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The Ancient Towers of the Paximadi Peninsula, Southern Euboia

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THE ANCIENT TOWERS OF THE PAXIMADI PENINSULA, SOUTHERN EUBOIA

ABSTRACT

This article discusses the organization and distribution of ancient towers on the Paximadi peninsula of southern Euboia, most of which date to the Classical period. Much attention has been given to the sporadic occurrence and possible uses of stone-built towers in different regions and time periods in Greece. Rather than identifying a single function for the Paximadi towers, the authors suggest that they fulfilled a variety of roles over time. Thus, changes in their form and distribution can be used to model how the rural landscape was exploited under different political and economic regimes.

Stone-built towers have a long history in the eastern Mediterranean.[1] From the Neolithic tower complex at Jericho to the 19th-century A.D. tower towns of Inner Mani, people have built towers for several thousand years in many different social and geographic contexts. The circumstances underlying the construction of these features also varied tremendously, leading to the appearance of regional, vernacular tower architecture. Despite the amount of written scholarship on ancient towers on the Greek mainland and islands, a consistent typology has not been developed for masonry styles, locations, or possible economic or political functions—nor would it be possible to create one. Each of these categories is dependent upon the specific environmental or sociopolitical context in which a group of towers was built, and this inherent variability prevents the construction of a typology that directly links form and function. Instead, the towers in each region require their own detailed study and analysis to determine their function in the ancient landscape.

This article presents the results of the survey of 25 towers on the Paximadi peninsula of southern Euboia (Fig. 1). The towers were originally identified by Keller in the course of his dissertation research in the

1. We thank Donald Keller for giving us the opportunity to work on this material and for providing invaluable comments, all the members of the Southern Euboea Exploration Project (SEEP) who have contributed to the project over the years, and the anonymous *Hesperia* reviewers, whose recommendations greatly strengthened this paper and expanded its bibliography.

The late Mac Wallace got this project started in more ways than one. He is greatly missed.

Plans and drawings are by S. Predovich and photographs were taken by D. R. Keller, unless otherwise indicated.

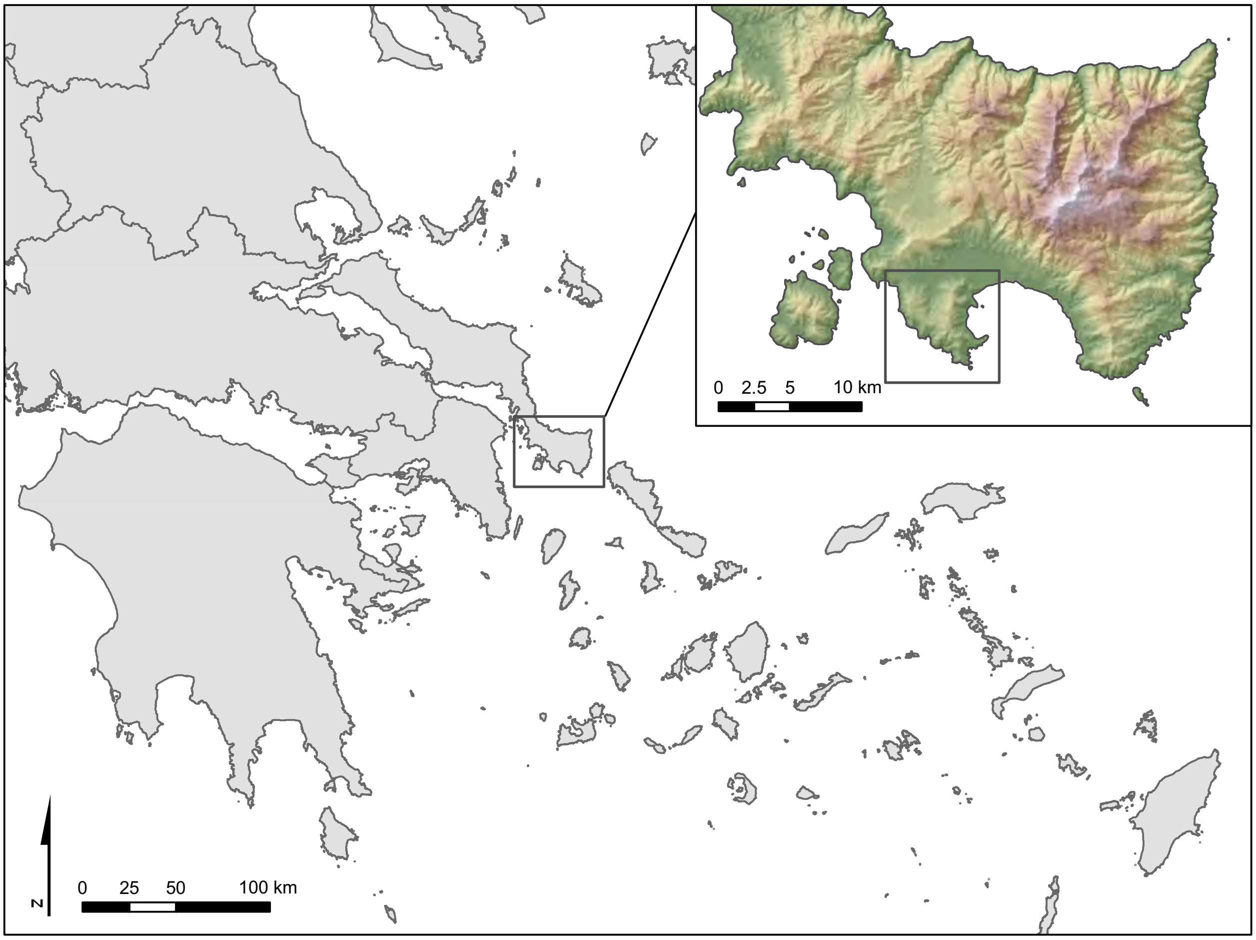


Figure 1. Map showing the location of southern Euboia and the Paximadi peninsula. Shuttle Radar Topography Mission (SRTM) elevation data from the Consortium for Spatial Information of the Consultative Group for International Agricultural Research (CGIAR-CSI).
R. M. Seifried

early 1980s, and they were revisited in 1992 and 1993 by Parkinson as part of the Southern Euboea Exploration Project (SEEP). They provide a particularly intriguing case study due to their small dimensions, poorly preserved schist architecture, and extremely high density, which is impressive given their location in a relatively unproductive countryside. The picture that emerges from this study suggests that rural towers in this region of Greece were multipurpose architectural structures. While that notion has been gaining traction in more recent publications, many archaeologists still prefer to attribute to tower sites either a militaristic or an agricultural function.

Militaristic: The earliest studies of towers in Greece tended to assume that towers were intended for military purposes. Lord, for example, argued that such structures in the Argolid served as houses for small, temporary garrisons, whose purpose was to patrol the countryside.[2] At the time, his typology of tower functions was limited to tombs, signal towers, and guardhouses, and he ruled out the first two categories because the structures possessed interior locks and had restricted views. Their minimal defenses, however, suggested that they were designed to withstand only small attacks. He later proposed an expanded typology that included fortresses, watchtowers, redoubts, and control stations along major routes.[3]

More recent studies have continued to employ this functional explanation, although additional criteria have been used to define these sites, such as

2. Lord 1938.
3. Lord 1939. For towers used as control stations, see Lord, Frantz, and Roebuck 1941.

the types of associated artifacts, location and view, and proximity to important resources. Such sites are expected to produce a limited array of pottery, with more drinking vessels and amphoras than domestic wares.[4] Artifacts found at the sites may indicate low-intensity, short-term use, and the structures may be located far from agricultural lands or at high elevations. Because the Late Classical to Hellenistic towers at Vayia in the southeast Corinthia meet these criteria, they are interpreted as military garrisons that guarded land and sea routes or responded to small-scale agricultural raids.[5] Towers with an unobstructed view of overland routes or the coast are often interpreted as watchtowers, and several linked by a visual network may be referred to as beacons or signal stations, which require intervisibility in order to function as a communicative network.[6] A militaristic function is also attributed to towers located near mines, quarries, and natural resources like springs, or situated along important roads, borders, or at the peripheries of polis centers.[7]

Militaristic interpretations assume a high degree of organization of resources (e.g., building supplies and labor) of the sort that could be provided by a government institution or by individual private wealth.[8] Yet militaristic explanations are rendered logical—and they are continually cited as such—because the durability of the tower walls and the height advantage they grant to their inhabitants are clearly beneficial for defense. They provide protection, allow their inhabitants to be forewarned of enemies' advances, and they even offer the possibility of notifying faraway allies of danger or attack. Not surprisingly, militaristic interpretations of towers persevere.

Agricultural: A contrasting interpretation of towers is that they functioned primarily as agricultural features. Young, for example, attributes to this category five Sounion towers associated with good farming land and other agricultural features such as threshing floors.[9] Domestic wares and storage-vessel fragments found at 19 towers on Leukas suggest that they, too, were primarily used as private agricultural residences.[10] Morris and Papadopoulos support this interpretation by linking the proliferation of towers throughout the Classical and Hellenistic countryside to the increased labor requirements of profit-oriented industries like viticulture and mining.[11] Others argue for a connection between the wealthy elite and the construction of towers, on the basis that the capital required to build

4. Hjohlman, Penttinen, and Wells 2005, p. 93.

5. Caraher, Pettegrew, and James 2010, pp. 408–413.

6. Koutsoukou and Kanellopoulos (1990, p. 169) suggest that the tower of Hellenikon-Choreza may have been a watchtower in a defensive network on the island of Andros. This tower has a good view of the coast but is far from productive agricultural land, and its impressive architecture suggests that it was publicly financed. Young (1956b) discusses towers connected in a visual network, and Ober (1985) argues for the development of a system of border defenses in 4th-century B.C. Attica, including forts, signal stations, and military highways.

7. For towers located near mines and quarries, see Young 1956b, p. 142; Morris and Papadopoulos 2005. For those located near springs, see Young 1956a. Cherry, Davis, and Mantzourani (1991, p. 295) address peripherally located towers, pointing out that none of the towers on Keos, which are tentatively dated to the Late Archaic to Early Hellenistic periods, are located near major towns. Camp (1991, pp. 195–197) discusses several Boiotian compartment towers, which are dated to the Classical period based on their masonry, that may have been used to guard ancient routes and polis borders.

8. Camp 1991, p. 201.

9. Young 1956b.

10. Morris 2001, pp. 340–341.

11. Morris and Papadopoulos 2005, pp. 180, 198. They believe that evidence of externally secured doors, along with other unusual architectural designs like second-story exterior openings, indicate that towers were used to lock away or protect valuables such as slaves; see Morris and Papadopoulos 2005, pp. 184, 188–190. No doorjambs were preserved in any Paximadi towers, so it is impossible to apply this model to the towers discussed here. See also Morris 2001, pp. 342–343.

them would far exceed that available to the average citizen.[12] Rather than serving as private defenses, the "deliberately monumental and conspicuous" towers of Keos may have functioned as elite status markers, in addition to providing a storage facility for the produce from elite-owned estates.[13]

In all these cases, the primary function of the towers was to grant inhabitants security while living near agricultural fields, as well as the ability to lock away expensive assets related to the farm, such as food, animals, or people to work the land. State-sponsored military functions are not necessarily excluded, but they are of secondary importance to the role of small-scale agricultural protection.[14] This functional category may be especially helpful for interpreting sites that contain a high number of domestic artifacts and storage wares, which are commonly found at tower sites and suggest a function based more on subsistence than on military defense.[15]

This dualist typology that has come to dominate the discussion of towers, however, oversimplifies and obscures the various functions that towers may have served in different regions of Greece. Some recent studies have found it difficult, if not impossible, to assign towers exclusively to a militaristic or agricultural functional category (e.g., the towers at Pyrgouthi in the Berbati Valley and at Tsouka on Andros).[16] In many cases, the towers may have served both purposes simultaneously.[17] Fracchia writes about the Peloponnesian towers, "Even if *primarily* agricultural in function, the towers could have easily served, and probably did, as places of refuge for those working the fields some distance from the nearest city walls."[18] Other towers located adjacent to harbors or major seaways served primarily as lighthouses.[19] Clearly, even when individual towers are associated with a particular function, extreme intraregional functional variability may still exist.[20]

12. Cherry, Davis, and Mantzourani 1991, pp. 296–297; Morris and Papadopoulos 2005, p. 164.

13. Cherry, Davis, and Mantzourani 1991, p. 296.

14. See Lohmann 1993, pp. 138–139.

15. Such domestic materials are frequently found at excavated tower sites, including those sites originally interpreted as militaristic in the early 19th century; see Morris and Papadopoulos 2005, p. 156.

16. Hjohlman, Penttinen, and Wells (2005, p. 93) discuss the excavation of the tower at Pyrgouthi, which yielded few artifacts associated with a military presence (e.g., drinking vessels and amphoras) and almost none associated with farmsteads (e.g., domestic wares, storage vessels, farming tools, grinding stones). The tower's view and location near a nucleated settlement and overland route suggest that it may have been used as a signal tower or guard post, as well as a storage facility. For the tower at Tsouka, see Koutsoukou and Kanellopoulos 1990, pp. 159–160. Its location and small size preclude a military use, but it provides a good view of the surrounding estate. The presence of domestic wares, fine wares, and storage vessels at the site suggests that it was the residence and storeroom of a wealthy landowner. Koutsoukou and Kanellopoulos believe this represents a common type of Greek tower that was primarily agricultural but could also provide limited defense against thieves.

17. Rousset (1999, p. 60) argues against a strictly militaristic interpretation of the towers in rural Central Greece. Their location near arable land but far from urban centers allowed them to be used both for agricultural exploitation and protection of coastal valleys. Other towers served not as fortified farmsteads, but rather as shelter, signal stations, or lighthouses. For an analysis of 35 towers in Eretria, which were more likely intended to protect rural civilians rather than defend *chora* borders, see Fachard 2012.

18. Fracchia 1985, p. 689. For a similar caveat about medieval Euboian towers, see Lock 1996. Although these later towers are frequently attributed to Venetian builders, Lock argues that their lack of intervisibility, distance from resources, structural variability, and non-Venetian architectural styles indicate that they were used as individual, agrarian residences.

19. See, e.g., the descriptions of lighthouses on Thasos in Osborne 1986, p. 169; Kozelj and Wurch-Kozelj 1989.

20. Osborne (1986, pp. 173–174) concludes that 31 towers known on Thasos served a variety of roles—defenses against pirates, refuges, storage facilities, or isolated agricultural residences—and that they were sometimes associated with larger agricultural settlements. In addition to this functional variety, the towers on Thasos exhibit great diversity in size (Osborne 1986, p. 168). For a discussion of tower variability in Attica, see Lohmann 1993, pp. 138–161.

The ancient towers on the Paximadi peninsula are best understood within this multifunctional interpretive framework. These structures are smaller than the military towers in other regions of Greece, yet many are positioned with impressive views of the coast or along ancient roads. At the same time, almost all are situated amid terraced fields, and a few are associated with threshing floors and artifacts that were used for domestic and agricultural activities. A total of 25 towers are located in the study area, mostly Classical in date, but with material spanning the Archaic through the Ottoman periods.

PREVIOUS RESEARCH ON THE PAXIMADI PENINSULA

Paximadi is a wedge-shaped peninsula on the western side of Karystos Bay (Figs. 2, 3). Like the hard bread that gave its name to the peninsula, it is dry and rough—a rocky outcrop that is mostly covered in dilapidated agricultural terraces. A V-shaped ridge (294–214 masl) forms the backbone of the peninsula. Extending out from this ridge on the eastern coast are a series of lower ridges separated by seasonal stream gullies and small, flat, alluvial basins. The western coast is more rugged, with steep slopes extending to the sea. The bedrock of the peninsula, composed primarily of amphibolites and schist, has an overlay of sandy gray-brown forest soil with stony inclusions. Some calcareous sandstone makes up Cape Mnima at the southeastern part of the peninsula.[21] Seasonal streambeds carry water to the bay in winter, but they are dry in summer. Standing water is found only at Palio Pithari on the eastern shore of the peninsula during the summer, and there are five perennial springs at the northern end, where they drain into the *kampos* (plain) to the west of Karystos.[22]

Although the dilapidated agricultural terraces suggest that many parts of the peninsula were once cultivated, today most of the landscape is covered with phrygana and maquis.[23] There are a few scattered wild olives and pear trees near Palio Pithari on the eastern shore, which may be associated with an abandoned 19th-century farm.[24] At the end of the 20th century, however, the region was used exclusively for grazing sheep and goats. In addition to the abandoned terraces, the only other obvious features on the landscape are goat folds *(mandria)* and shepherds' huts associated with seasonal husbandry practices.

The Karystos Survey, conducted by Keller between 1979 and 1981 as part of his dissertation research, was the first archaeological survey of the Paximadi peninsula.[25] The study region encompassed the eastern third of the peninsula and the watershed around Karystos Bay. Keller surveyed an area 41 km^2 in size, walking in 20 m transects. A total of 120 sites were identified during the survey, with over 30 containing potential tower architecture. Because the goal of this project was to survey the entire study area and identify as many sites as possible within a limited time frame, Keller employed a selective sampling technique at each site, rather than intensive, systematic surface collection.[26] Because the original survey permit did not allow for collection, diagnostic artifacts were initially gathered and inventoried in the field; when this restriction was lifted

21. Keller 1985, p. 56.
22. Keller 1985, p. 56.
23. The climate of southern Euboia has been compared to that of Andros and the Cycladic Islands; see Kayser and Thompson 1964.
24. Keller 1985, p. 57.
25. Keller 1983, 1985.
26. Keller 1985, p. 36.

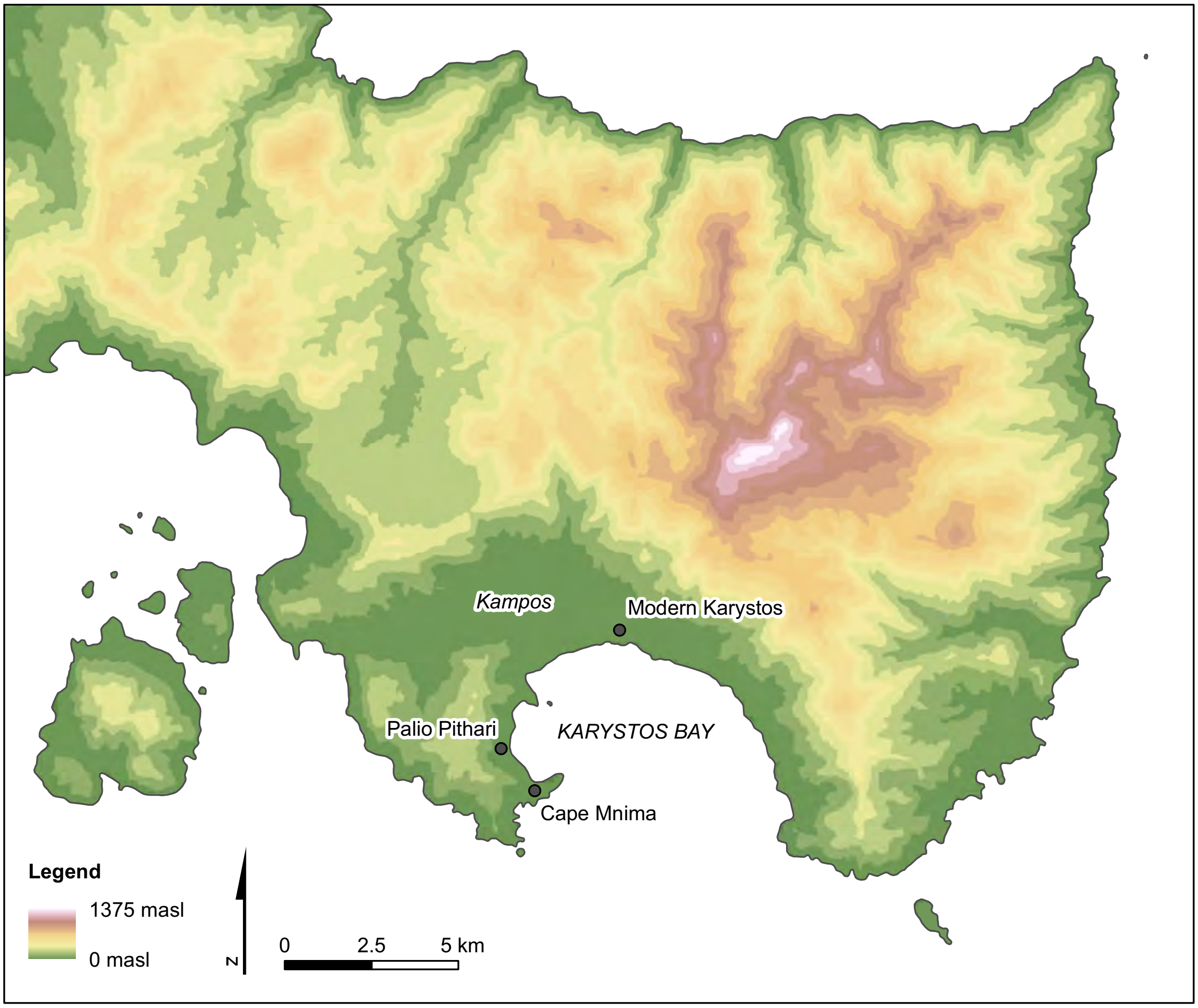


Figure 2. Map showing the location of important places mentioned in the text. SRTM data from CGIAR-CSI. R. M. Seifried

partway through the survey, a study collection of material from selected sites was established at the Karystos Archaeological Museum.[27] Dates were assigned to each site based on the surface-collected diagnostic pottery, association with nearby sites, and similarities with known Classical construction techniques.

Between 1984 and 1988, SEEP completed an intensive, systematic survey of the Paximadi peninsula, revisiting all the sites identified by the Karystos Survey and surveying the western part of the peninsula for the first time.[28] Team members walked in 10 m transects and covered an area of about 22 km^2, identifying a total of 162 sites ranging from the Final Neolithic to the Ottoman periods (Fig. 4; Table 1). As in the Karystos Survey, only diagnostic artifacts were collected, catalogued, and stored at the Karystos Archaeological Museum, and dates were assigned based on this diagnostic material. In addition to conducting the survey, the team also excavated two Classical sites: a cistern at an outpost at Cape Mnima (**1** in the site catalogue below), dated by the pottery to the late 6th to early 4th century B.C.; and a farmstead near Palio Pithari, dated to the

27. Keller 1985, p. 38.
28. For an overview of SEEP's work on Paximadi and in southern Euboia more broadly, see Wallace et al. 2006.

Figure 3. View of Karystos Bay and the eastern shore of the Paximadi peninsula from above modern Karystos

late 5th to early 4th century B.C.[29] SEEP has also conducted additional surveys around Karystos Bay and in the *kampos* to the west.[30]

The data collected during the SEEP survey of Paximadi allow for a preliminary reconstruction of settlement patterns in the study region.[31] Southern Euboia was first intensively occupied at the end of the Neolithic period.[32] During the Final Neolithic and Early Bronze Age, several sites were established throughout the area, including on the Paximadi peninsula. After this time of relatively dense occupation, there was a dramatic falloff in settlement throughout southern Euboia during the Middle and Late Bronze Age. Site numbers increased slightly after the Bronze Age, but the area was not significantly occupied again until the Archaic and Classical periods.

Over one-third of the sites recorded by SEEP date to the Classical period, a time characterized by a precarious sociopolitical relationship between southern Euboia and Athens. Historical sources report that Athens conducted two agricultural raids in the region around 470 B.C., and then promptly levied an unusually high tribute on the city of Karystos.[33]

29. For the cistern at Cape Mnima, see Keller and Schneider 2011, pp. 101–102. Although dated initially to the Classical period, the cistern was actually reused from the Hellenistic to the Late Roman periods. For the farmstead near Palio Pithari, see Keller and Wallace 1988; Keller and Schneider 2011, pp. 102–103. This farmstead is recorded as findspot 80C38 and no. 15 in Keller 1985, p. 89. For a summary of both excavations, see Wallace et al. 2006, pp. 30–34.

30. Tankosić and Chidiroglou 2010; Wickens 2011.

31. For a more thorough treatment of this preliminary data, see Wallace et al. 2006; Cullen, Talalay, and Tankosić 2011; Keller and Schneider 2011; Cullen et al. 2013.

32. For recent overviews of the prehistoric sites identified by SEEP in southern Euboia, see Talalay et al. 2005.

33. Keller 1985, p. 203. For a more detailed discussion of the Karystian tribute payments in the decades following its admittance into the Delian League, see Meritt 1972; Brock 1996.

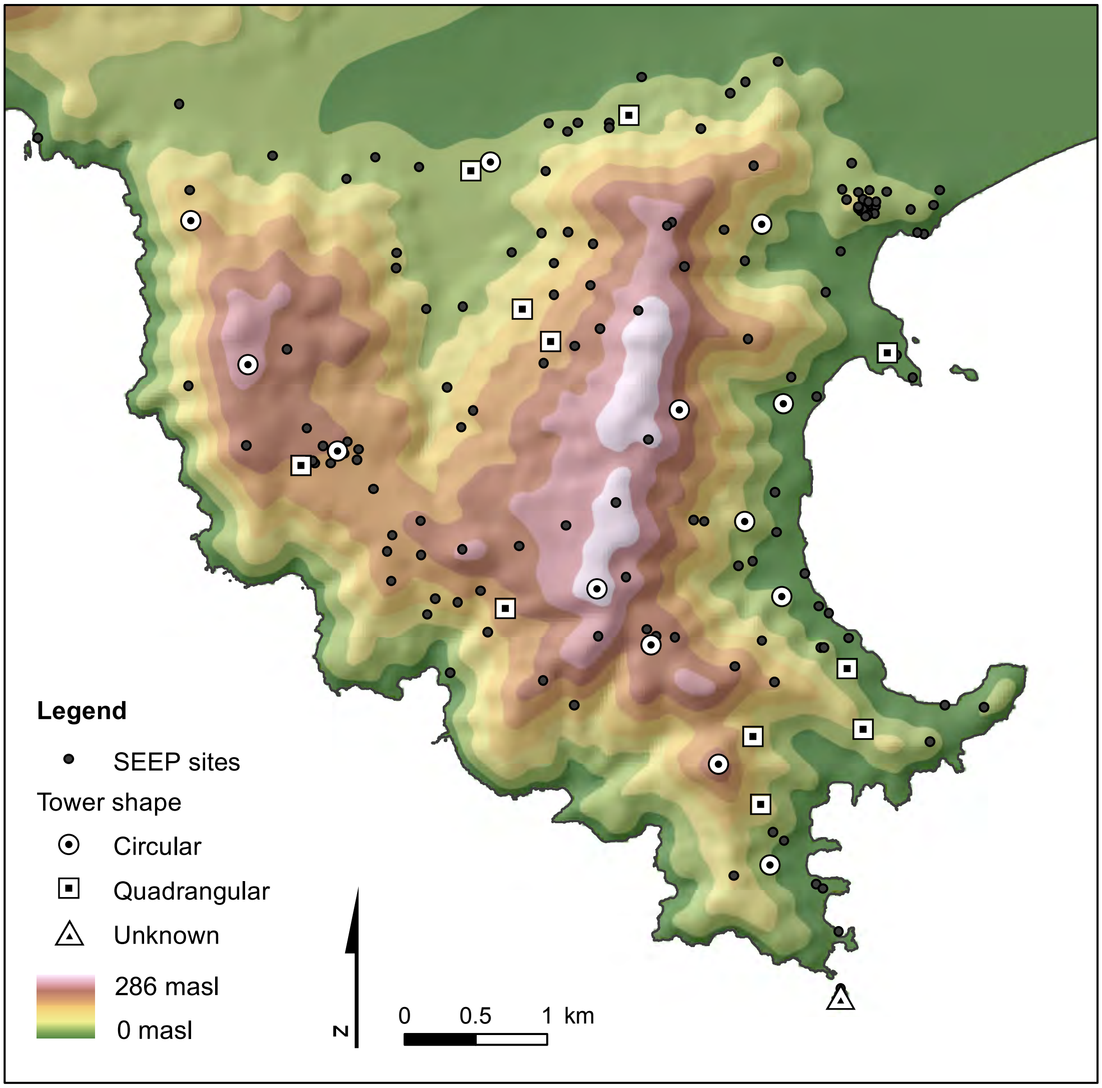


Figure 4. Map showing the distribution of towers and other sites identified by SEEP on the Paximadi peninsula. R. M. Seifried

Settlement in the region flourished despite these events, however, and many farmsteads and towers were occupied throughout the Paximadi countryside. The pattern revealed by the SEEP survey prompts us to ask who was responsible for the construction of these buildings. It has been suggested that Athens established a cleruchy of about 250 men at Karystos, partly in response to the decreasing availability of land in Attica following the Peloponnesian War, but also to protect the entrance to the South Euboian Gulf and to keep an eye on the city of Karystos.[34] In exchange for a private plot of land, the cleruchs served Athens as hoplites, defending the territory in which they lived. If such a system was established in southern Euboia, the resulting influx of Athenian citizens into the region and division of the countryside into private plots of land could account for the higher density of Classical farmsteads and towers.

Settlement in southern Euboia in the Roman period shifted toward the *kampos*, resulting in fewer—but larger—sites on the peninsula and elsewhere along the bay.[35] The peninsula became largely uninhabited in Byzantine times and remained so throughout the Ottoman period, when it was used primarily for grazing. Over the last 10 years, a series of paved

34. Wallace 1972, pp. 171–191; Figueira 1991, pp. 166–167, table 4; Brock 1996, p. 366; Wallace et al. 2006, p. 30; Keller and Schneider 2011, p. 100.

35. Keller 1985, p. 221. For a report on a Late Roman structure at Palaiochora, north of modern Karystos, see Kosso 1996. The author suggests that the site was an estate with a possible agricultural function.

TABLE 1. SITES IDENTIFIED BY SEEP ON THE PAXIMADI PENINSULA*

Period	*All Sites (n = 162)*	*Percent of Total Sites*	*Towers (n = 25)*	*Percent of Total Towers*
Final Neolithic	20	12.3	1	4
Geometric	17	10.5	–	–
Archaic	13	8.0	5	20
Classical	62	38.3	19	76
Hellenistic	11	6.8	6	24
Roman	39	24.1	7	28
Late Roman	–	–	2	8
Byzantine	20	12.3	5	20
Frankish	8	4.9	2	8
Ottoman	8	4.9	2	8
Unknown	18	11.1	1	4

* The sum of percentages is greater than 100, since many sites produced evidence for more than one period.

roads, electrical lines, and water lines have been carved into the peninsula in preparation for development, and, as a result, many of the archaeological sites documented by Keller have been damaged or completely destroyed.

THE TOWERS OF PAXIMADI

During the summers of 1992 and 1993, Parkinson revisited all the sites with potential tower architecture identified by the Karystos Survey and SEEP. The goals of this project were to verify the presence of towers, measure the dimensions of the architectural features, create detailed plans, and scan the site for additional diagnostic ceramics that might indicate additional phases of use. No artifacts were collected. The poor preservation of the local schist architecture of these structures complicated the identification of true towers. In most cases, only one or two courses remained of the original building. Entrances were never preserved (with the possible exception of tower **17**), and, because none of the towers were preserved above three courses, their heights could not be extrapolated.[36] Instead, towers were identified as those structures with a relatively small internal area and thick walls (Fig. 5). Five of the suspected towers that were revisited by Parkinson ultimately were removed from the list due to their large internal dimensions and relatively thin walls, architecture that more closely resembles the "blockhouses" found elsewhere in Greece.[37] Also omitted from consideration here are the so-called Dragon Houses

36. Based on five full-standing towers in the Megarid, Naxos, Andros, and Keos, Young calculates that tower height is approximately twice the value of the tower's outer diameter (or average of length and width, if quadrangular); see Young 1956b, p. 135.

37. Lord, Frantz, and Roebuck 1941. These "blockhouse" structures are isolated quadrangular buildings with larger dimensions than the towers, and their thin walls and the low density of rubble in their vicinity suggest that they never reached higher than a single story. The blockhouses are Classical in date, and therefore contemporaneous with most of the Paximadi towers. Due to their larger size, these structures may have been more suitable for habitation than were the towers. Four of them are located amid terraces, but only one is near a threshing floor. One wonders whether the Classical towers, more frequently located near threshing floors, served as processing and storage sites for the foodstuffs produced by the occupants of these blockhouses.

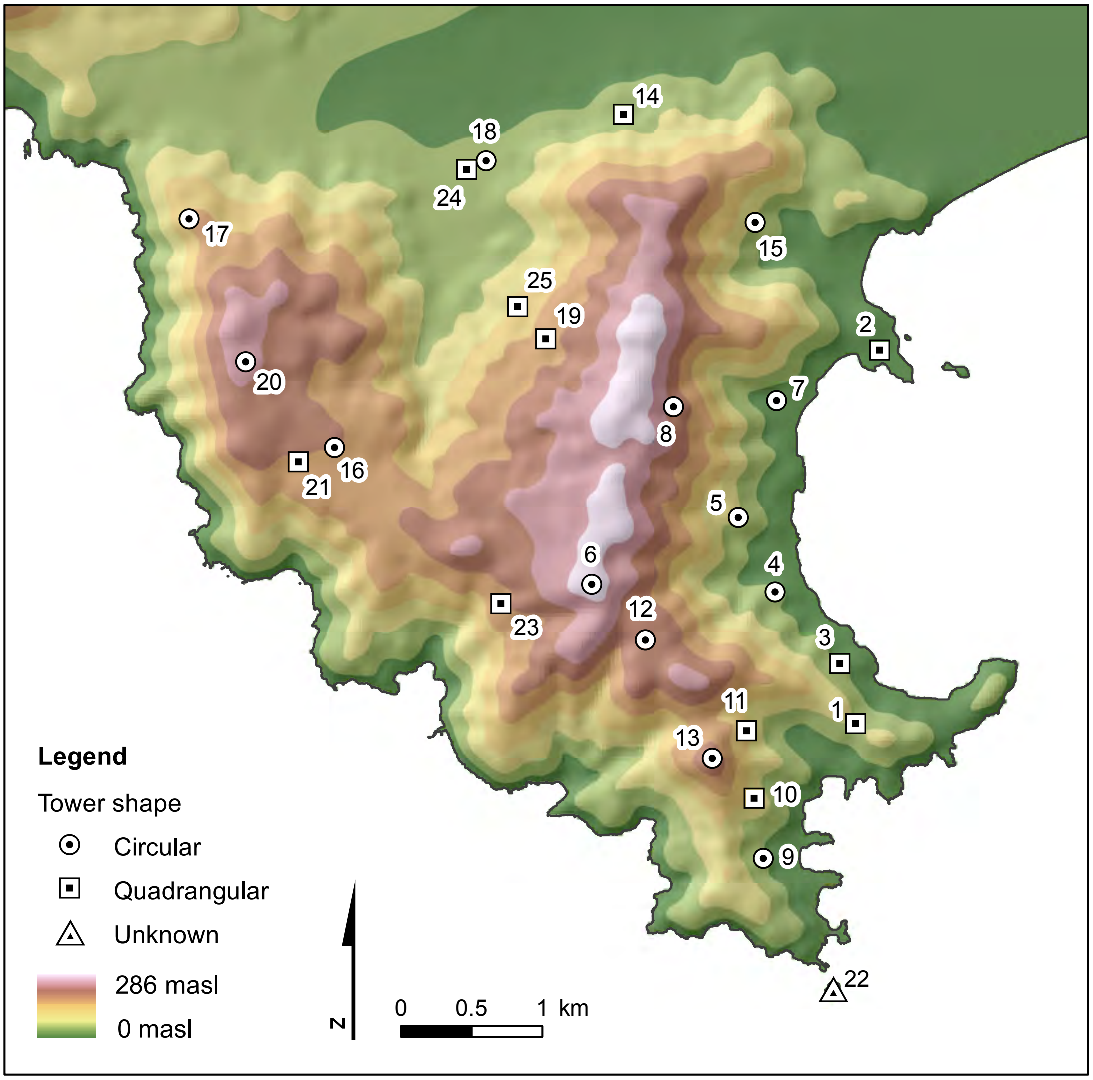


Figure 5. Map showing the locations of structures identified as towers on the Paximadi peninsula with their catalogue numbers. R. M. Seifried

(drakospita) of southern Euboia, the nearest of which is located on Mount Oxi to the north of modern Karystos.[38]

Each of the tower sites (except **16**) was visited at least three times: first by Keller, who made the preliminary identification; second by the SEEP survey team; and third by Parkinson, who recorded more detailed information about the towers. Diagnostic artifacts were inventoried in the field for all the sites, but in some cases they were also collected and brought to the Karystos Archaeological Museum for cataloguing, depending on the permit restrictions in place at the time of the visit. Only a few sites yielded no artifacts. Total numbers or densities of sherds were not calculated.

Due to the nature of this dataset—which consisted, at best, of a few diagnostic artifacts for each site—it is not possible to determine the exact dates of construction or primary use. Those sites with construction and masonry similar to the two sites excavated by SEEP, and securely dated to the late 6th to early 4th century B.C., may be assigned to the Classical period. However, for the majority of sites, dates are derived from the diagnostic artifacts. While surface-collected ceramics are not as reliable for dating as

38. See Reber 2001.

those collected during an excavation, they do point to phases within which a site was used.[39] Even when excavation is possible, relative numbers of artifacts do not always correspond to a structure's primary period of use. Material from earlier phases, for example, may have been cleared away by later residents, leading to an underrepresentation of these early periods in the archaeological record.[40]

Once dates were established for each tower, a geographic information system (GIS) was created to assess the intervisibility of contemporaneous sites using line-of-sight analysis.[41] Keller's original field notes report that some of the sites command an unobstructed view of the coast or of other sites (e.g., circular towers **6** and **13**), but the relatively small area of the peninsula suggests that many more sites are intervisible than was initially reported. Caution should be taken in interpreting the results of this analysis, especially because a strong analysis requires high-resolution elevation data, which were not available for the study area. Observer height can also influence visibility, especially when dealing with potentially multistoried towers. In these two areas, the Paximadi data fall short.[42] Nevertheless, the results of this analysis reveal interesting temporal patterning that is discussed in more detail below.

While all of the towers were constructed with rough-cut rectangular schist blocks and do not vary greatly in terms of size and wall thickness, they differ in two important categories: shape and association with additional structures. First, the towers are built in both circular and quadrangular forms. Elsewhere in Greece, such architectural variation may be a sign of chronological difference—or, in contemporaneous towers, it may indicate that the towers were built by different polities.[43] The Paximadi towers, however, do not sort neatly into distinct periods based on construction, with one exception: only quadrangular towers can be assigned a Roman date. Second, many of the towers are isolated structures, perhaps with a wall or threshing floor nearby, while others, categorized as "associated," are

39. For another example of using surface-collected ceramics to date unexcavated, fortified sites, see Ober 1987b.

40. Hjohlman, Penttinen, and Wells 2005, p. 56. The authors note that much of the material associated with the building phase of the Berbati tower was removed from its interior in the Late Roman period. Similarly, excavations of the Classical "pyramids" at Ligurio, Phychtia, and Kephalaria yielded little material associated with the construction phase, whereas artifacts from the structures' later periods of occupation (e.g., Roman) were more abundant; see Scranton 1938.

41. The analysis was conducted using ArcGIS 10.0 software and 90 m resolution SRTM data from CGIAR-CSI (version 4.1), resampled to a 15 m grid; see Jarvis et al. 2008. For each period, all sites with potential representative material were included in the analysis. Seven groups of sites were tested: Archaic (n = 5), Classical (n = 19), Hellenistic (n = 6), Roman (n = 7), Byzantine (n = 5), Frankish (n = 2) and Ottoman (n = 2). One site (**23**) was omitted from the analysis because it did not contain datable material. After the line-of-sight analysis was conducted, intervisibility relationships were verified using the "observer points" tool in ArcGIS.

42. To be more specific, the available DEM (digital elevation model) resolution was too low to differentiate subtle changes in the landscape that might have affected an observer's view from the location of each tower. We also chose not to estimate tower height—even though some archaeologists do so by extrapolating from extant towers (e.g., Young 1956b, p. 135)—because of the Paximadi peninsula's total lack of standing towers that could be used as a basis for comparison. In some cases, intervisibility may have been strengthened if the towers were several stories tall.

43. Camp (1991, p. 199), e.g., argues that Classical Athenian signal towers tended to be circular in shape with rubble or polygonal construction, while Boiotian towers were quadrangular with coursed trapezoidal construction. In contrast, Ober (1987a, pp. 601–602) finds little difference between Classical Athenian and Theban catapult towers, and suggests that they were part of a common architectural tradition.

encompassed within a larger complex with additional structures or connected rooms. In the absence of obvious rebuilding episodes, it is assumed that towers and their associated structures were constructed and used at approximately the same time. It is possible that a few of the towers identified as "isolated" were originally associated with mud brick or timber structures that have not been preserved, or stone structures that have been reduced to rubble by the erosive power of the Paximadi winds.[44]

Despite these caveats, we are confident that the descriptions presented here are as thorough as possible, given the nature of the data.

SITE CATALOGUE

The following catalogue entries include the tower's location, its findspot code assigned by Keller, its category (as determined by the tower's shape and whether it was associated with other enclosed structures), its dimensions and elevation above sea level, bibliographic references, a description of its construction and location, the artifacts that were catalogued and stored in the Karystos Archaeological Museum (if any), additional artifacts inventoried in the field, and the phases represented. All measurements are in meters. If not specified, black-glaze ware is assumed to be Classical–Hellenistic. Period designations with question marks indicate sites with only one artifact securely dated to that period, or with more than one artifact of questionable date. Artifacts with broad date ranges (e.g., Archaic–Hellenistic) are not taken as evidence for use in a single period of that range.

1 Cape Mnima (80C27) Fig. 6

Quadrangular, associated. 5.0 × 4.0; Th. 0.55; 68 masl.

Keller 1985, pp. 84–85, no. 8, fig. 11; Keller and Schneider 2011, pp. 101–102.

Three courses preserved, but the north edge of the site was destroyed by a new road in 1999. Part of a complex of at least five structures. Located along the crest of a ridge and extending down the southwestern slope on an artificial platform created by terraces on either side of the structure. An ancient road leads northeast, toward Classical farmsteads.[45] North of the site is a possible threshing floor (Diam. 20.0) and a Classical cistern (D. 8.0; Diam. 8.0), which was excavated by Keller in 1985–1988 and may have later served as a refuge. Intervisible with towers **9**, **10**, **11**, **13**, and **22** in the Classical period.

No catalogued artifacts.

Classical black glaze, plain ware, two red-figure sherds, lamp fragments, millstone fragments, two tile fragments, and several storage vessels.

Classical

2 Ayia Pelagia (80C28)

Quadrangular, isolated. 3.0 × 3.0; 5 masl.

Keller 1985, p. 94, no. 25.

Walls reduced to poorly preserved rubble, preventing measurement of wall thickness. Located between two sandy beaches, 30 m from the promontory opposite the island with the chapel of Ayia Pelagia. A dry stone-lined well (D. 0.7) is located 40 m to the northeast, and a long rubble wall is 100 m to the south; neither is securely datable, but both are found in association with Byzantine pottery. Intervisible with tower **4** in the Byzantine period, but no intervisibility in the Frankish.

44. Cherry, Davis, and Mantzourani 1991, p. 290.

45. For a recent discussion of the ancient land routes on the Paximadi peninsula and beyond, see Keller and Hom 2010.

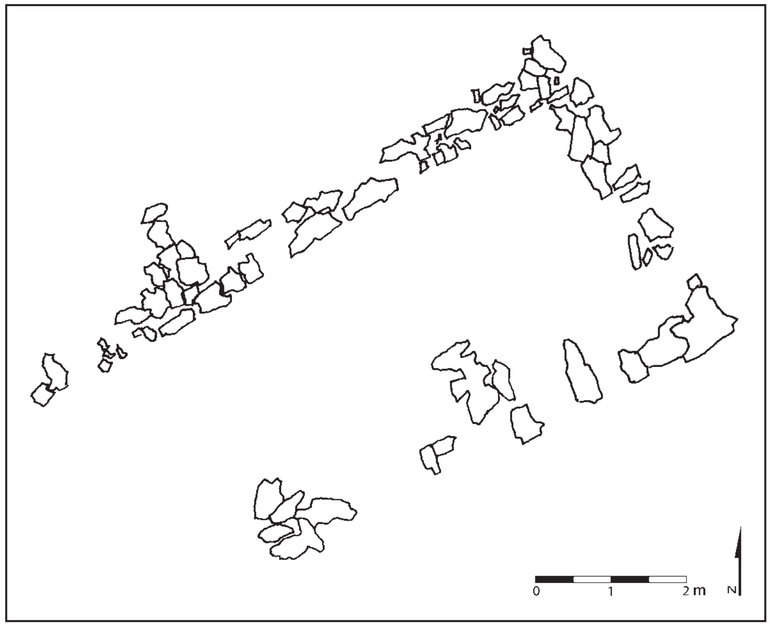


Figure 6. Plan of tower 1

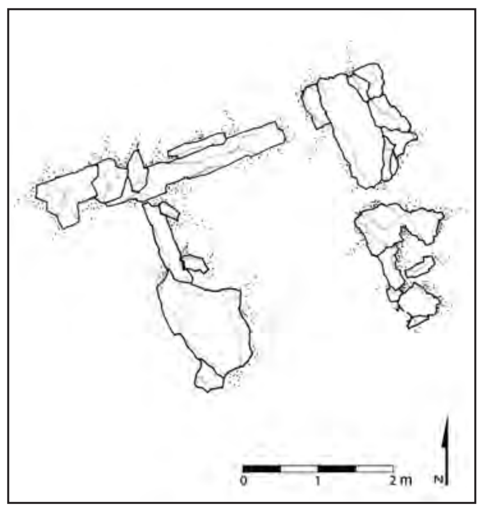


Figure 7. Plan of tower 3

Byzantine fine or plain glazed bowl body sherd (80C28.R03); 6th-century A.D. plain handle attachment, possible jug or amphora (80C28.R04); Byzantine(?) coarse amphora handle attachment (80C28.R05); Byzantine–Ottoman coarse sherd, possible handle (80C28.R06); Late Roman(?) coarse cooking-ware handle (80C28.R07); Frankish silver coin (80C28.01v); undated copper coin (80C28.08v); two Byzantine tile or brick fragments (80C28.A2v, 80C28.B1v).

Fragments of a Byzantine millstone and tiles (built into the tower); obsidian flake (20 m north).

Byzantine, Frankish(?)

3 Gremenitsa (80C30) Fig. 7

Quadrangular, associated. 3.4 × 6.0; Th. 1.0; 40 masl.

Keller 1985, pp. 86–87, no. 10, fig. 12.

Three courses of large polygonal boulders, 0.2 m thicker than those in the rest of the structure. Section of a larger structure with at least three rooms. Located on the crest of a ridge, east of a possible ancient route leading toward tower **1**, with abandoned terraces to the north and south and a rocky slope to the north. No intervisibility in the Archaic period, but intervisible with towers **5** and **8** in the Classical.

Undated coarse lekane rim (80C30.02); Archaic–Classical(?) fine handle, possible lekane (80C30.03); Archaic–Hellenistic fine handle, possible lekane (80C30.05); Archaic–Classical fine or plain base (80C30.06); Archaic–Classical fine black-glaze base, possible type C cup or lekythos (80C30.09); Archaic fine skyphos handle (80C30.11); undated plain handle attachment(?) (80C30.12); undated plain rim (80C30.13); undated fine bowl rim, possible cooking ware (80C30.14); Archaic–Hellenistic plain rim, possible amphora or jug (80C30.15); Archaic–Classical fine base (80C30.16); undated coarse cooking-ware rim (80C30.18); fine black-glaze lekane rim (80C30.R09); undated tile fragment (80C30.19v).

Three obsidian blade fragments.

Archaic–Classical

4 Palio Pithari (80C37) Fig. 8

Circular, associated. Diam. 7.6; Th. 1.2; 44 masl.

Keller 1985, pp. 88–89, no. 14, fig. 17.

Two courses of large, roughly hewn schist blocks laid as headers, with traces of a roughly worked inner wall. Blocks are very eroded, but edges of long ends are clearly rounded. Joined at the southeast with a structure of three or more rooms and a large open area. Located on the crest of a ridge, with a possible ancient road leading from the southern end of the site. A threshing floor (Diam. 12.25) is located 55 m to the east, just above the site on a slope. Intervisible with tower **5** in the Classical period and **2** in the Byzantine.

Hellenistic(?) tile fragment (80C37.15v).

Millstone fragment, Classical plain- and fine-ware sherds, three black-glaze sherds, two Byzantine glazed sherds.

Classical, Byzantine(?)

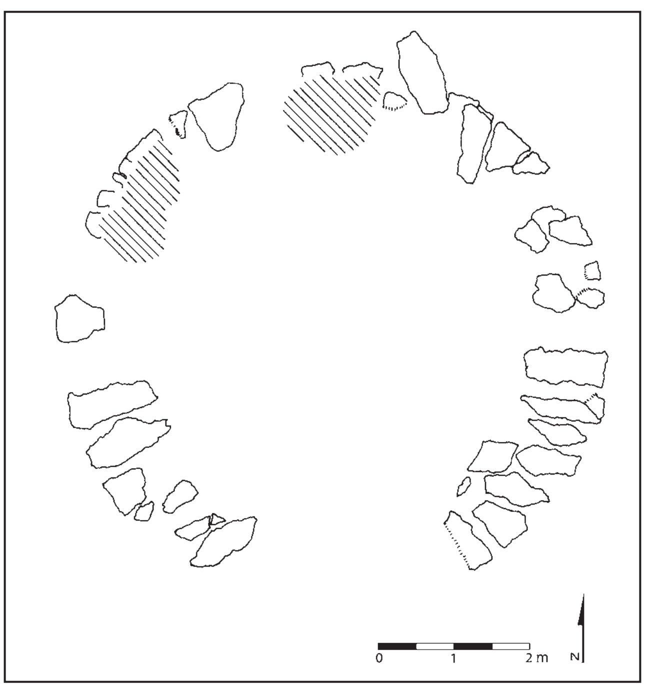


Figure 8. Plan of tower 4

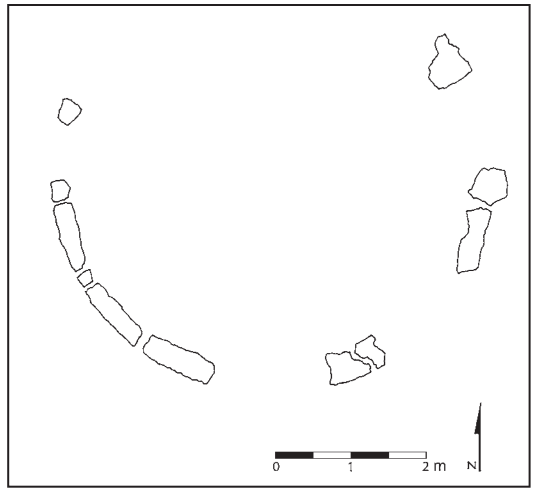


Figure 9. Plan of tower 5 and view from the northwest taken in 1980

5 Palio Pithari (80C40) Fig. 9

Circular, isolated. Diam. 6.0; Th. 0.5; 68 masl.

Keller 1985, pp. 92–93, no. 22.

Less than one course of poorly preserved, well-cut schist blocks, possibly laid as stretchers. Difficult to determine diameter. Located on the highest point of a ridge that dips into a saddle before continuing uphill, 50 m east of a modern *mandri.* View of the entire western shore of Karystos Bay. Intervisible with towers **3** and **4** in the Classical period.

Classical fine black-glaze base (80C40.01); Archaic–Roman fine or plain jar rim (80C40.08); Classical–Roman plain handle, possible amphora or pitcher (80C40.10); undated coarse lekane rim (80C40.11); Classical fine handle, possible cup (80C40.13); early- to mid-5th-century B.C. coarse rim, possible kados (80C40.15); Classical fine black-glaze bowl rim (80C40.R01); Classical plain spout (80C40.R02); Classical–Roman plain bowl rim (80C40.R03); undated clay fragment, possible unguentarium (80C40.R02v).

Lamp fragment, 12 obsidian fragments.

Classical

6 Stavros (80C41)

Circular, associated. Diam. 5.0; Th. 0.6; 283 masl.

Keller 1985, p. 91, no. 19, fig. 21.

A modern topographic marker destroyed much of the site and made it difficult to determine construction technique, but it appears similar to tower **20**. Connected to the north side of three rooms or enclosures. Located at Stavros Peak on an artificial square platform constructed of terrace walls around the tower. Slopes on either side of the ridge are terraced. A threshing floor (Diam. 17.0) is located about 50 m northwest of the site. View of Attica, Kea, Andros, and most of the peninsula. Intervisible with towers **12**, **13**, **16**, and **20** in the Classical period.

Two undated plain rims, possible cooking ware (80C41.01, 80C41.02); undated coarse base, possible cooking ware (80C41.03); undated fine base, possible bowl (80C41.04); undated coarse cooking-vessel body sherd (80C41.R03); fine black-glaze cup or skyphos base (80C41.R05); Medieval(?) bronze piece, possible buckle (80C41.05v).

Fragments of storage vessels; Classical fine- and plain-ware sherds.

Classical

7 Askoulidia (80C42) Fig. 10

Circular, isolated. Diam. 8.25; Th. 0.85; 5 masl.

Keller 1985, pp. 95–96, no. 27.

Three courses of large schist blocks (largest measuring 0.95 × 0.40 × 0.45), roughly dressed on the outer side, laid as alternating headers and stretchers and hewn to the curve. No work marks are visible on exposed layers. The interior of the west wall was destroyed by a backhoe in 1992 or 1993, exposing a cross section of the wall and an original internal dividing wall. The site's location at the bottom of a valley, 150 m from the shore, has caused significant soil accumulation, which may be obscuring additional courses of masonry below the modern surface. An ancient route appears to connect this site to Classical farmsteads to the south. Nearby are a ruined *mandri,* terraces, a threshing floor about 35 m to the south, and remains of a rubble wall 60 m to the south. Most of the pottery was collected from an eroded scarp just east of the site. Possibly intervisible with tower **8** in the Classical period, but no intervisibility in the Hellenistic.

Fine black-glaze cup or bowl rim (80C42.03); plain black-glaze base (80C42.05); fine black-glaze bowl base (80C42.06); fine black-glaze cup or mug rim (80C42.07); undated coarse pithos rim (80C42.R06); undated coarse storage-basin fragment with rim and handle attachment (80C42.R07); undated plain rim sherd, possible amphora (80C42.R08); undated andesite millstone fragment (80C42.09v); undated tile fragment (80C42.10v).

Roof tiles, several black-glaze sherds, two thin black-glaze sherds that may be from miniature shapes, beehive ware, and a Frankish sherd from a nearby scarp.

Classical–Hellenistic, Frankish(?)

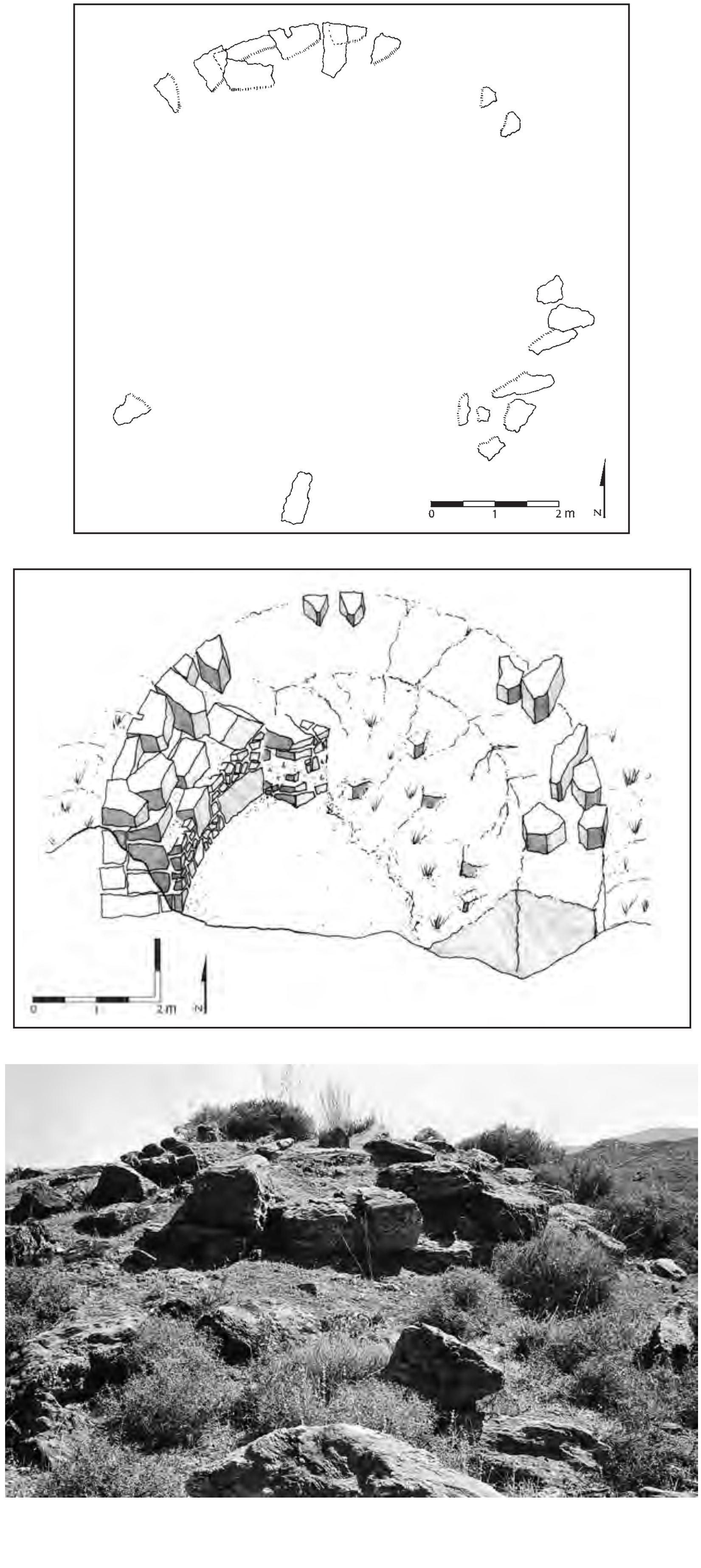
8 Askoulidia (80C43) Fig. 11

Circular, associated. Diam. 6.2; Th. 1.25; 212 masl.

Keller 1985, p. 96, no. 28, fig. 28.

One course of roughly hewn schist blocks (averaging 1.0 × 0.4 × 0.5) laid as headers, with traces of an inner wall of smaller blocks that are hewn to the curve. Blocks are highly eroded, slightly worked on the outer face, and have rounded edges. No visible cut marks. Construction similar to that of other Classical farmsteads on Paximadi. Tower is connected on its west side to a rectangular structure (10.0 × 7.0). Located above tower **7** on the crest of a ridge, amid terraces and north of an open area with rubble from additional walls. A possible property wall leads from the site to the threshing floor near tower **7**. Intervisible with towers **3** and possibly **7** in the Classical period.

Figure 10. Plan of tower 7, perspective drawing, and view from the north in 1980



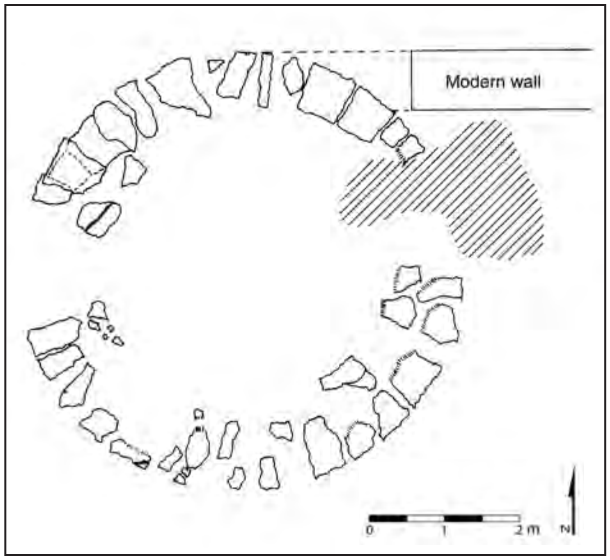


Figure 11. Plan of tower 8 (hatching represents soil accumulation) and view from the southwest in 1980

Late Classical–Hellenistic(?) fine black-glaze skyphos body sherd (80C43.R06); undated coarse lekane rim, possible cooking ware (80C43.R07); Archaic–Classical fine black-glaze pedestal base, possible type C cup (80C43.R09); undated coarse bowl rim (80C43.R15); undated coarse lekane rim (80C43.R16); undated very coarse lekane rim (80C43.R19); Classical–Roman(?) plain rim, possible jug (80C43.R20); Classical(?) coarse cooking-ware bowl rim (80C43.R21); Classical(?) coarse jug body sherd with handle (80C43.R22); Classical(?) fine black-glaze base, possible plate (80C43.R23); Classical(?) coarse lekane rim (80C43.R25); undated coarse rim, possible lekane (80C43.R26); undated coarse rim, possible plate (80C43.R27).

No additional inventoried artifacts.

Classical

9 Ayia Paraskevi (80C44)

Circular, associated. Diam. 7.0; Th. 1.0; 40 masl.

Keller 1985, p. 82, no. 4, fig. 7.

Walls are made of rough-cut local schist and are covered in rubble (0.5–1.0 m^3), preventing an estimation of the number of preserved courses. Construction similar to that of other Classical farmsteads on Paximadi. Connected to a possibly rectangular structure. Located amid terraces. A threshing floor (Diam. 12.0) is located to the west and a modern well is 350 m to the east on the beach. Possibly intervisible with tower **10** in the Archaic period, and intervisible with towers **1** and possibly **10** and **13** in the Classical.

Two sherds of an undated fine black-glaze base, possible lekane or plate (80C44.01, 80C44.07); Archaic–Hellenistic plain rim, possible amphora (80C44.02); two sherds of an Archaic(?) fine black-glaze rim, possible cup (80C44.05, 80C44.08); Archaic–Classical plain rim, possible cooking-ware jug (80C44.06); undated fine black-glaze strap handle (80C44.R01); Archaic–Classical fine black-glaze cup or skyphos base (80C44.R02); Archaic fine black-glaze rim, possible pyxis (80C44.R03); Archaic coarse lekane rim (80C44.R04); undated coarse rim, possible lekane (80C44.R05).

No additional inventoried artifacts.

Archaic–Classical

10 Glifada (80C46) Fig. 12

Quadrangular, associated. 4.75 × 6.60; Th. 0.9; 85 masl.

Keller 1985, p. 83, no. 5, fig. 8.

Up to three courses of roughly hewn local schist blocks (0.5–1.0 m^3), laid as alternating headers and stretchers. Northeast corner is rounded. Structure is incorporated into a large complex with at least two rooms or enclosures. Located on the crest of a ridge that continues to ascend. Slope above and below the site is terraced. A wall runs to the east and turns south after 30 m, and a possible ancient road links this structure to **11**. Construction is similar to **24**. Possibly intervisible with tower **9** in the Archaic period, intervisible with **1** and possibly **9** in the Classical, and intervisible with **22** in the Classical, Hellenistic, and Roman periods.

Undated fine rim, possible bowl (80C46.02); fine black-glaze base, possible bowl (80C46.14); Classical–Hellenistic plain kernos rim (80C46.18); Archaic–Hellenistic

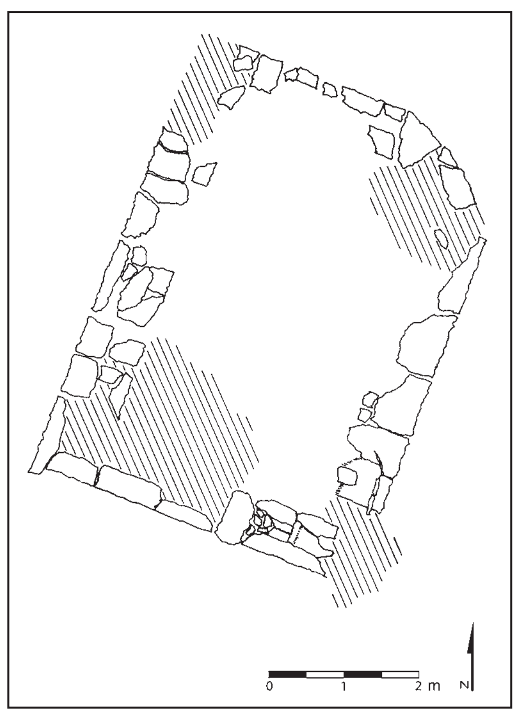


Figure 12. Plan of tower 10 (with soil accumulation represented by hatching)

collared jar rim (80C46.R04); undated coarse cooking-ware lid rim (80C46.R11); Hellenistic(?) coarse bowl rim (80C46.R20); Archaic fine black-glaze base, possible lekythos or type C cup (80C46.R22); Roman fine red-glaze plate base (80C46.R23); Archaic–Classical(?) coarse rim, possible basin or jar (80C46.R24); undated plain rim, possible amphora (80C46.R27); Classical clay lamp base (80C46.R18v); undated clay lamp ring base (80C46.R29v).

No additional inventoried artifacts.

Archaic–Hellenistic, Roman(?)

11 Saravanou (80C47) Fig. 13

Quadrangular, isolated. 4.4 × 5.8; Th. 0.8; 120 masl.

Keller 1985, p. 84, no. 7, fig. 10.

One to three courses of large, rough-cut schist blocks (averaging 1.0 × 0.7 × 0.7) laid as stretchers directly on bedrock. No rubble piles in the vicinity of the walls. Rests on an artificial terrace built up with a retaining wall. Located in a small pass between Paximadi Peak to the west and the Saravanou Ridge to the east, with a possible ancient route passing just beside the site to the west. Protected on the east by vertical rocky outcrop; an enclosure wall extends from the southwestern corner of the structure to connect with the outcrop. Area surrounding the tower is terraced. Nearby is a possible threshing floor. Intervisible with tower **1** in the Classical, **13** in the Classical–Hellenistic, and **22** in the Classical–Roman.

Undated fine bowl rim (80C47.R11); Roman–Byzantine coarse handle, possible jug (80C47.R19); Classical coarse base, possible bowl (80C47.R25); Classical fine black-glaze handle, possible hydria (80C47.R29); Hellenistic(?) plain amphora handle (80C47.R31); Roman(?) clay lamp fragment (80C47.R22v); two undated tile fragments (80C47.R28v, 80C47.R30v).

Black-glaze and Roman red-glaze sherds.

Classical, Hellenistic(?), Roman

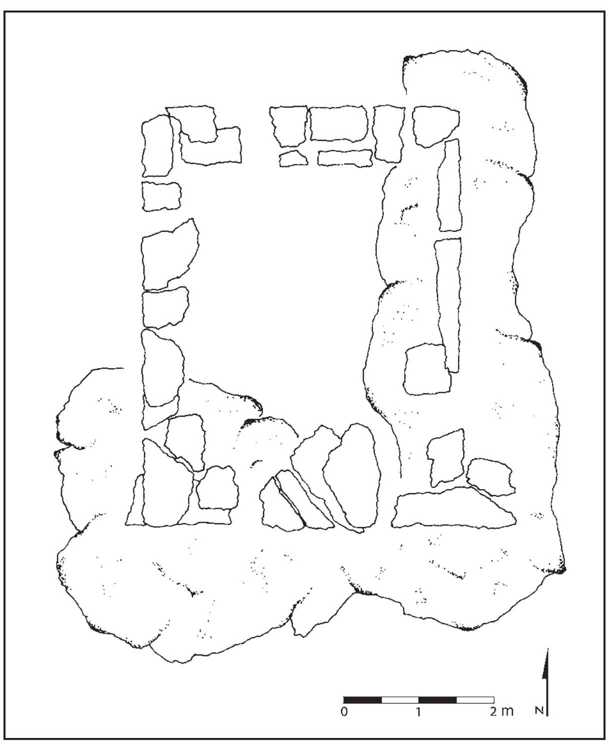
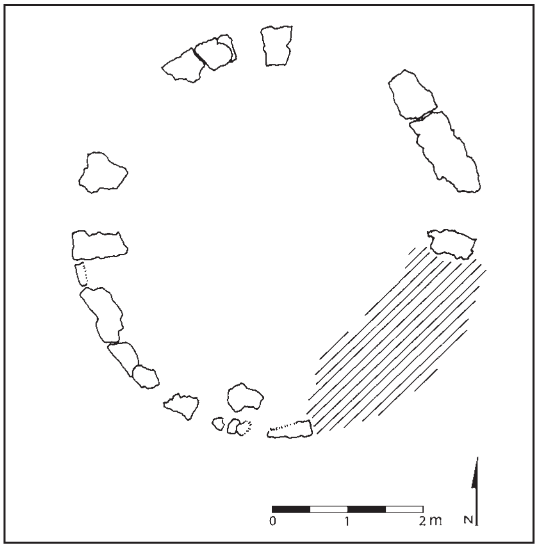


Figure 13. Plan of tower 11 (showing bedrock)



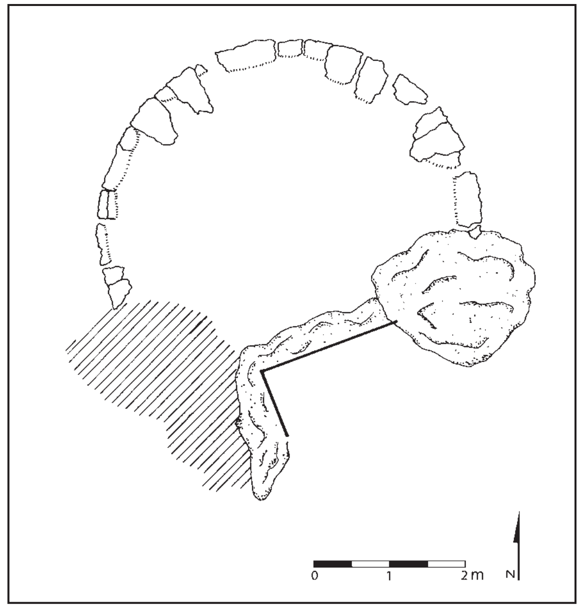


Figure 14 ***(left)*****. Plan of tower 12 (with soil accumulation represented by hatching)**

Figure 15 ***(right)*****. Plan of tower 13 (showing bedrock, with soil accumulation represented by hatching)**

12 Stavros (80C56) Fig. 14

Circular, isolated. Diam. 5.75; Th. 0.75; 200 masl.

Keller 1985, p. 90, no. 17.

Blocks of various sizes (averaging 0.3 × 0.3 × 1.5), rounded at the edges and roughly hewn to the interior and exterior curves. Number of courses preserved is unknown. Wall is filled with rubble, and blocks are larger in the north section of the wall. Located near a path in a terraced valley between Stavros and Gremenitsa, about 20 m south of a Classical farmstead.[46] Traces of a wall may connect the tower to the farmstead; construction of both structures is similar. A threshing floor is located about 30 m south. Intervisible with tower **6** in the Classical period.

No catalogued artifacts.

Classical sherds were found at a nearby farmstead.

Classical(?)

13 Paximadi Peak (80C61) Fig. 15

Circular, isolated. Diam. 5.35; Th. 0.7; 214 masl.

Keller 1985, p. 83, no. 6, and fig. 9.

Up to two courses of small, well-cut stones on a platform of rubble fill. Blocks are laid as alternating headers and stretchers. Foundation mostly intact, but now supporting a modern topographic marker. Located at the highest point of the peninsula. A set of ancient stairs to the north connects the site to two terraces. View of the entrance to Karystos Bay, Andros, Kea, and Attica. Intervisible with towers **1**, **6**, **11**, **22**, and possibly **9** in the Classical period, **11** and **22** in the Hellenistic, and **22** in the Byzantine.

Hellenistic coarse frying-pan handle attachment (80C61.01); Byzantine fine green-glaze bowl rim (80C61.03); Classical fine black-glaze rim, possible pelike or bell krater (80C61.R01); Classical–Hellenistic(?) base (80C61.R03); Archaic–Classical fine black-glaze base, possible lekane (80C61.R04); undated coarse cooking-vessel base (80C61.R05); undated coarse cooking-vessel knob (80C61.R07); Classical black-glaze lamp fragment (80C61.02v).

Possible tile fragments, Classical sherds.

Classical–Hellenistic, Byzantine

46. Findspot 80C55 in Keller 1985, pp. 89–90, no. 16.

14 Ayios Theodoris (80C66)

Quadrangular, associated. 50 masl.

Keller 1985, pp. 110–111, no. 51.

Only one corner of a wall, constructed of large boulders, was preserved prior to the site being covered by a modern landfill in the early 1990s. Remains of four structures and walls were noted by Keller during his initial survey. Located on a hill near the chapel of Ayios Theodoris and a Turkish fountain, with a spring to the east. No intervisibility noted.

No catalogued artifacts.

Byzantine glazed sherds, tile fragments, millstone fragments, glass fragments, slag.

Byzantine(?)

15 Karababa (80C69) Fig. 16

Circular, isolated. Diam. 7.0; Th. 1.0; 66 masl.

Keller 1985, p. 100, no. 35.

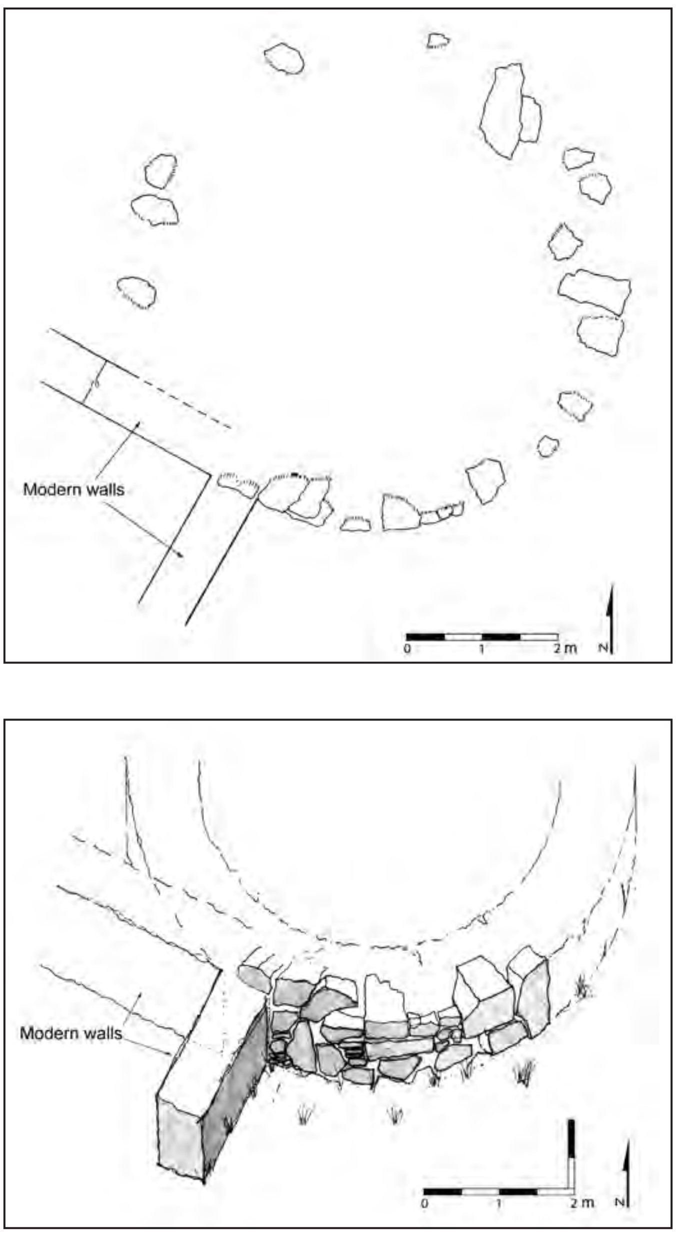


Figure 16. Plan of tower 15 and perspective drawing

Unknown number of courses of schist blocks of various sizes (averaging 1.0 × 1.0 × 0.7), roughly hewn on the outer face to form a semismooth exterior. Small, flat schist stones wedged between the larger blocks to stabilize the wall—perhaps a later modification to protect a nearby ruined *mandri* from wall collapse. Several of the structure's blocks were reused in the *mandri,* which was built along the tower's south side and may obscure additional ancient walls. Located near the Archaic sites of Plakari and Karababa on the spur of a ridge continuing west and surrounded by terraces. A threshing floor is located 100 m east of the site. View of the valley and harbor to the east. No intervisibility noted.

Undated coarse basin base (80C69.03); undated coarse mortar or basin rim (80C69.04); undated fine black-glaze skyphos or other cup handle attachment (80C69.05); two Ottoman clay pipe fragments (80C69.01v, 80C69.02v); 19th-century Ottoman clay pipe-bowl fragment (80C69.R01v).

No additional inventoried artifacts.

Classical(?), Ottoman

16 Kourmali (86A10)

Circular, associated. Diam. 6.7; 180 masl.

Construction details unknown, since the site was not revisited by Parkinson. A wall on the tower's eastern side connects it to a rectangular enclosure (8.5 × 7.1), 4 m to the east. SEEP dates this connected structure to the Classical period. Located on a double-peaked rocky outcrop. Intervisible with tower **6** and possibly **19** and **20** in the Classical period.

Classical fine black-glaze rim, possible skyphos or other cup (86A10.07); undated coarse jar rim (86A10.08); 5th-century B.C. coarse mortar base (86A10.09); two undated fine or plain black-glaze body sherds (86A10.10, 86A10.11).

No additional inventoried artifacts.

Classical

17 Mt. Valmos, North (86B01) Fig. 17

Circular, associated. Diam. 7.6; Th. 0.9; 150 masl.

Outer and inner walls of schist blocks, roughly hewn to the curve, and slightly smaller in the inner wall. Gaps in the outer wall filled with smaller chinking

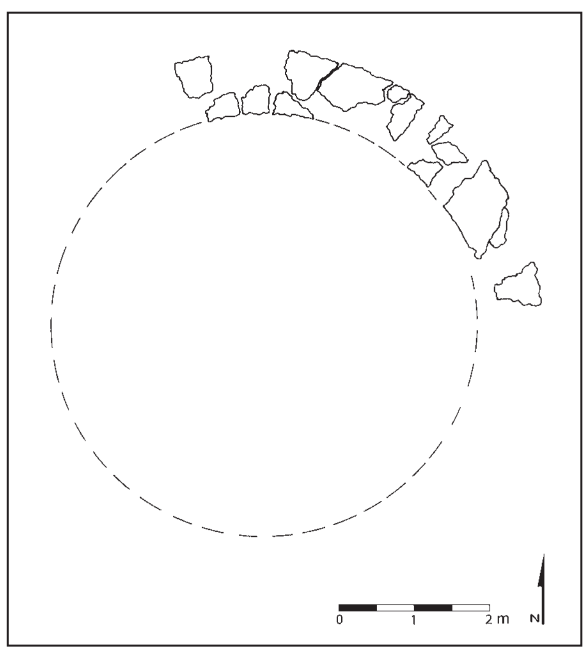


Figure 17. Plan of tower 17

stones. The northern part of the enclosure may contain an opening. Structure is covered with thick foliage, and the southern half is eroded away, making it difficult to estimate the number of courses preserved. Structure is incorporated into a larger complex of eroded walls. Similar in construction and layout to tower **20**. Located along a ridge amidst terraced slopes and olive trees to the south. A threshing floor (Diam. 10.9 m) is located adjacent to the site. View of the sea to the south and west, and the valley to the north and east. No intervisibility in the Classical period.

Classical fine black-glaze rim (86B01.10); undated coarse lekane rim (86B01.11); late-5th- to early-4th-century B.C. fine cup rim (86B01.13); late-5th- to early-4th-century B.C. fine rim, possible cup (86B01.14); undated coarse pithos rim (86B01.19); undated plain lekane rim (86B01.21); two undated coarse rims (86B01.33, 86B01.34); Archaic–Early Classical fine base (86B01.R02); undated plain amphora handle and attachment (86B01.R03); Classical–Hellenistic fine base, possible bowl (86B01.R04); undated clay lamp base (86B01.16v); undated clay fragment, possible tile or pithos (86B01.23v).

Obsidian fragment.

Classical

18 Skineri (86B03) Fig. 18

Circular, associated. Diam. 6.3; Th. 1.1; 30 masl.

Poorly preserved walls of roughly hewn schist blocks of various sizes, with traces of an inner wall. Much rubble in the vicinity, but number of courses preserved could not be estimated. A wall connects the tower to a water channel. Additional ruined walls nearby suggest that the tower was once incorporated into a larger structure. Located amid terraces on a low sloping hill that rises to the south. No intervisibility noted.

Undated coarse large bowl rim (86B03.04, 86B03.08); two undated coarse rims, possible pithoi (86B03.6, 86B03.07); early Classical fine black-glaze lekane base (86B03.R12); undated coarse pithos rim (86B03.R16); Archaic–Classical coarse pithos rim (86B03.R17); undated coarse base, possible pithos (86B03.R19); undated coarse body sherd, possible pithos or amphora (86B03.R22).

No additional inventoried artifacts.

Archaic–Classical(?)

19 Karababa, Southwest (86B15) Fig. 19

Quadrangular, isolated. 6.4 × 6.6; Th. 1.0; 155 masl.

Outer and inner walls of small, roughly worked schist blocks, resting on a natural platform. Number of courses preserved unknown. Located just above a gully, 150 m west of a possible farmstead[47] and near terraces to the south and southwest. Two threshing floors are located between this site and the farmstead. View of the valley to the south. May be linked with tower **25** via a fragmentary wall that extends from the southwest corner of that structure. Possible intervisibility with towers **16** and **20** in the Classical period, none in the Hellenistic, and possibly **24** and **25** in the Roman.

Two undated rims, possible bowls (86B15.R03, 86B15.R04).

Storage-vessel fragments, Roman red-glaze sherds, black-glaze sherds.

Classical–Roman(?)

20 Valmos (86C01) Fig. 20

Circular, associated. Diam. 8.25; Th. 0.75; 228 masl.

47. Findspot 86B14 in Parkinson's unpublished field notes.

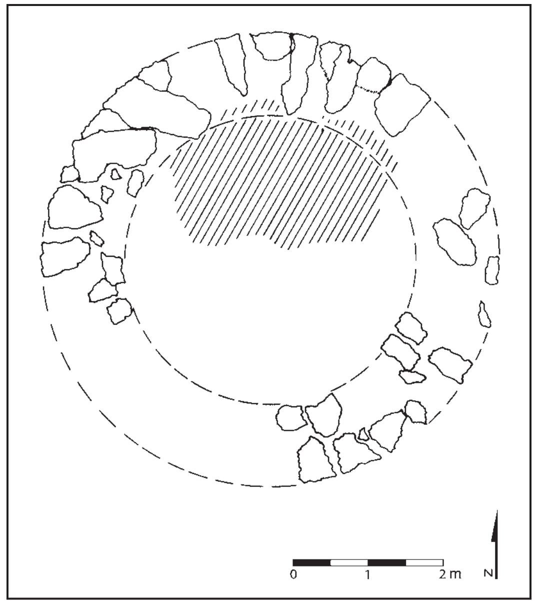


Figure 18. Plan of tower 18 (with soil accumulation represented by hatching) and a view of part of the tower in 1986

Very eroded walls of schist blocks of various sizes, with a visible inner wall. Similar in construction to towers **6** and **17**. Tower is incorporated into the northeast corner of an L-shaped complex of at least four rooms or enclosures. Located south of Valmos peak on a platform of terraces at the top of a slope, which extends down to the sea. A possible spring is located 150 m downhill to the southeast. View of the sea to the west. No intervisibility in the Archaic period, but intervisible with towers **6** and possibly **16** and **19** in the Classical.

Early Classical fine black-glaze pedestal base, possible cup (86C01.R02); undated coarse rim, possible cooking-ware lekane (86C01.R03); Archaic–Hellenistic base, possible skyphos or bowl (86C01.R05); undated coarse rim, possible cooking-ware bowl (86C01.R10); Classical fine handle, possible black-glaze skyphos (86C01.R11); undated clay fragment, possible tile or pithos (86C01.R04v).

Possible tile fragment.

Archaic(?), Classical

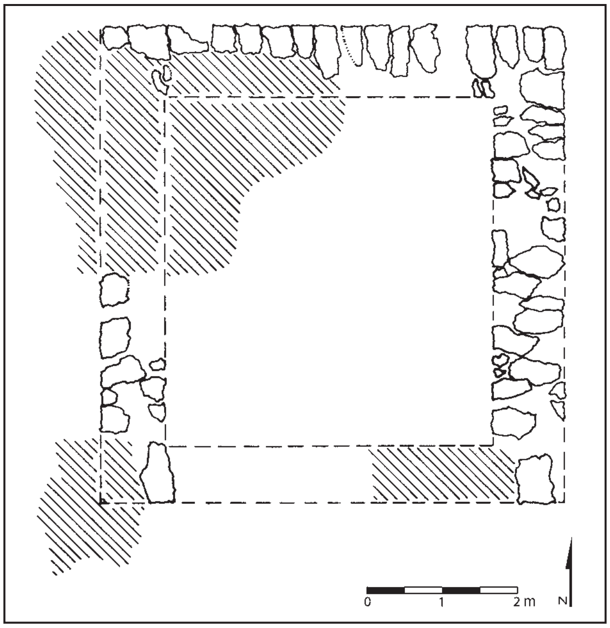


Figure 19. Plan of tower **19** (with soil accumulation represented by hatching)

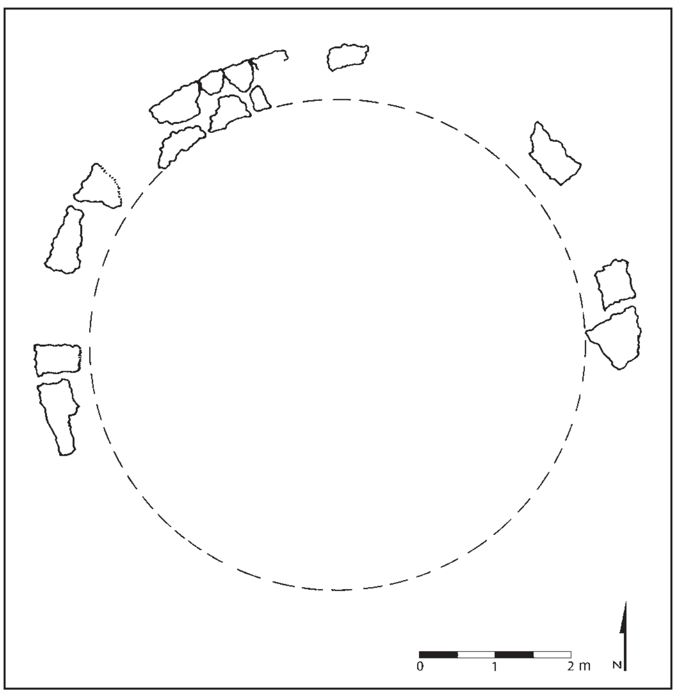


Figure 20. Plan of tower **20**

21 Kourmali (86C06)

Quadrangular, associated. 5.0 × 4.0; Th. 1.0; 176 masl.

Tower is incorporated into a complex of at least two additional structures; its thicker walls and smaller area suggest that it was a tower. Additional construction information is unknown. Located on a flat plain-like area at the top of a mountain range, with terrain sloping away from the site on all but the north side. A millstone (Diam. 1.4) is located in the center of the complex and two threshing floors (Diam. 12.6 and 13.2) are to the north. Beyond a field wall farther to the north are two semicircular paved areas and a water channel. The threshing floors are undated; the features farther to the north appear more recent. No intervisibility in the Roman period.

Late Roman fine rim, possible flanged bowl (86C06.01); Roman plain handle, possible jar (86C06.08); Middle Roman(?) plain handle, possible jug (86C06.09); Late Roman fine plate rim (86C06.12); Late Roman fine rim, possible dish or bowl (86C06.17); Late Roman fine bowl base (86C06.18); Late Roman fine plate body sherd (86C06.20); Late Roman fine red-glaze bowl rim (86C06.R01); two Late Roman plain amphora body sherds (86C06.R03, 86C06.R06).

No additional inventoried artifacts.

Roman–Late Roman

22 Paximadi Island (86C11)

Unknown shape, isolated. 12 masl.

Sections of walls and roof tiles with no discernible structure. Located at south end of peninsula on the island of Paximadi; ideal location for a tower functioning as a lighthouse, although no clear tower structure is present. Intervisible with towers **1**, **10**, **11**, and **13** in the Classical period, **10**, **11**, and **13** in the Hellenistic, **10** and **11** in the Roman, and **13** in the Byzantine, but no intervisibility in the Ottoman.

Classical–Hellenistic(?) coarse cooking-vessel body sherd (86C11.06); Late Roman plain amphora body sherd (86C11.09); Roman fine body sherd (86C11.10); Late Roman fine bowl or plate body sherd (86C11.11); Final Neolithic–Early Bronze Age coarse body sherd (86C11.12); Roman(?) fine plate body sherd (86C11.14); Roman fine bowl body sherd (86C11.15); Late Roman plain amphora body sherd (86C11.16); Roman(?) plain large bowl rim (86C11.18); Late Roman fine plate or dish base (86C11.19); Roman fine bowl rim (86C11.20); Roman(?) plain bowl rim (86C11.21); undated piece of metal ore or slag (86C11.01v); 5th- to 6th-century A.D. clay lamp rim and handle (86C11.07v, 86C11.08v); late-5th- to 6th-century A.D. clay fragment, possible lamp (86C11.11v); undated clay fragment, possible tile (86C11.17v); two Byzantine or Ottoman(?) glass vessel fragments (86C11.22v, 86C11.23v).

Obsidian fragments, tile fragments.

Final Neolithic–Early Bronze Age(?), Classical–Hellenistic(?), Roman, Late Roman, Byzantine(?) Ottoman(?)

23 Stavros (86D09)

Quadrangular, associated. 7.0 × 7.0; Th. 0.9; 175 masl.

Schist walls reduced to rubble. Tower is incorporated into a complex of at least two additional rooms. Located on the spur of a ridge that ascends to the east, with terraces on the downhill slopes. Intervisibility analysis not completed.

No catalogued artifacts.

No inventoried artifacts.

No assigned date.

24 Skineri (90R01)

Quadrangular, associated. 4.4 × 4.3; Th. 0.8; 28 masl.

Poorly preserved walls annexed to the outside southeast corner of a large rectangular structure (17.0 × 11.0) with no internal divisions. The annex has slightly thicker walls and a small area, suggesting that it was a tower. Construction is similar to **10**. Located amid terraces on the northwest base of a hill. An old trail (2.8 m wide) is located 25 m north of the site. Another section of wall is located near the trail. Possible intervisibility with towers **19** and **25** in the Roman period.

Classical–Roman(?) plain amphora foot (90R01.01); Roman coarse red-glaze plate or bowl foot, possible cooking ware (90R01.02); undated clay fragment, possible tile or pithos (90R01.06v).

No additional inventoried artifacts.

Roman

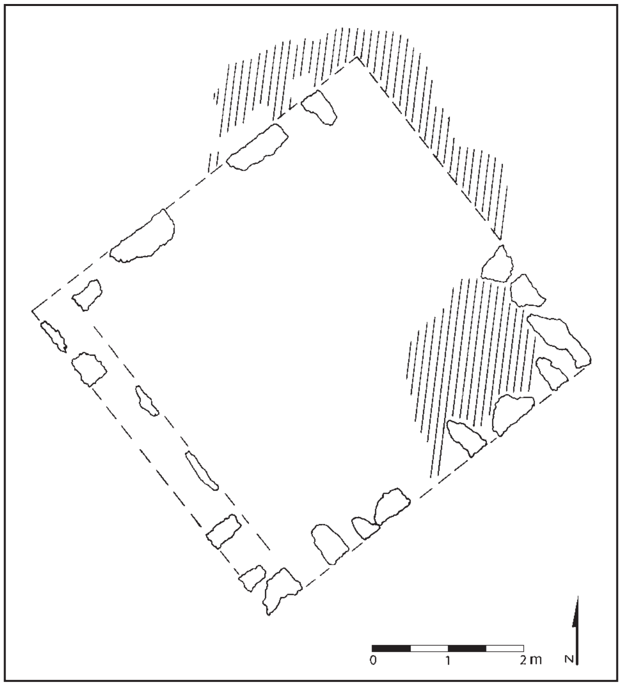


Figure 21. Plan of tower 25 (with soil accumulation represented by hatching)

25 Skineri (90R03) Fig. 21

Quadrangular, isolated. 5.25 × 5.75; Th. 0.55; 116 masl.

One course of schist blocks of various sizes, with traces of a smaller inner wall. Located on a crest in the center of a ridge, west of a possible Roman farmstead[48] and tower **19**. A fragmentary wall extends from the southwest corner and may link the tower to **19**. The possible association with these two sites is used to infer a date for the tower. Possible intervisibility with towers **19** and **24** in the Roman period.

No catalogued artifacts.

Modern vessel.

Roman(?)

THE CHRONOLOGY AND FUNCTION OF THE PAXIMADI TOWERS

Based on the surface artifacts collected at these sites, the towers were used primarily during the Classical period, with additional material ranging from the Archaic through Ottoman periods (Table 2). Thirteen of the towers are circular in shape, while 11 are quadrangular. Ten are isolated structures, and 15 are associated with additional enclosed rooms or are located in a complex of additional structures. The isolated towers generally have smaller dimensions and thinner walls than the associated ones, but there are few other characteristics that distinguish these categories. Instead, patterns are most evident when comparing the towers by shape category; it is here that we see the most variability in terms of date and site location.

All the circular towers have material at least tentatively dated to the Classical period, and none of them have Roman material. Four have material from post-Roman phases, but in all these cases, very few artifacts were associated with these later periods of use—specifically, two Byzantine glazed sherds at tower **4**, a Byzantine green-glaze bowl rim at **13**, a Turkish

48. Findspot 86B14 in Parkinson's unpublished field notes.

TABLE 2. SUMMARY OF THE PAXIMADI TOWERS*

Tower	*FN–EBA*	*A*	*C*	*H*	*R*	*LR*	*Byz*	*F*	*Ott*	*Shape*	*Association*	*Length/ Diam. (m)*	*Width (m)*	*Th. (m)*	*Elev. (masl)*	*T*	*TF*
1	–	–	C	–	–	–	–	–	–	Quad	Assoc	5.0	4.0	0.55	68	T	TF
2	–	–	–	–	–	–	Byz	F?	–	Quad	Iso	3.0	3.0	–	5	–	–
3	–	A	C	–	–	–	–	–	–	Quad	Assoc	3.4	6.0	1.0	40	T	–
4	–	–	C	–	–	–	Byz?	–	–	Circ	Assoc	7.6	–	1.2	44	–	TF
5	–	–	C	–	–	–	–	–	–	Circ	Iso	6.0	–	0.5	68	–	–
6	–	–	C	–	–	–	–	–	–	Circ	Assoc	5.0	–	0.6	283	T	TF
7	–	–	C	H	–	–	–	F?	–	Circ	Iso	8.25	–	0.85	5	T	TF
8	–	–	C	–	–	–	–	–	–	Circ	Assoc	6.2	–	1.25	212	T	–
9	–	A	C	–	–	–	–	–	–	Circ	Assoc	7.0	–	1.0	40	T	TF
10	–	A	C	H	R?	–	–	–	–	Quad	Assoc	4.75	6.6	0.9	85	T	–
11	–	–	C	H?	R	–	–	–	–	Quad	Iso	4.4	5.8	0.8	120	T	TF
12	–	–	C?	–	–	–	–	–	–	Circ	Iso	5.75	–	0.75	200	T	TF
13	–	–	C	H	–	–	Byz	–	–	Circ	Iso	5.35	–	0.7	214	T	–
14	–	–	–	–	–	–	Byz?	–	–	Quad	Assoc	–	–	–	50	–	–
15	–	–	C?	–	–	–	–	–	Ott	Circ	Iso	7.0	–	1.0	66	T	TF
16	–	–	C	–	–	–	–	–	–	Circ	Assoc	6.7	–	–	180	–	–
17	–	–	C	–	–	–	–	–	–	Circ	Assoc	7.6	–	0.9	150	T	TF
18	–	A?	C?	–	–	–	–	–	–	Circ	Assoc	6.3	–	1.1	30	T	–
19	–	–	C?	H?	R?	–	–	–	–	Quad	Iso	6.4	6.6	1.0	155	T	TF
20	–	A?	C	–	–	–	–	–	–	Circ	Assoc	8.25	–	0.75	228	T	–
21	–	–	–	–	R	LR	–	–	–	Quad	Assoc	5.0	4.0	1.0	176	–	TF
22	FN–EBA?	–	C?	H?	R	LR	Byz?	–	Ott?	–	Iso	–	–	–	12	–	–
23	–	–	–	–	–	–	–	–	–	Quad	Assoc	7	7	0.9	175	T	–
24	–	–	–	–	R	–	–	–	–	Quad	Assoc	4.4	4.3	0.8	28	T	–
25	–	–	–	–	R?	–	–	–	–	Quad	Iso	5.25	5.75	0.55	116	–	–

* Abbreviations: FN–EBA = Final Neolithic–Early Bronze Age, A = Archaic, C = Classical, H = Hellenistic, R = Roman, LR = Late Roman, Byz = Byzantine, F = Frankish, Ott = Ottoman, Quad = quadrangular, Circ = circular, Assoc = associated, Iso = isolated, T = terrace, and TF = threshing floor.

tobacco pipe at **15**, and a Frankish sherd found in a scarp near **7**. The circular towers have an average elevation of approximately 132 masl, ranging from 5 to 283 masl.

Material found at the quadrangular towers is more variable, with no single period characterizing all the sites. Interestingly, Roman material is only associated with quadrangular towers, even though several of them have evidence of earlier use. Towers **10**, **11**, and **19** have material either definitely or tentatively dated to the Classical and Hellenistic periods, and **10** was also used in the Archaic. Towers **21**, **24**, and **25** have exclusively Roman material. Two other towers have only post-Roman artifacts: **2** has Byzantine and possibly Frankish material, and **14** may also have been used during the Byzantine period. Quadrangular towers have a slightly lower average elevation of approximately 93 masl, and they range from 5 to 176 masl.

A clear chronological pattern is evident in the shape of the Paximadi towers, with high variability in the Archaic, Classical, and Hellenistic periods, and exclusively quadrangular towers being used in the Roman. While it is impossible to determine when the towers were built, this pattern suggests a change in architectural preference between the Classical and Roman period. The presence of earlier material at some of the quadrangular towers suggests that they were reused in the Roman period, while others may have been constructed at this time. This pattern is not surprising, as studies in other regions of Greece have documented a high incidence of Roman-period reuse of Classical–Hellenistic structures.[49] The Classical and Roman towers also differ in terms of their of association with terraces: 79% of the Classical towers are located amid terraces, as compared with only 57% of the Roman.

Unmistakable chronological patterning is also apparent in the intervisibility of the Paximadi towers. The five sites with definite or possible Archaic material are mostly independent sites; although all are associated with other structures or are part of larger complexes, only **9** and **10** have possible intervisibility (Fig. 22:a). In the Classical period, when more sites are occupied, a clear visual network appears that stretches from the southern end of the peninsula north along each coast (Fig. 22:b). Sixteen (84%) of the sites that are definitely or tentatively dated to this period are intervisible with contemporary towers. This visual connection disintegrates in the Hellenistic period, when the only intervisible sites are located in the south (Fig. 22:c), and the network remains fractured in the Roman period (Fig. 22:d). Although the percentage of sites that can be seen from contemporaneous towers in the Roman period (86%) remains roughly the same as in the Classical, two discrete clusters of intervisible structures are separated by the main ridge that runs along the spine of the peninsula. The change in visual connection may be related to the lower average elevation of Roman sites. The network remains limited in the Byzantine period (Fig. 22:e), and no visual connections were possible between the few towers occupied in the Frankish (Fig. 22:f) and Ottoman periods (Fig. 22:g).

In summary, the most notable changes appear between the Classical and Roman periods, a transition that is generally associated with a shift from agricultural intensification in the Classical and Early Hellenistic periods toward nucleation and consolidation of land into large estates in

49. The Eastern Korinthia Archaeological Project, e.g., reports that 75% of the units dating to the Classical–Hellenistic periods were reused in the Roman period; see Caraher, Pettegrew, and James 2010, p. 409. See also Scranton 1938.

the Roman period.[50] This model is certainly not applicable to every region of Greece, but the situation on Paximadi reflects the proliferation of Classical farmsteads, whether in the form of enduring towers or sparse artifact scatters, that is recorded by other survey projects.[51] The transition to imperial Roman rule saw a change in land-tenure systems that affected many parts of Greece. Small landowners were gradually replaced by large estate owners, who consolidated propertied land and intensified production of agricultural goods. As a result, landless peasants flocked to urban centers, increasing the population in cities at the expense of rural areas.[52] The data from Paximadi suggests a decrease in rural population at this time, with the number of towers decreasing from 19 in the Classical period to only seven in the Roman. Keller notes a similar change in the overall settlement pattern of the peninsula, with a total of 50 sites occupied during the Classical period and only 36 in the Roman.[53] This reduction in rural population characterizes southern Euboia as a whole, where the transition to Roman rule was marked by "a withdrawal from marginal areas and a preference for soils and terrain promising easier and more dependable yields."[54] The productive potential of the Paximadi peninsula was relatively low in ancient times, and it has continued to decline since then. Given the combination of poor productivity and imperial policies favoring estate consolidation, it is no surprise that the number of sites decreased after the Classical period.

Compared to towers elsewhere in Greece, those on Paximadi are unique in several respects, some of which can be explained as a product of the local environment. First, their rough-cut schist construction has not survived well, due in part to the strong erosive forces of the winds; the blocks have also been reused in other features, such as *mandria.* The friable nature of schist has contributed to many of the walls being reduced to rubble, and as a result, none of the structures is preserved to more than three courses (Fig. 23). Towers in other areas of Greece are generally better preserved.[55] Second, the Paximadi towers have smaller average dimensions than elsewhere in Greece, with circular towers measuring about 6.7 m in diameter and quadrangular towers about 5 m per side. The most interesting difference, however, is that the reasons for the construction of these towers are

50. For a discussion of the Classical and Early Hellenistic periods, see Bintliff 1982, pp. 106–107; Morris 2001, p. 342–343; Alcock et al. 2005, p. 170. For the Roman period, see Alcock 1989, pp. 30–33.

51. For a reanalysis of the Late Classical to Early Hellenistic periods in the Argolid and a critique of the assumption that extensive land use characterized the Hellenistic and Early Roman periods, see Acheson 1997. For a critique of the assumption that Hellenistic land-tenure systems were restructured throughout all of Greece, see Alcock 1989, p. 7. Pettegrew (2001) discusses survey data that indicate an increase in Classical-period farmsteads.

52. Alcock 1989. While the Roman period saw a decline in the number of rural settlements, a brief florescence in small-scale agriculture may characterize the Late Roman; see Kosso 1993, pp. 191–203.

53. Keller 1985, figs. 95, 96.

54. Alcock 1989, p. 26.

55. Exceptionally well-preserved examples include the Rhakes tower (six courses, prior to being dismantled for local construction purposes) and the Mazi tower (32 courses) in Boiotia; see Camp 1991, pp. 193, 201. The tower at Ayia Marina on Keos is preserved to 24 m; see Cherry, Davis, and Mantzourani 1991, pp. 285–287. The tower at Poros on Leukas is preserved to 22 courses, or 7 m; see Morris 2001, p. 292. On Siphnos, Young (1956a) documents many towers between five and 14 courses, with only a few preserved to less than four. Ober (1983) records one tower in the Megarid at four courses, or 1.25 m; another, however, is almost totally dismantled. Many other towers are preserved to heights of three or four courses, or about 1.5 m; see Osborne 1986; Koutsoukou and Kanellopoulos 1990; Cherry, Davis, and Mantzourani 1991; Morris 2001; Caraher, Pettegrew, and James 2010, p. 402.

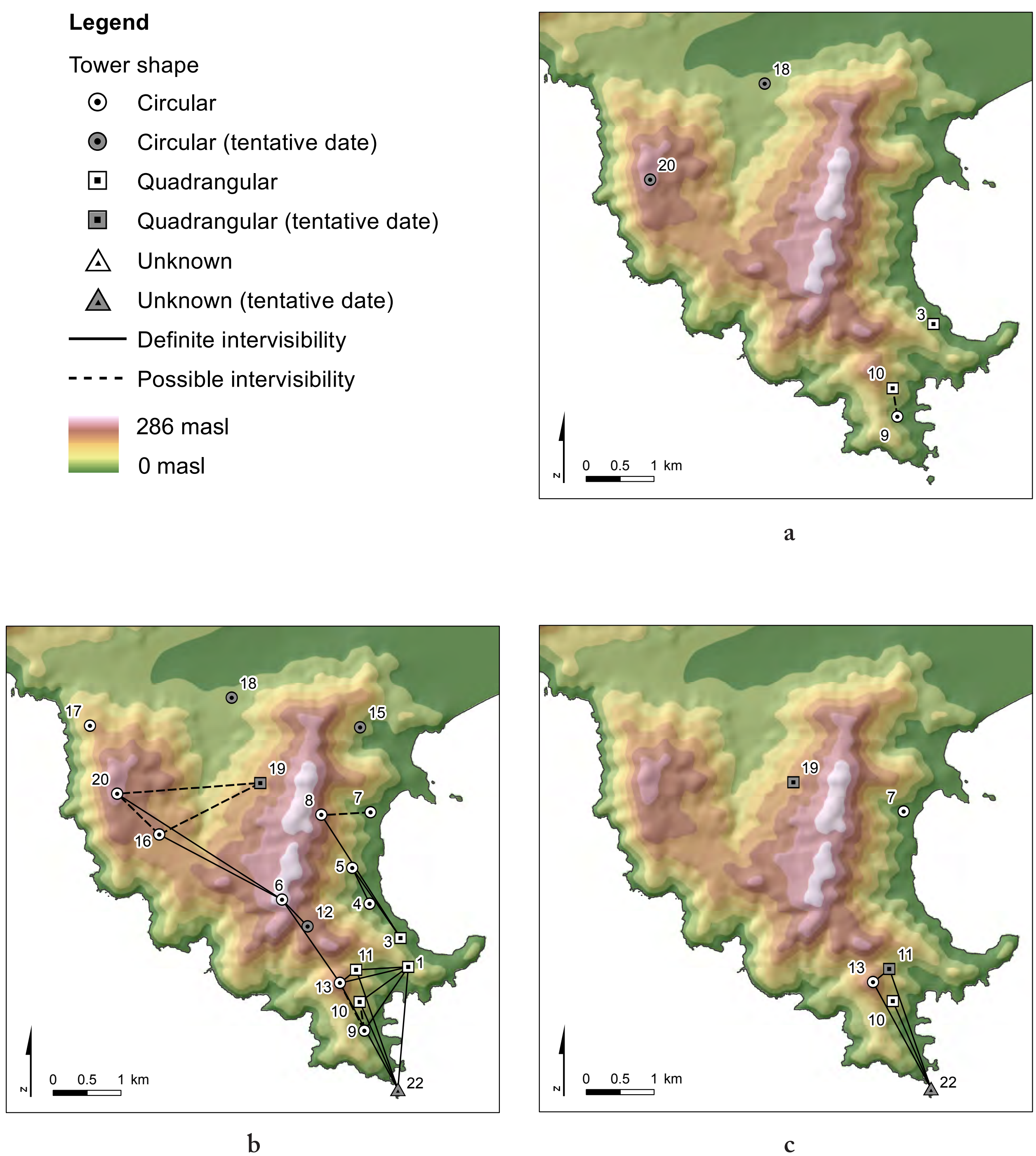
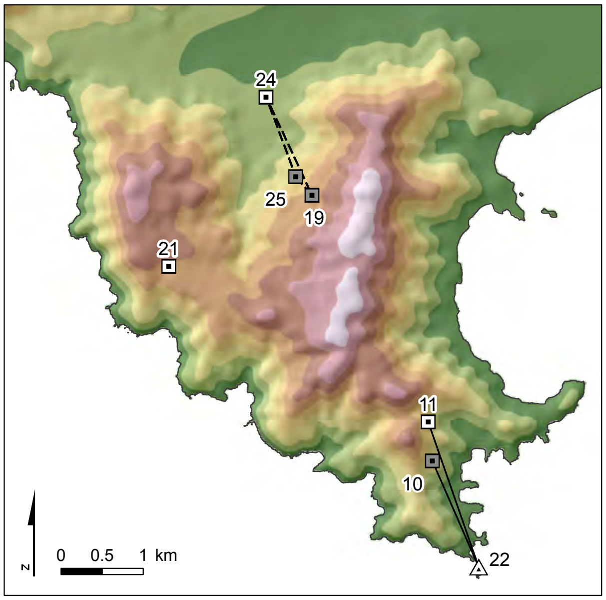


Figure 22 *(above and opposite)*. Map showing the distribution and intervisibility of towers in the following periods: (a) Archaic, (b) Classical, (c) Hellenistic, (d) Roman, (e) Byzantine, (f) Frankish, and (g) Ottoman. R. M. Seifried


24
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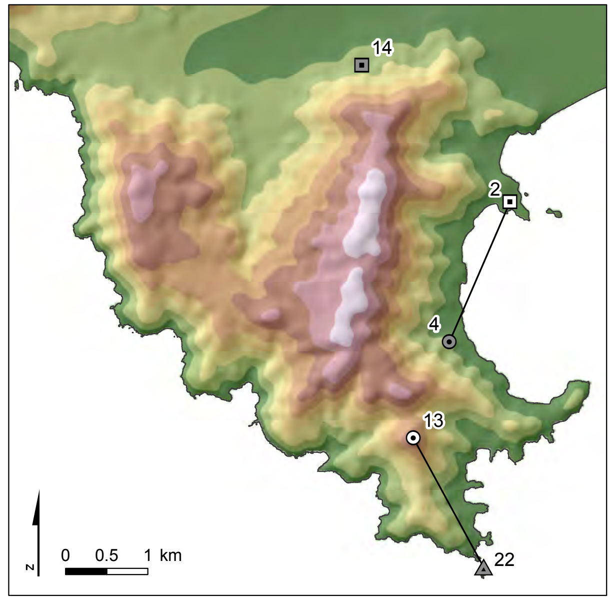
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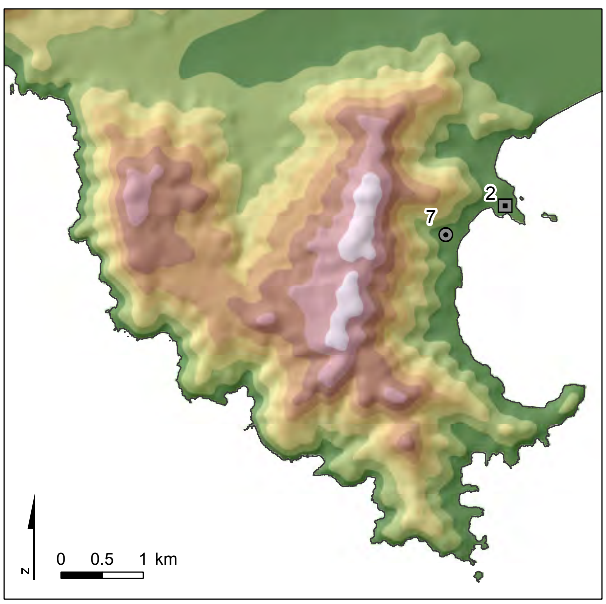
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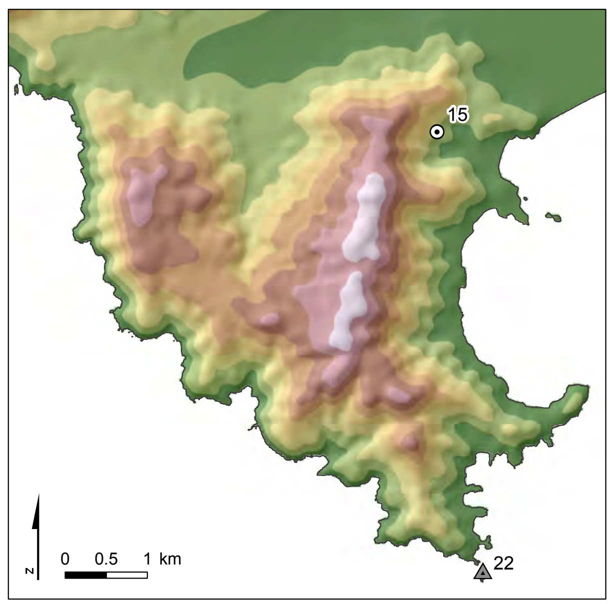
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g

Figure 23. Detail of schist wall architecture typical of Paximadi towers, taken of tower 18 in 1986

less clear than in other regions. Towers elsewhere are frequently found in close proximity to quarries, mines, or productive agricultural land, and are likely to have been used to defend these resources, but Paximadi has relatively few natural resources to protect.

How, then, can we explain the high density of towers on Paximadi? In a study region of 22 km^2, there are remains of 19 towers with ceramics either definitely or tentatively dated to the Classical or Hellenistic phase, giving a density of 0.86 towers per km^2. This figure contrasts sharply with the tower densities from smaller islands in Greece (0.51 on Siphnos and 0.33 in northwest Keos) as well as larger islands (e.g., 0.08 on Thasos and 0.03 on Leukas).[56]

The Paximadi towers were certainly not intended to be defensive strongholds, even though they are characterized by many criteria that are used elsewhere to infer a militaristic function. Their thick walls, which would have provided protection in times of piracy, raiding, or war, have withstood the test of time, while less durable structures that may once have accompanied them on the landscape have left no surface traces. The earlier towers were placed in strategic locations that granted a superior view of the coastline and nearby fields. Many of the Classical towers were intervisible, potentially providing a strong communication network that stretched along each coast. Despite these obvious defensive advantages, the Paximadi towers are also frequently associated with agricultural features. Many were situated amid ancient terraces and near threshing floors. Millstones, storage vessels, drinking vessels, and fine-ware ceramics indicate long-term residence. This artifact profile, which is unlike that found at supposed military garrisons, suggests that the towers were used primarily for rural agrarian purposes, while simultaneously providing the potential for defense.

56. On Siphnos, with an area of approximately 74 km^2, Young (1956a) documents 38 Classical–Early Hellenistic towers. On Keos, Cherry, Davis, and Mantzourani (1991) document six towers in their study region of 18 km^2. Five of these are dated to the Classical or Hellenistic periods, while one that was definitely used during the Byzantine may also date to the Archaic or Roman; see Cherry, Davis, and Mantzourani 1991, p. 288, table 13.1. On Thasos (area ca. 380 km^2), Osborne (1986) describes 31 towers, although it is possible that not all date to the Classical or Hellenistic periods. Additional towers likely exist in the interior of the island, which was not surveyed at the time. Finally, on Leukas, Morris (2001) records 19 Classical towers in an area of approximately 295 km^2.

Residents of these structures certainly faced difficult circumstances that necessitated the construction of agrarian defenses, which were likely to have been more costly than average farms. Literary accounts indicate that Paximadi endured conflicts and raiding during the Classical period, and Athens may have exerted enough influence in the region to establish a cleruchy at Karystos. The peninsula is also characterized by a marginal, challenging climate that makes it difficult to raise productive crops—so much so that the ancient terraces have long been abandoned and relinquished to flocks of goats. In such an environment, towers may have provided a protective advantage. As watchtowers, they would have allowed farmers to keep a lookout for raiding parties and wild animals that might destroy their crops. As beacons, they could have served as a communicative network to warn neighbors or kin of imminent danger. As thick-walled enclosures full of pithoi and amphoras, they could be used to store hard-earned agricultural products for times of need. The Classical towers were particularly well situated to maximize the defense of agricultural fields, as their high degree of intervisibility would have allowed their inhabitants to communicate quickly with one another in case of attack or upon spotting wild animals destroying precious crops.

The towers on the Paximadi peninsula may not be the most impressive structures still standing in Greece, and it is unlikely that they were ever meant to be so. In some regions, towers may have served as monuments that strengthened the prestige of the elite; in others, towers were built to intimidate enemies and defend valuable resources. The Paximadi towers, however, were rather unremarkable constructions that served primarily as agrarian defenses for local farmers or landowners. The shift from a circular to a quadrangular architectural design in the Roman period was associated with a slight withdrawal from agricultural endeavors and a decreased emphasis on maintaining a visual communication network. In later periods, the towers were even smaller in size, indicating that they continued to serve a function different from that of the monuments and defensive structures in other parts of Greece. Yet, despite their poor preservation and location in a peripheral and marginal environment, the Paximadi towers contribute to an understanding of Greek towers as highly vernacular and multifunctional structures.

REFERENCES

Acheson, P. E. 1997. "Does the 'Economic Explanation' Work? Settlement, Agriculture and Erosion in the Territory of Halieis in the Late Classical–Early Hellenistic Period," *JMA* 10, pp. 165–190.

Alcock, S. E. 1989. "Roman Imperialism in the Greek Landscape," *JRA* 2, pp. 5–34.

Alcock, S. E., A. M. Berlin, A. B. Harrison, S. Heath, N. Spencer, and D. L. Stone. 2005. "Pylos Regional Archaeological Project, Part VII: Historical Messenia, Geometric through Late Roman," *Hesperia* 74, pp. 147–209.

Bintliff, J. 1982. "Settlement Patterns, Land Tenure, and Social Structure: A Diachronic Model," in *Ranking, Resource, and Exchange: Aspects of the Archaeology of Early European Society* (New Directions in Archaeology), ed. C. Renfrew and S. Shennan, Cambridge, pp. 106–111.

Brock, R. 1996. "The Tribute of Karystos," *EchCl* 40, pp. 357–370.

Camp, J. McK. II. 1991. "Notes on the Towers and Borders of Classical Boiotia," *AJA* 95, pp. 193–202.

Caraher, W. R., D. K. Pettegrew, and S. James. 2010. "Towers and Fortifications at Vayia in the Southeast Corinthia," *Hesperia* 79, pp. 385–415.

Cherry, J. F., J. L. Davis, and E. Mantzourani. 1991. "The Towers of Northwest Keos," in *Landscape Archaeology as Long-Term History: Northern Keos in the Cycladic Islands from Earliest Settlement until Modern Times* (Monumenta Archaeologica 16), ed. J. F. Cherry, J. L. Davis, and E. Mantzourani, Los Angeles, pp. 285–298.

Cullen, T., L. E. Talalay, D. R. Keller, L. Karimali, and W. R. Farrand. 2013. *The Prehistory of the Paximadi Peninsula, Euboea* (Prehistory Monographs 40), Philadelphia.

Cullen, T., L. E. Talalay, and Ž. Tanković. 2011. "The Emerging Prehistory of Southern Euboea," in Rupp and Tomlinson 2011, pp. 29–51.

Fachard, S. 2012. *La défense du territoire: Étude de la "chôra" érétrienne et de ses fortifications* (Eretria 21), Gollion.

Figueira, T. J. 1991. *Athens and Aigina in the Age of Imperial Colonization,* Baltimore.

Fracchia, H. M. 1985. "The Peloponnesian Pyramids Reconsidered," *AJA* 89, pp. 683–689.

Hjohlman, J., A. Penttinen, and B. Wells. 2005. *Pyrgouthi: A Rural Site in the Berbati Valley from the Early Iron Age to Late Antiquity: Excavations by the Swedish Institute at Athens, 1995 and 1997* (*ActaAth* 4° 52), Stockholm.

Jarvis, A., H. I. Reuter, A. Nelson, and E. Guevara. 2008. "Hole-Filled Seamless SRTM Data V4," *International Centre for Tropical Agriculture (CIAT),* http://srtm.csi.cgiar.org, accessed November 2, 2010.

Kayser, B., and K. Thompson. 1964. *Economic and Social Atlas of Greece,* Athens.

Keller, D. R. 1983. "Southern Euboea Exploration Project," in *Archaeological Survey in the Mediterranean Area* (*BAR-IS* 155), ed. D. R. Keller and D. W. Rupp, Oxford, pp. 231–232.

———. 1985. "Archaeological Survey in Southern Euboea, Greece: A Reconstruction of Human Activity from Neolithic Times through the Byzantine Period" (diss. Indiana Univ.).

Keller, D. R., and E. Hom. 2010. "Ancient Land Routes on the Paximadhi Peninsula, Karystos, Euboea," *Mediterranean Archaeology and Archaeometry* 10, pp. 1–9.

Keller, D. R., and R. Schneider. 2011. "The Classical–Hellenistic Period at the Palio Pithari Farm Site and the Cape Mnima Emborio Site in the Context of Contemporary Sites and Findspots on the Paximadi Peninsula," in Rupp and Tomlinson 2011, pp. 95–111.

Keller, D. R., and M. B. Wallace. 1988. "The Canadian Karystia Project: Two Classical Farmsteads," *EchCl* 32, pp. 151–157.

Kosso, C. K. 1993. "Public Policy and Agricultural Practice: An Archaeological and Literary Study of Late Roman Greece" (diss. Univ. of Illinois, Chicago).

———. 1996. "A Late Roman Complex at Palaiochora near Karystos in Southern Euboia, Greece," *EchCl* 40, pp. 201–230.

Koutsoukou, A., and C. Kanellopoulos. 1990. "Towers From North-West Andros," *BSA* 85, pp. 155–174.

Kozelj, T., and M. Wurch-Kozelj. 1989. "Phares de Thasos," *BCH* 113, pp. 161–181.

Lock, P. 1996. "The Towers of Euboea: Lombard or Venetian, Agrarian or Strategic," in *The Archaeology of Medieval Greece* (Oxbow Monograph 59), ed. P. Lock and G. D. R. Sanders, Oxford, pp. 107–126.

Lohmann, H. 1993. *Atene: Forschungen zu Siedlungs- und Wirtschaftsstruktur des klassischen Attika* 1: *Text,* Cologne.

Lord, L. E. 1938. "The 'Pyramids' of Argolis," *Hesperia* 7, pp. 481–527.

———. 1939. "Watchtowers and Fortresses in Argolis," *AJA* 43, pp. 78–84.

Lord, L. E., M. A. Frantz, and C. Roebuck. 1941. "Blockhouses in the Argolid," *Hesperia* 10, pp. 93–112.

Meritt, B. D. 1972. "The Tribute Quota List of 454/3 B.C.," *Hesperia* 41, pp. 403–417.

Morris, S. P. 2001. "The Towers of Ancient Leukas: Results of a Topographic Survey, 1991–1992," *Hesperia* 70, pp. 285–347.

Morris, S. P., and J. K. Papadopoulos. 2005. "Greek Towers and Slaves: An Archaeology of Exploitation," *AJA* 109, pp. 155–225.

Ober, J. 1983. "Two Ancient Watchtowers above Aigosthena in the Northern Megarid," *AJA* 87, pp. 387–392.

———. 1985. *Fortress Attica: Defense of the Athenian Land Frontier, 404–322 B.C.* (*Mnemosyne* Suppl. 84), Leiden.

———. 1987a. "Early Artillery Towers: Messenia, Boiotia, Attica, Megarid," *AJA* 91, pp. 569–604.

———. 1987b. "Pottery and Miscellaneous Artifacts from Fortified Sites in Northern and Western Attica," *Hesperia* 56, pp. 197–227.

Osborne, R. 1986. “Island Towers: The Case of Thasos,” *BSA* 81, pp. 167–178.

Pettegrew, D. K. 2001. “Chasing the Classical Farmstead: Assessing the Formation and Signature of Rural Settlement in Greek Landscape Archaeology,” *JMA* 14, pp. 189–209.

Reber, K. 2001. “‘Σκέπην τινὰ ποιμένων ἢ βουκόλων’: Zur Verbreitung und Funktion der euböischen Drachenhäuser,” in *Zona Archeologica. Festschrift für Hans Peter Isler zum 60. Geburtstag* (Antiquas 3), ed. S. Buzzi, D. Käch, E. Kistler, E. Mango, M. Palaczyk, and O. Stefani, Bonn, pp. 339–351.

Rousset, D. 1999. “Centre urbain, frontière et espace rural dans les cités de Grèce centrale,” in *Territoires des cités grecques. Actes de la table ronde internationale organisée par l’École française d’Athènes, 31 octobre–3 novembre 1991* (*BCH* Suppl. 34), ed. M. Brunet, Athens, pp. 35–77.

Rupp, D. W., and J. E. Tomlinson, eds. 2011. *Euboea and Athens. Proceedings of a Colloquium in Memory of Malcolm B. Wallace, Athens, 26–27 June 2009* (Publications of the Canadian Archaeological Institute at Athens 6), Athens.

Scranton, R. L. 1938. “The Pottery from the Pyramids,” *Hesperia* 7, pp. 528–538.

Talalay, L. E., T. Cullen, D. R. Keller, and E. Karimali. 2005. “Prehistoric Occupation in Southern Euboea: An Overview,” in *Ancient Greece at the Turn of the Millennium: Recent Work and Future Perspectives. Proceedings of the Athens Symposium, 18–20 May 2001* (Publications of the Canadian Archaeological Institute at Athens 4), ed. N. M. Kennell and J. E. Tomlinson, Athens, pp. 21–44.

Tankosić, Ž., and M. Chidiroglou. 2010. “The Karystian Kampos Survey Project: Methods and Preliminary Results,” *Mediterranean Archaeology and Archaeometry* 10, pp. 11–17.

Wallace, M. 1972. “The History of Karystos from the Sixth to the Fourth Centuries B.C.” (diss. Univ. of Toronto).

Wallace, M., D. R. Keller, J. Wickens, and R. Lamberton. 2006. “The Southern Euboea Exploration Project: 25 Years of Archaeological Research,” in *Antiquities of Karystia,* ed. M. Chidiroglou and A. Chatzidimitriou, trans. M. Chidiroglou, Karystos, pp. 18–49.

Wickens, J. 2011. “Survey of the Bouros-Kastri Peninsula in the Southern Karystia, Euboea,” in Rupp and Tomlinson 2011, pp. 77–93.

Young, J. H. 1956a. “Ancient Towers on the Island of Siphnos,” *AJA* 60, pp. 51–55.

———. 1956b. “Studies in South Attica: Country Estates at Sounion,” *Hesperia* 25, pp. 122–146.

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