SEVEN

COASTSCAPES AND SMALL WORLDS OF THE AEGEAN BRONZE AGE

CASE STUDIES

The purpose of this chapter is to bring together the various conceptual and empirical approaches outlined in previous chapters in order to apply them to real-world times and places of the Aegean Bronze Age. In three case studies, this chapter suggests how we might write diachronic histories of maritime connectivity at local to regional scales of interaction. One lengthy case study is drawn from the "heartland" of the Mycenaean world in the Saronic Gulf, followed by two brief portrayals of potential coastscapes and small worlds, one focused on Miletos on the coast of southwestern Asia Minor, and the other on Dimini and neighboring sites on the Bay of Volos, which are meant to suggest opportunities for further research along the lines advocated in this book.

This exercise aims to reveal the trajectories over time of coastscapes that may range from isolated to highly connected, and of small worlds that oscillate between cohesion and fragmentation, which often means alternating between hierarchical and heterarchical or nonhierarchical organizational structures. It focuses both on internal dynamics and on the ways that external stimuli – opportunities, threats, and greater historical currents – impinge to play often profound roles in local and small-regional histories. Placing a primary emphasis on coastscapes and small worlds means eliciting rich local contexts from which to build out to broader spheres of interaction (Galaty, Parkinson et al. 2009; Tartaron 2010; Wright 2010: 808, 815). These case studies construct histories *in* the Mediterranean, because only when these are robust can they offer comparative material to the grand project of history *of* the Mediterranean (Horden and Purcell 2000).

MAKING AND BREAKING A SMALL WORLD: THE SARONIC GULF, 3000–1200 BC

The essential aim of this case study is a diachronic reconstruction of a Bronze Age maritime small world in the Saronic Gulf. The inhabitants of Kolonna on the island of Aigina dominated this small world of many coastscapes – coastal settlements dotting the islands and mainland – from the middle of the EBA until the early phases of the LBA, when the expanding palace at Mycenae broke it apart, incorporating Saronic communities into broader Aegean networks. Over its life, this small world alternated between cohesion and fragmentation, as Kolonna responded to conditions within the Gulf and without, often initiated by events taking place beyond the Saronic and affecting large parts of the Aegean. I will attempt to write this history primarily from two vantage points: from the center at Kolonna; and from the small Bronze Age settlement at Kalamianos, built upon a gently inclined shoreline near Korphos on the Saronic's western coast. Kalamianos was a rather minor player for most of the period under consideration, only achieving prominence in EH II and LH IIIB. Other settlements in Kolonna's orbit will be called upon to fill in aspects of the story.

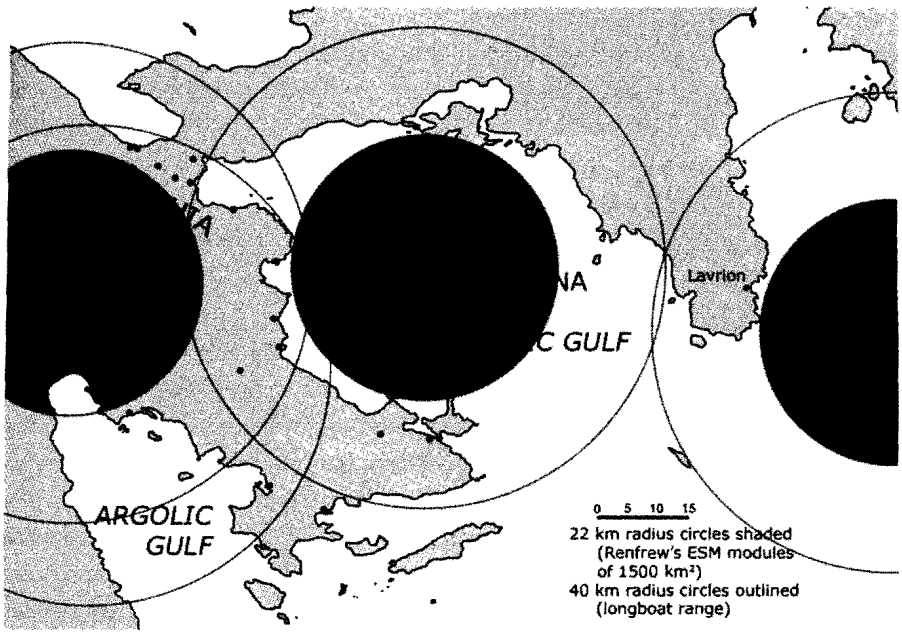
The Physical Environment of the Saronic Gulf

The Saronic Gulf occupies a central place in Greek maritime history, in part because of favorable sailing conditions and a strategic geographical situation (Fig. 7.1). It is partially enclosed by the land masses of the Argolid, the Corinthia, and Attica; as a consequence, winds, waves, and currents are moderate compared with more open areas of the Aegean Sea (Heikell 2002: 17, 29; Soukissian et al. 2002). The winds are reasonably consistent, especially in the summer months. The meltemi blows from the north to northeast, beginning fitfully in July and increasing to full strength in August to early September before diminishing thereafter. It generally blows in the Beaufort 3–5 range (gentle breeze to fresh breeze), though in peak season it reaches 5–6 (fresh breeze to strong breeze) and occasionally higher. Winter winds are less consistent and winds up to gale force are more frequent, though hardly common. Waves are rarely significant enough to be damaging to coastal areas or dangerous to maritime traffic, and there is a minimal effect from the currents of the Black Sea Waters, mainly in the form of some strong anticyclonic eddies at the mouth of the Gulf (Olson et al. 2007). These currents, combined with meltemi winds, can make for a bumpy ride departing the Saronic for the Cyclades (Heikell 2002: 29, 52). Isolated storms with associated squalls may arise at any time of year, though they are not common in the warmer months and they seldom last for more than an hour or two. The Saronic has relatively few dangerous reefs and rocks, excepting those quite close to shore and those in the narrows between small islands or between

7.1 Map of the Saronic Gulf region with important Bronze Age sites indicated. Pullen and Tartaron 2007: 147, fig. 14.1. Courtesy of the Cotsen Institute Press.

islands and offshore islets. While these mean characteristics establish the Saronic as an inviting maritime environment, there are local variations and exceptions to each. To give two examples: hazardous shoal waters extend southwest from the harbor at Aigina town (ancient Kolonna) through the islet of Metopi to Angistri; and strong westerly to northwesterly winds can blow from the Gulf of Corinth to produce severe gusts along the western side of the Saronic south to Epidauros (Heikell 2002: 61, 74–75). Further, each anchorage has unique characteristics that vary during the course of the year; the reader is referred to the discussion of Kapsali Bay, Kythera in Chapter 4 for an account of typical Aegean variability.

Sea travel in the Saronic is enhanced by large and small islands and moderate distances throughout. No trip within the Gulf approaches the 100-kilometer daily range proposed in the previous chapter for Bronze Age sailing under normal conditions. Even paddled longboats of the EBA could complete virtually any one-way trip in a single day given the 40-kilometer range proposed by Broodbank (2000: 287–289), and many round trips were possible in a day or less (Fig. 7.2). There are many islands of all sizes in the Saronic, even if we discount the tiny rocks that could not accommodate even a small boat. There are two particularly large islands, Aigina and Salamis, and in this category we might also count the *presqu'isle* of Methana, attached by the narrowest of necks to the Peloponnesian mainland but behaving in most respects as an island. Just a bit smaller is the island of Poros, in this case separated from the mainland only



7.2 Comparative ranges of transportation modes in the Saronic Gulf region. Pullen and Tartaron 2007: 154, fig. 14.4. Courtesy of the Cotsen Institute Press.

by a narrow channel several kilometers south of Methana. Angistri to the west of Aigina is somewhat smaller than Poros, but after this there is a drop-off to very small and tiny islands with far fewer usable anchorages. Nevertheless, for the reasonably experienced sailor there is shelter and good anchorage within reach throughout the Gulf.[1]

The Saronic Gulf is a crossroads by sea and land. By sea, it is the entrance from the open Aegean to the land masses of western Attica and the northeastern Peloponnese. From the Cyclades, the Saronic is the sea passage to the Isthmus of Corinth, and by crossing that narrow neck of land, to the Corinthian Gulf and the West. The presence of Aiginetan pottery at coastal sites on the Corinthian Gulf in the MBA suggests that the Isthmus was already used for that purpose. The Isthmus was also the land connection from southern to central Greece. At various times in history, states centered at Aigina, Corinth, Athens, and Nauplion laid claim to control of the Saronic as a fundamental basis of their economic and political power.

The Social Environment of the Saronic Gulf

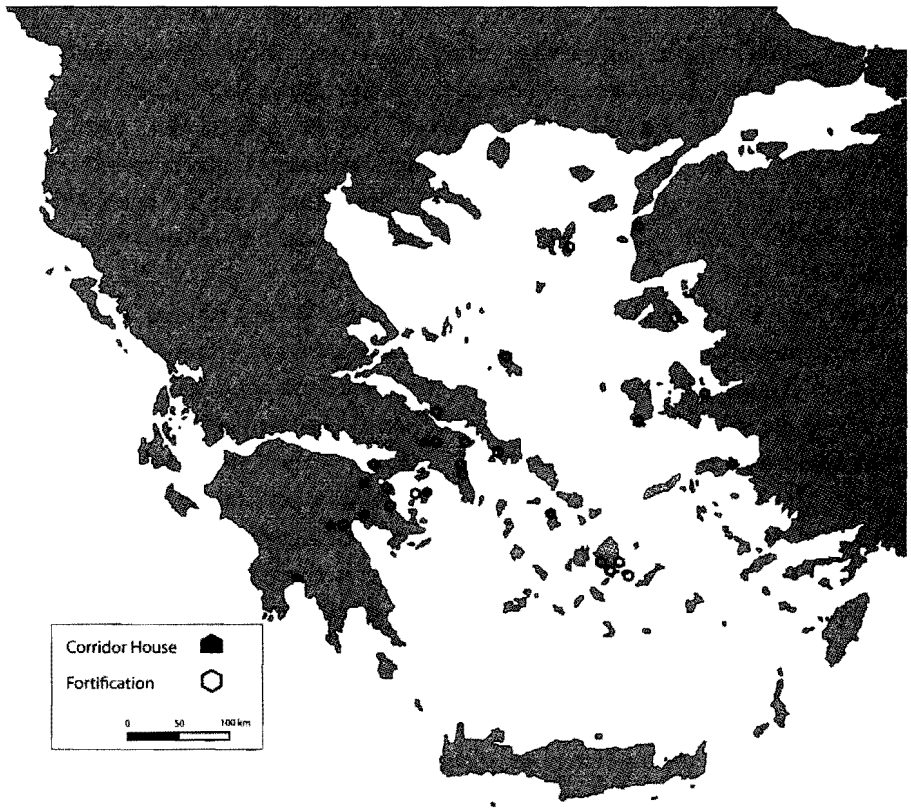
An argument for the existence of a Saronic small world can continue with a phenomenological perspective. Aigina is situated in the geographical center of the Saronic Gulf, with the land masses of Attica, the Corinthia, and the Argolid nearly encircling it. Intervisibility to and from Aigina is exceptionally high:

Aigina is a large island with a distinctive shape – the pointed peak of Mt. Oros is unmistakable – that looms on the near horizon from most coastal vantage points. With some exceptions, the Saronic coastline is rugged, with an abundance of small anchorages attached to diminutive coastal plains or to sheer coastal cliffs. Small coastal settlements tend to be perched on headlands or limited coastal lowlands backed by high mountains that block views, and easy access, to the interior. Thus the everyday field of view is directed toward the sea, to other coastal settlements, and especially to Aigina. Looking upon the Saronic, one perceives not boundless sea, but islands and coasts occupying much of the horizon at distances manageable for small craft. The phenomenological experience of inhabiting one of these communities reverses the common expression of looking *out* to sea, by giving the sense instead of settlements orbiting around and looking *into* the center at Kolonna. The visual element of connectivity so keenly highlighted by Horden and Purcell finds a perfect expression in the Saronic. We may hypothetically suggest that intervisibility, combined with moderate distances and relatively easy sea voyaging, promoted the perception of being part of an organically constituted, coherent world. Opportunities for forging ties with other coastal settlements must certainly have flowed from these advantages, but at times there must also have been social imperatives, including mutual arrangements to buffer the risk of resource failure, and the practice of exogamy to maintain the genetic viability of small communities and to cement the social ties needed to perpetuate vital relationships (Bintliff 2010).

Kolonna and the Bronze Age Saronic Small World

The promontory of Kolonna on the northwestern coast of Aigina was occupied during the Neolithic period at least as early as the fourth millennium BC. The natural advantages of the site are evident: it is elevated 12 meters above sea level and protected by cliffs on three sides, with a double embayment to the south and north and abundant arable land to the east (Felten 2007: 12). Although the shallow harbor at Kolonna – later Aigina town – was considered in Antiquity to be among the most hazardous in the Aegean to approach, it repeatedly served as the main port of powerful Aiginetan states from the Bronze Age to the Archaic period. This disadvantage did not outweigh the location's other natural benefits, or the social and economic will of the city's inhabitants to succeed in spite of environmental shortcomings.

An incipient maritime small world may have come into being in the Saronic as early as the Late or Final Neolithic. It has been demonstrated that Aigina was the main source of andesite for millstones in Attica and the Peloponnese by the later Neolithic period (Runnels 1985a), and a "Saronic" fabric that appears macroscopically to be tempered with volcanic-related inclusions characteristic of Aigina is common among the FN to EBA pottery sherds recovered during a



7.3 Map showing the locations of corridor houses and fortifications in the EB II Aegean. After Tartaron, Pullen, and Noller 2006: 147, fig. 3.

recent surface survey in the Korphos region (D. Pullen, personal communication 2001). The center at Kolonna comes into clearer focus in a mature phase of EB II in the Aegean. This was a time of increasing social complexity that witnessed the emergence of chiefdoms, the erection of fortifications at many sites, and vigorous exchange of exotic items with presumably high social value, including bronze daggers and tools, metal jewelry, fine drinking and pouring vessels of metal, and ceramic and marble vessels and figurines; in short, an era of "international spirit" (Renfrew 1972: 451–55). The relatively undifferentiated pattern of small farmsteads and hamlets in the preceding EB I period was transformed by a striking expansion of settlement and the appearance of large settlements, particularly at coastal locations oriented to maritime activity (Broodbank 2000: 279–87; Konsola 1986; Pullen 2003). This was also the time of the monumental "corridor houses" with long passages flanking the internal rooms found on the Greek mainland and at Kolonna itself (Fig. 7.3). These structures have been variously interpreted as palaces, administrative centers, residences of prominent families or lineages, or even hotels or meeting halls for traders (Felten 1986; Nilsson 2004; Pullen 1986; Shaw 1987; Weingarten 1997; Wiencke 1989).

Bronze Age Kolonna is a highly complex archaeological site, with nine separate urban phases or "cities," including massive fortification walls that were modified and strengthened over a period of 500 years (Table 7.1). From the EBA to the beginning of the LBA, roughly 2500 to 1400 BC, Kolonna was a site without peer in the Aegean outside of the brilliant Minoan civilization on Crete to the south (Rutter 2001: 125–30). Some believe that Kolonna achieved the first Aegean state-level society after the Minoans and before the Mycenaeans (Niemeier 1995).

During EH II (Kolonna phases II–III; circa 2700–2200 BC), Kolonna was a modest settlement of mudbrick houses, but had already begun to distinguish itself from other coastal and island sites in the Saronic and beyond. There is evidence of economic specialization in the production of textiles in the "Färberhaus" (phase III) and storage of agricultural surplus in the "House of the Pithoi" (phase III; Felten 2007). The monumental corridor house known as the "Weißes Haus" of phase III (along with its predecessor the "Haus am Felsrand" of phase II) may have played a central administrative role in the community. In its layout and construction, the Weißes Haus exhibits particularly close parallels to the House of the Tiles at Lerna, indicating early and meaningful relations (Shaw 2007; Wiencke 2000: 298–303). Ongoing excavations at Kolonna are revealing a number of large buildings in phase III, however, so the former impression of the Weißes Haus as singular in its size and complexity may be giving way to the picture of " . . . an accumulation of more or less homogeneous self-sufficient unities" (Felten 2007: 13).

By the latter centuries of the second millennium in EH III (Kolonna phases IV–VI early; circa 2200–2000 BC), Kolonna had been transformed into one of the most significant urban centers of the Aegean: a densely populated, heavily fortified town with monumental stone buildings and sophisticated town planning with buildings arranged in insulae separated by gravel roads. Beginning in EH III, pottery was imported, and stylistic influences on local pottery were adopted, from the Peloponnese, central Greece, and the Cycladic islands (Gauß and Smetana 2008: 329, 2010: 167); and by the beginning of the MBA, these same areas had begun to import Aiginetan tableware, storage vessels, and cooking pots (Lindblom 2001: 40–42, 131–32). There is some evidence in phase IV for a copper-smelting operation.

By EH III, all around Aigina the "international spirit" had broken down, ushering in a period of diminished activity and even abandonment over much of the Saronic and northeastern Peloponnese, which endured until the last phases of the MBA. Although there are variations across the area, the trend is a strong one that is clearly documented by both survey and excavation data (Wright 2004: 119–28). The inland Nemea Valley in the southern Corinthia is a particularly well-studied example, having been targeted by an intensive surface survey and a long-term excavation at Tsoungiza, its most prominent

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Table 7.1. Chronological chart for Kolonna (after Wild et al. 2010: 1020, table 3)

Cultural period, conventional (high) (a) and historical chronology (b)	Settlement phase	Ceramic phase	Research areas 1	2	3	4	Imports first appearance	Boundary between ceramic phases: Modeled calibrated date 68.2% probability (d)		Modeled calibrated date 95.4% probability (d)
Neolithic to EH I	I	Phase A (c)								
	II	Phase B								
EH II	III	Phase C								
a: EBA II Late: 2450/2350 to 2200/2150 BC	III (Rebuild.)	Phase C								
	IV	Phase D					Peloponnese			
EH III	V (Destr.)	Phase E						beginning of E	earlier than 2181 BC (e)	earlier than 2136 BC (e)
a: EBA III: 2200/2150 to 2050/2000 BC	V (Reconstr.)	Phase E					Central Greece			
b: EBA III/MBA transition: 2160 to 2025 BC								boundary E/F	2191 to 2169 BC	2196 to 2111 BC
	VI	Phase F					Cycladic (schist fabric) Local Cycladic imitations			
	VI	Phase G						boundary F/G	2183 to 2154 BC	2191 to 2064 BC
MH I	VII	Phase G					Lustrous Decorated			
a: MBA I: 2050/2000 to 1950/1900 BC	VIII	Phase H	.....					boundary G/H	2139 to 2061 BC	2150 to 2041 BC
b: MBA I: 2160/2025 to before 1800 BC	VIIIA	Phase H	.....	.....			Minoan, Cycladic (Melos/Thera)			
MH II	IX	Phase I	.....	.....				boundary H/I	2007 to 1904 BC	2049 to 1822 BC
a: MBA II: 1950/1900 to 1750/1720 BC b: MBA II: before 1900 to 1700 BC							Local Minoan imitations			
MH III	X	Phase J	.....					boundary I/J	1811 to 1745 BC	1873 to 1702 BC
a: MBA III: 1750/1720 to 1680 BC b: MBA III: 1700 to 1600/1580 BC										
LH I	X	Phase K				—	Southeast Aegean	boundary J/K	1707 to 1648 BC	1742 to 1623 BC
a: LBA I: 1680 to 1600/1580 BC b: LBA I: 1600/1580 to 1510/1485 BC										
LH II		Phase L						boundary K/L	1661 to 1591 BC	1679 to 1538 BC
a: LBA II: 1600/1580 to 1445/1415 BC b: LBA II: 1510/1485 to 1400/1390 BC								end of L	later than 1610 BC (e)	later than 1644 BC (e)
		Hiatus								
LH IIIA		Phase M			—		Cypriote	beginning ofM	earlier than 1285 BC (e)	earlier than 1259 BC (e)
a: LBA IIIA: 1445/1415 to 1340/1330 BC b: LBA IIIA: 1400/1390 to 1340/1330 BC								end of M	later than 1367 BC (e)	later than 1382 BC (e)

Research Areas
1) Fortification Wall
2) "Inner Settlement" (Innenstadt)
3) South Slope, Q-trenches (Südhügel)
4) Well Deposit

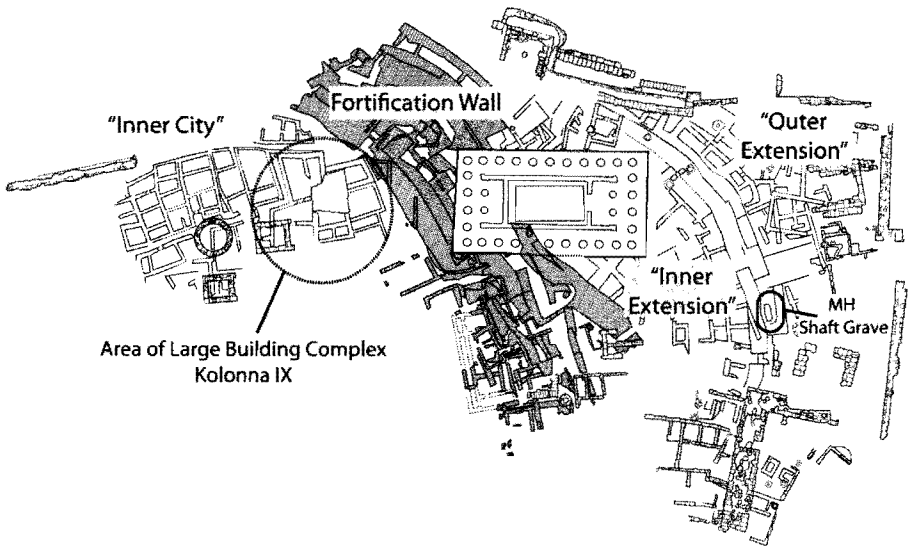
— vertical stratigraphic sequence

..... existing deposits, but not in vertical stratigraphic sequence

Notes:
(a) long absolute chronology for the Aegean Bronze Age based on the few presently published ^{14}C dates;
(b) historical chronology based on the Egyptian Chronology and its relations to the Aegean;
(c) with subphases (A1, A2, etc.);
(d) time range for the respective confidence level (1σ and 2σ);
(e) no time range is given for boundaries at the beginning or the end of the sequence or hiatus.

prehistoric settlement. These investigations indicate that the valley suffered virtually complete abandonment from sometime in EH III to MH III/LH I, a phenomenon sometimes known as the "Middle Helladic hiatus" (Cherry and Davis 2001: 151–55; Wright 2004: 119–28; Wright et al. 1990: 628–29). The reasons for this nadir in human activity are not well known: in the case of the Nemea Valley, flooding of the valley floor has been postulated (Cherry and Davis 2001: 155–56); elsewhere, finds of daggers, spear points, and sling stones at fortified coastal sites in the Aegean suggest violent destructions (Branigan 1999; Doumas 1990).

By contrast, Kolonna, almost uniquely in the southern mainland region, grew in prosperity and complexity through MH (circa 2000–1600), establishing relations beyond the Saronic with central and northern Greece (Maran 2007; Sarri 2007), the Cycladic Islands (Crego 2007; Gauß and Smetana 2008; Nikolakopoulou 2007; Overbeck 2007), the Argolid (Nordquist 1995: 44, 50–51; Philippa-Touchais 2007; Touchais 2007; Zerner 1978: 156–58, 1993: 48–50), and Minoan Crete (Gauß 2006; Gauß and Smetana 2007: 61–65; Hiller 1993). The prosperity of Kolonna's MBA inhabitants is evident in the material remains. By MH I, the community had expanded beyond the fortification wall to an "inner extension" or "inner suburb" that was then enclosed with a less imposing wall; still later, in early Mycenaean times, a further "outer extension" enlarged the urban area to almost the entire promontory (Fig. 7.4). Notable is the so-called Large Building Complex, founded early in MH just inside the massive fortification wall, and persisting until early Mycenaean times spanning several major architectural phases (Gauß and Smetana 2010). The footprint of the complex may have reached 680 square meters in the MBA, making it one of the largest known structures on the mainland; it has been interpreted as a mansion with a possible administrative function suggested by a clay stamp and a clay seal (Gauß and Smetana 2010: 172). The finds from the Large Building Complex include enormous amounts of pottery and faunal remains. The pottery of the complex's second architectural phase (Kolonna IX) comprises imports from the Cyclades and Minoan Crete, locally manufactured vessels of Minoan type, Aiginetan matt-painted (Siedentopf 1991), and solid painted. The imported and imitation Minoan pottery demonstrates not merely close exchange relations with Crete, but also the possibility that Minoan craftsmen (potters, at least) were resident on Aigina (Gauß 2006; Hiller 1993). The local vessels of Minoan type exhibit significant departures from Aiginetan potting traditions: they are wheelmade, they lack the omnipresent potters' marks found on contemporary Aiginetan vessels, and their forms are dominated by small, open shapes and cooking ware (Gauß and Smetana 2007: 63, 66). Other objects that testify to Minoan influence, if not presence, are an ashlar block with a Minoan-style double-axe mason's mark reused in a Late Roman context (Niemeier 1995: 78), a Minoan-type loomweight, fragments of three Minoan stone vases, a ceremonial



7.4 Site plan of Bronze Age Kolonna, Aigina. After Gauß and Smetana 2007: 58, fig. A.

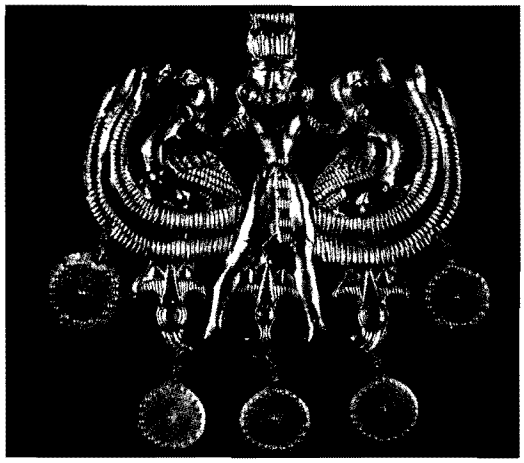
stone hammer, Minoan jewelry, a stone *kernos*, and fragments of a potter's wheel (Hiller 1993: 199).

Analysis of botanical, faunal, and human skeletal remains from the recent excavations at the Large Building Complex has revealed important information about how some inhabitants of Kolonna lived and died in the MBA (Forstenpointner et al. 2010; Galik et al. 2010; Kanz et al. 2010). The plant remains are dominated by the domesticated grain crops emmer wheat, bread wheat, and barley, with lentils as the main identifiable pulses. Grape, fig, and olive were also cultivated. The faunal assemblage consists of 3,178 terrestrial and 1,772 aquatic specimens. The terrestrial animals are overwhelmingly domesticated livestock, predominantly sheep/goat (66%), with lesser amounts of pig (20%) and cattle (14%). Only miniscule numbers of wild animal bones are present. This is a fairly standard faunal assemblage for the MBA and LBA, although the mix of domesticates varies and Gerhard Forstenpointner and colleagues note that the high percentage of sheep and goat is more characteristic of the Aegean Islands and Crete than the mainland, where cattle are more prominent. The remains suggest a mixed livestock economy in which both primary products (meat, hides) and secondary products (milk, hair, wool) were used, but a large percentage of animals were not slaughtered before four to five years of age. The inhabitants of the Large Building Complex also consumed fish, shellfish, and snails. Mollusks (bivalves and gastropods) make up 67% of the marine assemblage. Fish are perhaps underrepresented because of poor preservation of small bones, yet several species including dentex, pandora, sea bream, grouper, barracuda, and mullet indicate a mix of near-shore and open-sea fishing. Remains of fins, ribs, and scales imply processing on site. Alfred Galik and colleagues

also find closer parallels for the marine assemblage in Middle and Late Minoan Crete (e.g., Kommos) than in contemporary mainland sites. Taken together, these studies portray a varied and robust diet, but it must be remembered that the material comes only from the limited context of the Large Building Complex, an apparently elite setting where residents might be expected to have access to a better diet than others at Kolonna or in other settlements on the island.

The study of 48 subadult human skeletons recovered from intramural burials – chosen because Kolonna's adult cemeteries have not been located – produced results that support the impression of a generally prosperous community. The burials come from excavations of the last 20 years and range chronologically from EH I to LH (subphase not specified). Although these individuals died in utero (stillbirth), immediately or shortly after birth, or within the first year of life, there are few signs of malnutrition of the mother during pregnancy, or stress response in respiration, nutrition, or blood circulation after birth. Instead, death is more often attributed to perinatal failure: prematurity, congenital defects, acute diseases, and birth complications occurring at or immediately after birth (Kanz et al. 2010: 483–84). Stillbirth and death shortly after birth were surely common, unavoidable occurrences in the Bronze Age. A lingering question is whether meaningful trends can be extracted from a small sample spread over almost 2,000 years, but if it is accepted that the data fairly represent general trends in the health of Kolonna's population, a comparison with children at Lerna and Asine shows a much lower occurrence of malnutrition at Kolonna as measured by rates of dental hypoplasia and other indicators of metabolic problems.

The wealth and wide connections of Kolonna's inhabitants are suggested by the so-called Aigina Treasure. The mysterious history of this hoard, if that indeed is the right term for it, is well known (Higgins 1979), but recently new information has emerged, leading to a conference in which the historiography of the treasure was updated (Williams 2009) and the objects were reanalyzed stylistically and technically (Fitton 2009). The hoard is a spectacular collection of gold jewelry, comprising earrings, pendants, diadems, bracelets, necklaces, rings, and plaques, with lapis lazuli, amethyst, jasper, and rock crystal beads as secondary decorations (Fitton et al. 2009; Fig. 7.5). There is a basic consensus among scholars that the treasure probably did originate on Aigina in the MBA and should be viewed as a group that may have been looted from a MH tomb.[2] Most accept that the pieces could have been made in an Aiginetan workshop, but not necessarily all in the same generation. The widest divergence of opinion concerns the identity of the craftspeople and the techniques and stylistic influences intrinsic to the individual pieces. Stefan Hiller (2009) supposes that Minoan artisans, part of a small but affluent colony residing on Aigina, created such jewelry mainly for their own community, at the same time as their fellow expatriates manufactured Minoan-style vessels. While Hiller's scenario



7.5 "Master of Animals" pendant from the Aigina Treasure. © Trustees of the British Museum.

assumes that most of the objects find their closest parallels in Minoan typology and iconography, other scholars favor comparanda from the Near East, Anatolia, Egypt, or the Greek mainland as inspirations for individual objects (various contributions to Fitton 2009; Koehl 2011). Perhaps the most useful statement one can make is that the Aigina Treasure underscores the unusual wealth and wide foreign connections that the community at Kolonna enjoyed in the MBA. The treasure seems to represent a synthesis of influences, perhaps filtered through Cretan connections and individuals.

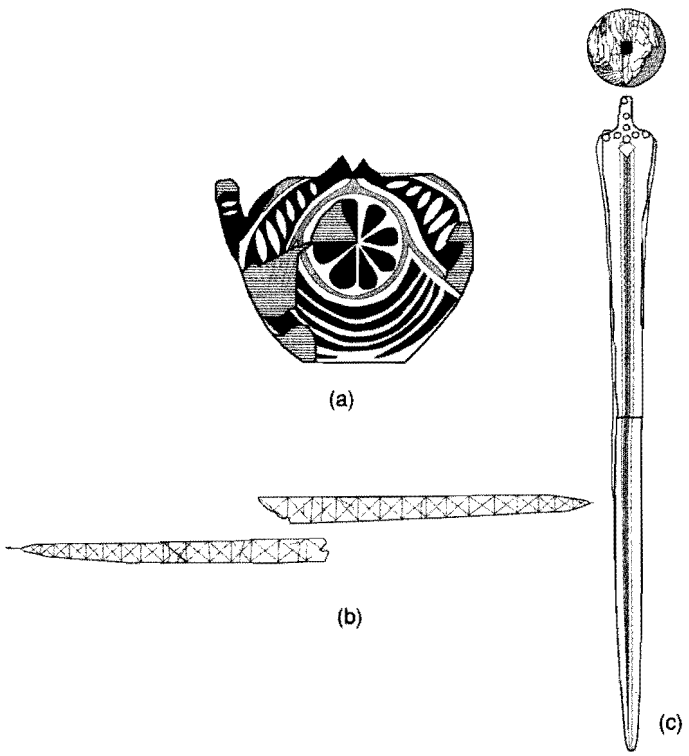
The significance of the Aigina Treasure is highlighted by the more recent discoveries at Kolonna of an EH III hoard and a warrior's grave of MH II. The hoard, excavated in 2000 in House 19 of the "inner town," bears some similarities with the later Aigina Treasure in its content and wide geographical affinities. It consists of a number of gold pins with loop terminals, gold and silver bracelets, several gold and silver pendants with embossed and wire decoration, and one or more necklaces with beads of gold, silver, carnelian, faience, and rock crystal (Felten 2007: 15, 2009: 34–35). The traditions from which these pieces come include northeastern Aegean, Anatolian, Levantine, Mesopotamian, and Cretan. This hoard has several important implications. It implies that in EH III an elite group already existed that could assemble such a rich collection of precious jewelry, and thus the Aigina Treasure may be part of a much longer local tradition. Furthermore, since those who hid the jewelry lived in a period before the earliest Minoan objects appeared in MH I, they were apparently able to forge such far-flung connections without Cretan intermediaries.

The warrior's grave is conventionally known as the Middle Bronze Age Shaft Grave of Aigina, and it is explicitly offered as a forerunner of, and possible model for, the somewhat later shaft graves at Mycenae (Kilian-Dirlmeier 1997).

Opinion is divided on whether it is a true shaft grave, however; according to Oliver Dickinson's (1977: 56) widely recognized definition, a shaft grave comprises a rectangular shaft cut into soft rock and earth, with built or rock-cut ledges some way down the shaft on which a roof of wooden beams would rest, creating a cavity for the burial chamber below it. The roof was covered with clay and the shaft above it was then filled with earth, stone, and sometimes offerings from a funerary meal. A tumulus might finally be raised above the grave. The Aigina grave does not entirely match this definition, in that the cut shaft is extremely shallow, with most of the grave built up of limestone rubble. There is no indisputable ledge, though Imma Kilian-Dirlmeier has plausibly detected a horizontal row of flat stones that could have served to hold in place a roof that does not survive (Kilian-Dirlmeier 1997: 17, fig. 4). Others have classified the burial as a "built tomb" or a "built cist" (Cavanagh and Mee 1998: 27; Hiller 1989: 138–39). The consequence of this debate is that it may not be possible to hold up the Aigina tomb as the model for the form of the later shaft graves at Mycenae, Lerna, and Ayios Stephanos; it must be pointed out, however, that the earliest shaft graves in Grave Circle B (MH IIIA–IIIB) at Mycenae do not display the fully developed, canonical form of the later (end of MH to LH IIA) examples (Graziadio 1988).

On the other hand, the prominent location and contents of the shaft graves at Aigina and Mycenae betray certain shared conceptions of the status and treatment of the deceased. Both were built in extraordinarily conspicuous locations just outside of the contemporary settlement's walls – in the case of the Aigina shaft grave, against the outer face of the enclosure wall of the inner extension during Kolonna IX. This may have been a unique honor; unlike those at Mycenae, the grave seems not to have been part of a cemetery, unless the latter was destroyed by construction during later periods. Kilian-Dirlmeier (1997: fig. 35) restores a 2-meter-thick tumulus over the shaft grave at Kolonna; the grave circles at Mycenae may have been covered by a low mound, separate mounds over individual graves, or no mound at all, but at both sites these reconstructions remain hypothetical (Mylonas 1966: 89–90).

The grave offerings at Kolonna are often thought of as a sampling, on a more modest scale, of the riches to come in Grave Circle A at Mycenae, but a better comparison is Grave Circle B, closer in date to the Kolonna shaft grave and less opulent in grave goods. The contents of the Kolonna burial include a bronze sword with a gold hilt and ivory pommel; several bronze daggers, including one with a decorated gold sheet molded around the handle; a bronze spear point; a gold diadem decorated with repoussé crosses; a gold knife with gold animal-head fittings; boar's tusk plaques from several helmets; six obsidian arrowheads; Minoan pottery of mature Kamares style dating to MM II; Middle Cycladic pottery from Melos and perhaps elsewhere in the Cyclades; and local matt-painted and plain vessels for drinking, eating, pouring, and storage



7.6 Examples of imported and high-status objects from the Aigina MH II "shaft grave." (a) Kamares Ware vessel, imported from Crete, MM II; (b) gold diadem; (c) bronze sword with ivory pommel and gold fittings. After Kilian-Dirlmeier 1997: p. 28, fig. 27:16 (vessel); p. 19, fig. 6:9 (diadem); p. 18, fig. 5:1 (sword).

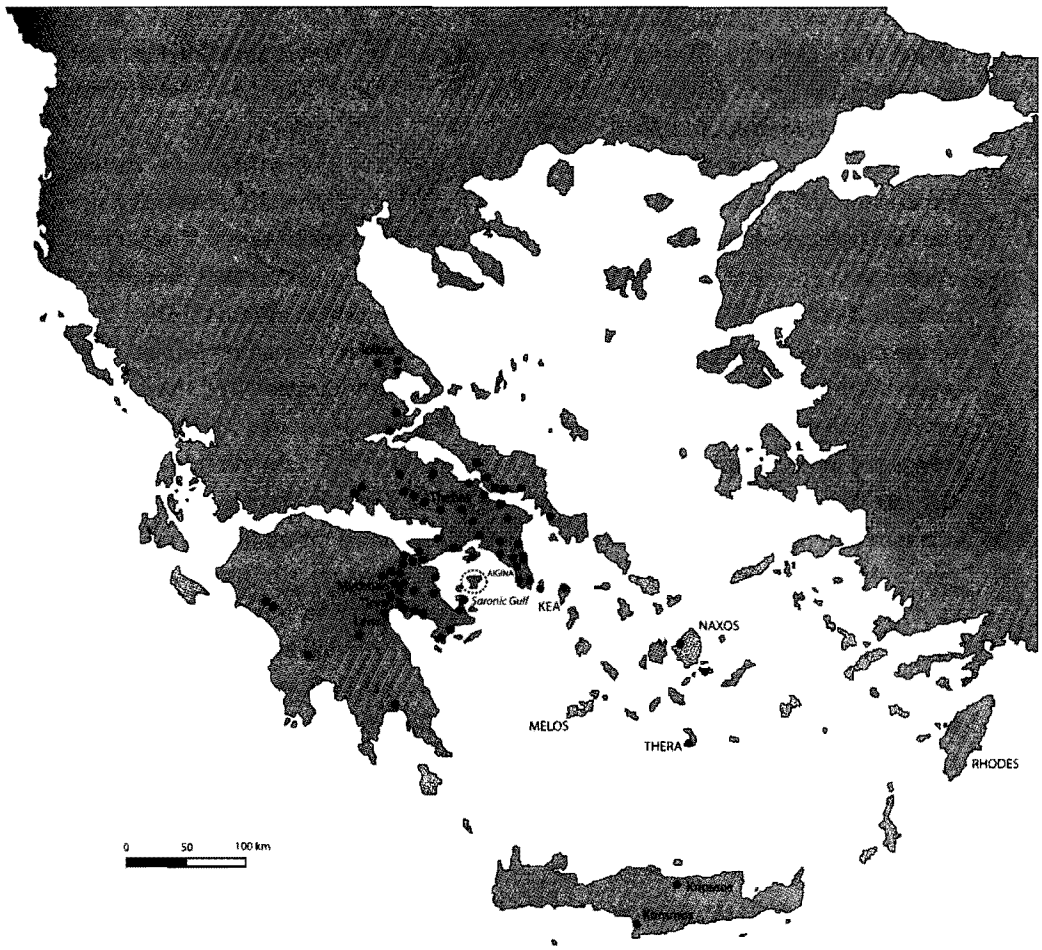
(Kilian-Dirlmeier 1997; Fig. 7.6). It has been noted that the artisanship and decoration of the metal objects reflect mainland rather than Cretan traditions (Hiller 2009: 37), a claim supported by the similarity of motifs on the molded gold sheet to those on locally manufactured matt-painted pottery (Kilian-Dirlmeier 1997: 57). The pottery fits well with the assemblage of local and imported wares in Kolonna settlement IX, ceramic phase I, chronologically equivalent to MH II (Gauß and Smetana 2007: 63, 66) and roughly contemporary with the Aigina Treasure.[3]

All of these artifact types are present in abundance in the shaft graves at Mycenae. Like many of the interments in Grave Circles A and B, the Kolonna shaft grave contains a warrior burial of a type that persists through the Mycenaean period and survives the collapse of the palaces (Deger-Jalkotzy 2006). That the elite individuals and families marked out by these shaft graves enjoyed preeminent status within the community is demonstrated by their setting and rich offerings, but it is specifically the warrior status of the individual buried at Kolonna that prefigures the striking (and decidedly un-Minoan) Mycenaean

preoccupation with martial equipment and iconography, as well as the possibly decisive role of violence in the emergence of the Mycenaean palace states (Acheson 1999; Bennet and Davis 1999; but cf. Wolpert 2004). The twin concerns with maritime and warlike pursuits (and perhaps even with naval warfare) are highlighted in a small number of MH Aiginetan matt-painted barrel jars decorated with ships and in one case a scene of armed warriors aboard a rowed ship (see Fig. 3.10; Rutter 2001: 128–30; Siedentopf 1991: fig. 4, pl. 38.162). There are very few Aiginetan pottery vessels deposited with the dead in Grave Circles A and B, undermining notions that Aigina had direct involvement in Mycenae's emergence to complexity. At the close of the MH period, however, Kolonna's long-standing relationship with Crete may have provided a conduit for Mycenae's initial contacts with the Minoan world. More likely than this is that Kolonna's massive fortification walls, paralleled in the contemporary Aegean only at Troy and Kea (Niemeier 1995: 75), and the precocious warrior burial, exerted a strong influence on an aspiring elite familiar with the prowess and the products of the island polity.

During the MH demographic free fall in Attica and the northeastern Peloponnese, the Aiginetans leapfrogged these areas to establish longer-distance trade relations with central Greece, the Cycladic Islands, and Crete. The impressive distribution of Aiginetan pottery plots the maritime routes over which the cargoes were moving, as well as overland routes by which fewer pots made their way to inland settlements (Fig. 7.7). Goods from Aigina may have been transferred across the Isthmus of Corinth to sites in central Greece along the Corinthian Gulf (e.g., Kirrha, Eutresis) through intermediaries living in the northern Corinthian plain. A number of sites in this intermediate zone, including Korakou, Gonia, Peridkaria, Aetopetra, Arapiza, and Ayios Gerasimos, seem to have been occupied from EH III through the Mycenaean period (Lambropoulou 1991: 144). They seem to have coexisted in a stable, heterarchical settlement pattern over much of the Bronze Age (Pullen and Tartaron 2007: 148, 150–52). During MH, their only detectable external contacts were with Aigina, indicated by the presence of matt-painted, red-slipped and burnished, and coarse plain and cooking vessels in Aiginetan gold-mica fabric. At Gonia, these types constitute 19% of the total ceramic assemblage; at Korakou the figure is 9% (Lambropoulou 1991: 145).

Because there has never been a systematic site survey on Aigina, the handful of known MH sites have been discovered as the result of informal explorations or as chance finds. In the mid-1990s, the MH catalogue consisted of eight confirmed sites and eleven uncertain sites (Fig. 7.8). These sites are mainly sherd scatters or occasionally graves, but beyond Kolonna architecture is lacking. It is at present impossible to know if this pattern is a fair representation of reality, and we are not in a position to answer Wright's (2010: 808) query concerning whether there were centers on the island apart from Kolonna serving as magnets for



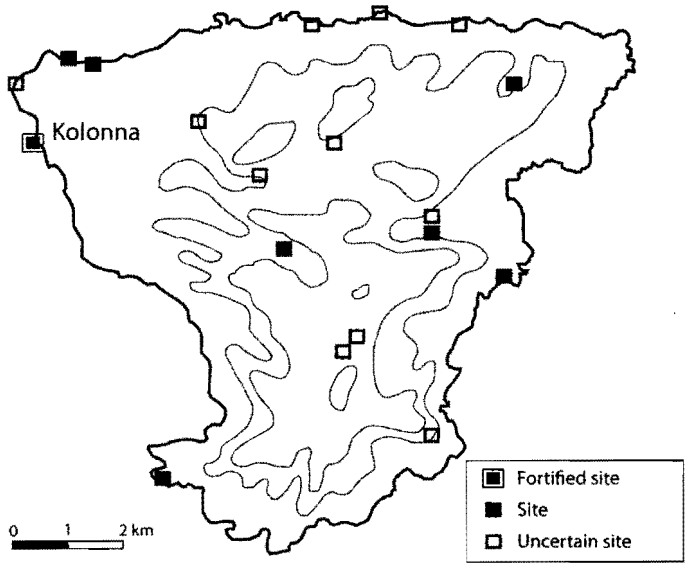
7.7 Distribution of Aiginetan "gold mica" pottery exports. After Rutter 2001: 127, fig. 12, with additions.

small villages and hamlets. Very small amounts of MBA material have been recovered in excavations at Lazarides, an elevated site in east-central Aigina with views over most of the Saronic (Sgouritsa 2010), and at the location of the later temple of Aphaia in the northeastern corner of the island (Pilafides-Williams 1998: 82–83, 156). These and other sporadic finds are not suggestive of alternative centers, or of a complex hierarchy of sites below Kolonna. There is a comparable dearth of MH I–II sites around the Saronic, but an important exception is the recent discovery at Megali Magoula near Galatas, across from Poros, of a small but impressive settlement enclosed by an elliptical fortification wall (Konsolaki-Yiannopoulou 2003a, 2010). The MH pottery is a mixture of Peloponnesian and Aiginetan types with a chronological concentration in MH II. Alongside mainland gray Minyan and Argive Minyan, much of the fine to semi-fine matt-painted pottery is Aiginetan, including large and small basins and a

few examples of cylindrical pyxides and barrel jars. Megali Magoula prospered along with Kolonna IX and X, perhaps in part by serving as intermediary for Aiginetan products with trade partners in places like Lerna and Asine (Konsolaki-Yiannopoulou 2010: 73).

At the end of the MBA, Kolonna X (MH III–early LH) witnessed a further expansion of the town to the east, enclosed by yet another wall in early LH, this time of large rubble construction reminiscent of cyclopean masonry. The ceramic evidence suggests that the outward focus that the Aiginetans had maintained on more distant trading partners during the Middle Helladic hiatus shifted back to the regions surrounding the Saronic Gulf, where two related transformations were taking place starting in MH III/LH I: the "colonization" of the interior of the northeastern Peloponnese, which saw resurgent populations establishing new sites or reoccupying old ones that had been effectively abandoned since the late third millennium (Rutter 2007: 42–43); and the social, political, and economic developments of the Shaft Grave Era, most prominently the emergence of complexity at Mycenae. The Aiginetan ceramic industry responded to the increased demand for household pottery closer to home by expanding production in a range of standardized and specialized forms: larger closed and open vessels including water jars, barrel jars, and kraters; smaller drinking and eating vessels such as goblets, *kantharoi*, and handleless bowls; and four types of cooking pots (Rutter 2007: 36). A pottery kiln dating to the early years of LH that was recently excavated in the southwestern part of the Large Building Complex may have played a role in the increased production. The Saronic small world centered on Aigina was thus revived, starting in MH III and peaking in LH I–II. This was the era of the greatest cohesion of the Kolonna-centered Saronic world, and for most sites in the Saronic and northeastern Peloponnese, the time of greatest abundance of Aiginetan imports (Lindblom 2001: 41–42).

Mycenae was not yet connected in any meaningful way to this network, but soon would be. Before we turn to the expansion of Mycenae, it is worth reflecting on why Kolonna had become such a monumental settlement with such broad contacts, and why the pottery produced on the island was one of few Aegean products to be so widely disseminated. It was partly a matter of Aigina's fortunate geographical position, and the opportunities for efficient transport by sea. It had also to do with the excellent sources of clay and temper to which potters at Kolonna had access. Moreover, Kolonna filled a power vacuum, surviving and flourishing while communities all around disintegrated, by forging new ties with more distant partners. A distinct distribution pattern had developed by the late MH for two main ceramic production and export industries: Aiginetan; and lustrous decorated wares centered in the southern Peloponnese or Kythera (Zerner 1993). In the southern Peloponnese, there is much lustrous decorated and little Aiginetan; in central Greece and Attica, the situation is



7.8 Map of Aigina showing the locations of known MH sites. After Kilian-Dirlmeier 1997: 109, fig. 62.

reversed; and in the northeastern Peloponnese, there is much of both (Rutter 2007: 36).

Many scholars have focused on the intrinsic properties of the Aiginetan pottery itself relative to local and imported alternatives (e.g., Zerner 1993). The Aiginetan product was more standardized in its form, the result of consistent forming and firing practices, including levigation, uniform clay composition, and controlled firing conditions (Philippa-Touchais 2007: 110), lending the impression of greater reliability. Its well-executed and attractive matt-painted decoration was appreciated for its aesthetic properties, inspiring local imitation. There is also strong evidence of superior performance for the pots' intended uses (Rutter 2007: 42). The cooking ware was lighter in weight but better made and more durable than the norm; the porosity of the fabric inhibited cracking during expansion and contraction cycles, while the volcanic rock temper apparently possessed favorable thermal expansion characteristics. The result was higher thermal shock resistance and fewer failures under thermal stress. The several forms of water jug (*stamnoi, hydrias,* amphoras, and large jugs) were larger, lighter, with thinner walls, thus more practical for transporting water, and their porosity promoted evaporation of moisture through the body wall and into the atmosphere, keeping the liquids they contained cooler.

While the performance characteristics of Aiginetan pottery have long been acknowledged, in recent years scholars have attributed to the trade in Aiginetan pottery far more profound influences. Anna Philippa-Touchais (2007: 110–12) asserts that the aesthetic of Aiginetan MBA pottery not only inspired imitations

at Argos and elsewhere, but actually created a network of "common references," a kind of koiné of instantly recognizable shapes, fabrics, and technical excellence that attained an ideological value for local elites wishing to display their connections with an external world in the context of communal feasting.

This sentiment is echoed in studies of Aiginetan ceramics in Thessaly and Boeotia, and at Lerna. Despite the fact that imported Aiginetan vessels are quite rare in Thessaly, Joseph Maran (2007) believes that "Magnesia polychrome," manufactured in or around Pefkakia beginning in MH II, emulates the shapes and decoration of Aiginetan matt-painted pottery. According to Maran, the adoption of these novel table and cooking vessels actually transformed methods of food preparation and consumption. These new practices became strategies in communal eating and drinking ceremonies to emphasize the connection of those who possessed them to elite practices in distant southern Greece. As at Argos, aspiring elites sought to differentiate themselves in society through the use of such exotic objects. Maran sees the spread of this influence, which began with exposure to a limited number of genuine Aiginetan specimens, to the northern Aegean and the Izmir region (Maran 2007: 174). In Boeotia, the aesthetics of Aiginetan pottery had a strong effect by MH II, as potters began to combine Minyan and matt-painted styles. This interaction can be traced through a succession of changes from yellow and red Minyan matt-painted, to polychrome mainland in MH III, and ultimately to Mycenaean style (Sarri 2007: 163). At Lerna, a massive collection of broken pottery and animal bones in the fill of two shaft graves of LH I, representing funerary meals that must have involved hundreds or even thousands of participants, contains Aiginetan pottery in the amount of more than 50% of between 15,000 and 18,000 sherds (Lindblom 2007). In such an obviously communal and symbolically charged event, vessels manufactured at Kolonna, an impressively fortified place possessing a maritime fleet and advanced technological knowledge, could serve as a powerful demonstration that the followers of the deceased had access to a network of social relations beyond the reach of most members of the communities on the Argive Plain (Lindblom 2007: 126). It may have been especially important to display wealth and esoteric knowledge if one purpose of the ceremony was to transfer rights and privileges to an heir of the deceased under potentially contentious circumstances. We might imagine that the Lerna shaft grave deposit represents the kind of competitively charged communal event that Philippa-Touchais and Maran have in mind for Argos and Pefkakia. The social ramifications implicit in the acquisition and use of Aiginetan wares thus extend well beyond the economic value of the pots or the exchange networks that moved them.

An even more direct influence may have been at work in Aigina's relationship with the settlement at Ayia Irini on the island of Kea (Crego 2007, 2010; Overbeck 2007; Overbeck and Crego 2008), just outside the Saronic Gulf. Ayia Irini IVa was founded in a developed phase of Middle Cycladic after a hiatus

spanning the end of Early Cycladic (Ayia Irini III) and the earliest part of the Middle Cycladic. The settlement was apparently colonized from outside, with an intrusive ceramic repertoire including a system of potters' marks; immediate engagement in vigorous trade with the mainland, the Cyclades, and Crete; and an impressive fortification wall. Donna May Crego (2010: 843) points out that there is little evidence for traditional women's crafts, and burials of the period are not yet known, suggesting to her the initial settlement of Ayia Irini IVa by a male, commercially oriented installation rather than a typical village. As for the origin of the settlers, in an earlier article John Overbeck and Crego (2008: 305) pointed to central Greece, perhaps Boeotia, on the strength of the abundance of mainland pottery types such as gray Minyan. More recently, in something of a reassessment, Crego (2010) relocates the settlers to Aigina, highlighting shared elements that add up to a special relationship between the two islands. She sees links to Kolonna in the fortification wall and the system of potters' marks. More salient still are indications of close relations in the ceramic assemblages (Crego 2010: 842–45). Although true Aiginetan matt-painted pottery makes up only around 3% of the pottery corpus of phase IVa at Kea, locally produced yellow-slipped (12%) appears to be an emulation of Aiginetan matt-painted adapted to local clays. Further, the two settlements exchanged vessel types rarely found outside their local contexts: at Kolonna the old and new excavations, as well as the shaft grave, have yielded a range of Keian vessels, including the rare white-on-gray, found in numbers matching those known on Kea itself. In parallel, potters at Ayia Irini manufactured barrel jars and bulbous jars in yellow-slipped fabrics, imitating the shape and appearance of Aiginetan matt-painted prototypes. The latter shape is rare outside Aigina. Crego concludes that Ayia Irini IVa was founded from Kolonna as a trade station to distribute Aiginetan products and to provide access to the metal deposits at nearby Lavrion on the Attic mainland. The wide contacts of the new settlement can be explained by Kolonna's existing maritime network of ties to the mainland, Cyclades, and Crete. In the subsequent phase IVb, commercial interests continued, but the far greater occurrence of burials and women's equipment suggests a fully formed village and an incipient Kean identity separate from Aigina. The dominant influence of Aigina had declined by the late MBA (phase V), when Minoan pottery was imported and imitated, Minoan architectural styles were adopted, and Linear A script was used (Davis 2008: 195). By the following phase VI, corresponding to the beginning of the LBA, Minoan influence was pervasive in every aspect of material culture. If Crego's interpretation of Ayia Irini IVa is accepted (and there are certainly alternative explanations of the evidence; e.g., Davis 2008: 194–96), it shows Kolonna in an expansive mode, extending its small world beyond the confines of the Saronic Gulf.

Aigina's unusual success in production and export, amounting to the better part of a millennium of competitive advantage, might be further illuminated if

we think in terms of connectivity. Recalling the discussion of social network theory in the previous chapter, we can suggest that the principle of preferential attachment (Barabási and Albert 1999), by which new vertices attach disproportionately to sites that are already well connected, applies forcefully to Kolonna's situation in the MBA and early LBA. Kolonna was a peer of several highly developed EH II communities in the northeastern Peloponnese and Cycladic islands, but unlike most others survived the EH III decline as a prosperous community, filling a yawning power vacuum. Although the growth of the Aiginetan potting industry was perhaps stimulated by contact with protopalatial Crete, this cannot explain the initiation of exchange relations with the Cyclades, the Peloponnese, and central Greece, for which the role of intrepid and enterprising individuals must have been decisive. By means of this precocious outreach, Kolonna became more "connected" than any other settlement in the region. As demographic recovery proceeded and new settlements were established in MH III–LH I, a period of continuous growth began with the addition of new vertices and new paths between them, but the huge competitive advantage held by Aiginetan producers in terms of experience, efficiency, and established connections meant that these new nodes connected to Aigina preferentially, in agreement with the ceramic evidence from the Saronic and surrounding areas. Under conditions of continuous growth and preferential attachment, a node that acquires more connections than others will accumulate them at an increasing rate, causing the difference in connectivity to multiply as the network grows (Barabási and Albert 1999: 511). I suggested in Chapter 6 that this dynamic might illuminate the emergence of Mycenae during the Shaft Grave Era or the dominant position of Knossos in the neopalatial period, but we can now apply the same idea to Kolonna's long-term prominence from EH III to LH II. This process, the impetus for which may have originally been economic, was a key factor leading to a situation where the emergence of rival centers of *political* power is suppressed, as argued by Pullen and Tartaron (2007) for Kolonna's relationship with the Saronic region and beyond. A consideration of connectivity within the framework of network theory augments the interpretations of the ceramic evidence, outlined above, to begin to answer Wright's (2010: 808) question: "How do we assess the regional influence or connectedness of Aegina beyond [the Saronic Gulf] area?"

Kolonna and Mycenae in the Late Bronze Age

The expansion of Mycenae's economic and political interests was destined to transform the Saronic Gulf entirely, but this was more a gradual process than the execution of a strategic plan at any one point in time. A brief survey of the evidence of pottery in regions to the north and east of Mycenae is enlightening on this point.[4] The areas of the southeastern Corinthia north of Mycenae, such

as the Nemea and Longopotamos Valleys, have been considered natural targets for Mycenae to expand into virtually empty landscapes in the early years of the Shaft Grave Era in MH III–LH I (Cherry and Davis 2001). But the ceramic evidence suggests otherwise, indicating a strong measure of independence in the early Mycenaean period (Morgan 1999: 358–61; Mountjoy 1999: 197; Rutter 1989, 1990, 1993; Wright 2004: 124–26). Jeremy Rutter (1990: 452–55) has observed that the pottery used by the first group to resettle Tsoungiza finds close parallels not in the Argolid but in late MH graves in the North Cemetery at Corinth. The MH III assemblage is parochial, with a few imports from Aigina, but only general stylistic links with the Argolid and the Corinthia (Morgan 1999: 360). In LH I, Mycenaean-style fineware is rare while imported Aiginetan gold-mica storage, cooking, and mixing vessels comprise between 7% and 10% of the total pottery assemblage (Rutter 1989: 12; Lindblom 2001: 41), with smaller numbers of Cycladic and Cretan pots possibly obtained through Aiginetan intermediaries. Tsoungiza may have looked not south to Mycenae, but west toward the thriving center at Aidonia at this time (Wright 2004: 125). It is not until LH IIA that a significant connection can be demonstrated with Mycenae. Although imports of Aiginetan utilitarian vessels held steady at approximately the same levels as in LH I (Rutter 1993: 82–85, table 1), trench EU 10 produced high-quality Mycenaean fineware, including a Vapheio cup and four piriform jars so similar to examples from Mycenae that they may have come from the same workshop (Mountjoy 1999: 199; Rutter 1993: 74–75, 79). By this time, then, Tsoungiza was being drawn into Mycenae's orbit, although we cannot say with certainty that Tsoungiza had been incorporated politically as opposed to simply participating in economic transactions with an emerging center of pottery production and trade at Mycenae (Rutter 1993: 91). Indeed, in LH IIB both Mycenaean and Aiginetan imports actually declined and the LH IIIA1 subphase is not well known (Mountjoy 1999: 200).

The more distant northern Corinthia was slow to adopt the Mycenaean style. At LH I Korakou, there are a few sherds only of LH I style, and a small number in the palatial and pseudo-Minoan styles of LH IIA (Davis 1979). Instead the main connection in the early Mycenaean period was with Aiginetan trade networks. As mentioned above, this relationship began in the MBA, but by LH I the inhabitants of Korakou were importing a range of Aiginetan cookware, kraters, and large storage and pouring vessels (Davis 1979: 241, 258–59; Lindblom 2001: 41; Morgan 1999: 351; Mountjoy 1999: 199–200). MH traditions persisted longer in the northern Corinthia than in the Argolid: in the East Alley, gray Minyan, matt-painted, and yellow Minyan wares were found together with sherds of Mycenaean LH I and LH II styles (Davis 1979: 256–57).

Mycenaean LH I style is also rare at Kolonna and at the circum-Saronic settlements that imported pottery primarily from Aigina throughout the MBA and early Mycenaean period (Lindblom 2001: 43, table 9; Siennicka 2002: 181–84).

Relatively few sites with good early Mycenaean deposits have been published, and these have produced few examples of Mycenaean LH I. In Attica, it is exceedingly rare; Kiapha Thiti has few sherds if any at all (Maran 1993: 205; Mountjoy 1999: 491–92). Megali Magoula (Galatas) has produced some sherds of Mycenaean painted LH I style from the mounds of earth covering two early tholos tombs; this material seems earlier than the tombs themselves, reflecting settlement pottery rather than grave goods (Konsolaki-Yiannopoulou 2010: 73). If Megali Magoula flourished in MH because of access to the Aiginetan economy, the tholos tombs appear to indicate a later prosperity tied to relations with the Argolid and beyond.

Commenting on exchange systems in LH I, Mountjoy (1999: 20, 492) finds it surprising that lustrous decorated and other early Mycenaean styles should be so rare in the Saronic and the Corinthia, despite the easy voyage from the Gulf of Argos, where they are found in abundance. She notes that the shapes in which Aiginetan workshops specialized, including hydrias, amphoras, and kraters, do not duplicate the fine tableware of LH I style, so redundancy is not an explanation. She speculates that Aiginetan activity might account for the lack of pottery decorated in the LH I style, and that Lerna and Kolonna may have had separate interaction spheres. This seems correct, but I would go further to suggest exclusionary practices – a deliberate strategy of protectionism reflecting not only economic hegemony but also a final phase of Aiginetan political muscle.

LH II marks a transition when Mycenaean pottery of palatial and pseudo-Minoan type found its place at Aigina, Kiapha Thiti, and Athens by LH IIA. Both of these classes were produced locally at Kolonna and Athens (Mountjoy 1999: 492). Among the pseudo-Minoan types, the marine style is found at Kolonna, Athens, Thorikos, and Eleusis. But in that same period Aiginetan imports still made up 7–10% of the corpus at Tsoungiza and 20% at Kiapha Thiti (Maran 1992: 204–211). Mycenaean LH IIB pottery is still relatively little known in Attica, except for some graves at the Athenian Agora, until masses of later LH IIB pottery were dumped into wells on the south slope of the Athenian acropolis (Mountjoy 1999: 492–93). Also included in these deposits is late matt-painted ware, possibly an Aiginetan product.

The appearance of Mycenaean pottery for the first time in substantial quantities marks the initiation of a shift, played out over a period of maybe 50 to 100 years and essentially accomplished in LH IIIA – the early Mycenaean palatial period in the fourteenth century – by which Mycenae swallowed the Saronic Gulf into its economic and political orbit. It is no coincidence that Kolonna's export industry seems to have gone into decline sometime during LH IIIA1, around the time of the establishment of the first verifiable palace at Mycenae (Lindblom 2001: 129–30). The chronological period represented by LH IIIA1 is barely detectable at Kolonna, and few LH IIIA2 deposits in the Aegean have produced Aiginetan imports (Lindblom 2001: 129). By that time, Mycenaean

fineware and utilitarian vessels had superseded most Aiginetan shapes throughout Kolonna's former sphere of influence. (Nevertheless, exports of Aiginetan storage and cooking vessels continued in LH IIIB and IIIC, owing to their superior working qualities as well as the momentum of long-term relationships by which they were exchanged [Lindblom 2001: 41; Zerner 1993: 55].) It is reasonable to assume that this shift in production and consumption patterns reflects the appropriation of the export market by Mycenaeans from the Argolid, but there are also clear signs of political expansion of Mycenae during the palatial period into the southwestern Corinthia and the Saronic Gulf, though probably not the northern Corinthia.

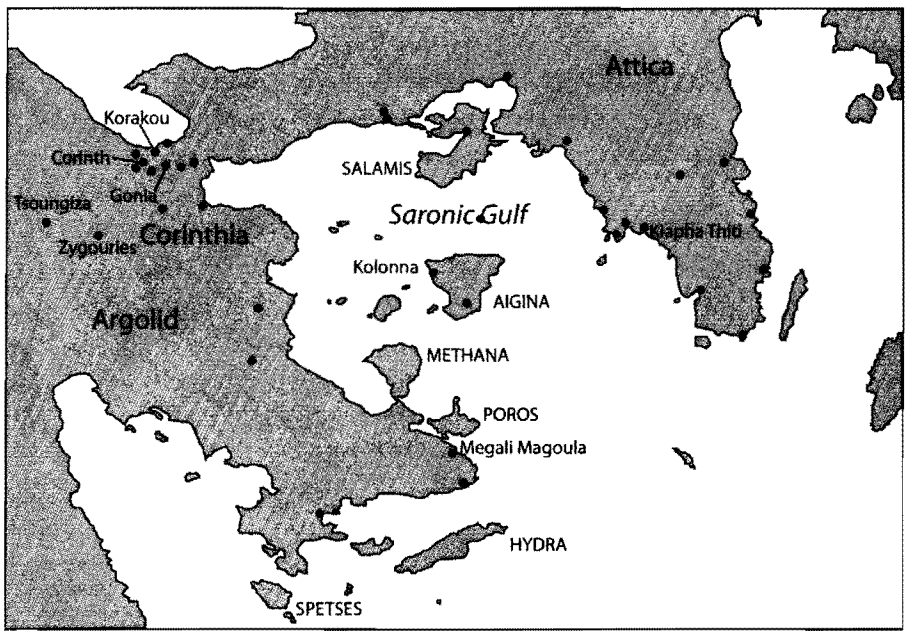
At Tsoungiza in the southwestern Corinthia, a ceremonial feasting deposit of LH IIIA2 (trench EU 9) consisting of cattle bones; drinking, serving, and cooking vessels; and a fragmentary ceramic female figure has been interpreted as the remains of a regional feast intended to cement alliances between elites at Mycenae and Tsoungiza (Dabney et al. 2004). The analysis of a pit with contents dating to LH IIIB1 shows that residents of tiny Tsoungiza had access to the same range and quality of pottery as Mycenae, indicating a close link but not necessarily strict control (Thomas 2005; this may already have been true in LH IIA: Rutter 1993: 90). Patrick Thomas also reinterpreted the so-called potters' shop in House B at Zygouries as a workshop for the manufacture of perfumed olive oil, implying a close link with Mycenae's interests in LH IIIB (Thomas 1992). In the broader sweep of the Mycenaean era, the southwestern Corinthia was only gradually incorporated into the political economy of the Argolid. Wright (2004: 127) has associated the Nemea Valley with a "periphery model," in which such regions exhibit considerable autonomy, participating in alternative social and economic networks before being incorporated into palatial economies to varying degrees in LH III.

A different pattern prevails in the northern Corinthia. There, the numbers of Aiginetan as well as other imported vessels declined in LH IIIA2. During the palatial period, Corinthian fineware shows strong stylistic connections with the Argolid in both forms and decorative motifs, but virtually all pottery vessels and terracotta figurines are believed to have been made locally (Morgan 1999: 353). The absence of true imports from the Argolid makes it highly unlikely that Mycenae dominated the northern Corinthia politically or established a permanent presence there (Pullen and Tartaron 2007; Tartaron 2010).

In the Saronic Gulf, the process of Mycenaean expansion into the region is not easily appreciated because few contexts spanning early to later Mycenaean are available, and in general the early Mycenaean remains are inferior in quantity and quality to those of the later Mycenaean phases (Siennicka 2002). Ongoing investigations at the MH–LH settlement of Megali Magoula offer a window onto the process by which Mycenaean influences insinuated themselves into the Saronic Gulf region (Konsolaki-Yiannopoulou 2003a, 2010). Located in the

southwestern corner of the Gulf, with manageable overland and maritime access to the Argive Plain and the Argolic Gulf, Megali Magoula was well positioned to be an intermediate link between the two bodies of water. As we have seen, a prosperous community of the MBA had strong ties to Aigina, and MH III–LH I sherds found in the fill of the somewhat later tholos tombs show continuity into the LBA. Of the three tholoi, Tomb 3 seems to be earliest, dating perhaps to LH I based on pottery and weapons tenuously associated with the burial(s). The form of the tomb, built entirely above ground with a circular chamber and no dromos, recalls the EM–MM tholoi of southern Crete; Eleni Konsolaki-Yiannopoulou (2010: 72–73) proposes that it may represent, along with the Vagenas tomb in Messenia, a link between Cretan tombs and Helladic tholoi – though of course there is nothing approaching a consensus about the origin of the Helladic tholos (Rutter 2001: 139; Voutsaki 1998: 42–43). If such a connection existed, it might have been part of the cultural expansion of Minoan Crete that affected Ayia Irini at the dawn of the LBA.

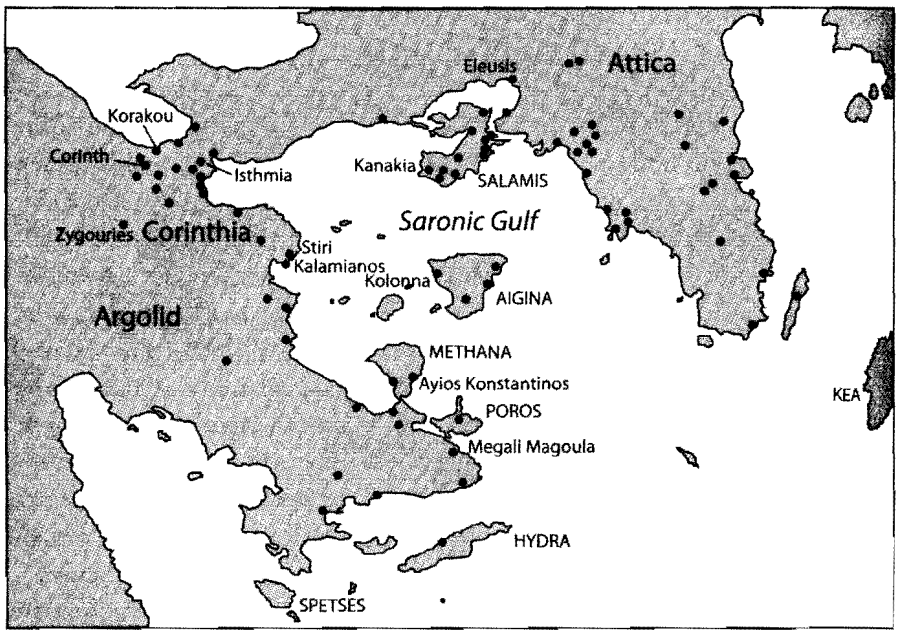
Tombs 1 and 2 are more recognizably Mycenaean tholoi, the architectural features and pottery of which indicate a date in LH IIB for their construction and earliest burials. They are quite different in form. Tomb 1 is a very large tholos (D = 11.8 meters) of Pelon's Class C built mainly above ground with an artificial tumulus heaped over it (Konsolaki-Yiannopoulou 2003a: 165–75). Elements of the tomb's construction find parallels in early tholos tombs in Attica, Messenia, and the northeastern Peloponnese. The Mycenaean pottery, while not found in undisturbed burial contexts, indicates that the tholos was in use from LH IIB to LH IIIB. Tomb 2 is a very small example (D = 3.8 meters) of Pelon's Class A, rare in the northeastern Peloponnese but common in Messenia, where Minoan influences were strongly felt (Nelson 2001; Pelon 1998). A construction date in LH IIB is also favored, with continuing use in LH III and a concentration of Mycenaean pottery in LH IIIA2–IIIB1 (Konsolaki-Yiannopoulou 2003a: 177–78). Initial use of these tombs in LH II coincides with the first wave of Mycenaean pottery in the Saronic, and we might imagine elites at Megali Magoula now taking their cues from the families burying their dead in early tholoi in Messenia and the Argolid, keeping in mind that the fertilization of Mycenaean culture from Crete was still ongoing. As Kolonna lost its preeminent position in the Saronic in LH IIIA, the wider area of Mycenaean Troizen around Megali Magoula flourished, indicated for example by the rich chamber tomb cemetery at nearby Apatheia, where evidence for libations as part of elaborate funerary rituals parallels similar traces in the Megali Magoula tholoi (Konsolaki-Yiannopoulou 2001). Following Konsolaki-Yiannopoulou's (2010: 73) suggestion that "[t]he fall of Aegina and the rise of Mycenaean Troezen are two parallel phenomena, which may not be disconnected . . . ," it is reasonable to perceive in these changing fortunes the moment at which Mycenaean presence in the Saronic began to have political, not just economic or cultural, ramifications.



7.9 Map of early Mycenaean sites in the Saronic region. After Siennicka 2002: 180, fig. 1.

The archaeological record shows unambiguously what a momentous shift this was (Figs. 7.9, 7.10). The number of known sites around the Saronic increases almost twofold in late Mycenaean times when corrected for phase durations, and numerous new settlements indicate a dynamic expansion (Siennicka 2002: 184–89). Some sites that had long been occupied continued to flourish; for example, in Attica, Eleusis and Ayios Kosmas experienced prosperity and expansion, and the long-established settlements of the northern Corinthian plain carried on as before. But many more of the settlements were new foundations of the palatial period, as Figure 7.10 clearly shows. With some variations, they adopted the typical repertoire of Mycenaean material culture, including pottery forms and styles, architectural techniques, burial customs, and cult practices; in short, they participated in the Mycenaean cultural koiné that formed rapidly in LH IIIA and remained in place until it began to fragment in later LH IIIB. To give a sense of the range of palatial-period communities in the Saronic Gulf region, I will next describe briefly two settlements, Kanakia on Salamis Island and Ayios Konstantinos on the Methana peninsula, before taking up a third, Korphos-Kalamianos, at much greater length. (For a more inclusive survey of LH IIIA–IIIB Saronic settlements, see Siennicka 2002: 184–89.)

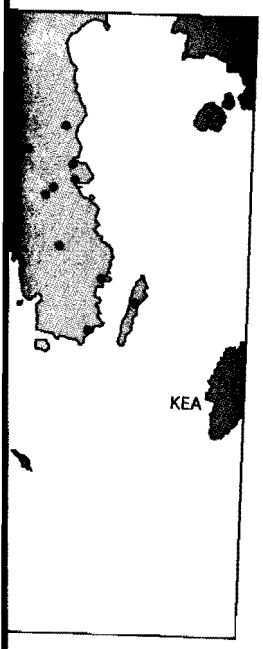
Kanakia was an acropolis-type settlement of LH IIIA–IIIC date in the southwestern corner of Salamis, built on a series of terraces with retaining walls on and around a pair of neighboring peaks (Lolos 2007). The site overlooks two harbors, with a broad viewshed encompassing much of the Saronic Gulf. The



7.10 Map of late Mycenaean sites in the Saronic region. After Siennicka 2002: 180, fig. 2.

built area covers approximately 4.5 hectares, with structures varying in size and plan separated by roads and courtyards (Fig. 7.11). Free-standing structures with one, two, and three rooms have been identified, along with true megara, trapezoidal buildings, and corridor-type buildings such as are known in LH IIIB contexts at Mycenae, Tiryns, and elsewhere. There are also at least two complexes of multiple, attached buildings on the upper areas of the acropolis. The site is unfortified, but the approaches are steep and a system of watch towers seems to have been in place.

Excavations since 2000 have focused on structures within the building complexes of LH IIIB–IIIC date. The structures often rested on multiple levels conforming to the terraced topography; an example is building IA, a LH IIIB corridor house built on two levels with an upper level devoted to working areas where stone tools, pottery, and traces of mineral pigments were found, and a lower-level cellar where pottery vessels were stored. Building IA forms part of a larger industrial complex with buildings IB and IΔ; this compound comprises more than forty rooms and spaces for workshops, storerooms, auxiliary rooms, corridors, courtyards, and paths. The finds of querns, grinders, whetstones, spindle whorls, beads, a hoard of bronze tools in IΔ, and everyday pottery of LH IIIB2–LH IIIC Early are consistent with this interpretation. Some evidence of cult has been found in a couple of buildings, in the form of a number of clay anthropomorphic and animal figurines, the former mainly of phi and psi type, but these attest to ritual practice in household or workshop contexts only.



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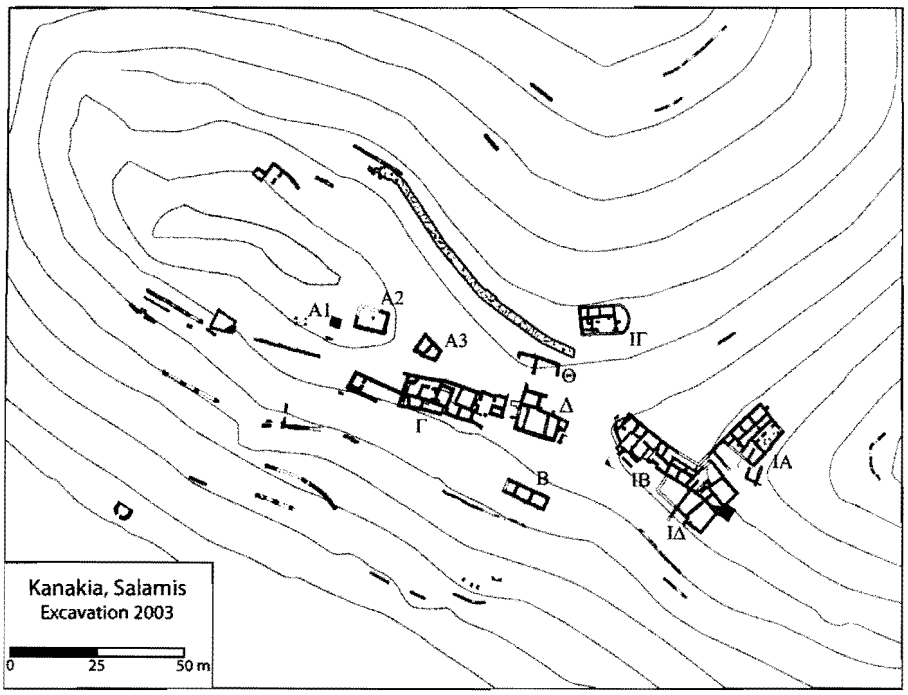


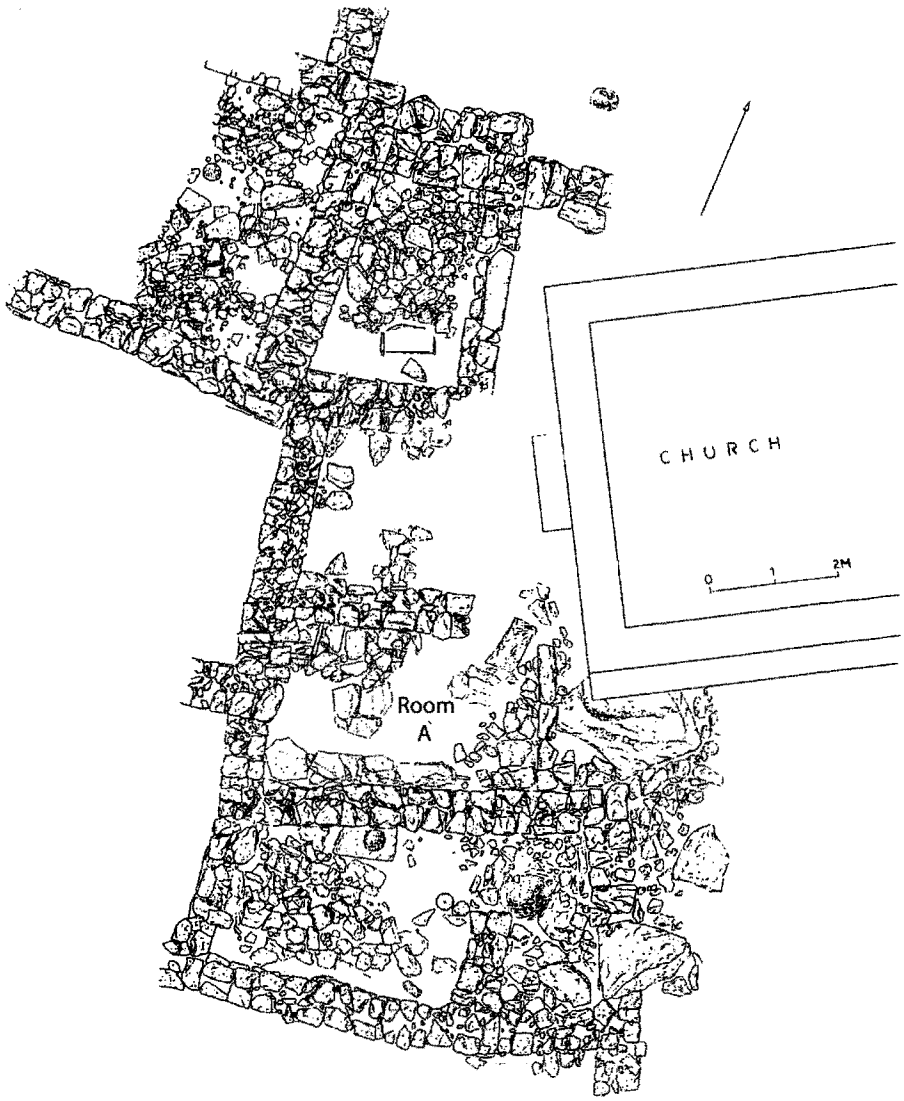
7.11 General plan of Mycenaean Kanakia, Salamis. After Lolos 2007: 238, fig. 4.

Overall, the settlement as revealed to date reflects a working community; as yet no building of truly palatial character has been uncovered. Yet the size of the settlement, the quality of the architecture, and the presence of imported goods suggest that this was an important settlement. Architectural details such as columned entrances (*propylaia*), a large "double megaron" (building Γ, considered by the excavator to be a ruler's residence: Lolos 2007: 235), and a unique, massive tower-like structure attached to a twin gate that controls access to a triangular space all point to a community of some wealth and power. Pottery was imported from the Argolid, Attica, and Aigina – in the last case the cooking pots, some with potters' marks, which were still circulating in palatial times. In the industrial area of IB, a large fragment of a Cypriot copper oxhide ingot was found, and also of Cypriot origin or inspiration, a piece of a ceramic wall bracket from building IΔ of a type known from Tiryns, and from the same context a coarseware stirrup jar marked in a Cypriot fashion.

Kanakia is best interpreted as the seat of a local ruler well connected to Mycenaean political and economic networks; with probably fine harbors, it must have been a destination for maritime traffic in the Saronic Gulf. Salamis was a busy place in LH IIIA–IIIB, with a large number of settlements and cemeteries that have not been adequately investigated (Anastasiou-Alexopoulou 2003). In the early twelfth century, Salamis was apparently a destination for refugees

of the palatial collapse and Kanakia may have been one of several sites on the island to receive them until circa 1150, when it was finally abandoned.

Ayios Konstantinos is a small village of the Mycenaean palatial period, situated on a high ridge overlooking the southeastern coast of the Methana peninsula. Unlike Kanakia, the settlement had no easy access to the sea, and so probably supported an agropastoral community exploiting terrestrial resources and routes. Yet among its humble buildings it housed a remarkable sanctuary, important for numerous reasons: its inconspicuous position within a simple village; the in situ condition of the remains, which permits chronology and ritual performance to be reconstituted; and the distinctiveness of the cult objects, which show local variability that cannot be characterized as a chronological effect (Hamilakis 2003; Hamilakis and Konsolaki 2004; Konsolaki-Yiannopoulou 1999, 2001, 2002, 2003b). The cult centered on the small Room A (4.3 × 2.6 meters), whose furnishings consisted of a floor of mixed earth and pebbles, a stepped bench in the northwest corner opposite the entrance, a low platform along the south wall, a podium in the center of the room, and a hearth in the southeast corner (Fig. 7.12). The finds date the use of the room to LH IIIA–LH IIIB. On and around the bench, excavators found more than 150 terracotta figurines, tripod altar tables, pottery, and a triton shell similar to those found in Minoan shrines. The corpus of figurines is unusual in that it consists mainly of bovids (cattle and oxen) and horses, with several rare groups including horses with helmeted riders, horses with chariot groups, and ridden and yoked oxen. The standard Mycenaean female figurines that are so abundant elsewhere are virtually absent. Other aspects of the sanctuary are well attested elsewhere, however. Like most Mycenaean cult places outside the palaces, this sanctuary lacks monumental construction or decorative elaboration. The pottery includes kylikes, bowls, alabastra, and rhyta, all common ritual shapes. Certain structural features, a stepped bench on which figurines were displayed, and platforms on the wall opposite the bench and in the center of the room, probably served as attention-focusing devices in the rituals and connect this sanctuary with others such as the Temple in the Cult Centre at Mycenae. Of utmost significance is the hearth, which was filled with ash and animal bones as well as scattered sherds from tripod cooking pots. Analysis of the faunal remains revealed a predominance of burnt juvenile pig bones, with lesser representation of sheep and goat (Hamilakis 2003; Hamilakis and Konsolaki 2004). The presence of all body parts suggests that these animals were burnt offerings (holocausts) to the deity rather than meals roasted for human consumption. The destruction of the entire animal body is perhaps to be understood in terms of the symbolic consumption of the offering by the deity (Hamilakis and Konsolaki 2004: 145). This is the first evidence found in a primary use context for burnt animal offerings in Mycenaean Greece, although the practice of animal sacrifice followed by human consumption was certainly widespread (Hamilakis and Konsolaki 2004: 144).



7.12 Partial plan of excavated Mycenaean structures, Ayios Konstantinos, Methana, with Room A indicated. Konsolaki-Yiannopoulou 2002: 26, fig. 1. Courtesy of the Swedish Institute at Athens.

In such close quarters, the performance of ritual at Ayios Konstantinos may have created an embodied sensory experience of food, drink, music (the triton shell used as a horn), and symbolic communication with deities and ancestors through the sights and smells of burnt offerings (Hamilakis and Konsolaki 2004: 146–47).

The anomalous features at Ayios Konstantinos are difficult to assess, since we possess few Mycenaean sanctuaries and thus do not know the true range of variation. We do not know whether the sanctuary was autonomous, serving

the needs of a small rural community, or tethered to a regional center, such as Megali Magoula (Konsolaki-Yiannopoulou 1999, 2003b). Ayios Konstantinos may have been like one of the outlying communities to which the palaces sent animals for sacrifices and feasting, as attested in the Linear B archives at Pylos and interpreted from a large deposit of animal bones and tableware at Tsoungiza (Bennet 2001: 33; Dabney et al. 2004).

Kolonna itself was occupied throughout the Mycenaean palatial period, as we know from pottery and burials, but there is little architecture that can be definitively attributed to LH IIIA–IIIB, and the surviving material is sufficiently meager that the continuing status of Kolonna as a center of major political and economic importance is in doubt. There are mitigating circumstances, however. The necropolis on nearby Windmill Hill indicates a sizable population, and extensive leveling in the Archaic and Hellenistic periods has obliterated at least some of the earlier architectural complexes. Remains of buildings and terraces underneath later structures, exposed in recent excavations in the West Complex and the south slope, may be part of the "missing" fourteenth to thirteenth century center (Felten 2007: 18–19; Felten et al. 2008). The ceramic material and the tombs demonstrate that Kolonna had been incorporated into the Mycenaean koiné, while imports from Cyprus and the southeastern Aegean show that Kolonna remained connected to regional and interregional maritime trade.

Elsewhere on Aigina, there are ample signs that influences from the Argolid were pervasive in the palatial period. The later sanctuary of Aphaia in the northeastern corner of the island was possibly an open-air hill sanctuary already in the LBA (Pilafidis-Williams 1998). The presence of standard terracotta human and animal figurines implies the adoption of Mycenaean cult practices. Neutron activation analyses carried out on sherds and figurine fragments from the site identified an origin in the Argolid for a high percentage of both groups (Pilafidis-Williams 1998: 166–81). If we combine this evidence with the limited but growing material from Kolonna, a picture emerges of an island thoroughly invested by Mycenaean influences from the Argolid no later than LH IIIA2, and possibly earlier.

The critical juncture at which hegemony in the Saronic passed from Kolonna to Mycenae seems therefore to fall sometime early in LH IIIA, i.e., the first half of the fourteenth century. This has been seen as some form of conflict or competition (Pullen and Tartaron 2007), but the nature of the interaction and resulting transformation is unclear. Was it a violent takeover of territory and trade routes, or was it an evolutionary process in which Mycenae's superior resources and broader networks of relations around the Aegean and beyond gradually rendered Kolonna irrelevant? There is no obvious evidence of destruction at Kolonna in this period, or necessarily of retrenchment; indeed, recent excavations indicate that "... the whole enlarged settlement was in use at least until LH IIIB" (Felten 2007: 19). Nor is there much clarity about Mycenae's

specific endeavors abroad since the early Mycenaean period there is known mainly from burials, and even LH IIIA settlement in and around the citadel is poorly known because of the extensive rebuilding programs in LH IIIB (French et al. 2003; Shelton 2010).

On balance, the second scenario seems more likely and has been offered as a partial explanation for the emergence of Mycenae to prominence in the Argolid (Voutsaki 1995, 1998, 1999, 2001). Sofia Voutsaki (1999: 113–14) makes a compelling case that Mycenae outmaneuvered Argive rivals such as Lerna and Asine to forge strong ties with partners on Aigina, the Cyclades, Kythera, and Crete. This network of alliances, giving access to exotic goods and raw material wealth – displayed or fashioned into high-status items deposited ultimately in monumental tombs – allowed elites at Mycenae to differentiate themselves from their counterparts in the Argolid and to position themselves, in social network terms, to accumulate ties preferentially and thus to suppress competition. As mentioned above, a similar scenario has been proposed with Kolonna as the dominant node in the Saronic Gulf, and Kolonna may even have played a role in suppressing the emergence of a palace state in the Corinthia (Pullen and Tartaron 2007: 157). Nevertheless, groups in the Argolid at Asine, Argos, Midea/Dendra, Tiryns, and elsewhere continued to bury exotic items and other forms of wealth with their dead at least through LH IIIA, before the concentration of wealth in burials was increasingly restricted to Mycenae in LH IIIB (Burns 2010: 168–90).

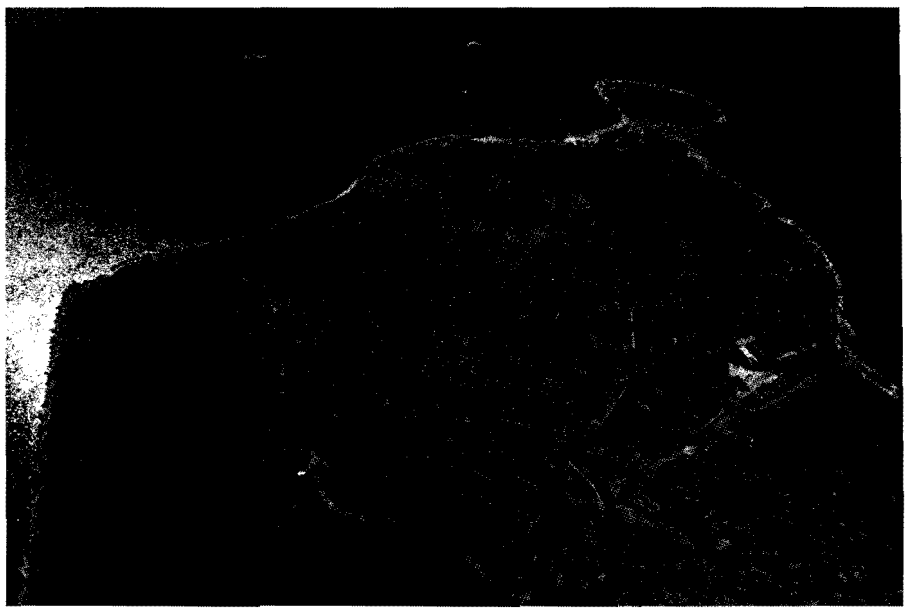
Thus, we can establish the likelihood, but not the certainty, that it was Mycenae that carved out maritime networks in the Saronic Gulf before LH IIIB. Given this ambiguity, it is the smaller settlements located in between Kolonna and Mycenae, such as Megali Magoula, with material spanning LH IIB–LH IIIA, and the later foundations at Kanakia and Ayios Konstantinos, through which we witness the gradual transfer of the Saronic region from the Aiginetan to the Mycenaean sphere of influence. The last location considered in this case study, the coastal site of Korphos-Kalamianos, presents another perspective on the Bronze Age Saronic maritime small world as a settlement that alternated over time between prominence and insignificance, between high and low connectedness. A consideration of this settlement from the dawn of the Bronze Age to the end of the Mycenaean palatial period will help to round out our diachronic narrative.

Korphos-Kalamianos and the Saronic Small World

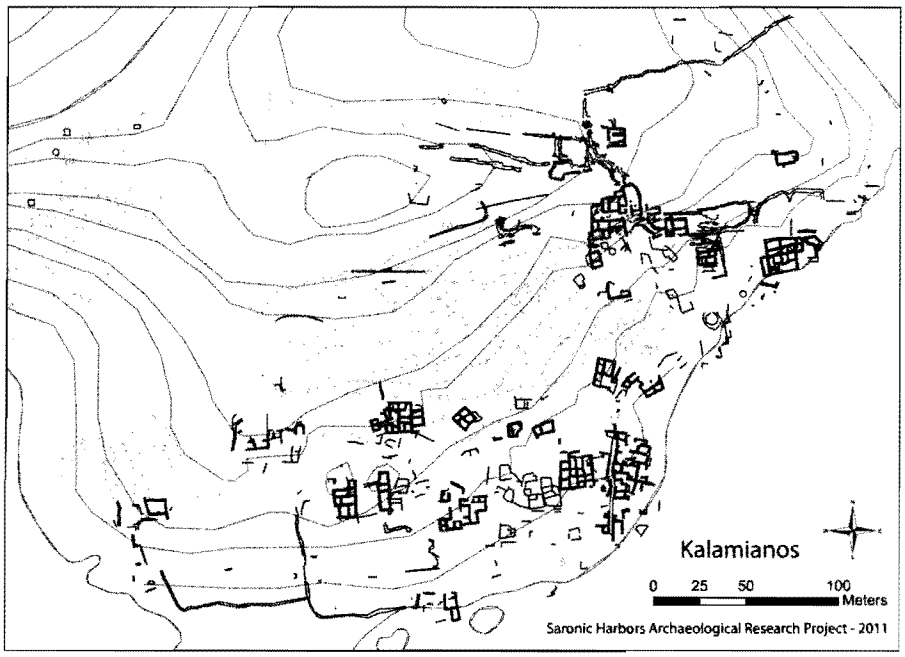
In 2001, members of the Eastern Korinthia Archaeological Survey (EKAS) discovered a large Mycenaean architectural complex at the location *Kalamianos* near the village of Korphos, on the rugged Saronic coast of the southeastern Corinthia (Fig. 7.13; Rothaus et al. 2003; Tartaron et al. 2003). The importance of the site was instantly clear: walls and foundations of buildings of Mycenaean

7.13 Digital terrain model of the Korphos region.

type, some of them monumental, are exposed on the surface of the gentle seaside slope above the cape known as *Akrotirio Trelli*, covering almost eight hectares on land and an unknown further extent now submerged underwater (Fig. 7.14). In 2006, the Saronic Harbors Archaeological Research Project (SHARP), which I co-direct with Daniel J. Pullen, was constituted for the purpose of initiating investigations on the site and in its surroundings.[5] From 2007 to 2009, a first phase of surface investigations was carried out, comprising detailed mapping and architectural study, a surface survey on the site and in a zone of seven square kilometers around it, geomorphological and environmental research, initial underwater investigations, the recording of oral histories, and various



7.14 Aerial photograph of the Kalamianos site. Balloon photograph by Kostas Xenikakis and Symeon Gesafides.



7.15 GIS plan of architecture and other features at Kalamianos. Photo by author.

specialist studies of the artifacts collected by the survey. (For a detailed preliminary report, see Tartaron et al. 2011.) SHARP hopes to undertake excavations at Kalamianos at a future date.

The site consists of an urban settlement preserved as stone architectural foundations and walls occupying approximately 4.5 hectares set within a town wall enclosing around eight hectares (Fig. 7.15). The "empty" 3.5 hectares seem to have been used for agricultural terraces and to quarry the settlement's building stone. Because of a unique convergence of tectonic activity, erosion, and human history, these features are exposed on the surface, giving us a rare opportunity to study a virtually complete Mycenaean settlement. The buildings employ a characteristic Mycenaean large-stone and -rubble construction, with foundations and walls preserved in situ, surrounded by massive stone collapse that indicates the considerable height of the original walls (Fig. 7.16). To date we have recorded over 1,200 walls and more than 50 buildings.

Although Kalamianos witnessed human activity at detectable levels during much of the Bronze Age, the urban settlement was a new foundation, laid out with a strong measure of central planning in a short period of time beginning around 1300 BC or a little earlier. Most buildings are oriented roughly to the cardinal directions, with long axes either north–south or east–west. Yet neither the layout nor the buildings themselves are uniform across the site. In certain areas, multiroom buildings cluster to form complexes, whereas elsewhere buildings are free-standing and often set at a distance from one another. Moreover, some

of the buildings can be described as monumental while others are more modest in size and architectural elaboration. These contrasts suggest some form of differentiation that may be social, functional, chronological, or some combination thereof.

The chronology of the Kalamianos site was firmly established by a gridded intensive surface survey. Artifacts and features were recorded in regular 25 × 25 meter grids, and special collections were made from the interior spaces and rubble cores of intact buildings. The canonical masonry of the walls provides a rough chronology in the palatial period (circa 1400–1200 BC), but the retrieval of LH IIIB pottery built into the cores of the walls of many buildings provides a *terminus post quem* that indicates a construction date in the thirteenth century. A preliminary analysis of the pottery collected at Kalamianos shows how dominant Mycenaean material is relative to all other periods. If we remove the unidentifiable sherds, LBA makes up 86% with Late Roman coming in a distant second at 5.5%. Also significant is the fact that we have not yet recognized LH IIIC material, meaning that Kalamianos was likely abandoned by around 1200, and so may be closely tied to the palaces and their fate. Postabandonment phases from LH IIIC through Hellenistic are virtually absent.

Geomorphology of an Unlikely Harbor

We have strong evidence that Kalamianos was a harbor settlement in the Mycenaean palatial period, and we have come to believe that it served as Mycenae's principal Saronic harbor in the thirteenth century. Yet we could never have imagined making such bold statements upon first encountering the site. Kalamianos is by no means an obvious location for an ancient harbor: a shallowly submerged peninsula off the coast makes it impossible for even small boats to avoid the shoals and approach the shore today. We approached the Korphos region as most observers would (e.g., Conlin 1999: 77), assuming that if an ancient harbor were to be found, it would be located in the sheltered, inviting Korphos Bay (Fig. 7.13), but Kalamianos provides a perfect illustration of the point, emphasized in Chapter 5, that we cannot assume that ancient Aegean coastlines possessed the same configurations as their modern counterparts.

The modern coastline in the Korphos region is rugged, dominated by a rocky shoreline that plunges to water depths of three or more meters, with the exception of Korphos Bay. Despite its rugged structure, the Saronic coast offers an abundance of small, sheltered anchorages. This was surely true in ancient times as well, but the configuration of the shoreline has changed dramatically since the Bronze Age due to tectonic displacements. In the Corinthia, tectonic movements have occurred along several major regional extensional fault systems with a complex history of differential fault motions. In low-lying, shallow water contexts like Kalamianos, these forces can bring about significant changes in coastal configuration with even small changes in relative sea level. The narrow

7.16 Example of large-rubble construction of Mycenaean buildings at Kalamianos. Photo by author.

land shelf at Kalamianos slopes gently into the shallow offshore waters, with depths of only several meters within 125 meters of the shoreline, after which the sea floor drops abruptly to 50 meters, and within 500 meters from shore reaches more than 100 meters depth. This feature is known to local fisherman as the "chasm," and is exploited as a particularly fertile fishing ground that has sustained the fishing trade for generations.

We have followed multiple lines of geomorphological evidence to reconstruct the coastline and harbor basins of the Bronze Age. Recently, a Canadian-American team collaborating with EKAS determined that the coastline of Korphos Bay, about three kilometers west of Kalamianos and just southwest of Korphos village, has undergone net subsidence during the Holocene as a result of co-seismic fault motion (Nixon et al. 2009). From a series of cores taken in a salt marsh, they identified up to five phases of local coastal subsidence since the mid-Holocene, associated with seismic events resulting in rapid relative sea-level rise. The transgressive events were recognized by shifts in the abundance of microfossils (foraminifera, thecamoebians) in marsh sediments and correlated with tidal notches in the inshore area. They estimate a relative sea-level rise of about four meters in the last 5,500 years. Members of the same team recognized several beachrock platforms at depths up to 5.9 meters in the inshore areas adjacent to Kalamianos (Rothaus et al. 2003; Nixon et al. 2009). These cemented

beach deposits were formed in the supratidal zone close to sea level and provide a useful indicator of former sea level (Kelletat 2006; Vousdoukas et al. 2007). In spite of the proximity of these two locations, their tectonic histories are not identical; Nixon and colleagues report that Korphos Bay and Kalamianos have distinct and independent sequences controlled by different fault blocks (Nixon et al. 2009: 51–52). This result illustrates how localized tectonic effects can be, with serious implications for coastline reconstruction, while the shared indications of multiple subsidence events support the archaeological evidence of submerged Bronze Age structures and artifacts off the coast at Kalamianos.

The next step toward identifying the configuration of the Bronze Age coastline and harbor basin was taken in 2009, when a collaborative project was initiated between the Canadian Institute in Greece and the Greek Ephorate of Underwater Antiquities (Enalion).[6] More than 400 line kilometers of bathymetry, side-scan sonar, sub-bottom seismic, and magnetic survey data were acquired within a ten-square-kilometer expanse of sea in the Korphos region using a seven-meter Zodiac inflatable survey boat. The bathymetric survey generated a detailed map of the sea-bed relief around the site, and determined the location and configuration of beachrock ridges identified by previous work, which were then mapped using Differential Global Positioning System (DGPS) equipment. The sub-bottom seismic and magnetic survey data provided information on sediment thickness, bedrock structure, and location of buried ballast and pottery materials within the harbor basin. Underwater diver surveys were conducted using scuba equipment to investigate the submerged beachrock platforms and other targets identified by the geophysical survey. These were documented with underwater video and samples were obtained at several locations for ongoing laboratory analysis (grain size, micropalaeontology, pottery studies) and AMS radiocarbon dating of shell materials.

Results

Based on the results of these studies, Joseph Boyce has constructed a preliminary model of the evolving Bronze Age paleoshoreline configuration (Fig. 7.17). The bathymetry clearly identifies a submerged bedrock promontory extending east from Akrotirio Trelli and a drowned isthmus that formerly connected the small islet with the mainland coast. The submerged isthmus divides the inshore area into two separate lagoonal basins (the "western" and "eastern" basins in Fig. 7.17a). Two distinct beachrock platforms (BR-1, BR-2) appear in the bathymetry mapping and were confirmed by diver survey. BR-1 consists of two mound-like beachrock outcrops located on the submerged isthmus, about 100 meters from shore. The mounds are up to 1.2 meters in height, 30 to 40 meters in length, and about 20 meters in width. Both outcrops are elongated roughly parallel with the modern shore and have a basal water depth of 3.2 to 3.6 meters. Cemented into the calcarenite of BR-1 are thousands of Mycenaean sherds, constituting

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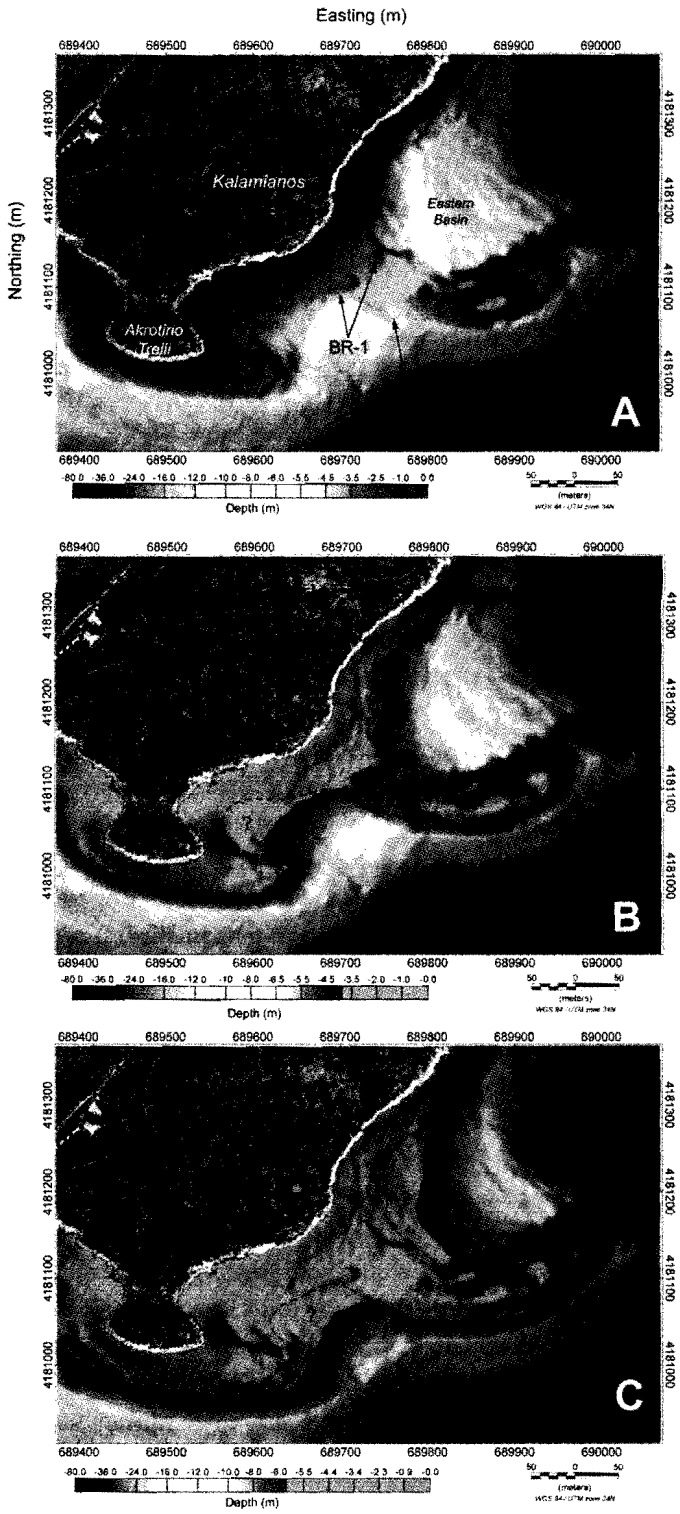
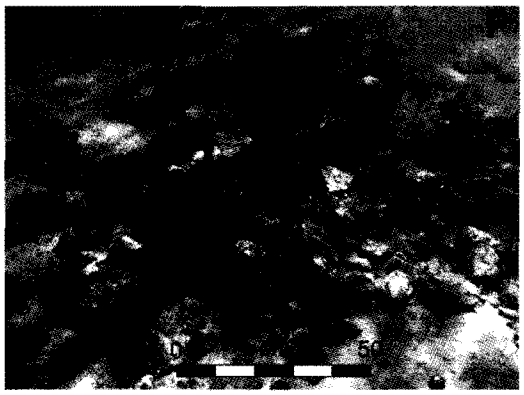


7.17 Reconstructed coastlines and harbor basins at Kalamianos. Courtesy of Joseph I. Boyce, Despina Koutsoumba, and the Trustees of the American School of Classical Studies at Athens.

around 30% to 50% of the beachrock volume and showing little sign of post-depositional reworking or biological alteration. This condition is consistent with rapid burial, as with a tectonic event, in a supratidal low-energy beach environment. The lowermost beachrock platform (BR-2) occurs at a depth of 5.4 to 5.8 meters on the western margin of the submerged promontory. The beachrock is about 0.4 to 0.6 meters in height and incorporates well-preserved sherds of EH pottery making up 10% to 20% of the beachrock volume. This pottery also preserves surface decorative features and lacks significant post-depositional reworking or biological alteration, consistent with rapid burial. Because beachrock forms at the interface of shore and sea, and because the Aegean is nearly tideless, we know that at one time BR-1 and BR-2 were shoreline positions. The pottery cemented into the platforms gives *terminus post quem* dates for the formation of the beachrock; that is, BR-1 could not have formed prior to the Mycenaean period, and BR-2 must have formed in the EBA or later. Yet because the condition of the pottery suggests rapid burial and not gradual transport or wearing away of surfaces, and because our examination of the potsherds to date indicates segregation of the pottery phases with little mixing of earlier or later material, it is highly likely that the broken sherds were incorporated into the deposits roughly during the time of their use, whether as the refuse of normal harbor activities or the result of a catastrophic tectonic event.

The provisional chronology derived from the associated pottery allows us to assign the BR-1 shoreline to LH III (circa 1400–1200 BC) and the BR-2 shoreline to an EH phase (circa 2700–2200 BC).[7] As reconstructed, during the LH (Mycenaean) phase the islet was much more extensive than at present (approximately 500 square meters) but separate from the mainland. The bedrock promontory on the east side of Akrotirio Trelli would have provided a sheltered anchorage site (western basin) with a deep-water approach, the extent of which is approximate because the thickness of the post-Mycenaean sediment fill has yet to be established in seismic and core data. During the Mycenaean phase, small boats could have been pulled up onto shore, and larger ships may have anchored in the western basin or moored at the offshore island. The process of onloading and offloading may have generated much of the broken pottery preserved in BR-1. The western basin would have provided a sheltered anchorage during periods when the dominant winds were blowing from the north or west to southwest, accounting for most wind patterns throughout the year. During periods when winds were blowing from the east and southeast, the offshore island offered some protection from winds and along with the submerged promontory diminished wave energy, but ships might also anchor off the western side of Akrotirio Trelli.

During the EH phase, the local relative sea level was about 5.4 meters below present and the island was connected to the mainland via an isthmus that stood 1.0 to 1.5 meters above sea level. Together, the island and isthmus formed a natural recurved breakwater about 250 meters long and 40 to 50 meters wide,



7.18 Ballast pile identified in inshore waters at Kalamianos. Courtesy of Joseph I. Boyce, Despina Koutsoumba, and Trustees of the American School of Classical Studies at Athens.

creating a well-protected double harbor configuration with many options for moving watercraft as required by weather conditions and a sufficiently deep approach to permit even the largest seagoing vessel of the day – the Cycladic longboat – to anchor close to shore.

Other important clues to the location of anchorage sites were obtained from the distribution of ships' ballast, which can be detected by a magnetic gradiometer survey even when buried at some depth (Boyce et al. 2009). Magnetic surveys in the eastern and western harbor basins at Kalamianos identified a number of magnetic "hotspots" found by subsequent examination to be associated with accumulations of volcanic ballast stones and pottery, which have a significant induced and remnant magnetization compared to the local limestone bedrock and seafloor sediments. Diver reconnaissance surveys of the western basin identified a number of small ballast stone piles and a large, partially exposed ballast mound consisting mainly of andesitic boulders and limestone cobbles (Fig. 7.18). The exposed portion of the ballast mound is four to five meters in diameter and includes scattered Mycenaean pottery fragments. Mapping the distribution of magnetic anomalies and recording their sources is helping to pinpoint the locations of anchorage sites. An intriguing and possibly telling pattern in the magnetic data shows numerous anomalies all around Kalamianos, but few in Korphos Bay. This pattern seems to confirm that Kalamianos was the area's primary anchorage, and there is some evidence that the modern Korphos Bay may have been primarily a wetland in the Bronze Age.

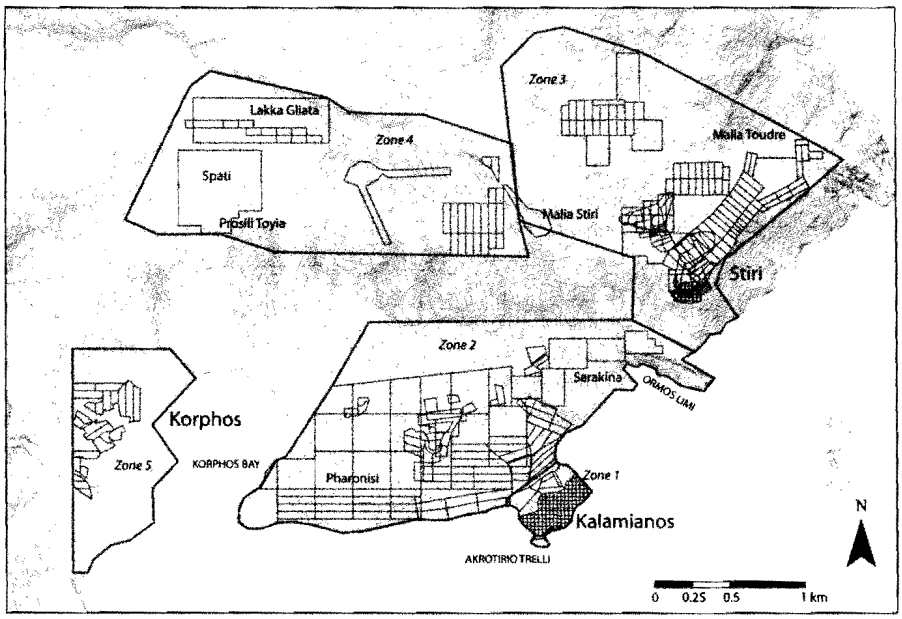
Beyond the Site: Korphos as a Bronze Age Regional Center

SHARP undertook a systematic surface survey of seven square kilometers outside the walls of Kalamianos from 2007 to 2009, using both intensive and extensive methods (Fig. 7.19; Tartaron et al. 2011). The survey aimed to contextualize

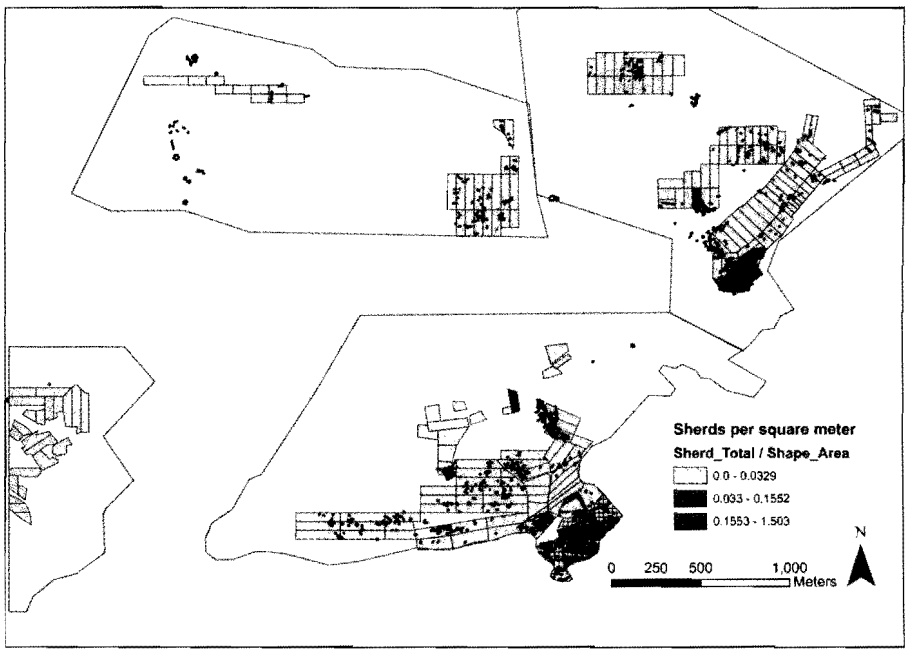
Table 7.2. Classes of EBA and LBA architectural remains in the Korphos region

Early Bronze Age	Quantity	Late Bronze Age	Quantity
Habitation sites (Kalamianos and Stiri)	2	Habitation sites (Kalamianos and Stiri)	2
Stone cairns	Approximately 25	Agricultural terrace walls	Dozens to hundreds of preserved segments
Elliptical stone enclosures	Approximately 20	Fortified stone enclosures	2

Kalamianos in its wider microregional setting, in order to better understand how the harbor town was sustained by and connected to its interior hinterland. We were astonished to discover that the survey area was nearly as rich as Kalamianos itself in ancient architectural remains, similarly exposed on the modern surface (Fig. 7.20). The bulk of this architecture dates either to the EBA or LBA, and we quickly realized that these were the periods in which the Korphos region came to some kind of prominence in the past. Each of these periods is characterized by three kinds of architectural remains (Table 7.2). Taking each in turn, we shall see that there are similarities, but also interesting differences in the locations where people chose to build, and in their overall use of the landscape.



7.19 SHARP survey zones and survey units.



7.20 Ancient architectural remains in the SHARP survey area, marked in black.

Early Bronze Age

The earliest material recovered in survey is pottery belonging to the Final Neolithic/Early Helladic; although it is difficult to be more specific chronologically for unstratified material using only formal criteria, there are reasons to believe that most of these sherds date no earlier than the end of the long FN period or the beginning of EH. Remarkably, the whole range of vessel forms, from tableware to cooking and storage pots, contain inclusions (almost certainly temper) characteristic of the volcanic suite of minerals found on Aigina.[8] The reddish, iron-oxide-rich fabric may derive from local terra rossa clays, tempered with crushed volcanic rock retrieved from andesite imported from Aigina as raw material or as finished ground stone implements. The appearance of Aiginetan volcanic rock in the Korphos region at this early date is consistent with Curtis Runnels' (1985a) finding that the island exported volcanic millstones by Late Neolithic, and it implies that Aigina was already becoming a center in the Saronic region. Close connections with Aigina already in the EBA are not surprising, since Kolonna and Kalamianos are intervisible sites; indeed, on a clear afternoon it is possible to make out the archaeological site of Kolonna from Kalamianos.

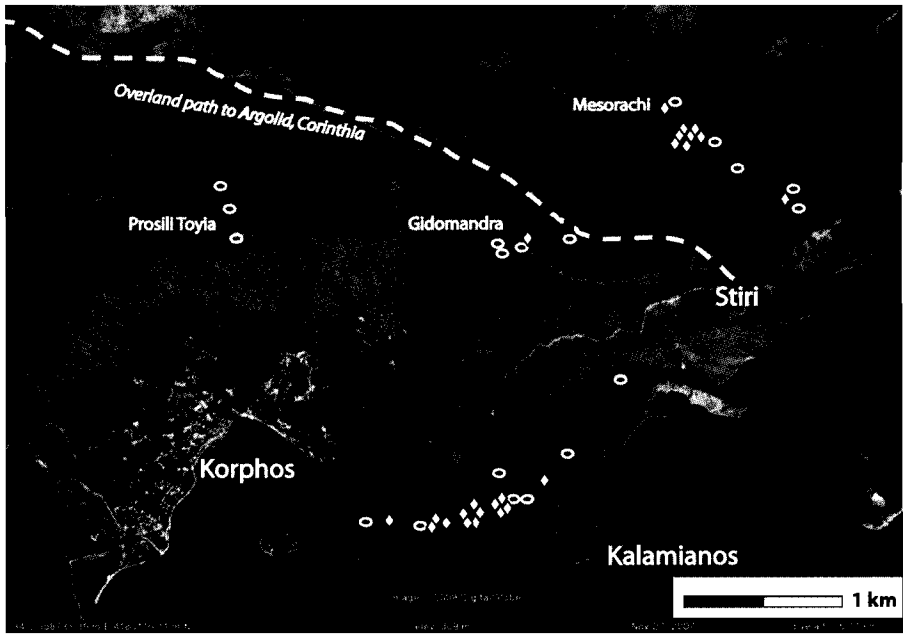
EBA material (architecture, pottery, lithics) is spread throughout the survey area. During the EBA, there were two substantial settlements in the Korphos region: a seaside settlement at Kalamianos – now mostly submerged and without

obvious architectural remains preserved on land – and a quite large settlem at Stiri, perched high above Kalamianos on a coastal bluff (Fig. 7.19). The m striking feature of the poorly preserved settlement at Kalamianos is an obsidi workshop now eroding from gravels near the modern water's edge. All sta of the reduction process, from raw nodules with preserved cortex to finish blades, are present. Inland from Kalamianos, obsidian is ubiquitous, but occ mainly as finished blades and flakes, although cores and other pieces show th tool making took place on a small scale in many locations.

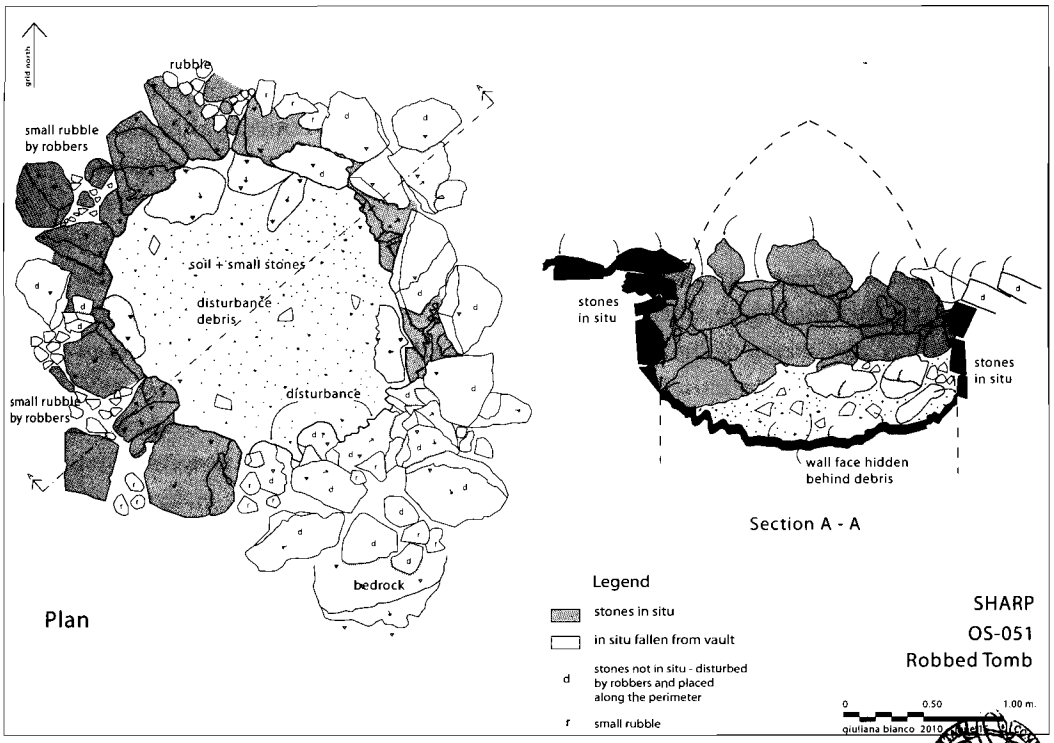
The settlement at Stiri is marked by discrete fields of stone on the sea-facin southern slope, replete with EBA pottery and stone artifacts, which represent th locations of collapsed structures. Several thousand pottery sherds and obsidi flakes and blades were concentrated over an area of approximately four hecta on the peak and surrounding slopes, making Stiri a very substantial settleme for its main period of occupation in EH II. The pottery encompasses a wide ran of types and decorative styles, indicating a thriving domestic settlement wi local and long-distance trade contacts. Two likely motivations for occupyin this location are the vast viewshed over the Saronic Gulf, and ready access to number of small but well-watered upland basins ideal for small-scale agricultur

A second architectural manifestation of the EBA comprises about 25 enigma cairns – amorphous stone piles distributed both on the ridge of the Pharon peninsula north and west of Kalamianos, and in the upland basins to the nor (Fig. 7.21). These cairns can be distinguished from modern field clearance pil by their form, erosional features, and artifactual associations. Pottery retrieve from their interiors is of FN–EH II type, with no certain later material. Th occur in a larger and a smaller size that seem to relate to different function The larger cairns are similar to those we have investigated in the last decade Vayia and Vassa in the northeastern Peloponnese, where collapsed but part preserved wall faces suggest an originally squarish, perhaps tower-like form th we interpreted as collapsed bastions in enclosure walls around EH II settlemen (Tartaron, Pullen, and Noller 2006). Those cairn groups tend to snake throu the landscape, with large cairn mounds connected by wide linear stone pil that we interpreted as walls. There are only two certain cairns of this scale i the survey area, and unlike at Vayia and Vassa, their relationship to know settlements is unclear.

The smaller cairns cannot be interpreted in the same way. They are fa more numerous (23 of 25), and their form is more limited to a round or ellip tical mound of stone, without radiating linear features. In one of the smalle cairns, illicit digging revealed a cavity or chamber built up in a corbellin technique, which suggests the strong possibility of a burial chamber, thoug no finds were discovered inside (Fig. 7.22). Despite the differences betwee the small and large cairns, they share one intriguing feature: most have on or more depressions in their upper surfaces, suggesting a collapsed cavity



7.21 Satellite image with locations of stone cairns (diamonds) and enclosures (ovals). Satellite image © 2009 Google Earth, © 2009, Digital Globe.



7.22 View and drawing of a small cairn on the Pharonisi peninsula. Drawn by Giu… Bianco.

such as the one revealed illicitly. It is thus possible that all of the cair funerary monuments, with simpler and grander versions.

The collapsed cairns of the Korphos region would have been taller tha appear today, and more visible on the landscape locally and from a dis They were placed in prominent ridge-top locations with expansive view and high intervisibility with other EBA cairns and enclosures. Typically, overlooked both the sea and adjacent arable land, suggesting that they meant to be seen from the sea, and possibly also served as territorial ma manifesting the claims of a living community to land and resources thr explicit links of descent from ancestors who occupied them in the past (Mu 1998; Saxe 1970). Whatever the range of functions, the cairns in the Ko area can now be associated with at least a regional, and not simply a l tradition in the northeastern Peloponnese.[9]

The final architectural type comprises approximately 20 walled stone e sures, found in virtually every part of the survey area, which can no confidently dated to the EBA on the basis of associated artifacts – we have recovered later material from the features themselves – as well as geomor logical observations. Though predominantly elliptical in form, they range f round to elliptical to squarish and vary in size from 15 × 12 meters to 25 × meters, translating roughly to between 125 and 700 square meters of inte space (Fig. 7.23). The locations and viewsheds of the enclosures provide the l clues to their functions (Fig. 7.21). Most have excellent views both to the and to nearby arable land below them. Almost every enclosure is potenti intervisible with at least one other, and many with several others, although lack information on vegetation cover and we cannot definitively establish t the enclosures are all contemporary. Yet it appears that they were placed s tematically and strategically on the landscape with a carefully rationalized so purpose. Some potential functions include monitoring stations with views to sea, to agricultural territories, and to an upland basin-to-basin route runn west to give access to the interior Corinthia and the Argolid; collection str tures for agricultural produce; animal enclosures; territorial markers; or fo or similar defensive complexes. Perhaps they combined all of those functio as the strongholds of extended family or kin groups arrayed across a contes agropastoral landscape. Historical and ethnographic examples of contested lan scapes resulting in functionally comparable structures can be found in Gree and the Balkans (e.g., Galaty in press; Galaty, Lee et al. 2009; Karakatsianis 201 Mangalakova 2004; Wagstaff 1965).

There also seems to be a chronological and conceptual association betwe the cairns and enclosures. The stone enclosures are closely associated spatiall with cairns at several locations, but elsewhere they seem to be isolated or sem isolated from other architectural complexes. Yet both are embedded in the sam webs of intervisibility: cairns are visible from enclosures and vice versa. Mo

area subjected to excavation or regional survey; perhaps the most compelling demonstration of general vitality emerges from systematic, intensive surveys. The Methana Survey team, though by their own account working in a "rough and rocky place," nevertheless recorded fifty-one sites with EH pottery in the limited confines of the Methana peninsula, roughly evenly divided between EH I and EH II (Mee and Taylor 1997: 42–51). SHARP has located dozens of scatters of EH sherds in its own small survey area, many of these not directly associated with the EH sites or architectural features described above.

The data from SHARP and Methana are again informative about the period of abandonment, or at least retrenchment, between EH III and the end of the MH period. SHARP has produced no certain EH III or MH pottery, with the possible exception of a few sherds with standard Aiginetan potters' marks that may fall sometime in MH I–LH I. On the Methana peninsula, both EH III and MH sherds are rare, though present (Mee and Taylor 1997: 51–52). This is precisely the period in which the vibrant Saronic small world of the EBA collapsed, compelling Kolonna to refocus its energy beyond the Saronic Gulf. That the gulf was not an entirely empty seascape, however, is underscored by the recent discovery on Salamis of a large MH II–III acropolis-type settlement at Sklavos, on the island's southern coast facing Aigina (Lolos 2010). It seems, therefore, that scattered pockets of the Saronic still supported substantial communities, while most places were reduced to tiny hamlets or abandoned altogether.

Late Bronze Age

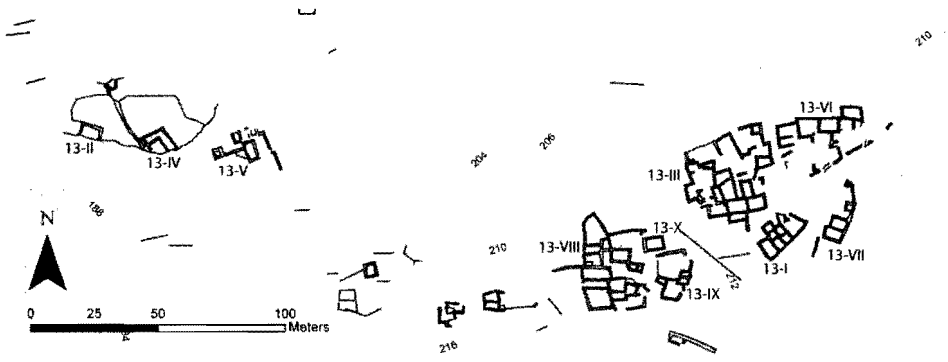
During the LBA, the Mycenaean harbor settlement at Kalamianos was the main, anchoring center of the Korphos region. Pottery recovered at the site indicates that a settlement of modest size had taken root in the fourteenth century – just less than 10% of the LH assemblage at Kalamianos belongs securely to LH IIIA. From this inconspicuous beginning, in the early thirteenth century, i.e., the LH IIIB1 pottery phase, the urban harbor complex was built and became one of the more important sites in the Saronic region. It was also in the thirteenth century that the Mycenaeans developed the hinterland to harness the agricultural and pastoral potential of the lowland and upland zones, in support of Kalamianos' maritime (and perhaps overland) connection to the Mycenaean economy. The physical traces of this expansion include a second substantial settlement built at Stiri over a part of the old EH site, a large fortified enclosure in the territory between Kalamianos and Stiri, and dozens of agricultural terrace walls of Mycenaean date.

The Mycenaean settlement at Stiri sits on a ridge overlooking a double-lobed basin to the west, and the sea to the east and south (Fig. 7.24). As at Kalamianos, the foundations and lower walls of several distinct complexes of well-constructed buildings are exposed on the surface, preserving the plan of the settlement in its apparent entirety (Fig. 7.25). At around 1.4 hectares

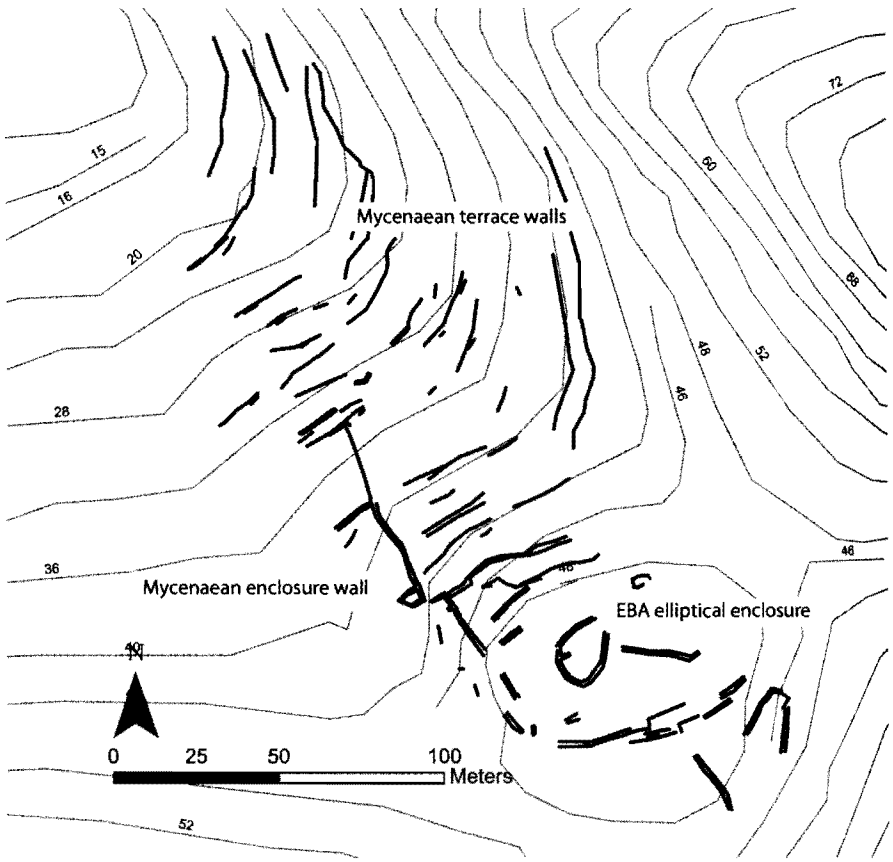
7.24 View of Stiri and adjacent polje, with location of the Mycenaean site indicated.

in extent, Mycenaean Stiri is less than one-fifth the size of Kalamianos. The masonry technique is essentially the same as at Kalamianos, although Stiri lacks the monumentality of some buildings at the harbor site, and the varied building plans do not match those at Kalamianos particularly closely. Yet the buildings are remarkable in their own right, such as the sprawling central structure 13-III that consists of between 35 and 40 rooms. The Mycenaean artifacts recovered within rooms and wall cores belong exclusively to LH IIIB, showing that Stiri was a later foundation than Kalamianos, but also that the two settlements overlap chronologically in that phase.

Location must have been an important factor in the role Stiri played in the Mycenaean coastal world of the thirteenth century BC. Perched on a high sea cliff with an unobstructed view of Kalamianos, Stiri was undoubtedly in constant communication with the harbor town below. A sweeping viewshed extending from Athens and Salamis in the northeast to Aigina and Methana in the east and southeast allowed the inhabitants to monitor seaborne traffic on the Saronic.



7.25 Differential GPS plan of Mycenaean architecture at Stiri.



7.26 Plan of architectural features at the "saddle site" north of Kalamianos.

A second important function is suggested by the basin west of the site, which is well watered by springs and winter rains, making agriculture and pastoralism possible on a relatively large scale. Intensive cultivation of wheat and olives has been practiced here in recent times, along with grazing of sheep and goats on wheat stubble and in the wooded hills all around. This productive landscape may have been systematically developed to provide staple crops, animals and their secondary products, and trade goods to the harbor community at Kalamianos.

In the sloping terrain between Kalamianos and Stiri, a large Mycenaean walled enclosure was situated in a saddle between two low peaks immediately north of Kalamianos, consisting of a large space enclosed by partially preserved fortification-grade walls that can be traced for about 180 meters (Fig. 7.26). Within the presumed interior, there are many terrace walls of Mycenaean type on the north slope facing a large basin that may have been another locus of agricultural activity. Also preserved inside the fortified area is one of the elliptical stone enclosures of EBA date. To the south, the sea view is limited, but the harbor at Kalamianos is plainly visible. This site may have been the

7.27 Monumental Mycenaean agricultural terrace walls at Stiri.

agricultural estate of a high-status family or individual, connected closely with the settlement at Kalamianos and perhaps with elite families there.

In the territories adjacent to the two main settlement sites, the Mycenaeans invested heavily in terrace wall construction, apparently to maximize agricultural potential in this stony, semi-arid landscape. The terrace walls are the subject of a recent dissertation by Lynne Kvapil, whose important contribution has been to systematize the documentation and dating of terraces throughout the study area (Kvapil 2012). Systems of terracing dating to the Mycenaean period have been found at Kalamianos itself, on the western slopes of the hill north of Kalamianos, on the south-facing slope of the Pharonisi peninsula, in the saddle area described above, and on the steep south slope below Stiri. At Stiri in particular, the slope facing the sea was terraced with massive walls in Mycenaean masonry technique, sections of which survive on contours from top to bottom (Fig. 7.27). One aspect of their construction that ties them closely to Mycenaean architectural practice is the use of stones with flat outer faces and long, triangular trailing edges that help to bond the wall with the terrace behind it. This technique is also clearly seen in wall building at the two settlement sites. The southern slope at Stiri is the steepest on which the Mycenaeans built terraces, partially explaining their monumentality, but just as important was their prominent visibility from the sea. As at Kalamianos, monumentality and high visibility seem to have been as integral to the design of the built environment as their utilitarian function. Although there were several basins suitable for agricultural exploitation in both the lowland and upland zones, it seems that

the Mycenaeans felt the need to maximize agricultural yields to support the population of this microregion and perhaps to generate a surplus for shipment from the harbor at Kalamianos.

Comparing Early and Late Bronze Age Exploitation

There are similarities, but also important differences, in EH and LH patterns of activity in the Korphos region. The Mycenaean inhabitants occupied Kalamianos and Stiri as their primary settlements, as had their counterparts in EH. These locations make sense as the lowland and upland anchors of the region, giving access to the sea at Kalamianos and agropastoral resources as well as panoramic viewsheds at Stiri. In LH IIIB, Kalamianos was a much larger and more important settlement than Stiri, while in the EBA the relationship was reversed. Mycenaean habitation at Stiri was confined primarily to the ridge top; the steep south-facing slope was apparently used only for agricultural purposes as many segments of strongly built terrace walls survive but counts of LBA artifacts are quite low.

Beyond the two main settlement sites, the differences in the distribution of remains and use of the landscape are striking. The most distinctive difference is that EBA activity, measured both by architecture and portable artifacts, was much more extensive throughout the survey area, while the Mycenaean activity pattern was more spatially limited, focused on the habitation sites and their immediate surroundings. A likely explanation for this difference is that EBA activity was the result of a long development, begun already in FN, and thus a "settling into" the landscape. Depending on how far back into FN the activity began (and this we do not know at present), a period of a millennium or more is indicated to the end of EH II. The EBA signature developed over a relatively long period of gestation leading to a flourishing and complex society in EH II.

The Mycenaean distribution, on the other hand, reflects a deliberate but short-lived transformation of physical and social landscapes in which emigrants, most likely from Mycenae, arrived in the late fourteenth century to a sparsely populated area, built a harbor at Kalamianos, and developed the hinterland to support it. The identification of Mycenae as colonizer of Kalamianos rests on circumstantial evidence, which taken together presents an argument that we have found persuasive, if not yet conclusive. It is perhaps most accurate to say that the evidence draws us to the Argolid, with Mycenae consistently the most plausible option. The Mycenaean fineware collected from Kalamianos and Stiri exhibits general affinities with the Argolid, while the architecture offers compelling parallels in construction techniques and monumentality (Tartaron et al. 2011). The large-rubble construction of buildings at Kalamianos can be classified as Type III cyclopean masonry in Claire Loader's (1999: 27–31) typology, characteristic of the Argolid and other Mycenaean core areas. The Mycenaean

agricultural terrace walls, particularly at Stiri, show strong similarities to those in the vicinity of Mycenae itself. It is also possible to make a case that Kalamianos was the most conveniently located anchorage offering Mycenae access to the Saronic Gulf, Attica, and the Isthmus of Corinth, particularly since the evidence of Mycenae's presence in the northern Corinthia is slim (Pullen and Tartaron 2007; Tartaron 2010). There is a modern land route beginning at Korphos or Stiri, which follows a series of interconnected east- to west-trending basins and passes through Angelokastro and Limnes, before joining the Mycenaean road at Berbati to finally reach Mycenae after a journey of approximately 50 kilometers on foot. This route is attested by villagers in the Korphos/Sophiko area, and members of SHARP have made the walk on several occasions in a single day, requiring between nine and thirteen hours depending on fitness. It is by no means an easy walk, but even making allowances for ancient tracks rather than modern roads, a two-day journey with a donkey would not have been difficult.

Mycenae's interest beyond the connectivity offered by the maritime station was agricultural intensification in small pockets of fertility, while the upland zone also monitored the sea and connected the region to routes leading to the interior of the Corinthia and the Argolid. The timeframe of their arrival in the late fourteenth or beginning of the thirteenth century, as suggested by the ceramic evidence, coincides with the explosion of sites with Mycenaean characteristics on the islands and shores of the Saronic (see Fig. 7.10). By the late fourteenth century, the penetration of Mycenaean material culture was profound, encompassing not only styles of architecture and pottery, but also burial and cult practices, including the objects that accompanied them – such as the ubiquitous anthropomorphic and zoomorphic figurines that might betoken the propagation of a state religion.

Mycenae's presence in the Korphos region was intense but brief, lasting perhaps only 100 or 125 years, before the abandonment of the region circa 1200 BC, roughly synchronous with the collapse of the palace state at Mycenae. The brevity of Mycenae's presence precluded expansion into all niches in the landscape as a normal consequence of development and growth. However, the substance and monumentality of the Mycenaean constructions suggests that they were built for permanence, and surely long-term growth was expected before it was truncated by the collapse of the palaces.

Korphos and the Saronic World through Time

The results of SHARP's field studies permit the outlines of a diachronic narrative for the Korphos region to be interwoven with that of Kolonna and other communities to develop a larger history of the Saronic maritime small world.

Sometime before the beginning of the third millennium BC, potters in the Korphos area were importing Aiginetan volcanic stone, which they crushed and

used as temper in the full range of functional pottery classes. Incipient settlement in the SHARP survey zone in FN/EH I grew steadily, culminating in a highly developed economic and social exploitation of the landscape in EH II. During that phase, raw obsidian was imported from Melos and worked into tools at a workshop overlooking the western basin of the harbor at Kalamianos. Stiri was a large settlement well situated for agropastoral subsistence and for expansive views over the Saronic Gulf. The pottery assemblage at Stiri represents a full domestic suite, and shows that the inhabitants were connected to sources of contemporary shapes and decorative styles. The Korphos region can thus be counted among the nucleated and socially complex coastal centers of the EH II Aegean. At that time, Kolonna, with its large settlement and two phases of a grand corridor house, was the most important settlement in the Saronic and well along its trajectory toward regional domination. This was a period of cohesion in the Saronic small world as settlements in places like Kalamianos, Kiapha Thiti, and the Methana peninsula interacted with Aigina, and, although it is nearly impossible to prove, surely with neighboring small settlements as well.

From EH III to the beginning of the Mycenaean palatial period, Kalamianos is almost invisible archaeologically, like so many other small settlements of the northeastern Peloponnese. This hiatus lasted even longer than for the many communities that were founded or revitalized in MH III or LH I. The scant evidence of human presence, consisting of a few sherds at Kalamianos with standard Aiginetan potmarks, is insufficient to project more than a sparse, inward-focused population engaged in agropastoral pursuits, with limited external contacts between 2200 and 1400 BC. This dramatic depopulation prevailed throughout the Saronic, with the principal exception of Kolonna, which exploded into complexity with continuous expansion of the settlement, characterized by massive building programs of fortifications and dwellings. Kolonnans now developed long-distance contacts with Minoan Crete, the Cycladic islands, central Greece, and the interior Peloponnese, in part to compensate for the deep reduction in connectivity within the Saronic Gulf. They imported pottery and may have hosted a small enclave of Minoan potters, but soon Aiginetan potters developed their own highly successful export industry that persisted well into the Mycenaean palatial period, and for specific shapes even to its very end.

The recolonization of the northeastern Peloponnese and the lands bordering the Saronic in MH III–LH I, and the events of the Shaft Grave Era in the Argolid, seem to have drawn Kolonna's attention back to the Saronic Gulf. The earliest phases of the LBA marked a time of prosperity and high connectivity between Aigina and the settlements on the islands and coasts of the Saronic, along with more distant partners in Attica, the northeastern Peloponnese, central Greece, and the Aegean Islands. Mycenaeans from the Argolid expanded their interests and exports only gradually into the Saronic region. Mycenaean-style painted pottery of LH I–IIA is rare in the circum-Saronic area. The Saronic

small world, although nested geographically within the Helladic realm, may have been culturally distinct from the emerging Mycenaean palatial state in the Argolid, and seems to have resisted its expansion into the Saronic Gulf. By LH IIB, when Mycenaean fineware pottery had begun to appear around the Saronic, the inhabitants of Megali Magoula in the Troizenia were building tholos tombs, perhaps signaling the establishment of a Mycenaean foothold on the western shores of the Saronic. During the crucial transition to early LH IIIA, Kalamianos was part of a contested periphery – the setting for a competitive process in which Mycenae extended its sphere of influence into the Saronic Gulf at the expense of Aigina. The foundation of a number of centers large and small in LH IIIA, such as Kanakia and Ayios Konstantinos, coincided with the decline of the Aiginetan pottery export industry and the adoption of Mycenaean cult practices at Aphaia.

The founding of a port town at Kalamianos, probably by Mycenae circa 1300 BC or slightly earlier, served two objectives: first it was a foothold and safe haven for maritime economic and military activity in the Saronic, and second it was a definitive statement of Mycenae's ascendancy. This statement is encoded in the monumentality of the architecture at Kalamianos and the terrace walls at Stiri, quite remarkable in contrast to other Saronic settlements of the period, marking Kalamianos as a second-order center and probably Mycenae's principal Saronic harbor. This display of power was probably not specifically aimed at Aigina, since Kolonna by that time was no longer a legitimate threat. Instead, it was a characteristic habit of the Mycenaeans of the Argolid to build monumental structures as an advertisement of power, from the shaft graves and tholos tombs to the fortification walls and elaborate buildings on their citadels. The imposing architecture at Kalamianos and Stiri was meant to be seen from the sea.

Kalamianos was a coastscape and the anchor of a maritime microregion characterized by highly developed internal organization, which was at the same time the creation of the wider Mycenaean world, to which it was closely connected by both sea and land. The Korphos region was developed to support the role of Kalamianos as a working harbor town, giving rise to a second substantial settlement at Stiri and a system of agricultural terracing. Kalamianos was not a long-lived settlement, however. The rapid and intensive development of this microregion ceased abruptly circa 1200 BC, when Kalamianos and the other sites were abandoned, suggesting a strong association with the fate of the palaces and many other settlements that were destroyed or abandoned at that time.

Oral History and Kalamianos

In the absence of written records in prehistory, different forms of ethnographic and ethnoarchaeological research can contribute to enlightening hypotheses about the conditions of seafaring and the social and economic networks that

prevailed in ancient small worlds. Members of SHARP were fortunate to be able to interview elder residents of Korphos, who described details of life in the village in the years during and before World War II, when there were no paved roads to Korphos and no motorized seacraft, yet the Saronic Gulf was teeming with social and economic activity. Lita Tzortzopoulou-Gregory conducted a program of interviews between May 2007 and June 2009, which I have mined for the observations that follow.[10] Of particular relevance to the topic of this chapter are the relationships that the inhabitants of Korphos maintained with the inland village of Sophiko on the one hand, and the coasts and islands of the Saronic on the other.

Prior to the Second World War, Korphos was a fishing and seafaring village, with perhaps 90% of the male population engaged in fishing or merchant activities on the Saronic Gulf. Young boys learned by doing, taking to the boats at a young age to accompany their fathers and grandfathers on their rounds. The more ambitious or better connected aspired to be sea traders because there was good money in it. The fishermen were generally poor, as fish were plentiful and cheap throughout the Gulf. Their work provided subsistence and fish to exchange with farmers, shepherds, and forest workers for needed commodities. There were approximately 30 families living in Korphos, each owning at least one fishing boat or caique. As many as 60 rowboats, fishing boats, caiques, and small sailing boats were anchored at Korphos. Most of the boats were built at Perama on Salamis island.

The consensus among the seagoing Korphiotes is that the Saronic is a relatively trouble-free body of water to navigate. They use the word *limni* (lake) to describe it, asserting that the winds and currents are not especially dangerous, and the shallows and other hazards are few. This is not to say that environmental conditions had little effect on voyages. One experienced seaman reported that the trip from Korphos to Aigina in a small sailing boat could take anywhere from three to seven hours, depending on the winds. On longer trips, the merchants would overnight at ports of call in their boats before setting off for home the next morning; they generally did not travel on the Saronic at night.

The fishermen worked in local waters and preferred the fishing ground between Kalamianos and the small island of Ayios Petros offshore. It was there that the shallow waters off Kalamianos gave way to the steep drop-off of the sea bed, known locally as the "chasm," where the catch was plentiful. The fishermen rarely ventured more than a few kilometers from Korphos. In winter, fishing continued but kept close to shore. In addition to subsistence use, fish and seafood were transported by donkey to Sophiko, a trip of approximately one and a half hours by an old path that followed a stream bed west of town to the upland basins that open west to the interior Corinthia. One older woman remembers bartering for goods with Sophiko residents who did not have cash to pay for the fish.

Korphos was, in the early twentieth century, a *proti skala*, a major port in the Saronic trade, and this afforded the sea traders a more varied life, intimately connected with both inland producers and the merchants at ports and anchorages around the Saronic. Farmers and herders from Sophiko village owned most of the land in the hinterland of Korphos, and they engaged in several traditional pursuits. Farmers grew cereals, chiefly wheat but also barley, and tended olives, mainly for their own subsistence needs with the surplus traded in Korphos and elsewhere. Wheat and barley were also grown in the limited lowland basins, including the one directly above the Kalamianos site. Sheep and goat were herded in the upland areas and their primary and secondary products were offered in trade for maritime products and services. The most prevalent occupation in the upland zones around Korphos, however, was forest work. Wood, charcoal (mainly from bushes and bush roots), and pine resin were harvested in this heavily forested region and brought on donkeys to Korphos for shipment abroad. The sea traders purchased these varied products and exported them to Saronic markets, either in their own boats or in larger ships they contracted for the purpose. It was not only at Korphos that these products were collected for shipment. Often, when a farmer's fields or trees were closer to one of the many tiny anchorages in the area, the produce would be brought down and picked up there. One resident reported that the sea traders often took advantage of the inland producers who were dependent on sea transport by bargaining for unfairly low prices.

There was not a single dominant port in the Saronic, but instead a handful of large, bustling nodes of maritime connectivity. Several interviewees recalled bringing wood, charcoal, resin, and manure to markets at Piraeus, Eleusis, Salamis, Aigina, Poros, Nea Epidauros, and elsewhere. Frequently, a port town specialized in processing certain material or had high demand for specific products. At Eleusis there were factories processing resin, while charcoal and wood were in demand at all of the above-named ports. In exchange, the Korphiotes sought food and staples. From Aigina they imported flour and water jugs (even in modern times tempered with the volcanic inclusions that enhanced their performance), fruits and vegetables from Nea Epidauros, and foodstuffs and water from Piraeus, among many other items. On returning to Korphos, the merchants brought their wares to Sophiko and sometimes beyond, where local buyers acquired them and distributed them further on. The forest industries have long since become economically unprofitable. There are few uses for charcoal,[11] and pine resin, once used in turpentine and other chemical products, has been superseded by synthetic substitutes, while the popularity of resinated wine has declined in recent years. A few farmers continue to harvest resin on a small scale.

Fresh water was and remains scarce in the village, and this was perhaps a strong incentive for Bronze Age people to settle at Kalamianos instead. Water was

retrieved from coastal sites such as Nea Epidauros, Kyra island, and occasionally Kenchreai. One informant describes four men regularly taking a four-meter-long rowboat to Nea Epidauros to fill 150-kilogram barrels with water, taking turns rowing one and a half hours each way. Tiny Kyra island, several kilometers off Kalamianos, had a fine though not copious spring where fishermen would often fill up. In the years after World War II, small boats brought water daily from Piraeus or Salamis as part of government programs. Fetching water by boat was a summer activity, since cisterns in the village filled amply with winter rains. Women and girls traveled by boat or donkey to Kalamianos to wash clothing in two brackish wells there.

Some of the more intrepid seafarers ventured outside the Saronic, one mentioning that he had sailed out to islands such as Siros, and along the eastern Peloponnesian coast. We might think of these as the modern counterparts of the "expert" sailors discussed in previous chapters. Many Korphiotes spent some part of their adult life in the merchant marine, aboard big ships engaged in international commerce. They all returned to the village and their families after several years at sea.

Kinship relations with Sophiko were close, and there was much intermarriage. People also found spouses in Aigina and Salamis; many Korphiotes emigrated to Salamis and Aigina after marriage. This is one demonstration that social imperatives such as maintaining genetic and demographic viability bound together coastal communities in a small world. Another example is that children from Korphos, Nea Epidauros, and other coastal villages were sent to Aigina for high school because these small communities could support nothing more than a one-room elementary school. The notion presented in Chapter 5 that the landward limits of the coastscape were generally the passes and the first-encountered inland nodes finds support in the movements of the Korphiote merchants, as well as the fact that there was little interaction with Corinth before the modern road was built to join the Corinth–Epidauros coastal highway in the 1960s.

When prompted concerning the general orientation of the community, the informants were unanimous that the Korphiotes have always thought of themselves as an island people: they looked to the sea for their livelihood, wore island dress, listened to island music and danced island dances, and created networks of interaction with coastal and island people in the Saronic. They contrasted their outlook with that of the Sophikites, whom they considered inland, "mountain" people. That they nevertheless maintained close social and economic ties with Sophiko indicates the dual orientation of a maritime coastal community, and exemplifies the inland–coastal symbiosis that is an important feature of the dynamism of coastal life. Perhaps the coastal–inland symbiosis between Korphos and Sophiko in modern times is analogous to the relationship between Kalamianos and Stiri in the LBA. Several interviewees spoke of a pre-modern switchback walking path from the lowland north of Kalamianos up

the steep slope to Stiri, used to access the eleventh-century church of Panayia Stiris; thus, although the two sites seem mutually inaccessible, people on foot with their donkeys have managed to overcome an environmental obstacle to preserve connectivity in this microregion.

The Korphos–Sophiko system in the early modern period bears the stamp of a microregion in Horden and Purcell's terms, and Korphos emerges as a coastscape and a maritime coastal community. The people of Korphos forged the link between the terrestrial and maritime worlds and facilitated the exchange of desired commodities. The sea merchants truly occupied a position of centrality with respect to connectivity around the Saronic. Young boys were inculcated in the seafaring life and the essential knowledge was passed down within families, much as we have seen among South Pacific societies. In the first half of the twentieth century, the Saronic Gulf was a vibrant modern small world, with a proliferation of nodes on coasts and islands and innumerable crisscrossing paths connecting them.

What use are these oral histories to us as we contemplate life in the coastscapes of the Mycenaean period? With the customary caution against equating modern times with eras of the remote past, it is possible to suggest that the challenges and opportunities encountered by these two peoples inhabiting a Saronic small world bear many similarities. The traditional lifeways of early twentieth-century people and their Mycenaean counterparts in the Korphos region were not qualitatively dissimilar; they possessed comparable technologies of subsistence and seafaring. They lived at times of modest prosperity and vigorous interaction, when both were highly connected to spheres of interaction on land and sea. Much will have been different, of course; to name just one example, the structures of political power are not comparable. Nevertheless, the information we obtained from local residents tends to support the picture I have constructed from archaeological and ethnographic data, and therefore it seems appropriate to add it to the diverse strands of evidence bearing on the reconstruction of Mycenaean coastal worlds. The theoretical underpinnings of this position rest in a structure–contingency framework (Bintliff 1999; Tartaron 2005: 158–59): essentially, there are long-term structures, corresponding in *annales* terms to the forces of the *longue durée* that influence the configuration of societies and their interactions with the world around them. Among the most important are the environment (including physical geology and geography, climate, and resources) and the human subsistence technologies (agropastoral, maritime) and other adaptive mechanisms (culture) that allow populations to survive and sometimes thrive over time. By establishing structural similarities between two societies or periods, it is acceptable to take the comparisons further, but this may not be done by ignoring the differences, which may reside already in the structural realm but are most salient in medium-term political and economic patterns (*conjonctures*) and in decisive events (*événements*). It is in the

interplay of long-term forces with shorter temporal and smaller spatial contexts that historical contingency arises, giving each locality and community a unique history. My contention is not that we can simply equate the Korphiotes of the early twentieth century with their counterparts at Kalamianos in the LBA. Rather, given key structural similarities of environment, technology, and location in the Saronic Gulf, their respective engagements and worldviews on facing the sea – their connectivity and interaction patterns – may also share important parallels, at least hypothetically as we await future phases of investigation.

Discussion

When considered in terms of a maritime cultural landscape framework, we observe the fluctuation of the Bronze Age Saronic maritime small world between cohesion and fragmentation, as demographic patterns and external opportunities drew Aigina's attention into and away from the Gulf. The hegemony of Aigina in this small world, at least economically, seems to have begun already in the later Neolithic. From there, the Saronic maritime small world developed steadily to a peak in EH II, collapsed from EH III to MH III, revived in the Shaft Grave Era to reach a second peak in LH I–II, until finally (though gradually) Mycenae usurped Kolonna's traditional role. For the coastal communities dotting the coasts and islands of the Saronic Gulf, this transformation entailed not only a new master, but new cultural material and practices, and a reorientation of maritime relations and connections. In effecting this transformation, Mycenae broke apart the old Saronic world and incorporated the region into a larger world of land and sea connections.

I hope to have made a few central points in this extended case study by interweaving the stories of Kolonna and Kalamianos, ones that can be applied usefully to other cases. The Saronic was susceptible to the emergence of maritime small worlds because visual contact, relative ease of movement by sea, and moderate distances facilitated connectivity and the experiential sense of a coherent world. Taking a bottom-up perspective, we can propose that this is important because most Mycenaeans lived and died mostly or wholly within these small-scale settings. For more than a millennium, Kolonna, with a fortunate location and important natural resources, established itself as a center interacting with small peripheral settlements in the Saronic as well as more distant trading partners. But precisely because small worlds are nested in larger-scale spheres of influence and respond to the consequences of external developments, they are prone to change over time. The Middle Helladic hiatus shows that, as Horden and Purcell emphasized, social forces often trump environmental imperatives; we cannot simply map maritime relations according to currents, winds, and distances.

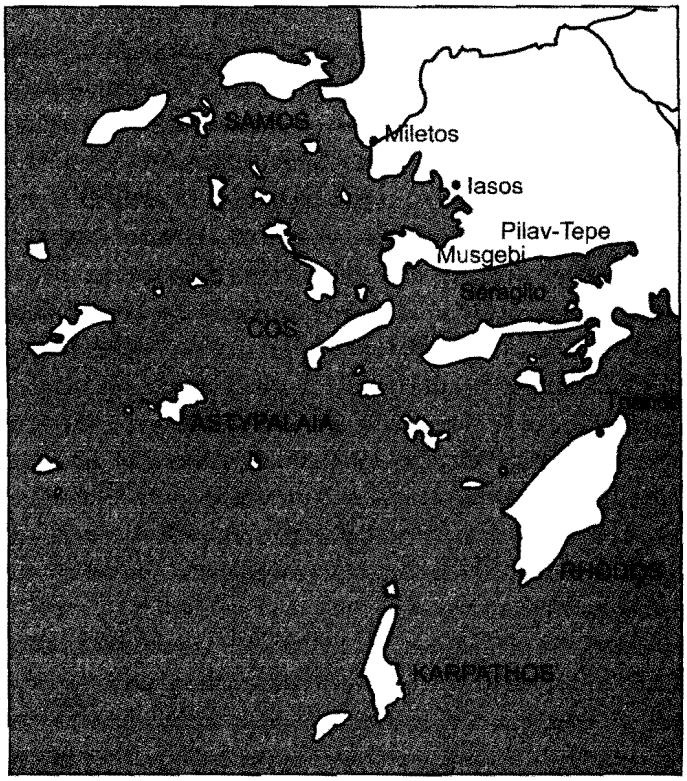
By following Kolonna and Kalamianos, we see the Saronic small world responding both to internal dynamics and to shifting centers of power and demographic trends played out beyond the Saronic. Kalamianos became prominent only in periods of strong supra-local connectivity: EH II with its nucleation of population and strong maritime orientation, and LH III with the incorporation of large territories by the Mycenaean palaces. In each case, the harbor at Kalamianos and its hinterland were developed to articulate with economic and political systems of greater scope than the Saronic. If we break down these broad patterns, we could write a different history for each coastscape, reflecting varied effects of, and responses to, dynamics both internal and external to the Saronic. The story of Kalamianos is different from those of Megali Magoula, Kiapha Thiti, or the Salaminian settlements at Kanakia and Sklavos, nuancing but not diminishing the validity of the broad diachronic and spatial patterns. The same dynamism pertains to the shape and extent of the regional/intracultural sphere over time. The changing distribution of Aiginetan pottery (excepting rare distant outliers) is a useful measure of Kolonna's regional sphere of interaction in a given phase (Fig. 7.7).

Tracking the long-term history of the Saronic leads to the realization that Kolonna and Mycenae exercised very different styles of center–periphery leadership. The evidence from Kalamianos and other sites suggests that when the Mycenaeans infiltrated the western shores of the Saronic, they colonized, built massively, developed local economies, and in some cases extended a measure of political control. By comparison, the Saronic small world of the Aiginetans seems decidedly underdeveloped. Certainly, Kolonna exercised economic hegemony, benefiting from control over trade in the Saronic and extending its export networks to the nearby mainland and islands. Yet one looks in vain for sites with monumental Aiginetan-style architecture, or other signs of intensive political or economic development of the Saronic. As such, the coastscapes of the Saronic were not exactly like the peraia of later times (Constantakopoulou 2007; Horden and Purcell 2000: 133), because the elements of political control and direct economic exploitation from the island state that seem to have been essential in the Classical period were lacking.

In attempting to understand the coastscape at Kalamianos and its role in the Saronic small world, the ability to reconstruct the Bronze Age coastline was decisive, and this will be true also in the two brief case studies to which I now turn.

POTENTIAL COASTSCAPES AND SMALL WORLDS: MILETOS AND DIMINI

In this concluding section, I offer brief outlines of two additional places where there is high potential for identification of coastscapes and small worlds. These

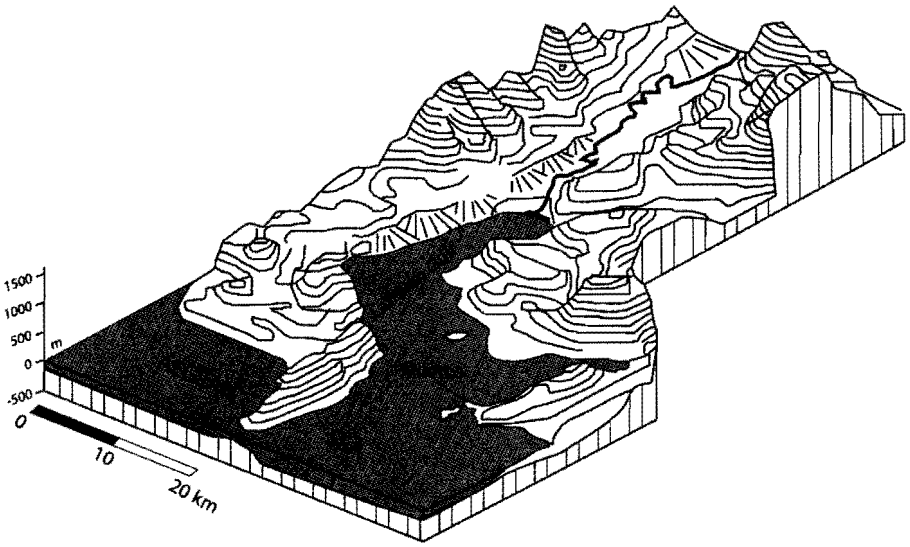


7.28 Map of the southeastern Aegean and southwestern Anatolian coast. Drawing by Felice Ford.

observations on Miletos and the Latmian Gulf, and Dimini and the Bay of Volos, are not detailed analyses, but rather explorations of ways that a maritime cultural landscape perspective might be illuminating in understanding the Mycenaean-period activity in these coastal settings. The main principle guiding the selection was that reasonable amounts of both archaeological and paleocoastal information should exist.

Miletos and the Latmian Gulf

The former Latmian Gulf (now virtually closed) is a striking example of a deep marine embayment created by flooding of a low-lying coastal shelf during the pan-Mediterranean Holocene marine transgression (Figs. 7.28, 7.29). At the peak of the transgression circa 6000 to 5000 BP, the gulf may have extended 40 to 50 kilometers inland, but there is some evidence that relative sea level was actually highest circa 2500 BC (Bay and Schröder n.d.; Brückner 2003; Herda et al. 2009; Knipping et al. 2008; Müllenhoff et al. 2005). At the termination of the marine transgression, the process of infilling of the gulf by delta progradation of the Maeander (Menderes) River began, assisted by the instability



7.29 Three-dimensional map of the Latmian Gulf at maximum marine transgression, circa 4000 BP. After Bay and Schröder n.d., fig 3.

of the natural Mediterranean environment and augmented by variable long-term human impacts. A German geoarchaeological team placed more than 100 sediment cores in the Maeander floodplain in order to reconstruct the advancing coastline in the context of human activity (e.g., Brückner 2003: 121–27). Using methods similar to those described in Chapter 5, they relied mainly on macro- and microfaunal analysis to determine diverse environments of deposition (marine, littoral, lacustrine, terrestrial). Radiocarbon dating of organic material furnished a chronological framework, which was supplemented by archaeological and historical information.

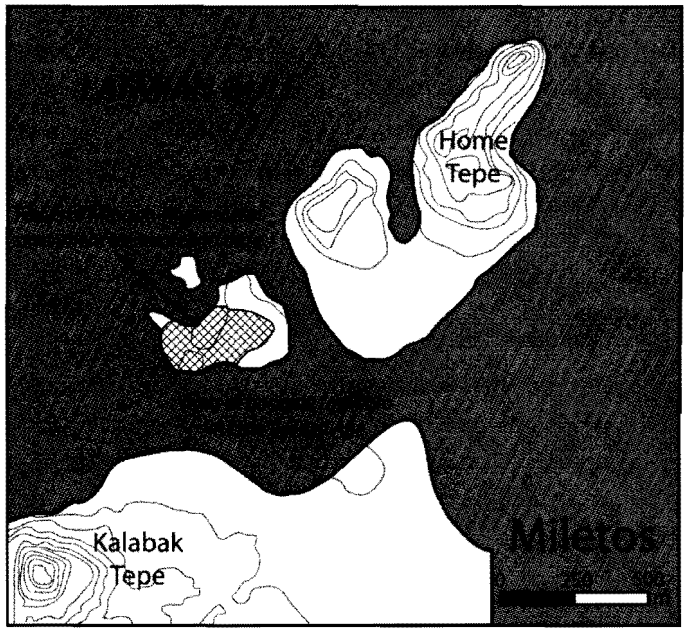
The progradation of the shoreline toward the Aegean was gradual through the Bronze Age, though a modest increase in sediment load can be attributed to the erosional effects of expanded goat herding in the second millennium BC (Knipping et al. 2008: 368, table 1). A rapid and massive increase in the rate of sedimentation occurred only in the first millennium BC (Bay and Schröder n.d., figs. 4, 5). During the Mycenaean period, the gulf still penetrated some 30 kilometers inland, and the promontory of Miletos consisted of two main islands, one formed by Home Tepe and Kale Tepe and the other the area of the later temple of Athena, which may or may not have been connected to the mainland by a tombolo (Brückner 2003: 129–30); in short, Miletos was part of an archipelago-like coastal landscape facing onto a still-vast Latmian Gulf (Fig. 7.30).[12] All around the islands and coastal areas there will have been natural anchorages and small coastal plains suitable for habitation. The climate was favorable, with moderate temperatures and adequate rainfall to support agriculture. Other natural resources such as timber and building stone were

plentiful (Greaves 2002: 8–16). The Maeander valley was also a communicati corridor connecting the sea with east–west land routes to the interior. Al those routes metals and other products from the interior of Anatolia may h been passed along to the Aegean (Greaves 2002: 32–37).

Sporadic German excavations since the beginning of the twentieth centu have demonstrated that the LBA at Miletos witnessed first intensive Mino then Mycenaean, influence (Niemeier 1998, 2005). Early excavations establish three LBA "building periods," essentially confirmed by more recent campaig The first building period corresponds to Minoan presence in Miletos ph IV, succeeded by Mycenaeans in the second (Miletos V) and third (Miletos building phases.

Miletos V encompasses pottery phases LH IIIA1–2, from the late fifteenth the end of the fourteenth century. Wolf-Dietrich Niemeier (1998, 2003, 200 makes a strong case that in the second building period, there already w a Mycenaean colony at Miletos. The architectural remains are meager, a two rectilinear buildings in the Athena temple area may or may not sho Mycenaean influence (Niemeier 1998: 30–31). But in other ways, the settl ment is overwhelmingly Mycenaean. The pottery – including painted finewa unpainted, and domestic coarseware – is predominantly Mycenaean with v tually no indigenous Anatolian types. Seven kilns from this period are know including mainland Greek and Cretan types, establishing Miletos as an impo tant center of pottery production (Niemeier 1999). Slight evidence exists f cult activity in the form of a terracotta phi-type figurine (Niemeier 1998: 33). N cemetery associated with the settlement is known. The second building perio ended in a destruction dated by pottery to the LH IIIA2/IIIB1 transition, whic has been linked to the Hittite conquest of Millawanda circa 1315 BC (Niemei 1998: 38). As we have seen, scholarly opinion increasingly endorses the equ tions Ahhiyawa = Mycenaean Greeks and Millawanda = Miletos. Millawand was a foothold for the kingdom of Ahhiyawa on the western coast of As Minor, and Miletos is far and away the most likely candidate for Millawand linguistically and archaeologically.

After the destruction of Miletos V and possible control by the Hittites for som period of time, the settlement regained its Mycenaean character in the thirteenth century. The third building period, Miletos VI, has yielded LH IIIB–LH IIIC pottery in large quantities, much of it locally made. Although the architectural remains have been mostly obliterated by later construction, one corridor-type building similar to thirteenth-century examples at Mycenaean mainland centers is partially preserved. A cemetery at Değirmentepe, 1.5 kilometers southwest of the Athena temple, can now be associated with Miletos VI. It includes 11 chamber tombs of canonical Mycenaean type, containing LH IIIB–IIIC pottery and Mycenaean weapons and jewelry. The evidence of cult and administration is again slight: a psi-type figurine and two pithos sherds of local manufacture



7.30 Map showing the topography of Bronze Age Miletos and vicinity. After Brückner 2003: 128, fig. 3.

that may have Linear B signs incised on them (Niemeier 1998: 36–37). The date of the final destruction of Miletos VI has been ambiguous, but the last Mycenaean pottery has recently been placed in transitional LH IIIB/LH IIIC Early or LH IIIC Early, which by comparison with material at Ugarit suggests a date in the neighborhood of 1185 BC, at the time of general unrest in the eastern Mediterranean (Mountjoy 2004).

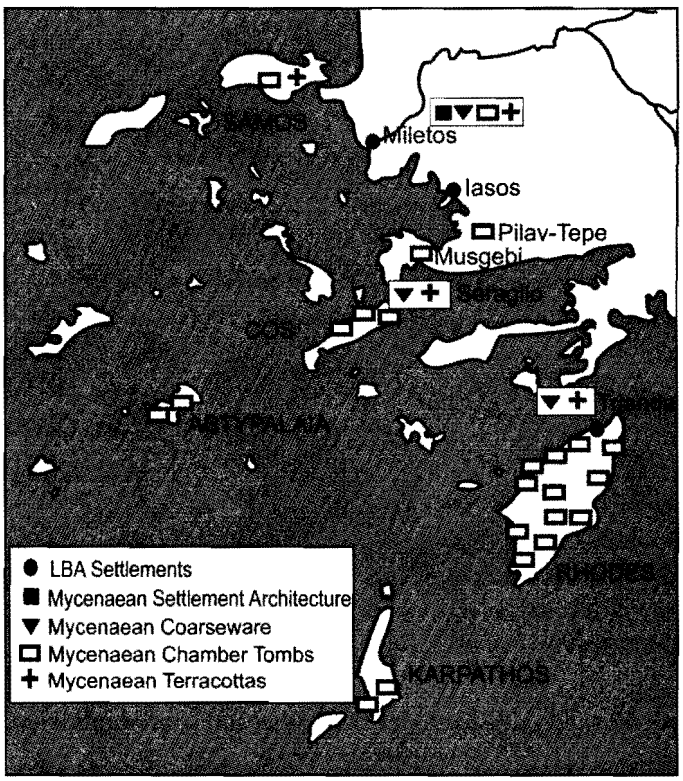
Miletos was unquestionably the most important Mycenaean settlement on the coast of Asia Minor, and there are similarities in its position within the Latmian Gulf to Kolonna's status in the Saronic Gulf at an earlier time. The scale of the two bodies of water is comparable, and the role of intervisibility among the coastal settlements must have been equally important in creating a Latmian maritime small world with numerous coastscapes engaged in dense webs of interactions. Like the Saronic Gulf, the Latmian Gulf is an ideally circumscribed body of water with which to pursue a study of interaction networks at small to medium scale. A similar sentiment is expressed by Nicoletta Momigliano, based on her study of material from Iasos. She characterizes Iasos in the early LBA as a community open to maritime traffic and exchange, but acting only within a regional sphere of interaction in the Aegean; most of the pottery is of Anatolian type while actual imports from Crete, the Cyclades, the Dodecanese, and further afield are rare (Momigliano 2005). She stresses that we should pay more attention to smaller-scale exchange networks and cabotage as the chief mechanism of moving material. (Of course, this is a fundamental theme for

Horden and Purcell, and for the present work.) If sites like Miletos, Trianda, and Seraglio were the emporia of the LBA, Iasos is more representative of the kind of settlement we would expect to find at good anchorages on the shores of the Latmian Gulf.

It is possible to also think about larger-scale interaction spheres into which Miletos was incorporated, thanks to a protracted dialogue among archaeologists, philologists, and historians about the nature and intensity of interactions between the Mycenaeans and the inhabitants of Anatolia's western coast. Long ago, it was noticed that, roughly speaking, the regions south of the Mykale peninsula (i.e., the northern promontory of the Maeander valley) possess a much richer record of contact with the Mycenaean world than those to the north, not only in the quantity of items but also in the presence of material categories that are deemed to reflect actual settlement or some form of engagement well beyond simple trade or episodic visits (e.g., cult objects, burial practices, domestic pottery; Fig. 7.31). The patterns are relatively uncontroversial, but some see colonies or other forms of permanent presence, while others see selective adoption or acculturation. (Compare Mountjoy 1998 and Niemeier 2005 for a sampling of the debate.)

We need not get bogged down in these issues to make the simple suggestion that the zone south of Mykale, termed by Mountjoy (1998: 33, fig. 1) the "Lower East Aegean–West Anatolian Interface," should correspond to the regional/intracultural maritime interaction sphere (see Table 6.1) in which Miletos operated. Mountjoy (1998: 47–51) proposes that this Lower Interface is the kingdom of Ahhiyawa itself. This is another, much more complex, debate beyond the scope of the present discussion (see Niemeier 1998, 2003 for the view that the kingdom of Ahhiyawa must be on the Greek mainland), but certainly the Lower Interface roughly demarcates the network in which familiar cultural materials and information moved with relative ease by sea. In LH IIIC, this zone became the core of the "East Aegean Koine" (excepting Rhodes: Mountjoy 1998: 52–63). For a Mycenaean crew departing Miletos, voyaging beyond the Lower Interface into the Central and Upper Interfaces might have been tantamount to a cross-cultural adventure, though perhaps not particularly daunting to an experienced sailor.

It is difficult to say, in my ignorance of the area, whether a targeted archaeological prospection of the former Latmian Gulf, taking as its starting point the excellent geoarchaeological work, might succeed in populating the LBA small world. Some survey work has been done, but mostly in the vicinity of Miletos itself (Lohmann 1995, 1997, 1999) and mainly with an interest in the historical periods (but see Marchese 1986). Colluvial and alluvial deposits will have buried many early sites (Greaves 2002: 40), but it is also true that Mycenaean artifacts are found on hills and in the hinterland away from Miletos, not restricted to the coast as in the period of Minoan presence (Greaves 2002: 56). It may be

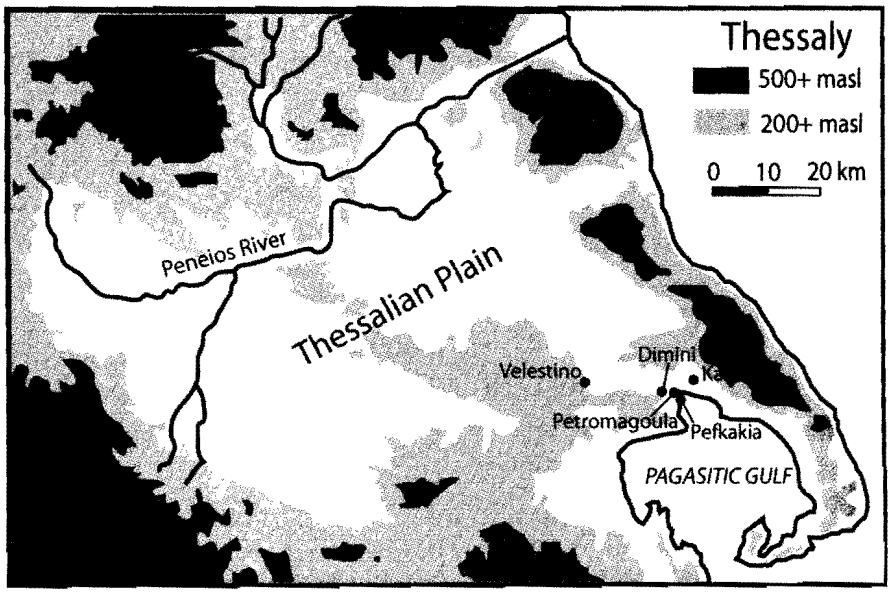


7.31 Mycenaean elements in the southeastern Aegean. Drawing by Felice Ford, after Niemeier 2003: 103, fig. 1.

interesting to attempt an investigation of some part of the lower Maeander valley from a Maritime Cultural Landscape perspective.

Dimini and the Bay of Volos

The Bay of Volos, on the Aegean coast of Thessaly, presents another attractive setting for Mycenaean coastal activity (Fig. 7.32). Well sheltered by its position deep within the Pagasitic Gulf, the bay was the gateway from the sea to the rich Thessalian plain, already the destination of the earliest agropastoralists of the Greek Neolithic. Paleocoastal reconstruction of the bay shows that following the maximum marine transgression circa 6000 BP, at which time the sea penetrated three kilometers inland of its modern position, a series of human impacts and natural sedimentation processes caused the shore to prograde rapidly, so that by the EBA, the coastline had moved 1.5 to 2.0 kilometers seaward (Fig. 7.33; Zangger 1991). The location of the shoreline in the LBA is not known precisely, but it likely averaged two kilometers from the maximum marine transgression, or a little more than one kilometer inland from the modern coast. In addition to abundant arable and pasture land nearby, coastal dwellers could exploit

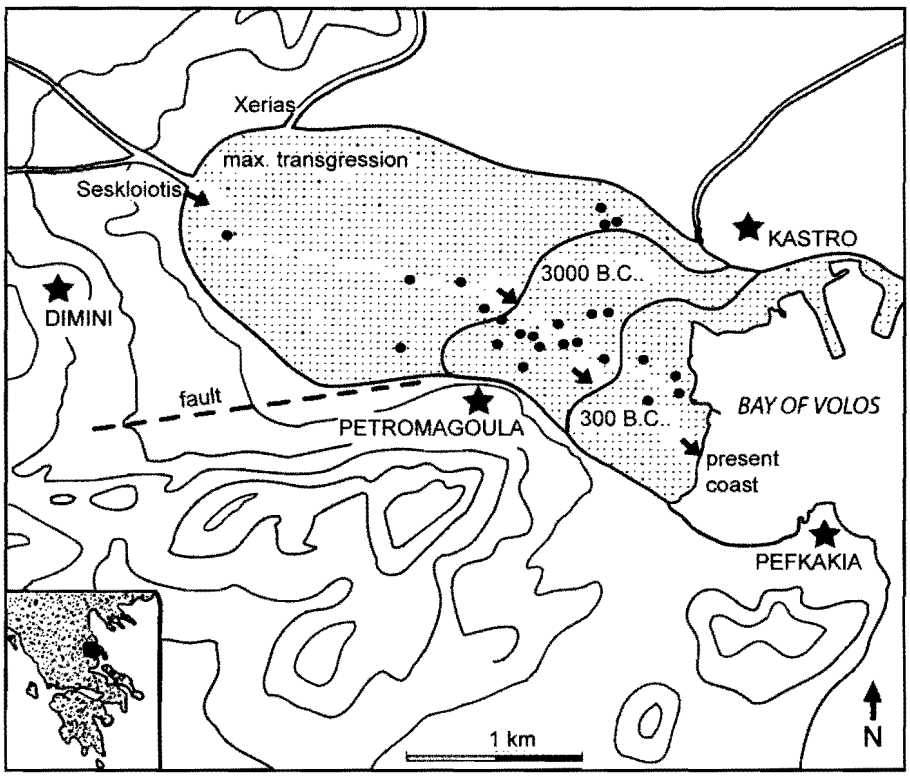


7.32 Area map of Thessaly, with important Neolithic and Bronze Age sites indicated. After Andreou et al. 2001: 261, fig. 1.

marine resources and trade for timber and other forest products from the Pindos mountains.

Ringing the LBA Bay of Volos were a small number of large, nucleated settlements, most prominently Dimini, Kastro (Volos), and Pefkakia. By that time, Dimini was a little more than 2.5 kilometers from the bay, but Kastro and Pefkakia had always been and remained coastal sites. Each of these sites was inhabited through much of the Bronze Age, rarely with a hiatus or a shift in settlement location. Intrasite complexity was well established at the beginning of the Mycenaean palatial period, expressed in the construction of LH II–IIIA tholos tombs near Dimini and Kastro, and built chamber tombs at Pefkakia.[13] Thus, by LH IIIA, one group in society built monumental structures and buried their dead in monumental tombs, while others lived and died more simply. All three sites suffered major destructions at the end of LH IIIB2; Dimini was reoccupied on a small scale in the beginning of LH IIIC, but by the end of LH IIIC Early was abandoned. Only Kastro persisted through LH IIIC and into Protogeometric and Geometric times (Batziou-Efstathiou 2003).

Thessaly is usually considered a periphery of the Mycenaean world, in spite of a large number of sites, both on the coast and in the interior, that were heavily Mycenaeanized. Bryan Feuer (1983, 1994, 1999, 2003) has modeled Thessaly as a periphery exhibiting decreasing integration with the Mycenaean world as one moves from the coast to the interior, in three zones that he terms the "inner border" (i.e., the coastal zone), the "outer border," and the "frontier" (e.g., Feuer 1999: fig. 5). Based on this pattern, Nikolas Papadimitriou (2008)



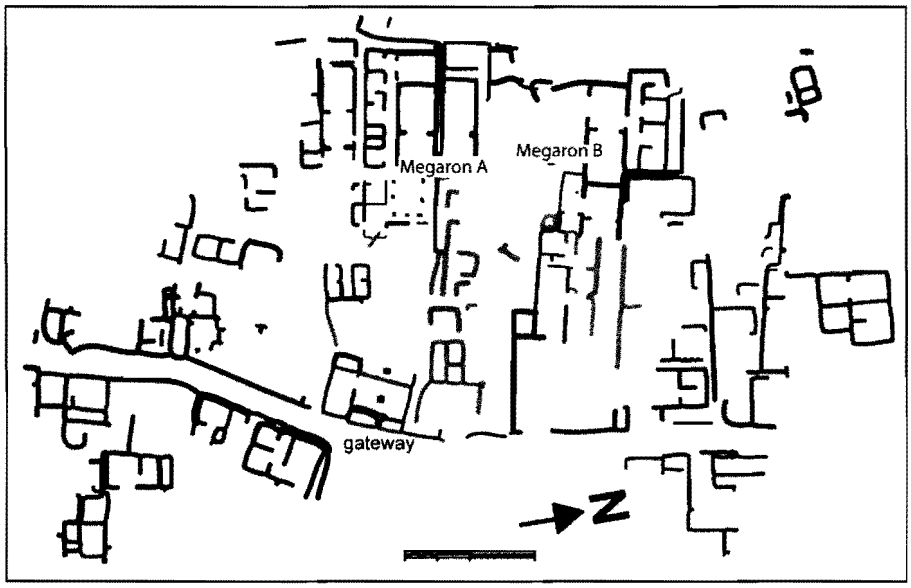
7.33 Map of the changing coastline of the Bay of Volos. Drawing by Felice Ford, after Zangger 1991: 3, fig. 1.

characterizes Thessaly as both center and periphery. Adrimi-Sismani (2007) argues, however, that the entire region should be considered a fully integrated part of the Mycenaean world, having in common with it settlement patterns, intrasite settlement structure, tomb types, cult practices, pottery and other material culture, and a similar historical trajectory. For the coastal area, at least, this claim has merit and continuing discoveries tend to support it.

Much of Adrimi-Sismani's case rests on her excavations at the remarkable site of Dimini. She has touted Dimini as a Mycenaean palace center, probably the Iolkos of Homer and the saga of Jason and the Argonauts (Adrimi-Sismani 2006, 2007). Excavations from 1977 to 1997 revealed a Mycenaean settlement of around 10 hectares founded east of the Neolithic mound at the end of the fifteenth century (Adrimi-Sismani 1994, 1999, 2006, 2007). The site has two main architectural phases, in LH IIIA and LH IIIB. The later (thirteenth-century) settlement was divided into an eastern and a western zone by a wide road running north–south (Fig. 7.34). The western zone was an elite, or at least public, sector segregated from humbler domestic dwellings east of the road. The western sector centered on Megaron A and Megaron B, two large megaron-style corridor buildings, defined by Panagiota Pantou (2011: 39) as

structures that comprise " . . . a megaron-type unit flanked on one side by a long corridor and a series of smaller rooms (secondary wing)." These buildings were constructed of rubble stone foundations and mudbrick superstructures. A monumental gateway with three axial columns gave access to a forecourt and then to a peristyle courtyard before the megaron unit could be reached in Megaron A. In the series of small rooms to the south, separated from the megaron unit by a long corridor, evidence was found of food storage and preparation, as well as tools for potting and jewelry manufacture. Here too was found a fragment of a stone weight with a Linear B inscription (Adrimi-Sismani 2007: fig. 15.4). Megaron B was even more interesting, with plentiful evidence for cult activity and feasting (Adrim-Sismani 2007: 165). In the middle of the vestibule at the eastern end of the megaron unit lay an H-shaped altar of clay attached to an elliptical platform and two perforated, triangular mudbricks. A painted mug found in situ in front of the altar suggests the pouring of libations. In three small attached rooms to the south, cups holding the remains of animal bones were recovered. Outside the southern entrance to the large western room of the megaron unit, 16 small Mycenaean clay figurines were found next to a large limestone slab with cavities, suggesting a function as a *kernos* for the placement of cult offerings. The northern auxiliary wing contained many storage, cooking, and serving vessels, and just outside the building middens of animal and fish bones, seashells, and broken pottery may be the refuse of feasts. The two large rooms of the megaron unit were found nearly empty, but considering their size and the finds from adjacent areas, they may have been locations for communal eating and drinking, cult ceremonies, and other kinds of public gatherings (Pantou 2010: 386–87). The evidence from Dimini indicates the existence of an intrasite social hierarchy with two tiers: an elite ruling and priestly caste living in the western sector and burying their dead in two tholos tombs at the site, and a larger group of commoners engaged in agropastoral and craft occupations and burying their dead in modest cist graves (Pantou 2010: 389). Adrimi-Sismani (2007: 167) labels Dimini a palace center and the controlling hub of a regional hierarchy in which Dimini " . . . combines all the features of an administrative, financial, and religious center, and consequently it is the only settlement in Thessaly that clearly displays organization and social elements . . . of a true center."

Leaving aside Dimini's possible mythical connections, not all accept the designation of the Megaron A/Megaron B complex as palatial, or of Dimini as a regionally dominant center. In a thorough and methodical reassessment of the archaeological evidence in the Volos region, Pantou (2010, 2011) has challenged many of Adrimi-Sismani's interpretations. Her disagreements fall in two main areas. First, she asserts that the "palace" at Dimini is not palatial. Although the plans (corridor buildings with megaron units, storage, industrial, and cult areas) and some of the activities (e.g., feasting, cult) carried out in Megara A and



7.34 Architectural plan of LBA Dimini. Drawing by Felice Ford, after Pantou 2010: 388, fig. 5.

B emulate those of the Mycenaean palaces, the materials used (stone socle and mudbrick superstructure), the modest elaboration (e.g., simple plastered floor and walls with some painted colors but no frescoes, no ashlar blocks), and the size (falling into Pascal Darcque's [2005] intermediate, not palatial, category) fall far short of their counterparts at Mycenae, Tiryns, Pylos, and elsewhere. Further, the discovery of part of a stone weight with a Linear B inscription does not constitute evidence for " . . . the presence of an accounting system that monitored the movement of products manufactured in the complex" (Adrimi-Sismani 2007: 168).

Second, Dimini was perhaps not the "administrative, financial, and religious center" of the Volos region. Pantou (2010: 383) finds striking similarities in architecture, burial types, and material culture among the settlements at Dimini, Kastro, and Pefkakia. For example, only minor differences in elaboration and grave furnishings exist when one compares tholoi with tholoi and cist graves with cist graves across the region. A two-tiered social hierarchy of ruling elites and commoners existed at each site, manifest in contrasts of architectural elaboration and burial monuments, but in Pantou's view this did not extend to a regional hierarchy (an opinion already expressed by Andreou et al. 2001: 272–73). Instead, she envisions a stable socioeconomic environment with a heterarchical rather than hierarchical relationship among the sites. Dimini, Kastro, and Pefkakia were independent communities with their own internal hierarchies, but with regard to one another display overlapping, redundant features and functions. The settlements are three to five kilometers apart, intervisible, and unfortified.

They lack smaller satellite settlements. In this the Volos region differs from t inland settlement pattern (the Lake Karla region, Almyros Plain, and Phars region), where large settlements are surrounded by satellites, probably sm agricultural or pastoral settlements (Adrimi-Sismani 2007: 171–74). The contr must partly reflect a stronger orientation toward maritime and industrial pu suits at the coast, but Pantou (2010: 386) does caution that systematic, intensiv surveys are needed to be sure that small sites have not been missed.

If Pantou's reconstruction of the Volos area without a central-place hier chy is correct, it may be similar to the situation in the northern Corinthia plain, where Pullen and I have argued for long-term social and economic st bility in a heterarchical arrangement of settlements (e.g., Gonia, Perdikari Korakou) spaced at regular intervals and exploiting similar resources in a ge erous environment (Pullen and Tartaron 2007; Pantou [2010: 394] notes th similarity herself). Such a stable milieu may in fact inhibit the emergence of a overarching palace center (Haggis 2002; Pullen and Tartaron 2007: 148). Thi is in contrast to the Saronic Gulf: although Aiginetan dominance was politi cally underdeveloped, Kolonna was nevertheless the undisputed central place settlement and economic power driving the maritime small world for a millen- nium. The Mycenaean features in the Volos region might be explained primarily by acculturation, since there is strong evidence of connections with southern Greece already in the MBA. The reader will recall Maran's argument that by MH II, potters in coastal Thessaly were emulating the shapes and decorative schemes of matt-painted Aiginetan pottery (his "Magnesia polychrome"), and from there the influences traveled along with Thessalian products to the north- eastern Aegean islands in MH and early LH (Cultraro 2005; Maran 2007). By the time the Mycenaean palaces emerged in the Peloponnese and Boeotia, an elite familiar with southern materials and practices was in place and eager for practical and symbolic markers of power (Adrimi-Sismani 2010).

These observations help us to better define coastscapes and small worlds in the Volos region and beyond. The Bay of Volos may comprise a series of coastscapes within a small world defined by the Pagasitic Gulf. To the south, the Almyros plain and the western and southern coasts of the Pagasitic Gulf have produced several LH sites and five small tholos tombs in the Pteleos area, despite patchy investigation (Adrimi-Sismani 2007: 173). Even less information is available about the Gulf's eastern promontory. It remains likely, however, that the Bay of Volos, with three major, independent settlements, was the main port area for the Pagasitic Gulf, and Pefkakia may have served as the principal harbor. Heterarchy does not mean simply the absence of hierarchy, however, but the possibility of shifting hierarchies and nonhierarchical configurations over time. Thus, in the Volos region we see that the main settlement at Dimini suffered a hiatus between EH III and MH II; Pefkakia was particularly prosperous and outward looking in the EBA and MBA; tholos tomb use continued in LH IIIB

only at Dimini; and only Kastro survived beyond LH IIIC Early. With these and many more observations on individual site histories we can tease out the subtleties of their interrelationships over time.

Casting an eye beyond the Gulf to the regional scale, the early interactions with the nearby Sporades and the northern Aegean islands as far as Lemnos trace out one part of the regional interaction sphere. Another obvious and important maritime route ran south into the narrow Euboean Gulf, the safer side of Euboea for navigation, giving access to Attica, the Cyclades, and farther on the Saronic Gulf and the eastern Peloponnese. The North Euboean Gulf, with many coastal Mycenaean sites, was surely another small world that would reward investigation (Crielaard 2006; Kramer-Hajos 2008; Nikolopoulos 2003; Van de Moortel and Zahou 2005).

Placing an area like the Bay of Volos in a maritime cultural landscape framework may be simply a matter of posing the question from that point of view. One could systematically gather information on the exploitation of marine resources (e.g., fish and shellfish at Dimini), the physical traces of harbor activities at Pefkakia, the evidence of extralocal contacts in the material culture assemblages (e.g., Aiginetan influence on the MBA pottery repertoire; a Canaanite amphora at Dimini), and compare these across the sites. Were the intervisible communities at Dimini, Kastro, and Pefkakia acting in concert in connecting to networks within and beyond the Pagasitic Gulf, or were they acting independently? Was Pefkakia the main harbor for all three? Returning to the question of surface survey coverage in the region, Pantou (2010: 386) doubts that we understand the nature and degree of integration of the coastal area with the interior because there have not been systematic, intensive surveys. How much would such a survey change the picture we now have of large, solitary coastal settlements articulating with very differently organized habitation and production in the interior? How much could systematic survey add to the more "empty" eastern and western land masses enclosing the Pagasitic Gulf, and how would that change our reconstruction of coastscapes and maritime small worlds in the area? The Pagasitic Gulf is a fascinating case study in the extension of Mycenaean influence along maritime routes, and despite a spate of new discoveries and the extraordinary work at sites like Dimini, there is much more that could be learned with problem-oriented research on maritime networks at the local and small-regional scale.

CONCLUSION

The aim in presenting one detailed and two brief case studies of Mycenaean maritime worlds has been not only to demonstrate a particular approach, but also to try to convince the reader that this approach offers the possibility of alternative histories that are truly meaningful because they reveal details about

the fabric of Mycenaean life as experienced by most coastal and near-coastal dwellers. The scale of analysis appears to be justified because to a surprising extent, each region in the Mycenaean world was unique, due to the varied environmental and historical conditions that are expressed in the structure and contingency of the long-, medium-, and short-term processes of *annales* history. Just how striking these contrasts can be is shown in a brief comparative analysis of seven Bronze Age "settlement regions" on or near the North Euboean Gulf by Margaretha Kramer-Hajos (2008: 114–17). Despite being contiguous and occupying a relatively small part of Greece, they exhibit sharp differences in political organization, site types and locations, burial practices, monumental works, and other social and cultural characteristics. Surely this result validates the microregional framework of Horden and Purcell, and the focus of this book on the local and microregonal scale. Nevertheless, we must not lose sight of the bigger picture: the results of the analysis of coastscapes and small worlds form the robust data sets that can make big-picture and cross-cultural studies more than "cherry picking" from trait lists for superficial similarities and differences (Tartaron 2008: 134, 2010).

In the concluding chapter, I shall restate the main points of the study, and discuss prospects for future research along the same lines.