RAVAGING THE WINE DARK SEA:
ATTACKS ON CRETE BY SEA RAIDERS DURING THE BRONZE AGE

A Thesis
by
DAVID JAMES STEWART

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of
MASTER OF ARTS

May 1997

Major Subject: Anthropology
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May 1997

Major Subject: Anthropology
ABSTRACT

Ravaging the Wine Dark Sea: Attacks on Crete by Sea Raiders

During the Bronze Age. (May 1997)

David James Stewart, B.A., Baylor University
Chair of Advisory Committee: Dr. George F. Bass

The Minoan civilization of Bronze Age Crete is one of the most interesting and enigmatic of the ancient world. Writing over half a millennium after the end of the Bronze Age, the historian Thucydides stated that king Minos of Crete had built a navy and kept the sea free of pirates. The first archaeological excavations on Crete early this century revealed many unfortified sites lying close to the coasts. It seemed inconceivable that unprotected settlements could have existed on the Cretan coast unless the Minoans had indeed possessed a strong navy. Blending archaeology and historical tradition, scholars interpreted the Cretan Bronze Age as a time of peace. Evidence shows, however, that Bronze Age Crete was not always peaceful. The end of the Bronze Age was a time of great destruction in many parts of the eastern Mediterranean, and Crete was no exception. On Crete, the end of the Bronze Age was accompanied by abandonment of the coasts, the use of refuge sites, and the construction of fortifications. The pattern of these occurrences suggests that they were due in large part to attacks from the sea. While evidence for sea raids is most pronounced near the end of the Bronze Age, there is evidence that such raids occurred in earlier times as well.
For My Parents

who gave me the opportunities
ACKNOWLEDGMENTS

This project has taken four years to complete, and thus there is a long list of people who provided assistance along the way. Some of them I have known from the very beginning of this study, while others came along late in the process. To all of them I owe a great many thanks.

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Although not a thesis committee member, one other professor deserves mention. Dr. Fred Hocker has been a teacher, friend, and colleague for several years. His advice and friendship have always been welcome, and I look forward to working with him more in the future.

Many Texas A&M University Nautical Archaeology Program graduate students helped out in one way or another, either with the work itself or in providing escape from the
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CHAPTER I

INTRODUCTION

The island of Crete, which forms the southern boundary of the Aegean Sea, was ideally situated for interaction with all areas of the ancient Mediterranean world. Stretching approximately 250 km from west to east, Crete acts as a giant stepping stone between the Peloponnese and the coast of Asia Minor. Consequently, the inhabitants of Crete had easy access to the civilizations of the Greek mainland and those of Anatolia and the Near East. In addition, the southern coast of Crete is only a few days sailing distance from the Nile delta region of Egypt. Trade routes from the Levant to the western Mediterranean and from the Black Sea to the Mediterranean pass very close to Crete. Thus, Crete's geographical situation, combined with its diverse topography and excellent agricultural conditions, made the island a prime area for the development of civilization in the ancient Mediterranean.

First settled in the Neolithic period (c. 6400 B.C.), Crete underwent a slow process of growth that culminated in the rise of one of the greatest civilizations of antiquity. Throughout the Neolithic period, Crete remained largely isolated from the rest of the eastern Mediterranean world. The subsequent Prepalatial period (c. 2900-1900 B.C.) saw the introduction of metallurgy and the beginning of sustained international contacts. Crete's population expanded greatly and a system of social hierarchy began to emerge. The developments of the Prepalatial period led to a system of administration based upon palace centers scattered throughout the island. In the Old Palace period (c. 1900-1700 B.C.), the palaces were mainly agricultural storage centers and were quite accessible to the general

This thesis follows the format of the American Journal of Archaeology.
population.\footnote{K. Branigan, "Some Observations on State Formation in Crete," in E.B. French and K.A. Wardle eds., Problems in Greek Prehistory (Bristol 1988) 64-65.} This situation changed during the Neopalatial period (c. 1700-1450 B.C.), when the palaces began to dominate many aspects of Cretan life, including craft production, internal and external exchange, and religion. Crete's palatial society changed about the middle of the 15th century B.C., when the island came under the influence of Mycenaeans from mainland Greece, who controlled the administration of some areas of Crete until the end of the Bronze Age. At that time, the Mycenaean palatial administration of Crete, along with the other main civilizations of the eastern Mediterranean, was destroyed. The Greek world entered a Dark Age from which it did not emerge until the eighth century B.C. By then, the memory of Bronze Age Greece lived on only in myths and legends.

Of the legends that arose concerning the Cretan Bronze Age, one of the most interesting and least examined is the association of Crete with piracy. The fifth-century B.C. historian Thucydides reported that Minos of Crete built a navy, suppressed piracy, and colonized most of the Cycladic islands.\footnote{Thuc. 1.4.} Legend held that Minos had ruled from Knossos, a city in northern Crete not far from the sea. At the beginning of this century, Arthur Evans began excavations at Knossos. Evans discovered an immense unfortified palace complex from a Bronze Age civilization previously unknown to archaeology. Evans dubbed the civilization Minoan after the legendary king. Minoan archaeology grew rapidly as scholars from all over the world descended on Crete. Within the space of a few decades, hundreds of Bronze Age sites had been discovered throughout the island. Excavations revealed several
other palaces and many smaller towns. Like Knossos, many of these sites were situated close to the sea and appeared to be unfortified. This stood in sharp contrast to both mainland Greece and the Cycladic islands, where fortified sites dating as far back as the Early Bronze Age were known. It seemed inconceivable that unprotected settlements could have existed on the Cretan coast unless the Minoans had indeed possessed a strong navy, as reported by Thucydides. Blending archaeology and historical tradition, scholars developed the idea that the Bronze Age Cretans possessed a thalassocracy over the Aegean. With the Minoan navy controlling the waves, and the Minoans themselves only peaceful merchants, there seemed to be no place for piracy in Bronze Age Crete.

However, the interpretation of a Minoan Crete free from the depredations of sea raiders suffers from a number of problems. Evidence now seems to indicate that, while Minoan influence was strong, there was no thalassocracy. Without a Minoan fleet to control the waves, pirates would have been free to raid throughout the Aegean. Historical evidence indicates that piracy was known in the Bronze Age eastern Mediterranean world. The end of the Bronze Age was accompanied by a series of destructions throughout the eastern Mediterranean. Texts from the Near East and Egypt relate that attacks by sea raiders formed a large part of these destructions. Crete also exhibits signs of destruction and depopulation at this time, so it is possible that the island was a target for seaborne attacks as well. In addition, evidence from Crete reveals episodes of destruction in earlier periods of the Bronze Age as well. For example, the end of the EM II B period was accompanied by destruction

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3 The best discussion of the arguments for and against a Minoan thalassocracy is provided in R. Hägg and N. Marinatos, eds., The Minoan Thalassocracy: Myth and Reality (Stockholm 1984).
and abandonment at some sites. It is possible that some of the destructions at this time were also caused by raids from the sea. In addition, study shows that Crete has been the victim of seaborne attacks many times throughout history. For these reasons, it seems likely that sea raiders may well have visited Crete throughout the Bronze Age.

In the absence of written texts, archaeological evidence alone must be used to determine the existence and extent of sea raids against Crete during the Bronze Age. The best way to evaluate sea raiding is to construct a model describing the types of evidence that piratical raids leave in the archaeological record. Study of the history of piracy in Crete and Bronze Age texts describing sea raids reveals that the activities of raiders have changed little throughout time. This idea is confirmed by comparison with other areas and time periods. The recurring activities of pirates also tend to elicit the same responses in lands subject to raids. These responses include shifts in settlement patterns away from the coast, site nucleation, the construction of fortifications, the use of refuge sites, and the development of fleets of warships to fight the pirates at sea. The traces these responses leave in the archaeological record form the basis of a model for studying the effects of sea raids. Applying this model to the archaeological record of Crete reveals that evidence for attacks from the sea does exist throughout the Bronze Age.

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CHAPTER II

A HISTORY OF PIRACY IN CRETE

Unfortunately, no documentary evidence for piracy has survived from Bronze Age Crete. Nevertheless, piracy and sea raiding were an integral part of Cretan history from antiquity until modern times. The first literary reference to connect the island with piracy comes from Homer, who recites a tale in which Odysseus claims to be a Cretan pirate:

But the ships, furnished with oars, were forever dear to me, as well as the wars and polished javelins and arrows, oh miserable things, which are horrible for others. But they were dear to me, these things which somehow a god placed in my heart. Another man takes pleasure in other deeds. Before the sons of the Achaeans set foot in Troy, nine times I led men and swift-traveling ships against foreign men, and exceedingly, many things came to me. Of these things I chose plenty, and many things hereafter I obtained by lot. And at once, my house increased in riches and in turn I then became both feared and revered among the Cretans.5

This passage has been cited by numerous scholars as proof of widespread Cretan piracy at the end of the Bronze Age and throughout the Dark Ages.6 However, it is important to remember that the Homeric epics, while describing events that supposedly occurred in the Late Bronze Age, and undoubtedly containing many Bronze Age elements, were not written down until centuries later. Although still a controversial topic, most scholars hold the view that both the Iliad and the Odyssey reflect the society of the Dark Ages more than the Bronze Age.7 Homer’s descriptions show that piracy was a common phenomenon on Crete during

5 Od. 14.224-234. My thanks to Heidi Luchsinger for her help with the translation.

6 See, for example, H.A. Ormerod, Piracy in the Ancient World (Liverpool 1924) 89; R.F. Willetts, Ancient Crete: A Social History (London 1965) 141-143.

7 Good recent discussions of the Homeric question include O.T.P.K. Dickinson, “Homer, the Poet of the Dark Age,” Greece and Rome 33 (1986) 20-37; E.S. Sherratt, “Reading the Texts”:
the Dark Ages. After Homer’s vivid description, no direct references to piracy in Crete occur for the remainder of the Dark Ages. However, one piece of evidence indicates that piracy probably continued to be a problem in the island. The Gortyn Law Code, which dates to the seventh or sixth century B.C., contains a passage dealing with the ransom of captured persons. In the passage, the person to be ransomed is described as “a man gone away to a strange place” who is to be “set free from a foreign city.” Throughout history, the main goal of Mediterranean pirates has been the abduction and ransoming of captives. Thus, capture by pirates is a plausible explanation for a person being held for ransom in a foreign city. It is very possible that the provision in the Gortyn code was intended to deal with the ransoming of victims of piratical raids.

Interestingly, a later Greek legend connects Cretans with kidnapping. Writing in the fifth century B.C., Herodotus begins his account of the Persian Wars by explaining how trouble came to pass between Persians and Greeks. The Persians claimed that the Phoenicians started the trouble by kidnapping Io, daughter of the king of Argos, and carrying her to Egypt. In retaliation, a group of Greeks landed at Tyre, abducted the king’s daughter Europa, and fled with her to Greece. “These Greeks must, I suppose, have been Cretans,”


10 Hdt. I.2.
states Herodotus. Ormerod claims that this statement proves that Cretans were always regarded as pirates. However, Herodotus never explains the remark. It is probable that Herodotus related this story to the myth of Zeus and Europa. In the myth, Zeus takes Europa to Crete, where she becomes mother of Minos and Rhadamanthys and has the continent of Europe named after her. Herodotus may have been trying to explain both the myth and the origin of the Persian Wars by relating the two. He thinks that Cretans abducted Europa not because Cretans had a horrible reputation for piracy, but because in the myth Zeus first takes Europa to Crete.

During the sixth century B.C., Crete entered a period of apparent decline. Trade and seafaring decreased, and the island became largely isolated from the rest of the Greek world. Crete was neutral in the Persian and Peloponnesian wars, although Cretan mercenaries did serve in these struggles. Until near the end of the Classical period (500-323 B.C.), Crete was composed of numerous small city-states, more concerned with conflicts at home than abroad.

By the middle of the fourth century B.C., Crete began to emerge from its state of isolation. Cretan city-states, although still involved in their own power struggles, began to participate in the larger affairs of the Aegean world. During the campaigns of Alexander the Great, Crete was plagued by Persian and Spartan marauders. Alexander sent his fleet

11 Hdt. I.2.

12 Ormerod (supra n. 6) 142.

13 E. Hamilton, Mythology (New York 1969) 78-81. Hamilton’s version, based on the writings of the third-century poet Moschus, states that Europa was taken from Sidon, not Tyre.

commander Amphoterus to free the island from pirate attacks. After the death of Alexander in 323 B.C., his empire was divided among several successors. It was not long before Alexander's successors, hungry for power, began fighting among themselves. Piracy was a common practice during the Hellenistic wars, and Cretan pirates were among the most notorious.

Philip V of Macedon was one of the first rulers to recognize the strategic value of Cretan piracy. By the late third century B.C., Philip sought dominion over the entire Aegean region. He was opposed by Rhodes, which had the most powerful fleet of the time. Philip devised a masterful plan in order to defeat Rhodes on the sea. Taking advantage of Crete's internal conflicts, Philip helped the West Cretan cities of Lappa, Polyrhenia, Eleutherna, Aptera, and Kydonia break away from the control of Knossos and Gortyn, the most powerful alliance on the island (fig. 1). Philip soon controlled much of western Crete. From this base, Philip incited Cretans, Aetolians, and Spartans to carry out piratical attacks on Rhodian shipping. By 205 B.C., the raids had sapped much of Rhodes' strength. Rhodes declared war on Crete and appealed to Rome for help. With Roman assistance, Rhodes was able to defeat Philip and the Cretan pirates by 201 B.C.

In order to prevent further outbreaks of Cretan piracy, Rhodes pursued alliances with several Cretan city-states. Around 200 B.C., Rhodes concluded a treaty with the East Cretan city of Hierapytna stipulating that Hierapytna would aid Rhodes against any Cretan cities

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15 Quintus Curtius 4.8.15.

16 Detorakis (supra n. 14) 73-74.
Fig. 1. Map of Crete, showing locations of major sites discussed in Chapter II.
practicing piracy.\textsuperscript{17} The pirates and their ships were to be handed over to Rhodes; other spoils would be divided with Hierapytna. The treaty also stated that Rhodes would render assistance if any pirates attacked Hierapytna. A similar treaty probably existed between Rhodes and Knossos.\textsuperscript{18} By these treaties, Rhodes and its allies Knossos and Hierapytna ended piracy in central and eastern Crete.

Many West Cretan cities, however, continued to support piracy. Several Cretan city-states participated in raids with the Spartan king Nabis, a particularly noted patron of piracy.\textsuperscript{19} Incensed by his revolutionary policies and support of pirate raiders, the Romans attacked Nabis, who had been their ally against Philip V. Faced with the strength of the Romans, in 196 B.C. Nabis agreed to end his piratical raids, give up control of any towns in Crete to the Romans, and form no further alliances with any Cretan cities.\textsuperscript{20} This action marked the beginning of Roman influence over Crete.

Despite the growing power of Rome in the eastern Mediterranean, Cretans continued to engage in piracy. In 192 B.C. the Seleucid king Antiochus the Great sent troops to Thrace in a bid to gain control over all of Greece. For three years Antiochus waged a bitter struggle against the Romans and their Greek allies until his ultimate defeat in 189 B.C. While the Romans and Rhodians were engaged in the fight against Antiochus, the Cretan city of Kydonia began its own war with the cities of Knossos and Gortyn. Pirates from Kydonia and

\textsuperscript{17} Ormerod (supra n. 6) 138-139.

\textsuperscript{18} Ormerod (supra n. 6) 138.

\textsuperscript{19} Polybius 13.8.

\textsuperscript{20} Livy 34.35.
other Cretan cities roamed the Aegean. The Cretans captured a number of Roman vessels and took many Roman prisoners to Crete as slaves. The Romans sent a fleet commanded by Quintus Fabius Labeo to Crete to demand the release of the Roman prisoners. Only Gortyn obeyed, releasing about 4,000 captives. By this action, Gortyn became the center for pro-Roman sentiment on the island, while the powerful cities of Knossos and Kydonia continued to resist Roman influence.

Continued Cretan piracy led to another war between Crete and Rhodes in 155 B.C. Not content merely with attacking Rhodian shipping, Cretan raiders carried the war to Rhodes’ allies as well. Around 153 B.C., a Cretan fleet attacked the island of Siphnos. The Siphnians surrendered to the Cretans after receiving a guarantee that the pirates would spare their city. Forgetting their promise, the pirates soon treacherously enslaved the city, sacked the temples of the gods, and withdrew before the Rhodian fleet could respond. Piratical acts such as this caused the Romans to intervene once again on the side of the Rhodians. The war was soon brought to a halt, but the Romans began to realize the seriousness of the threat presented by the Cretan pirates.

The first half of the first century B.C. saw a major outbreak of piracy throughout the Mediterranean. The most famous pirates of the time were the Cilicians, but according to Plutarch, Crete was the second biggest source of pirates. On the pretext of destroying

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21 Livy 37.60.

22 Detorakis (supra n. 14) 78.

23 Diodorus Siculus 31.45.

24 Pompey 29.
piracy, Rome launched a series of campaigns across the Mediterranean. These campaigns had the secondary objective of bringing the entire Mediterranean basin under Roman control. In 74 B.C., a rebellion led by the Pontic king Mithridates VI gave the Romans a reason to intervene in Crete. Cretan mercenaries fought for Mithridates, and Cretan pirates worked with the pirates of Cilicia. The Roman senate gave Marcus Antonius command of a fleet and ordered him to capture Crete. Antonius was overconfident, and in expectation of an easy victory loaded his ships with more fetters than weapons. A Cretan fleet attacked and defeated Antonius' squadron near Heraklion, and the victorious Cretans hung the bodies of the Roman prisoners from their ships' rigging.25 Antonius was forced to sign a treaty on Cretan terms, which the Roman senate refused to ratify. Seeking an end to the hostilities, Crete sent representatives to Rome to negotiate a peace. Rome demanded the surrender of all Cretan ships, the deliverance of 300 Cretan hostages to Rome, the surrender of the two most prominent Cretan rebel leaders, and 4,000 silver talents as reparation.26 The Cretans rejected these terms and united against the Romans. In 69 B.C., Rome sent Quintus Caecilius Metellus to subjugate Crete. Beginning in the west, Metellus proceeded to conquer the island city by city. By 67 B.C. the Roman conquest was complete, and Crete became part of the Roman world.

After the Roman conquest, Cretan power at home and abroad was destroyed. However, the Romans also stopped the constant internal struggles, and the island enjoyed a period of prosperity and peace. In the civil wars that followed the assassination of Julius

25 Florus 1.42.
26 Diodorus Siculus 40.1.
Caesar, some Cretan cities supported Mark Antony, who in turn granted them special
privileges. After his victory at Actium in 31 B.C., Octavian punished the Cretan cities that
had supported Antony, and rewarded cities that had opposed Antony. Crete offered no real
resistance to Roman rule after this time, and soon became a remote backwater of the empire.
Under Roman administration, Crete became a part of the province of Cyrene, and Gortyn
was made the provincial capital. For the remainder of the Pax Romana, piracy was largely
eradicatd from Crete and the rest of the Mediterranean world.

Following the division of the Roman state after the death of emperor Theodosius in
395, Crete became part of the Byzantine empire. Detailed knowledge concerning the First
Byzantine period (330-827) is scarce due to an almost total lack of historical references to
events on the island during this time. We know little more than that the island enjoyed a
time of peace from the fourth to the early seventh centuries. However, during these years a
number of natural disasters, primarily earthquakes, struck the island. The earthquakes
brought about a flurry of building activity in the fifth century, but seemed to have few lasting
detrimental effects. The fact that many of the Cretan churches built in these centuries were
located close to the coast suggests that piracy was not widespread during this time. From
the available evidence, it appears that Crete remained relatively prosperous until the mid-
seventh century.

Crete's peacefulness was shattered in the seventh century by the beginning of a new

27 In the words of O. Rackham and J. Moody in The Making of the Cretan Landscape
(Manchester 1996) 7: "All the writing that survives from the early Byzantine period would go on a
single page - and yet, on archaeological evidence, this was the second most active period in Cretan
civilization."

28 Detorakis (supra n. 14) 112.
series of piratical raids that brought the island back into the mainstream of international affairs. This time, however, the pirates were not Cretans. The new danger came instead from the Arabs, who began their expansion into the Mediterranean in the seventh century.

One of the earliest recorded raids on Crete occurred in 654, when Arabs under the command of Abu l’‘Awar briefly attacked the island on their way home after sacking Kos.29 This attack caused little damage but served as the precursor for future, more deadly Arab attacks. Such assaults were not long delayed: a fleet under the command of the Arab leaders ‘Abd Allah ibn Qais and Faydal spent the winter of 674/5 in Crete.30 Moslem raids continued into the eighth century, while Byzantium did little to alleviate the problem. A series of devastating attacks in 705, 713, and 714, during which Moslems under al-Walid occupied part of Crete for some time, marked the beginning of a concerted Moslem effort to capture the island.31 Constantinople began to realize the seriousness of the danger and finally took steps to secure the island. A number of defensive fortifications were constructed on Crete during the eighth century.32 In addition, the discovery of numerous seals belonging to military officials may point to an increased Byzantine army presence at this time.33 However, the eighth century was also a period of general decline throughout most of the

29 D. Tsougarakis, Byzantine Crete from the 5th Century to the Venetian Conquest (Athens 1988) 22.

30 Theophanes 354.


32 I.F. Sanders, Roman Crete (Warminster 1982) 133.

33 Tsougarakis (supra n. 29) 25.
Byzantine world. This decline was mirrored on Crete: plagues, droughts, and earthquakes devastated the island in the eighth century, leading to a downturn in economic and social conditions.\textsuperscript{34} All of these problems made Crete an easy target for Moslem pirates. As the ninth century approached, Arab attacks increased in severity, with various Moslem groups vying for the island. The Byzantine state could not adequately deal with the Arab raiders, and it was only a matter of time before Crete fell to Moslem invasion.

The Arab conquest is one of the few events in medieval Cretan history about which we have much textual information. Both Byzantine and Moslem historians wrote about the conquest; the Byzantine sources are not very reliable, however, so it is to the Arabs that we must turn for accurate reports.\textsuperscript{35} In 813, a group of Spanish Moslems led by Abu Hafs al-Balluti were expelled by the Emir of Andalusia for participating in a rebellion in Cordova. Taking their wives and children with them, the Andalusians sailed to Alexandria, Egypt. On the way, they raided several Greek islands, including Crete.\textsuperscript{36} Upon arrival in Alexandria, the Andalusians took control of the city and lived there for some time. In 825/6, they were expelled from Alexandria by Caliph al-Mamun, who told the Andalusians to find a new homeland that was not already ruled by Moslems. Familiar with Crete from their earlier raid, the Andalusians decided to attempt a takeover of the island. This plan was acceptable to the caliph, who arranged for the Egyptian navy to ferry the Andalusians to Crete in about

\textsuperscript{34} Tsougarakis (supra n. 29) 28-29.

\textsuperscript{35} Unfortunately, many of the most important works by Islamic authors have not yet been translated into English. For a good discussion of these crucial sources, see Christides (supra n. 31) 17-33.

\textsuperscript{36} Tsougarakis (supra n. 29) 37.
The Moslems landed near the city of Heraklion, destroyed a Byzantine fortress there, and quickly founded their own citadel, named Chandax after the defensive ditch (*al-Khandaq* in Arabic) they constructed for protection. From this base, the Moslems embarked upon a conquest of Crete, reducing the island city by city over a number of years. The difficulty and slowness of the Arab takeover is shown by the Moslem writer Ibn-Khordhadbeh, who still listed Crete as a Byzantine possession from 838 to 848.\(^{38}\)

Nevertheless, command of the area around Chandax gave the Moslems effective strategic control over the entire island. It did not take long for the Byzantines to realize the seriousness of the loss of Crete. Although still reeling from the revolt of Thomas the Slav in 821-823, Constantinople soon attempted to regain Crete. The *strategos* Photienos was dispatched to the island to destroy the Moslem invaders. Photienos, believing that he could never defeat the Moslems alone, called for reinforcements. Another Byzantine leader, Damianos, soon arrived with a large fleet and army. Unfortunately, however, even the combined forces of Photienos and Damianos were no match for the Moslems, who soundly defeated the Byzantines. A few years later, an expedition under the command of the *strategos* Krateros made another attempt to recapture Crete. After some initial success, Krateros too met with defeat at the hands of the Moslems. The Arab victory over Krateros ended serious Byzantine attempts to reconquer Crete until the tenth century.

With Byzantine power effectively in check, the Cretan Moslems launched a series of

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\(^{37}\) There is some controversy as to the exact date of the conquest; I have followed Tsougarakis, who seems to have the best argument. For details of the dating controversy, see Christides (supra n. 31) 85-88 and Tsougarakis (supra n. 29) 37-41.

\(^{38}\) Tsougarakis (supra n. 29) 40.
piratical raids throughout the Aegean during the ninth and tenth centuries, spreading terror as far as the Gulf of Corinth and the approaches to Constantinople itself. In 829, the island of Kos became the first target of the Cretan Moslems, even before they had completed the conquest of Crete. Later in the ninth century, Cretan pirates attacked Lesbos and the monasteries of Mount Athos in the same year; the Greeks fortified the monasteries in response. Cretan pirates even ventured into the Adriatic Sea and raided the Dalmatian coast in 872.\textsuperscript{39} A major raid occurred in about 879, when Cretan Moslems conducted a huge plundering expedition in the Aegean, reaching as far as the Hellespont. After being repulsed from Thrace, the raiders sailed to the Peloponnese and plundered Methoni, Pylos, and Patras. Such a large series of raids attracted a great deal of attention, which proved to be the pirates' downfall. The Byzantine admiral Niketas Ooryphas pursued, had his ships pulled over the isthmus of Corinth, took the pirates by surprise and massacred them in the Gulf of Corinth.\textsuperscript{40} Despite this setback, Moslem raids continued into the tenth century, when Cretan pirates attacked Attica and sacked the fortified Peloponnesian port of Monemvasia.

However, it is a mistake to view Moslem Crete as simply a nest of pirates, as has commonly been the view of past scholars.\textsuperscript{41} As noted by Christides, the Moslem conquest of Crete was not undertaken simply to gain a base for piracy. Rather, the conquest was part of the Moslem \textit{jihad}, or holy war, against Christian Byzantium.\textsuperscript{42} Crete became, in effect, a

\textsuperscript{39} Christides (supra n. 31) 163.

\textsuperscript{40} Theophanes Continuatus 300-301.19.


\textsuperscript{42} Christides (supra n. 31) 38-39.
forward base in the struggle to unite the Mediterranean world under Islamic religious rule. Nevertheless, despite its warlike footing, Moslem Crete developed into an important Arab trading center, as well as the home of several learned scholars. Additionally, the Cretan Moslems were known for excellent works of craftsmanship and art.\textsuperscript{43}

Moslem Crete was one of the most painful thorns in the side of tenth-century Byzantium. In addition to the threat of raids launched from Crete, the loss of the strategic island endangered Byzantine trade routes in the eastern Mediterranean. In 911, Emperor Leo VI determined to attempt a reconquest of Crete. He sent a fleet of almost 200 vessels, along with over 18,000 troops, to the island.\textsuperscript{44} The force was commanded by Himerios, who had successfully campaigned against the Arabs in Cyprus and the Levant. Himerios' campaign in Crete lasted for more than eight months, but in the end the Byzantines were forced to withdraw. Despite this failure, the Byzantines doggedly persisted in their attempts to regain Crete. In 949, Constantine VII Porphyrogenitos sent a fleet against Crete, but once again the expedition ended in failure.\textsuperscript{45} It appeared that the island was lost to Byzantium forever. Finally, however, the future emperor Nicephoras Phocas led an overwhelming force against Crete in 960. The Byzantine army established a beachhead and laid siege to the Arabs in their capital at Chandax. After a harsh winter, the Christians began fresh assaults in the spring of 961, culminating in the capture of Chandax and the Emir of Crete in March. Nicephoras Phocas went on to liberate the rest of the island from Moslem rule and stationed

\textsuperscript{43} Christides (supra n. 31) 116-136 summarizes the accomplishments of the Cretan Moslems.

\textsuperscript{44} Constantine VII Porphyrogenitos, \textit{De Cerimoniis} 651-664.

\textsuperscript{45} Constantine VII Porphyrogenitos, \textit{De Cerimoniis} 664-678.
a Byzantine garrison and fleet in Crete to safeguard the island and prevent future outbreaks of piracy.

With the end of Moslem rule, Crete once again lapsed into a period of obscurity, at least as far as the literary sources are concerned. Because the Moslems did not attempt to impose their religion on the natives of the island, the people of Crete had little difficulty readjusting to the Byzantine world. During the Second Byzantine period (961 - 1204), Crete experienced a cultural flowering. The economy improved, and art flourished. The prosperity of Crete did not escape the notice of western European nations, notably the Italian maritime republics, which were expanding into the eastern Mediterranean during the 12th and 13th centuries. In 1204, knights of the Fourth Crusade under the command of Boniface of Montferrat wrested Crete from Byzantine control. Constantinople, itself besieged and soon to fall, could do little to help Crete. The Venetians, hungry for a trading base in the eastern Mediterranean, bought Crete from Boniface for the sum of 1,000 silver marks. Venice’s rival Genoa attempted to counter the Venetian purchase by sending troops to seize Crete in 1206. The two Latin powers struggled over the island for four years, but in the end Venice reigned supreme. The Venetian conquest marked the end of Byzantine authority over Crete forever.

During the Venetian period (1204 - 1669), Crete reverted from being a base for piracy to the object of piratical raids. Many of these were carried out by Moslems as part of the jihad against Christianity. Christian pirates were also active; Maltese, Genovese, and Greeks, among others, raided Crete during this period. Turkish pirates attacked Crete in

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46 Tsouarakis (supra n. 29) 89.
1333, prompting Duke Vlasios Zeno to build two galleys to patrol the coast. Other defensive measures taken by the Venetians included the building of fortifications and watch towers. Native Cretans were forced to row galleys and serve as coast watchers to counter the pirate threat. None of these measures proved entirely effective at eradicating piracy. After the final capture of Byzantium by the Ottoman Turks in 1453, Moslem raids on Crete increased in severity. The raids of the Barbary pirates were particularly noteworthy; in 1522 the area around Ierapetra was raided, and in 1527 pirates seized two ships anchored in the harbor at Khania. Algerian pirates even occupied the island of Gaideronis, just off the coast from Ierapetra, and used it as a base. Venice gave the island as a fiefdom to Andrea Dandolo on the condition that he destroy the pirate base and build a tower.\(^{47}\) In 1538 the notorious pirate Barbarossa began a series of raids in the Aegean. Barbarossa failed to take the well-fortified cities of Khania, Rethymnon, and Candia, but managed to plunder lightly-defended Sitia. Many other villages in the area were also captured, and thousands of Cretans abducted.\(^{48}\) Often, such captives were held for ransom. If their families could not meet the pirates’ ransom price, the unfortunates were sold in the slave markets of the Barbary Coast.

By the mid-17th century Crete was the last bastion of the Christian east, and the Ottoman Empire coveted the fertile isle. Ironically, a pirate raid served as the pretext for the Ottomans to launch their takeover of Crete.\(^{49}\) In 1644 the Knights of St. John of Malta captured a Turkish ship close to the coast of Crete. The ship was carrying a load of pilgrims

\(^{47}\) Detorakis (supra n. 14) 202.

\(^{48}\) Detorakis (supra n. 14) 203.

\(^{49}\) Detorakis (supra n. 14) 229.
on their way to Mecca. Incensed over the treatment of the pilgrims, the Turks claimed complicity on the part of the Venetian rulers of Crete. The Ottomans sent a force of 100 warships and 50,000 men, which landed west of Khania in 1645 and promptly surrounded the city. After a two-month siege, Khania surrendered. The Turks moved eastward, and by the spring of 1648 virtually the entire Cretan countryside was in Turkish hands. The capital of Candia, however, held out for over 20 years, finally surrendering in 1669. After that time, all of Crete was controlled by Turks except the three island fortresses of Suda, Grambousa, and Spinalonga, which remained in Venetian hands for many years.

Pirate raids on Crete largely ceased after the Turkish conquest, as Moslem corsairs did not want to raid Turkish territory and most Christian pirates likewise did not wish to harass fellow Christians.\(^5^0\) During the Greek rebellion of the 1820s, however, pirates became active again. By 1824, the rebellion had largely been quelled in Crete. However, in the summer of 1825, Cretan revolutionaries fighting in the Peloponnese decided to revive the revolution in their homeland. They returned to the island and captured the fortresses of Grambousa and Kisamos. The Turks soon recaptured Kisamos and prevented the spread of revolution throughout the island. Trapped in the island fortress of Grambousa, the Cretan rebels resorted to piracy. They raided Cretan coastal areas as well as Turkish and European shipping. In 1828, determined to put an end to piracy in Greece, the new Greek prime minister Ioannis Capodistrias sent a delegation backed by British and French warships to Grambousa. The pirate ships were destroyed, and the fortress captured and placed under the

\(^{50}\) Rackham and Moody (supra n. 27) 199.
authority of the British. Although the presence of the British and French fleets ended most piracy, some rebellious Cretans continued to prey on Turkish shipping until the Ottoman withdrawal from Crete in 1898. With the beginning of the 20th century, and the joining of Crete to the modern Greek state, the long history of piracy in Crete came to an end.

31 Detorakis (supra n. 14) 312-315.
CHAPTER III

SEA FIGHTING AND SEA RAIDING IN THE BRONZE AGE

Although no textual references for sea raiding exist from Bronze Age Crete, a study of the texts and iconography of the ancient eastern Mediterranean reveals that ships have been used in warfare for more than five thousand years. The earliest depiction of ships involved in a battle is from the Gebel el-Arar knife from Egypt, which dates to the Late Gerzean period (c. 3200-3100 B.C.).52 The scene shown on the handle of the knife may depict an attempted invasion of Egypt by foreigners. Soldiers are shown fighting each other from the decks of two different vessels. Only the men are armed; the ships themselves are not equipped with weapons. Egyptian records from the reign of the Fifth Dynasty pharaoh Sahure (c. 2491-2477 B.C.) state that he employed ships to transport troops to the Syro-Canaanite coast (fig. 2).53 Less than two centuries later, the Sixth Dynasty military leader Weni ferried troops to the coast of the Levant in nmlw, or "travel ships."54 It is apparent that in the beginnings of naval warfare ships were used only as fighting platforms for soldiers and for the transport of troops.

Once it had been discovered that ships could be used to transport armies and as fighting platforms for soldiers, it could not have been long before unscrupulous individuals

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54 Faulkner (supra n. 53) 3.
also began to take an interest in ships. Indeed, the first references to the theft of vessels date to the early second millennium B.C. The earliest texts describing the seizure of boats come from the ancient civilizations of Mesopotamia. The first mention is from the Lawcode of Eshnunna, which dates to the early 18th century B.C. Section 6 of the laws states that if a man seizes a boat that does not belong to him, the penalty shall be ten shekels of silver. 55 The wording of the law and the small fine imposed indicate that theft of the boat (i.e., piracy) is not what this law covers. Instead, the law probably refers to seizure of the boat in a time of emergency, such as a flood. Still, the Eshnunna Code shows that even at this early date boats were considered private property and could not simply be taken without compensation to their owners. 56 Another 18th century B.C. document, the famous Code of Hammurabi, provides stiffer penalties for the theft of boats. According to Law 8, "if a man stole either an ox or a sheep or an ass or a pig or a boat, if it belonged to the church (or) if it belonged to the state, he shall make thirtyfold restitution; if it belonged to a private citizen, he shall make good tenfold. If the thief does not have sufficient to make restitution, he shall be put to death." 57 The severe penalties imposed show that the theft of vessels must have been quite a problem during Hammurabi’s time.

The earliest record of the capture of a vessel at sea comes from an account of the


military campaign conducted by the Egyptian Pharaoh Tuthmoses III (c. 1504-1450 B.C.) in the 29th year of his reign. Tuthmoses mentions capturing a ship of the type called 'h' in the Mediterranean Sea. This may have been a type of merchant vessel. Although Tuthmoses' account can be considered a military action rather than piracy, clear references to piratical attacks on both land and sea soon follow. Indeed, piracy played a large role in the destructions that brought the Bronze Age world to a close.

The first hints of the troubles to come are found in the El Amarna tablets, a group of 14th-century B.C. diplomatic letters between Egypt and various other eastern Mediterranean states. During the 14th century B.C., Egypt was beginning to lose control of its vassal states on the Syro-Canaanite coast. Rib-Addi, king of Byblos and an Egyptian ally, wrote to Egypt to complain of the troubles he was having with Yapah-Hadda, the rebellious king of another Syro-Canaanite city-state. El Amarna tablet 113 provides a description of Yapah-Hadda's piratical acts: "Moreover, what have I done to Yapah-Hadda that he plots evil upon evil against me? As he has plundered two of my ships and my sheep and goats so that the amount of my property in his possession is very large, may the king send his commissioner to decide between the two of us." In a subsequent letter, El Amarna 114, Rib-Addi again complained that Yapah-Hadda was going to sea to seize his ships, and Yapah-Hadda's ally Azira had also seized 12 of Rib-Addi's men and was holding them for ransom. Rib-Addi's pleas to Egypt apparently fell on deaf ears, for the Egyptians did not send aid and Byblos eventually fell to


60 Moran (supra n. 59) 188-189.
the rebels.

Another Syro-Canaanite coastal city caught up in the wars of the times was the important trading center of Ugarit. A series of tablets from the early 12th century B.C. describes Ugarit’s battles with pirate raiders. In one letter, an official from the land of Amurr u sought information from Ugarit concerning the activities of the enemy. Amurr u promised to place its ships under Ugaritic control for mutual protection against the raiders. Along with Amurr u, Ugarit was allied with the kingdom of Alashiya, which was almost certainly located on the island of Cyprus. Tablet RS 20.18 contains a warning from Alashiya to Ugarit that 20 enemy ships had escaped the vigilance of the Alashiyan forces and were presently in an unknown location. Not long afterwards, another letter from Alashiya warns the king of Ugarit to prepare for a siege. However, Ugarit was already in grave danger. In tablet RS 20.238, the Ugaritic king laments that seven enemy ships had raided his territory and burned several of his cities. All of Ugarit’s troops and vessels were away at the time of the attack, so the raiders could not be stopped. The Ugaritic king desperately asked the king of Alashiya to send a warning if he received information concerning the whereabouts of any more enemy vessels. This letter was probably never sent: the tablet was found still in the kiln in the ruins of the palace of Ugarit. It is likely that it was being prepared for sending at the time of the destruction of the city in the early 12th century B.C.

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62 Linder (supra n. 61) 63-66.

63 Linder (supra n. 61) 69-72.

64 Linder (supra n. 61) 58-62.
Alashiya, too, might have been at least partly overrun at this time. A tablet from the Hittite king Suppiluliuma II boasts that he defeated and burned a fleet of ships from Alashiya in a sea battle. Afterwards, the Hittites defeated “the enemies from Alashiya” on land.\(^{65}\) Previously, the Hittites and Alashiyans were allies, so it makes no sense for them to be fighting. Therefore, this tablet may indicate that invaders had captured part of Alashiya and were using it as a base for raids on Hittite territory on the southern coast of Anatolia. The Hittite triumph over the enemies in Alashiya was short-lived: soon after this victory Hattusas was burned to the ground and the Hittite empire fell.

Farther west, Mycenaean Greek kingdoms were also subject to attack by seaborne raiders at the beginning of the 12th century B.C. Five Linear B tablets (PY An 657, An 654, An 519, An 656, and An 661) from Pylos list coast-watchers whose job it was to scan the seas for the approach of enemy vessels.\(^{66}\) A total of 800 coast-watchers were assigned to cover about 150 km along the western coast of the Peloponnese. Chadwick has argued convincingly that these tablets also record the disposition of the Pylian army to meet the seaborne threat.\(^{67}\) In addition, Pylos seems to have attempted to raise a fleet to meet the raiders. Two tablets, Vn 46 and Vn 879, list quantities of wooden components, possibly for shipbuilding.\(^{68}\) Text An 1 from Pylos lists 30 or 31 rowers (\textit{e-re-ta}) from several different

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67 Chadwick (supra n. 66) 176-177.

locations who are being sent to Pleuron, most likely a coastal city. Another Pylos tablet, An 724, tells of a landowner who owes service to the Pylian fleet, and An 610 lists rowers and landholders at several locations. It appears that wealthy landowners were obligated to act as rowers or provide vassals to do so. The defensive preparations by the kingdom of Pylos seem to have been in vain. Just as at Ugarit, the palace at Pylos was burned to the ground around 1200 B.C., probably by attackers from the sea. Many other Mycenaean citadels, including those at Mycenae and Tiryns, were destroyed at this time as well.

The troubles that plagued Byblos, Ugarit, and Mycenaean Greece were only part of the struggles that occurred throughout the eastern Mediterranean near the end of the Bronze Age. Much of the danger during this time was caused by the Sea Peoples, an enigmatic group of refugees and raiders who swept across the eastern Mediterranean beginning in the 14th century B.C. Although they were the most famous sea raiders of the Bronze Age, the Sea Peoples were not merely warriors. Rather, they were a collection of peoples on the move during the great period of destructions and migrations that brought the Bronze Age to a close. In the words of Sandars, "the hallmark of the times was movement."

One of the Sea Peoples groups intimately connected with raiding was the Lukka. It is not know for certain where this group of people originated, but it must have been along the coast of Anatolia, probably in the area of Caria or Lycia. The Lukka are mentioned in El


70 Chadwick (supra n. 66) 178-179.


72 Sandars (supra n. 71) 37. A detailed argument for locating the Lukka homeland in southwestern Anatolia is given in J. Garstang and O.R. Gurney, The Geography of the Hittite Empire
Amarna tablet 38, where an Egyptian pharaoh, probably either Amenhotep III (c. 1386-1349 B.C.) or Akhenaten (c. 1350-1334 B.C.), accuses the king of Alashiya of aiding the Lukka in their raids on Egyptian territory. The Alashiyan king denied these charges, and stated that every year the Lukka captured towns in his land. Raids by the Lukka and other groups were dangerous enough to cause Amenhotep III to organize a naval fleet to patrol the Egyptian coast. This did not prove entirely effective, for at the end of the 13th century B.C., the Lukka allied with the Libyans and other Sea Peoples to stage a massive attack on Egypt during the reign of pharaoh Merneptah (c. 1212-1202 B.C.). This was no mere hit-and-run raid; the invaders intended to settle in Egypt. However, Merneptah defeated the foreigners and secured peace in Egypt for several more years. After their defeat by Merneptah, the Lukka seem to drop out of history, though it is likely that Lukka groups continued to conduct raids for many years.

Three other groups who participated in the attack on Egypt during Merneptah’s time are also of interest. These groups, the Ekwesh, the Shardana, and the Shekelesh, were all


73 Moran (supra n. 59) 111-112.

74 Faulkner (supra n. 53) 4.

75 Sandars (supra n. 71) 105-106. Sandars dates the battle to c. 1220 B.C., but more recent work has lowered the dates of Merneptah’s reign, and consequently the battle: P. Clayton, Chronicle of the Pharaohs (London 1994) 156-158. Clayton favors a date of 1207 B.C. for Merneptah’s defeat of the Libyans.

76 It has been suggested that the Lukka may have been the forerunners of the Carian pirates of later centuries: Sandars (supra n. 71) 200. At present, however, there is no archaeological evidence to support such a claim.
described as being “of the Countries of the Sea” by the Egyptians.\textsuperscript{77} The Ekwesh may be the same as the Ahhiyawans, a seagoing group connected with piracy and raiding. Like the Lukka Lands, the homeland of the Ahhiyawans remains uncertain; it may have been in the area around Miletus on the western coast of Asia Minor.\textsuperscript{78} Some scholars have equated the Ahhiyawans with Homer’s Achaeans, and suggested a homeland in Mainland Greece or the Aegean islands.\textsuperscript{79} The association of Ahhiyawans with Mycenaean is certainly possible. In the late Bronze Age, Mycenaean Greeks were present in parts of western Anatolia, including areas around the later cities of Miletus and Halikarnassos.\textsuperscript{80} That the Ahhiyawans supported piracy is shown by the Tawagalawas Letter.\textsuperscript{81} This document, which probably dates to the late 14th or early 13th century B.C., was written by an unknown Hittite king to the king of Ahhiyawa. The Hittite king complains that a former subject of his by the name of Piyama-radius has turned pirate and is conducting raids on Hittite territory, including parts of the Lukka Lands, from a base at Millawanda. The city of Millawanda, which is probably the same as the later city of Miletus, was under the control of the king of Ahhiyawa. The Hittite king asks the Ahhiyawan king to end his support of Piyama-radius and return him to the

\textsuperscript{77} Sandars (supra n. 71) 107.

\textsuperscript{78} Sandars (supra n. 71) 110-111.

\textsuperscript{79} The standard works identifying the Ahhiyawans with Achaeans are G.L. Huxley, \textit{Achaeans and Hittites} (Belfast 1968) and D.L. Page, \textit{History and the Homeric Iliad} (Berkeley 1959). For a recent discussion of the Ahhiyawa problem see O.R. Gurney, \textit{The Hittites} (Revised ed., London 1990) 38-47 and 196-197 for full bibliography.


\textsuperscript{81} Garstang and Gurney (supra n. 72) 111.
Hittites. Whether the Ekwesh and the Ahhiyawans are the same group is still a matter of debate. However, it is interesting that both are associated with sea raiding and both may also be connected with Mycenaean Greeks. Like the Lukka, there is no mention of the Ekwesh in Egyptian records after the reign of Merneptah. It is possible that the Ekwesh who took part in the attack on Egypt during Merneptah's time were indeed Mycenaean Greeks fleeing the destructions that were occurring in their homelands near the end of the 13th century B.C.

The second group specifically associated with the sea, the Shardana, may have been originally from northern Syria. The Shardana were mercenaries who were noted for their use of the bow, spear, and horned helmet. After their defeat at the hands of Merneptah, some Shardana mercenaries entered Egyptian service. Others apparently left the eastern Mediterranean. They may have colonized and given their name to the island of Sardinia.\(^2\)

The final group of Libyan allies specifically identified with the sea are the Shekelesh. These people are enigmatic, but they certainly had some connection with Hittite Asia Minor. In a text discovered in Ugarit, a Hittite king refers to the Shekelesh “who live in ships.”\(^3\) Whatever their origin, the Shekelesh appear to have remained a menace in the eastern Mediterranean for many years. In about 1186 B.C., they were among the groups that took part in a great invasion of Egypt. The Egyptian pharaoh Ramesses III defeated the invaders both on the sea and on the land, and the monument he left to the battles provides some of the best information about Late Bronze Age sea fighting.

The depiction of Ramesses III's victory over the Sea Peoples is carved and painted on

\(^2\) Sandars (supra n. 71) 106-107, 199.

\(^3\) Sandars (supra n. 71) 112.
the walls of his mortuary temple at Medinet Habu.\textsuperscript{84} The battle scene graphically illustrates the destruction of one Sea Peoples vessel by an Egyptian warship.\textsuperscript{85} As in the battle depicted on the Gebel el-Arak knife, the ships in the Medinet Habu relief are being used as fighting platforms for soldiers. The ships themselves were not weapons, and there is no evidence for the use of waterline rams.\textsuperscript{86} In the relief, the Egyptians are shown using a grappling hook to capsize the enemy vessel. Other weapons depicted include bows, swords, slings, and long naval spears. Although the ships themselves are not weapons, both the Egyptian and Sea Peoples vessels do show one advanced feature: the use of brailed sails. Where and when brailed sails originated is still a mystery; the Medinet Habu relief is one of the earliest certain depictions of this system.\textsuperscript{87} Brails allow a sail to be shaped to suit varying wind directions, thus allowing ships to sail closer into the wind than is possible with square-rigged sails alone. Brails also make ships more maneuverable, an important consideration for raiders such as the Sea Peoples.

Five groups of Sea Peoples took part in the attack depicted at Medinet Habu: the Peleset, Tjeker, Shekelesh, Denyen, and Weshesh. The Shekelesh had been known since the


\textsuperscript{86} M. Pridemore, \textit{The Form, Function, and Interrelationships of Naval Rams: A Study of Naval Rams from Antiquity} (MA thesis, Texas A&M University 1996) 12. The waterline ram was not developed until after the end of the Bronze Age.

\textsuperscript{87} A good discussion of the origin of brailed sails, including several Egyptian depictions that may predate the Medinet Habu reliefs, has recently been published: S. Vinson, “The Earliest Representations of Brailed Sails,” \textit{JARCE} 30 (1993) 133-150.
time of Merneptah; the other four groups made their first appearance in the battle against Ramesses III. Little is known about the Weshesh. The same is true of the Denyen, who probably originated in northern Syria. The Peleset are an extremely intriguing group of raiders: after their defeat in Egypt, they settled along the eastern coast of the Mediterranean and gave their name to the land of Palestine. Like the other Sea Peoples, the origins of the Peleset are unclear. However, there is good evidence that at least some of them were fleeing Mycenaean Greeks. The final group, the Tjeker, settled in the area around Dor after being repulsed from Egypt. There the Tjeker continued their piratical ways, as shown by one of the most entertaining tales of Bronze Age seafaring.

The tale of Wen Amon, which dates to about 1100 B.C., describes the trip of an unlucky Egyptian priest to the Syro-Canaanite coast. Wen Amon, a priest from the temple of Amon in Thebes, was sent to Byblos to purchase timber for the god’s ship. Wen Amon sailed first to Dor, the home of the Tjeker, where he was robbed of all his money. Continuing on his voyage, Wen Amon regained some of his losses by robbing a group of Tjeker of 30 deben of silver. Upon arrival in Byblos, the ruling prince Zakar-Baal did not want Wen Amon in his harbor because he feared reprisals from the Tjeker. For 29 days Wen Amon sat in the harbor at Byblos. Finally Zakar-Baal agreed to sell Wen Amon the timber he wanted. When the timber was ready, just as Wen Amon was ready to leave, 11 Tjeker

88 Sandars (supra n. 71) 161-164.


ships sailed into the harbor and demanded his arrest. Zakar-Baal did not want to offend a paying customer, so he told the Tjekers that he could not stop a messenger of Amon from sailing. However, Zakar-Baal hinted that he would not stop the Tjekers from following and capturing Wen Amon’s vessel. Fortunately for Wen Amon, a favorable wind carried him to Alashiya, allowing him to elude the Tjeker pirates entirely. He eventually made it back to Egypt.

The tale of Wen Amon provides the last glimpse of piracy from the Bronze Age eastern Mediterranean world. By the time of Wen Amon’s ill-fated journey, the political and cultural landscape of the eastern Mediterranean had changed irrevocably. The Hittite empire had fallen, along with the proud citadels of Mycenaean Greece. The cities of the Syro-Canaanite coast were in turmoil. For several hundred years, darkness covered the entire region. Only Egypt remained, but even its power was greatly diminished.
CHAPTER IV
A MODEL FOR BRONZE AGE SEA RAIDING

The preceding two chapters are important because they provide details on pirate activities in the eastern Mediterranean throughout time and show that Crete has a long history as both a pirate haven and as the victim of sea raids. Unfortunately, extant texts do not provide any references to attacks on Crete during the Bronze Age, but we have seen that piracy was very much a part of the Bronze Age eastern Mediterranean world. In fact, the Bronze Age was brought to a close by an orgy of violent destruction, much of it in the form of raids from the sea. It is likely that Crete was also a victim of such raids. For Bronze Age Crete, which lacks direct historical testimony, archaeological evidence alone must be examined to determine if attacks by sea raiders occurred.

To evaluate the effects of sea raiding on Bronze Age Crete, it is necessary to construct a model for Bronze Age piracy. The most important thing that the preceding study of historical material shows is that piracy changed very little over the millennia. Sea raiders used the same methodologies, from the earliest recorded instances up until the beginning of this century. The preferred method of operation for Mediterranean pirates has always been quick, hit-and-run raids against lightly defended targets on shore. The capture of persons to be held for ransom was a main goal of raiding, but pirates also sought property such as livestock. Small, fast, highly maneuverable vessels were used so that the pirates could strike with surprise and retreat before land or naval forces could come against them.

Just as sea raiders used the same techniques for millennia, people threatened by seaborne raids adopted similar defensive measures to deal with the danger. Common
responses to piratical raids included such things as settlement pattern changes, construction of fortifications, and the organization of a fleet to deal with the raiders at sea. All of these points require elaboration.

SETTLEMENT PATTERN CHANGES

One of the most obvious effects of large-scale sea raiding is the abandonment of coastal areas. During peak periods of raiding activity, coastal settlements virtually disappear. The connection between the desertion of coastal habitations and piracy has been stressed by many scholars. 91 Few of these, however, have provided any real evidence for their claims. This has led, in recent years, to the tendency for some scholars to dismiss sea raiding as a reason for settlement pattern changes. 92 Instead, they claim that changes occur because of a variety of factors, especially the economy. It is no doubt true that change is usually the result of a number of complex causes. Nevertheless, to deny the importance of sea raiding for settlement pattern changes is to ignore abundant archaeological and textual evidence, both ancient and modern.

Among the earliest sources to cite sea raiding as a reason for the abandonment of coastal territory is the previously mentioned text RS 20.238 from Ugarit. In this document,


the king of Ugarit laments that due to sea raiders "the country is abandoned to itself."\textsuperscript{93} Thucydides also attributed lack of coastal settlement to raiding, writing that "because of the wide prevalence of piracy, the ancient cities, both in the islands and on the mainland, were built at some distance from the sea."\textsuperscript{94} In medieval times, other evidence illustrates coastal abandonment due to the depredations of pirates. From the 16th to the 18th centuries, savage attacks by Barbary corsairs led to the desertion of much of the southern European coast.\textsuperscript{95} On Crete itself, some of the best attested accounts of coastal abandonment come from the Venetian period. During this time, Crete was beset by both Muslim corsairs and Christian pirates such as the Knights Hospitallers of Malta. Accounts mention increasing numbers of raids beginning in the 14th century. By the 16th century, the problem was so bad that virtually the entire coast of Crete was abandoned. In the words of Rackham and Moody, "for a hundred years Provveditori and Rettori listed the abandoned coastal plains, and shook their heads over the number of measures of wheat not being grown."\textsuperscript{96} The desertion of the coasts caused by the raids of this time took centuries to repair. Even in the mid-19th century, the English traveler Spratt noted that the plain around the Bay of Palaikastro in eastern Crete was abandoned due to piracy and had been for many years.\textsuperscript{97} Similarly, the coastal Frangokastello plain was not inhabited as late as 1867 because of the danger of raids by

\textsuperscript{93} Linder (supra n. 61) 58-62.

\textsuperscript{94} Thuc. 1.7.

\textsuperscript{95} P. Earle, \textit{Corsairs of Malta and Barbary} (London 1970) 67.

\textsuperscript{96} Rackham and Moody (supra n. 27) 199.

\textsuperscript{97} T.A.B. Spratt, \textit{Travels and Researches in Crete}, vol. I (London 1865) 205.
Turkish corsairs.  

The locations of monasteries also reflects the prevalence of piracy in Crete during the medieval period. Monasteries were often established at coastal locations. However, as they were defenseless, monasteries became favorite targets for pirate raiders. The monastery of Apezanes, probably established sometime in the 15th century, was originally located only half a kilometer from the sea at the mouth of the Ayiofarango gorge on Crete’s south coast. Repeated raids by pirates, however, forced the monks to move their home to another location farther inland. Other monasteries followed this same pattern. The situation in Crete was mirrored in medieval England, where monasteries were often the favorite targets for Viking raiders.

As can be seen, there is abundant evidence that attacks from the sea lead to the desertion of coastal settlements. People abandon dangerous seashores and relocate to safer areas farther inland. The question is, how far from the sea did one have to move in order to be safe? Evidence shows that raiders were able to penetrate quite far inland, but not with impunity. Pirates who ventured too far into the interior ran the risk of being cut off from their vessels and surrounded in hostile territory by superior numbers. This, too, is a concept that is reflected in some of the oldest literature about piracy. Another of Homer’s tales concerns a raid carried out by Odysseus on his long journey home from the Trojan War. After departing Troy, Odysseus and his warriors staged a raid on a coastal city in the land of


100 Od. 9.39-61.
the Cicones, generally considered to be Thrace. The Achaeans successfully pillaged the city, capturing women and treasure in the process. Odysseus then counseled a swift retreat, but his men would hear none of it. They remained on the shore, drinking wine and feasting on captured sheep. Other Cicones who had escaped the fight fled inland and sought help from neighboring cities. The next morning, the Achaeans were attacked by a host of warlike Cicones gathered from the surrounding region. A number of Achaeans were killed before they could escape in their ships. A similar theme is echoed later in the *Odyssey*, during the tale in which Odysseus claims to be a Cretan pirate. Odysseus describes a raiding expedition which he organized and led against Egypt. After outfitting nine ships, the Cretans sailed to Egypt and anchored in the mouth of the Aegyptus river, which must be the Nile. Odysseus, prudent as always, ordered his men to stay and guard the ships while scouts covertly surveyed the countryside. Disobeying his orders, Odysseus’s men left the ships unguarded and raided the surrounding countryside, killing the men and carrying off women and children. This attack caused an uproar throughout the surrounding region, and within a short time a huge host of footsoldiers and charioteers filled the entire plain, surrounded the pirates, and killed many. The rest of the raiders were captured and made slaves, although Odysseus, as leader of the group, became an honored guest of the local king. Of course, the stories of Odysseus are legend rather than historical fact. Nevertheless, Homer’s words reflect the types of events that occurred during the Dark Ages, and provide a vivid description of the

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fate awaiting any raider who tarried too long in hostile territory.

The same fate befell more than one group of raiders in other parts of the world. In 794, in one of the earliest recorded Viking attacks on England, a group of raiders sacked and burned the monastery at Jarrow. Several Viking warriors were killed in the attack, and as the survivors were making their escape, bad luck befell them. Their ships were caught in a storm, causing some to be driven ashore. There the Vikings were slain by vengeful Anglo-Saxons. Another Viking story recounts the saga of Eirik Bloodaxe, who mounted an attack on England during the reign of King Edmund (939-946). According to the tale, Eirik "had such confidence in his own prowess and his own army that he advanced far inland, plundering as he went. Against him came King Olaf, sub-king to Edmund. They fought, and Eirik was beaten down by superior local forces and fell there with all his host." Like the Homeric epics, this story is based on legend rather than historical fact. Still, it provides a reflection of what could happen to raiding bands that ventured too far into hostile territory.

These accounts shed light on the reason for settlement pattern changes. Obviously, it was possible for groups of raiders to attack targets that lay well inland. However, the pirates ran the risk of being surrounded and destroyed before they could return to their ships and sail away. Therefore, placing settlements even a few kilometers from the sea provided a measure of security against pirate raids. But the question remains, how far inland was far enough? The answer lies in the amount of time it took raiders to travel to the target, sack it, and return to their vessels to make good their escape. For the purposes of this model, I have adopted a

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three-hour time limit for pirate raids on Crete. I believe that any raiding party that lingered ashore more than three hours was in serious danger of being destroyed. Given a three-hour time limit, raiders would be limited to attacking targets no farther than one hour's march inland. This is because it would take at least one hour to reach the target, plus an hour to overcome resistance and gather spoils. A third hour would then be needed to travel back to the waiting ships. This is a somewhat arbitrary limit, but it seems in keeping with historical information which stresses that the normal methodology of pirate bands was to strike quickly and run away before resistance could be mounted.

In order to evaluate settlement pattern changes on Crete, it then becomes necessary to know how far one can travel across the Cretan landscape in one hour. The topography of Crete is extremely diverse, from broad plains to sheer mountains. Travel time is thus a much more important indicator of distance than actual linear measurement. Pendlebury published travel times for many different routes across Crete, most of which he had walked himself. Comparing Pendlebury's travel times to actual distances illustrates the problems involved in trying to arrive at an average speed for walking in Crete. Pendlebury's estimates vary widely, from 2.3 km/h in rugged areas to over 7 km/h in flat topography or along good roads. Overall, Pendlebury's average speed calculates to about 4.5 km/h. More recent work, however, has suggested that an average speed of about 3 km/h provides an accurate reflection of travel times throughout Crete. J. Moody gives this figure as an average walking

\[103\] Pendlebury (supra n. 91) 9-15.
speed based on her dissertation work in the Khania area. In the summer of 1996, I undertook an experiment in the Vrokastro region of eastern Crete to determine how far inland one could walk in a given amount of time. For this experiment, I walked from the beach at Priniatikos Pyrgos to a point in the Prina gorge, then traveled back to my starting point. The outbound trip was made by road, while the return trip was made as straight as possible across country. On the outbound journey, total walking time was 2.5 hours. The straight line distance for this trip was about 5 km, yielding an average speed of only 2 km/h. However, by my pace count, the actual distance by road was about 7.1 km. This yields an average speed of 2.8 km/h. The return trip overland was much more difficult, and involved negotiating such rough terrain as the steep sides of the Prina gorge and the bramble-choked olive and citrus groves of the Istron river valley. I managed to cover the 5 km back to the coast in 2.5 hours, for an average speed of 2 km/h. It is my belief that bands of raiders would follow established routes as much as possible, rather than attempt to bushwack their way across unknown and hostile territory. My speed by road of 2.8 km/h agrees well with Moody's figure of 3 km/h, so this seems to be a good general average to use for travel on established pathways throughout Crete. I will therefore use 3 km/h as the general speed for raiding parties venturing into the interior of Crete.

For the purposes of this model, I have used the average walking speed of 3 km/h to establish three settlement zones for use in evaluating settlement patterns in Bronze Age Crete. These three areas are the coastal zone, the intermediate zone, and the inland zone.

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The coastal zone covers all the territory from the seashore up to 0.5 km inland. This area can be reached by raiders within ten minutes, and is thus a prime target for sea raids. During times of heavy piratical activity, therefore, settlement in the coastal zone should be virtually non-existent. The next region, the intermediate zone, covers the area from 0.5 km to 3.0 km from the sea. This represents the distance a raiding party could travel inland in about one hour. The raiders would then need a minimum of another hour to sack the target and gather spoils, plus a third hour to return to their vessels and depart the area. A three-hour round trip would be possible, although there was certainly a chance that natives would have time to mount counter-attacks against the raiders. The intermediate area, then, represents both a chance for great profit and great risk to the raiders. For the inhabitants of this zone, settlement contains some measure of danger, but still allows them to be close enough to the sea to take advantage of coastal resources. I therefore hypothesize that intermediate zone habitations would be the preferred settlement form during times of heavy raiding in areas with established traditions of exploiting coastal resources. Finally, the inland zone covers all the area more than 3.0 km inland. Attacking a target in this zone would require a minimum of three hours’ round trip at the closest point to the sea. It is likely that venturing any farther than 3.0 km inland would result in almost certain destruction at the hands of local forces. This can be seen in a story from medieval Crete: one night in 1556, raiders penetrated 4 km into the Asterousia mountains and pillaged the village of Andiskari, carrying off many prisoners. This foray was ultimately unsuccessful, however, as men from a nearby village armed themselves, cut off the retreating pirates, and recovered the captives.\(^\text{107}\)

\(^{107}\) Rackham and Moody (supra n. 27) 199.
SITE NUCLEATION

In addition to abandonment of the coasts, areas that undergo heavy episodes of sea raids tend to exhibit a nucleated settlement pattern. During peaceful times, small settlements are commonly dispersed widely throughout the landscape. However, when faced with the threat of raids, people group their villages closer together for mutual protection. Again, this is a concept that dates back to at least Classical times. Thucydides stated that pirates had an easier time attacking cities which consisted only of scattered settlements.\(^{104}\) The 18th-century traveler Thévenot noted that on the island of Chios the settlement pattern consisted of groups of two or three villages clustered together for mutual protection against pirate raids.\(^{109}\) Moody notes that on Crete, the most common type of settlement was usually the hamlet of less than 250 people.\(^{110}\) However, during certain periods the inhabitants of Crete grouped their hamlets into larger villages. Moody cautions that site nucleation does not automatically mean danger from the sea. Instead, on Crete at least, nucleation often seems to be the result of threats from other areas within the island. However, Moody believes that settlement nucleation in coastal areas was probably the result of danger from the sea.\(^{111}\)

\(^{104}\) Thuc. I.5.7-8.

\(^{109}\) Ormerod (supra n. 6) 40.


\(^{111}\) Moody (supra n. 110) 55-56.
FORTIFICATIONS

Another common adaptation of those faced by pirate raids was to construct fortifications. Fortifications are practical for two main reasons. First, even during times of heavy raiding activity, people often wanted to take advantage of the resources such as trade and fishing, afforded by coastal locations. In order to carry out these activities some form of presence on the coast had to be maintained. Also, cities that had been established on the coast previously were sometimes simply too big to move to an inland location.\textsuperscript{112} In the face of pirate raids, the best alternative was to fortify those sites that had to remain on the coast.

Examples of fortifications to deter sea raiders are numerous throughout history. The beginning of Viking raids in continental Europe in the ninth century caught many cities completely off guard. Frankish cities such as Langres, Beauvais, and Reims had dismantled their Roman fortifications during the peaceful times of Charlemagne’s reign. Other new Carolingian cities had no defenses whatsoever. However, within years of the beginning of Viking raids, almost all cities in northern Gaul constructed fortifications.\textsuperscript{113} Viking attacks upon Wessex led king Alfred the Great to develop a system of fortified settlements, called \textit{burhs}, throughout the countryside.\textsuperscript{114} In 16th-century Venetian Crete, almost every coastal settlement was fortified because of pirate raids. Pirate descents were so prevalent, in fact, that even monasteries such as Apezanes and Toplou were fortified and provided with cannon

\begin{itemize}
  \item \textsuperscript{112} Moody (supra n. 110) 56.
  \item \textsuperscript{113} M. Rouche, “The Vikings Versus the Towns of Northern Gaul: Challenge and Response,” in C.L. Redman, ed., \textit{Medieval Archaeology} (Binghamton, NY 1989) 41-42.
  \item \textsuperscript{114} A good discussion of the \textit{burh} system can be found in D. Wilson, ed., \textit{The Archaeology of Anglo-Saxon England} (London 1976) 124-137.
\end{itemize}
to fight off attacks.\textsuperscript{115}

REFUGE SITES

Along with fortifications, people faced with the threat of pirate raids often moved to refuge sites, settlements in highly inaccessible locations such as mountain peaks. Refuge sites used terrain to aid in defense against attacks. A settlement on the top of a steeply sloped hill would prove much more difficult to assault than one on a flat coastal plain. In Crete, there is good evidence for widespread relocation to refuge sites at the end of the Bronze Age and throughout the Dark Ages.\textsuperscript{116} It is possible that much of the danger during these times was caused by sea raiders. This idea will be examined in later chapters. Whether or not pirate attacks led to the use of refuge settlements in Bronze Age Crete, seaborne raids were certainly responsible for the advent of refuge settlements in other areas at other times. The Roman historian Diodorus Siculus claimed that the early inhabitants of Sicily placed their villages on hilltops because of the threat of pirate raids.\textsuperscript{117} During his journeys throughout Crete, the English traveler Spratt became acquainted with the Cretan custom of using refuge sites during times of trouble. Near the city of Gortyn, Spratt was shown a labyrinth under Mount Ida that was used as a place of refuge during times of danger.\textsuperscript{118} Another time, Spratt had difficulty finding a guide to accompany him to the Nide

\textsuperscript{115} Psilakis (supra n. 99) 92, 178-179.


\textsuperscript{117} Diodorus Siculus 5.6.

\textsuperscript{118} T.A.B. Spratt, \textit{Travels and Researches in Crete}, vol. II (London 1865) 45-50.
Plain, near the summit of Mount Ida. Local villagers did not want to show a foreigner the way to the high mountain plain, which was used, according to Spratt, “in times of internal trouble.” Spratt’s words serve as a caution against automatically assuming that refuge settlements were used only because of pirate raids. Attacks from the sea were not the only reason for flight to the mountains; internal troubles often produced the same result. Still, the presence of refuge settlements near coastal areas probably serves as a reliable indicator of danger from the sea.

DEVELOPMENT OF A FLEET

In contrast to the defensive responses discussed above, the development of a fleet requires a higher degree of social organization. Moving settlements away from the coasts, grouping villages together for mutual protection, or placing habitations in difficult to reach locations are all adaptations that could have been done by even the most loosely organized societies. The construction of fortifications necessitates a greater degree of social organization, but even this is commonly seen in chiefdom societies. On the other hand, evidence implies that the construction of a fleet required the organization and resources of a state.

As detailed in the previous chapter, the Egyptian pharaoh Amenhotep III built a fleet to guard the Egyptian coast against raids by the Lukka and other Peoples of the Sea. Two

119 Spratt (supra n. 97) 22.

centuries later, Ramesses III used his fleet and army to defeat an invasion by Sea Peoples. The city-state of Ugarit also possessed a fleet during the time of the Sea Peoples raids. In tablet RS 20.238, the king of Ugarit writes that he is hard pressed by raiders because his army is away in Hittite territory and all his ships are in the land of Lukka. Table UT 83 from Ugarit tells of 18 men from several different locations who are being gathered for service on a ship. These men may have been conscripted to serve in the Ugaritan fleet in a last failed attempt to save the city from destruction. Likewise, Linear B tablets from Pylos list landowners who owe service as rowers, and possibly detail shipbuilding materials. As at Ugarit, this may indicate that Pylos attempted to raise a fleet shortly before its destruction.

Evidence from later in history also shows that only states used fleets to combat piracy. The Athenian fleet, originally built to defend Athens from Persian invasion, was used into the fourth century B.C. to keep piracy in check. After the destruction of the Athenian fleet off Amorgos in 322 B.C., the only real force left to deal with pirates in the Aegean was the Rhodian fleet. Rhodes had good success until the loss of Roman support following the Third Macedonian War (171-167 B.C.), but then declined in power. The power vacuum in the eastern Mediterranean created by the absence of the Rhodian fleet was one of the main factors that led to the outbreak of Cilician piracy in the first century B.C.

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121 Linder (supra n. 61) 58-62.
122 Linder (supra n. 61) 18-19.
123 Killen (supra n. 69) 72-75.
124 Ormerod (supra n. 6) 114-116.
125 Ormerod (supra n. 6) 199.
When Rome began her campaign against piracy in the first century B.C., one of the first things that Pompey the Great did was to organize fleets to fight the raiders at sea and keep them blockaded in port. The *Anglo-Saxon Chronicle* records that Alfred the Great built a fleet of longships to combat the Viking raids that were ravaging his country.

All of these societies meet the commonly accepted definition of a state. That is, each one had an official ruling bureaucracy that had the power to make laws and enforce them by the use of force. This implies that we should not expect to see the development of an organized fleet in Crete before the Prepalatial period. Before that time, society within Crete more easily fits the definition of segmentary societies or chiefdoms. During the Protopalatial period, when the first palaces and a system of writing emerged, Crete began to take on the aspects of a state level society. Recently, the first palace territories have been termed city-states, and seem to possess all of the aspects required for this distinction. Therefore, it is possible that fleets for defense against piracy might have been raised by Cretan cities as early as the Protopalatial period. By the Neopalatial period, Knossos was a dominant palace center. Knossos probably controlled at least the central part of Crete, and may have ruled all of the island. The Neopalatial period, then, was certainly a time when several polities on Crete possessed the organization and resources to build a fleet. Likewise, during the Linear B administration of Crete, whether the Mycenaeans controlled

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126 Ormerod (supra n. 6) 235-239.

127 Savage (supra n. 103) 103, 107.


129 Watrous (supra n. 4) 752.
all of the island or not, Crete possessed the ability to raise a fleet of warships.

THE FORM OF THE MODEL

The information presented above reveals five defensive adaptations common to groups facing attack by sea raiders:

1. A shift in settlement patterns away from the sea.
2. The nucleation of coastal settlements.
3. The construction of fortifications, especially at coastal settlements.
4. The use of refuge centers in areas accessible from the sea.
5. The development of a fleet in state-level societies.

All of these activities leave traces in the archaeological record that can be recorded and interpreted. If Crete suffered attacks by sea raiders during the Bronze Age, evidence for some or all of these patterns should be present in the archaeological record. The following two chapters analyze the archaeological record of Bronze Age Crete to determine whether or not evidence for any of these activities exists.
CHAPTER V

SETTLEMENT PATTERN ANALYSIS

Until recently, a clear picture of Bronze Age settlement patterns on Crete was lacking. This was mostly due to the fact that scientific archaeological surveys had not been conducted on the island. Fortunately, in recent years several archaeological surveys have been conducted on Crete. These help to provide long-term diachronic contexts for various regions of the island. Like all other types of archaeological evidence, surveys suffer from a number of problems such as differential preservation of material and visibility. 130 Nevertheless, archaeological surface surveys are the best means of identifying long-term changes in settlement patterns at the regional level.

The following sections review survey evidence from seven areas of Crete: Khania, Sphakia, the western Mesara plain, Ayiofarango, the Lasithi Plateau, Vrokastro, and Kavousi-Thripiti (fig. 3). Where data are available, settlement patterns from the Neolithic through the Dark Ages are traced in order to provide a picture of the entire Bronze Age, as well as the immediately preceding and succeeding periods. Where appropriate, data from excavations are added in order to give a fuller picture of the Bronze Age in each region.

Six of the areas studied (Khania, Sphakia, the western Mesara, Ayiofarango, Vrokastro, and Kavousi-Thripiti) contain coastal territory. Of these six coastal areas, four

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Fig. 3. Locations of the seven survey areas. (Drawing by D. Stewart)
(Khania, Sphakia, Ayiofarango, and Vrokastro) have been published in sufficient detail to allow division into coastal zone, intermediate zone, and inland zone settlements as proposed in the model in the preceding chapter. The other two coastal regions, the western Mesara and Kavousi-Thripti, cannot be divided into settlement zones, but still provide some information regarding settlement pattern changes in coastal areas. Finally, changes in settlement patterns in the Lasithi plateau have also been analyzed, even though this area does not lie on the coast. The results from Lasithi serve as a control, providing information about settlement changes in non-coastal areas of the island. If similar patterns emerge in both coastal and non-coastal regions, it may be an indication that the fluctuations are due to reasons other than attacks from the sea.

THE KHANIA REGION

West Crete was for many years ignored by archaeologists, who considered the region a cultural backwater devoid of archaeological significance. In recent years West Crete has become much more well-known, thanks in part to an archaeological survey of the Khania region conducted in the 1980s. The survey was designed to cover all territory within three hours walking distance of the Bronze Age city at Khania Kastelli, an area of 171 km² (fig. 4). However, intensive survey of the entire Khania plain was not possible due to modern settlement and cultivation. Also, the Khania plain is covered by several meters of recent sediment that totally obscures archaeological material greater than 1,500 years old. Survey of the plain was therefore limited to places where roadcuts and ravines revealed buried
Fig. 4. Map of the Khania survey area. (After Moody, 1987, map 6.1)
prehistoric material. Although locating sites in this manner certainly shows that the Khania plain was occupied in antiquity, Bronze Age settlement patterns in the plain cannot be reliably reconstructed because most sites still lie buried. For this reason, the following assessment of Bronze Age settlement patterns in the Khania area relies only on site data from the Akrotiri peninsula, which was both extensively and intensively surveyed.

Settlers first colonized the Khania region during the Neolithic period. The settlement at Khania Kastelli, which underlies the modern city of Khania and which later grew into one of the main Bronze Age cities of Crete, was founded by the Late Neolithic period. Almost all Neolithic habitations were located on the coast (table 1). In addition to open settlements, several caves were inhabited during the Neolithic. All Neolithic sites in West Crete contain obsidian, so there must have been some contact with the Cyclades even at this early date. Obsidian seems to have been brought to the Khania area in the form of cores and blanks, and then processed into other tools. Sites such as KL3 and KL5, on a small bay on the western side of the Akrotiri peninsula, yielded obsidian cores and many flakes. Much obsidian was also discovered at the site of KL12, a small islet just offshore from KL5. These coastal sites may have been ports into which the obsidian was shipped, and the abundance of flakes and cores may indicate that they were processing centers as well.

131 Moody (supra n. 106) 195-196.

132 Moody also limited her statistical calculations to data from the Akrotiri: Moody (supra n. 106) 200 note 12.

133 Moody (supra n. 106) 291. Almost 1,500 pieces of obsidian were recovered by the survey, mostly from habitation sites whose earliest phases were FN, EM or MM I-II.

134 Moody (supra n. 106) 203-204.
Table 1. Habitation Site Proximity to Coast, Khania region.

<table>
<thead>
<tr>
<th>Period</th>
<th>Coastal</th>
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<th>Intermediate</th>
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<td>Percentage</td>
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<td>10%</td>
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</tr>
<tr>
<td>Prepalatial</td>
<td>16</td>
<td>47%</td>
<td>16</td>
<td>47%</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>Protopalatial</td>
<td>22</td>
<td>24%</td>
<td>57</td>
<td>63%</td>
<td>12</td>
<td>13%</td>
</tr>
<tr>
<td>Neopalatial</td>
<td>17</td>
<td>17%</td>
<td>71</td>
<td>70%</td>
<td>13</td>
<td>13%</td>
</tr>
<tr>
<td>Postpalatial</td>
<td>6</td>
<td>15%</td>
<td>27</td>
<td>66%</td>
<td>8</td>
<td>19%</td>
</tr>
</tbody>
</table>

A total of 34 habitation sites had Prepalatial period material. Almost half of Prepalatial habitations were located in the coastal zone. In addition, most were situated at low elevations, although a few hilltop settlements were discovered. As in other parts of Crete, the Khania region experienced growth and contact with outside areas during the Prepalatial period. Ceramic parallels indicate interaction with the rest of Crete. Contact with the Cyclades continued throughout the period, as shown by finds of obsidian from all Early Minoan sites. Near the end of the Prepalatial period, the region acquired close ties to Kythera, where a new Minoan settlement was developing.\(^{135}\) Moody also noted the existence of small territories with incipient hierarchies, a social development which helped bring

about the palace system of the succeeding period.\textsuperscript{136}

A total of 91 Protopalatial period habitation sites were recorded. The large increase in occupied sites must indicate an increase in population. However, compared to the Prepalatial period, there was a definite shift in settlement patterns away from the coast during the Old Palace period. Only about a quarter of the settlements were located in the coastal zone; most were in the intermediate zone. Settlement in the backcountry of the Akrotiri, more than three km from the coast, also expanded. Moreover, the MM I-II material does not show interaction with foreign areas or the rest of the island as much as in the Prepalatial period.\textsuperscript{137}

As in other areas of Crete, the Khania area was most populated in the Neopalatial period. Despite a growing population, the trend of siting habitations away from the coast continued. Only 17\% of Neopalatial sites were located on the coast, which seems strange since overseas contacts were strong throughout the period.\textsuperscript{138} As in the Protopalatial period, most Neopalatial sites were located in the intermediate zone. There was little change in the number of sites more than three km from the coast.

The Khania area flourished during the LM IIIA-B periods, during which Khania Kastelli was one of the leading towns in Crete. Quantities of imported Mycenaean pottery and finds of Linear B tablets (the only ones known from Crete outside of Knossos) show Khania Kastelli’s strong contacts with Mainland Greece during the LM IIIA-B and early LM

\textsuperscript{136} Moody (supra n. 106) 300.

\textsuperscript{137} Moody (supra n. 106) 302.

\textsuperscript{138} Moody (supra n. 106) 306.
IIIC periods. Pottery from Cyprus points to connections even farther abroad. However, by the middle of LM IIIC the number of sites declined and site nucleation began. The number of coastal zone settlements declined slightly, reaching its lowest level of the Bronze Age. Khania Kastelli and other coastal sites were abandoned in the second half of LM IIIC. As in the Protopalatial and Neopalatial periods, the majority of the population preferred to live in the intermediate zone some distance away from the sea, but still close enough to take advantage of maritime resources.

There is little evidence for either the Subminoan or Protogeometric periods in West Crete. During the Geometric period, an increase in sites occurred throughout the region. Khania Kastelli was reoccupied, grew in size, and spread out over the plain. Imported pottery from Attica, Argos, Corinth, and Euboea attests to renewed contact with Mainland Greece. Another important site, Aptera, was founded in the Geometric period. Aptera occupied a commanding position on a hill overlooking Suda Bay. The historical settlement was surrounded by a four km long fortification wall, probably constructed during the Classical period. Throughout the Khania region, the recovery of the Geometric period

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141 Moody (supra n. 106) 309-315.


143 Vlasaki (supra n. 142) 417.

144 Vlasaki (supra n. 142) 410.
persisted into the Orientalizing and Archaic periods, during which there was a renewal of activity along the coast. Growth and the expanded utilization of the sea continued during Graeco-Roman times.

THE SPHAKIA SURVEY

The Sphakia Survey, conducted in the rugged and beautiful White Mountains, is also helping to fill the gaps in our knowledge of West Crete. Sphakia is very mountainous and contains little arable land except for several mountain plains and the coastal Frangokastello plain (fig. 5). The region also receives very little rain; it is part of the "European Sahara" - the dry, desolate rain shadow of Crete’s south coast. Though a seemingly inhospitable environment, Sphakia has traditionally been known as a bastion of resistance against foreign invaders. Refugees flocked to the district during the Venetian and Turkish occupations. The area served as a place of refuge as recently as the German occupation during World War II.

In addition, despite its remote and mountainous character, the Sphakia region has a long history of maritime trade. In Graeco-Roman times, the harbor at Phoinix (modern Loutro) was one of the major ports on the south coast of Crete. It was to this haven that St.

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146 Nixon, Moody, and Rackham (supra n. 145) 167.
Paul's ship was making when it was caught by a storm and subsequently shipwrecked on Malta. The port was also utilized by Roman vessels making the run from Alexandria to Rome. An inscription from the second century A.C. tells of a large grain-carrier seeking shelter at Loutro during a storm. In the Medieval period, cypress logs were exported from Sphakiot ports such as Loutro and Aghia Roumeli. Thus, the coast of Sphakia has been utilized since antiquity.

Analyzing settlement pattern fluctuations in Sphakia, which has a long tradition of both coastal activity and resistance to outside incursions, should help bring new understanding to the meaning of settlement pattern changes in other parts of Crete. Although fieldwork on the Sphakia survey has been completed, the artifacts are still being studied. Thus, the settlement patterns discussed below are preliminary and subject to modification when more detailed information becomes available. Nevertheless, it is possible to note several general settlement pattern trends in the Sphakia area.

To date, the pottery from the earliest periods has been studied the most and is therefore the best known. Although remote, the Sphakia area was inhabited by the Final Neolithic period. None of the FN/EM sites were right on the sea, although one, site 6.02, is only slightly beyond the coastal zone (table 2). Instead, sites were divided approximately evenly between the intermediate and inland zones. Interestingly, several FN/EM sites were discovered in the Madhares, a high mountain plateau well back from the coast. The

147 ICr XX.7.

148 I am grateful to J. Moody for allowing me to study the unpublished 1995 Sphakia site catalog, on which my observations are based.
Madhares, situated at an elevation of 1,700 to 2,000 m, is too high for cultivation or tree growth. In the winter months, the plateau is bitterly cold and often covered with snow. The harsh winter conditions preclude year-round occupation, and today the Madhares is used only for summer grazing of sheep and goats.\textsuperscript{149} It is possible that the FN/EM sites discovered in the Madhares also represent the seasonal camps of shepherds. Although the coast does not seem to have been utilized by the earliest settlers of Sphakia, finds of obsidian from all FN/EM sites show that the region had some form of contact, either direct or indirect, with the outside world. In the absence of coastal sites, it is probable that much of this activity took place overland, with settlements on the north coast such as those in the Khania region. Indeed, it is possible that Sphakia was originally settled by farmers and shepherds moving overland from the developing areas of the north coast.

Table 2. Site Proximity to Coast, Sphakia region.

<table>
<thead>
<tr>
<th>Period</th>
<th>Settlement Zone</th>
<th>Coastal</th>
<th>Intermediate</th>
<th>Inland</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Period</td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
</tr>
<tr>
<td>Neolithic</td>
<td></td>
<td>0</td>
<td>0%</td>
<td>6</td>
</tr>
<tr>
<td>Prepalatial</td>
<td></td>
<td>4</td>
<td>21%</td>
<td>10</td>
</tr>
<tr>
<td>Protopalatial</td>
<td></td>
<td>4</td>
<td>29%</td>
<td>8</td>
</tr>
<tr>
<td>Neopalatial</td>
<td></td>
<td>5</td>
<td>22%</td>
<td>13</td>
</tr>
<tr>
<td>Postpalatial</td>
<td></td>
<td>1</td>
<td>33%</td>
<td>2</td>
</tr>
</tbody>
</table>

\textsuperscript{149} Nixon, Moody, and Rackham (supra n. 145) 163-164.
In the Prepalatial period, the population of Sphakia increased and began to utilize the coast. About one-fifth of Prepalatial sites were located in the coastal zone. One of these was situated on the peninsula of Loutro, the area that became a major south coast port later in antiquity. Still, movement down to the sea was tentative. Of the four coastal zone sites, the one at Loutro and one other (3.08) were located right above the water. The other two (6.03 and 6.04) sat on mountain slopes at elevations of 144 m and 196 m, respectively. Despite the beginnings of coastal settlement, most Sphakiots still preferred to live in the intermediate zone; fully half of Prepalatial sites were located there. The area around the coastal plain at Frangokastello was first settled during this period. However, none of the new sites was located on the surface of the plain close to the water; instead, the slopes of hills away from the sea were favored. Another new site (5.01) was located in the Aradena Gorge about 1.8 km from the coast. This site has a good view down the gorge to the sea, providing a measure of security against raids. It also produced MM and LM material, indicating that this defensible location continued to be desired for much of the Bronze Age. Farther inland, use of the Madhares declined somewhat, but still continued; as before, this activity probably indicates transhumance. In addition to the site in the Madhares, two other sites were founded in the inland zone, in the areas of Aradena and Frangokastello.

There are fewer known Protopalatial sites than Prepalatial, but this is probably due to the fact that the Early Palace period material has not yet been studied in detail. The number of coastal zone sites remained the same, and activity was concentrated on the Loutro peninsula. All four coastal zone sites were located at low elevations not far above the sea, showing that the people of Sphakia were becoming more comfortable with living right on the
water. Still, as in the preceding periods, most sites were located in the intermediate zone. Activity on the Frangokastello plain continued to develop, but no sites were placed very close to the sea. Two sites from the Madhares show that shepherding continued to be practiced. There is little evidence for outside contact in the Protopalatial period. The only real imported object is a sherd with a flaky white calcareous MM fabric of a type that is known from excavations and survey in the Khania area.\(^\text{150}\)

Coastal zone development continued in the Neopalatial period. The port at Loutro remained active, and the first coastal sites were founded on the Frangokastello plain. The coastal site at 8.32 became the major bronze age site in the Frangokastello area. Much LM pottery and one piece of obsidian were recovered from the site. Finds of slag indicate metalworking, while murex shells show that the inhabitants exploited sea resources. Despite the growing dependence on the sea, most Neopalatial settlements were located in the intermediate zone, just as they had been in all preceding periods. Only one Neopalatial site is known from the Madhares region, but it is a large site that contains at least four structures. Several other sites were discovered in the inland zone. One of these (1.06) was located far up the Samaria Gorge, about 9.5 km from the sea. Another inland site (7.04) is in the plain of Askyphou, on the overland route from the south coast to the Khania area. Despite the coastal sites and the overland route, external contacts in the Neopalatial period were slight.

Concerning the succeeding Postpalatial period very little is known. Three LM III vases, acquired in 1895 by Arthur Evans and now in the Ashmolean Museum, Oxford, are

\(^{150}\) Nixon, Moody, Price, and Rackham (supra n. 145) 214.
supposed to have come from an unknown site in Sphakia.\textsuperscript{151} Faure reported finding LM III pottery in the Agiasmatsi cave.\textsuperscript{152} Other than these vague reports, no LM III sites had been identified in the Sphakia district previous to the recent survey. The survey discovered only three sites with definite LM III material. The coastal site on the Frangokastello plain, founded in the Neopalatial period, remained in use. The other two sites were both located in the intermediate zone, although one, also on the Frangokastello plain, was only 0.7 km from the sea. Other than these sites, Sphakia seems to have been largely uninhabited during the Postpalatial period. It is not possible to make accurate observations about settlement patterns in Postpalatial Sphakia based on only three sites. However, the fact that the coastal plain at Frangokastello continued to be inhabited indicates that the threat of seaborne raids may not have been very great. It is hoped that further study of the survey material will shed more light on the situation during this period.

After the end of the Bronze Age, knowledge of Sphakia grows even dimmer. The only Archaic period habitation, at Tarrha, was located close to the coast. However, during the unsettled Classical and Hellenistic periods, the coast was largely avoided. The city-state at Poikilasion, for example, was situated at an elevation of 400 m, higher than any of its agricultural land.\textsuperscript{153} By Late Roman times, however, the area was much safer, as attested by numerous coastal settlements.

\textsuperscript{151} S. Hood, “Minoan Sites in the Far West of Crete,” \textit{BSA} 60 (1965) 113.

\textsuperscript{152} Kanta (supra n. 140) 241.

\textsuperscript{153} Nixon, Moody, Price, and Rackham (supra n. 145) 207, 214-215.
THE WESTERN MESARA PLAIN

The Mesara plain constitutes one of the most fertile agricultural regions in Crete. During the Bronze Age, two major Minoan centers, Phaistos and Aghia Triada, were located in the Mesara. Kommos, on the coast near Phaistos, was the port for the region. An archaeological survey has recently been conducted of 22 km² of the western Mesara plain in the vicinity of Phaistos (fig. 6).\textsuperscript{154} Although the survey area included territory on the coast near Kommos, no coastal areas were intensively surveyed. Instead, the area intensively surveyed varies between 1.25 and 7.5 km from the sea. Moreover, the preliminary report does not include details on the exact location of sites. It is therefore impossible to assign sites to zones and plot their percentage distribution as has been done for other areas. However, the Mesara survey still provides valuable information for this study. Historically, the western end has been the most densely settled part of the plain. With an abundance of rich, densely populated, easily accessible land so close to the coast, the Mesara was certainly a tempting target for corsairs. An analysis of Bronze Age settlement patterns in the western Mesara, therefore, should prove extremely valuable when studying the effects of Bronze Age piracy.

The earliest human activity in the western Mesara dates to the Final Neolithic period.\textsuperscript{155} Phaistos was originally settled at this time, and eight other Final Neolithic sites were discovered during the course of the survey. Geographically, Final Neolithic sites in the


\textsuperscript{155} There may be a Middle Neolithic site near Kannia, but this is not certain: Watrous (supra n. 4) 700.
Fig. 6. Map of the western Mesara survey area. (After Watrous et al., 1993, fig.7)
western Mesara varied dramatically; locations included coastal hills, the floor of the plain itself, and caves. Especially notable were sites on slopes and ridges near the edge of the plain. During the first part of the Prepalatial period, settlements continued to be scattered widely throughout the landscape. Population apparently grew during the first two phases of the Early Bronze Age, as there were about twice as many EM I-II sites as there were Final Neolithic sites. Large Early Minoan settlements existed at both Phaistos and Aghia Triada. In addition to these major centers, the survey discovered smaller Early Minoan settlements that may represent hamlets and single farmsteads.\(^{156}\) Finds of Vasiliki ware show contact between the Mesara and other regions of Crete, while obsidian indicates relationships farther afield. The obsidian, of course, does not necessarily indicate direct interaction between the Mesara plain and Melos. Instead, obsidian, which was traded widely, could have arrived in the Mesara oveland from sites on the north coast of Crete. The picture of expanding population and settlement growth in the western Mesara grows blurry for the last three and a half centuries of the Early Bronze Age. These years, the EM III - MM IA periods, are only barely represented in the survey material. This may indicate depopulation and the abandonment of the plain. On the other hand, the paucity of EM III - MM IA material could be due to the fact that the ceramic record for these periods is still poorly understood.\(^{157}\)

Whether or not there was a decline in the late Prepalatial period, the subsequent Protopalatial period was certainly a dynamic time in the western Mesara. In the Protopalatial period, the plain was more densely settled than at any other time during the

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\(^{156}\) Watrous et al. (supra n. 154) 224.

\(^{157}\) Watrous et al. (supra n. 154) 224.
Bronze Age. Settlements varied greatly in size, from small farms to the first palace at Phaistos. In addition, many new sites were founded in previously unutilized locations. International contacts during the Protopalatial period are shown by finds of imported Cypriot pottery at Kommos.  

The dynamism of the Protopalatial period seems to have changed somewhat during the Neopalatial period. The majority of previously established sites remained inhabited, although there were fewer total sites than in the Protopalatial period. The survey found no newly established Neopalatial sites. The authors believe that this may have been due to centralization at major settlements such as Phaistos, Aghia Triada, and Kommos. The palace at Phaistos, destroyed during an earthquake in MM II, was rebuilt, though on a smaller scale than its Old Palace predecessor. Despite its smaller size, Phaistos maintained its status as the main administrative center for the region until the end of the Neopalatial period. Aghia Triada seems to have increased greatly in importance during the Neopalatial period, functioning as a secondary administrative center after Phaistos. At Kommos, a large, walled port complex was constructed in LM I. It contained shipsheds, workrooms, and storage facilities. Imported objects attest to plentiful contact with the Cyclades, Mainland Greece, Anatolia, Cyprus, the Levant, and Egypt. In addition to the three major centers,  

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159 Watrous et al. (supra n. 154) 226.

there were three other types of Neopalatial settlements. The first of these were medium-sized (100+ m in length) settlements that probably represent small villages. Numerous examples of this type were discovered. The second type of settlement was smaller (10-50 m in length) and much less numerous, and may have been composed of individual farmhouses. Several extremely small (less than 5 m in length) sites may represent seasonal fieldhouses. 161

The western Mesara, like most other areas of Crete, entered a time of mystery at the end of the Neopalatial period. The LM II and LM IIIA1 periods are difficult to interpret in the region. No LM II pottery was found during the Mesara survey, but such material is known from excavations at Phaistos, Aghia Triada, and Kommos. Very little LM IIIA1 pottery was recovered by the survey. No new sites were established, many small sites were no longer inhabited, and those that remained occupied seem to have been smaller. Excavations tend to corroborate the observations made by survey teams: no LM IIIA1 pottery was found during excavation of small sites at Selli, Kammia, and Kouses. 162 Also, the palace at Phaistos was destroyed at the end of LM IB and never rebuilt. At nearby Aghia Triada, the villa was burned at the end of LM IB, but small-scale occupation continued throughout LM IIIA1.

The LM IIIA2 and LM IIIB periods seem to have been a time of renewed growth in the Mesara. There were twice as many sites of these periods as there were LM II to LM IIIA1 sites. Several settlements deserted during LM II and LM IIIA1 show signs of reoccupation; the LM IIIA2 to LM IIIB sites, however, were generally smaller than their

161 Watrous et al. (supra n. 154) 227.

162 Watrous et al. (supra n. 154) 228.
Neopalatial predecessors. Although the LM IIIA2 and LM IIIB periods certainly seem to be a time of growth and stability in the western Mesara, there were significant changes from the prosperity of the Protopalatial and Neopalatial periods. Occupation at Phaistos was limited to a few scattered buildings, and it was no longer an administrative center. New monumental structures were erected at Aghia Triada, making it probable that this site functioned as the new power center for the region.\textsuperscript{163}

A drastic change occurred during the LM IIIC period. The whole western Mesara seems to have been nearly abandoned: only three previously unknown LM IIIC sites were found by the survey, bringing the total of known LM IIIC sites in the survey area to only seven. Of the three new sites, only one was a settlement. This settlement, south of the village of Sivas, was not a completely new foundation; it had been in use from MM I, and remained inhabited throughout the Protogeometric and Geometric periods. The only other LM IIIC settlement in the western Mesara seems to have been at Phaistos.\textsuperscript{164} Indeed, in what was apparently a return to earlier tradition, Phaistos once again became the major settlement in the area and remained so from LM IIIC to the end of the Early Iron Age.

After a period of isolation at the end of the Bronze Age, the Mesara region resumed overseas contacts in the 10th century B.C., from which time Phoenician pottery at Kommos


\textsuperscript{164} The settlements at Kommos and Agia Triada continued in use until the second half of the 13th century B.C., when they were abandoned. However, shrines remained in use at both Kommos and Agia Triada throughout LM IIIC. The only other LM IIIC sites in the region were scattered burials at Aghios Onouphrios, Liliana, Petrokephali, and the ridge of Jerodotis: Watrous et al. (supra n. 154) 230.
attests to renewed international contacts.\textsuperscript{165} The Phoenician presence at Kommos peaked during the ninth century B.C., and continued for the rest of the Early Iron Age. Shaw thinks that Kommos might have served as a waypoint or watering station for Phoenicians colonizing the western Mediterranean.\textsuperscript{166}

At the end of the Dark Ages, expansion occurred once again in the western Mesara. A total of 13 Orientalizing to Archaic period sites were discovered; most of these remained in use in the Classical and Hellenistic periods. Several of these sites were large enough to be called hamlets, while others were probably farms. Nine Archaic sites were clustered closely around Phaistos, and may have been founded by people spreading out from that settlement. Dispersal continued throughout the Classical period, when the number of sites in the Mesara almost doubled. The number of sites almost doubled again during the Hellenistic period, when population also began to spread farther across the plain and expanded westward closer to the sea. Phaistos remained the most important regional center until the second century B.C., when it was destroyed by the rising power of Gortyn. By the first century B.C, Gortyn controlled all of the Mesara, and became the capital of the province of Crete and Cyrenaica after the Roman conquest of the island.

THE AYIOFARANGO SURVEY

One of the earliest surveys on Crete was conducted on a coastal region south of the Mesara plain. From 1971 to 1972, archaeologists from the British School surveyed two


\textsuperscript{166} Shaw (supra n. 165) 182.
adjacent areas of the Asterousia Mountains. The main focus of the survey was on the Ayiofarango valley, following the Aghia Kyriaki river from a point about 7 km inland to its mouth at the Libyan Sea. Although conducted before the advent of most modern survey techniques, fieldwalking on the Ayiofarango survey was done in an intensive manner, with surveyors examining the entire lower catchment of the valley, from the river bed to the surrounding slopes that form its watershed. The second area surveyed lay just to the east, where efforts were concentrated around the harbor sites at Kaloi Limenes and Lasaia. The entire coastal strip between these harbors and the mouth of the Ayiofarango river, a distance of about 8 km, was studied.

The survey discovered no traces of Neolithic material in the Ayiofarango area. Most of the sites discovered by the Ayiofarango survey were founded in the EM I period. A total of 24 Prepalatial sites were found; 13 of these appear to have been habitations (fig. 7). Four of the sites that I have termed habitations (W11B, E12, E18, and MO.W1) were interpreted as possible peak sanctuaries by Blackman and Branigan. However, these sites do not fit the topographic criteria for peak sanctuaries established by Peatfield. In addition, W11B and E12 both yielded pithoi sherds, which could be domestic wares rather than ritual offerings. Instead of peak sanctuaries, these sites were probably small farmsteads, like the majority of other EM sites interpreted by the authors. Small farms scattered throughout the valley

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167 D.J. Blackman and K. Branigan, “An Archaeological Survey on the South Coast of Crete, Between the Ayiofarango and Chrisostomos,” BSA 70 (1975) 17-36; Blackman and Branigan (supra n. 99) 13-84.

Fig. 7. Prepalatial settlements in the Ayiofarango valley.  
(After Blackman and Branigan, 1977, fig. 34)
certainly seem to have been the dominant settlement form during the Prepalatial period, but only one of these, SC5, was in the coastal zone (table 3). It perched atop a small hill above the harbor of Kaloi Limenes. The intermediate zone, which contained only four sites, was also not very heavily exploited. Instead, the majority of habitation sites lay in the inland zone, in a cluster between three and four km from the coast. One of these inland sites, E11, was about 3.25 ha in area and may have been a small village. It was probably the main Prepalatial site in the region. Several outlying farms and tholos tombs were grouped around the village at E11. Contact with the Mesara region is shown by finds of Aghios Onouphrios pottery at several sites. In addition, one EM tholos tomb (SC11A) contained Vasiliki ware, providing evidence for some form of contact with eastern Crete.

Table 3. Habitation proximity to coast, Ayiofarango region.

<table>
<thead>
<tr>
<th>Period</th>
<th>Coastal</th>
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<th>Intermediate</th>
<th></th>
<th>Inland</th>
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<tr>
<td>Neolithic</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
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<td>1</td>
<td>8%</td>
<td>4</td>
<td>31%</td>
<td>8</td>
<td>61%</td>
</tr>
<tr>
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<td>8%</td>
<td>4</td>
<td>33%</td>
<td>7</td>
<td>58%</td>
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</tr>
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<td>Postpalatial</td>
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<td>0%</td>
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<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

The pattern of settlement established in the Prepalatial period carried over into the succeeding Protopalatial period with very little change (fig. 8). Most of the habitations
Fig. 8. Protopalatial settlements in the Ayiofarango valley. (After Blackman and Branigan, 1977, fig. 34)
founded in the preceding period remained occupied, although little MM material was found at the village of E11, which may have been abandoned after MM I. Nevertheless, the inland zone remained the most heavily populated part of the region. One new small habitation was founded in the intermediate zone. This site, E4a, occupied the summit of a low hill and was interpreted as a peak sanctuary. However, like the four sites discussed above (W11B, E12, E18, and MO.W1), E4a does not fit the criteria for peak sanctuaries. Instead, it was in all likelihood a small habitation, possibly a farm. Closer to the sea, the site of SC5 remained the only habitation in the coastal zone. Thus, the Protopalatial period was a time of stability and continuity in the Ayiofarango region, with no significant changes in population or settlement patterns.

The situation changed drastically in the Neopalatial period. The Ayiofarango region seems to have been almost totally abandoned. No sites whatsoever existed in the Kaloi Limenes - Lasaia harbor areas, and only four habitation sites were discovered in the Ayiofarango valley itself (fig. 9). All four of these sites were located in the inland zone. Two, E12 and E14, were close to the previous main settlement cluster at E11, which was almost certainly abandoned by LM times. The other two habitations were at previously established sites farther up the valley. The intermediate and coastal zones were totally abandoned, although the ossuary at W8, in use since at least the MM period, continued in limited use. Blackman and Branigan believe that the abandonment of the Ayiofarango area in the Neopalatial period may have been due to the rise of the palatial economic system.169

Under this system, a market economy predominated and international trade flourished.

169 Blackman and Branigan (supra n. 99) 69-70.
Fig. 9. Neopalatial settlements in the Ayiofarango valley.
(After Blackman and Branigan, 1977, fig. 34)
Rural villages were abandoned as the population moved to coastal towns and large regional centers, in a similar manner to changes taking place in Greece today. It is possible that people abandoned the isolated Ayiofarango region in favor of the developing centers of the Mesara such as Phaistos, Aghia Triada, and Kommos. After LM I, settlement in the Ayiofarango region ceased completely. No Postpalatial material was recovered by the survey. However, an LM I-III settlement was reported in the area of the Oditytria monastery, just outside the survey area.\textsuperscript{170} This site, which has not been extensively studied, lies well inland. Pendlebury discovered another LM I-III site east of the Ayiofarango area, near the Goulofarango Gorge.\textsuperscript{171} Other than these, no Postpalatial sites are recorded for the entire Asterousia mountain region. The drop in settlement during the Postpalatial period in the Ayiofarango region is similar to the situation in the neighboring Western Mesara plain in LM IIIC, and mirrors the Postpalatial abandonment of many other areas of Crete.

After the desertion of the Late Bronze Age, the Ayiofarango area remained empty for centuries. The survey discovered no trace of reoccupation until the Classical period, when small settlements were reestablished throughout the valley. Population and settlement grew during Hellenistic and Roman times, when the harbor at Kaloi Limenes became one of the few good harbors on Crete’s south coast. It was from Kaloi Limenes that St. Paul’s ship departed on its ill-fated voyage to Rome. Several kilometers to the east of Kaloi Limenes was the Graeco-Roman city-state of Lasaia. This city had a rock breakwater connecting a

\textsuperscript{170} Kanta (supra n. 140) 94.

\textsuperscript{171} Kanta (supra n. 140) 94; J.D.S. Pendlebury, M. Money-Coutts, and E. Eccles, “Journeys in Crete, 1934,” BSA 33 (1934-35) 87.
small islet to the mainland, forming a double harbor.

THE LASITHI PLATEAU

The Lasithi Plateau is a large, fertile plain located at an elevation of ca. 850 masl in the Diktaean Mountains. The plain was surveyed in 1973 under the direction of L.V. Watrous. The edges of the plain and all slopes to a height of 200 m above the surface of the plain were intensively surveyed. Unfortunately, except for the peripheral areas, most of the floor of the plain was not studied in detail. This was due to the fact that Watrous believed that in antiquity the floor of the plain would have been flooded and uninhabitable, just as it was during much of the Venetian and Turkish periods. This is a matter of debate, and no real evidence for flooding in Bronze Age times is provided. Given the fact that much of the Lasithi area was not surveyed, the history of settlement elucidated by Watrous must be used with caution. Nevertheless, some patterns in the history of settlement can be determined for the region based on the amount of area surveyed.

The Lasithi plateau was first settled in the Final Neolithic or Early Minoan I period. The earliest sites were located on high spots around the plain where arable foothills ascend into the surrounding mountains. Two caves, the Trapeza Cave and the Diktaian Cave, were used as dwelling places as well. Most FN/EM habitations were located near one of the natural entrances to Lasithi. Watrous thinks that the plain may have been settled due to an

increase in population at coastal sites such as Knossos and Mallia.¹⁷³ Farmers running out of land in these areas moved onto the plateau, where they continued to grow cereals such as the barley, oats, and wheat that are known from other FN/EM sites. The inhabitants of Lasithi also likely practiced herding, as the slopes around the plain provide good grazing land for sheep and goats.

Throughout the Prepalatial period, population grew and the number of sites expanded. A total of sixteen Prepalatial habitation sites are known. Several were fairly large, but none big enough to compare with Prepalatial sites such as Vasiliki or Myrtos Fournou-Koryphi. It appears that the majority of Prepalatial settlements were scattered farmsteads. The caves at Trapeza and Dikti were no longer inhabited after EM I, although they were still used for burials. These burials provide evidence for contacts with the outside world. Two ivory figurines, a monkey head and a human head, were found at Trapeza. The human head figurine is probably a Near Eastern import.¹⁷⁴ Bronze daggers, of a type common in the Mesara plain, were found in both Dikti and Trapeza. A gold diadem from Dikti was probably imported from another area of Crete. Obsidian blades and marine shells were discovered at several sites. These objects definitely indicate exchange with a coastal region, possibly the developing site at Mallia. Also, Lasithi potters produced a local imitation of Vasiliki ware. It appears that, although isolated, the inhabitants of the Lasithi plateau shared in the development of Crete during the Prepalatial period.

During the Protopalatial period, the number of habitations remained about the same,

¹⁷³ Watrous (supra n. 172) 10.

¹⁷⁴ Watrous (supra n. 172) 12.
but several old ones were abandoned in favor of new locations. Three new large settlements were founded at Augousti, Kastellon, and Plati. Trapeza cave continued to be used as a ritual site. Offerings included imported MM II sherds, an Egyptian scarab of the 12th Dynasty, and eleven Chamaizi juglets, perhaps acquired through Mallia.\footnote{Watrous (supra n. 172) 13.} Dikti was also an important shrine; bronze figurines, bronze swords, sickles, chisels, and an adze were all offered by worshippers. The Protopalatial period seems to have been a time of continued growth, with people abandoning some small, widely-scattered farmsteads in favor of developing settlements such as Augousti, Kastellon, and Plati.

The settlement pattern for the Neopalatial period in Lasithi was more complicated and difficult to understand. Small sites were extremely numerous, and many of these lay on mountain slopes high above the plain. Watrous believes that many small sites represent seasonally occupied fieldhouses.\footnote{Watrous (supra n. 172) 14-15.} Seasonal occupation of fieldhouses for herding is still practiced today and has been hypothesized for the Sphakia and western Mesara regions as well. Other than these small high-altitude sites, hilltop sites were rare in the Neopalatial period. Instead, most settlements were located on slopes right above the plain or on the surface of the plain itself. In addition, although settlements such as Plati remained prominent, there is a general paucity of Neopalatial material. It is possible that some of the population emigrated to major palatial centers such as Knossos and Mallia. This is similar to the present day, when many young people from the upland villages are leaving Lasithi for the attractions of city life. The modern parallel shows that movement of population down to the
coasts is due to the linking of the village economy to that of the region.\textsuperscript{177} If this was also true for the Bronze Age, it could be an indication that Lasithi was linked to the palace at Mallia. In fact, the main purpose of the palace of Mallia may have been as the redistribution and export center for agricultural products originating in Lasithi. Evidence for external contact in the Neopalatial period is shown by items of bronze, gold, silver, and ivory from the plateau. However, the evidence for a major shift in population out of the region during the Neopalatial period is not conclusive. What evidence there is shows that the population was moving downward, to the low slopes around the plain and the surface of the plain. It is possible that there were many more Neopalatial settlements scattered across the floor of the plain, undetected by the survey, which covered only the edges of the plain and surrounding slopes. Watrous notes that there were Late Roman period sites on the surface of the plain itself.\textsuperscript{178} This could indicate that the surface that we see today dates back to Late Roman times, so that those sites are still visible, while earlier sites may be covered by sediment.

In the Postpalatial period, the number of sites declined sharply, and there may have been an accompanying decrease in population. Most Postpalatial material is from the LM IIIA2-IIIB periods, which could point to a severe reduction in population during LM I-IIIA, followed by reduced resettlement in LM IIIA2-IIIB. This fits in well with the LM IB destruction and desertion pattern noted at other Cretan sites. At Plati, which remained one of the major settlements on the plateau, a large complex of LM III houses was built around a central court. The style is similar to House He at Gournia, which is generally regarded as

\textsuperscript{177} Watrous (supra n. 172) 15-16.

\textsuperscript{178} Watrous (supra n. 172) 24.
Mycenaean; this may mean that Mycenaean lived in Lasithi in the Postpalatial period.\textsuperscript{179} Four Linear B tablets from Knossos (Fp1, Fp7, F866, and Fh5467) mention offerings of oil and figs for Diktaian Zeus and Dikte.\textsuperscript{180} In addition, votive weapons from Dikti, which have parallels in the warrior tombs at Knossos, may point to a Mycenaean presence.\textsuperscript{181} It is possible that Mycenaean controlled the plateau, exacting tribute of wheat and other agricultural goods, much like the Venetians did in the Middle Ages.

By the LM IIIC period, the Linear B administration of Crete had broken down. Whether or not there was a drop in population in the Neopalatial and earlier Postpalatial periods remains problematic, but Lasithi certainly seems to have suffered a severe loss of population in LM IIIC. Only four habitation sites are known from the region. The major site at Plati remained occupied, along with two other sites not far above the surface of the plain. However, many inhabitants of Lasithi moved to higher sites in the mountain surrounding the plateau. One of these was the site of Karphi, which was founded in the LM IIIC period. Karphi, located in the mountains north of the Lasithi plain, is the best known Dark Age settlement in Crete.\textsuperscript{182} The town was situated on a bleak pinnacle some 1100 masl. Pottery from Karphi shows similarities to pottery from other parts of Crete. Overseas contacts were

\footnotesize
\begin{itemize}
\item \textsuperscript{179} Watrous (supra n. 172) 18.
\item \textsuperscript{180} J. Chadwick, J.T. Killen, and J.-P. Olivier, \textit{The Knossos Tablets} (Cambridge 1971).
\item \textsuperscript{181} Watrous (supra n. 172) 17. For the Mycenaean warrior grave parallels, see M.S.F. Hood and P. de Jong, “Late Minoan Warrior-Graves from Ayios Ioannis and the New Hospital Site at Knossos,” \textit{BSA} 47 (1952) 270, fig. 12., and M.R. Popham and H. Catling, “Sellopolo Tombs 3 and 4, Two Late Minoan Graves near Knossos,” \textit{BSA} 69 (1974) 227, 244-245.
\item \textsuperscript{182} Karphi was excavated from 1937-39 by J.D.S. Pendlebury. See H.W. Pendlebury, J.D.S. Pendlebury, and M.B. Money-Coutts, “Excavations in the Plain of Lasithi. III. Karphi: A City of Refuge in the Early Iron Age in Crete,” \textit{BSA} 38 (1937/38) 57-145.
\end{itemize}
also evident. Some pottery is similar to Aegean and Cypriot types, and a number of bronze
dress pins and iron tools show Cypriot affinities.\textsuperscript{183} Thus, even during a time of greatly
reduced settlement, the inhabitants of the Lasithi plateau maintained some contact with the
outside world.

Despite the seeming importance of Karphi, it is probable that not all residents of
Lasithi moved to this desolate settlement. Two other LM IIIC sites, Papoura and
Siderokephali, lie in the mountains not far north of the plateau. Both were close to and
several hundred meters lower than Karphi and would have provided much more hospitable
dwelling places than the bleak, snow-covered conditions that must have existed at Karphi
throughout much of the winter. It is possible that Karphi was only used seasonally or as a
place of refuge during times of peril. After Karphi was abandoned near the end of the
Subminoan period, the settlement of Papoura increased in size, suggesting that the residents
of Karphi may have relocated permanently to this lower site. Papoura continued to be the
main focus of activity in the region until the end of the Geometric period. Few other sites in
Lasithi were occupied during Protogeometric and Geometric times. Site numbers increased
in the Archaic period, and by the end of the seventh century B.C. there were a number of
small villages spread out around the edge of the plain.\textsuperscript{184} Following another period of
depopulation in the Classical and Hellenistic periods, Lasithi began to recover during Roman
times and was densely settled by the Late Roman period.

\textsuperscript{183} V.R. d’A. Desborough, \textit{The Greek Dark Ages} (London 1972) 123-127; Watrous (supra n. 172) 19.

\textsuperscript{184} Watrous (supra n. 172) 20-21.
THE VROKASTRO SURVEY PROJECT

The Vrokastro Survey Project is an intensive survey of approximately 50 km² along the southern coast of the Bay of Mirabello in eastern Crete. Vrokastro itself, located on a hill 313 m above the bay, was one of the most important Early Iron Age towns in Crete. The region is topographically diverse, with low hills, river valleys, and inland valleys separated from the coast by mountains.

Evidence from the early periods is slight, but shows that human settlement in the Vrokastro region began in the Final Neolithic or Early Minoan period. Only three sites from these periods were discovered by the survey; two of these (IM1 and IM3) were situated close together in the coastal zone. The third (KP6) lies near the top of a hill only slightly more than 0.5 km from the sea. Just to the east of the survey region, Neolithic pottery was discovered at Sphoungaras, a cave on the coast just north of Gournia.

Population grew during the Prepalatial period, as shown by an increase in the number of sites to 20. Over one-third were located in the coastal zone (table 4). One coastal site

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186 Vrokastro was excavated in 1910 and 1912 by Edith Hall. See Hall, Excavations in Eastern Crete, Vrokastro (Philadelphia 1914) for the report on this work. For recent plans of the site, see B.J. Hayden, “New Plans of the Early Iron Age Settlement of Vrokastro,” Hesperia 52 (1983) 367-387, pls. 71-72.

187 Hayden, Moody, and Rackham (supra n. 185) 322; E.H. Hall, Excavations in Eastern Crete, Sphoungaras (Philadelphia 1912) 46-48. Sphoungaras later became the site of the cemetery of Gournia, which was founded in the EM II period.
Table 4. Site proximity to coast, Vrokastro region.

<table>
<thead>
<tr>
<th>Period</th>
<th>Coastal</th>
<th></th>
<th>Intermediate</th>
<th></th>
<th>Inland</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>Neolithic</td>
<td>2</td>
<td>67%</td>
<td>1</td>
<td>33%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Prepalatial</td>
<td>7</td>
<td>35%</td>
<td>11</td>
<td>55%</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Protopalatial</td>
<td>4</td>
<td>25%</td>
<td>11</td>
<td>69%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>Neopalatial</td>
<td>15</td>
<td>33%</td>
<td>18</td>
<td>40%</td>
<td>12</td>
<td>27%</td>
</tr>
<tr>
<td>Postpalatial</td>
<td>6</td>
<td>22%</td>
<td>20</td>
<td>74%</td>
<td>1</td>
<td>4%</td>
</tr>
</tbody>
</table>

(PP1) was situated on the peninsula of Priniatikos Pyrgos (fig. 10). This small promontory forms a double harbor and seems to have been a port for much of the Bronze Age. On the west side of the peninsula Minoan walls extend into the sea. Obsidian blades found by the survey indicate that this port was in contact with the Cyclades. Just to the east of Priniatikos Pyrgos, the peninsula site of Nisi Pandeleimon (NP1) probably functioned as a port as well. Despite such coastal activity, over half of Prepalatial sites were located in the intermediate zone. Favored locations were hilltops and slopes between 100 and 200 m elevation. A number of sites were clustered closely around the mouth of the Istron River valley, probably to take advantage of the deep alluvial soils for farming.\(^{183}\) Settlers had not begun to exploit

\(^{183}\) Hayden, Moody, and Rackham (supra n. 185) 324.
Fig. 10. Map of the Vrokastro survey area.
(After Hayden, Moody, and Rackham, 1992, fig. 3)
the backcountry of the Vrokastro region very much at this early date; only two sites were located in the inland zone.

The total number of sites decreased slightly in the Protopalatial period. There was a concomitant decline in coastal zone sites, which account for only 25% of the total. The ports at Priniatikos Pyrgos and Nisi Pandeleimon remained in use, showing that exploitation of the sea was still important. However, with the vast majority of sites in the intermediate zone, it is clear that the people of the region did not care to be too near the sea. As before, settlement in the inland zone was virtually nonexistent.

Settlement in the Vrokastro region reached a peak in the Neopalatial period, when the number of sites almost tripled. Numerous sites contain both MM and LM pottery, showing the continuity of regional settlement. In addition, a number of new sites were founded in the period. Almost 40% of new sites were founded in the coastal zone, which reached its highest level of activity for the Bronze Age. Occupation in the intermediate zone also increased in terms of total site numbers, but there was a significant drop in the percentage of settlements in this zone. This was partly attributable to the development along the seacoast, but mainly due to the founding of sites in mountain valleys farther from the sea. Though heavily populated, the Vrokastro region apparently lacked a major site that would have served as a regional administrative center. Instead, Gournia, site of a small Neopalatial palace, was probably responsible for the administration of the Vrokastro region.\(^\text{189}\) Overall, it appears that the Vrokastro region experienced a time of prosperity and growth throughout

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\(^{189}\) Hayden, Moody, and Rackham (supra n. 185) 326. The best recent report on the administrative complex at Gournia is J.S. Soles, “The Gournia Palace,” AJA 95 (1991) 17-78.
the Neopalatial period.

The situation changed after the end of the Neopalatial period. Pottery of LM I/III to Early Iron Age date is known from only about half as many sites as had Neopalatial material. Also, sites were clustered into groups rather than being dispersed throughout the landscape, as they had been in the Neopalatial. The main settlement cluster was around the hill of Vrokastron. There, a large settlement was located at the peak, and several smaller settlements lay within a few hundred meters. Numerous tombs have been found scattered in the areas between the habitations. All of the satellite settlements had visual contact with the main settlement on the peak of Vrokastron, and none were more than two km from the sea. The two other settlement clusters were farther inland, at the head of the Istron River valley and in the Prina area (about 2.5 km and 5.0 km from the coast, respectively). Both of these habitation areas straddled the land route into the Vrokastron region from the south and west. Although settlement directly on the coast declined drastically during the Postpalatial period, many of the known sites were located only slightly beyond the coastal zone. A new coastal site at Elias to Nisi (EN2) may have served as a port for the Vrokastron settlements. This site was located on a peninsula at the foot of Vrokastron. The port at Elias to Nisi, along with other coastal peninsula sites such as Priniatikos Pyrgos, indicate that the sea continued to be utilized for the remainder of the Bronze Age and into the Early Iron Age.

Indeed, although the coast was not favored for settlement in the Postpalatial period and later, the Vrokastron region was not totally isolated. Pottery from Vrokastron shows affinities to Early Iron Age pottery from other areas of Crete. However, it does not seem that Vrokastron was influenced by the Protogeometric style. Instead, Subminoan pottery
continued to be used until the advent of the Geometric style in the late ninth century B.C.\textsuperscript{190} It also seems likely that Vrokastro maintained overseas contacts throughout the Early Iron Age. Imports include an 11th-century-B.C. iron knife with bronze rivets, which probably came from Cyprus or the Levant, and a 10th-century-B.C. Cypriot bronze tripod stand.\textsuperscript{191}

Few Dark Age sites were discovered by the survey. Vrokastro continued to function as the main settlement in the region until its abandonment at the end of the Geometric period. Sometime during the Dark Ages a new site cluster emerged in the Meseleri valley, over four km from the coast. Most sites continued to be located away from the coast until the end of the Archaic period. Coastal activity did not revive until Classical times.\textsuperscript{192}

**THE KAVOUSI-THRIPHTI SURVEY**

Just to the east of the Vrokastro area, an archaeological survey has recently been completed around the Early Iron Age site of Kavousi.\textsuperscript{193} The site of Kavousi consists of two distinct areas: Vronda, a low settlement inhabited from the LM IIIC to Subminoan periods, and Kastro, an inaccessible peak that functioned as a refuge center from the LM IIIC to Orientalizing periods.\textsuperscript{194} To date, the only detailed settlement pattern information available


\textsuperscript{191} For the knife, see Desborough (supra n. 183) 308. For the tripod stand, see Desborough (supra n. 183) 236 n.9; J.N. Coldstream, *Geometric Greece* (London 1977) 284.

\textsuperscript{192} Hayden, Moody, and Rackham (supra n. 185) 330.

\textsuperscript{193} Haggis (supra n. 92) 131-174.

\textsuperscript{194} Kavousi was originally excavated by H.A. Boyd: see Boyd, “Excavations at Kavousi, Crete, in 1900,” *AJA* 5 (1901) 137-143. New excavations are currently being conducted by G.C. Gesell, L.P. Day, and W.D.E. Coulson. For the latest report and full bibliography, see Gesell,
from this survey is for the end of the Bronze Age and the Early Iron Age.

The Kavousi-Thripti area had an increase in both site numbers and site size from the LM IIIC to Protogeometric periods. However, the settlement pattern changed. The two main LM IIIA-B sites were abandoned in LM IIIC. The Early Iron Age sites were at new locations and formed three distinct clusters.\textsuperscript{195} The first of these, the Monastiraki cluster, is very interesting. One of its two sites, Khalasmeno, was located on a small hill close to the isthmus of Ierapetra, the main north-south transportation route in this part of Crete. The other, Katalimata, was constructed on a series of natural terraces high in the Kha gorge some 350 masl. The approach to Katalimata was extremely difficult and defensible. Haggis and Nowicki agree that Katalimata must have been a refuge settlement.\textsuperscript{196} Katalimata was apparently abandoned at the end of LM IIIC, while Khalasmeno may have continued in use until the Protogeometric period.

The other two settlement clusters, Kavousi and Avgi, were located in the hills three to four km from the coast. Both apparently remained stable throughout the Early Iron Age. In the Orientalizing or Archaic period, there was a shift in settlement pattern to larger, lower sites closer to the coast and transportation routes.\textsuperscript{197}

\textsuperscript{195} Haggis (supra n. 92) 143.

\textsuperscript{196} Haggis (supra n. 92) 154; D.C. Haggis and K. Nowicki, “Khalasmeno and Katalimata: Two EIA Settlements in Monastiraki, East Crete,” Hesperia 62 (1993) 305.

\textsuperscript{197} Haggis (supra n. 92) 159-160.
CHAPTER VI

DEFENSIVE MEASURES IN BRONZE AGE CRETE

A study of the Bronze Age archaeological record reveals that the inhabitants of Crete sometimes took measures to defend against threats from the sea. Defensive measures were manifested in several ways, each of which requires consideration.

SITE NUCLEATION

Site nucleation began early in the western Mesara plain. In the Neopalatial period, several old sites went out of use, and no new sites were established. Instead, population seems to have concentrated at large towns such as Phaistos, Aghia Triada, and Kommos.\footnote{Watrous (supra n. 154) 226.}

In the LM II and LM IIIA1 periods, very few sites in the western Mesara were occupied at all. A new period of growth followed in the LM IIIA2 and LM IIIB periods, but even then habitation was concentrated into a few small sites. By LM IIIC, the only two settlements in the western Mesara seem to have been at Phaistos and near the modern village of Sivas.

Many areas of Crete showed a shift to a more nucleated settlement pattern in the Postpalatial period. Site nucleation began in LM III in the Khania region. There, mean site size increased from 1.19 ha to 1.49 ha. This was accompanied by a substantial decrease in the number of both very large and very small habitation sites.\footnote{Moody (supra n. 106) 309-315.} In Sphakia, only three Postpalatial sites were discovered. Two of these, however, were very close together on the
Frangokastello plain; they may in fact be one large site. In preceding periods, numerous sites had been scattered around the Frangokastello area. It is possible that in the Postpalatial period the residents of these abandoned settlements concentrated together in the two large sites on the Frangokastello plain. The Vrokastro region also shows a move to a nucleated settlement pattern beginning in LM III.\textsuperscript{200} Settlements were clustered into three groups, one around the refuge site at Vrokastro and the other two farther inland. A similar situation existed in the Kavousi-Thripti area. There, Postpalatial and Early Iron Age settlement consisted of small villages formed into clusters. Clustering itself was a form of site nucleation.\textsuperscript{201} In Lasithi, the plain was virtually abandoned in LM III C, when most residents moved to the major sites of Plati, Karphi, Papoura, and Siderokephali.

**FORTIFICATIONS**

In the past, it was widely believed that fortifications were not used on Crete during the Bronze Age. In recent years, however, a number have been discovered. Fortifications in Bronze Age Crete took several forms, from towers to walled villages.

Scant evidence for fortifications exists from the Prepalatial period. The site of Myrtos Fournou-Koryphi was built on top of a 66-m-high hill directly above the sea. The EM IIB settlement at Myrtos Fournou-Koryphi was enclosed on its seaward-facing southern side by a wall whose only entrance was flanked by a structure that has been interpreted as a

\textsuperscript{200} Hayden, Moody, and Rackham (supra n. 185) 326.

\textsuperscript{201} Haggis (supra n. 92) 157-158. In Haggis’s words, the settlement pattern amounts to a “dispersal of nucleated settlements.”
This wall also blocked access to the western side of the settlement, but the northern and eastern sides were left open. The hill on which the settlement is constructed, however, drops off steeply on the northern and eastern sides, making access to the site difficult from these directions. Still, a determined assault could overcome the steepness of the hill, so it seems strange to leave the northern and eastern sides unprotected. Moreover, the proposed fortification wall is only 0.5 m wide, and seems unsubstantial compared to later Bronze Age fortification walls, which were typically greater than 1.0 m wide and sometimes over 2.0 m in width. The weakness of the wall and the fact that it does not completely enclose the settlement may indicate that it was not intended for defense. Nevertheless, the placement of the settlement atop a hill implies some concern with defense, and the wall certainly would have provided some protection against assault. Warren has also reported a possible EM II tower close to the settlement at Fournou-Koryphi. This roundish structure lies on the edge of a plain 128 m northwest of the settlement. The walls of the structure are mostly collapsed, so it is impossible to determine its original height. However, with a base diameter of only 2.42 to 2.80 m, the structure can never have been very tall. There are no traces of plaster to indicate use as a cistern, nor do the rocks show any signs of burning which would point to a kiln. The soft bedrock on which the structure rests has been hollowed out to create a small depression in the center. A stepped opening on the east side provides access to this depression. Several burned sticks were found inside the depression;


203 Warren (supra n. 202) 89-90, fig. 30.
these were $^{14}$C dated to A.D. 1650 $\pm$ 60.\textsuperscript{204} The excavators assigned the structure to the EM period based on the fact that they did not believe that remains of any other time periods existed in the area and because the general construction looks the same as that of the settlement at Fournou-Koryphi. However, there is no real reason to believe that this construction is from the Bronze Age. It was probably built at a much later time from blocks reused from the Minoan settlement, accounting for the similarity of rock types. Moreover, the one secure date, that of the wood, provides an age directly in the period of heavy piracy that occurred in the Late Venetian period. This structure possibly did serve some defensive function, but not in the Early Bronze Age: rather, it may have been a Medieval vige constructed to keep watch over this section of the coast. The evidence for a fortified Prepalatial settlement at Myrtos Fournou-Koryphi is therefore inconclusive.

Although no convincing evidence for Prepalatial period fortifications has yet been discovered, fortified sites did exist in the succeeding Protopalatial period. At Myrtos-Pyrgos, on the south coast west of the modern city of Ierapetra, the MM settlement was at least partially enclosed by a wall that contained a square tower.\textsuperscript{205} The enclosed area at the top of the hill also contained two cisterns. After a destruction by fire at the end of the Protopalatial period, Myrtos-Pyrgos was rebuilt. The Neopalatial settlement, however, had no towers or other fortifications. Also, the cisterns were filled in. It appears that there was some need for defense in the Protopalatial period that necessitated the construction of fortifications and a secure water supply. By the Neopalatial period, the threat no longer existed. The first palace

\textsuperscript{204} Warren (supra n. 202) 344.

at Phaistos had two rectangular, heavily-constructed stone bastions that controlled access to two of the three entrances into the palace interior from the West Court. The south side of the palace may also have been enclosed by a wall, traces of which exist in several places.\textsuperscript{206} Unfortunately, most of this wall was cut away during construction during the Geometric period, so the exact nature of the south wall will remain forever unknown. After the destruction of the old palace in an earthquake, the western facade was rebuilt; the Neopalatial palace did not contain fortifications. Similarly, the north side of the first palace at Mallia, which faces the sea, may also have been partially enclosed by a fortification wall that went out of use during the Neopalatial period.\textsuperscript{207} A large wall has also been reported at the north coast town of Gournia. Based on associated pottery, this wall seems to date to the MM IA period.\textsuperscript{208} To date, it has not yet been studied in depth, so its defensive function remains unproven. Farther east, however, the coastal settlement at Aghia Photia provides some of the best evidence for fortifications in Protopalatial Crete. At Aghia Photia, a large MM IA-B building complex was constructed on a low, flat headland next to the sea. The three sides closest to the sea were enclosed by a 1.3- to 1.5-m-wide fortification wall containing four towers or bastions. The form of this wall is very similar to fortifications at Lerna and Chalandriani, Syros, but it is unique in Minoan Crete.\textsuperscript{209}

High in the Lasithi plateau, the Minoan town at Plati was encircled by a fortification

\textsuperscript{206} D. Levi, \textit{The Recent Excavations at Phaistos (SIMA 11, Lund 1964) 5-8, fig. 2.}

\textsuperscript{207} H. van Effenterre, \textit{Le palais de Mallia et la cité minoenne (Rome 1980) 266-267.}

\textsuperscript{208} Watrous (supra n. 4) 721.

wall. This site is constructed on two hills, Apano Kephali and Kato Kephali. Apano Kephali, the higher of the two hills, was encircled by a wall constructed of large polygonal blocks.\(^{210}\) The main period of occupation on Apano Kephali dates to the MM period, so it is likely that the enclosure wall is also Protopalatial. The lower hill of Kato Kephali contains an LM I-III and Archaic period settlement, but apparently no earlier material. At Apano Kephali, on the other hand, the vast majority of pottery is MM, although there are a few traces of LM wares. It appears that the settlement was moved from the fortified site of Apano Kephali to the lower, unprotected settlement at Kato Kephali in the Neopalatial period. The remote setting of Plati, high on the Lasithi plateau far from the sea, argues against threats by sea raiders as a reason for fortification. Instead, it is likely that the walls were constructed to protect the residents of Plati from hostile neighboring villages.

Far fewer Neopalatial period fortifications have been identified, but they did exist. In the extreme east of the island, parts of the Neopalatial settlement around the palace at Kato Zakros were enclosed by a 1.70-m-thick wall.\(^{211}\) Not far north of Kato Zakros, the town of Palaikastro was probably at least partially walled in the Neopalatial period.\(^{212}\) This wall reached a width of 2.8 m in some places and includes the foundations of two rectangular towers. Near the southwest corner of the settlement a heavily-built structure was discovered that may have been a guardpost controlling access to the town. The location of the wall

\(^{210}\) R.M. Dawkins, “Excavations at Plati in Lasithi, Crete,” BSA 20 (1913/14) 1-17; Watrous (supra n. 172) 63-64, pl. 16c.


presents some mystery; it appears to run through the middle of the town rather than encircling it. Two explanations for this are possible. First, the wall may date from an earlier period, and have gone out of use by the Neopalatial period. Support from this comes from the fact that all of the constructions outside the wall date to no earlier than LM I.\textsuperscript{213} If this is the case, it is likely that the wall was necessary for defense of the Protopalatial community, but by Neopalatial times defense was no longer such a concern, so buildings were constructed outside the wall. Alternatively, the wall might have been in use in the Neopalatial period, but designed to protect only a part of the settlement, possibly the area containing important administrative buildings or wealthy areas. This is analogous to the situation at Aghia Triada. There, the Neopalatial town was surrounded by a wall constructed of large irregular blocks on top of a base of small stones. This large wall enclosed not only the villa complex on the hill, but also much of the town below, including wealthy residences such as the House of the Tripod Cauldron. Watrous does not believe that wall was thick enough to be considered a fortification.\textsuperscript{214} However, at 1.20 m thick, the wall is similar to other Bronze Age fortification walls, and was certainly thick enough to aid in the defense of the community.

Kato Zakros lies directly on the coast, so it is quite possible that its wall was used as a defense against sea raiders. Aghia Triada, on the other hand, is several kilometers inland. Here, the wall may have been constructed as a deterrent to more domestic foes. Possibly there was some conflict with the nearby palace at Phaistos; in the Neopalatial period Aghia

\textsuperscript{213} MacGillivray et al. (supra n. 212) 137.

\textsuperscript{214} Watrous (supra n. 211) 132.
there was some conflict with the nearby palace at Phaistos; in the Neopalatial period Aghia Triada grew in importance, but was still second to Phaistos in the region. However, after both centers were destroyed at the end of LM IB, the palace at Phaistos was abandoned for good, while the villa at Aghia Triada was rebuilt and became the main center for administration of the Mesara in the LM IIIA2 and LM IIIB periods. Phaistos was resettled and regained the reigns of power in LM IIIC. It is possible that this conflict between these two centers had something to do with the construction of fortifications at Neopalatial Aghia Triada.

The Postpalatial period, by all other accounts the heaviest time of pirate raiding, also provides evidence for fortifications. Postpalatial fortification walls were usually dry-laid, with two stone faces surrounding an interior fill of rubble. Local stones were commonly employed in construction. Blocks ranged in size from 0.5 to 1.5 m and were typically not dressed.215 At Phaistos, a 2-m-thick fortification wall was built around the town near the end of the Bronze Age or in the Protogeometric period. The wall was very carefully constructed and contained at least one bastion.216 Very little of the wall remains today, but it is likely that it enclosed most of the Dark Age settlement. In the Vrokastro region, the harbor site at Elias to Nisi (EN 2) was also enclosed by a fortification wall. This wall, 1.5 to 5 m thick, extended completely across the promontory of Elias to Nisi, blocking access to EN 2 from the exposed landward side. The exact date of construction is unknown, but must


216 Hayden (supra n. 215) 5-6, figs. 5-6.
Of less secure date is a proposed fortification wall at Knossos, traces of which survive just to the south of the LM I South House. This wall is approximately 2 m thick and is carefully constructed of medium to large rocks. The foundation of the wall is built on bedrock, and today it is preserved to a height of three courses.218 The wall is placed in a position to protect the palace and part of the town of Knossos. Unfortunately, the chronological relationship of the wall and surrounding features has not been definitely established. Evans originally dated the wall to the MM period, and this has been accepted by other scholars.219 However, it is also possible that the wall was constructed in the LM III period. Only further study of the area where the fortification wall joins the south wall of the South House will resolve the problem of its date.220

Another wall of uncertain date and function exists at the site of Vasiliki in eastern Crete. Here, a 2-m-thick wall preserved for a length of 8 m runs across the top of house Gamma, which dates to the MM I period.221 The wall is constructed of very large blocks unlike other structures at Vasiliki. Zoïs thought that the wall postdated the LM I period due to the fact that the LM IA House M was located outside the proposed circuit of the wall. However, there is no real evidence that the wall enclosed the hilltop, and it is possible that this was simply part of a large building or a heavily-constructed terrace wall.222 Further

218 Hayden (supra n. 215) 8-10, figs. 10-11.


220 Hayden (supra n. 215) 10.

221 Hayden (supra n. 215) 14-16, fig. 18.

222 Hayden (supra n. 215) 15-16.
excavation is necessary to tell for certain.

REFUGE SITES

In Bronze Age Crete, the primary defensive adaptation seems to have been the widespread relocation to refuge sites during times of trouble. Nowicki has studied Cretan refuge settlements extensively and noted a number of common features that they all shared. First, they were situated in very inaccessible locations. Second, refuge sites were usually located near cultivable land and water sources. Finally, they tended to have excellent views of the surrounding countryside, especially towards directions from which attacks were likely to come. Within these broad parameters, refuge sites took several forms.

The simplest form of refuge site was the settlement located in a highly defensible position, such as a hilltop or mountain peak. The main defensive feature of all of these sites was their inaccessibility. They were usually surrounded by difficult terrain such as cliffs or ravines. Access to the sites was commonly limited to a few narrow approaches. Thus, these settlements relied on natural topographical features as their main line of defense. An example of this type is the refuge settlement at Vrokastro.

In other places, terrain alone did not provide enough protection against attacks. Therefore, additional fortifications had to be constructed. An example of this type is the site of Kastrokephala, where a large fortification wall partially surrounded the summit of a 355-m-high hill. At Juktas, the top of the peak was enclosed by a 735 m long wall that may

223 Nowicki (supra n. 116) 217-222.

224 Hayden (supra n. 215) 3-5, figs. 2-4.
have served a defensive function.\textsuperscript{225} Similarly, at the Postpalatial refuge site near Smari, the peak of Prophitis Elias was enclosed by a large wall containing bastions or towers.\textsuperscript{226} In these locations, the fortification walls served to supplement the natural defensibility of the terrain, rather than being a complete defensive system by themselves.

A third type of refuge site was the dual-settlement. Dual-settlements consisted of one low-lying settlement with good access to land and water and one defensible settlement that did not have good access to resources. The defensible settlement was inhabited only in times of trouble. The previously mentioned sites of Khalasmeno and Katalimata formed a classic dual-settlement.\textsuperscript{227} Both Mythi and Arvi Fortetsa have small fortified hilltops in close proximity to undefended villages.\textsuperscript{228} In each case, the fortified area was large enough to provide temporary refuge to only one village. Another probable dual-settlement existed at Oreino Kastri.\textsuperscript{229} Here, the lower settlement was unfortified, but the upper was protected by steep cliffs and a fortification wall. Finally, a possible dual-settlement has recently been

\textsuperscript{225} This wall was first reported by A. Evans, who dated it to the MM period: Evans, \textit{The Palace of Minos at Knossos}, vol. I (London 1921) 156. More recent studies have concluded that the wall was probably constructed in the LM III period: Hayden (supra n. 215) 10-12, figs. 12-13; K. Nowicki, “Fortifications in Dark Age Krete,” in S. Van de Maele and J.M. Fossey, eds., \textit{Fortificationes Antiquae} (Amsterdam 1992) 57-58.


\textsuperscript{227} Haggis and Nowicki (supra n. 196) 334-335; Haggis (supra n. 92) 156.

\textsuperscript{228} Mythi: Hayden (supra n. 215) 6-7, figs. 7-8; Nowicki (supra n. 225) 61-62. Arvi Fortetsa: Hayden (supra n. 215) 14, fig. 17; Nowicki (supra n. 225) 58-61, fig. 3.3.

\textsuperscript{229} Nowicki (supra n. 225) 62-64, fig. 3.4, pls. 22-24.
identified near Pefki in eastern Crete. Based on this typology, Nowicki has been able to identify over 100 refuge sites in Crete.

Nowicki's studies of refuge settlements have concentrated on the Late Bronze Age and Dark Ages, especially the LM IIIC period. He notes that refuge sites were intimately connected to settlement pattern changes; whenever the coast was abandoned due to raids from the sea, refuge settlements appeared. Nowicki is certainly correct that the end of the Bronze Age and the Dark Ages were very troubled times, and therefore is justified in studying the refuge settlements from these periods. However, as shown by the study of settlement patterns, the Postpalatial period was not the only time in the Bronze Age that Cretans avoided the coast. In certain areas lack of settlement on the coast dated to well before Prepalatial times. If this desertion was due to the actions of sea raiders, there should be evidence for refuge settlements during these earlier periods as well. Study of the archaeological record shows that such sites did indeed exist.

At Palaikastro Kastri, an LM III B-C refuge settlement has been identified on the top of a barren, windswept hill almost 90 m above the sea. Although the most intense occupation seems to date to the Postpalatial period, an earlier phase of occupation occurred during the Prepalatial period. The first phase of occupation, from EM I, ended in destruction by fire. After a hiatus of several hundred years, a large building was constructed on top of the hill in EM III. This structure was destroyed suddenly, probably by an earthquake, before

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the start of the MM period.\textsuperscript{231} No further occupation occurred at Palaikastro Kastri until the Postpalatial period. At that time, a new larger settlement was constructed. There seem to have been two Postpalatial phases. The first, probably from late LM IIIB, was destroyed by fire. The main occupation phase dates to LM IIIC, and the settlement was abandoned before the end of that period.\textsuperscript{232} It is likely that the structures atop Kastri served as a dual-settlement with the town of Palaikastro. This town was an important East Crete trading port and was inhabited throughout the Bronze Age. The fact that Kastri was occupied in the Prepalatial and Postpalatial periods may indicate that raids from the sea were most pronounced during those periods.

Another Postpalatial refuge settlement that shows signs of earlier occupation is the site of Vrokastro. In addition to its Early Iron Age phase, the main peak of Vrokastro (VK 1) also produced MM sherds, indicating some form of use in the Protopalatial period. More MM pottery was discovered at another site (VK 6) not far from the peak of Vrokastro. In the Postpalatial period, this site functioned as one of the satellite settlements clustered around the main habitation at Vrokastro. It is possible that the MM material from these two sites shows that Vrokastro was utilized as a refuge in the Protopalatial period as well. If so, this may represent evidence for attacks from the sea in the Vrokastro region in the Protopalatial period.

Another possible Protopalatial refuge site was discovered during the Khania survey.


\textsuperscript{232} Sackett, Popham, and Warren (supra n. 231) 252, 269-278.
The site of PI 1 sat on the slopes of a hill overlooking the sea and the western coastal plain of
the Akrotiri peninsula. Survey of the site produced MM I-II pottery and a wall. It is
interesting that this habitation came into being in the Protopalatial period, which is the time
when coastal zone settlement dropped by half in the Khania region. Although this site is
located in the coastal zone, its elevation of 120 m suggests that the inhabitants sought some
measure of protection from attacks from the sea. Farther inland, the cave of Koumarospilio
(KM 4) may have been used as a refuge in the Protopalatial period as well. This cave lies in
the Akrotiri mountains about 1.8 km from the coast. Burials were placed in the cave during
the Middle and Final Neolithic periods. The cave was not used during the Prepalatial period,
but did produce MM and LM III material. The LM III pottery, which included two
Mycenaean stirrup jars, was apparently votive in nature, indicating that the cave was
probably a sanctuary during this time.\(^{233}\) However, the MM sherds are more problematic. It
is possible that they represent ritual material, but they could also be evidence for use of the
cave as a refuge during Prepalatial times.

Additional evidence for refuge settlements comes from the Neopalatial period. In the
Sphakia district, coastal settlement began during the Prepalatial period and slowly grew
throughout the Neopalatial period. However, one Neopalatial site in Sphakia (6.01) lay at an
elevation of approximately 1000 m over 3 km from the sea. On the coast below, the harbor
site at Chora Sfakion (6.06) shows the first signs of occupation during this period. It is

\(^{233}\) P. Faure, “Nouvelles recherches de speleologie et de topographie cretoises,” *BCH* 84
(1960) 212; Hood (supra n. 151) 110; Kanta (supra n. 140) 231-232. The cave was originally
possible that 6.01 represents a refuge site used by the inhabitants of the harbor town during times of trouble.

During the Postpalatial period, virtually every area of Crete suffered severe abandonment of the coasts. Not surprisingly, the vast majority of refuge settlements also date from this time. To date, over 30 Postpalatial refuge sites have been identified; most of these are from the LM IIIC period, and many continued in use throughout the Dark Ages.234 Postpalatial refuge sites are found throughout Crete, in both coastal and inland locations. Far too many exist to provide a detailed description of each one. However, several Postpalatial refuge sites are located in or near the survey areas studied, and therefore need to be addressed in greater detail.

In West Crete, the site of Vryses, southwest of Khania, has been identified as a refuge settlement.235 This identification is based on some LM III sherds from the summit of the hill of Aghios Georgios. No LM III architecture has been found on the summit. Farther below, however, a fortification wall stretches from Aghios Georgios to another hill that may have been part of the refuge settlement. The wall is up to 1.50 m wide and runs for a distance of approximately 250 m in the saddle between the two hills.236 So placed, the wall protects the most vulnerable approach to the settlement. Unfortunately, however, the date of this wall is not secure. Zoïs excavated an LM I structure not far from the site of the wall, so the

234 A complete list of LM IIIC through Dark Age refuge settlements can be found in Nowicki (supra n. 116) 216, fig. 1. See also Nowicki (supra n. 230) 239-240, figs. 1-2.

235 Hood (supra n. 151) 100, 106.

236 Hayden (supra n. 215) 13-14, figs. 15-16.
fortification may date to the Neopalatial period.\textsuperscript{237} If so, it could be an indication that Vryses was used as a refuge settlement as early as the Neopalatial period.

Elsewhere in West Crete, a Postpalatial refuge site has been identified in the Sphakia district at Aghios Georghios Kastri, in the mountains behind the Frangokastello plain.\textsuperscript{238} Two of the three Postpalatial sites discovered by the Sphakia survey were located on the Frangokastello plain, so it is possible that the site at Aghios Georghios represents a refuge for these settlements.

Several Postpalatial refuge settlements were located in the Mirabello Bay region. Chief among these was the site of Vrokastro, which seems to have been the major \textit{LM IIIC} site for the southern Mirabello area. The settlement at Vrokastro consisted of two areas. The upper area was located on the peak of Vrokastro, over 300 m above the sea. To the north, in the direction of the sea, another settlement area existed farther down the hill. Despite the steepness of the hill and high elevation, only 30 to 40 minutes are required to walk to the site from the seashore below.\textsuperscript{239} Therefore, a large wall on the seaward side of the lower settlement probably aided in the defense of the community.\textsuperscript{240} On the western side of the Bay of Mirabello, a similar refuge settlement existed at Kritsa Kastello. There, the \textit{LM IIIC} settlement was surrounded by cliffs on three sides. However, the easily accessible

\textsuperscript{237} A. Zoits, \textit{Vryses, Kydonias I, 1974} (Athens 1976) 5.9 plan 2 no.6.

\textsuperscript{238} Nowicki (supra n. 116) 239.

\textsuperscript{239} Hayden (supra n. 215) 369.

\textsuperscript{240} Hayden also believes that the wall served to retain rooms built against it and shield the settlement from sea winds: Hayden (supra n. 215) 8.
western side was blocked by a fortification wall.\textsuperscript{241} Not far east of Vrokastro, a contemporary refuge settlement was located at Asari. This site was 2 km from the coast in the hinterland behind the Minoan city of Gournia. The settlement occupied the top of a steep hill and was completely hidden from the sea by surrounding mountains. From the coast, the only approach to Asari was through the Moulas gorge. Nowicki believes that Asari was occupied from the LM IIIC to Geometric periods by people who had abandoned Gournia and its surrounding coastal plain.\textsuperscript{242} Finally, the sites at Kavousi Kastro and Kavousi Vronda, along with the dual-settlement at Khalasmeno and Katalimata, served as refuges for the inhabitants of the eastern shores of the Bay of Mirabello during the LM IIIC period.

The above examples show that there is evidence for refuge settlements in all periods of the Bronze Age. Further exploration of the mountains of Crete should reveal more in the future. In addition, more detailed study of known Postpalatial refuge settlements may reveal earlier phases at these sites as well.

**DEVELOPMENT OF A FLEET**

The statement by Thucydides that Minos of Crete built a fleet and swept the Aegean free of pirates has been a matter of debate among scholars since the earliest discoveries on Crete at the beginning of this century. Convincing evidence for considerable Minoan influence in the Aegean exists for the Neopalatial period, and to a lesser extent the

\textsuperscript{241} Nowicki (supra n. 225) 66.

\textsuperscript{242} Nowicki (supra n. 116) 219
Protopalatial period. However, there is no real archaeological evidence that Minoan influence was secured by a fleet of vessels. No discoveries of Bronze Age ships have yet been made on Crete or in its surrounding waters. The only information we have about ships and shipbuilding in Bronze Age Crete comes from boat models, iconography, and textual references.

In the Aegean, the earliest representations of ships occur on so-called “frying pans,” enigmatic terracotta, stone, and bronze objects which are found in Early Bronze Age contexts from Mainland Greece to Anatolia. The vast majority, however, come from the Cycladic islands. A number of the Cycladic frying pans feature crudely drawn ships. The depictions provide little information about the construction of the vessels. Practically all that can be determined is that the ships were long narrow galleys propelled by paddles or oars. Three lead models from Naxos and another of unknown Cycladic provenience represent the same type of boat depicted on the frying pans. This type of boat may have been descended from dugout canoes. Only two frying pans have been discovered on Crete, and neither of these depicts a ship. However, some evidence for watercraft does exist from Prepalatial

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Crete. A pair of clay models from Mochlos depict small boats. Richard Seager, the original excavator of Mochlos, reported that such models were “very common” in the EM II-III levels, but only two remain today. Similar models were discovered at Palaikastro and in a tholos tomb in the Mesara. None show large ships; instead, all seem to represent small boats, perhaps fishing craft. Earlier, it was proposed that no evidence for a fleet would be forthcoming from Prepalatial Crete due to the lack of state-level social organization during this time. The few depictions that exist from this period represent simple boats, in keeping with the form of the model.

Near the end of the Prepalatial period, ship depictions begin to appear on Minoan sealstones. These illustrations are highly stylized, and provide very few details concerning ship construction, despite attempts by many scholars to interpret seal impressions as lines drawings or construction plans. Despite their shortcomings, it is possible to glean some general information concerning hull shapes and propulsion methods from sealstones. The earliest sealstones seem to show large ships with more rounded hulls than the vessels depicted on the Cycladic frying pans. This type of hull form is better suited to a cargo carrier than a warship. The EM III seals are also the first to show sails. The majority of these early seals show sails as the only means of propulsion, although a few depict both sails and oars.

Around 1600 B.C., a new type of vessel begins to be depicted on seals. This type has a long, slender, crescent-shape hull. This hull form is very similar to that of the vessels

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247 R. Seager, “Excavations on the Island of Mochlos, Crete, in 1908,” AJA 13 (1909) 290. One of the Mochlos models is pictured in Casson (supra n. 246) fig. 54.
depicted on the Ship Procession fresco from Thera, and the two may in fact represent the same type of vessel. Most of these vessels are depicted with both sails and oars. The number of oars provides some indication of the size of these vessels: several seals show examples with either ten or fifteen oars. Although this may be simply artistic license, ten- and fifteen-oared vessels were common types later in Greek history, being used in both the Dark Ages and Classical times. Thus, in this particular the seals may be accurate. If so, the vessels pictured would have been approximately 15-20 m in length for a 10-oared ship or 20-25 m in length for a 15-oared vessel. Crew size would probably have ranged from 20 to 35 men. A long, slender hull form such as this is much better suited to a warship than the rounded hulls depicted on earlier seals. This type of hull form, capable of being both sailed and rowed, and with a large crew, was ideally suited either as a raiding vessel or to pursue raiding vessels.

The fact that the second generation of ship-depiction sealstones show a vessel better suited as a warship may suggest that the Minoans had begun to develop a type of warship by the Neopalatial period. This is interesting, as the Neopalatial period was the flowering of Minoan culture and also the time of greatest Minoan influence abroad. In addition, the degree of social organization necessary to organize a fleet certainly existed in Neopalatial and Postpalatial Crete. It is tempting to believe that ships such as those depicted on the seals and the Thera frescoes represent artistic portrayals of the type of vessel that formed Minoan fleets and controlled the Aegean. However, there is no way of knowing how many ships of this type existed. Sealstones show individual ships, not fleets. The one representation of a

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248 Casson (supra n. 246) 34.
fleet in the Aegean during the Late Bronze Age comes from the frescoes from the West House at Akrotiri, Thera. The vessels depicted in the Thera frescoes have been variously interpreted as Theran, Minoan, or Mycenaean.\textsuperscript{249} At present, their nationality is a matter of debate. It is interesting, however, that Akrotiri seems to be one of the most heavily Minoan-influenced sites in the Aegean during the LM I period.\textsuperscript{250} Even the ships depicted on seals found on Crete may not necessarily be Minoan. Indeed, the later examples, from LM III, show vessel types that appear to be the same as those from Mainland Greece, and may be a Mycenaean type. For these reasons, it is impossible to interpret a Minoan fleet from the depictions on sealstones.

From Postpalatial Crete, Linear B tablets provide some slight evidence for seafaring matters. One tablet from Knossos may list rowers and has an ideogram in the shape of a ship. The word for rowers, \textit{e-re-ta}, occurs four times on two other Knossos tablets; in one instance the rowers are connected with the place name \textit{re-ri-jo}, which may be a coastal location. On other Knossos tablets, the term \textit{e-to-ro-qa-ta} and an accompanying ideogram may refer to straps used to fasten oars against tholepins.\textsuperscript{251} These few references, while certainly providing evidence that the palace bureaucracy was concerned with nautical matters, do not furnish evidence for the existence of a fleet in Bronze Age Crete.

One series of Linear B tablets from Knossos has been interpreted as possibly

\textsuperscript{249} A massive amount of literature has been written about the Thera ship frescoes. L. Morgan, \textit{The Miniature Wall Paintings of Thera} (Cambridge 1988) 88-92, 118-142 provides the best summary of the relevant arguments concerning location, nationality, and ship construction in the frescoes.

\textsuperscript{250} Wiener (supra n. 243) 31.

providing evidence for a Minoan fleet. Chadwick studied nine V-series tablets and two fragments from Knossos that seem to follow the same formula. Each tablet contains an introductory word, followed by the word *po-ti-ro*, and concludes with the names of two men and the numeral one. The men’s names are written in similar form to the names of shepherds from the Knossos sheep tablets, indicating that the men are in charge of something. The word *po-ti-ro* may be an early form of ποντίλος, a synonym for ναυτίλος, the Classical Greek word for sailor. Thus, the pairs of men may be sailors. The initial element of the formula, the introductory word, seems to refer to place names. One of these places, *a-pa-ta-wa-ja*, indicates Aptera, an important city in the Khania region known from other Linear B tablets. Another entry, *da-*22-ti-ja, is also known from other tablets and seems to be closely associated with Knossos. Two other place names are similar to the names of coastal locations in Mainland Greece and Anatolia. The association of coastal place names with sailors who are in charge of some object led Chadwick to believe that the tablets may refer to ships and their commanders at various locations throughout Crete. If this interpretation is correct, the tablets provide further documentary evidence for ships in Bronze Age Crete. However, the tablets certainly do not provide evidence for a Minoan fleet. Only nine or ten vessels are listed, and these are all at different ports, except for the port of *da-*22-ti-ja, which has two ships. Such a dispersed pattern of individual vessels could never function as a fleet to keep away pirate vessels. Moreover, we have no way of knowing what types of ships are referred to. The vessels in question may well have been

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merchantmen rather than warships. The Knossos tablets, therefore, provide a tantalizing
glimpse of some form of seafaring activity in Postpalatial Crete, but do not furnish evidence
for a fleet charged with protecting the Minoan thalassocracy.
CHAPTER VII
SUMMARY AND CONCLUSIONS

Archaeological interpretation is based primarily on explaining patterns in the archaeological record. The preceding chapters have provided, in as great a detail as possible, evidence for conflict in Crete throughout the Bronze Age. Crete is an extremely diverse island, a fact which makes generalization about it extremely difficult. Still, by analyzing each area separately, and then comparing them to each other, meaningful patterns begin to emerge. These patterns provide information about attacks against Crete from the sea during the course of the Bronze Age.

NEOLITHIC PERIOD

To begin, the Final Neolithic period seems to have been a time of peace in Crete. This is hardly surprising, considering that many parts of the island were still being settled at this time. The peopling of Crete seems to have started from the original settlements around Knossos in the north central part of the island. From there, people spread out and occupied the other fertile agricultural plains, especially those on the north coast and the Mesara. Survey evidence from the areas studied seems to confirm this observation. The Khania area was occupied by at least the Late Neolithic, with heavy settlement along the coasts of the Akrotiri peninsula. Farther to the east, the Vrokastro region contained a few settlements by the Final Neolithic period. Like Khania, the Neolithic settlements in the Vrokastro region were close to the seacoast. The fertile Mesara plain was permanently settled by the Final
Neolithic period, as shown by the earliest levels at Phaistos.\textsuperscript{253} Final Neolithic pottery has been discovered at Kommos as well.\textsuperscript{254} Like other areas of Crete, peaceful conditions during the Neolithic period are shown by the fact that the Western Mesara survey discovered Final Neolithic settlements scattered widely throughout the plain. However, Neolithic settlers do not seem to have gained much of a foothold in the mountains south of the Mesara. The only material of this period found by the Ayiofarango survey was some possible FN sherds from a looted tholos tomb.\textsuperscript{255} In recent years, excavation of an EM tholos at Ayia Kyriaki has revealed some additional FN sherds.\textsuperscript{256} The fact that tholos tombs were present would argue for some settlement of the Ayiofarango area, as people do not usually bury their dead far from settlements. Also, numerous EM I habitations were found in the Ayiofarango valley, so there was probably some occupation during the Final Neolithic.

The expansion of population at centers on the north coast led people to migrate into the mountainous Lasithi plateau and Sphakia regions during the Final Neolithic. The Neolithic settlers of Sphakia, however, lived in the intermediate and inland zones, and did not develop habitations along Crete’s south coast before the beginning of the Bronze Age. This is probably a reflection of the fact that the Sphakia area was settled by farmers and herders moving overland from the north rather than an indication of danger from the sea.


\textsuperscript{254} P. Betancourt, \textit{Kommos 2: The Final Neolithic through Middle Minoan III Pottery} (Princeton 1990).

\textsuperscript{255} Blackman and Branigan (supra n. 99) 37-38.

Although different areas of Crete were settled at varying times throughout the Neolithic period, one thing they all have in common is evidence of international contact in the form of obsidian from Melos. Extremely common at Neolithic coastal sites, obsidian found its way even into such remote areas as the Madhares plateau in the Sphakia district. So, overall, Neolithic settlement patterns in Crete seem to suggest little or no danger from the sea. Coastal sites were the norm in the Khania and Vrokastro regions (fig. 11). Sphakia does not seem to have coastal settlement, but occupation began near the end of the Neolithic, so this could simply be a reflection of lack of time to begin coastal exploitation. The data from Ayiofarango are simply too sparse to tell. However, both the Lasithi and Western Mesara regions produced evidence for numerous small, widely scattered settlements, something that would not exist in a time of great danger. The lack of fortifications at FN sites also supports the interpretation of a generally peaceful period.

PREPALATIAL PERIOD

The Cretan Prepalatial period has been widely regarded as a time of dynamic expansion that laid the foundation for the rise of the first palaces. The four areas for which it is possible to calculate settlement distributions show some divergent trends during the Prepalatial period (fig. 12). Around Khania, the heavily favored coastal zone settlements of the Neolithic period gave way to a settlement pattern split evenly between the coastal and intermediate zones. A similar shift took place in the Vrokastro region, where coastal zone activity remained high (35%), but just over half of the sites were located in the intermediate
Fig. 11. Comparison of settlement proximity to coast, Neolithic period.
Fig. 12. Comparison of settlement proximity to coast, Prepalatial period.
Sphakia region, settlers began moving to the coast during the Prepalatial period. Most people, however, still preferred to live on mountain slopes in the intermediate zone. At Ayiofarango, the vague beginnings of occupation hinted at for the Final Neolithic period developed into a number of settlements in the EM I period. However, only one site was in the coastal zone. Around 30% of the people of the Ayiofarango valley preferred the intermediate zone, while twice as many chose to live farther inland. Blackman and Branigan have suggested that EM sites were placed near areas of cultivable land.257 This seems logical, but no habitation was located near the mouth of the gorge, where a patch of arable land exists close to a spring.258

What the settlement patterns seem to indicate is that the people of Prepalatial Crete wanted to utilize the sea. Especially from the EM II period onwards, there is a large increase in the number of international contacts, as attested by increased imports. This phenomenon was not limited to Crete; it occurred throughout the Aegean world during the Early Bronze II period, and has been referred to as an emerging “international spirit” by Renfrew.259 In general, Cretans on the north coast were able to live close to the sea during the Prepalatial period, as shown by high coastal zone settlement percentages in areas such as Khania and Vrokastro. However, both of these areas also show definite tendencies for settlements to be placed in the intermediate zone as well. This indicates that, while utilization of the sea was

257 Blackman and Branigan (supra n. 99) 69-70.

258 See Blackman and Branigan (supra n. 99) 66, fig. 34. A tholos tomb (E22) is located near this patch of land, so one would expect there to be a habitation site close by. However, the survey failed to recover evidence for such a site.

259 Renfrew (supra n. 91) 27.
desired, people did not want to live too close to the coast, perhaps because the sea also provided threats.

The situation is less clear on the south coast. Both the Sphakia and Ayiofarango areas were still being populated during the Prepalatial period, and neither one had yet developed many coastal settlements. In Sphakia, people were definitely moving closer to the sea, as shown by the founding of four new sites in the coastal zone. Only one coastal zone settlement was present in the Ayiofarango area, however, so it is possible that the threat of danger from the sea inhibited coastal development in this region. The evidence from the Lasithi plateau and the Western Mesara plain seems to show that these two areas continued the growth begun in the Neolithic period. Numerous widely scattered sites occurred in both regions, indicating that dangers were probably not too great in these areas.

At the end of the EM IIB period, there is evidence for destruction by fire at Mallia, Vasiliki, Myrtos Fournou-Koryphi, and Myrtos-Pyrgos. Other sites such as Palaikastro show signs of abandonment at this time.260 It is possible that the residents of Palaikastro relocated to the refuge site atop Kastri. At Myrtos Fournou-Koryphi, there is slight evidence for the construction of a fortification wall prior to destruction. It is possible that the residents of this site realized that danger was coming and took steps to defend themselves, even though their defensive preparations ultimately proved futile. It is interesting that three of the four sites that were destroyed by fire, Mallia, Myrtos Fournou-Koryphi, and Myrtos-Pyrgos, were located on the coast.

Mallia was situated on the sea in the north central part of the island. Settlement

260 Watrous (supra n. 4) 717.
patterns from Khania and Vrokastro showed developing coastal exploitation at this time, but also the tendency to place settlements in the intermediate zone rather than directly on the sea. When considered together, this evidence seems to show that the north coast was subject to raids from the sea during the Prepalatial period. Vasiliki, the one non-coastal site that was destroyed by fire in EM IIB, was also located in the northern part of the island, just east of the Vrokastro survey area. Vasiliki, some 4 km from the sea, may have been out of range of seaborne raids. It is possible that the destruction of Vasiliki was the result of internal conflict rather than sea raiders.

The destructions of the south coastal sites at Myrtos Fournou-Koryphi and Myrtos-Pyrgos may also point to internal conflict rather than attacks by outside groups. Both settlements were located on the coast, and it is possible that both were destroyed by attackers who came from the sea. If so, these attackers were probably other Cretans. In the Early Bronze II period, despite its characterization as a time of dynamic international contact, the only area that really shows evidence for long-distance seafaring activity is the Cycladic islands. The representations of longboats on Cycladic frying pans and the lead models from Naxos provide the only real evidence of vessels suited for long-distance voyages at this time. However, during the Early Bronze Age the Cycladic islands were sparsely populated. Broodbank has shown that the Cyclades simply did not possess sufficient population to man more than a few vessels.261 For example, the site of Chalandriani, Syros, from which 7 of the 13 representations of ships on frying pans come, probably only had sufficient population to

crew one longboat. Other islands did not have enough people to man even one. Therefore, it seems highly unlikely that Cycladic islanders could have been responsible for the EM IIB destructions of Cretan coastal sites, or the trend for non-coastal settlement on the northern coast of Crete. The thought of one or two Cycladic longboats journeying across the Aegean to raid the huge island of Crete is laughable. The EM IIB destructions on Crete are probably the result of internal conflict rather than piratical raids. It is certainly possible that part of this internal conflict involved groups of Cretans who employed ships to raid other areas of Crete. This would account for the trend on the north coast to locate settlements in the intermediate zone rather than directly on the sea.

PROTOPALATIAL PERIOD

Several interesting developments occurred in the Protopalatial period. Around Khania, coastal zone settlement dropped by almost half; only 24% of habitations were located close to the sea (fig. 13). A similar phenomenon took place in the Vrokastro region, where coastal zone settlement dropped to only 25%. In both of these areas, the vast majority of people preferred to live in the intermediate zone. Intermediate zone settlement continued to be the favored pattern in the Sphakia region as well. In Sphakia, however, coastal zone settlement, which had its beginnings in the Prepalatial period, continued to rise. Coastal settlements accounted for 29% of all sites, the highest level of coastal utilization in Sphakia during the Bronze Age. At the same time, inland zone exploitation in Sphakia dipped to its lowest level of the Bronze Age, providing further evidence that people were becoming more interested in the developing seacoasts rather than the old mountain sites. In the other south
Fig. 13. Comparison of settlement proximity to coast, Protopalatial period.
coast region studied, Ayiofarango, the Protopalatial period was a time of stability. The settlement pattern remained almost exactly the same as it had been in the preceding Prepalatial period.

Protopalatial settlement patterns show a dichotomy between the north and south coasts of Crete. Both of the north coast regions studied, Khania and Vrokastro, show a marked shift of settlements away from the coast. However, in both areas imported objects have been found, indicating that maritime trade continued. It seems strange, then, that neither area had many coastal sites. A logical explanation for the lack of coastal settlement at this time is that these areas were experiencing attacks from the sea. This would account for the overwhelming choice of intermediate zone settlements: people were close enough to the coast to participate in international trade, but far enough away to be safe from pirate attacks. Also, in both Khania and Vrokastro there may be evidence for the use of refuge sites during the Protopalatial period. In Khania, the site of PI 1 seems well-suited as a refuge, while KM 4 may have been used in this capacity as well. Protopalatial pottery from Vrokastro indicates use in this period, and it would not seem out of place to interpret this usage as refuge activity, considering that the site is known to have been a refuge in later times. The fact that the coastal settlements at Mallia and Aghia Photia were fortified also points to danger from the sea on the north coast of Crete. The possible fortifications at Knossos and Gournia, if these can be dated to the MM period, would provide additional evidence.

By contrast, evidence for attacks from the sea is not as well documented on the south coast of Crete during the Protopalatial period. In Sphakia, coastal zone exploitation
continued to develop, while in Ayiofarango people continued to avoid the sea. The south coastal site of Myrtos-Pyrgos was rebuilt after its fiery destruction at the end of EM IIB. The new settlement had some fortifications; these may not have proven very effective, however, as the site was burned again at the end of the Protopalatial period. In the western Mesara area, the first palace at Phaistos also showed some traces of fortifications. The western Mesara survey discovered that the Protopalatial period was the most densely settled time of the Bronze Age in this area. It is possible that increasing population led to conflicts between villages. If so, internal trouble seems a likely explanation for the fortifications at Phaistos. Conflict within Crete is also indicated by fortification at the Middle Minoan settlement at Plati high in the Lasithi plateau. Thus, while north coastal regions show plausible evidence for sea raids in the Protopalatial period, the situation on the south coast remains unclear, and fortifications at inland areas point to trouble within Crete as well.

NEOPALATIAL PERIOD

The Neopalatial period was the time of maximum Minoan influence abroad. The palaces reached the apex of their power, and in many ways Minoan culture reached its grandest level at this time as well. If there was ever a time when Crete possessed the population and the power to dominate the Aegean, it was the Neopalatial period. With Minoan power at its height, one would expect to find little evidence for sea raiding in the archaeological record of Neopalatial Crete.

Neopalatial settlement patterns provide mixed evidence for sea raids. In the Khania region, coastal zone settlement continued to decline in the Neopalatial, dropping to only 17%
of habitations (fig. 14). However, in the Vrokastro region, coastal zone settlement revived after the dip in the Protopalatial period. Overall, coastal sites accounted for one-third of all settlements in the Vrokastro region during Neopalatial times. This period was the most populous time of the Bronze Age in the Vrokastro region, and many new sites were founded. Almost 40% of new sites were established in the coastal zone. Intermediate zone settlement continued to be the overwhelming favorite in the Khania area. In Vrokastro, the intermediate zone still accounted for a majority of settlements, but there was a substantial increase in inland zone settlement as well. Thus, settlement pattern evidence from the north coast, which had been similar in the preceding periods, shows a divergence in the Neopalatial period. The eastern area around Vrokastro appears populous and safe, while West Crete, although heavily populated, was still subject to threats from the sea. Additional evidence for this idea is provided by the Lasithi plateau, where many small Neopalatial settlements existed and the fortified Protopalatial settlement at Plati Apano Kephali was abandoned in favor of the lower, unfortified village at Kato Kephali. Still, the eastern half of the island was not totally free from danger in the Neopalatial period, as evidenced by fortification walls at the east coast sites of Palaikastro and Kato Zakros.

The situation on the south coast shows regional variation as well. In Sphakia, coastal zone settlement continued to develop. Especially notable are sites on the coastal Frangokastello plain, an open area that would not be heavily populated if there had been great danger from the sea. Still, the fact that the newly founded harbor settlement at Chora Sfakion may have possessed an inland refuge site indicates that sporadic threats existed in the Sphakia region. Farther east, no coastal zone settlements were present in the
Fig. 14. Comparison of settlement proximity to coast, Neopalatial period.
Ayiofarango area, and the whole region seems to have been totally deserted after LM I. This may be related to the situation in the western Mesara plain, where survey discovered a distinct shift to site nucleation in the Neopalatial period. Such nucleation may have been due to the tendency for population to concentrate in major settlements during periods of a market based economy. If this is correct, it may account for the abandonment of the Ayiofarango area. Evidence shows that Ayiofarango was always an area of small, rural farming settlements. It is possible that people abandoned these for the attractions of the market centers of the Mesara plain.\(^262\) This seems to be a more plausible explanation than sea raids for the desertion of the Ayiofarango region, because the Mesara plain, while concentrated on major centers, still contained many smaller sites. The construction of a fortification wall around the settlement at Aghia Triada indicates that the developing centers of the Mesara plain were not always safe. As previously discussed, however, the fortification at Aghia Triada may have been due to conflict with nearby Phaistos rather than attacks from outside.

Overall, the Neopalatial period certainly seems to have been the time of least raiding activity on Crete. Data from both the areas studied and information from other parts of Crete shows a picture of a heavily populated land. In most areas, sites were scattered widely throughout the landscape, and there is little evidence for fortifications or refuge sites. Only the northwestern and extreme eastern parts of the island provide any real evidence for defensive measures to protect against sea raids.

\(^{262}\) Blackman and Branigan (supra n. 99) 69-70.
POSTPALATAL PERIOD

The earliest part of the Postpalatial period, the LM II period, remains enigmatic. Surveys rarely find LM II material. What evidence we have is therefore limited to excavated sites, which do not provide coherent pictures of regional settlement patterns. For the LM III A-B periods, surveys do provide evidence, and show a great deal of continuity. Whether it was Minoans or Mycenaeans who controlled the administration of Crete during this time is a question that cannot be answered by this study. However, it is interesting that in the Neopalatial period, settlement patterns in the Khania region continue to show a desertion of the coasts, while in most other areas of Crete the majority of evidence points to a time of peace (fig. 15). The Khania region is the part of Crete closest to the Mycenaean centers of the Peloponnese. Winds in the Aegean favor journeys from the southern Peloponnese to northwest Crete, although currents would have a tendency to take vessels around to the south coast.\(^3\) It is possible that Mycenaean raids were responsible for the abandonment of the coast in the Khania area. If Mycenaeans did invade Crete, the Khania region would have been a logical starting place. On this note, it is interesting that northwest Crete seems to have been the area most heavily in contact with the Peloponnese; the only Linear B tablets found in Crete outside of Knossos were discovered at Khania Kastelli.

Whatever the character of the Linear B administration of Crete, the situation in Crete increasingly deteriorated as the Postpalatial period wore on. The Khania region remained stable and very in touch with the Greek Mainland throughout the LM III A-B periods. A

decline in settlement in both the western Mesara plain and the Lasithi plateau occurred in LM IIIA1, but both areas recovered somewhat during LM III A2-B. Settlement in the Vrokastro region dropped by about one-half in the LM III period. The Sphakia survey found LM III material at only three sites, and the Ayiofarango region remained deserted.

By the LM IIIC period, even those areas that had retained a degree of stability show a significant decrease in settlement. Very few LM IIIC sites were discovered in the Khania, western Mesara, or Lasithi areas. In the Vrokastro region, settlement was clustered around the refuge site atop the peak of Vrokastro. A similar situation existed at nearby Kavousi-Thrifthi, where LM IIIC settlement was grouped into site clusters. No LM IIIC material was discovered by the Sphakia survey.

The widespread abandonment of many areas of Crete in the LM IIIC period was accompanied by the use of fortified sites and refuge settlements. Many of these were located in coastal areas, indicating that much of the danger during this time was due to attacks from the sea. However, it is important to note that sea raiders could not have been the only source of danger in LM IIIC Crete. Inland areas such as the Lasithi plateau show the same abandonment that characterizes coastal regions. Moreover, fortifications and refuge sites existed in areas far from the sea. For example, LM IIIC refuge sites have been discovered during the recent survey of the inland Ayios Vasílios valley of west central Crete. One of these refuge sites, at Phrati Kephala, had a fortification wall to protect an easily approachable side.264 Evidence from the Postpalatial period thus indicates that Crete followed a pattern similar to most other areas of the eastern Mediterranean at the end of the

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264 Nowicki (supra n. 225) 68-70, figs. 3.8-3.9.
Fig. 15. Comparison of settlement proximity to coast, Postpalatial period.
Bronze Age. The abandonment of the coasts, coastal refuge sites, and fortifications show that Crete must have suffered from seaborne raids during this time. Still, similar patterns in the interior of the island point to internal conflicts as well.

CONCLUSIONS

Evidence for sea raiding in Bronze Age Crete is a regional phenomenon that varied chronologically throughout the course of the Bronze Age. The Khania region shows evidence for attacks by sea raiders from the Prepalatial period onward. Similarly, in Sphakia, coastal zone development expanded from the Prepalatial period until the Postpalatial period, but throughout this time most people still preferred to live farther inland. Nobody ever wanted to live on the coast at Ayiofarango. In the Vrokastro region, intermediate zone settlement was usually favored, and the Protopalatial period showed evidence for heavy raiding. The Neopalatial period, however, was peaceful in Vrokastro. After that, however, coastal settlement declined sharply in Vrokastro and other areas of Crete. By the LM III C period the coasts of Crete were largely abandoned.
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