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THE BRONZE AGE
AEGEAN
(ca. 3000–1000 BC)

Edited by
ERIC H. CLINE

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CHAPTER 1

HISTORY OF RESEARCH

JAMES D. MUHLY

OUR modern reconstructions of Greek prehistory have always been influenced by the ways in which the ancient Greeks attempted to create a usable account of their own history. Out of a rich, inherited body of saga, folklore, and myth, the Greeks of the Archaic and Classical periods struggled to assemble a meaningful framework, a sequence of events that satisfied the needs of a contemporary audience. Obviously all of this centered round the Homeric epics, but the establishment of the structural framework seems to have been the work of Hesiod, in his sequence of the “five ages” and in his ordering of genealogical traditions in the work now known as the *Catalogue of Women*.

The *Iliad* and the *Odyssey* established the Trojan War as the culminating event in the prehistory of the Greek people. For Thucydides, writing in the mid-fifth century BC, the separate Hellenic states were weak and disorganized prior to the Trojan War. They lacked even a common name and could not bring themselves to do anything together (Thucydides, I.3). What they did have was a common language that was always the decisive factor in distinguishing between Greeks and barbarians. No one who did not speak Greek could possibly be considered a Greek.

It was the sequence of events associated with the Trojan War and its aftermath that gave Greeks of the historic period their Heroic past. It was this same Heroic past that inspired modern scholars to re-create an archaeological past for a preliterate age. Heinrich Schliemann went to Hisarlık in 1870 to find the capital city of Priam, the king of Troy. He then went to Mycenae in 1876 to find the graves of Agamemnon and all of those involved in the downfall of the House of Atreus. Arthur Evans went to Knossos in 1900 to find the palace of Minos, the king who ruled the seas and for whom the craftsman Daidalos built the Labyrinth. Carl Blegen went back to Troy in 1932 in order to determine what city, out of the nine that made up the prehistoric mound, could best be identified as Homeric Troy. He then went to Ano Englianos,

in the southwestern Peloponnese, in 1939 to find the palace of Nestor, the king of Pylos. In other words, our modern reconstruction of Greek prehistory has been motivated and guided by the Heroic past that the ancient Greeks had created for themselves.

The problem is that modern scholars have tried to create a serious history out of fantasy and folklore. In retrospect it is hard to imagine how it could otherwise have happened. What else could possibly have motivated early researchers than the desire to establish the reliability and accuracy of ancient literary traditions? In 1878 Charles Newton, then Keeper of Greek and Roman Antiquities in the British Museum, writing about Schliemann's discoveries at Mycenae in 1876, came to the following conclusion:

How much the story of Agamemnon is really to be accepted as fact, and by what test we may discriminate between that which is merely plausible fiction and that residuum of true history which can be detected under a mythic disguise in this and other Greek legends, are problems as yet unsolved, notwithstanding the immense amount of erudition and subtle criticism which has been expended on them. (Fitton 1995, 76)

One hundred and thirty years later these problems are, of course, still unresolved, and, in recent years, most Aegean prehistorians have concluded that they can never be resolved because they represent what for George Grote, the great 19th-century historian of ancient Greece, constituted "a past that never was present."

Best to move on to other things, it was argued, and to look upon sites such as Troy, Mycenae, and Pylos not as being inhabited by the likes of Priam, Agamemnon, and Nestor but as important centers of Bronze Age civilization. Yet, our very concepts of Bronze Age and Iron Age go back to Hesiod, and we will never be able to visit Mycenae without thinking of Agamemnon and Clytemnestra. Nor would we necessarily ever want to do so. What Schliemann and Evans did, in its most basic sense, was to take Greek historical and literary scholarship out of the library and into the field. They demonstrated, once and for all, that sites such as Mycenae, Tiryns, Pylos, Thebes, and Orchomenos had a reality that could be uncovered by careful archaeological investigation. The exact nature of the relationship between that reality and the heroic past of ancient Greece will probably never be understood, but most scholars today feel that much more can be accomplished by trying to understand such sites within a framework now identified by terms such as *Late Minoan IA* and *IB* than by worrying about the historicity of Minos and his Labyrinth.

Just as ancient Greece moved from a heroic mythical past in the Bronze Age, to a glorious historical present in the Archaic and Classical periods, so Bronze Age scholarship has moved from a heroic past dominated by larger-than-life figures such as Schliemann, Evans, Tsountas, Wace, and Blegen, to an international, multidisciplinary present that is increasingly dominated by science and technology. Behind all of this, past and present, looms the figure of Homer. Whatever one's own interests and areas of specialization, it is probably true that no Bronze Age scholar has ever worked independently of Homer. Hesiod has always taken a more

secondary, subsidiary role, yet his work was critical for the formulation of the Heroic Age, as seen by the ancient Greeks. There are probably good reasons for this. Didactic poetry will never be able to compete with the grand sweep of epic, and, in any case, Homer was simply a much better poet. One need look only at the outpouring of recent scholarship on all aspects of the study of Homer and Hesiod to appreciate the enduring importance of both poets in the 21st century AD.

There is considerable interest today in what can be described as the history of scholarship. Works such as William McDonald and Carol Thomas's *Progress into the Past* and J. Lesley Fitton's *The Discovery of the Greek Bronze Age* give excellent accounts of the historical development of Bronze Age scholarship and of Aegean archaeology from before Schliemann to the decipherment of Linear B by Michael Ventris. Although they both cover the same basic material, they are very different in scope and in approach and complement each other quite nicely. Mention should also be made of the excellent short handbook by Carol Thomas, *Myth Becomes History: Pre-Classical Greece*, written for students of ancient history and containing extensive bibliography.

McDonald's approach is more episodic, analyzing a number of key works of synthesis at different stages of the story, such as Tsountas and Manatt's *The Mycenaean Age*, Gustav Glotz on *The Aegean Civilization*, and H. L. Lorimer's *Homer and the Monuments*. Fitton's work is more analytical. She does a wonderful job of evaluating the work of many important scholars while at the same time putting things together into a grand historical narrative. McDonald, who worked with Blegen at Pylos in 1939 and, as a graduate student, actually excavated the first archive of Linear B tablets found on the Greek mainland, tends to emphasize contributions made by American scholars, whereas Fitton places considerable emphasis upon the role of the British Museum and the writings of early British travelers to Greece. Both McDonald and Fitton have a keen interest in trying to understand the present focus and the future course of Aegean Bronze Age archaeology.

It was the study of seal stones from Crete and their possible evidence for early pictographic writing that first involved Arthur Evans in the antiquities of the island and led to one of his earliest publications, *Cretan Pictographs and Prae-Phoenician Scripts*. The study of Minoan and Mycenaean seal stones and clay sealings soon developed into one of the major research areas in Bronze Age archaeology. The *Corpus der minoischen und mykenischen Siegel*, soon to become known as the *CMS*, published its first volume in 1964. Some twenty-five volumes were to follow, along with six Beiheft or supplementary volumes, making the *CMS* one of the most comprehensive, most significant research enterprises in Aegean archaeology. Originally established by Friedrich Matz, the series has long been edited by Igno Pini at Marburg. An excellent introduction to research in this field has now been published by Olga Krzyszkowska.

Probably the most significant development in the study of Bronze Age archaeology in the 20th century was the recognition of the importance of pottery, resulting in the development of ceramic studies almost as a separate discipline. Carl Blegen began his career as a field archaeologist not at Troy or at Pylos but at the tiny

prehistoric site of Korakou, near Cornith, where he uncovered a deep stratigraphic sequence of Early, Middle, and Late Helladic pottery styles (as they came to be called thanks to this excavation). This he published in 1921, and scholarship over the past ninety years has refined and elaborated Blegen's basic sequence. As Blegen himself put it, "Korakou explains Tiryns and Mycenae" (Fitton 1996, 147). The importance of pottery had, to some extent, been recognized right from the start with the pioneering study of *Mykenische Vasen* by Furtwängler and Loeschcke. For the modern study of Mycenaean pottery the basic publication has long been *Mycenaean Pottery: Analysis and Classification* by Furumark, the work that established the chronological sequence for both shapes and motifs. What is most remarkable about this fundamental work is that Furumark worked almost entirely from photographs, with no access to the vases themselves. An excellent synthesis of scholarship since Furumark is *Mycenaean Pottery: An Introduction* by Mountjoy. For Minoan pottery, the basic handbook has long been Betancourt's *The History of Minoan Pottery*.

Pottery study is a field that abounds in specialized studies and monographs. It is important to understand that the establishment of a ceramic sequence establishes a relative chronology. What scholars now realize is that this sequence is usually valid only for a particular region, and the study of variations in regional styles of pottery is one of the major aspects of current research in the field. An excellent account of present-day complexities in the discipline is the two-volume work by Mountjoy titled *Regional Mycenaean Decorated Pottery*. In recent years the trend has been to study the pottery of individual chronological periods. The pottery associated with the collapse of the Bronze Age world in the early 12th century BC, a style known as Late Helladic III C, has been the subject of several international conferences sponsored by the Austrian Academy of Sciences in Vienna. Specialization has reached the point where an entire conference can be devoted to LH III C Middle (held in Vienna in 2004; published in 2007; see also Thomatos 2006). There are also specialized monographs devoted to individual types of pottery. Outstanding in this regard is *Aegean Bronze Age Rhyta* by Robert Koehl.

What about absolute chronology? When did it all take place? Chronology has always been seen as crucial to any understanding of past events. For Herodotus, Homer lived some four hundred years before his time, or ca. 850 BC, and the Trojan War took place another four hundred years earlier, or ca. 1250 BC. No one in antiquity ever seriously believed that Homer was a contemporary of the world he described in such a haunting fashion. Was there any reason, nevertheless, to take seriously a Hellenistic chronographic tradition, based upon very dubious evidence, that dated the Trojan War at 1193–1184 BC?

When Schliemann presented his discoveries at Mycenae to a very receptive general public, he was greeted with great skepticism by the leading Classical scholars of the day, especially R. C. Jebb, the great editor of the plays of Sophocles. The art of Greece was the art of Phidias and the Parthenon. The gold jewelry from the Shaft Graves at Mycenae was seen as crude and barbarous, probably the work of Scythian nomads. But Charles Newton saw that the pottery from Mycenae was very similar to that found by Biliotti in his excavations at Ialysos on Rhodes in 1868 and 1870. That

pottery, sent to the British Museum, had been found in association with a scarab of the Egyptian pharaoh Amenhotep III, now dated to 1391–1353 BC.

The first sherds of what came to be recognized as Kamares ware, the hallmark of the Middle Minoan II period, were discovered by Flinders Petrie at Lahun in Egypt in 1889–1890, ten years before Evans began work at Knossos and five years before John Linton Myers found the pottery at the Kamares Cave itself. Petrie soon recognized that Egypt, with its rich tradition of contemporary historical records, was destined to serve as the basis for the reconstruction of an absolute chronology for the Aegean Bronze Age.

To a great extent this is true still today. Minoan and Mycenaean pottery found in datable Egyptian contexts and inscribed Egyptian objects found in secure Aegean contexts enabled Evans to reconstruct a tripartite framework for Minoan chronology, and Carl Blegen was soon to extend this system to the world of Mycenaean Greece. It might seem surprising, in this high-tech world of Greenland ice cores, Santorini tephra, radiocarbon dating, and dendrochronology, that Egyptian historical records still play such a central role in our understanding of the chronology of the Aegean Bronze Age. The reasons for this are quite simple: The Egyptian records are, for the most part, contemporary with the events they describe (and date). Modern scientific dating techniques, however sophisticated, still represent modern attempts to reconstruct a chronology for events that happened three or four thousand years ago. The more we work with the range of scientific dating techniques available to the modern scholar the more we come to realize the complexity of each technique and the number of variables that have to be understood and accounted for.

The role of Egypt in the establishment of the absolute chronology of the eastern Mediterranean during the second millennium BC has been enhanced in recent years as the result of two spectacular excavations: (1) The excavations by Spyridon Marinatos at the site of Akrotiri on the southern coast of the island of Thera, starting in 1967, uncovered an LM IA settlement buried under pumice and ash from the fallout of a huge volcanic eruption that is to be dated in the mid-second millennium BC; and (2) the excavations by Manfred Bietak at the site of Tell el-Dab^{ca}, ancient Avaris, in the eastern delta of the Nile Valley, with spectacular wall paintings in a Minoan style, formerly placed in the period of the Hyksos rulers of Egypt (1638–1540 BC) but now dated to the reign of Thutmose III (1479–1425 BC). The arguments over dating the eruption of Thera and the wall paintings of Tell el-Dab^{ca} have split asunder the world of Bronze Age Aegean archaeology. Those who favor the ‘scientific’ chronology, based upon radiocarbon dates and dendrochronology, place the eruption of Thera at ca. 1620 BC. Those who favor the ‘historical’ chronology, based upon synchronisms with New Kingdom Egypt, date the eruption to ca. 1520 BC.

These issues were first discussed in a series of three international Thera congresses, organized by Marinatos and starting in 1968. Following the death of Marinatos in 1978, the venue for the discussion of these problems eventually shifted from Athens to Vienna in recognition of the importance of the work of Bietak on behalf of the

Austrian Academy of Sciences. The first volume of studies on the excavations at Tell el-Dab'a appeared in 1975. For absolute chronology, the most important development was the establishment in 2000, by Bietak, of an international conference series to be known as SCIEM 2000 (SCIEM = The Synchronisation of Civilisations in the Eastern Mediterranean in the Second Millennium BC). Volume XX in this series, dealing with *The Bronze Age in the Lebanon*, has just appeared (Bietak and Czerny 2008). In 1990 Bietak established a new journal, *Ägypten und Levante*, soon to also acquire an English version of the title: *Egypt and the Levant* (with vol. VI for 1996). This journal now publishes, among other things, the proceedings of conferences and workshops held under the auspices of SCIEM 2000. The most recent of these, in vol. XVI for 2006, was a workshop on "Egypt and Time: Proceedings of a Workshop on Precision and Accuracy of the Egyptian Historical Chronology." Those who believe that the 'high or 'scientific' chronology must be correct but who also find it difficult to ignore well-established synchronisms with New Kingdom Egypt, have concluded that Egyptian historical chronology must be off by about one hundred years. This is exceedingly unlikely.

The arguments on both sides of this debate constitute an excellent reflection of the state of Bronze Age archaeology in the early 21st century AD. Many of the technical arguments seem to be a long way from the world of Homer, but relations between Greece and Egypt, and especially Crete and Egypt, have long been part of the archaeology of the world of Homer. In 1930, Pendlebury, who, in the course of his brief career as a field archaeologist, had excavated both in Crete (at Knossos) and in Egypt (at Tell el-Amarna) published his monograph titled *Aegyptiaca: A Catalogue of Egyptian Objects in the Aegean Area*. In that same year, he published an article in the *Journal of Egyptian Archaeology* on "Egypt and the Aegean in the Late Bronze Age." For Pendlebury, the end of Minoan civilization was brought about by a revolt of oppressed Aegean people against hated Minoan domination. These 'historical' events provided the background for the myth of Theseus, who liberated his fellow Athenians from the tyranny of Minos and his Labyrinth. This was Bronze Age archaeology in the grand old tradition of using mythology in an attempt to write history. Today no reputable Bronze Age archaeologist would ever hazard such a reconstruction. The new monograph by Jacqueline Phillips titled *Aegyptiaca on the Island of Crete in Their Chronological Context: A Critical Review*, published as a volume in the SCIEM 2000 series, will be very different from what Pendlebury published in 1930.

These differences reflect the tremendous growth of the discipline of Bronze Age archaeology over the past eighty years. Thanks to the impact and influence of a whole range of disciplines, the Bronze Age archaeologist is now capable of presenting excavated material in ways unthinkable even a few decades ago. Consider, just to give one example, the ways in which a scholar such as Marian Feldman is capable of evaluating the international style of art that developed in the 14th and 13th centuries BC (in her book *Diplomacy by Design* and her earlier article in the *Art Bulletin*).

In the late 19th and early 20th century AD, the Egyptologist Flinders Petrie had a much better understanding of the antiquity of Mycenaean civilization than did

his colleagues in Classical Archaeology. It was Petrie who demonstrated to William Ramsay, in his article on “Notes on the Antiquities of Mykenae,” that the lions on the Lion Gate at Mycenae had nothing to do with those shown on the façade of the Phrygian tomb at Arslan Taş. Petrie argued that the Lion Gate was to be dated in the 15th century BC, not the 8th.

Ramsay was not alone in believing that Mycenaean civilization was no older than the 8th century BC. For instance, A. S. Murray of the British Museum, in his *Handbook of Greek Archaeology*, published in 1892, argued that the antiquity of the remains of Mycenaean Greece had been greatly exaggerated. He firmly believed that Mycenae and Tiryns were the work of Greek tyrants in the 7th century BC. This is the same Murray who went on to excavate at Enkomi (Cyprus) at the end of the century on behalf of the British Museum.

We tend to forget just how revolutionary the work of Heinrich Schliemann really was. For all his faults as an excavator, Schliemann set the field of Bronze Age archaeology on a path from which it has never deviated. He made it possible for the fantasies of the past to be turned into the solid scholarship of today. Schliemann was more than capable of defending himself against his critics. When Sir Richard Jebb (1882) argued that Hisarlık was not Troy and that Mycenae and Tiryns were Byzantine fortresses, Schliemann replied, in his *Troia* publication (1884, 237): “No courtesy on my part can save Professor Jebb from the fate on which an eminent classical scholar rushes when he mingles in an archaeological debate in ignorance of the first principles of archaeology” (for this debate see Morris 1997, 119). What is remarkable here is that Schliemann is already arguing as an archaeologist in defense of a new discipline that he did so much to bring into existence.

BIBLIOGRAPHY

- Betancourt, Philip. 1985. *The History of Minoan Pottery*. Princeton: Princeton University Press.
- Bietak, Manfred and Ernst Czerny. 2008. *The Bronze Age in the Lebanon. Studies on the Archaeology and Chronology of Lebanon, Syria and Egypt*. Vienna: SCIEM, Vol. XV, Vienna, Verlag der Österreichischen Akademie der Wissenschaften.
- Evans, Arthur. 1895. *Cretan Pictographs and Prae-Phoenician Scripts*. London: B. Quaritch.
- Feldman, Marian. 2002. “Luxurious Forms: Redefining a Mediterranean ‘International Style,’ ca. 1400–1200 B.C.E.” *Art Bulletin* 84: 6–29.
- . 2006. *Diplomacy by Design*. Chicago: University of Chicago Press.
- Fitton, J. Lesley. 1995. “Charles Newton and the Discovery of the Greek Bronze Age.” In *Klados: Essays in honour of J. N. Coldstream*, ed. Christine Morris, 73–78. London: British Institute of Classical Studies, Suppl. Vol. 63.
- Fitton, J. Lesley. 1996. *The Discovery of the Greek Bronze Age*. Cambridge, Mass.: Harvard University Press.
- Furtwängler, Adolf, and Georg Loeschcke. 1886. *Mykenische Vasen*. 3 vols. Berlin: A. Asher.

- Furumark, Arne. 1941. *Mycenaean Pottery: Analysis and Classification*. Stockholm: Swedish Institute in Athens.
- Glötz, Gustav. 1925. *The Aegean Civilization*. New York: Knopf.
- Jebb, Sir Richard. 1882. "I. The Ruins of Hissarlik. II. Their Relation to the Iliad." *JHS* 3: 185–217.
- Koehl, Robert B. 2006. *Aegean Bronze Age Rhyta*. Philadelphia: INSTAP Academic Press.
- Krzyszowska, Olga. 2005. *Aegean Seals: An Introduction*. BICS Suppl. 85. London: Institute of Classical Studies.
- Lorimer, Hilda L. 1950. *Homer and the Monuments*. London: Macmillan.
- McDonald, William. 1967. *Progress into the Past*. New York: Macmillan.
- McDonald, William, and Carol Thomas. 1990. *Progress into the Past*, 2d ed. Bloomington: Indiana University Press.
- Morris, Ian. 1997. "Periodization and the Heroes: Inventing a Dark Age." In *Inventing Ancient Culture: Historicism, Periodization, and the Ancient World*, ed. Mark Golden and Peter Toohey, 96–131. London: Routledge.
- Mountjoy, Penelope. 1993. *Mycenaean Pottery: An Introduction*. Oxford: Oxford University Committee for Archaeology.
- . 1999. *Regional Mycenaean Decorated Pottery*. Rahden, Germany: M. Leidorf.
- Murray, Alexander S. 1892. *Handbook of Greek Archaeology*. London: J. Murray.
- Pendlebury, John D. S. 1930a. *Aegyptiaca: A Catalogue of Egyptian Objects in the Aegean Area*. Cambridge: Cambridge University Press.
- . 1930b. "Egypt and the Aegean in the Late Bronze Age." *JEA* 16: 75–92.
- Petrie, William M. F. 1891. "Notes on the Antiquities of Mykenae." *JHS* 12: 199–205.
- Phillips, Jacqueline. 2008. *Aegyptiaca on the Island of Crete in Their Chronological Context: A Critical Review*. SCIEM 2000, Vienna, Verlag der Österreichischen Akademie der Wissenschaften.
- Schliemann, Heinrich. 1875. *Troja*. New York: Harper and Brothers.
- Thomas, Carol. 1993. *Myth Becomes History: Pre-Classical Greece*. Claremont, Calif.: Regina.
- Thomatos, Marina. 2006. *The Final Revival of the Aegean Bronze Age: A Case Study of the Argolid, Corinthia, Attica, Euboea, the Cyclades, and the Dodecanese during LH IIIC Middle*. Oxford: Archaeopress.
- Tsountas, Christos, and J. Irving Manatt. 1897. *The Mycenaean Age*. London: MacMillan.

CHAPTER 2

CHRONOLOGY AND TERMINOLOGY

STURT W. MANNING

A VERY BRIEF HISTORICAL INTRODUCTION

Scholarship that is concerned with the discovery, creation, and interpretation of Aegean prehistory has, throughout its history (mid-19th century AD to present; e.g., McDonald and Thomas 1990; Papadopoulos 2005; Darcque, Fotiadis, and Polychronopoulou 2006; Manning 2008a), been intimately associated with the allocation and categorization of time. Dialectically, the field has been strongly shaped by these time frames as developed by modern scholars. Chronology has become both framework and constraint, friend and problem. If we know nothing else (concretely), we at least hope to put things in order, but how we create this order and how we choose to see the framework entirely creates our 'prehistory.'

The early 19th-century AD concept of the Three Age system developed from Thomsen's reorganization of the National Museum of Denmark (originally Stone Age, Bronze Age, Iron Age; cf. Daniel 1943; Gräslund 1987) and its ideas of evolutionary progression became the standard in most European (region and scholarship) prehistory. In turn, it was transferred to the Near East and the Mediterranean. In the Aegean, via especially the Three Age division of Egyptian history into the Old, Middle, and New Kingdoms for the third-second millennia BC, this framework of classification led to the creation of an Early, Middle, and Late Bronze Age in the Aegean (and before the Bronze Age the Neolithic and afterward the Iron Age) and then to further subdivisions (also typically tripartite, at least to start) of I, II, and III within these periods (Evans 1906 represents a succinct statement and delineation of such a method for Crete). And often further subdivisions, typically of A, B, and C

(with a typically tripartite maximum and sometimes even additional subdivisions) were added later; thus, we have ‘Late Minoan IIIA2 early’ or ‘Late Helladic IIIB2’ (and even further Early and Late groups; see Vitale 2006) at the extreme. Some additional transitional phases have also been suggested at various times, for example a Middle Minoan III–Late Minoan IA transition (Warren 1991) (see caption to table 2.2).

Each main region, moreover, has its own system: thus Early, Middle, and Late Cycladic and subdivisions; Early, Middle, and Late Helladic and subdivisions; and Early, Middle, and Late Minoan and subdivisions. Western Anatolia has avoided regionalization and either has only key site sequences or Early, Middle, and Late Bronze Ages with various subdivisions. These classifications and their own evolutionary processes have led to an undeniably cumbersome and artificial structure with which scholars actively contend today. Much of our evidence and interpretation does not neatly fit such a unilinear evolutionary framework in terms of both time progression and space (different sites and regions had slightly to more substantially varying histories).

A quest to create some sort of structure and to bring order to a couple of millennia of calendar time has, over the course of the later 19th through the early 21st centuries AD thus come to create an incredibly rich, dense, ad hoc, and arcane system for describing and demarcating the time frame of the Aegean Bronze Age. For some, chronology became an end in itself (and it is almost a subfield of study of its own), forever to be elaborated and pursued to some elusive goal of a totality of knowledge. For others, chronology has, however, become almost a pejorative term—and its central role in Aegean prehistory is argued to distract attention from the more important topics of wider culture change, process, and history, as well as the role of this preclassical world in the creation of later classical civilization. Proponents of such views would argue that we need an agreed approximate framework, yes, but not endless detail and caveats.

An analogous situation exists for the chronology of prehistoric Cyprus, and, in response, Knapp and colleagues (e.g., Given and Knapp 2003, 30) have for some years proposed a much simplified/generalized chronological framework; thus, ‘Early Prehistoric,’ ‘Prehistoric Bronze Age,’ and ‘Protohistoric Bronze Age’ cover the entire previous Epipalaeolithic/Akrotiri phase, Aceramic Neolithic (early, late), Ceramic Neolithic, Early Chalcolithic, Middle Chalcolithic, Late Chalcolithic, Early Bronze/Cypriot I, II, III, Middle Bronze/Cypriot I, II, III, and Late Bronze/Cypriot I, II, III (and various subdivisions) phases. Knapp finds this useful, but many in the field have ignored or criticized this ‘brave’ attempt to cut through the minutiae (e.g., Frankel 2008).

There are two basic types of chronology in Aegean Bronze Age studies: relative chronology and absolute chronology.

RELATIVE CHRONOLOGY

Relative chronology refers to the temporal ordering of objects and events relative to each other, such that assemblage (or context or object, etc.) ‘A’ is older or younger than or equivalent to assemblage ‘B,’ and so on. At a particular site this can be a

clear stratigraphic ordering, such that level 10 is followed by level 9, and so on to the most recent level 1. However, on a wider basis, connecting different contexts or sites, comparisons are made between artifact types (and assemblages thereof). Sets of stylistic traits are thus defined to represent one context or phase or period or culture and so on, and assemblages found in different contexts or at different sites with similar stylistic traits are then linked—as seemingly very similar (and more or less) contemporary or as seemingly a bit earlier or later, and so forth. At Knossos on Crete, Evans found a (complicated) stratigraphic sequence at the beginning of the 20th century AD (Evans 1921–1935), which ran from the Neolithic through the post-Minoan, thus almost immediately creating the basis for a long diachronic synthesis (though many details were clarified only many years later, if at all; see Pendlebury 1939, xxxi–xxxii; Evely, Hughes-Brock, and Momigliano 1994; Cadogan, Hatzaki, and Vasilakis 2004).

Ideally, stratigraphic sequences set the order of the typological sequences, but, as Petrie (1899) showed, assemblages that lack stratigraphic order (grave assemblages in his case) can still be plausibly best ordered through what he termed *sequence analysis*. Petrie minimized the relative duration of sets of typological elements on the basis that this was the most efficient general solution (for general archaeological applications of seriation since then, see, e.g., O'Brien and Lee 1999). Turning to the Aegean, we may note that an attempt to better delineate Early Bronze groups (also known largely from cemeteries at the time) in the Cyclades along statistical lines was attempted (with only partial success) by Renfrew (1972, 142–47 and appendix 3). Luckily, subsequent work has found and investigated stratigraphic sequences, which now provide key evidence to better define the Early Cycladic period (e.g., Marangou, Renfrew, Doumas, and Gavalas 2006; Renfrew 2007; Renfrew, Doumas, Marangou, and Gavalas 2007; Brodie, Doole, Gavalas, and Renfrew 2008; Kouka 2009).

By 1903, Montelius had created a typologically derived chronology for Europe, and such work formed the general basis to wider European prehistory for the next two to three generations of scholarship, seen in seminal works such as Childe 1925. A contrast was available in the Aegean, however, as stratigraphic sequences, even if imperfect, informed the efforts to create chronology on Crete and the mainland. Thus, Evans (1906) proposed a Three Age stratigraphic-typological sequence for Crete, taking the term 'Minoan' from its legendary king Minos, and Wace and Blegen (1916–1918) did the same for the mainland, using the term 'Helladic' (thus, Early Helladic, Middle Helladic, Late Helladic—sometimes 'Mycenaean' is used in place of Late Helladic). Purported criticisms of these approximate stratigraphic systems in favor of architecturally or culturally based assessments (notably Åberg 1933) were rejected by most (but see below) and gave the Aegean a key place in the development of European prehistory (see, e.g., Childe 1935; for specific responses regarding Crete, see, e.g., Pendlebury 1939). Åberg's (1933) observations regarding instances of cultural (architectural) sequence and regionalism (and generally in favor of a more compressed European prehistoric chronology) were useful correctives, nonetheless. The Three Age-based, stratigraphy-typology derived structures became largely standard for the chronology of the Aegean Bronze Age, and, as Åberg's (1933) synthesis among others demonstrated (despite criticisms), the

mainland, Cretan, and Cycladic sequences could be approximately related, and an overall Aegean chronology was thus available.

Two partial exceptions to this standard, tripartite ordering process also developed. In the Cycladic Islands Renfrew (1972) and then Doumas (1977) proposed to break with the use of Early Cycladic I, II, III, and so forth and instead to employ cultural groupings, principally the Grotta-Pelos culture, the Keros-Syros culture, and the Phylakopi I culture, along with some intermediary groups (especially the Kampos group between Early Cycladic I and Early Cycladic II, and the Kastri group between Early Cycladic II and Early Cycladic III, as well as other subregional or intermediary variants like the now abandoned 'Amorgos Group'). They based their proposal partly on the longstanding lack of stratigraphic sequences in the Cycladic Islands and partly on theoretical or appropriateness grounds. The logic was sensible, but the reality of these groupings as real 'cultural groupings' was questionable, and, to be pragmatic, the groups largely equated with the conventional Early Cycladic I, Early Cycladic II, and Early Cycladic III labels (adding Early Cycladic IIIA and IIIB; see Barber and MacGillivray 1980) and perhaps made less difference than hoped. The complex but fragmented world of the Cycladic Islands offers two other challenges to uniformitarian scholarship. First, the lack of replicated, long stratigraphic sequences leaves some possible gaps in the overall sequence, most notably between the Kastri and Phylakopi I groups in the Early Bronze 3 period (Rutter 1984; Broodbank 2000, 331–35), but see the later discussion. Second, our evidence remains incomplete even today. Just in the last few years new, hitherto unknown, material cultural groupings have been recognized, in particular the 'Rivari Group' found on Melos (Renfrew 2008, 4–5). Differences between islands, moreover, highlight the issues of regionalism and variability in the temporal and spatial dimensions and thus the problem of rigid, overarching chronological frameworks. In the subsequent Middle and Late Bronze Age periods, Cycladic phasing is understood mainly in terms of the sequences at Phylakopi on Melos and Ayia Irini on Kea and increasingly at Akrotiri on Thera (see Barber 1987; MacGillivray and Barber 1984; Renfrew 2007; Nikolakopoulou, Georma, Moschou, and Sofianou 2008), but nonetheless the labels Middle Cycladic I, II, II, and Late Cycladic I, II, and III are standard. (Although it is now dated in light of important subsequent work, MacGillivray and Barber [1984, 301] provide a useful chart of the Cycladic phases and their approximate placement against the mainland and Cretan phases.)

The other main alternative paradigm developed on Crete, where an archaeological framework based on the main architectural/historical phases has appealed to many (beginning with Åberg 1933 and given modern form by Platon 1961; 1968). Thus, we have a Prepalatial period (Early Minoan I–Middle Minoan IA ceramic phases), a Protopalatial period (the first or Old Palace period, comprising the Middle Minoan IB–II ceramic phases), a Neopalatial period (the second or New Palace period, comprising Middle Minoan III to Late Minoan IB), a Monopalatial period (only at Knossos in Late Minoan II to IIIA2 early, when Knossos appears to have been the only functioning palace on the island and to have exerted control over much of central and west Crete at least), and a Postpalatial period (Late Minoan

III, except Knossos, where the palace appears to have functioned until Late Minoan IIIB).

Over the course of the last century, relative chronologies for each Aegean region have thus been constructed, linking assemblages and sites together, with the various typological groups placed into an approximate order (for example, Early Minoan IA, IB, IIA, IIB, III; Middle Minoan IA, IB, II, IIIA, IIIB; sometimes with various individual ceramic wares or classes noted either within or across these periods, like EM Ayios Onouphrios ware or MM Kamares ware on Crete; see Betancourt 1985). Endless elaboration and further subdivision is both possible and inevitable, as new sites and assemblages are found and studied; for example, after many years of debate and some nonclarity, very recent scholarship now offers a much better definition for the beginning of the Middle Bronze Age in the Cycladic islands (Nikolakopoulou, Georma, Moschou, and Sofianou 2008) and largely closes the Early Cycladic III gap (much as suggested by Broodbank 2000, 331–35).

The various regions can then be coordinated with each other to build an overall, relative chronological map of the Aegean by comparing instances of exchanges of material culture or apparent stylistic traits. For example, the sauceboat form and several other indicators are found widely in the earlier to mid-Early Bronze Age 2 period of the Aegean (Early Helladic II, Early Cycladic II, Early Minoan IIA) and serve to link a variety of contexts and cultures from Troy and the northern Aegean to as far south as Knossos on Crete (Broodbank 2000, 305–309). Or, the finds of Phylakopi I duck vases (especially) in the Cyclades and southeast Aegean and then Cretan Middle Minoan IA ceramics in parts of the Cyclades and the mainland tie a series of contexts together in successive time slices and in trade, cultural, and perhaps political ways at the beginning of the Middle Bronze Age (Broodbank 2000, 351–61).

A fundamental problem, though, when one considers the apparent neat framework of the Aegean relative chronology, is the relationship between the typology of material cultural classes—be they ceramic forms and decoration or forms of metal objects and so on—and time, history, and human culture. Some types of material culture tend to be more conservative and stay similar over long periods (for example, storage vessels and cooking utensils are often suggested as belonging in this category), whereas others change rapidly (i.e., as soon as any improvement is available) (weapons and other critical technologies are usually placed in this category), and most lie in some rather ill-understood middle region. Major stratigraphic breaks and building changes at important sites (or across a group of sites) are often seen as demarcating key historical or cultural changes, yet there is no reason that material culture in the form of, let us say, ceramics will reflect these changes (or not immediately). However, in reverse, such major stratigraphic changes at sites (for example, the ubiquitous ‘destruction’ horizon) usually provide the large bodies of ceramic material that archaeologists then study and use to define the typologies and stylistic phasings and thence chronology. We thus have detailed views through open windows for these destruction events only, from which we can learn a lot, and then closed blinds/curtains for much of the rest of the overall timescale. Thus, some

end of phase assemblages (e.g., the Late Minoan IB destruction horizon on Crete) largely define the past we have, leaving out much of the rest of the life of a site and wider regional groupings (in this case early through mid- to mature Late Minoan IB; perhaps also tending to seem to minimize real chronological spans for overall periods in some such cases, as perhaps for Late Minoan IB: see Manning 2009).

The relative chronologies that scholars construct end up with boxes of time labeled as Late Helladic I, then IIA, then IIB, and so on. These are correlated (through exchanges and stylistic similarities) with Late Minoan IA, IB, II, and so on to yield an overall (or macro) Late Bronze 1, 2, and so on regional chronology. This is a useful heuristic device, and the standard framework constructed from years of scholarship is invaluable. However, it is also deeply misleading. Style in material culture is dynamic, and different aspects change or do not change at varying rates within any society and among different groups and places and at different times for many reasons, thereby affecting scales from individual actors to the wider regional settings (including processes linked with biography, status, gender, and ethnicity as much as wider group values, technology, trade, and so on). Fundamentally, one style (and certainly any grouping of styles) neither starts nor ends on any wider basis on a given day, month, year, or maybe even decade, and plural styles and interplays are possible, if not likely. Regionalism can also act to create confusion, with one area apparently conservative with certain 'old' styles continuing in use, whereas another area adopts new styles or influences—yet these different assemblages can be contemporary.

Two examples illustrate the issues. One dynamic form of regionalism/variation occurs on the eastern-central mainland in late Early Helladic II marked by the appearance of new ceramic forms and technology—linked to the Kastri Group in the Cyclades and progenitors in the east Aegean and western Anatolia (in Anatolian terms it is EBIIIA)—conspicuous at some sites and a minor presence at others. Taking its name from the site where it was first recognized as a major element, this grouping or phase is referred to as the Lefkandi I culture/phase (Rutter 1979). It appears largely contemporary with later Early Helladic II (though some see it as representing initial Early Bronze 3 = Early Helladic IIIA (see Manning 1995, 51–63; Rutter 1983; Warren and Hankey 1989, 36–42; Broodbank 2000, 309–19; Kouka 2009). This Lefkandi I phase is not just a regional variant; it also represents new ways of doing things: new technology (wheel-made), new shapes/styles, new external influences, and new or refocused social practices embodied in these new artifact types. These new ways seem to play a central role in restructuring the whole Early Helladic world as seen by the subsequent period.

Another form of regionalism is the more typical occurrence of significant temporal/spatial variation, where one region seems to precede or lag another. An example in general terms can be seen when east Crete continues with its Early Minoan III styles into the temporal period, when central Crete, and especially the sequence as defined at Knossos, has adopted the distinctive new Middle Minoan IA styles—and thus into the chronological period called Middle Minoan IA as a general label (Warren and Hankey 1989, 20; Momigliano 2000).

Table 2.1. Schematic and summary relative chronology for the Aegean Bronze Age showing the main phases and sequences.

	Crete		Cycladic Islands	Greece
Early Bronze 1	Early Minoan IA Early Minoan IB	Early Pre-palatial period	Early Cycladic I—Lakkoudes, Pelos and Plastiras Phases/ Groups Kampos Group	Early Helladic I
Early Bronze 2	Early Minoan IIA Early Minoan IIB	Late	Early Cycladic II—Keros-Syros Phase/Group Kastri Phase	Early Helladic II Lefkandi I Phase
Early Bronze 3	Early Minoan III		Early Cycladic III—Phylakopi I	Early Helladic III
Middle Bronze 1	Middle Minoan IA Middle Minoan IB	Protopalatial (Old Palace Period)	Middle Cycladic I Group/Phase Middle Cycladic II	
Middle Bronze 2	Middle Minoan II (A–B at main palaces)		Middle Cycladic III	Middle Helladic
Middle Bronze 3	Middle Minoan IIIA Middle Minoan IIIB	Neopalatial (New Palace Period)		
Late Bronze 1	Late Minoan IA Late Minoan IB	Monopalatial Period (Knossos only)	Late Cycladic I	Late Helladic I Late Helladic IIA
Late Bronze 2	Late Minoan II		Late Cycladic II	Late Helladic IIB
Late Bronze 3	Late Minoan IIIA1 Late Minoan IIIA2 Late Minoan IIIB Late Minoan IIIC	Final Palatial Period	Late Cycladic III	Late Helladic IIIA1 Late Helladic IIIA2 Late Helladic IIIB (phases 1–2 in Argolid) Late Helladic IIIC (with 3 to 5 phases)

Source: Courtesy of the author.

It is important to appreciate these variations and dynamic processes. Yet, for all intensive purposes, Aegean prehistory rather pretends that style-based periods do typically start and end fairly neatly and that time frames can be mapped out in clear boxes of time, one after the other. This might seem practical and harmless enough if everyone understands the true, inherently fuzzy nature, but the problem with abbreviations and labels is that they come to have their own reality as they enter textbooks and common currency, sometimes independently of the information they summarize. They become factoids that are then transferred into other categories of thinking. This can particularly impact Aegean prehistory because of the logical or practical problem that the ceramic and stratigraphic labels are often the same—yet there is no reason they should relate. A system in which the material culture is comprehensively and consistently defined in its own terms (by, e.g., wares), which are then linked to whichever stratigraphic phase or phases in which they occur, as on Bronze Age Cyprus, would have merits.

More practically for the student and general reader, relative chronology has become a gate-keeping technology for the academic field: Only the initiated understand the otherwise impenetrable terms such as LH IIIA2 early or EM IB or Transitional LH IIIB2–LH IIIC Early or late Prepalatial, or the Grotta-Pelos culture and so on. Much of this tradition stems from the largely Classical roots of the discipline and its key practitioners; classics has long employed a system of abbreviations, codes, and technical terms known only to those in the field, and Aegean prehistory unfortunately extended this tradition (see table 2.1).

ABSOLUTE CHRONOLOGY

Absolute chronology is simple in concept but fiendish in practice; it means the ability to allocate the Western calendar timescale (thus dates AD/CE or BC/BCE) to archaeological contexts, objects, or discussions. Thus, we hope to be able to make statements that such and such an artifact, type of artifact, building, series of changes in the archaeological record, or burial dates to such and such a century, set of years, or, in a perfect world, even a specific year. The problem is how to establish the calendar years.

Archaeological-Historical Dating

One approach to dating the Aegean Bronze Age tries to link exports or imports of objects or apparent stylistic features or technologies between the Aegean world and the approximately historically dated cultures of Egypt and the Near East. Subject to possible time lags in import/export processes and to how long an imported object remains in use before becoming incorporated in the archaeological context, where it is subsequently found by modern excavations and scholarship, the assumption is

that the Egyptian/Near Eastern date associated with either the import or the context of the Aegean export can be roughly applied to the associated Aegean cultural phase. Thus, for example, when Sir Flinders Petrie found Middle Minoan Kamares ware ceramics in Middle Kingdom Egyptian contexts and Late Helladic IIIA2 ceramics at Tell el-Amarna in Egypt, along with finds of other Aegean exports, he provided a solid chronological basis to Mycenaean and Minoan chronology (Petrie 1890; 1891a, 9–10; 1891b; Petrie 1894; Phillips 1997). In this way the Aegean Bronze Age was first established as a genuine pre-Classical period.

The date for the Egyptian or Near Eastern context or object is possible because various written/inscribed records from Egypt, Assyria, Babylonia, and so on provide lists of kings and other officials and sometimes the period of time they reigned or held office (in years and sometimes even the months and days), and in several cases we have long more or less continuous 'king lists.' Calendar dates are then calculated, in some cases on the basis of an ancient record of an astronomical event (like an eclipse, the first reappearance of a conspicuous star, or records of the moon) and in others on the basis of dead reckoning—that is, starting at a known point, like 525BC, when the Greek historian Herodotos tells us Cambyses conquered Egypt and ended the 26th Dynasty (last king Psamtik III), and working backward, adding attested and best interpreted reign lengths to the point of interest.

Occasionally we also have extant written communications between two or more of these various Near Eastern and Egyptian kings, and we can test and refine the chronologies (especially Assyrian/Babylonian dates versus Egyptian). In particular, the Amarna letters from Egypt in the mid-14th century BC (Moran 1992) contain correspondence between the Babylonian kings Kadasman-Enlil I, Burna-Burias II, and Pharaoh Amenhotep III of Egypt and between Burna-Burias II and both Akhenaten and Tutankhamun. Thus, these associated kings were more or less contemporary and have to be fitted together (given the known order of reigns in each country). In this way, the various ancient Near Eastern chronologies can be closely synchronized (see Brinkman 1972, 1976; Kitchen 1996a, 1996b; Beckerath 1997; Hornung, Krauss, and Warburton 2006). Various archaeological contexts in Egypt and the Near East can then be associated with these dated kings or their families or officials—and imported objects from these are approximately historically dated (see, for example, Aston 2003 on New Kingdom examples). In reverse, Egyptian/Near Eastern exports can be related to styles known from dated contexts in Egypt/the Near East—and sometimes the object even carries the name of a specific king (such as the group of items in the Aegean with the name of Amenhotep III; cf. Cline 1987).

Where the linkage comprises a single object or a nonspecific stylistic association, this type of archaeological dating is entirely uncontrolled and could be substantially misleading. When several (and, even better, numerous) linkages exist for a specific period, however, then we may have much more confidence in the dating. In the third millennium BC, for example, we have just a few loose or indirect linkages between the Aegean and the ancient Near East, and the archaeological-historic chronology is approximate and flexible at best. From the First Intermediate Period

and the start of the second millennium BC, we begin to see more linkages. The protopalatial period on Crete then has several direct ties with 12th–13th-Dynasty Egypt and is relatively secure in the 19th–18th centuries BC.

We then have very few useful or secure linkages until some Late Minoan I (and mainly IB and mature/late Late Minoan IB, where diagnostic) objects appear in early 18th-Dynasty contexts in Egypt, before mainland Late Helladic IIA and then IIB products replace these during the reign of Thutmose III in the mid-15th century BC (and a vessel with the cartouche—royal name—of Thutmose is found in Crete). Some wall paintings from Egypt also provide likely images of Aegeans ('Keftiu' = Cretans) in Late Minoan I and then Late Minoan II(–IIIA)-style clothing through the reign of Thutmose III. Late Minoan/Helladic IIIA1 is then linked with Amenhotep II and Amenhotep III, and Late Helladic IIIA2 is securely tied to the reign of Amenhotep IV (Akhenaten) and continues subsequently into the late 14th century BC. Late Helladic IIIB and Minoan IIIB subsequently occupy the 13th century BC.

The period c. 1400–1200 BC in broad terms represents the developed palatial era of the east Mediterranean, with major interlinked economies and trading worlds incorporating the Myceneans/Aegeans, the Hittites and other Anatolian powers, Cyprus, the Levant, and Egypt. This all starts to change from around c. 1200 BC and through the 12th century BC, and, as export patterns become less clear, our dates become less certain in the period from the close of the Late Bronze Age through the early Iron Age (for data and discussions, see, e.g., Höflmayer 2007; MacGillivray 1998, 106–108; Merrillees 2003; Kemp and Merrillees 1980; Warren and Hankey 1989, 121–69; Manning 1995, 104–120, 217–29; 1999; 2009; Aston 2003; Wiener 2003; Deger-Jalkotzy and Zavadil 2003; Mountjoy 1999, 2005).

Science-Based Dating

The main science-based dating technique relevant to the Aegean Bronze Age is radiocarbon dating. This enables estimates of the date when organic materials stopped exchanging carbon dioxide with the atmosphere (e.g., when a plant or part thereof—like a tree ring—stops growing or an animal dies; see Taylor 1987, 1997). In archaeology, the critical issue is the use of organic material that relates closely and as directly as possible to the context for which a date is sought (Waterbolk 1971); usually this means that samples of short-lived nature, such as annual growth material, are the ideal candidates because they should yield ages more or less contemporary with the time of human use. In contrast, random wood charcoal (with no evidence of bark or sapwood), when from long-lived tree species, can easily yield correct ages that are many decades to even centuries older than the archaeological context from which they come (and are thus very unhelpful *terminus post quem*—point after which—ranges). Over the last few decades, increased dating precision has become available, and on very much smaller samples (using Accelerator Mass Spectrometry radiocarbon dating; Gove 1992, 1999), making the dating of short-lived samples and other focused materials and contexts practical.

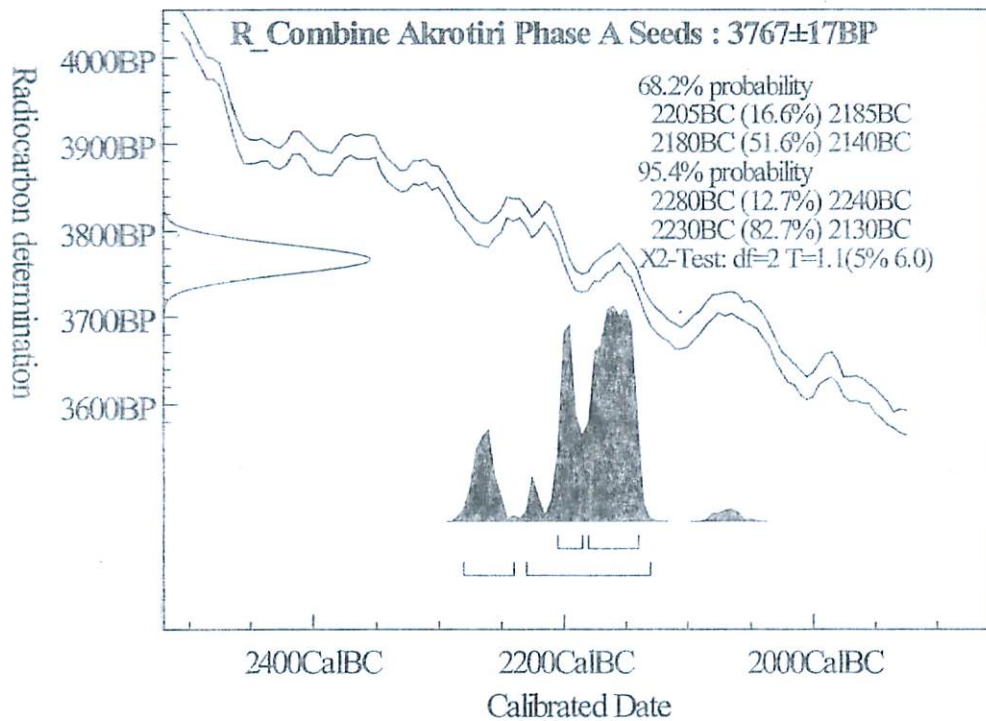


Figure 2.1. Calibrated calendar age probability distribution for the weighted average radiocarbon age from three measurements on charred seeds from a single lump from Locus M31/67 No69 at Akrotiri on Thera/Santorini belonging to the initial Middle Cycladic Phase A (and not the end of the phase). Data from OxCal and IntCal04 (Bronk Ramsey 1995, 2001, 2008; Reimer et al. 2004).

For the Early Bronze Age Aegean, radiocarbon is our main source of absolute dating evidence and provides the available chronology and temporal framework c. 3000–2000 BC (see Manning 1995, 1997, 2008b; Korfmann and Kromer 1993; Kromer, Korfmann, and Jablonka 2003). Additional modern, high-quality dating programs are needed, however, especially to focus on short-lived sample material. A promising example of the progress possible toward the resolution of longstanding problems comes from Akrotiri on Thera/Santorini. Here Phase A is now defined at the very beginning of the Middle Cycladic sequence linking to the Phylakopi I (–ii and –iii) phase (Nikolakopoulou, Georma, Moschou, and Sofianou 2008, 313–17). The weighted average of three very similar radiocarbon measurements on a compressed lump of charred seeds (Manning 2008b, 56) from this phase offers a calibrated calendar age range at 2 standard deviation (95.4%) confidence of 2280–2240 BC (12.7% of probability) or 2230–2130 BC (82.7% of probability); see figure 2.1. Thus, we may start the Middle Cycladic period no later than about the same time; this relatively early date closes the gap somewhat to the late Early Bronze 2 Kastri Group, which seems to cover the early 25th through the later 23rd centuries BC (Manning 2008b). (Some Middle Minoan IA ceramics have also been found in Phase A at Akrotiri; whether this early date applies also to them is an interesting issue for further clarification; the archaeological linkages suggest a date more in the 21st century BC for the start of Middle Minoan IA.)

For the Middle and Late Bronze Ages, there are data and interpretations from both archaeology and radiocarbon evidence. At first, the long-studied and relatively refined archaeological chronologies were much more accurate and precise than anything radiocarbon could offer (Kohler and Ralph 1961). Thus, radiocarbon dating was of interest but at most offered support to an already accepted framework; if there was a conflict, it was obvious that the archaeological chronology was to be preferred (Betancourt and Weinstein 1976; Warren and Hankey 1989, 127).

However, over the last three decades, increasingly precise radiocarbon dates have been obtained, and more sophisticated analytical frameworks developed to refine interpretation (especially Bayesian model-based approaches as employed in the Manning et al. 2006 study). Work on short-lived samples from the Late Minoan IA and IB periods, in particular, have highlighted some apparent discrepancies between the archaeological chronology and the radiocarbon chronology (Manning et al. 2006; Manning 2009). This issue centers on the date of the important eruption of the volcano of Santorini/Thera and the associated archaeological horizon (see chapter 34). A major controversy now exists in the field, and rival (High v. Low) chronologies are in parallel use, depending on whether the radiocarbon evidence (High chronology) or the conventional archaeological evidence (Low chronology) is preferred for the mid-second millennium BC.

An appropriate perspective on this debate is critical, however, as the published literature has become a clash of scholarly cultures, with many arguments made on the basis of assumed truths. The fundamental observation is that the Late Minoan IA period and the earlier part of the Late Minoan IB period (and the preceding Middle Minoan IIIA and IIIB periods) form a time for which very little chronological evidence exists in the form of clearly defined and plural exchanges of material with Egypt and the Near East. Instead, conventional dates were largely estimated for this era between the good Middle Minoan links with the Middle Kingdom and the mature-late Late Minoan IB, as well as Late Helladic IIA and IIB links with the earlier 18th Dynasty and into the reign of Thutmose III. Thus, things were always potentially suspect (or flexible), and phases might be longer or shorter than guessed. Radiocarbon finds age ranges consistent with the archaeological chronology where the latter is well based on numerous exchanges (e.g., Late Minoan II/Late Helladic IIB to Late Helladic IIIB; see, e.g., Manning and Weninger 1992; Manning, Weninger, South, Kling, Kuniholm, Muhly, Hadjisavvas, Sewell, and Cadogan 2001; Betancourt and Lawn 1984), but it suggests a much longer Late Minoan IB period than previously thought (though archaeology now also suggests this; see Rutter n.d.; Betancourt 1998) and a date for Late Minoan IA about one hundred years earlier than the conventional date (Manning et al. 2006; Manning 1998, 1999, 2009). The necessary implication is that Middle Minoan III as a whole was relatively short (something already considered likely; cf. Warren and Hankey 1989, 54–60). The Middle Minoan II linkages with the Middle Kingdom remain untouched and unquestioned, however. Thus radiocarbon redefines some best guesses in the past (where solid evidence was lacking) for Late Minoan IA and IB but does not contradict any good, sound, replicated body of archaeological evidence.

Table 2.2. Approximate Absolute Chronology for the Aegean Bronze Age

Crete	Dates BC	Cyclades	Dates BC	Mainland	Dates BC
Early Minoan I (EMIB)	3100–3000 (2900–2650)	ECI	3100–3000	Early Helladic I	3100+ to 3000
EMIIA	2650–2450/00	Kampos Phase ECII (Keros-Syros phase)	2900–2650 2650–2500	EHII	2650–2500
EMIIB	2450/00–2200	Kastri Phase	2500–2250	Later EHII/Lefkandi I	2500–2200
EMIII	2200–2100/2050	Kastri Phase and into Phylakopi I Phase	2400–2200	EHIII	2250–2100/2050
Middle Minoan IA	2100/50–1925/00	Middle Cycladic–Phylakopi I Phase	2200–	Middle Helladic	2100/2050–
MMIB	1925/00–1875/50				
MMII	1875/50–1750/00				
MMIII(A–B)	1750/00–1700/1675				
Late Minoan IA	1700/1675–1625/00	Late Cycladic I	1700/1675–1625/00	Late Helladic I	1700/1675–1635/00
LMIB	1625/00–1470/60	LCII	1625/00–	LHIIA	1635/00–1480/70
LMII	1470/60–1420/10			LHIIIB	1480/70–1420/10
LMIIIA1	1420/10–1390/70	LCIII	1420/1400–	LHIIIA1	1420/10–1390/70
LMIIIA2	1390/70–1330/15			LHIIIA2	1390/70–1330/15
LMIIIB	1330/15–1200/1190			LHIIIB	1330/15–1200/1190
LMIIIC	1200/1190–1075/50			LHIIIC	1200/1190–1075/50

Note: Minoan, Cycladic, and Mainland phases are of course not in exact synchronicity in reality, even when closely aligned; for example, Late Helladic (LH) IIA appears to begin a little before Late Minoan (LM) IB. However, this serves as a general system, so these minor, specialist, issues can often be overlooked (or could fit into the dating ranges indicated for the start/end dates). Similarly, although the table lists specific numbers, these are all approximate. For the EM/EC/EH phases ± 50 years should be allowed as a reasonable guide range. For the MM/MMH/MC and LM/LC/LH phases, ± 25 years may be a reasonable allowance. There is of course one major possible exception. The dates in the table reflect the high or radiocarbon-based dates for LMIA–II and so on (from the study of Manning et al. 2006 in particular). If the conventional archaeological dates are employed instead, then the MM period must become longer, the LMIA period begins closer to ca. 1600 BC, and LMIB begins in the late 16th century BC to ca. 1500 BC. The time period on Crete at the close of the MMIII period and start of the LMIA period has been variously called MMIII to LMIA transition, or LMIA Early, or most recently (as again) MMIIIB—each label referring to more or less the same interval. On the high chronology shown in table 2.2, this time period lies around the late 18th century BC into the first decades of the 17th century BC (courtesy of the author).

The other dating technique of general relevance to the Aegean Bronze Age is dendrochronology, also called tree-ring dating (Kuniholm 2001; Schweingruber 1987). Where bark or sapwood is present, it is possible to define closely the cutting date and hence human use of timbers. A long near-absolute dendrochronology from Anatolia covers the earlier first and most of the second millennia BC and has major implications for the dating of key sites and even ancient persons in Anatolia and the Near East (Manning, Kromer, Kuniholm, and Newton 2001). Some chronologies, though with a questionable linkage as yet to the second–first millennia dendrochronology, exist also for a good part of the third millennium BC (Newton and Kuniholm 2004).

There has been less success to date in finding good wood or charcoal samples from the Aegean region (but the potential remains, and one reads sadly of apparently large timber remains (now lost) found earlier in the 20th century AD at some of the main palace sites). Nevertheless, some key shorter tree-ring series have been radiocarbon wiggle-matched to yield high-precision information. Examples include a pine timber from Troy I (Korfmann and Kromer 1993; Manning 1997), an oak sample from Miletus that offers a high-resolution *terminus post quem* for the eruption of Santorini/Thera (Manning et al. 2006), and a speculative effort at best-dating some short sequences at Assiros from toward the end of the Late Bronze Age (Newton and Wardle 2005). An approximate absolute chronology for the Aegean Bronze Age is shown in table 2.2.

BIBLIOGRAPHY

- Åberg, Nils. 1933. *Bronzezeitliche und früheisenzeitliche Chronologie IV Griechenland*. Stockholm: Kungl. Vitterhets Historie och Antikvitets Akademien.
- Aston, David A. 2003. "New Kingdom Pottery Phases as Revealed through Well-dated Tomb Contexts." In *SCIEM II*, 135–62.
- Barber, Robin L. N. 1987. *The Cyclades in the Bronze Age*. London: Gerald Duckworth.
- , and J. Alexander MacGillivray. 1980. "The Early Cycladic Period: Matters of Definition and Terminology." *AJA* 84(2): 141–57.
- Beckerath, Jürgen von. 1997. "Die Zeitbestimmung der Ägyptischen Geschichte von der Vorzeit bis 332 v. Chr." *Chronologie des pharaonischen Ägypten*. Mainz: Philipp von Zabern.
- Betancourt, Philip P. 1985. *The History of Minoan Pottery*. Princeton: Princeton University Press.
- . 1998. "The Chronology of the Aegean Late Bronze Age: Unanswered Questions." In *Sardinian and Aegean Chronology: Towards the Resolution of Relative and Absolute Dating in the Mediterranean*. Studies in Sardinian Archaeology, ed. Miriam S. Balmuth and Robert H. Tykot, 291–96. Oxford: Oxbow.
- , and Barbara Lawn. 1984. "The Cyclades and Radiocarbon Chronology." In *Prehistoric Cyclades*, 277–95.
- Betancourt, Philip P., and Gail A. Weinstein. 1976. "Carbon-14 and the Beginning of the Late Bronze Age in the Aegean." *AJA* 80(4): 329–48.
- Brinkman, John A. 1972. "Foreign Relations of Babylonia from 1600 to 625 B.C.: The Documentary Evidence." *AJA* 76(3): 271–81.

- . 1976. *Materials and Studies for Kassite History*. Chicago: Oriental Institute of the University of Chicago.
- Brodie, Neil J., Jenny Doole, Giorgos Gavalas, and Colin Renfrew, eds. 2008. *Horizon*.
- Bronk Ramsey, Christopher. 1995. "Radiocarbon Calibration and Analysis of Stratigraphy: The OxCal Program." *Radiocarbon* 37: 425–30.
- . 2001. "Development of the Radiocarbon Calibration Program OxCal." *Radiocarbon* 43: 355–63.
- . 2008. "Deposition Models for Chronological Records." *Quaternary Science Reviews* 27: 42–60.
- Broodbank, Cyprian. 2000. *An Island Archaeology of the Early Cyclades*. Cambridge: Cambridge University Press.
- Cadogan, Gerald, Eleni Hatzaki, and Adonis Vasilakis, eds. 2004. *Knossos*.
- Childe, V. Gordon. 1925. *The Dawn of European Civilization*. London: Kegan Paul.
- . 1935. "Review of Nils Åberg, *Bronzezeitliche und fruheisenzeitliche Chronologie: I–IV?*" *Man* 35: 75–76.
- Cline, Eric. 1987. "Amenhotep III and the Aegean: A Reassessment of Egypto-Aegean Relations in the 14th Century B.C." *Orientalia* 56:1–36.
- Daniel, Glyn E. 1943. *The Three Ages: An Essay on Archaeological Method*. Cambridge: Cambridge University Press.
- Darcque, Pascal, Michael Fotiadis, and Olga Polychronopoulou, eds. 2006. *Mythos: La pre-histoire egeenne de XIXe au XXIe siecle apres J.-C. Actes de la Table Ronde Internationale d'Athènes (21–23 novembre 2002)*. BCH Supplément 46. Athens: École française d'Athènes.
- Deger-Jalkotzy, Sigrid, and Michaela Zavadil, eds. 2003. *LH IIIC*.
- Doumas, Christos. 1977. *Early Bronze Age Burial Habits in the Cyclades*. SIMA 48. Gothenburg: Åström.
- Evans, Arthur J. 1906. *Essai de classification des epoques de la civilisation minoenne. Résumé d'un discours fait au congres d'archeologie à Athènes*. London: B. Quaritch.
- . 1921–1935. *PM*, vols. I–IV.
- Evely, Doniert, Helen Hughes-Brock, and Nicoletta Momigliano, eds. 1994. *Labyrinth of History*.
- Frankel, David. 2008. "Review of B. Knapp and M. Given, *Sydney Cyprus Survey Project*." *AJA* 112(3): 182–83.
- Given, Michael, and A. Bernard Knapp. 2003. *The Sydney Cyprus Survey Project: Social Approaches to Regional Archaeological Survey*. Monumenta Archaeologica 21. Los Angeles: Cotsen Institute of Archeology, University of California, Los Angeles.
- Gove, Harry E. 1992. "The History of AMS, Its Advantages over Decay Counting: Applications and Prospects." In *Radiocarbon after Four Decades: An Interdisciplinary Perspective*, ed. Royal E. Taylor, Austin Long, and Renee S. Kra, 214–29. New York: Springer.
- . 1999. *From Hiroshima to the Iceman: The Development and Applications of Accelerator Mass Spectrometry*. Bristol: Institute of Physics Publishing.
- Gräslund, Bo. 1987. *The Birth of Prehistory Chronology: Dating Methods and Dating Systems in Nineteenth-century Scandinavian Archaeology*. New York: Cambridge University Press.
- Höflmayer, Felix. 2007. "Ägyptische Skarabäen auf Kreta und ihre Bedeutung für die absolute Chronologie der minoischen Altpalastzeit (MM IB–MM IIB)." *Ägypten und Levante* 17: 107–26.
- Hornung, Erik, Rolf Krauss, and David A. Warburton, eds. 2006. *Ancient Egyptian Chronology*. Leiden: Brill.
- Kemp, Barry J., and Robert S. Merrillees. 1980. *Minoan Pottery in Second Millennium Egypt*. Mainz am Rhein: Philipp von Zabern.

- Kitchen, Kenneth A. 1996a. "The Historical Chronology of Ancient Egypt: A Current Assessment." *Acta Archaeologica* 67: 1–13.
- . 1996b. *The Third Intermediate Period in Egypt (1100–650 BC)*, 2d rev. ed. with suppl. Warminster: Aris and Phillips.
- Kohler, Ellen L., and Elizabeth K. Ralph. 1961. "C-14 Dates for Sites in the Mediterranean Area." *American Journal of Archaeology* 65: 357–67.
- Korfmann, Manfred, and Bernd Kromer. 1993. "Demircihüyük, Besik-Tepe, Troia—Eine Zwischenbilanz zur Chronologie dreier Orte in Westanatolien." *Studia Troica* 3: 135–71.
- Kouka, Ourania. 2009. "Third-millennium-BC Aegean Chronology: Old and New Data under the Perspectives of the Third Millennium AD." In *Tree-Rings, Kings, and Old World Archaeology and Environment: Papers Written in Honor of Peter Ian Kuniholm*, ed. Sturt W. Manning and Mary Jaye Bruce, 133–149. Oxford: Oxbow.
- Kromer, Bernd, Manfred Korfmann, and Peter Jablonka. 2003. "Heidelberg Radiocarbon Dates for Troia I to VIII and Kumtepe." In *Troia and the Troad: Scientific Approaches*, ed. Günther A. Wagner, Ernst Pernicka, and Hans-Peter Uerpman, 43–54. Berlin: Springer.
- Kuniholm, Peter I. 2001. Dendrochronology and Other Applications of Tree-ring Studies in Archaeology. In *The Handbook of Archaeological Sciences*, ed. Don R. Brothwell and Angela M. Pollard, 35–46. London: John Wiley and Sons.
- MacGillivray, J. Alexander. 1998. *Knossos: Pottery Groups of the Old Palace Period*. BSA Studies 5. London: British School at Athens.
- , and Robin L. N. Barber, eds. 1984. *Prehistoric Cyclades*.
- Manning, Sturt W. 1995. *The Absolute Chronology of the Aegean Early Bronze Age: Archaeology, History, and Radiocarbon*. Monographs in Mediterranean Archaeology 1. Sheffield: Sheffield Academic Press.
- . 1997. Troy, Radiocarbon, and the Chronology of the Northeast Aegean in the Early Bronze Age. In *Poliochni*, 498–520.
- . 1998. "Aegean and Sardinian Chronology: Radiocarbon, Calibration, and Thera." In *Sardinian and Aegean Chronology: Towards the Resolution of Relative and Absolute Dating in the Mediterranean*. Studies in Sardinian Archaeology, ed. Miriam S. Balmuth and Robert H. Tykot, 297–307. Oxford: Oxbow.
- . 1999. *A Test of Time: The Volcano of Thera and the Chronology and History of the Aegean and East Mediterranean in the Mid-second Millennium BC*. Oxford: Oxbow.
- . 2008a. "An Edited Past: Aegean Prehistory and Its Texts." In *Editing the Image: Strategies in the Production and Reception of the Visual*. Mark A. Cheetham, Elizabeth Legge and Catherine M. Soussloff (eds.), 33–65. Toronto: University of Toronto Press.
- . 2008b. "Some Initial Wobbly Steps towards a Late Neolithic to Early Bronze III Radiocarbon Chronology for the Cyclades." In *Horizon*, 55–69. Cambridge: McDonald Institute for Archaeological Research.
- . 2009. "Beyond the Santorini Eruption: Some Notes on Dating the Late Minoan IB Period on Crete, and Implications for Cretan-Egyptian Relations in the 15th Century BC (and especially LM II)." In *Time's Up! Dating the Minoan Eruption of Santorini*, ed. David Warburton, 207–226. Monographs of the Danish Institute at Athens 10. Athens: Danish Institute at Athens.
- Manning, Sturt W., Bernd Kromer, Peter I. Kuniholm, and Maryanne Newton. 2001. "Anatolian Tree-rings and a New Chronology for the East Mediterranean Bronze-Iron Ages." *Science* 294: 2532–35.
- Manning, Sturt W., Charles Bronk Ramsey, Walter Kutschera, Thomas Higham, Bernd Kromer, Peter Steier, and Eva M. Wild. 2006. "Chronology for the Aegean Late Bronze Age." *Science* 312: 565–69.

- Manning, Sturt W., and Bernhard Weninger. 1992. "A Light in the Dark: Archaeological Wiggle Matching and the Absolute Chronology of the Close of the Aegean Late Bronze Age." *Antiquity* 66: 636–63.
- , Bernhard Weninger, Alison K. South, Barbara B. Kling, Peter I. Kuniholm, James D. Muhly, Sophocles Hadjisavvas, David A. Sewell, and Gerald Cadogan. 2001. "Absolute Age Range of the Late Cypriot IIC Period on Cyprus." *Antiquity* 75: 328–40.
- Marangou, Lila, Colin Renfrew, Christos Doumas, and Giorgos Gavalas. 2006. *Markiani, Amorgos: An Early Bronze Age Fortified Settlement: Overview of the 1985–1991 Investigations*. BSA supplementary vol. 40. London: British School at Athens.
- Merrillees, Robert S. 2003. "The First Appearances of Kamares Ware in the Levant." *Ägypten und Levante* 13: 127–42.
- McDonald, William A., and Carol G. Thomas. 1990. *Progress into the Past: The Rediscovery of Mycenaean Civilization*, 2d ed. Bloomington: Indiana University Press.
- Momigliano, Nicoletta. 2000. "On the Early Minoan III and Middle Minoan IA Sequence at Knossos." In *Pepragmena H' Diethnous Kritologikou Synedriou, Irakleio, 9–14 Septemvriou 1996*. Vol. A2, *Proistoriki kai Archaia Elliniki Periodos*, ed. Alexandra Karetsoy, Detorakis Theocharis, and Alexis Kalokairinos, 335–48. Irakleio: Etaireia Kritikon Istorikon Meleton.
- Montelius, Oscar. 1903. *Die älteren Kulturperioden im Orient und in Europa*. Stockholm: Selbstverlag des Verfassers.
- Moran, William. 1992. *The Amarna Letters*. Baltimore: Johns Hopkins University Press.
- Mountjoy, Penelope A. 1999. "Late Minoan IIIC/Late Helladic IIIC: Chronology and Terminology." In *Meletemata*, 511–16.
- . 2005. "Mycenaean Connections with the Near East in LH IIIC: Ships and Sea Peoples." In *Emporia*, 423–27.
- Newton, Maryanne W., and Peter I. Kuniholm. 2004. "A Dendrochronological Framework for the Assyrian Colony Period in Asia Minor." *Türkiye Bilimler Akademisi Arkeoloji Dergisi* 7: 165–76.
- , and Ken A. Wardle. 2005. "A Dendrochronological ¹⁴C Wiggle-match for the Early Iron Age of North Greece: A Contribution to the Debate about This Period in the Southern Levant." In *The Bible and Radiocarbon Dating Archaeology, Text, and Science* ed. Thomas E. Levy and Thomas Higham, 104–13. London: Equinox.
- Nikolakopoulou, Irene, Fragoula Georma, Angeliki Moschou, and Photini Sofianou. 2008. "Trapped in the Middle: New Stratigraphic and Ceramic Evidence from Middle Cycladic Akrotiri, Thera." In *Horizon*, 311–24.
- O'Brien, Michael J., and R. Lee Lyman. 1999. *Seriation, Stratigraphy, and Index Fossils: The Backbone of Archaeological Dating*. New York: Plenum.
- Papadopoulos, John K. 2005. "Inventing the Minoans: Archaeology, Modernity, and the Quest for European Identity." *JMA* 18: 87–149.
- Pendlebury, John D. S. 1939. *The Archaeology of Crete*. London: Methuen.
- Petrie, William M. Flinders. 1890. "The Egyptian Bases of Greek History." *JHS* 11: 271–77.
- . 1891a. *Illahun, Kahun, and Gurob: 1889–90*. London: David Nutt.
- . 1891b. "Notes on the Antiquities of Mykenae." *JHS* 12: 199–205.
- . 1899. "Sequences in Prehistoric Remains." *Journal of the Anthropological Institute* 29: 295–301.
- . 1894. *Tell el Amarna*. London: Methuen.
- Phillips, Jacke. 1997. "Petrie in Egypt." In *Ancient Egypt, the Aegean, and the Near East: Studies in Honour of Martha Rhoads Bell*, ed. Jacke Phillip, 407–19. San Antonio: Van Siclen.

- Platon, Nikolaos. 1961. "Chronologie de la Crète et des Cyclades à l'Age du Bronze." In *Bericht über den V Internationalen Kongress für Vor- und Frühgeschichte, Hamburg 1958*, ed. Gerhard Bersu and Wolfgang Dehn, 671–76. Berlin: Mann.
- Platon, Nikolaos. 1968. "Τα προβλήματα χρονολογήσεως των Μινωικών ανακτόρων." *Αρχαιολογική Εφημερίς*: 1–58.
- Reimer, Paula J., Mike G. L. Baillie, Edouard Bard, Alex Bayliss, J. Warren Beck, Chanda J. H. Bertrand, Paul G. Blackwell, Caitlin E. Buck, George S. Burr, Kirsten B. Cutler, Paul E. Damon, R. Lawrence Edwards, Richard G. Fairbanks, Michael Friedrich, Thomas P. Guilderson, Alan G. Hogg, Konrad A. Hughen, Bernd Kromer, Gerry McCormac, Sturt Manning, Christopher Bronk Ramsey, Ron W. Reimer, Sabine Remmele, John R. Southon, Minze Stuiver, Sahrá Talamo, F. W. Taylor, Johannes van der Plicht, and Constanze E. Weyhenmeyer. 2004. "IntCal104 Terrestrial Radiocarbon Age Calibration, 0–26 Cal Kyr BP." *Radiocarbon* 46: 1029–58.
- Renfrew, Colin. 1972. *The Emergence of Civilization: The Cyclades and the Aegean in the Third Millennium B.C.* London: Methuen.
- . ed. 2007. *Excavations at Phylakopi in Melos, 1974–77*. Suppl. Vol. 42. London: British School at Athens.
- Renfrew, Colin, Christos Doumas, Lila Marangou and Giorgos Gavalas. 2007. *Keros, Dhaskalio Kavos: the investigations of 1987–88*. Cambridge: McDonald Institute for Archaeological Research.
- . 2008. "Cycladic Studies Today." In *Horizon*, 1–8.
- Rutter, Jeremy B. 1979. *Ceramic Change in the Aegean Early Bronze Age*. Occasional Paper 5. Los Angeles: Institute of Archaeology, University of California.
- . 1983. "Some Observations on the Cyclades in the Later Third and Early Second Millennia B.C." *AJA* 87: 69–76.
- . 1984. "The Early Cycladic III Gap: What It Is and How to Go About Filling It without Making It Go Away." In *Prehistoric Cyclades*, 95–107.
- . n.d. "Late Minoan IB at Kommos: A Sequence of at Least Three Distinct Stages." In *LM IB Pottery: Relative Chronology and Regional Differences*, ed. Thomas M. Brogan and Erik Hallager. Athens: Danish Institute at Athens.
- Schweingruber, Fritz H. 1987. *Tree Rings: Basics and Applications of Dendrochronology*. Dordrecht: D. Reidel.
- Taylor, Royal E. 1987. *Radiocarbon Dating: An Archaeological Perspective*. Orlando: Academic Press.
- . 1997. "Radiocarbon Dating." In *Chronometric Dating in Archaeology*, ed. Royal E. Taylor and Michael J. Aitken, 65–96. New York: Plenum.
- Vitale, Salvatore. 2006. "The LH IIIB-LH IIIC Transition on the Mycenaean Mainland: Ceramic Phases and Terminology." *Hesperia* 75: 177–204.
- Wace, Alan J. B., and Carl W. Blegen. 1916–1918. "The Pre-Mycenaean Pottery of the Mainland." *BSA* 22: 175–89.
- Warren, Peter M. 1991. "A New Minoan Deposit from Knossos c. 1600 B.C. and Its Wider Relations." *BSA* 86: 319–340.
- , and Vronwy Hankey. 1989. *Aegean Bronze Age Chronology*. Bristol: Bristol Classical Press.
- Waterbolck, Harm T. 1971. "Working with Radiocarbon Dates." *Proceedings of the Prehistoric Society* 37: 15–33.
- Wiener, Malcolm H. 2003. "The Absolute Chronology of Late Helladic III A2 Revisited." *BSA* 98: 239–50.

CHAPTER 4

MAINLAND GREECE

JEANNETTE FORSÉN

THE geographical scope of this overview is mainland Greece bordered by Albania, the Former Yugoslav Republic of Macedonia (FYROM), and Bulgaria to the north and the Cyclades and Crete to the south. The period is the Early Bronze Age (EBA), or Early Helladic (EH) denoting the mainland, during the time span between the preceding Final Neolithic period and the ensuing Middle Bronze Age. The absolute dates for the EH period remain unsettled, but if we follow a traditional school, it begins ca. 3100 and ends ca. 2000 BC (Manning 1995).

A tripartite division of the EH period, denoted by Roman numerals EH I–III, was conceived by Blegen, drawing upon his excavation data from Korakou near Corinth (1921, 2–3, 14). This scheme was further elaborated through excavations at Zygouries (Blegen 1928) and Eutresis (Goldman 1931). Goldman was able to apply the term *EH I–III* to three main phases at Eutresis, defined by her through changes in pottery fabric, pottery shapes, and architecture. Thus, a chronological framework based on changes in archaeological material *and* stratigraphical sequencing was created (1931, 227–231).

EH I was then characterized by polished ware, either slipped or unslipped, the earliest most often red slipped, and by incised decorations. EH II was characterized by good-quality glazed ware (“Urfirnis,” now Dark-painted ware) and Yellow Mottled ware (now Light-painted, fine-polished ware). Finally, EH III was described as having a degenerated glazed ware, Dark-on-Light ware, a diminishing amount of Yellow Mottled ware, and increasing amounts of Plain ware (Blegen 1928, 76–125, 216–18).

In close to ninety years of archaeological enterprises on mainland Greece, little has altered Blegen’s main outline of the EH period, and the stylistic classification of artifactual assemblages for this period has merely been fleshed out. Admittedly, the historical conclusions were modified since Blegen believed that a dramatic and

complete cultural break could be seen at the end of the EH III period (Blegen 1928, 221), whereas Caskey—through his excavations at Lerna in Argolis and Eutresis in Boeotia—reached the conclusion that a notable break in southern Greece occurred between EH II and EH III, while a second break took place in central Greece at the end of EH III (Caskey 1960, 299–302; 1973, 136; 1986, 25).

The “cultural break” at the end of EH II and/or EH III has been used to bring one group of foreigners or another to Greece, either through an invasionistic/migrational model or a diffusionistic model (e.g., Blegen 1928; Caskey 1960; Wiencke 1989; Rutter 1995; Maran 1998). However, the historical outline sketched by Caskey, with a pattern of destructions throughout the Peloponnese at the end of EH II, has been shown to be untenable. The traits that he associated with a “foreign invasion” (e.g., apsidal houses, tumuli, and “terracotta anchors”) appeared on the mainland at different times during the EH II–MH periods and originated in many different areas (Forsén 1992). Other explanations for the “cultural break” proposed now and then include, for example, climatic changes (Manning 1997) and land degradation (Whitelaw 2000).

However, that the changes seen in the cultural assemblages of EH III date (also called the “Tiryns culture”) were due to a local evolution was suggested by Renfrew (1972), French (1973), and Walter and Felten (1981), although they all lacked the means to prove it. A thorough reappraisal of the ceramic changes at the EH II/III boundary at Lerna and Kolonna on Aigina now explain these as a “long-term process within a well-established local population” (Shriner, Murray, Christidis and Brophy in prep.). Behind this process are several decisive elements that ultimately lead to a demand for more robust coarse ware. Such a production began in southern Greece in later EH II and was created by fusing different technological pottery traditions from “central places” (e.g., Lerna, Kolonna) with those from their respective “hinterland” (Shriner, Murray, Christidis and Brophy in prep.). Could these regional sites with more traditional technologies explain the reintroduction of controlled reduction firing during late EH II–III? It should not be doubted that sophisticated technological manufacturing techniques existed at this time, thereby denoting anything *but* a decreased complexity (Spencer in press).

THRACE, MACEDONIA, AND THESSALY

A survey of the principal EBA sites in mainland Greece begins in the northeast with Thrace, Macedonia, and Thessaly, which is an area dominated by large broad plains with conspicuous mounds (magoules) spread out in the landscape.

From the onset of the EBA, the pottery in these regions changed. Whereas it had been diverse, implying many local schools, now coarse ware, principally storage vessels, became the focus of production. This could indicate that a larger degree

of self-sufficiency within the agricultural sphere had taken place, but it might also imply the existence of a surplus of agricultural products that could be exchanged for exotica such as gold and tin (cf. Maran 1998, 2007).

Surprisingly little archaeological work has been undertaken in Thrace, considering its setting at the crossroads between northwestern Asia Minor, the Aegean, and the Balkans. The picture of the EBA in Macedonia is clearer, thanks to the seminal work by Heurtley (1939), who laid out a basis for a ceramic cultural sequence. The stratigraphical sequence in combination with radiocarbon dates from several Macedonian sites has recently (Andreou, Fotiadis, and Kotsakis 1996, 586) enabled the identification of an early EBA phase (Dikili Tash IIIA and Sitagroi IV–Va = EH I and early EH II in the southern mainland) and a later EBA phase (Dikili Tash IIIB and Sitagroi Vb = late EH II and EH III in the south).

Dikili Tash, near Philippi, has been excavated intermittently since 1961 (Séfériadès 1983). Circuit walls of EBA date were probably built in order to protect the site from the surrounding marshes (Péristéri and Treuil 1988; Darcque, Touchais, and Treuil 1992). Pottery from the early EBA phase reflects connections to both Troy I and Eutresis in Boeotia (e.g., black polished bowls with tubular lug handles) (Caskey and Caskey 1960, 134–35), while small cups with high, vertical loop handles show influences from the north. Pottery from the later EBA phase retains influences from the north (e.g., bowls with incised lip), while so-called Corded ware has a wider distribution and connects this area with northwestern and central Greece (cf. Christmann 1996, 159–61). The square-spouted jug (Malamidou 1997, 339, figure 12) is more at home in southern Greece than in the north but is an important chronological link between the two regions.

In the Drama plain, Sitagroi magoula was excavated in 1968–1969 (Renfrew, Gimbutas, and Elster 1986; Elster and Renfrew 2003). The main trench on top of the magoula revealed two successive apsidal houses, the “Burnt House” and the “Long House” of early EBA date. These remains were accompanied not only by hearths and storage bins but also by vessels, shaft-hole axes, querns, and spindle-whorls, all artifacts reflecting a farming community. The material culture from Sitagroi can be correlated with both Troy and the important Thessalian site of Argissa. This ties Sitagroi into the Anatolian, as well as the Aegean, sphere, although it remains in the marginal zone. Results of the botanical study indicate a groundwater rise during a phase equivalent to late EH I in the south, recently corroborated by similar results at Chalkis in the Corinthian Gulf (see later discussion).

In Chalkidiki on the eastern side of the Sithonia peninsula, excavations during the late 1990s revealed a large necropolis in a tumulus at Kriaritsi (Asouchidou 2001). The pottery can be correlated with Troy and Thessaly, as well as with southern Greece (e.g., the type 6 jar at Lerna) (cf. Wiencke 2000, 561). The remarkable resemblance in both layout and content between this necropolis and the R-tombs at Steno on Lefkas on the other side of the Greek mainland is noteworthy.

In mountainous western Macedonia, substantial EBA remains, including houses, have been found at Servia (Ridley and Wardle 1979; Ridley, Wardle, and Mould 2000). The pottery reflects the important setting of Servia—at the crossroads and

well-trodden passage—to Thessaly in the south and Epirus in the west. Moreover, EH II–III pottery (Light-painted, fine-polished sauceboats and degenerated, Dark-painted ware) correlates Servia with the southern mainland.

Thessaly belongs to a more arid climate zone than that of Macedonia and Thrace. The EBA sites exhibit a different “outlook” in that they are less influenced by northern cultures and more by the southern mainland. Excavations at Argissa magoula in the 1950s revealed—apart from several architectural phases—three main pottery phases, which can be correlated with late EH I–III in the south through similarities in the repertoire of shapes and surface finish and through actual imports (e.g., of Dark-painted pottery [Hanschmann and Milojević 1976, 78–80, 185–93, Taf. XI, Beilage 12, 32]).

Pevkakia magoula, on a rocky promontory on the Thessalian coast, shows clear influences from west Anatolia in the appearance at the end of EH II of the “Lefkandi I pottery assemblage” (first identified at Lefkandi on Euboea; see French 1972), accompanied by a change in architecture from an apsidal building to a rectangular megaron. A defensive circuit wall of early EH II date was also exposed (Christmann 1996, 321–25). In the region of Phthiotis in southeastern Thessaly, the evidence for EBA remains is scarce, although a rescue excavation at Rachi Panagias in 1994 exposed two phases of EH I, including bowls with incised lips, one-handled cups, and “Bratislava lids” (Zachou 2004a, 738).

EPIRUS AND LEFKAS

The EBA pottery of Epirus in northwestern Greece reflects northern rather than southern influences, although contacts with the south exist. At Doliana, a site near the source of the river Kalamas, a most interesting pottery assemblage has been found (Dousougli and Zachos 2002). Its importance lies in the fact that the pottery shapes and surface finish (e.g., large storage jars with taenia bands, slipped and polished bowls with incised lips) recall pottery found at most EH I–II sites in the south. The Bratislava lid (figure 4.1) makes Doliana part of a very wide distribution network that includes not only Moravia, Albania, Bulgaria, Macedonia, and Thessaly to the north and east (Maran 1998, 509–17) but also Attica in the south (see later discussion).

The R-necropolis at Steno on Lefkas was excavated by Dörpfeld from 1903 to 1913. The extraordinary finds from the twenty-four tumuli have recently been republished (Kilian-Dirlmeier 2005). The tomb architecture and small finds correspond to burial customs and artifacts found stretching from Lefkas to Kriaritsi in Chalkidiki, Aphidna in Attica, and Olympia in Elis. Lefkas was probably an emporio similar to Aigina, through which goods from Dalmatia and farther north on the Balkan were transmitted to the Peloponnese and Attica in the south (Kilian-Dirlmeier 2005, 155–64).

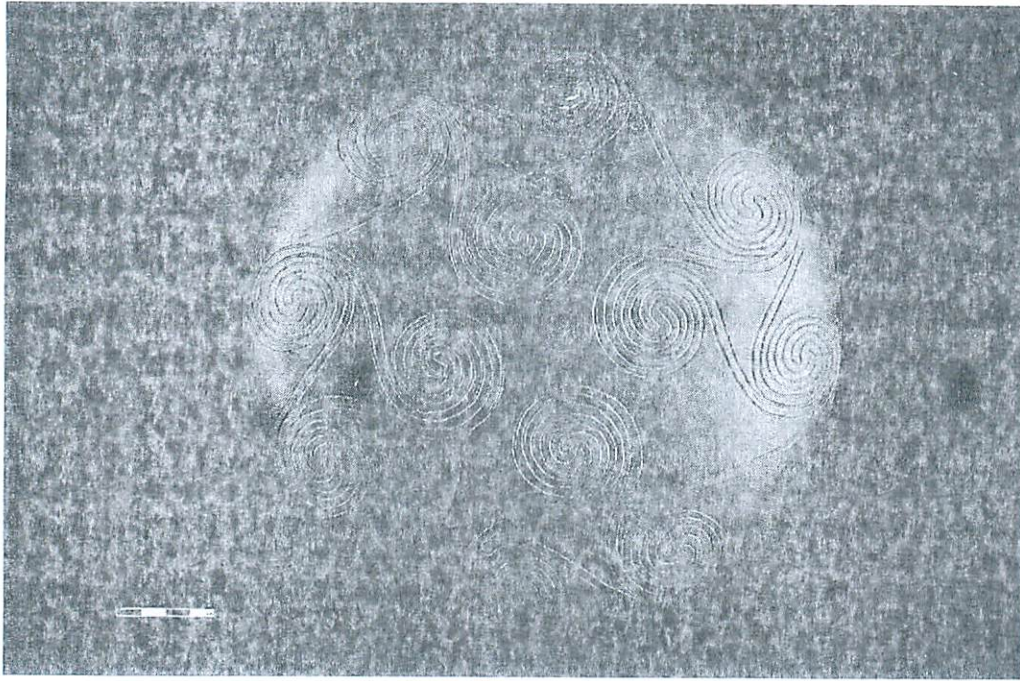


Figure 4.1. A Bratislava lid (restored) from Doliana in Epirus (courtesy of Angelika Dousougli and Kostas Zachos).

LOCRIS, PHOCIS, BOEOTIA, AND AITOLIA-AKARNANIA

Central Greece is characterized by small valleys usually well watered and fertile but compartmentalized by many mountains. Along the Locrian coast, EH sites abound, while less than three kilometers from the coast a complex pottery production area of EH I and early EH II date was recently found at Proskynas. The layout of this “workshop,” including kilns of different size (Zachou 2004b, 1267–76), implies ceramic craft specialization at a surprisingly early date.

Few EH sites have been excavated in Phocis, although one notable exception is the large mound of Kirrha next to the Corinthian Gulf (Dor, Jannoray, van Effenterre, and van Effenterre 1960). However, Boeotia has several important EH sites, such as Lithares, a vast EH I and early EH II village that includes streets and blocks of houses (Tzavella-Evjen 1985). Lefkandi I pottery is documented at Orchomenos, Eutresis, and Thebes (Forsén 1992). Recently another tumulus of late EH II date was found at Thebes (Aravantinos 2004, 1255–59), which can be correlated both in date and possibly function to tumuli with similar features previously known at Olympia in Elis and Lerna in Argolis.

In Aitolia on the northern shore of the Corinthian Gulf, excavations at Chalkis have documented pottery from two subphases of EH I, which can be correlated with assemblages both in central Greece (Eutresis) and southern Greece (Talioti). The late EH I phase is accompanied by an environmental change in the form of a rising sea level (Dietz and Moschos 2006).

ATTICA AND AIGINA

All along the Attic coast, EH sites are to be found either on the coast (e.g., Agios Kosmas) or a little inland, typically on low hills (e.g., Pani and Kontopigado in Alimos) (Kaza-Papageorgiou 2006). The proximity to the Cyclades is felt at most Attic sites usually in the form of pottery (e.g., the Kampos group of EC I/EH I date and the Kastri/Lefkandi I repertoire of late EH II date) or through large quantities of obsidian brought from Melos.

At Tsepi, near Marathon, Kampos group pottery in the cemetery dates the site to EH I, whereas the appearance of Bratislava lids among the grave goods, which include frying-pans (Pantelidou-Gofa 2005), adds Tsepi to the very extensive network of sites mentioned in connection to Doliana in Epirus (thereby stretching from the Carpathian basin to the south Aegean). Moreover, the relationship between the frying-pans and the Bratislava lids needs a careful study (Coleman, forthcoming, suggests that the lids may indicate the beginning of EH I on the mainland).

The cemetery at Agios Kosmas may include a few graves of Cycladic individuals, although the material culture mostly reflects mainland influences, including northern Greece, besides some Kastri/Lefkandi I pottery of west Anatolian inspiration (Mylonas 1959; French 1968, 64–65). A similar case can be made for the burial tumulus near Aphidna, where an amalgam of Anatolian, Cycladic, and mainland influences is evident among the grave goods and in the construction of the tumulus itself, which resembles the ones at Olympia and Lerna in particular. Especially intriguing is the possible link between Aphidna and tomb R-24 at Steno on Lefkas through their identical arrangement of gold rings (Forsén in press).

A large, prehistoric settlement at Kolonna on Aigina has come to light through excavations in the 1970s (Walter and Felten 1981) and from 1993 to 2002 (Felten and Hiller 2004). The importance of the site should not be underestimated as it must have functioned as a hub through which products and influences circulated at a steady pace during the EH II–III periods (EH I is less known). This fortified settlement exhibits similarities in architecture and layout with various areas (e.g., Poliochni on Lemnos, Lithares in Boeotia, and Lerna in Argolis). While the pottery exhibits the usual EH II koiné, it also includes Lefkandi I elements (Berger 2004) and hybrids spanning the crucial EH II–III boundary, allowing for an essentially local development of the pottery (Walter and Felten 1981, 108–16).

CORINTHIA AND ARGOLIS

Corinthia and Argolis are united in the west by a common range of mountains that is divided into two main plains, the Corinthian and the Argive, with smaller upland valleys hidden behind isolated mountains. In Corinthia, the small EH site, Tsoungiza, has supplied data concerning the transition from EH I to early EH II in

particular (Pullen, forthcoming), thereby supplementing those already known from the Kephalaria Magoula near Argos (Dousougli 1987).

Still, both of these sites are said to represent late EH I, and the question as to whether there is a different material culture assemblage during an early EH I period remains open (see Coleman 2000). However, judging by the EH I pottery found at Asine in Argolis (Frödin and Persson 1938, 200–205), Eutresis in Boeotia (Caskey and Caskey 1960), and Perachora in Corinthia (Fossey 1969), early EH I is denoted by strata containing red-slipped (or unslipped) and polished or dark-burnished ware without traces of Dark-painted ware or other salient features of late EH I (the Talioti repertoire; see Weisshaar 1990) or EH II date.

One of the most famous sites in the region is Lerna, a low artificial mound on the western shore of the Bay of Argos, which was excavated in the 1950s. The site has become one of the key sites in southern Greece due to its well-published artifactual assemblages of EH II–EH III date. During EH II, Lerna was a fortified site dominated by large rectangular “corridor houses” (e.g., the House of the Tiles, which, once destroyed, was turned into a low tumulus). Ceramics were often thin-walled, high-fired, and light colored (Wiencke 2000 and this volume). The subsequent settlement of EH III date consisted of smaller apsidal houses without fortification, while the pottery was often thick-walled, porous, and low-fired (Rutter 1995). The contrast between the two settlement layers could not have been greater, and it is no wonder that Caskey (1971) concluded that an “invasion” or “influx” of new and different people had taken place.

On the eastern side of the Bay of Argos opposite Lerna, important EH II architecture is documented at Tiryns, for example, the Rundbau and apsidal houses of early EH II date (Kilian 1986, 65–71), the latter feature recently corroborated by similar finds at Epidauros (Theodorou-Mavrommatidi 2004, 1167–82). Much controversy over a slightly divergent pottery chronology as documented at Tiryns and Lerna has been solved by Maran (1998, 460), who inserted a “Wendezeit,” thus allowing different sites to follow slightly different historical trajectories during this period of change.

ACHAEA AND ARCADIA

On a narrow strip of land along the southern coast of the Corinthian Gulf, remarkable EH remains are found at Helike in Achaia. This was a coastal site, a “central place” with a “corridor house” of EH II date, late EH II pottery of Lefkandi I type, and rectangular houses of EH III date (Katsonopoulou, forthcoming). A *depas amphikypellon* of Anatolian origin (figure 4.2) indicates that Helike was most likely part of an extensive exchange network during EH II–EH III between the Peloponnese and west Anatolia, which, according to Rahmstorf (2006), also encompassed the Near East.

In the upland valleys of Arcadia, data from Asea Paleokastro indicates that this seemingly remote site also took part in far-reaching exchange networks during the EH period, as evidenced by exotica such as non-local pottery, obsidian, and honey flint (Forsén 1996; 2003, 195). The existence of a land route across the Peloponnese,

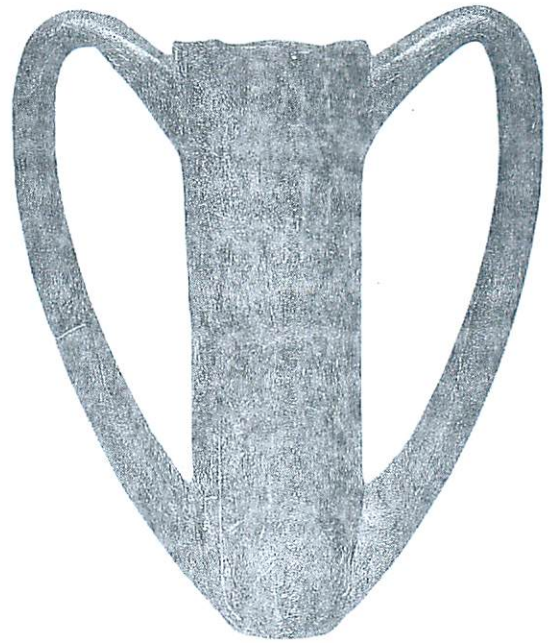


Figure 4.2. The depas amphikypellon found at Helike in Achaea (courtesy of Dora Katsonopoulou).

along which goods originating, for instance, in Dalmatia reached the Bay of Argos (Rambach 2004, 1233–42), has been postulated in order to explain Asea’s status as a “central place” during the later EH period.

ELIS AND MESSEنيا

In the Altis at Olympia in Elis, important EH remains were excavated by Dörpfeld (1935) and Kyrieleis (1990) e.g., the Pelopeion, a large tumulus of late EH II date, and several apsidal houses of late EH III date. The fact that much non-local pottery of EH III date was found is seen as the result of Olympia’s serving as a trading post, like Asea, along a land corridor across the Peloponnese (Rambach 2004, 2007).

Excavations at Akovitika in Messenia have revealed “corridor houses” similar to the ones at Lerna (Themelis 1984, 344–47). The pottery includes Attic and Lefkandi I type ceramics (Koumouzelis-Bouchard 1981), implying that Akovitika was part of the far-reaching exchange network postulated for the late EH II period.

LACONIA

Renewed research centered on Kouphovouno, a low hill just southwest of Sparta, including both survey and excavations, has revealed a high level of interconnectivity between sites of EH II date ranging in size from “central places” to single farmsteads.

Specialist potters supplied a network of smaller sites with their products, indicating some sort of commercial activity and/or shared cultural values (Mee 2009). At the fortified acropolis site at Geraki, southeast of Sparta, a thriving community existed during EH II (Crouwel, Prent, Thorne, and van der Vin 2000), whereas the EH III period until recently (Banou 1999) has been lacking in the archaeological record of Laconia.

SUMMARY

It seems that extensive exchange networks existed from the onset of EH I, when the Bratislava lid spread over large areas of mainland Greece. Social hierarchies might be inferred from early EH II, when the earliest fortifications were built (e.g., at Pevkakia in Thessaly). A wider distribution occurs during the late EH II period, when, for example, Askitarío and Plasi in Attica, Kolonna on Aigina, Lerna in Argolis, and Geraki in Laconia were fortified. This propensity to fortify in late EH II can possibly be connected to a rise in internal competition between different communities. It is not impossible that environmental changes (cf. Sitagroi and Chalkis) triggered this development.

The dramatic cultural break seen especially at Lerna between EH II and EH III was in the past interpreted as evidence of invaders at the site, who supposedly built the apsidal houses of Lerna IV. However, the appearance at several Argive sites of apsidal houses during early EH II could imply that people from these nearby sites (i.e., Tiryns or Epidauros) moved to Lerna after the most famous of “corridor houses”, the House of the Tiles, burned down. That it was the local people who turned the debris of the house into a low tumulus (to commemorate it?) should not be doubted. The notion to build a tumulus might initially have emanated from actual visits to Thebes or Olympia.

In this chapter I have suggested that complex exchange networks and sophisticated technological manufacturing techniques, especially within pottery production, existed during late EH II–III. Thus, envisioning a decreased social complexity at the end of EH is not necessarily accurate. On the contrary, the demand for coarse ware, which increased during late EH II–III, implies a new form of complexity that we cannot yet decipher. It is bedeviling that functions that must have been self-evident to EH humans—for instance, sealings or potter’s marks—are lost to us since they could feasibly be part of deciphering this complexity.

In any event, the spectacular jewelry hoard of late EH III date found at Kolonna on Aigina (Reinholdt 2004) indicates the existence of social elites with far-reaching trading contacts at this time. One hopes that more research and archaeological finds will bring solutions that will help to explain the cultural shift at the end of the EH period.

BIBLIOGRAPHY

- Andreou, Stelios, Michael Fotiadis, and Kostas Kotsakis. 1996. "Review of Aegean Prehistory V: The Neolithic and Bronze Age of Northern Greece." *AJA* 100: 537–97.
- Aravantinos, Vassilis. 2004. "New Evidence about the EH II Period in Thebes: A New Architectural Complex and a Group Burial within the Kadmeia." In *Die ägäische Frühzeit: Die Frühbronzezeit in Griechenland*, ed. Eva Alram-Stern, 1255–59. Vienna: Verlag der Österreichischen Akademie der Wissenschaften.
- Asouchidou, Sofia. 2001. "Καύσεις της εποχής του χαλκού στη Μακεδονία." In *Καύσεις στην Εποχή του Χαλκού και την Πρώιμη Εποχή του Σιδήρου*, ed. Nicholas Chr. Stampolidis, 31–46. Athens: Πανεπιστήμιο Κρήτης.
- Banou, Emilia. 1999. "New Evidence on Early Helladic Laconia." *BSA* 94: 63–79.
- Berger, Lydia. 2004. "Neue Ergebnisse zur FH II-Keramik aus der prähistorischen Innenstadt." In *Die ägäische Frühzeit: Die Frühbronzezeit in Griechenland*, ed. Eva Alram-Stern, 1093–1103. Vienna: Verlag der Österreichischen Akademie der Wissenschaften.
- Blegen, Carl W. 1921. *Korakou: A Prehistoric Settlement near Corinth*. Boston: American School of Classical Studies.
- . 1928. *Zygouries: A Prehistoric Settlement in the Valley of Cleonae*. Cambridge, Mass.: Harvard University Press.
- Caskey, John L. 1960. "The Early Helladic Period in the Argolid." *Hesperia* 29: 285–303.
- . 1971. "Greece, Crete, and the Aegean Islands in the Early Bronze Age." In *The Cambridge Ancient History*, vol. 1, part 2, 3d ed., ed. I. E. S. Edwards, C. J. Gadd, and N. G. L. Hammond, 771–807. New York: Cambridge University Press.
- . 1973. "Greece and the Aegean Islands in the Middle Bronze Age." In *The Cambridge Ancient History*, vol. 2, part 1, 3d ed., ed. I. E. S. Edwards, C. J. Gadd, and N. G. L. Hammond, 117–40. New York: Cambridge University Press.
- . 1986. "Did the Early Bronze Age End?" In *The End of the Early Bronze Age in the Aegean*, ed. Gerald Cadogan, 9–30. Leiden: Brill.
- , and Elizabeth G. Caskey. 1960. "The Earliest Settlements at Eutresis: Supplementary Excavations, 1958." *Hesperia* 29: 126–67.
- Christmann, Elmar. 1996. *Die deutschen Ausgrabungen auf der Pevkakia-Magula in Thessalien II: Die Frühe Bronzezeit*. Bonn: Dr. Rudolf Habelt.
- Coleman, John E. 2000. "An Archaeological Scenario for the 'Coming of the Greeks' ca. 3200 B.C." *JIES* 28: 101–53.
- . Forthcoming. "The Petromagoula-Doliana Group and the Beginning of the Aegean Early Bronze Age." In *Helike IV: The Early Helladic Peloponnesos: Proceedings of the Fourth International Conference*, ed. Dora Katsonopoulou. Athens: Helike Society.
- Crouwel, Joost H., Mieke Prent, Stuart MacVeigh Thorne, and Jos van der Vin. 2000. "Geraki: An Acropolis Site in Laconia: Preliminary Report on the Sixth Season (2000)." *Pharos* 8: 41–76.
- Darcque, Pascal, Giles Touchais, and René Treuil. 1992. "Dikili Tash." *BCH* 116: 715–19.
- Dietz, Søren, and Ioannis Moschos, eds. 2006. *Chalkis Aitolias I: The Prehistoric Periods*. Monographs of the Danish Institute at Athens, vol. 7. Århus, Denmark: Århus University Press.
- Dor, Léopold, Jean Jannoray, Henri van Effenterre, and Micheline van Effenterre. 1960. *Kirrhä: Étude de préhistoire phocidienne*. Paris: E. de Boccard.
- Dörpfeld, Wilhelm. 1935. *Alt-Olympia: Untersuchungen und Ausgrabungen zur Geschichte des ältesten Heiligtums von Olympia und der älteren griechischen Kunst*. Berlin: E. S. Mittler und Sohn.

- Dousougli, Angelika. 1987. "Makrovouni-Kefalari Magoula-Talioti: Bemerkungen zu den Stufen EH I und II in der Argolis." *PZ* 62: 164–220.
- , and Konstantinos Zachos. 2002. "L'archéologie des zones montagneuses: Modèles et interconnexions dans le Néolithique de l'Épire et de l'Albanie méridionale." In *L'Albanie dans l'Europe préhistorique*, ed. Gilles Touchais and Josette Renard, 111–43. BCH Supplémentaire 42. Athens: École française d'Athènes.
- Elster, Ernestine S., and Colin Renfrew. 2003. *Prehistoric Sitagroi: Excavations in Northeast Greece, 1968–1970*. Vol. 2, *The Final Report*. Monumenta Archaeologica 20. Los Angeles: Cotsen Institute of Archaeology, University of California.
- Felten, Florens, and Stefan Hiller. 2004. "Forschungen zur Frühbronzezeit auf Ägina-Kolonna 1993–2002." In *Die ägäische Frühzeit: Die Frühbronzezeit in Griechenland*, ed. Eva Alram-Stern, 1089–92. Vienna: Verlag der Österreichischen Akademie der Wissenschaften.
- Forsén, Jeannette. 1992. *The Twilight of the Early Helladics: A Study of the Disturbances in East-central and Southern Greece towards the End of the Early Bronze Age*. SIMA-PB 116. Partille, Sweden: Åström.
- . 1996. "Prehistoric Asea Revisited." *OpAth* 21: 41–72.
- . 2003. "The Early and Middle Bronze Age." In *The Asea Valley Survey: An Arcadian Mountain Valley from the Palaeolithic Period until Modern Times*, Jeannette Forsén and Björn Forsén, 192–96. Acta Instituti Atheniensis Regni Sueciae 4^o, 51. Sävedalen, Sweden: Åström.
- . In press. "Aphidna in Attika Revisited." In *Mesohelladika*.
- Fossey, John M. 1969. "The Prehistoric Settlement by Lake Vouliagmeni, Perachora." *BSA* 64: 53–69.
- French, David H. 1968. "Anatolia and the Aegean in the Third Millennium B.C." Ph.D. diss., Cambridge University.
- . 1972. "The Pottery." In *Excavations at Lefkandi, Euboea 1964–66*, ed. Mervyn R. Popham and L. Hugh Sackett, 7–8. London: British School of Archaeology at Athens.
- . 1973. "Migrations and 'Minyan' Pottery in Western Anatolia and the Aegean." In *Bronze Age Migrations in the Aegean*, ed. R. A. Crossland and Ann Birchall, 51–57. London: Duckworth.
- Frödin, Otto, and Axel W. Persson. 1938. *Asine: Results of the Swedish Excavations 1922–1930*. Stockholm: Generalstabens litografiska anstalts förlag.
- Goldman, Hetty. 1931. *Excavations at Eutresis in Boeotia*. Cambridge, Mass.: Harvard University Press.
- Hanschmann, Eva, and Vladimir Milojević. 1976. *Die deutschen Ausgrabungen auf der Argissa-Magula in Thessalien III: Die frühe und beginnende mittlere Bronzezeit I–II*. Bonn: Rudolf Habelt.
- Heurtley, Walter A. 1939. *Prehistoric Macedonia*. Cambridge: Cambridge University Press.
- Katsonopoulou, Dora. Forthcoming. "The Early Helladic Settlement at Helike: An Early Bronze Age Center in Achaea." In *Helike IV: The Early Helladic Peloponnesos: Proceedings of the Fourth International Conference*, ed. Dora Katsonopoulou. Athens: Helike Society.
- Kaza-Papageorgiou, Konstantina. 2006. "Euonimon and Alimos" In *Alimos: A Greek-English Edition of the City's History*, ed. Dimitris Lucas, 16–151. Athens: Alexandros Publications.
- Kilian, Klaus. 1986. "The Circular Building at Tiryns." In *Early Helladic Architecture*, 65–71.
- Kilian-Dirlmeier, Imma. 2005. *Die bronzezeitlichen Gräber bei Nidri auf Leukas: Ausgrabungen von W. Dörpfeld 1903–1913*. Römisch-Germanisches Zentralmuseum Monographien Bd. 62. Mainz: Verlag des Römisch-Germanisches Zentralmuseum.

- Komouzelis-Bouchard, Margarita. 1981. "The EH II Site of Akovitika in Messenia (Abstract)." *AJA* 85: 202–203.
- Kyrieleis, Helmut. 1990. "Neue Ausgrabungen in Olympia." *Antike Welt* 21: 177–88.
- Malamidou, Dimitra. 1997. "Eastern Macedonia during the Early Bronze Age." In *Poliochni*, 329–43.
- Manning, Stuart W. 1995. *The Absolute Chronology of the Aegean Early Bronze Age: Archaeology, Radiocarbon, and History*. Monographs in Mediterranean Archaeology 1. Sheffield: Sheffield Academic Press.
- . 1997. "Cultural Change in the Aegean c. 2200 BC." In *Third Millennium BC Climate Change and Old World Collapse*, ed. H. Nüzhet Dalfes, George Kukla, and Harvey Weiss, 149–71. Berlin: Springer.
- Maran, Joseph. 1998. *Kulturwandel auf dem griechischen Festland und den Kykladen im späten 3. Jahrtausend v. Chr.: Studien zu den kulturellen Verhältnissen in Südosteuropa und dem zentralen sowie östlichen Mittelmeerraum in der späten Kupfer- und frühen Bronzezeit*. Universitätsforschungen zur prähistorischen Archäologie 53. Bonn: Dr. Rudolf Habelt.
- . 2007. "Seaborne Contacts between the Aegean, the Balkans, and the Central Mediterranean in the 3rd Millennium BC: The Unfolding of the Mediterranean World." In *BABS*, 3–23.
- Mee, Christopher. 2009. "Interconnectivity in Early Helladic Laconia." In *Sparta and Laconia from Prehistory to Pre-modern*, ed. William G. Cavanagh, Chrysanthi Gallou, and Mercourios Georgiadis, 43–53. London: British School at Athens.
- Mylonas, George E. 1959. *Aghios Kosmas: An Early Bronze Age Settlement and Cemetery in Attica*. Princeton: Princeton University Press.
- Pantelidou-Gofa, Maria. 2005. Τσέπι Μαραθώνος. Το προτοελλαδικό νεκροταφείο. (Βιβλιοθήκη της εν Αθήναις Αρχαιολογικής Εταιρείας, 235). Athens: Η εν Αθήναις Αρχαιολογική Εταιρεία.
- Péristéri, Katérina, and René Treuil. 1988. "Dikili Tash." *BCH* 112: 727–31.
- Pullen, Daniel J. Forthcoming. *The Early Bronze Age Village on Tsoungiza Hill*. Nemea Valley Archaeological Project. Vol. 1. Princeton: American School of Classical Studies at Athens.
- Rahmstorf, Lorenz. 2006. "Zur Ausbreitung vorderasiatischer Innovationen in die frühbronzezeitliche Ägäis." *PZ* 81: 49–96.
- Rambach, Jörg. 2004. "Olympia im ausgehenden 3. Jahrtausend v. Chr.: Bineglied zwischen zentralem und östlichem Mittelmeerraum." In *Die ägäische Frühzeit: Die Frühbronzezeit in Griechenland*, ed. Eva Alram-Stern, 1199–1254. Vienna: Verlag der Österreichischen Akademie der Wissenschaften.
- . 2007. "Olympia and Andravida-Lechaina: Two Bronze Age Sites in the Northwest Peloponnese with Far-reaching Overseas Cultural Connections." In *BABS*, 81–90.
- Reinholdt, Claus. 2004. "Der frühbronzezeitliche Schmuck-Hortfund von Kap Kolonna/ Ägina." In *Die ägäische Frühzeit: Die Frühbronzezeit in Griechenland*, ed. Eva Alram-Stern, 1113–19. Vienna: Verlag der Österreichischen Akademie der Wissenschaften.
- Renfrew, Colin. 1972. *The Emergence of Civilisation: The Cyclades and the Aegean in the Third Millennium B.C.* London: Methuen.
- , Maria Gimbutas, and Ernestine Elster, eds. 1986. *Excavations at Sitagroi: A Prehistoric Village in Northeast Greece*, vol. 1. Monumenta Archaeologica 13. Los Angeles: Institute of Archaeology, University of California.
- Ridley, Cressida, and Kenneth A. Wardle. 1979. "Rescue Excavations at Servia 1971–1973: A Preliminary Report." *BSA* 74: 185–230.

- , and Catharine A. Mould. 2000. *Servia I: Anglo-Hellenic Rescue Excavations 1971–1973 Directed by Katerina Rhomiopoulou and Cressida Ridley*. BSA Supplementary volume 32. London: British School at Athens.
- Rutter, Jeremy B. 1995. *Lerna: A Preclassical Site in the Argolid*. Vol. 3, *The Pottery of Lerna IV*. Princeton: American School of Classical Studies at Athens.
- Séfériadès, Michel. 1983. "Dikili Tash: Introduction à la préhistoire de la Macédoine orientale." *BCH* 107: 635–77.
- Shriner, Christine, Haydn H. Murray, George E. Christidis, and James G. Brophy. In prep. "A Method of Explanation for the Nature of Cultural Change. Archaeological and Theoretical Implications."
- Spencer, Lydia. In press. "The Regional Specialisation of Ceramic Production in the EH III through MH II Period." In *Mesohelladika*.
- Themelis, Petros, G. 1984. "Early Helladic Monumental Architecture." *AM* 99: 335–51.
- Theodorou-Mavrommatidi, Anthi. 2004. "An Early Helladic Settlement in the Apollon Maleatas Site at Epidauros." In *Die ägäische Frühzeit: Die Frühbronzezeit in Griechenland*, ed. Eva Alram-Stern, 1167–88. Vienna: Verlag der Österreichischen Akademie der Wissenschaften.
- Tzavella-Evjen, Hara. 1985. *Lithares: An Early Bronze Age Settlement in Boeotia*. Institute of Archaeology, University of California. Occasional Paper 15. Los Angeles: UCLA Institute of Archaeology Publications.
- Walter, Hans, and Florens Felten. 1981. *Alt-Ägina III, 1. Die vorgeschichtliche Stadt: Befestigungen, Häuser, Funde*. Mainz am Rhein: Philipp von Zabern.
- Weisshaar, Hans-Joachim. 1990. "Die Keramik von Talioti." In *Tiryas, Forschungen und Berichte*, Band XI, 1–34. Mainz am Rhein: Philipp von Zabern.
- Wiencke, Martha H. 1989. "Change in Early Helladic II." *AJA* 93: 495–509.
- . 2000. *Lerna: A Preclassical Site in the Argolid*. Vol. 4, *The Architecture, Stratification, and Pottery of Lerna III*. Princeton: American School of Classical Studies at Athens.
- Whitelaw, Todd. 2000. "Settlement Instability and Landscape Degradation in the Southern Aegean in the Third Millennium BC." In *Landscape and Land Use in Postglacial Greece*, ed. Paul Halstead and Charles Frederick, 135–61. Sheffield Studies in Aegean Archaeology 3. Sheffield: Academic Press.
- Zachou, Eleni. 2004a. "Rachi Panagias." In *Die ägäische Frühzeit: Die Frühbronzezeit in Griechenland*, ed. Eva Alram-Stern, 738. Vienna: Verlag der Österreichischen Akademie der Wissenschaften.
- . 2004b. "Die frühbronzezeitliche Siedlung in Proskynas/Lokris." In *Die ägäische Frühzeit: Die Frühbronzezeit in Griechenland*, ed. Eva Alram-Stern, 1267–83. Vienna: Verlag der Österreichischen Akademie der Wissenschaften.

CHAPTER 7

MAINLAND GREECE

SOFIA VOUTSAKI

THE Middle Helladic (MH) period is caught between two peaks of economic growth and cultural achievement, the Early and Late Bronze Ages. In addition, the MH mainland has suffered from comparison with Minoan palatial societies and the maritime polities of the Aegean (Rutter 2001, 32). As a result, the MH period has until recently received little attention.

For most of the 20th century, research concentrated on the origins of the MH civilization or on typological sequences, although studies by Dickinson (1977), Zerner (1979), Nordquist (1987), and papers in the journal *Hydra* have laid the foundations for subsequent research. The last fifteen years have seen a renewed interest in the period, spurred by seminal new publications (Maran 1992), Rutter's excellent synthesis (Rutter 2001), renewed investigations at important sites (e.g., Kolonna: Gauss and Smetana 2007; Aspis: Touchais 1998; Philippa-Touchais in press b), and the reexamination of old data (e.g., pre-Mycenaean finds from Ano Englianos: Davis and Stocker in press; MH Argolid: Voutsaki 2005). These investigations and discussions, many of which have been assembled in two recent conferences on the MH period (Felten et al. 2007; Philippa-Touchais et al. in press), have cast doubt on the traditional perception of MH societies as static, backward, isolated, and largely homogeneous (as pointed out already by Rutter 2001, 132). The MH period is now seen as witnessing important social, political, and cultural changes that lead to the formation of the early Mycenaean polities and the later palatial states. The following discussion presents some of the new evidence, as well as new approaches to old data, which have brought about the modification (or at least the qualification) of these earlier views.

DEMARCATIION IN SPACE

The core area of the MH mainland includes the Peloponnese, Attica, Boeotia, Euboea, and coastal Thessaly, while the areas to the west and the north (Ionian islands, Aetolia-Acarnania, inland Thessaly, Epirus, Macedonia) can be said to belong to the periphery of the Helladic world. The discussion here covers primarily the core areas of the southern mainland, although relations and exchanges with neighboring areas are also discussed.

DURATION

The MH period begins around 2100 BC or somewhat earlier. While there is agreement about the earlier part of the period, the transition to the LH period is caught in the wider debate between the 'High Chronology,' which supports a date around 1700 BC (Manning et al. 2006), and the 'Low Chronology,' which prefers the traditional date at 1600 BC (Warren and Hankey 1989). The issue can be resolved only if more extensive programs of radiocarbon analyses from mainland sites are undertaken.

Defining the internal subdivisions of the period is difficult for several reasons. Regional differences hinder comparison between local sequences (see Maran 1992, 370, figure 25), while establishing synchronisms with Minoan Crete and the Aegean is not without difficulties (Hatzaki 2007; Girella 2007). Moreover, there are only a few reliable radiocarbon dates from the mainland. It is worth noting that recent ¹⁴C analyses from Lerna (Voutsaki, Nijboer, and Zerner in press) render support to the High Chronology. Table 7.1 shows some recent suggestions for the chronology of the period. The discussion here concentrates on the MH period and thereby follows the accepted periodization of Aegean prehistory, based on the ceramic sequence. However, if one considers historical and social developments, as well as changes in material culture, it makes more sense to discuss the earlier part of the period (MH I–MH II phases) together with the EH III phase and to consider MH III together with LH I. For this reason, an effort is made to discuss earlier and later developments for each aspect presented.

SUMMARY OF MAIN DEVELOPMENTS

The southern mainland suffers a severe crisis at the end of the EH period, the nature of which is now better understood, though its causes are still debated (Forsén 1992; Maran 1998). The EH II/EH III transition and the EH III period witness depopulation and destruction in various sites, changes in the settlement pattern and the settlement

Table 7.1. The MH Period: Relative and Absolute Chronologies

	Suggested Calendar Years BC			
	Dietz 1991	Dickinson 1994	Rutter 2001 (based on Manning 1995)	Voutsaki, Nijboer and Zerner (in press)
EH III			2200/2150–2050/2000	–2100
MH I		2100–1900	2050/2000–1950/1900	2100–1900
MH II	–1775	1900–1700	1950/1900–1750/1720	1900–1800
MH III	1775–1700	1700–1580	1750/1720–1680	1800–1700
LH I	1700–1625/1600	1580–1500	1680–1600/1580	1700–

Source: Courtesy of the author.

hierarchy, the use of settlement space, mortuary practices, and the material culture. Traditionally these changes were attributed to invasions and migrations (Howell 1973; Hood 1986). Recently, more emphasis has been placed on environmental causes such as land degradation and erosion (see Zangger 1992; Whitelaw 2000; Rutter 2001, 136) or climate change (Manning 1997), as well as their impact on the social system. However, migrations (or at least infiltration of ethnic groups) are still part of the explanatory framework (papers in Galanaki et al. 2007)—though whether these were the cause or the consequence of the crisis in the south needs to be discussed more explicitly. As Rutter (2001, 145) concludes, an old explanatory model has been rejected, but alternative interpretations have not been formulated as yet. He stresses, nevertheless, that the realization that we are dealing with a complex and protracted process affecting different regions and sites in an uneven manner is a significant and positive development.

The situation in MH I–MH II is not very well understood since these periods have received very little attention. While prevailing opinion holds that there is little development during the early part of the MH period, closer analyses of well-documented bodies of data indicate that changes *are* taking place in this period. For instance, the MH I period in Lerna sees the appearance (and subsequent disappearance) of larger or more complex domestic structures and perhaps some accumulation of wealth (Voutsaki forthcoming), while in MH II a subtle increase in the complexity of mortuary practices is evident (Milka n.d.). However, *irreversible* changes seem to take place only in MH III–LH I (Dickinson 1989, 133).

In the last phase of the MBA, the mainland societies indeed undergo a deep transformation. The changes are manifested primarily in the mortuary practices and are accompanied by an intensification of exchanges with areas within and beyond the Aegean. The influx of prestige items found (primarily though not exclusively) in the Shaft Graves of Mycenae represent the most spectacular aspect of this change in external relations—but more mundane items such as pottery circulate more widely as well. Exchanges not only with Minoan Crete and the Aegean but also with areas farther afield become denser, while the local material culture becomes much more receptive to Aegean and Minoan influences.

The reasons underlying this transformation are complex. The evolution of the debate gives us interesting insights into the history of the discipline. Under the diffusionist paradigm, the transformation of the mainland was attributed first to invasion and later to heavy cultural influence by the more advanced Minoan palatial societies. In the last decades of the 20th century, under the influence of Renfrew's evolutionist model (Renfrew 1972), the explanation for social change was sought in internal social developments. Most recently, an attempt has been made to bring together external stimuli and internal developments (Voutsaki 1999, 2005; Wright 2004b; Dickinson *in press*).

SETTLEMENT PATTERN

The transition from the EH to the MH period is marked by a severe discontinuity in the settlement pattern: Many sites are destroyed and/or abandoned between the end of the EH II period and the beginning of MH I. The number of sites in use decreases dramatically (Rutter 2001, 122–23; Wright 2004a, 119; Zavadil *in press*); most notably, the small rural sites are abandoned (Bintliff *in press*). There is also evidence for the decrease in the size of settlements and for an ensuing disappearance of the site hierarchy (Rutter 2001, 113). However, some poorly documented sites, such as Argos (Touchais 1998), Thebes (Demakopoulou and Konsola 1975; Dakouri-Hild 2001), and Mycenae (Shelton *in press*), were perhaps fairly large throughout the period. In certain regions, the evidence for EH III is limited or nonexistent, while MH I sites are quite rare across the entire southern mainland. This process of abandonment and regression, as well as the recovery from MH II or MH III onward, proceeds in an uneven fashion in the different regions (Wright 2004a; Zavadil *in press*).

In the MH III period, we observe population growth, as attested by an increase in the number of sites (Zavadil *in press*), the resettlement of areas that lay abandoned during the MH I–II periods, and a possible increase in the size of some settlements, for instance in Thebes, Argos, and Mycenae. In addition, survey data suggest a more intensive land use (Wright 2004a, 122). A three-tiered site hierarchy can once more be reconstructed (Rutter 2001, 130–31)—although, in the absence of information on settlement size, the criterion is often the presence of rich tombs.

SETTLEMENT ORGANIZATION AND DOMESTIC ARCHITECTURE

Few MH settlements have been extensively excavated (Malthi constitutes an exception, but its dating remains debated—see Darcque 2005, 343–344). In addition, neither settlement organization nor the development of domestic architecture during

the MH period has ever been studied systematically (but see now Philippa-Touchais in press; Voutsaki in press). Few settlements are fortified: Kolonna has already been mentioned; the circuit wall in Malthi most likely dates to the Mycenaean period (Darcque 1980, 32–33); and the function or date of the enclosures in Thebes, Aspis, and Megali Magoula, Galatas (for the latter see Konsolaki-Yannopoulou in press) are uncertain.

Houses are self-standing and usually positioned in an irregular fashion—at least in MH I–II. They are fairly homogeneous: Most consist of two rooms, are rarely larger than 50–60 m², and have stone foundations with a mud-brick superstructure. There are differences in size and contents even in the earlier period. For example, MH I House 98A in Lerna consists of a main house and a smaller structure serving as a storage/kitchen area—where several large, imported Minoan jars have been found—within a rectangular enclosure. Similarly, house 311B in Pefkakia had large storage pithoi and a concentration of Aeginetan imports (Maran 2007a, 172ff.). In the later phases, differences between houses become more marked: Some MH III houses in Asine are up to four times larger than ordinary MH houses, have a more complex layout, and are built on either side of a path, sharing a similar orientation (Nordquist 1987, 76ff.; Voutsaki in press). Other large houses are reported from other settlements (e.g., in Plasi, Marathon) (Marinatos 1970). Finally, in MH III–LH I, a few sites acquire a more organized layout: For instance, in the southeastern sector in the Aspis, the haphazardly positioned MH IIIA houses are replaced in MH IIIB–LH I by a row of complexes that adjoin each other and encircle the top of the hill, that is, following the (possible) outer enclosure (Philippa-Touchais in press).

Throughout the period, Kolonna stands out because of its heavy fortification wall, the more organized arrangement of the houses (Felten 2007, 13, 15), and the presence of a monumental structure from MH I onward (Felten 2007; Gauss and Smetana in press). It should be emphasized that Kolonna differs from the mainland centers in terms of social and economic organization and has many similarities with the large, cosmopolitan harbor towns of the Aegean.

MORTUARY PRACTICES

Mortuary practices are quite homogeneous in the earlier phases (EH III–MH I–MH II), although subtle variations can be observed. Burials are in general intramural, though few burials (mostly of infants) are interred under the floor of houses still in use; many graves are cut into or among ruined houses (Nordquist 1987, 95; Milka in press; Aravantinos and Psaraki in press). Extramural cemeteries are in use probably from MH II onward. Tumuli are also found, but their distribution is uneven (Müller 1989). Different grave types are used: simple pits, cists of various types, as well as large pithoi or smaller jars (the latter exclusively for infants and children). The mode of disposal is fairly uniform: As a rule, the graves contain single, contracted inhumations,

although a few double or even multiple burials exist. Offerings are rare and unimpressive: a vase, a few beads, a bone pin. Once more, there are notable exceptions, such as the tumuli in Aphidna (Wide 1896; Hielte-Staupoulou and Wedde 2002) and Kastroulia (Rambach 2007) or the built grave in Kolonna (Kilian-Dirlmeier 1997).

The situation changes in a fairly dramatic fashion in MH III–LH I, though the transformation is actually gradual and uneven across space. Extramural cemeteries are used more widely, and reuse of the grave and the secondary treatment of the body become more common. New tomb types, especially designed for reuse—the shaft grave, the tholos tomb, and the chamber tomb—are adopted. Finally, there is a general increase in the quantity and diversity of funerary offerings, although no tombs equal in any way the splendor of the Shaft Graves of Mycenae. Conspicuous consumption in the mortuary sphere clearly becomes the main strategy for the creation of power and prestige in this period (Voutsaki 1997).

CULT

Interestingly, evidence for cult or ritual practices is absent from the MH mainland: There are virtually no cult places (Rutter 2001, 144) or artifacts that have an unambiguous ritual function, with the exception of a few late figurines or zoomorphic vases, such as the two bull *rhyta* found in Eleusis (Mylonas 1975, 203). Needless to say, the archaeological invisibility of religion in MH times need not imply the absence of religious beliefs. It has been suggested that the ritual focus in MH times was in the mortuary sphere, as can be attested, for instance, by the evidence of rites taking place on or in the vicinity of some tumuli (Whittaker in press).

One shrine dates from the very end of the MH period at Apollo Maleatas in Epidauros. While votives (pottery, weapons, and ornaments found in ashy layers intermingled with animal bones—Lambrinudakis 1981) were deposited from LH I onward, at a short distance away, on the very top of the Kynortion hill, an MH pit was cut and subsequently filled with feasting debris in the middle of a settlement abandoned since EH times. As the area was never built over, Theodorou-Mavrommatidi (in press) suggests that we may observe here the process of the ‘sanctification’ of a precinct.

MATERIAL CULTURE

The discussions regarding early MH material culture have largely concentrated on the issue of the origins of MH culture. However, Forsén’s (1992) study has by now demonstrated that changes in material culture (the appearance of apsidal buildings,

terracotta 'anchors,' stone shaft-hole hammer axes, tumuli) attributed by scholars of the previous generation to invaders from the north or migrants from the east do not all appear at the same time, nor are they consistently associated with destruction (or postdestruction) layers.

While MH pottery is considered fairly simple and conservative (Rutter 2007, 35), there are marked differences between regions and even between neighboring sites, as each site contains different proportions of local wares, local imitations, and imports from different regions. Nonceramic finds (tools, ornaments) are equally simple and basic, and show little development through time. However, recent studies emphasize that technological advances *did* take place even very early on in the period—for example, the replacement of arsenic copper with bronze metallurgy (Kayafa in press) and the adoption of the potter's wheel (Spencer in press). On the other hand, the range and quantities of metal objects remained limited throughout the period, while technological advances in pottery remained largely restricted to Boeotia. One may conclude that a certain introvertedness and conformity to tradition characterized some, though not all, of the mainlanders: For instance, Aeginetan pottery was imitated in Thessaly (Maran 2007a, 174) but not in Boeotia (Sarri 2007, 163).

Needless to say, the situation changed dramatically toward the end of the period, when the mainland became open to external cultural influences. It is only by reference to changing social conditions and cultural orientation that we can explain the transformation of material culture in MH III–LH I: the diversification of pottery styles and technologies; the appearance of a uniform ceramic style (the LH I style: Rutter 2001, 137); the adoption of figurative elements in the hitherto uniconic MH culture (Rutter 2001, 141–42); the increased receptivity to external influences and stimuli; and, of course, the influx of valuable items.

EXTERNAL CONTACTS

This last point brings us to the issue of external contacts. The EH II–EH III–MH I discontinuity affected trade relations as well, as one can deduce from the circulation of both ceramics and chipped stone (Rutter 2001, 122). However, even in early MH I there is an increase in contacts between the Greek mainland (especially the eastern coast) and Aegina, the Aegean islands, and Crete (Rutter and Zerner 1984; Rutter 2001, 124). The distribution of (primarily) ceramic imports (Rutter and Zerner 1984; Nordquist 1987, 61ff.; Zerner 1993) allows us to reconstruct small-scale, overlapping networks whose extent and intensity fluctuate. The presence of Minoan imports mostly along the eastern coast is well documented, though there are now interesting new additions to the corpus, for instance at Kastroulia (Rambach 2007) and Pylos (Davis and Stocker in press). Aeginetan pottery (Zerner 1993; Lindblom 2001) reached primarily the Argolid and Corinthia and to a lesser extent Arcadia, Laconia, Boeotia, Euboea, Thessaly, and the Cyclades, while a few pieces are found along the

coasts of Italy and Asia Minor (Lindblom 2001, 43–44; Maran 2007a, 171). Lustrous Decorated and other Minoanizing wares (whose provenance remains uncertain—Kiriati in press) have a more southerly distribution. Central Greek pottery, produced in Boeotia, was exported to the south (Zerner 1993, 47 and notes 44–48; Sarri 2007, *passim*). A Thessalian network reaching the northeastern Aegean has recently been reconstructed (Maran 2007a). There are substantial differences in the distribution of imports throughout the period: While coastal sites had obvious advantages, certain communities (or social groups) were clearly more successful than others in establishing and maintaining trade contacts. For instance, imports concentrate in Lerna (Zerner 1993) and Argos (Kilikoglou et al. 2003), while more modest quantities are imported to Asine (Nordquist 1987, 61ff.), and none are found in Tsoungiza (Rutter 1990). As already stated, the MH III–LH I period sees an intensification of pottery exchanges, as well as clearer Cycladic and Minoan influences on mainland pottery (Graziadio 1998; Rutter 2001, 142).

Turning now to metal trade, most of the copper and all of the lead used in the MH period came from the Aegean, though some of the copper may have come from sources in the Aegean islands, Rodopi in Thrace and perhaps Cyprus (see references on provenance analyses in Kayafa in press). Less is known about the provenance of the few gold and silver objects found in the MH mainland.

Contacts were not restricted to the Aegean: The interaction between the southern mainland and the areas to the west and north, primarily Epirus and Macedonia, is now better understood, thanks to recent discoveries and investigations (see Andreou, Fotiadis, and Kotsakis 2001). Minyan imports and local imitations are found in a few coastal sites (Horejs 2007). In recent years, contacts with the Adriatic and the Balkans (Maran 2007b) have received more attention, and their significance has been discussed in a much more nuanced manner (though overtly diffusionist approaches persist as well). The significance of contacts with the central Mediterranean—as evidenced by the presence of mainland pottery in the Aeolian Islands and in Vivara (Vianello 2005; Merkouri in press)—cannot be overemphasized. It becomes evident that the traditional notions of an isolated and introverted mainland need to be abandoned, although a certain resistance to external influences in the early part of the period is apparent as well.

SOCIAL ORGANIZATION AND SOCIAL CHANGE

In the MH period communities were organized in villages whose economic life was based on agriculture and animal husbandry (Nordquist 1987; for recent studies see Forstenpointner et al. in press; Gardeisen in press). Basic craft activities (e.g., the preparation of stone tools—Hartenberger and Runnels 2001) may have taken place within the household. A certain degree of craft specialization existed, although we are dealing mostly with what Nordquist has called ‘household industries’ (Nordquist

1995). Needless to say, pottery production in Aegina must have been highly organized, but in economic and social organization, Kolonna clearly differed from MH villages.

Society in the MH period was traditionally considered to be fairly simple, undifferentiated, and static. However, Imma Kilian-Dirlmeier, in her publication of the MH II built grave at Kolonna (Kilian-Dirlmeier 1997), has argued for the existence of elites as early as MH I–II on the basis of some rich burials. Although the early date of some of her examples has been questioned (Voutsaki 2005, 136; Dickinson in press), there undoubtedly *are* some rich tombs in MH I–II (see earlier discussion). However, we should be careful when equating wealth with status—whether achieved, claimed, or aspired to (Dickinson in press). In addition, we should not interpret these burials in isolation (and see them as antecedents of the Shaft Grave elites) but examine them alongside all of the contemporary graves in the region. We certainly need to acknowledge the possibility that different regions of the MH world had different forms of social organization.

James Wright (2001, 2004b) has offered a slightly different reading of these rich burials, which he attributes not to established elites but to aggrandizing leaders of unstable and fluid factions stretching across different communities. However, the emphasis in the mortuary sphere in the mainland (with the exception of the Kolonna grave) is not really on the individual but on the burial group (presumably representing a kinship group). Indeed, the clustering of graves and their close association to houses (Milka in press) suggest that kinship was an important element of social organization (Voutsaki 2005, 137). Recent analyses of mortuary and osteological data have stressed the significance of age and gender—both dimensions underlying kinship positions—in the MH period (Ingvarsson-Sundström 2003; Voutsaki 2004; Milka in Voutsaki, Triantaphyllou, and Milka 2005, 37; Triantaphyllou in press; Pomadère in press; Ruppenstein in press). It has therefore been suggested that the main organizational principle in the MH I–II period was kinship rather than status and that authority was embedded in kinship relations and therefore did not require ostentatious practices or elaborate material culture for its legitimation (Voutsaki 2001, 183–84).

However, the question remains, why did the situation change in MH III–LH I? To attribute social changes solely to growing prosperity (following Renfrew's [1972] systemic model) is not convincing: Economic growth on the mainland takes place primarily *after* or at best *parallel to* the so-called Shaft Grave phenomenon (Voutsaki 2005, 139–140; see earlier discussion of the intensification of land use and trade in MH III–LH II). In addition, attempts to attribute the rise of the mainland centers to control of specific economic resources, usually (precious) metal, remain inconclusive (Dickinson 1989, 136; Rutter 2001, 145). Of course, the integration of the mainland in ever-expanding networks of exchange played a very important role (Sherratt and Sherratt 1991; Voutsaki 1997)—and here Wright's arguments about the manipulation of external contacts by competing leaders are directly relevant (Wright 2004b; see also Voutsaki 1997). However, we need to reflect more about the *political* ramifications, the impact of the expansionist policies of the Minoan palaces, and the shifting significance of (and possible competition between) the

Aegean maritime centers (Broodbank 2000, 350ff.). These expanding horizons and fluid 'international' conditions created new arenas of social action and provided unique opportunities for diplomatic alliances. The sudden wealth acquired by a couple of families in Mycenae cannot be seen as the result of gradual enrichment and growth but should be attributed to cunning political maneuvers by opportunistic leaders. However, only close empirical analyses of both funerary and settlement data in the mainland will allow us to reconstruct the changing position of individuals, social groups, and communities in this expanding new world.

BIBLIOGRAPHY

- Andreou, Stelios, Michael Fotiadis, and Kostas Kotsakis. 2001. "The Neolithic and Bronze Age of Northern Greece." In *Aegean Prehistory*, 259–328.
- Aravantinos, Vassilis, and Kyriaki Psaraki. In press. "The Middle Helladic Cemeteries of Thebes: General Review and Remarks in the Light of New Investigations and Finds." In *Mesohelladika*.
- Bintliff, John. In press. "The Middle Bronze Age through the Surface Survey Record of the Greek Mainland: Demographic and Sociopolitical Insights." In *Mesohelladika*.
- Broodbank, Cyprian. 2000. *An Island Archaeology of the Early Cyclades*. New York: Cambridge University Press.
- Dakouri-Hild, Anastasia. 2001. "Plotting Fragments: A Preliminary Assessment of the Middle Helladic Settlement in Boeotian Thebes." In *Urbanism*, 103–18.
- Darcque, Pascal. 2005. *L'habitat mycénien: Formes et fonctions de l'espace bâti en Grèce continentale à la fin du IIe millénaire avant J.-C.* Athens: École française d'Athènes.
- Davis, Jack, and Shari Stocker. In press. "Early Helladic and Middle Helladic Pylos: The Petropoulos Trenches and Pre-Mycenaean Remains on the Englianos Ridge." In *Mesohelladika*.
- Demakopoulou, Katie, and Dora Konsola. 1975. "Leipsana protoelladikou, mesoelladikou kai ysteroelladikou oikismou sti Thiva." *Archaiologiko Deltio* 30 A: 44–89.
- Dickinson, Oliver T. P. K. 1977. *The Origins of the Mycenaean Civilisation*. SIMA 49. Gothenburg: Åström.
- . 1989. "The Origins of Mycenaean Civilisation' Revisited." In *TRANSITION*, 131–36.
- . 1994. *The Aegean Bronze Age*. Cambridge: Cambridge University Press.
- . In press. "The 'Third World' of the Aegean? Middle Helladic Greece Revisited." In *Mesohelladika*.
- Dietz, Soren. 1991. *The Argolid at the Transition to the Mycenaean Age*. Copenhagen: National Museum of Denmark.
- Felten, Florens, Walter Gauss and Rudolfine Smetana, eds. 2007. *MH Pottery*.
- Felten, Florens. 2007. "Aegina-Kolonna: The History of a Greek Acropolis." In *MH Pottery*, 11–34.
- Forsén, Jeannette. 1992. *The Twilight of the Early Helladics: A Study of the Disturbances in East-central and Southern Greece towards the End of the Early Bronze Age*. Jonsered, Sweden: Åström.

- Forstenpointner, Gerhard, Alfred Galik, Gerald E. Weissengruber, Stefan Zohmann, Ursula Thanheiser, and Walter Gauss. In press. "Subsistence and More in Middle Bronze Age Aegina Kolonna: Patterns of Husbandry, Hunting, and Agriculture." In *Mesohelladika*.
- Galanaki, Ioanna, Helena Tomas, Yannis Galanakis, and Robert Laffineur, eds. 2007. *BABS*.
- Gardeisen, Armelle. In press. "Approche comparative de contextes du Bronze Moyen égéen à travers les données de l'archéozoologie." In *Mesohelladika*.
- Gauss, Walter, and Rudolfine Smetana. 2007. "Aegina Kolonna: The Stratigraphic Sequence of the Middle Bronze Age." In *MH Pottery*, 57–80.
- . In press. "Aegina Kolonna in the Middle Bronze Age." In *Mesohelladika*.
- Girella, Luca. 2007. "Toward a Definition of Middle Minoan III Ceramic Sequence in South-central Crete: Returning to MM IIIA and IIIB Traditional Division?" In *MH Pottery*, 233–56.
- Graziadio, Giampaolo. 1998. "Trade Circuits and Trade-routes in the Shaft Grave Period." *SMEA* 40(1): 29–76.
- Hartenberger, Britt, and Curtis Runnels. 2001. "The Organization of Flaked Stone Production at Bronze Age Lerna." *Hesperia* 70(3): 255–83.
- Hatzaki, Eleni. 2007. "Ceramic Groups of Early Neopalatial Knossos in the Context of Crete and the South Aegean." In *MH Pottery*, 273–94.
- Hielte-Staupoulou, Maria, and Michael Wedde. 2002. "Sam Wide's Excavation at Aphidna—Stratigraphy and Finds." In *Peloponnesian Sanctuaries and Cults*, ed. Robin Hägg, 21–24. Skrifter utgivna av Svenska Institutet i Athen. 4^o, 48. Stockholm: Åström.
- Hood, Sinclair. 1986. "Evidence for Invasions at the End of the Early Bronze Age." In *The End of the Early Bronze Age in the Aegean*, ed. Gerald Cadogan, 31–68. Leiden: Brill.
- Horejs, Barbara. 2007. "Transition from Middle to Late Bronze Age in Central Macedonia and Its Synchronisms with the 'Helladic' World." In *MH Pottery*, 183–200.
- Howell, Roger J. 1973. "The Origins of the Middle Helladic Culture." In *Bronze Age Migrations in the Aegean*, ed. R. A. Crossland and Ann Birchall, 73–106. Park Ridge, N.J.: Noyes.
- Ingvarsson-Sundström, Anne. 2003. "Children Lost and Found: A Bioarchaeological Study of Middle Helladic Children in Asine with a Comparison to Lerna." PhD diss., University of Uppsala.
- Kayafa, Maria. In press. "Middle Helladic Metallurgy and Metalworking: Review of the Archaeological and Archaeometric Evidence from the Peloponnese." In *Mesohelladika*.
- Kilian-Dirlmeier, Imma. 1997. *Das mittelbronzezeitliche Schachtgrab von Ägina*. Mainz: Philip von Zabern.
- Kilikoglou, Vassilis, Evangelia Kiriati, Anna Philippa-Touchais, Gilles Touchais, and Ian Whitbread. 2003. "Pottery Production and Supply at MH Aspis, Argos: The Evidence of Chemical and Petrographic Analyses." In *METRON*, 131–36.
- Kiriati, Evangelia. In press. "'Minoanising' Pottery Traditions in the Southwest Aegean during the Middle Bronze Age: Understanding the Social Context of Technological and Consumption Practice." In *Mesohelladika*.
- Konsolaki-Yannopoulou, Eleni. In press. "The Middle Helladic Establishment at Megali Magoula, Galatas (Troizinia)." In *Mesohelladika*.
- Lambrinudakis, Vasileios. 1981. "Remains of the Mycenaean Period in the Sanctuary of Apollon Maleatas." In *Sanctuaries and Cults*, 59–65.
- Lambropoulou, Anastasia. 1998. "The Middle Helladic Period in the Corinthia and the Argolid: An Archaeological Survey." PhD diss., Bryn Mawr College.
- Lindblom, Michael. 2001. *Marks and Maker: Appearance, Distribution, and Function of Middle and Late Helladic Manufacturers' Marks on Aeginetan Pottery*. SIMA 128. Jonsered, Sweden: Åström.

- Manning, Sturt W. 1995. *The Absolute Chronology of the Aegean Early Bronze Age*. Monographs in Mediterranean Archaeology 1. Sheffield: Sheffield Academic Press.
- . 1997. "Cultural Change in the Aegean c. 2200 BC." In *Third Millennium BC Climate Change and Old-world Collapse*, ed. Hasan N. Dalfes, George Kukla, and Harvey Weiss, 149–71. NATO ASI Series I, vol. 49. Berlin: Springer.
- , Christopher Bronk Ramsey, Walter Kutschera, Thomas Higham, Bernd Kromer, Peter Steier, and Eva M. Wild. 2006. "Chronology for the Aegean Late Bronze Age 1700–1400 BC." *Science* 312 (5573): 565–69.
- Maran, Joseph. 1992. *Die deutschen Ausgrabungen auf der Peukakia–Magula in Thessalien III: Die mittlere Bronzezeit*. Bonn: Habelt.
- . 1998. *Kulturwandel auf dem griechischen Festland und den Kykladen in späten 3. Jahrtausend v. Chr.* Bonn: Habelt.
- . 2007a. "Emulation of Aeginetan Pottery in the Middle Bronze Age of Coastal Thessaly: Regional Context and Social Meaning." In *MH Pottery*, 167–82.
- . 2007b. "Seaborne Contacts between the Aegean, the Balkans, and the Central Mediterranean in the 3rd Millennium BC: The Unfolding of the Mediterranean World." In *BABS*, 3–23.
- Marinatos, Spyridon. 1970. "Further News from Marathon." *AAA* 3: 153–66.
- Merkouri, Christina. In press. "MH III/LH I Pottery from Vivara (Gulf of Naples, Italy): A Contribution to the Understanding of an Enigmatic Period." In *Mesohelladika*.
- Milka, Eleni. In press. "Burials upon the Ruins of Abandoned Houses in the MH Argolid." In *Mesohelladika*.
- . n.d. "An Analysis of Mortuary Practices in MH Lerna." Unpublished paper.
- Müller, Sylvie. 1989. "Les tumuli helladiques: où? quand? comment?" *BCH* 113: 1–41.
- Mylonas, G. 1975. *To dytikon nekrotafeion tis Elefsinos*. 3 Vols. *Vivliothiki tis en Athinais Archailogikis Etaireias* 81. Athens: Archailogiki Etaireia.
- Nordquist, Gullög C. 1987. *A Middle Helladic Village: Asine in the Argolid*. Studies in Ancient Mediterranean and Near Eastern Civilization 16. Uppsala: Boreas.
- . 1995. "Who Made the Pots? Production in the Middle Helladic Society." In *Politeia*, 201–207.
- Philippa-Touchais, Anna. In press a. "Settlement Planning and Social Organisation in Middle Helladic Greece." In *Mesohelladika*.
- Philippa-Touchais, Anna. In press b. "Les tombes intra muros de l'Helladique Moyen à la lumière des fouilles de l'Aspis d'Argos," in A. Banaka and S. Huber (eds.) *Sur les pas de Wilhelm Vollgraff. Cent ans d'activités archéologiques à Argos, Recherches Franco-Helléniques* 4.
- Philippa-Touchais, Anna, Gilles Touchais, Sofia Voutsaki and James Wright, eds. In print. *Mesohelladika*.
- Pomadère, Maia. In press. "De l'indifférenciation à la discrimination spatiale des sépultures? Variété des comportements à l'égard des enfants morts pendant l'HM–HR I." In *Mesohelladika*.
- Rambach, Jörg. 2007. "Investigations of Two MH I Burial Mounds at Messenian Kastroulia." In *MH Pottery*, 137–50.
- Renfrew, A. Colin. 1972. *The Emergence of Civilisation: The Cyclades and the Aegean in the Third Millennium B.C.* London: Methuen.
- Ruppenstein, Florian. In press. "Gender and Regional Differences in Middle Helladic Burial Customs." In *Mesohelladika*.
- Rutter, Jeremy B. 1990. "Pottery Groups from Tsoungiza of the End of the Middle Bronze Age." *Hesperia* 59: 375–458.

- . 2001. "The Pre-palatial Bronze Age of the Southern and Central Greek Mainland." In *Aegean Prehistory*, 95–156.
- . 2007. "Reconceptualizing the Middle Helladic 'Type Site' from a Ceramic Perspective: Is 'Bigger' Really 'Better'?" In *MH Pottery*, 35–44.
- , and Carol W. Zerner. 1984. "Early Hellado-Minoan Contacts." In *Minoan Thalassocracy*, 75–83.
- Sarri, Kalliope. 2007. "Aeginetan Matt-painted Pottery in Boeotia." In *MH Pottery*, 151–66.
- Shelton, Kim. In press. "Living and Dying in and around Middle Helladic Mycenae." In *Mesohelladika*.
- Sherratt, Andrew, and Sue Sherratt. 1991. "From Luxuries to Commodities: The Nature of Mediterranean Bronze Age Trading Systems." In *Bronze Age Trade*, 351–86.
- Spencer, Lindsay. In press. "The Regional Specialisation of Ceramic Production in the EH III through MH II Period." In *Mesohelladika*.
- Theodorou-Maurommatidi, Anthi. In press. "Defining Ritual Action: A Middle Helladic Pit at the Site of Apollo Maleatas in Epidauros." In *Mesohelladika*.
- Touchais, Gilles. 1998. "Argos à l'époque Mesohelladique: Un habitat ou des habitats?" In *Argos et l'Argolide: Topographie et urbanisme*, ed. Anne Pariente and Gilles Touchais, 71–84. Paris: de Boccard.
- Triantaphyllou, Sevasti. In press. "Prospects for Reconstructing the Lives of Middle Helladic Populations in the Argolid: Past and Present of Human Bone Studies." In *Mesohelladika*.
- Vianello, Andrea. 2005. *Late Bronze Age Mycenaean and Italic Products in the West Mediterranean: A Social and Economic Analysis*. BAR-IS 1439. Oxford: Archaeopress.
- Voutsaki, Sofia. 1997. "The Creation of Value and Prestige in the Late Bronze Age Aegean." *Journal of European Archaeology* 10: 34–52.
- . 1999. "The Shaft Grave Offerings as Symbols of Power and Prestige." In *Eliten in der Bronzezeit: Ergebnisse zweier Colloquien in Mainz und Athen*, ed. Imma Kilian-Dirlmeier and Markus Egg, 103–17. Monographien des Römisch-Germanischen Zentralmuseums 43. Mainz: Römisch-Germanisches Zentralmuseum.
- . 2001. "The Rise of Mycenae: Political Interrelations and Archaeological Evidence." *BICS* 45: 183–84.
- . 2004. "Age and Gender in the Southern Greek Mainland, 2000–1500 BC." *Ethnographisch-archäologische Zeitschrift* 46(2–3): 339–63.
- . 2005. "Social and Cultural Change in the Middle Helladic Period: Presentation of a New Project." In *Autochthon*, 134–43.
- . In press. "The Domestic Economy in MH Asine." In *Mesohelladika*.
- . Forthcoming. "Houses and households in MH Lerna." *Hesperia*.
- , Albert J. Nijboer, and Carol Zerner. In press. "Radiocarbon Analysis and Middle Helladic Lerna." In *Mesohelladika*.
- , Sevasti Triantaphyllou, and Eleni Milka. 2005. "Project on the Middle Helladic Argolid: A Report on the 2004 Season." *Pharos* 12: 31–40.
- Warren, Peter, and Vronwy Hankey. 1989. *The Absolute Chronology of the Aegean Bronze Age*. Bristol: Bristol Classical Press.
- Whittaker, Hélène. In press. "Some Thoughts on Middle Helladic Religious Beliefs and Ritual and Their Significance in Relation to Social Structure." In *Mesohelladika*.
- Whitelaw, Todd. 2000. "Settlement Instability and Landscape Degradation in the Southern Aegean in the Third Millennium BC." In *Landscape and Land Use in Postglacial Greece*, ed. Paul Halstead and Charles Frederick, 135–61. Sheffield Studies in Aegean Archaeology 3. Sheffield: Sheffield Academic Press.
- Wide, Sam. 1896. "Aphidna in Nordattika." *Athenische Mitteilungen* 21: 385–409.

- Wright, James C. 2001. "Factions and the Origins of Leadership and Identity in Mycenaean Society." *BICS* 45: 182.
- . 2004a. "Comparative Settlement Patterns during the Bronze Age in the Northeastern Peloponnesos, Greece." In *Side-by-Side Survey: Comparative Regional Studies in the Mediterranean World*, ed. Susan E. Alcock and John F. Cherry, 114–31. Oxford: Oxbow.
- . 2004b. "The Emergence of Leadership and the Rise of Civilization in the Aegean." In *Emergence of Civilisation Revisited*, 64–89.
- Zangger, Eberhard. 1992. "NL to Present Soil Erosion in Greece." In *Past and Present Soil Erosion: Archaeological and Geographical Perspectives*, ed. John Boardman and Martin Bell, 133–47. Oxbow Monograph 22. Oxford: Oxbow.
- Zavadil, Michaela. In press. "The Peloponnese in the Middle Bronze Age: An Overview." In *Mesohelladika*.
- Zerner, Carol W. 1979. "The Beginning of the Middle Helladic Period at Lerna." PhD diss., University of Cincinnati.
- . 1993. "New Perspectives on Trade in the Middle and Early Late Helladic Periods on the Mainland." In *Wace and Blegen*, 39–56.

The more elaborate and monumental corridor houses begin to appear on the mainland later, in Early Helladic II (ca. 2900–2400 BC). Although once believed to be limited to the “House of the Tiles” at Lerna in the southwestern Argolid, more examples of this form have been detected, most notably at Kolonna on the island of Aegina.

The House of the Tiles was named for the enormous quantity of fired clay roof tiles associated with the building. It was built of mud brick over a substantial stone foundation course (ca. 12x25 m), with traces of wood-sheathed doorjambs and stucco-plastered walls in some rooms. It was two stories high, as indicated by traces of stairways, and may have had several verandas upstairs, partially covered by a pitched roof, as suggested by Shaw (1990). The House of the Tiles was preceded by an earlier structure of similar type, House BG. These buildings sometimes also incorporated elaborate clay hearths that are decorated with stamped-seal impressions.

In addition, while monumental fortifications typify the mainland, they are well known in the Cyclades during the EBA as well. These fortifications were characterized by thick, stone-built walls; round (Lerna, Kastri) or square (Troy, Poliochni) towers; heavily protected and/or hidden entranceways (Preziosi and Hitchcock 1999). Dwellings were characterized by groupings of rooms into what may have been compounds for extended families, separated by alleys, streets, or courtyards. Burial architecture was simple, consisting of rectangular cists lined with stone slabs.

MIDDLE HELLADIC ARCHITECTURE

On the mainland, cities were located on citadels from at least the Middle Helladic period. Early examples of the prototypes for Mycenaean palaces may be proposed for the MH through LH II periods. Among them, House D at Asine is the most convincing. It is composed of a rectangular hall and porch but lacks the column bases and hearth of a canonical *megaron* (see the following section). Other early structures that are worthy of mention include a Middle Helladic building with hall and porch at Eutresis; Building F at Krisa in Phocis, which was composed of a hall with ancillary chambers and side corridor as early as LH I; a large LH II hall with two preserved column bases at Kakavatos in Elis (Barber 1992); the MH settlement at Kolonna on Aegina, where a reused ashlar block with double-ax “mason’s mark” hints at a Cretan connection (Niemeier 1995); and a substantial MH building at Plasi (Marinatos 1970), which features a rectangular hall rather than the apsidal hall more common to this period.

The LH II building known as Mansion I at the Menelaion in Laconia is the earliest building of some importance on the mainland. It was a hall-centered building with a porch and a forehall, as well as rear and side chambers accessed by circulatory corridors. Its carefully rendered foundation beddings anticipate the Mycenaean palaces of the 13th century BC. Mansion I and its successor,

Mansion II, contain some of the earliest ashlar blocks on the mainland in the form of reused poros blocks, which imply the presence of an earlier, hypothetical building dubbed the "Old Menelaion" (also Catling 1976–1977).

CHARACTERISTICS OF MYCENAEAN PALACES

Mycenaean palaces of the Late Helladic III period are best known from Pylos, Mycenae, and Tiryns, while less typical variants are known from Midea and Gla. Thebes and Orchomenos are only partially preserved, and the presumed Mycenaean palace at Athens was obliterated by later structures. In terms of design, the main Mycenaean palaces included a core set of recognizable architectural features and modules arranged in a set pattern, additional recurring features that were deployed in a varied syntax, and unusual elements that were site specific and formed the central part of a larger compound that included buildings unique to each site. This is most clearly illustrated at Tiryns and Pylos and to a lesser extent at Mycenae, where much of the palace was lost over a precipice.

The core element of the Mycenaean palace is the *megaron*, or hall. This is generally not very large and would have fit easily within the central court at Knossos. It consists of a hall, a forehall, and a porch of rectangular outline with two columns in *antis* to support the roof. Both the forehall and the porch are approximately one-half the depth of the inner hall. The internal arrangement of the megaron was dominated by a monumental circular hearth decorated with painted plaster and surrounded by four columns. The best-preserved hearth is at Pylos and is ca. 4 m. in diameter with an inner ring of 3 m. It is decorated with a painted stucco design depicting a running spiral motif around the top and a flame pattern around the side. There, the columns probably supported a clerestory with a balcony to admit light and draw off smoke through a two-part clay chimney found in the excavations. The megaron frequently had rear chambers, with side corridors giving access to smaller, square service rooms. All megarons incorporate variations of this basic arrangement.

Most dominant among the additional recurring features alluded to earlier is a smaller, subsidiary megaron that is frequently referred to as a "Queen's" megaron by analogy with Evans's suggestions for Knossos. At Tiryns, this feature is located to the northeast of the palace across a court, though still within the confines of the palace. In contrast, at Pylos this feature is tightly incorporated into the fabric of the palace and is located to the south of the east row of side chambers and on the east end of the courtyard leading into the palace. An H-shaped *propylon* with a central doorway and one or two columns between projecting *antae* is another characteristic feature. Layers of plaster around the column bases at Pylos preserved impressions of fluted wooden columns. The propylon gives access to a colonnaded courtyard that leads to the palace at both Pylos and Tiryns. Tiryns had an additional outer courtyard and

on the mainland (Andrikou 1998). Figurines of Troadic and Cycladic inspiration produced in Crete show that people and ideas traveled between these areas of the Aegean in the EBA (Branigan 1971) (figures 16.1.6, 16.1.8, 16.2.3).

MIDDLE BRONZE AGE

Figurine production diminishes in the Cyclades and the mainland in the Middle Bronze Age, whereas it flourishes in Crete. In the Protopalatial (MM I–II) period, thousands of terracottas were dedicated at peak sanctuaries located on mountaintops. Finds include human and animal figurines and votive limbs. Mount Jouktas, for example, produced far more male than female figurines. Among other votives were human heads, hands, and torsos; sheep/goats, pigs, birds, snakes, and bucrania; clay balls, floral branches, women in childbirth, and phalloi.

Similar finds were made at Petsophas above Palaikastro within the enclosure wall of the sanctuary and in the rocks and crevices outside the confines of it. Male and female are differentiated by their gestures: The males fold their hands on the chest, the females extend their arms upward or outward (figures 16.1.10, 16.1.11).

At the small rural sanctuary at Atsipades, hundreds of clay phalloi were found. Rethemiotakis (1998, 51) believes the votives were dedicated by farmers and shepherds asking the god to intervene and protect plants and animals. Watrous (1995, 402) interprets them as part of a cult concerned with male and female maturation. While figurines were repeatedly deposited in the peak sanctuaries, few have been excavated in domestic contexts—at Malia, Tylissos, Vasiliki, at the farm house at Khamaizi—and they are rare among tomb offerings (figure 16.1.12).

LATE BRONZE AGE

At the end of the Protopalatial and beginning of the Neopalatial (MM III–LM IB) period, the production of terracottas diminishes markedly. Bronze and ivory are favored, while clay figurines imitate examples in those materials. Well more than one hundred bronze Neopalatial human figurines have been excavated in peak sanctuaries, caves, palaces, and villas. They are distinguished by at least eight different gestures: ‘the Minoan salute,’ or one hand on the forehead; both arms bent toward the face, placed on the hips, or folded or crossed on the chest; one on the chest and the other at the side (Hitchcock 1997) (figure 16.2.5).

The production and distribution of bronze was controlled by the palace. The high quality of workmanship, evident in the detailed and possibly individuating features of the figurine from Kato Symi, strengthens the argument that the owners