classical Studies in Rome, processing the pottery material excavated in 1959 (photograph by Hannu Kuisma).

was LiDAR (light detection and ranging), but this had to be operated from a helicopter during a limited period of time in 2010.[5] This new aerial and land survey approach at Vignale became vital to delivering a more far-reaching understanding of the site as a much larger unit than expected. The ultralight aircraft, flown by the survey team themselves, also became an integral tool within the daily work and as such proved a straightforward yet innovative venture. The aerial component of the project also introduced our team to new perspectives of scientific approaches through the excellent co-operation with the Italian remote sensing specialists Dr Nicola Masini and Dr Rosa Lasaponara.[6]

As a result of this renewed interest in Vignale, the first study that was initiated in February/March 2006 had the following aim, to undertake a field survey in order to investigate new parts of the larger Vignale area with a focus on the land that extended between the Pietrisco brook in the north and river Vesca in the south. Previous research on the western plateau of Vignale had already revealed a variety of features, possible building remains, and a great number of wells and cisterns which were said to possess a great value as evidence for a monumental area from the 7th century BC onwards.[7] Due to economic factors the investigations initiated in the late 1950s were not concluded. Part of the excavated material has since been presented in a doctoral thesis by one of the present authors, Yvonne Backe Forsberg,[8] and selected categories of artefacts from Vignale are currently on display in the Museo Nazionale Etrusco Rocca Albornoz in Viterbo (*Figs. 4, 152*).

The 2007 and succeeding phase of our first fieldwork research was to develop and test results already gained by a series of remote sensing techniques using the small aircraft—this with new photographic techniques applied from the air. The remote sensing methods permitted the site's sometimes shallow structures to be traced beneath the ground through variations in the moisture and temperature of the covering soil. This in turn could affect plant conditions, enabling the variable content of chlorophyll to be recorded using colour film. This was preferably performed during early spring, and so guided our choice of research season for that year. The aircraft's modest size, its cost effectiveness, and its ability to be stationed directly next to the site all established its usefulness. The approach furthermore allowed data to be tested and re-recorded almost immediately, this in contrast to the often-complex procedures that come with hiring an airport-based aircraft with a pilot. The method of linking adjacent sites with now vegetation-covered or buried structures undetectable from the ground made it possible to put the several decades' worth of detailed and narrow-focus studies into a larger context.

[5] On the surveying and aerial methods used, see further in *Chapter 3*.
[6] Nicola Masini, CNR/IBAM and Rosa Lasaponara CNR/IMAA, both at Potenza, Italy.
[7] MdC notebook 1959.
[8] See Backe Forsberg 2005.

As we shall see, VAP's land and aerial surveys have moreover been able to detect several previously unknown ancient structures on top of and in the immediate surroundings of the Vignale plateau. These findings involve new roads, stray finds, and fortification walls that paint a picture of a sister settlement of great importance. The aerial view also opened up new understandings of the geological processes that have reshaped and affected the cultural landscape over the centuries.

Chapters and appendices

This volume comprises six chapters, starting with this general introduction, which aims to deliver an initial walkthrough of the book, its ambitions, and why the Vignale plateau was chosen as the main study area in San Giovenale. *Chapter 2* acquaints the reader with the area's geological setting and the physical parameters that both limited and favoured activities at Vignale and its surroundings as a setting for daily life through the ages. The same chapter moreover delves into the important factors of the known historical and geographical setting. What do early records of historical and archaeological data reveal about the significance of Vignale, its intraregional connections, naming, and relation to San Giovenale as a larger unit? This will eventually lead the reader to a brief chronology of visible and still-concealed remains, both already identified and potential new discoveries.[9]

The archaeological studies and various surveying methods, used periodically between 1959 and 2010, are presented and discussed separately in *Chapter 3*. Here we are familiarized with both the modern methods utilized, such as different remote sensing techniques, as well as the independent surveys that have greatly complemented VAP's local studies. Among the various studies of Vignale, the initial and now 60-years-old unpublished documentation of the site is also highlighted. An important aim of the present book is to combine these early results alongside our up-to-date knowledge. The method of combining old and new data has allowed us to interpret and publish the old investigations and at the same time be able to present personal interpretations based on current research.

The focus and content of *Chapter 4* moves down to the level of individual structures and tries to separate the different features according to function, chronology, and type. Each feature description is accompanied by a data sheet comprising position, dating, category, and adjacent artefacts or ecofacts. Each feature is also put in a larger perspective and discussed in a broader context. Thus, the chapter lists each and every feature in categories such as infrastructure, manufacturing features, water installations, quarries, burials, and other important characteristics that embodied the activities of the area's early inhabitants. Each feature category of this assembled material is also preceded by a general introduction. Here, the actual choice of grouping certain types of features is explained—for example, the separation between water installations and manufacturing features, both potentially relating to the use of water. The chapter is also supplemented with discussions, tables, and lists in order to enhance the study by reference to analogous material, both local and interregional.

Chapter 5 differs profoundly from the more report-based rendering elsewhere in this study. Since the place name of Vignale is intimately connected to that of wine, the chapter inevitably features a broader historical account in order to better place Vignale's wine-related features with function over time. After nearly two and a half millennia, vinicultural remains may provide a comprehensive understanding of how the activities surrounding wine were initiated and developed on the Italian peninsula. Dating and function of, for example, wine presses, cultivation trenches, and associated ceramics have many times been shown to be problematic in archaeological ventures. Therefore, this chapter tries to provide the reader with a detailed narrative of wine in order to better approach such shortcomings and at the same time mediate both an economic and ceremonial perspective of wine with its associated customs. In general, there is no shortage of literature telling the history of wine, but seldom this is discussed in direct connection with the archaeological contexts themselves. This chapter therefore tries to fuse these traits into a coherent whole. Thus, *Chapter 5* is divided in two main parts, with the first concentrating on the more pragmatic characteristics of wine production, and the second part focusing on the ritualized qualities connected to wine. The reader should however be aware of how these qualities are often intricately intertwined and sometimes difficult to tell apart. Moreover, this study of Vignale will take these properties and compare them with features and finds in San Giovenale at large, and also seek parallels elsewhere on the Italian peninsula when pertinent.

To conclude the volume, 'Final synthesis and chronological overview' of *Chapter 6* attempts to fuse the factual information gained from Vignale with hypotheses about meaningful patterns relating to activities and spheres of production, habitation, and religion, in both a local and wider perspective. Finally, three appendices are presented, two of which are by the present authors. *Appendix 1* expands on the investigations of the southern bank of the Pietrisco brook, which were conducted in 1959–1963, including a consideration of a still-unpublished report of the ceramic material found in several trenches. Sixty years ago, the various features and installations were minimally investigated due to lack of time, and consequently no detailed measurements or descriptions were made.

[9] For chronological concordances of periods at San Giovenale, see *San Giovenale* V:1, 12.

Some of the archaeological finds from both sides of the brook are however already analysed and published.[10] This appendix presents the material, and also makes a comparative analysis with the find material found elsewhere on Vignale, which may be helpful for future ventures.

Appendix 2, 'The Etruscans and the question of alunite', is a condensed presentation based on a Master's thesis by Richard Holmgren.[11] It explores the rich assets of alunite, the mineral salt found in the nearby Tolfa Mountains, and whether this natural resource, known to have been of great importance from medieval times onwards, was known and extracted earlier, in Etruscan times. Since alunite in the form of alum was a vital component as a mordant when dyeing fabrics, the question may be pertinent when approaching alternative considerations of the Etruscan economy. In this volume the question of Etruscan alunite aims to complement the study of water installations with additional interpretations. In the case of San Giovenale among other Etruscan settlements, the cisterns and basins there may hint at large-scale activities connected to the process of dyeing and perhaps even trade of both alum and coloured textiles.

Appendix 3, by Agneta Freccero, concerns the conservation of a Hellenistic altar found in San Giovenale. For many years the altar was kept in the garden of the Swedish Institute of Classical Studies in Rome. From 2016 onwards it has formed part of the Vignale exhibition in the Museo Nazionale Etrusco Rocca Albornoz in Viterbo; the piece is also discussed in *Chapter 5*.

[10] Backe Forsberg 2005, figs. 23–24, 29–31, 36, 44b, 52, 62.
[11] Holmgren 2000.