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The Sanctuary of the Divine Palikoi
(Rocchicella di Mineo, Sicily):
Fieldwork from 1995 to 2001
LAURA MANISCALCO AND BRIAN E. MCCONNELL

Abstract
This report details the results of past research and current excavations at the Sanctuary of the Divine Palikoi in eastern Sicily, where fieldwork conducted between 1995 and 2001 has yielded remains of two stoas and a hestiaiterion of the fifth century B.C., structures of the Archaic period, and evidence of occupation in the Paleolithic and Neolithic periods and the Sicilian Bronze Age. Literary sources tell us that in the mid fifth century B.C. the Sikel leader Duceetius founded a city, which he called Palikê, near the sanctuary and that he also created a short-lived federation of Sikel cities that challenged the hegemony of Syracuse and other coastal Greek cities. The sanctuary may have functioned as an alternative center of social and political power from the fifth century B.C. to the second century B.C. when it became a rallying point for runaway slaves.*

Ancient Palikê (modern Rocchicella di Mineo) is located in the Caltagirone river valley south of the plain of Catania in eastern Sicily. It is articulated in three areas: an open plain where a notable hydrogeological phenomenon came to be the core of an important sanctuary of the indigenous Sikel people, a service area for this sanctuary where structures were built on a rising slope toward a large open grotto in the flank of a low hill, and the relatively level summit of the hill, which was the site of an extensive settlement. The name Palikê is associated with that of Duceetius, the leader of an indigenous Sikel confederation that challenged the Greeks of Sicily in the mid fifth century B.C., and it is the story of Duceetius that has played a fundamental role in determining the site’s historical significance. Nevertheless, the archaeological record reveals a long history of human activity and stratigraphy extending from the Paleolithic period through late antiquity. This report, which focuses on the area of the Grotto, offers a new assessment of the historical context in which this center developed and maintained its unique identity despite the absorption of Sikel society into the currents of Greek and Roman civilization.

THE SANCTUARY AND “THE CRATERS”

The ancient historian Diodorus Siculus (11.88.6–11.90.2), writing in the first century B.C., describes the revolt of Duceetius, who founded a city at the site of the ancient sanctuary of the divine Palikoi, twin brothers sacred to the indigenous Sikel people.² Diodorus’s vivid description pays routes in this area, see Adamesteanu 1962, 174–81.

¹ Historical analyses of Duceetius may be found in Consolo Langher 1996, 246–51; 1997, 61–9. For historical summaries on the cult of the Palikoi, see Holm 1870, 75–9; Freeman 1891, 517–30; Pace 1945, 520–7; Ziegler 1949a, 1949b; Bello 1960; Manni 1983; Meurant 1998. The Sanctuary of the Divine Palikoi is thought to have been the setting for one of the four acts of Aeschylus’s lost play, The Women of Atria (La Rosa 1974; Lucarh 1994, 342–4; Corbato 1996). The etymological derivation of the name Palikoi has been the subject of speculation since antiquity. Macrobius (Sat. 19.15–17) states that it comes from the Greek Παλικῶν, and recounts the story of Thalia, a river nymph who bore to Zeus twin sons but who for fear of Hera’s wrath hid them beneath the earth—the bubbling lakes would represent the return of Thalia’s sons to the surface. An interesting hypothesis (Croon 1952), on the other hand, focuses on the root pal in Palikoi and relates it to Latin words for “gray” or “muddy” in connection with the physical aspect of the “boiling” lakes themselves. Although it is customary and convenient to describe the lakes as boiling (for the apparent activity), the actual nature of the hydrogeological phenomenon is caused as much by chemical as by thermal properties (Ponte 1934).

²This river is also called the Margi. For an analysis of ancient

particular attention to the unusual geological phenomenon that was the focus of their cult: “First of all, there are the Craters which, although they are not large, they yet hurl up violent geysers from an unspeakable depth... the surge of the waters is so amazing that the event seems to be due to a divine force.”3 The geysers of water were often accompanied by a thunderous roar, which came to be reiterated as an ancient wonder by later authors.4 Other authors state that it was actually dangerous to be near the lakes—Hippys of Rhesion in the fifth century B.C. wrote that one could walk about them without harm but that anyone who lay down on the ground would die.5 The lasting fame of the shrine stemmed from the sacrality of the oaths that were made in its temenos and the severity with which perjurers were punished by death or blinding.6

The presence of the boiling lakes may have conditioned occupation patterns in the area at an early date. The danger around the lakes described by Hippys of Rhesion most likely was caused by the presence of gases especially at ground level, and this danger is consistent with conditions known at similar lakes, even in recent times.7 For this reason, higher ground may have been sought for stable occupation, and in fact the earliest occupation at the site, which dates to the Paleolithic period, is located in front of the grotto above the actual plain and at a distance from the area of the former lakes. The favorable conditions of this location—a grotto protected from the winds and open toward the south onto a wide plain near the Margi river—would suggest the possibility of a permanent settlement rather than a seasonal one or one tied to the movement of game animals.

Literary sources describe several important events in the history of ancient Paliê. Hippys of Rhesion, in connection with an Olympic date in the late seventh century B.C. (636–652 B.C.), comments that the sanctuary of the Divine Palikoi was “built up” (οἰκοδομήθη)7. In the mid-fifth century B.C., according to Diodorus Siculus,8 Duce-tius transferred the population of Menae, his own native city, to a place near the “precinct” (τέμενος) of the Palikoi, and he apportioned the surrounding land (κατεκληρύσας τὴν ὠρον χώραν) to a multitude of colonists (τὸ πλῆθος τῶν οἰκήτων).9 Duce-tius’s choice for a foundation was logical—he himself was from Menae, the sanctuary of the Divine Palikoi was already the indigenous sanctuary par excellence in eastern Sicily, and its location in the center of the Sikel heartland was easily defensible.10 Diodorus relates that the city Paliê was destroyed after only a brief period of existence, and that even in his time, some four centuries after the fact, it remained uninhabited (οἰκίτης).11 The Sanctuary of the Divine Palikoi, on the other hand, seems to have survived the fall of the city Paliê, and it continued to serve as a place to which slaves could escape from cruel masters.12 Diodorus goes on to say that during the Second Slave Revolt a band of slaves departing from Syracuse took refuge there and that Salvius, another slave who led a siege of Morgantina and over-ran the countryside as far as the plain of Leontinoi, made a thank-offering to the Divine Palikoi for his military victory and was crowned king with the new name Tryphon.13

What literary sources do not tell us explicitly about the Sanctuary of the Divine Palikoi and the city Paliê is the way in which each was administered and the social, political, and religious func-

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1Diod. Sic. 11.89.2–3, authors’ translation.
2See Diod. Sic. 11.89.3–4; Pseudo-Aristotle, Mir. 57.
3Text of Hippys is preserved among the marvels of antiquity described by Antigonus Carystius (Hist. mir. 121): “Πηνυς δὲ ὁ Ῥηγίνου περὶ τῶν λεγομένων τόπων φθείρειν τὰ ἐμπίπτοντα τοιοῦτον τῷ γράφειν, φοβὸν ἐν Ἀθήναις εἰς βοιολέος Ἐπανετός, ὠλυμπίαδος ἑκτῆς καὶ τριακοτης (656/3), ἐν Ἦ Αρετήμας Ἀκόν νεκτάτων, τῆς Σκηλίας ἐν Πολυκοῖς οἰκοδομήθη τόπον, ἐκ ὧν ὡσις ἐν εἰλέθη, εἰ οὐκομετοκύθη, ὁ πινετοκεῖκος, εἰ δὲ περιπατητό, οὐδὲν πάσαν.

See also Jacoby 1950, 542, nr. 554 (3). Other editions of this text appear in ΠΑΡΑΔΟΧΟΓΡΑΦΟΙ 1963, 90, CXXI (133) and Rerum Mirabilium Collectio (Musso 1985, 56, 121 [133]).
4Diod. Sic. 11.89.5 and Pseudo-Aristotle, Mir. 57.
5The presence of carbon dioxide and other gases at low levels effectively deprives one of necessary oxygen and therefore leads to asphyxiation.
6Hippys of Rhesion, supra n. 5.
7Diod. Sic. 11.88.6.
tions that related the two. Although Diodorus writes in the same paragraphs about the creation of a league (οὐντεκλέατο) of Sikel cities, he never actually states that the Sanctuary of the Divine Palikoi or even that the city Paliḳè was the seat of this union (even though one could easily assume so). Likewise, the precise location Salvius’s dedication and coronation, apart from having taken place in the territory of Leontinioi (which could be conceived as including Paliḳè), is not specified, although the Sanctuary of the Divine Palikoi would have been most appropriate for such ceremonies. Such information can only be deduced from archaeological discoveries on site examined in the context of similar evidence recovered elsewhere in Sicily and other relevant locations.

Early Exploration and Current Excavation at Rocchicella

Rocchicella has been known as an archaeological site since the 16th century when the Dominican monk Tommaso Fazello identified it as Paliḳè. He also identified the nearby Naftia Lake as the boiling craters of the Palikoi, which could be seen easily until the 1930s when land reclamation and industrial projects began to tame their characteristic jets of carbon dioxide. In the 18th century the famous French illustrator Jean Houel visited the site and produced several panoramic illustrations in gouache and aquatint. A rare picture from 1887 shows one of the lakes before drainage in the 1930s and later industrial transformation (fig. 1). In the early 20th century, Paolo Orsi reported the finding of a Sikel inscription, now lost, from Paliḳè. It was not until the 1960s, however, that actual survey and excavation of the site were undertaken first by Gino Gentili and later by Paola Pelagatti and Luigi Bernabò Brea. This phase of research saw the identification of a polygonal wall near the summit of the hill and the recovery of a number of painted architectural terracottas from the area of the city itself. Further exploration of the city area by Paola Pelagatti led to the creation of the first archaeological plan. Gentili also published a bronze belt with an inscription in Greek, found just outside the city wall along the northeastern side of the hill. It reads:

ΦΑΙΚΟΝ ΑΠΟ ΤΟΝ ΚΕΝΤΟΡΙΠΕΝΩΝ | ΑΝΕΟΘΕΚΕ ΠΑΣΙΟ ΘΕΟΙ

Phaikon dedicated (this belt taken) from the (soldiers) of Kenturipe to all the gods.

On comparison with similar artifacts from the Sabellian area in central Italy, this belt and its inscription have been dated to the fourth century B.C. It suggests the presence of mercenaries in eastern Sicily and indicates that Paliḳè was a cult center where war-spoils could be dedicated in a manner similar to the pan-Hellenic sanctuaries of Greece.

Paola Pelagatti also conducted brief excavations in the area of the large grotto on the southern side of the hill facing the former Boiling Lakes. There she found a structure with a roughly square plan in volcanic breccia, which she identified as a temple of the Archaic period. Paleolithic levels were found beneath this structure, and Luigi Bernabò Brea published them along with Neolithic and Copper Age materials found in fields nearby.

Renewed archaeological exploration at Rocchicella began in 1995 when the recently formed Superintendency of Catania conducted a series of archaeological tests on the hilltop, in front of the grotto, and in other areas. This investigation confirmed the existence of a city of the fourth century B.C. on the hilltop with a regular planned layout and an

15 Fazello 1558, dec. I 1.3, cap. 2; see also Cluverius 1659, 195–200. The Prince of Biscari, Ignazio Paternò Castello, on the other hand, suggested that Sanctuary of the Divine Palikoi be located in Contrada Bella Cortina near the modern city of Paternò (Paternò Castello 1817, 63–9).
16 The chemical composition of the gases emitted by the lakes and their industrial potential were recognized in the 1930s by Giuseppe Ponte; see Ponte 1954. Currently, an industrial establishment that captures the gases and refines them for use in carbonated beverages occupies the location.
17 Houel 1785, 57 ff., pl. 177.
18 The authors wish to thank S. Interlandi for obtaining a print of this image.
19 Orsi 1900.
20 This plan appeared first in the compendium Sicilia Antica (Sicilia Antica 1980, 756, fig. 226) and again in smaller format in an archaeological guidebook (Coarelli 1984, 202).
21 Landowner Sig. A. Tranquillità discovered this belt, and it is now on display in the Syracuse Museum. See Gentili 1962.
22 Phaikon must have been one of these mercenaries, and numerous coins with the legend Kainon found at Paliḳè can be explained in this manner (from an official report on the coins from Rocchicella prepared by Dott.ssa Emilia Oteri). For the Sabellian associations of this belt, see Tagliamonte 1994, 148. We may compare this dedication to the well-known dedication at Olympia of a helmet taken from the Etruscans at the Battle of Cumae. During the Sicilian Slave Revolts at the end of the second century B.C., a leader of the slaves, Salvius, dedicated a purple robe captured from the Romans (Diod. Sic. 36.7.1 and supra).
23 This excavation was reported in brief annual summaries of archaeological fieldwork (Pelagatti 1962, 1966), but a complete discussion of the findings has yet to be published.
24 See Bernabò Brea 1965.
enclosing fortification wall. The remains of the fourth-century B.C. city seem to postdate cuttings in the bedrock and earlier structures beneath the buildings and the streets of this city, which follow a different layout and extend beyond the limits of the fourth-century B.C. city wall. The fact that the so-called polygonal wall, which Gentili identified as a defensive work, encloses both the summit of the hill and several ashlar blocks that probably once were part of the foundations of a small temple suggests that it actually defined the temenos of a sanctuary, thus transforming the summit of Rocchicella into an acropolis.

Even more surprising was the discovery in 1995 of a monumental building in the area of the Grotto, just north of the complex excavated by Dott.ssa Pelagatti. Subsequent excavations in 1996, 1997, and a major campaign from 2000–2001 have afforded a more complete view of these structures and provided a clearer notion of the architectural layout of this area, which we interpret to be a sanctuary (fig. 2). Legislative control of large tracts of land around the site now protects the archaeological remains, and an interpretive center is being created in the historic farmhouse that is located at the base of the Grotto.

SEQUENCE OF OCCUPATION

Exploration and excavation has revealed a sequence of settlement at the site far longer than that recorded in historical sources. The following is an overview.

Paleolithic Period

Epipaleolithic strata, characterized by the strong red color of the soil produced by a high concentration of iron, are present in the area in front of the Grotto, and they have been investigated in two sectors. From these strata excavators recovered a wide variety of flint and quartzite tools, faunal remains, and botanical remains.

In trench 4 the tools (grattatoi, raschiatoi, and denticolati) are attributable to the so-called Undifferentiated Epipaleolithic. In trench 22 the tools (microliti) are attributable to the Souvetrian (F. Nicoletti).

The official report on faunal remains by C. Di Patti and L. Galletti of the Museo Geologico C.G. Gemmellaro dell’Università di Palermo identifies bos primigenius, equus hydruntinus, and perhaps cervus elaphus.

The official report on botanical remains by E. Castiglioni and S. Di Martino of the ARCO Coopertativa ricerca archeobiologica identifies two large seeds of leguminous plants (pisum/lathirus).

Excavation and study of this area has been entrusted to Spencer Pope. The authors wish to thank the Center for Old World Archaeology and Art of Brown University and student volunteers, including Zoe Kontes, for their support.

Roger Wilson identifies the blocks as the base of an altar (Wilson 1990, 278–9).

Progress reports on these excavations were presented at the annual meetings of the Archaeological Institute of America in 1997 (L. McConnell 1997), 1998 (L. Maniscalco and B.E. McConnell 1998), and in the course of a special colloquium held at the 102nd Annual Meeting in 2001 (B.E. McConnell et al. 2001). A preliminary report appears in Maniscalco and McConnell 1997–1998.
Radiocarbon dates place these strata between the 11th and the 10th millennia B.C. In the stratum immediately above these, a burial of an infant was found. Cut twice by later strata, this burial, a small, simple pit with a few stones around it, yielded the bones of the complete, frontal portion of a skull, a clavicle, and the small bones of an infant 3–5 months old with a few flint tools buried as a funerary assemblage.\textsuperscript{31}

\textit{Neolithic and Bronze Age}

The first traces of stable settlement date to the Neolithic period, and they consist of a terracotta pavement with two terracotta platforms set on it. The limited dimensions of the trench do not permit us to know whether this is a portion of a hut or perhaps an open area. The presence of grinding stones on one of the platforms points to a domestic use of the structures. The next architectural re-

\textsuperscript{31} Official report on the human skeletal remains by Prof. F. Mallegni of the Università di Pisa.
mains date to the Early Bronze Age (ca. 2000 B.C.), and they consist of a hut with a circular plan in the area of Complex P (fig. 3). Cut by the lower wall of Complex P (wall 49), the wall of the hut appears to have been built carefully in large stones of volcanic breccia, and it is preserved in two courses.

Occupation during the Sicilian Late Bronze Age is well represented by many rock-cut tombs, which were carved into the cliff face of the Grotto and into the surrounding slopes of Rocchicella. All of the tombs had been plundered in the distant past, but their architecture—three of them have a circular plan, a conical section, and a bench around the interior—is similar to that of Late Bronze Age tombs at Caltagirone. An assemblage of four Late Bronze Age vessels along the west side of the Grotto may indicate that the area had been used for funerary or other ritual purposes.

We cannot say with any certainty when the cult of the Divine Palikoi first appeared. Cults connected with geological phenomena in Sicily are well attested not only in historic times, but also at many prehistoric sites.

**Archaic Period**

The earliest architectural remains in the Grotto area, apart from the prehistoric structures, date to the Archaic period, ca. seventh century B.C. (fig. 4). These structures have been explored only partially. Although the remains were cut by later walls, a 4 m wide room was identified (not shown). A change in the overall orientation of buildings to north–south and east–west axes appears in the later Archaic remains. Factors for the reorientation may include both a better layout with respect to the immediate slope of the Grotto and a possible relation to the boiling lakes, which clearly is significant in later structures (infra).

The best known structure of the Archaic period, Building A, was built in the center of the Grotto on a level surface cut deep into the protohistoric strata in that sector. The removed soil with its protohistoric contents was deposited just below this level in order to construct a terrace on the steep slope in front of the Grotto (fig. 5). The building appears to have been constructed in two phases. The first phase consists of a rectangular room, 5.5 m long and 4.5 m wide, with an entrance on the short, west side and walls composed of small and medium-sized stones arranged in two rows (a doppio paramento). In the second phase, the north wall was reinforced and lengthened to a total of 8 m using a different masonry technique: limestone slabs. The plan of the

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33 Similar deposits of ceramic vessels without actual burials are found in the context of Late Bronze Age necropoleis at Paternò (Maniscalco 1997).

34 Late Neolithic settlements in Sicily seem to have a special association with water and mud-springs, as demonstrated by the Calcarìa on Panarea in the Aeolian islands and the Salinelle at Paternò (Maniscalco 1996, 1999a).
structure thus takes on the form of a small temple in antis with one of the short sides set obliquely, probably to account for the extreme natural drop. For this reason, in fact, the southern wall of the cella is in a different masonry technique from that of the other walls, which are built in limestone blocks; instead, it consists of large blocks of volcanic rock (vulcanite) and served also as a kind of terrace wall. Numerous stone slabs were found within the porch in antis outside of the cella and on the eastern side of the building. Another, similar slab found within the cella near the entrance had a concave impression, which may have served as the base for a wooden pole. These slabs may be the remains of what was originally a stone flooring.

Unfortunately, this building was found to be almost empty, but we know that it was destroyed already in the sixth century B.C. from the presence of pottery fragments from the Archaic period in its own destruction stratum. In the foundation trench of the northern wall of this building, a Cycladic cup was found dated to the beginning of the seventh century B.C. Even though the central position of this building and architectural details, such as the presence of a stone flooring and, perhaps, a wooden pole, lead us to think that it had a cult function, the dimensions do not seem to correspond to those of a small temple (sacellum). Small temples of the seventh and sixth centuries B.C. in Sicily typically are over 15 m long, although some smaller buildings are attested. In reality, the longer walls of the structure at Rocchicella seem to continue to the east, where other slabs were found. Perhaps it is possible that the eastern side of this structure was transformed by the later structures of Complex P and that the building originally was longer than is apparent from the archaeological data.

Fifth Century

The primary structure from the fifth century B.C. is the Hestiaterion, which was built most likely in connection with two stoas: Stoa B and Stoa FA (fig. 6). The fact that these buildings maintained the existing east–west and north–south orientation suggests that other, earlier structures with that same orientation were already standing. Stoa B, the floor of which was cut in part from the underlying bedrock and was built in part on landfill, was kept dry by a large channel cut into the bedrock immediately above it. The building’s central axis was in alignment with the central axis of the Hestiaterion, and it may have had a colonnade along the southern side roughly 1.75 m above the level of a street or passageway running just below it. For this reason it seems likely that the building was entered on the eastern side.

35 See Romeo 1989. Sacello E at Naxos is 8 m long. The small North Temple at Megara Hyblaea is 9.6 m long.
Stoa B may have been part of a larger complex that included other structures across the street. Large pithoi found in room β6 may indicate that this building was involved in the collection and redistribution of agricultural products. The careful recovery of mono-valve shellfish and a bronze “shell-shucker” near the in situ table supports in this wide room suggests that foods were eaten in this area, as well (fig. 7). This building, standing almost as a barricade along the slope of the Grotto, served as an architectural interface between public areas down toward the sacred plain and areas of more restricted access (where the elegant Hestia-terion was located) up toward the Grotto.

Hellenistic and Roman Periods

The impressive Complex P was built above the destruction level of Stoa B. The base wall, wall 49, extends for at least 50 m across the talus slope of the Grotto, effectively utilizing the back wall of Stoa B as a foundation (fig. 8). Complex P is not, as interpreted by Pelagatti, an Archaic building, but more likely a large terrace with its base probably rising to the same level as the street that divided this complex from the Hestia-terion. It may have served as the platform for a southward extension of the Hestia-terion with remarkable affinity to contemporary terraced sanctuaries at Palestrina and Terracina. Unfortunately, mechanical scraping of the talus slope, long before the excavation began, has reduced the height of these walls, leaving gaps in the plan in some places. In front of wall 49, on top of the collapsed ruins of Stoa B, an enormous deposit of pottery and larger terracotta vessels (amphoras and pithoi), and the remains of shells, animal bones, and a bovine skull were found in a dark gray, ashy soil matrix.

The sanctuary remained active through the second or the third century A.D. At least two modifications of the Hestia-terion can be dated to the early and middle Roman empire, including the construction of an enclosure within the central court. Hundreds of pottery sherds pertaining to kitchen and dining vessels recovered from the floor levels of the Hestia-terion show the continuing use of the building as a dining facility. In the fourth century A.D. the Hestia-terion was transformed into a farm complex. This change probably indicates that the area ceased to function as a sanctuary or other public space. Excavated strata, however, show continuity of activity in the area from late antiquity through the 13th century. An apsidal structure, interpreted as an early Christian basilica, was constructed on the remains of the Hestia-terion in about the eighth century A.D. (fig. 9). During the 1960s, several Byzantine tombs were found by chance in the proper-

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36 See discussion infra.
37 Wilson (1990, 278–9) and Bell (1994) debate the presence of Roman remains at Rocchicella. It is now clear that extensive Roman remains are found in the Grotto area, while no Roman remains have been found in the upper areas of Rocchicella where the city is located.
ties bordering Rocchicella, and it is likely that a substantial population still inhabited the area. The Medieval toponym for the boiling lakes, Naftia, seems to have nothing to do with the indigenous and classical tradition that preceded it.38

SETTLEMENT ON THE SUMMIT OF ROCCHICELLA39

The summit of Rocchicella holds remains of a settlement with Archaic and Classical phases and an acropolis at 201 m asl. Damage from clandestine excavations in the 1970s and 1980s has obliterated the archaeological strata. Nonetheless, it was possible to identify portions of houses constructed in so-called woven masonry (muri a telaio).40

The town had a regular, planned grid with a main street, about 2.5 m wide, oriented north–south and descending from the acropolis in the direction of the city wall that protected the settlement on its eastern side.41 The eastern face of the wall (1 m in height and 17 m in length) in the woven masonry technique is characterized by six large blocks in limestone and one in basalt, probably reused from earlier structures, which were set vertically at intervals. Some of the facing had fallen away to reveal about 1 m behind it the presence of a second wall-facing in regular blocks, perhaps indicating the presence of an earlier circuit wall. This sequence suggests that following the phase built by Ducetius in 453 B.C. there was a destruction, perhaps the one mentioned by Diodorus Siculus (11.90.1–2), with subsequent repair to the fortifications and reconstruction of the buildings in the woven masonry technique, which is the easiest way to build using debris, at the beginning of fourth century B.C.42

Traces of an earlier level, dated to the seventh century on the basis of associated pottery fragments, were found beneath the street surface. For example, a wall in this early level crossed the street found in the later phase, an orientation that indicates a

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38 Although this toponym would seem to be Greek in origin (from νάφθα, see Liddell et al. 1978, 1163), this word does not appear in connection with Rocchicella in any source until the Middle Ages (Arcifa 2001, 297).

39 The investigation of the settlement area began in 1995 with the collaboration of C. Cirelli.

40 The direct translation of the Italian term for this technique is preferable to using the Latin term opus africanum, which is associated more appropriately with buildings of the Roman era.

41 The long city wall was brought to light by the excavations of the 1960s, but it remains unpublished apart from a short description (Gentili 1962, 16).

42 Rocchicella is also one of the locations suggested for the Sikel city Trinakie, which Diodorus Siculus (12.29.2–4) says resisted subjection by Syracuse and consequently was sacked in 440/439 B.C. (Diodorus Budé, 106, n. page 30, ch. 29.2). For the identification of Trinakie instead at Mendolito, see Franco 1999.
very different urban layout. Thus it is clear that the settlement at Palikė existed prior to its so-called foundation by Ducetius and that it survived the fall of his short-lived Sikel state.

Monumental Architecture

Apart from the reference from Hippys above and the passing reference to the “ara Palicorum” in Vergil’s *Aeneid*, which may refer to just that—an altar dedicated to the Divine Palikoi, which must have been located somewhere near the boiling lakes (the spiritual center of the sanctuary)—Diodorus Siculus is the sole literary source regarding the monumental architecture of the sanctuary. Diodorus makes specific reference to:

\[\text{ἔστι δὲ καὶ τὸ τέμενος ἐν πεδίῳ θεοπρεπεὶ κλέμενον καὶ στοάῖς καὶ ταῖς ἄλλαις καταλύσεσιν ἱκανῶς κεκοσμημένον}\]

And there is the precinct lying on a plain fit for a god, (the precinct) which is adorned adequately both with stoas and with other lodgings.

Diodorus then cuts the description short, but he does use the precise architectural term “stoa” and he does refer to other καταλύσεις—lodgings or resting-places. The archaeological remains recovered to date by the excavations of the Superintendency of Catania suggest that most monumental construction took place in the area of the sanctuary, although monumental structures stood also on the summit, or acropolis, of Rocchicella perhaps as early as the Archaic period.

Remains on the Acropolis

Within the confines of a massive wall that runs around the edge of the summit of Rocchicella as a terrace or temenos wall, there are cuttings for the

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43 This settlement may have been the Eryke mentioned in historical sources; see Messina 1967.

44 For the text of Hippys of Rhegion, supra; Verg. *Aen.* 9.584–5: “matris luco Symaethia circum / flumina, pinguis ubi et placabilis ara Palici.” The term “monumental architecture” is used here in reference to any large-scale building, which, whether it be commissioned by a single individual, or a family, or a public body, had general symbolic significance to the immediate community at and/or beyond the site itself.

45 Diod. Sic. 11.89.7. Authors’ translation.


47 Tracts of this wall have been explored at four locations around the summit, and it is clear that there was a continuous enclosure at least on the eastern, northern, and western sides. Discontinuities in the topography of the summit complicate efforts to identify a related wall tract on the southern side.
setting of large ashlar blocks, and some of the blocks themselves, which must have served as the foundations for a major structure (fig. 10). Seven blocks in calcarenite define the eastern side of the structure, while portions of three other blocks were found along the northern side. Setting lines preserved on the surface of two of the blocks in the first group show clearly that they were part of the foundations of a large building designed and constructed course-by-course. Little remains of this building, and an effort to delimit its western and southern sides brought to light smaller Hellenistic buildings that had already obliterated it.

Major effort had been exerted to create a platform that covered an area of at least 22.5 × 10 m. This activity may be associated with deposits containing ceramics of the late seventh and sixth centuries B.C., which may be the remains of a fairly large Archaic sacellum. Furthermore, the location of such a structure on the Rocchicella hilltop would suggest that it was related to a cult of one or more heavenly divinities, as opposed to chthonic divinities, and the reference to “all the gods” on the bronze belt dedicated by Phaikon (supra), which was found in the general area of the summit, may confirm the presence of other cults and cult-places such as this one near the Sanctuary of the Divine Palikoi.

THE GROTTO AREA

From the acropolis one descends to the Grotto by way of a stairway cut carefully into the rock and preserved in at least six tracts as a kind of “sacred way.” The stairs descend in dramatic fashion along the top and around the western side of the Grotto to a street roughly 2.5 m wide with a surface of packed calcarenite chips, which proceeds across the upper slope in a perfect west–east alignment between Complex P and a monumental building that we identify as a hestiaterion.

The Hestiaterion

The Hestiaterion is the best-built structure found to date at Palikè. It is a long building constructed in ashlar blocks, mostly of sandy limestone, that consists of seven rooms set around a central court (fig. 11).

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48 Wilson (1990, 278–9) refers to these blocks as the remains of an altar, which would seem unlikely given the extent of the cuttings.

49 The blocks, ACR2 and ACR3, were found in a position tilted over to the south by relatively recent clandestine exploration, but when they were flipped back in place, reversing the apparent disturbance, the setting lines on each block lined up thus confirming that they were indeed in situ.

50 Comparable structures of the Archaic period are presented by Romeo (1989). The dimensions 22.5 × 10 m are not unusual for this kind of structure, although the actual area of the building above the foundations would be somewhat smaller.

51 Given the topography and the alignments that have been identified so far, possibly two other tracts of stairs may remain to be discovered. Where the terrain descends steeply, the stairs are consistently between 1.29 and 1.33 m wide, while in flatter areas the stairs or level tracts reach 1.85 m in width. Greater variation occurs in the tread-width of each step from about 35 to 55 cm, while the rise of each step remains relatively consistent between about 17 and 25 cm.

52 Both spellings of this word for a dining facility, hestiaterion and hestiatorion, are supported by textual evidence; see Liddell et al. 1978, 698, entry for ἑστιατήριον, τοῦ.

53 In this description of the Hestiaterion, measurements given to the millimeter are considered to be definitive and precise, whereas those given in centimeters or meters are considered to be approximate and are offered for purposes of discussion. Measurements were taken with a Luflin-brand 50 m steel tape marked to the millimeter and plumb-bobs under favorable atmospheric conditions.

Architectural discussion in this report refers to a system of identification which recognizes wall tract, course, and individual block as basic units of analysis. E.g., block II.B.3 is block number 3 located in course B of wall II. As a convention, course 8 is considered to be the highest foundation course, and courses beneath it are identified with double letters.
The facade of this building measures 25.5 m east-west, while the shorter sides of the building measure 11.812 m on the west and 11.8 m on the east.\(^{54}\) Four larger rooms (roughly 5 m\(^2\)) flank the court on its eastern and western sides,\(^{55}\) while three smaller rooms (4 m east-west × 3 m north-south) flank the court on its northern side.\(^{56}\) The interior of the central court (room 2, 13.36 m east-west × 7.212 m north-south) was an open space that gave access to each of the flanking rooms and provided a common area for other functions.\(^{57}\) A heavy, squared block was found in situ in the eastern half of the

\(^{54}\) The difference is primarily a result of the degree to which blocks were finished along the rear of the building, which was hidden against the slope of the grotto.

\(^{55}\) Rooms 1 (4.985 m east-west × 5.03 m north-south) and 4 (4.985 m east-west × 5.25 m north-south) on the eastern flank of the court, and rooms 3 (4.960 m east-west × 4.954 m north-south) and 5 (4.9 m east-west × ca. 5.285 m north-south; room only partially excavated) on the western flank of the court. While the rear pair of side-rooms (rooms 4 and 5) mirror each other in plan, the plan of the forward rooms (rooms 1 and 3) would seem to be identical—the plan of room 3 is the rotation, not the mirror, of the plan of room 1, as one may see in the placement of the asymmetrical doorways. Unfortunately doorways of rooms 1 and 3 were not fully preserved, but the off-center placement may be calculated from the edge of the preserved block and the estimated width, which each preserved doorway block completes in the other doorway. Similar off-center placement of the doorway into a dining room and the rotation in plan of opposite rooms may be seen in many locations, e.g., the hestiateion in the Sanctuary of Asklepios at Troizen, (see Boerker 1983, fig. 13).

\(^{56}\) Rooms 6 (4.220 m east-west × 3.093 m north-south), 7 (4.185 m east-west × 3.076 m north-south), and 8 (4.220 m east-west; north-south measurement unavailable because of incomplete excavation of this room, but it seems to have been roughly comparable to the others).

\(^{57}\) Determining a standard unit of measurement employed in the construction of this building depends on the recognition of significant lengths in the design of both the structure and its components, such as the blocks themselves and the treatment of the blocks. The appeal of the facade as an integral length of 100 units, a sort of hekatopedon, would yield a basic unit of 0.255 m, which is consistent with several other measurements, including the full depth of the structure (roughly 46¼ such units) and the width of the core structure (room 2 with its walls, which would be almost 45 such units). Interestingly, the width of the street in front of the Hestiateion and that of at least some of the streets on the acropolis (2.52 m) seem to maintain this unit as an integral multiple of 10. Nevertheless, other units result in integral measurements, as well. A unit of 0.3 m, based on the height of the step into room 2 from the outside, yields exactly 85 units along the facade of the building, just under 40 units along the shorter side, 48 units in width across the core, and 18.5 units beyond the core across the lateral rooms to the edge of the building. Neither the lengths given for the Attic foot (ca. 0.294 m) nor the Doric foot (0.327 m), nor for other standard Greek units of measurement yield particularly convincing integral multiples. Quantal analysis of fundamental measurements for this building for possible units from 0.2 to 0.4 m, however, did not confirm either the 0.255 or 0.3 units. For the principles and the formula for quantal analysis (Kendall’s formula), see Cherry...
court in line with the wall between rear rooms 6 and 7. If paired with another such block in the western half of the court (i.e., in line with the wall between rooms 7 and 8), then the two blocks could provide bases for pillars or columns to support a roof over the central court and the flanking rooms.

The central court and the three rooms along its northern flank seem to have been the core of this building’s plan, and direct parallels can be established between this core and the plan of a well-known building in the Greek city of Megara Hyblaea, the so-called hestiatorion or prytaneion (fig. 12). The exterior measurements of the core structure at Paliké (14.435 m east–west × 11.8 m north–south) are close to those of its architectural paradigm at Megara Hyblaea (13.96 m east–west × 11.005 m north–south). The existence and the exact length of standard units of measurement in Greek architecture is a complex issue (Coulton 1975; De Waele 1998, 379–84). The complex and often imprecise correspondence of derived foot-units in Greek architecture is explained by De Waele (1988) as the result of site-specific rules in construction and not a standardized system of measurement as we conceive it today. Against this interpretation and in favor of standardized measurement systems is Mertens (1984, 43–5).

It is possible that a “Sikel” foot was employed at Paliké in the same manner as better known Greek units, perhaps even by Greek architects and craftsmen who came to work on this building, as they must have on projects that were commissioned at other non-Greek sites, such as Segesta. Undoubtedly both Sikels and Greeks, and certainly by the fifth century B.C. people with both Sikel and Greek ancestry, must have been drawn already to wherever they could find work, especially on architectural projects. Regarding Greek and non-Hellenic ethnic groups in Elymnian cities, see Gallo 1982; Lejeune 1982; G. Vallet, citing Diod. Sic. (6.20.2: Συρακόσιοι δὲ καὶ ἀπὸ βερβηρῶν τινῶν αὐτὶ ἁρξῆς φέρεται.), discusses the contribution of tribute to Syracuse from the indigenous “barbarians” (i.e., Sikels) and the possibly significant presence of an indigenous workforce in major Greek construction projects, which led to a corresponding transfer of construction skill and experience to projects at indigenous centers (Vallet 1987, 539, 544–7).

In order to understand this parallel, one must consider the measurements not of the interior of room 2 but rather of the interior space plus the flanking walls of the rooms on east and west (as though those flanking rooms were not there) and the complete measurements of room 2 plus the rooms on the northern flank including the rear wall. The fundamental publication of the building at Megara Hyblaea, for which the terms hestiatorion and prytaneion are used, appears in Vallet et al. 1976, 199–202, with plan 4; and Vallet et al. 1983, 62–9. Miller (1978, 229–30) also discusses this building and doubts the identification as a prytaneion. It should be noted that this structure does not seem to be preserved to its original floor level for the irregularities which one may see in both preserved courses of blocks (author’s personal observation).
to such a degree that the basic plan of the hestiaterion at Megara Hyblaea appears to have been adapted at Palikè, with the addition of the four larger rooms on the eastern and the western flanks.

Unlike the hestiaterion at Megara Hyblaea, however, the building at Palikè is preserved above the foundations, so that the wide, monumental step entry to the central court (fig. 13) and the very wide doorways (over 2 m) of the rooms flanking

Fig. 11. Plan of the Hestiaterion as originally constructed. (M. Puglisi)

Fig. 12. Schematic plan of the Hestiaterion at Palikè with core structure indicated

60 The overall measurements at Megara Hyblaea were taken from the course above the lowest foundation, which itself measures 14.195 m east–west × 11.135 m north–south. The interior measurements of the three rooms along the north side from west to east, (a) 3.750 m east–west × 3.215 m north–south, (b) 3.777 m east–west × 2.289 m north–south, and (c) 3.831 m east–west × 3.249 m north–south, are comparable to those of the corresponding rooms at Palikè, also. The author wishes to thank Dott.ssa Beatrice Basile for this information.
the northern side of the court were visible. It is
doubtful that these cramped, open rooms could
have served the traditional arrangement of din-
cing couches. The lateral rooms in this structure,
however, (roughly 5 m², with the doorway from the
central court into each room off-center, thus per-
mitting the insertion of seven dining couches) seem to fit a canonical scheme for Greek-style din-
ing rooms.

Fixed couches in stone with an earth fill are
known, along with portions of mobile couch furni-
ture as depicted in vase painting and other repre-
sentations in the context of Greek-style dining
rooms. In the Hestiatorion at Palikê, a curiously
cut slab of calcarenite set against the northern wall
of room 1 may be an element of a dining couch. The
length of a fixed couch in stone or more mo-
bile couches in wood could have been up to rough-
ly 1.75 m, well within the normal range for full-
length dining couches, and still permit a maximum
of seven couches per room.

The original floor of the central court had an
extremely smooth surface of beaten clay on packed
soil, a portion of which has been preserved in the
southwestern corner of room 2. Determining the
original floor surface in the lateral and the rear
rooms was more difficult because of extensive re-

63 For measurements and discussion of the monumental
entrance into the central court, see below. The widths of the
doorways into the rear rooms are all about 2.080 m, the width
measured for room 6. The doorway into room 7 remained ob-
scured by partial rebuilding, which reduced the doorway width
by half. The width of the doorway into room 8 remains inde-
terminate because the room was not excavated to floor level.

64 It is possible that these rooms, which one would see first
upon entering the building, served other purposes. Their wide
doorways would have enhanced viewing what was within them
to an even greater extent, and perhaps they were used for display of statuary, decrees, spolia, or other dedicated items.

65 This slab was carved in two elements, a main body 1.35 m
long × 0.63 m high × 0.175 m thick and a wider edge 1.475 m
long × 0.29 m wide × 0.14 m thick, which together create a T-
shaped cross-section. Perhaps it served as the horizontal plat-
form for a dining couch, which was raised on vertical supports
and on which cloths and other items could have been placed
to offer greater comfort. It seems unlikely that this slab could
have been used in the construction of the walls or other archi-
tectural elements of the building for the way in which its edg-
es had been carefully beveled. The way in which it had been

66 Although later surfaces made measurement difficult, it was
possible to determine a slight pitch between 0.76 and 2.04%
from back to front and 0.67% from east to west, perhaps to
drain whatever rainwater came into the court from its open
southern side back out to the exterior of the building. The
height at the rear of room 2 is based on a beveled edge in
preserved wall plaster along course C, which presumably corre-
sponded to the floor surface, while the height at the front of
the room is based on actual beaten surfaces of clay. The pitch
from east to west within room 2 would seem to correspond to
a slight east-west pitch in the surface of the euthynteria.

68 This pattern of preservation results primarily from the way
in which floor levels had been raised in the course of the build-
ing’s reuse and the way in which the building was buried be-
neath the soil of the Grotto’s talus slope.

69 Pietro Nobile, conservator for the Superintendency of
Catania, suggests that this coloration may simply result from the
oxidation of iron deposits within the plaster and/or the
underlying stone.

67 Only one small area of plaster surface was found on the
exterior (on block 6.C.1), but most likely the masons covered
the extremely soluble calcarenite used in the construction of
the walls. Traces of plaster surfacing are found on virtually ev-
ergy Greek building constructed in blocks of calcarenite, the
sandy limestone common in southern Sicily.

The techniques of construction are among the
best that one can find in Greek architecture al-
ready in the Archaic period. The blocks of the walls
were carefully squared and set snugly against each
other using the technique of anathyrosis. Setting-
lines and pry-holes attest the care with which the
blocks were aligned horizontally. Vertical align-
ment was achieved using the anepyov technique,
or cutting vertical channels at critical points to
indicate the desired final, or reference, surface

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upon entering the building, served other purposes. Their wide
doorways would have enhanced viewing what was within them
to an even greater extent, and perhaps they were used for display of statuary, decrees, spolia, or other dedicated items.

63 The bibliography on Greek dining rooms is vast. For thor-
ough studies of these structures with tabulations of room di-

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of a finished wall.71 Such channels are found both on the interior and the exterior surfaces of walls and in one instance, the interior southwest corner of room 1, a channel running up the courses in elevation was found to correspond perfectly with a reference line on the foundation course immediately beneath it (fig. 14).72 The quality in workmanship and construction is also evident in the cutting and fitting of blocks at the ends of the monumental entrance (fig. 15).

One may conclude that four columns stood across the entranceway step on the basis of the interval (2.15 m) between the anta cutting on the easternmost block of the step and the centerpoint of the first possible block (unfortunately missing) where a column could have been erected.73 Three test trenches along the façade74 and other excavations along the interior walls of the building indicate that the foundations of the façade were two courses deeper than the foundations of the lateral and rear walls (fig. 16). In every instance, a sleeper course in blocks of various dimension was placed at a right angle to the line of the wall tract in order to give stability to the overlying structure; then, the courses of more regularly sized blocks set in alternating cadence for structural coherence rose out of the ground to become the superstructure. Where the bedrock underlying the soil deposit of the Grotto slope emerged toward the rear portions of the building, efforts had been made to level it and/or to dig out foundation trenches for the placement of the first sleeper course.

The associated stratigraphy along the façade demonstrates the way in which the foundations were raised—the blocks of the sleeper course were set into line and then chipped appropriately to create a level surface for the wall; the leftover chips were

71 The term ἀπεργόμενος was coined in connection with recent study of monumental buildings of the Archaic and Classical periods at Selinus, including Temple C and the Malophoros sanctuary; see Zoppi 1993. Previously, such channels had been interpreted as settings for decorative elements in wood and/or bronze; see Gabrici 1956 and Tusa 1956. Regarding the Malophoros sanctuary, see also Miles 1998.

72 Vertical channels have been noted in several locations: on the building’s exterior at the eastern end of the façade (block II.B.9, 0.095 m wide), on the eastern end of the rear wall (block X.E.1, 0.1 m wide; this block would have been buried against the hillside), on the interior of room 1 at the western end of the southern wall (block II.B.3 mentioned in the text, 0.1 m wide), and along the eastern wall of the central court (room 2) in the course beneath the doorway into room 4 (block V.C.5, 0.085 m wide and block V.C.6, 0.085 m wide for a combined width of 0.17 m). As suggested in relation to the channels at Selinus (supra n. 71), which appear on buildings dated to the sixth century B.C., the discovery of the ἀπεργόμενος is the result of the incomplete carving of the block surfaces, which was obviated by the application of a surface in plaster. Clear evidence for such finishing is found on the blocks of the wainscot course (course C) along the base of the walls in room 2 where traces of plaster cover channels beneath the doorway into room 4.

73 Block I.B.10, the block of the step next to the end block on the eastern side of the entranceway, bears no trace of the setting for or placement of a column (rather, it is well worn from foot traffic); therefore the first logical opportunity for the placement of a column would be at the center of block I.B.9, now missing. There would be no sense in placing a column right next to an anta. Apparently, it is not necessary to fix a column on a step through the use of dowels, as one may see in the unworn, circular setting for a column in the so-called Northwest Stoa at Morgantina (the author wishes to thank Malcolm Bell III for indicating this feature during a visit to Morgantina).

74 The test trenches along the façade were made: (1) on the interior at the southwest corner of room 1 (test trench 1), (2) along the exterior in front of room 3 (test trench 2), and (3) on the interior of room 2 (test trench 3) behind the monumental entrance. The locations were selected so as not to compromise the static integrity of the building but nevertheless to obtain necessary architectural and stratigraphic information. All three were excavated to the lowest level of the building’s foundations. The position of trench 3, in particular, was chosen in order to test the hypothesis that extra support would have been needed in order to reinforce a column, but instead of finding specific reinforcement it appeared that the same solid foundation had been given to the entire façade.
then pitched into the foundation trench; the next course was set; then a layer of soil probably excavated from the foundation trench was pitched back into the trench, and the chipping process was repeated. This sequence was repeated at least four times up to ground level. Pottery sherds recovered from the lower levels of soil in this sequence do not date beyond the middle of the fifth century B.C. While one should heed immediately the caveat that the number of sherds from trenches is limited and that the trenches themselves were too limited in size to offer a statistically significant terminus post quem for the construction of this building, there is nothing either in the stratigraphy or in the architectural techniques employed in the construction of this building that speaks against its attribution to the period when Palikë was likely the seat of a confederation of cities led by Ducetius.

Reconstruction in Elevation
The walls of the Hestiaterion are preserved in six courses above the foundations to a maximum height of about 2.6 m above the original floor level in room 2. Much of the wall structure of the Hestiaterion may be observed directly, and we are able to infer much about the structure of the roof, as well. The bulk of the structure is of ashlar masonry, and demonstrates a high degree of planning and precision in the selection and combination of wall blocks. The notable difference between the height of course F and the other courses may correspond to the placement of windows along the facade.

Fig. 14. *Anastylosis channel on block II.B.3 in alignment with reference line on block II.A.5 below it, as seen in upper right corner of fig. 16*
ere that varied in height depending on proximity to course F, the midpoint in the sequence.79 If this were the arrangement, then the overall height of the wall would be just under 5 m above the base of course A.80 The columns along the facade probably were in the Doric order, but no evidence is known for a Doric entablature with an architrave and a frieze.81

Evidence for tile roof construction, on the other hand, abounds at this site. While few fragments of roof tiles and other terracotta elements contemporary with the construction of the Hestiaterion could be recovered from the building itself because of its heavy reconstruction in Roman times, key fragments from other, contemporary structures, including terracotta pan tiles and cover tiles in the so-called Corinthian system, ridge tiles, antefix fragments, and fragments from a terracotta sima provide evidence for a roof system.82 A relatively simple wooden grid of rafters, battens, and purlins most likely provided the support structure for the system of roof tiles.83 Both a hip roof and a gable roof are possible given the layout of the rooms around a central court, based on the alignment of walls and an excavated stone base. A ridge beam of one or more dressed timbers could have rested on a post and lintel system that employed both the walls and interior columns or pillars set on the stone bases.84

A reconstruction of one version of the roofing system prepared by Learning Sites, Inc. shows what a hip roof may have looked like on the original structure (fig. 17).85

While the forward portions of the Hestiaterion were completely visible above foundation levels, the rear portions were set against the talus slope of the
Grotto, which had been cut back for the construction of the building. The space between the building and the talus slope was filled in with cobble-size stones most likely as a means of directing rainwater and groundwater seepage around the building to drains along the side. The width of this space was ca. 0.7 m, and it was filled with stones between 10–20 cm³. Ceramics recovered from the surface of this fill pertained to the Roman phases of the building’s use. Deeper exploration of this feature was prohibited by concern for the physical integrity of the building and the talus slope above it.

One drainage channel was found cut into the volcanic rock along the western edge of the Grotto, and it led to a relatively elaborate water channel system further downslope. Although the facade of the building does not display the kind of bowing that one would expect in a Greek temple by the mid fifth century B.C., a slight east–west pitch in the surface of the euthynteria, and in the remaining blocks of the step, may have directed water runoff toward that same drainage channel.

**Layout and Architectural Context**

The architecture of the Hestiaterion and the other monumental buildings at Palikè must be considered in the context of the landscape of the Grotto. The Grotto provides a dramatic backdrop to the architectural stage of the built sanctuary for those who approach it, and once inside the sanctuary the buildings thrust one’s view out toward the panorama of the valley and especially the sacred Boiling Lakes. The position of the Hestiaterion on the western side may be explained in terms of its placement along an axis running from the ancient city of Menai through the natural sanctuary of the former boiling lakes and into the built sanctuary. Although modern development confuses the landscape features outside of the Grotto area, the Hestiaterion appears to be set at a perfect right angle to this alignment in such a way that its plan is divided into symmetric halves. Furthermore, the same axis also appears to provide the orientation for Stoa B (approximately 51 m, or twice the length of the Hestiaterion) lower down the slope in the same manner, which also seems to be set symmetrically across this fundamental alignment. Stoa FA, which lies roughly 75 m to the south of Stoa B, was laid out to the east of the central axis that links the Hestiaterion and Stoa B, and it is oriented parallel to both of those structures, presumably according to the same terraced grid plan. In sum, the significance of such a coherent plan and alignment stems from the architectural focus of these two monumental buildings, the Sacred Boiling Lakes, and the fact that the Sikel leader Ducetius, who was born at ancient Menai (modern Mineo), provided the principal impetus for its creation. This alignment linking important places in Ducetius’s life with important places in his sociopolitical agenda represents the indelible mark of his theorizing by Doxiadis on nonorthogonal space relations among built structures at Archaic and Classical Greek sanctuaries (Doxiadis 1972) would seem to provide an intuitive guide for the analysis of such architecture from the real standpoint of a person on the ground, the actual layout of the buildings at Palikè along the single slope below the Grotto would seem to follow an actual grid intentionally designed at a definite point in the sanctuary’s history.

The sacred Boiling Lakes currently lie beneath an industrial plant, which captures natural carbon dioxide for use in carbonated beverages, and the land around it has been altered heavily by the creation of extensive orange groves.

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86 The width of this space was ca. 0.7 m, and it was filled with stones between 10–20 cm³. Ceramics recovered from the surface of this fill pertained to the Roman phases of the building’s use. Deeper exploration of this feature was prohibited by concern for the physical integrity of the building and the talus slope above it.

87 The pitch drops to the west just under 2 cm over a length of roughly 11 m or 0.17%. It was not possible to measure meaningful differences in elevation between the corner blocks of the building for the pitch of the floor in room 2 toward the exterior.

88 The importance of landscape setting in Greek architecture has long been recognized. While the interesting early

89 The sacred Boiling Lakes currently lie beneath an industrial plant, which captures natural carbon dioxide for use in carbonated beverages, and the land around it has been altered heavily by the creation of extensive orange groves.

90 The measurement is planimetric horizontal.
personality and the events of the mid fifth century B.C. on the landscape. 91

Comparanda for the Hestiaterion

Architectural comparanda for both form and function of the Hestiaterion at Palikè may be found in theater stage and other buildings. Within the complex remains of the theater at Eretria, a stage building with four lateral rooms and three back rooms set around an open court-like space may have been built as early as the fifth century B.C. 92 The court space remained open to the sky, and the overall architectural scheme appears to have been derived from that of a stoa. 93 In the fourth century B.C. the open space was enclosed by a colonnade of four columns and a hip roof, which covered the entire structure in a manner strikingly similar to the present reconstruction of the Hestiaterion at Palikè (fig. 17). 94 The analogy between theater architecture and the landscape setting of the Hestiaterion at Palikè would seem to be appropriate also to the building’s placement high on the talus slope and within the dramatic outline of the Grotto, which itself functions as a backdrop to the architectural “scene” of the built sanctuary.

Several buildings in the heart of Athens provide further parallels with features of the Hestiaterion at Palikè. A recent reconstruction of the facade of the Old Bouleuterion (dated to the sixth century B.C.) shows a colonnade with five columns set flush against the facade of the building with flat wall surfaces extending equally on both sides. 95 A hip roof covers the complex interior with its series of seats in risers, and windows along the sides of the build-

91 It would not be by chance, then, that ancient written sources on Palikè speak of his division of the landscape and of the topographical definition of Menai in relation to the position of the ancient sanctuary. Diodorus Siculus writes specifically that Ducetius removed the city of Menai and planted it in the plain (11.88.6): παρὰ τοῦ κοινοῦ τῶν Σικελῶν ἀθρόιοις δύναμιν ἀξιόλογον τὸς Μέναος, ἢτις ἦν αὐτοῦ πετρίς, μετώπικαν εἰς τὸ πεδίον ὧν ἦν αὐτής. Stephanos of Byzantium (see Ethnika 1958, 444) defines Menai: Μεναί, πόλις Σικελίας ἐγγὺς Παλικῶν.

92 For discussion, see Fiechter 1937, 10–5.

93 The court area to the south of the three rooms in the so-called hestiatorion or prytaneion at Megara Hyblaea may in fact have been open to the sky, but it seems unlikely that such an arrangement existed in the building at Palikè, for the presence of the lateral rooms and the indication of a base for a pillar in the central room 2.

94 See the reconstruction in Fiechter 1937, 39, figs. 34–35. Admittedly, the construction of the monumental colonnade with four columns across the entrance of the Hestiaterion in a second moment offers a parallel, too, although it would seem difficult to ascribe this to a separate phase of reconstruction given the difficulty of integrating such an addition into the structural fabric of the lateral rooms.

95 For a plan of this building and the restored south elevation, see Shear 1994, 255, figs. 8, 10.
ing are placed high on the exterior walls in accordance with the uppermost rows of seating. The decorative rebate bands along the monumental entrance step into the Hestiaterion find close parallels in the bands along the steps of the Stoa Poikile. The notion that direct knowledge of Attic architectural practices was current among architects and craftsmen of the fifth century B.C. in Sicily, noted in the monumental propylon of the Malophoros sanctuary at Selinus, seems to be the case in eastern Sicily at Palikè as well.96

The Hestiaterion at Rocchicella also is comparable to dining facilities in Greece, southern Italy, and Sicily.97 For example, remains found at Delphi and Thasos, dated no later than the mid fifth century B.C., include structures with one or two dining rooms entered from a pastas-like corridor.98 While these may be smaller versions of stoa-like arrangements of dining rooms, a closer relationship exists with the so-called prytaneion form of dining facility found at Megara Hyblaea and Palikè. Lateral dining rooms entered by way of a monumental entranceway or large central room appear within a complex that has been identified as the Hestiaterion of the Kean by the Artemision on Delos and that has been dated between 480 and 460 B.C.99 The lateral dining rooms and a monumental entranceway seen at Palikè also exhibit similarities with the dining room flanking the monumental entrance to the Acropolis of Athens in the Propylaia of Mnesikles.100

A likely contemporary of the Hestiaterion at Palikè is the so-called West Building in the Sanctuary of Hera at Argos.101 In this structure (33.3 × 30.4 m, or 100 × 90 Doric ft.102), three rooms flank the northern side of a closed court that extends out over a hillside. The court in front of the rooms in the West Building at Argos is open and enclosed by a peristyle colonnade. This would seem to be more in keeping with the addition to the Hestiaterion of Complex P, which we propose to have been composed of two series of rooms set on the eastern and the western sides of an open peristyle court.103 A similar combination of three dining rooms flanking a large peristyle court is found in the Asklepeion and Lerna at Corinth and dated after 350 B.C., and other complexes of dining rooms within a larger enclosed complex are found in many locations in Greece.104 Although its origin is in the fifth century B.C., the enclosed complex with dining rooms is a later architectural form than the model with rooms placed along a simple corridor, the arrangement found in the core structure of the Hestiaterion at Palikè. The addition of Complex P to the Hestiaterion in this context, however, marks the same trend in the design of dining facilities observed in these other locations.

Closer to Sicily the development of dining complexes follows the same pattern, and the reasons for such developments may lie in an overall increased frequency of extramural cult sanctuaries and in the use of such sanctuaries by political organizations. At Locri, the U-shaped Stoa in the Centocamere district, which dates originally to the sixth century B.C. with later additions, is composed of a series of dining rooms set around a wide-open area.105 The sanctuary of Hera Lacinia at Capo Colonna near Croton includes two buildings, each distinct but with a similar plan based on a series of rooms set around a central court,
which are described as a hestiatorion and a kata-
gogion. Construction of these dining and lodg-
ing facilities at Capo Colonna in the fourth centu-
ry B.C. is associated apparently with the creation
of a league of Greek cities, which was based at this
famous Greek sanctuary. By analogy, the connec-
tion between dining and political activities at Pa-
likè, albeit during the preceding century, would
seem all the more likely. Dining facilities also have
been identified within the complex of the Malo-
phoros sanctuary at Selinus, and Diodorus Sicu-
lus mentions the presence of a 60-couch facility
built by Agathocles at Syracuse. The language
used by Diodorus demonstrates that the words
katastrogosion, and hestiatorion or hestiatorion,
were never used in his text; he provides no distinction
for this splendid structure further than one of the
kataluseis (“adornments”) that were present at the
site. The lack of a precise architectural term for
this kind of building may be a result of the mutable
nature of its design and its apparent transform-
ation during the Hellenistic period from a structure
rooted in the concept of a stoa or a stage build-
ing into a larger complex dominated by a peri-
style court at a sanctuary which, despite the defeat
of Ducetius and his federation of Sicel cities in
the mid fifth century B.C., never lost its image as a
political point of reference.

Stoa B and FA
Stoa B consists of a series of rooms that were cut
back into the preexisting archaeological deposit
and in places into the underlying volcanic bedrock
of the slope below the Grotto. A large drainage chan-
nel was cut into the bedrock just above the build-
ing and flowed into the same channel that carried
water down from the area of the Hestiaterion. Dividing walls presumably led out toward a colon-
nade or other form of facade, which unfortunately
has not survived in any of the areas examined so far.

The four rooms defined by these walls to date have
a regular, rectangular plan; three are roughly 5 m
wide (rooms β1, β4, and β5), while the fourth (room
β6) is wider. A series of cuttings in the bedrock
suggest where the southern walls may have been set,
with a depth also of about 5 m and therefore a
square plan. This plan would be consistent both
with room construction in the Hestiaterion and in
many other Greek stoa buildings.

The rear wall of Stoa B was constructed in a dis-
tinctive technique that employed both blocks of
sandy limestone cut regularly (but not squared as
in ashlar masonry) and smaller stones that were used
to fill the spaces between the blocks (fig. 18). Some-
times smaller stones were used alone as a regular
facing either for blocks or for the bedrock that had
been cut back in somewhat irregular surfaces. At
places where the volcanic bedrock provided a solid
base, the surface of the rock simply was leveled with
single or double flattened cuttings for the stable
placement of the built portion of the wall. From the
width of these cuttings, a total width of 0.86 m for
the exterior wall of Stoa B was determined.

A trench dug to the east of the principal excavat-
ed area of Stoa B has revealed a wall segment in
parallel rows of irregular fieldstones, the interior
face of which is in perfect alignment with that of
this rear wall. This segment seemed to mark the
end of the building, which was closed by a wall com-
ing out at right angles roughly 51 m from the west-
ern end of Stoa B (this is twice the length of the
Hestiaterion), but this construction was in mud-
brick and reused fragments of terracotta pan and
cover tiles.

Stoa B suffered destruction early on—roof tiles
in the so-called Corinthian system were found in
situ where they had fallen. This structure was left
in ruins, but there is reason to believe that the tile
deposit had been raided in an effort to recover re-
main ing whole tiles. All of the ceramics found in

106 Seiler 1984, 1996; D’Arrigo 1996. A somewhat similar
arrangement of rooms around a peristyle court dated between
the end of the third and the first century B.C. (the so-called
arrangement of rooms around a peristyle court dated between
the north of Croton (Orsi 1933, 18–9, 42–50, with fig. 16).

107 See the entry for kattilados in McDougall 1983.
the deposit of tiles or in the deposit sealed immediately beneath it offer a rather homogeneous context between 430–420 B.C., a probable date for the last use of the building.114 Several architectural terracottas, most likely fallen from the roof of the original structure, were also recovered from this deposit, including antefix and sima fragments that recall those from Greek cities, particularly Syracuse, in the choice of motifs and colors and in the quality of their execution (figs. 19–20).115 Analysis of wood samples recovered from the deposit of tiles indicates the presence of white pine (Abies alba) and in particular a species endemic to the Nebrodes mountain range along the northern shore of Sicily (Abies nebrodensis).116

Stoa FA was discovered beneath the historic farm buildings, which have been renovated for use as an interpretive center.117 This long building may have been erected along a road that ran around the sacred Boiling Lakes, thus providing an architectur-
al border between the area of the lakes and the built sanctuary. The back wall of the building (55 cm wide) was constructed in a masonry technique similar to that of the so-called North Stoa at Morgantina using a combination of small stones and irregularly cut larger blocks (much more irregular than those of the back wall of Stoa B). Walls at a cadence of about 8 m divide the structure into units, which themselves are divided by a principle of halving. The rooms face out onto a walkway about 2.35 m wide, which is flanked on the southern side by an 80 cm thick foundation wall. The total width of the structure would be, therefore, about 8.45 m front to back.

A limited sounding along the southern side of the foundation wall revealed that it consisted of an upper portion 0.52 m high in smaller stones and a lower portion 0.38 m high in two courses of somewhat larger stones. It resembles very closely the foundation (soletta) for the colonnade of the Hellenistic stoa along the northern side of the agora at Megara Hyblaea. In Stoa FA, too, this construction most likely served the same function—a course of stone slabs would have been set across the surface of this foundation as the actual stylobate for the colonnade. Although the soletta in Stoa FA appears at a slightly higher elevation than the apparent floors of the rooms, the difference is never more than about 20 cm, and a level colonnade may have served to mask differences in elevation among the actual floors of the rooms behind it.

Preliminary study of the ceramics and other materials recovered from the floor levels and trenches along the walls of this building suggest a date for its last use in the fourth century B.C. As in the case of Stoa B, the date of its initial construction and the various phases within the history of its existence are unclear.

**Complex P and Hellenistic Transformation of the Hestiaterion**

Complex P is constructed in heavy, rough-cut blocks of local volcanic stone, which rest along its southern side (wall U.S. 49) upon the rear wall of Stoa B, utilizing it as a foundation. Today, the 1.05 m wide wall U.S. 49, which served as a terrace wall, extends for at least 50 m across the slope of the Grotto parallel to both the alignment of Stoa B and that of the Hestiaterion. Departing from this terrace wall and proceeding upslope toward the Hestiaterion are walls in blocks of similar material, which seem to have served as the

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118 For general discussion of ancient roads in the vicinity of the Naftia Lake, see Adamesteau 1962, 174–81. Traces of a road running along the western base of the Rocchicella hill (which appear juridically as a municipal thoroughfare) and cuttings apparently for the continuation of this road through a rocky outcrop on the neighboring Milo property seem to form an alignment coordinated with that of Stoa FA.

119 For the North Stoa at Morgantina, see Sposito et al. 1995, 40–2 (this building was identified originally as a gymnasion; Sjoeqvist 1962, 136–7).

120 Such subdivision by halving may well be the product of later modification to an earlier structure with a simpler plan.

121 The full extent of this structure has been found at its western end, and clearly it still continues to the east. A radar survey performed in November by Professors Frank Vento and Gary D’Urso of Clarion University of Pennsylvania along the presumed alignment of this building has revealed that it may have extended to a total length of about 100 m.

122 For the structure at Megara Hyblaea, see Vallet et al. 1983.

123 Furthermore, a raised stylobate would help to preserve columns in wood from rotting through contact with nearby soil, although there is no proof that such columns were in wood.

124 For procedural reasons during the course of excavation it was not possible to sample the foundation deposits of this structure in any systematic way. Significant ceramic fragments from an undisturbed stratum (U.S. 83) include an unpainted cup and an unpainted pitcher of the first half of the fourth century B.C. From stratum U.S. 149, which covered the foundation trench of wall U.S. 88, the foundation (soletta) for the proposed colonnade, a fragment of a black glazed lekythos was recovered datable to the first half of the fifth century B.C.

125 The letter honors Dott.ssa Paola Pelagatti whose excavations first uncovered it.

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Fig. 19. Terracotta antefix GR612
foundations for rooms set on either side of an open central court. The court area is defined by the remains of a roughly square arrangement of foundation walls also in local volcanic stone. The outermost walls are perfectly aligned as the continuation of the short eastern and western exterior walls of the Hestiaierion, and it seems that Complex P served as an extension of the Hestiaierion in a platform structure, which loomed out over the built sanctuary.

The stratigraphy along the southern side of wall U.S. 49 provides a date in the Hellenistic period for the construction of Complex P. A terminus post quem in the fourth century B.C. is offered clearly by the destruction of Stoa B upon which this wall rests. A terminus ante quem is offered by a thick deposit of ash and burnt soil that was deposited against the southern face of wall U.S. 49. This deposit was full of animal bones, ceramics, and other finds dated to the second century B.C., and it seems to have been created intentionally over a short period of time. Perhaps it represents the kind of sacrifices that are described by Diodorus in connection with the Second Slave Revolt. Despite the two centuries between these termini, such dating does provide a contrast with the Classical date for construction of the Hestiaierion.

The stratigraphy along the southern side of wall U.S. 49 provides a date in the Hellenistic period for the construction of Complex P. A terminus post quem in the fourth century B.C. is offered clearly by the destruction of Stoa B upon which this wall rests. A terminus ante quem is offered by a thick deposit of ash and burnt soil that was deposited against the southern face of wall U.S. 49. This deposit was full of animal bones, ceramics, and other finds dated to the second century B.C., and it seems to have been created intentionally over a short period of time. Perhaps it represents the kind of sacrifices that are described by Diodorus in connection with the Second Slave Revolt. Despite the two centuries between these termini, such dating does provide a contrast with the Classical date for construction of the Hestiaierion.

Erosion and pastoral activity prior to excavation has greatly reduced the height of the walls of Complex P, which once must have reached the level of the street that runs in front of the Hestiaierion and served as foundations for the walls of rooms that can only be defined barely in plan. The western side of Complex P the outcrop of volcanic bedrock had been cut to a flat plane, which would have intersected the rising exterior foundation at precisely the level of the street, and low-lying areas between this outcrop and the wall may have contained an earth and rubble fill. On the eastern

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126 This structure was interpreted initially as the remains of an Archaic temple in part on the basis of ceramic finds that now can be attributed to the earlier levels that underlie it.

127 The author wishes to acknowledge the careful excavation and analysis of this stratigraphy by field archaeologist Dott. Fabrizio Nicoletti.

128 Although the rear wall of Stoa B seems to have been rebuilt in places in order to unify the juncture between it at the base of wall U.S. 49, the architectural succession from one structure to the other is evident consistently at many other points.

129 Diod. Sic. (36.7.1) mentions a sacrifice made by the rebel slave leader Salvius somewhere in the territory of Leontinoi and quite likely at the Sanctuary of the Divine Palikoi (supra).

130 In only one location—at the corner formed by walls U.S. 44 and U.S. 45—is there a block in calcarenite, which may have been part of the building’s superstructure.
side of this complex a square column in volcanic stone filled with rubble may have reinforced the exposed eastern flank of the terrace foundations. This eastern wall and the southern wall U.S. 49 may have been the only elements of the terrace foundations not enveloped in earth and rubble fill which would have guaranteed the structure further support. Despite the degree of conjecture required to envision the original form and purpose of the foundations of Complex P, the plan illustrates the way in which this structure follows the primary measurements and construction modules of the Hestiaierion. The width is identical, 25.5 m from its eastern to its western flank. Each group of lateral rooms proposed for the foundations on either side of the central court are each equal to the overall length and width of the group of rooms along the back of the court in the Hestiaierion (rooms 6–8), that is, 14.4 × 4.78 m. The overall width of the foundations for the central court of Complex P east–west, 11.885 m, is equal to that of the monumental entrance to the Hestiaierion. Despite poor preservation of the archaeological remains, it is possible that Complex P consisted of groups of two or three rooms each along the eastern and the western sides of a central court, perhaps with a colonnade around a square, open space and a covered walkway along the southern side open out toward the breathtaking panorama of the sacred Boiling Lakes.

Paliê: An Alternative Center of Power

A monumental sanctuary such as that at Paliê cannot exist in a vacuum, in complete isolation from the institutions that governed Sikel society. A comparison of sociopolitical institutions of the Sikels with the architecture of the sanctuary would reveal much about sociopolitical organization, but the rare Sikel inscriptions and the accounts of Greek writers offer little more than circumstantial evidence for the structure of Sikel society and impressions about the way in which it functioned.

The few Sikel inscriptions that exist do represent a direct source. The only monumental writing that is preserved is a stone inscription from the site of Mendolito, near Adrano on the southern slopes of Mount Etna. It was found set into the fortification wall of this extensive settlement at a gate, and it is dated to the second half of the sixth century B.C. The provenance, as well as three words in the text, seem to indicate civic institutions and perhaps even a specific civic area within the settlement. Comparison between these terms and those for political institutions known among Italic peoples of central Italy suggest that there was a large assembly and a smaller group within it.

Whether the institutions alluded to in the Mendolito inscription were “autochthonous” in their origin, or whether they in some way were influenced by, if not directly modeled on, Greek institutions, is unclear; nonetheless, Sikel society was reasonably complex in its organization. By the fourth century B.C., there were distinct organs of government among the Elimi, another indigenous people located in western Sicily, as attested in the somewhat mysterious bronze inscriptions from Entella. These documents, which were written in Greek, contain numerous declarations regarding equal right to citizenship (iounioutiêa), military alliance (ouρmouχiâ), the right to sit in the front row of the theater (τιροερηâ), and invitations to participate in sacrifices and contests approved by an assembly bearing diffusion of Greek throughout Sicily—Sikel as a written language would seem to have been nipped in the bud (Agostiniani 1997).

Preliminary evaluation of the Complex P foundation by Nicholas Raddell under supervision of the Department of Engineering of the University of Dayton suggests that the static characteristics of wall 49 could have been sufficient to withstand the potential vector forces produced by the weight of the solid wall itself and the presumed fill of earth and stone rubble behind it to a height of roughly 6 m.

For discussion on the structure of Sikel society, see La Rosa 1989, 89–100; Holloway 1991, 86–96. Unlike Oscan and Latin, which are languages closely related to that of the Sikels and which were written also in scripts derived from Greek alphabets, the corpus of Sikel writing is far less perhaps because the Sikels themselves simply did not develop their own language extensively as a written medium. One may attribute this perhaps to a precocious and over-

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131 The volcanic stones along the eastern side of wall U.S. 196, in fact, display an unusually smooth surface, which may have been worked to a greater degree than the surfaces of the other foundation walls precisely because it was visible.

132 Preliminary evaluation of the Complex P foundation by Nicholas Raddell under supervision of the Department of Engineering of the University of Dayton suggests that the static characteristics of wall 49 could have been sufficient to withstand the potential vector forces produced by the weight of the solid wall itself and the presumed fill of earth and stone rubble behind it to a height of roughly 6 m.

133 For discussion on the structure of Sikel society, see La Rosa 1989, 89–100; Holloway 1991, 86–96.

134 Unlike Oscan and Latin, which are languages closely related to that of the Sikels and which were written also in scripts derived from Greek alphabets, the corpus of Sikel writing is far less perhaps because the Sikels themselves simply did not develop their own language extensively as a written medium. One may attribute this perhaps to a precocious and over-

135 Pelagatti 1964–1965 (first publication, with many illustrations).

136 The terms are: toutsa- and akara-, which appear paired in the same way as the Oscar touta- and ocri-, and venger-, which is similar to vereina/verehi in Oscan and poplo- in Umbrian; Durante 1964–1965, 439–43; Parlangeî 1964–1965, 222–6.

137 The akara- (interpreted as the Greek ēkrop, “high place” or the Latin arx, “rock” or “citadel”) would be the location where the toutsa met, and the venger- would be a subdivision of the toutsa with a military connotation similar to that of the Latin invates; Prosdocimi and Agostiniani, 1976–1977, 242–3; La Rosa 1989, 95.

138 Relevant texts with earlier bibliography are found in Nenci 1993.
pressed in Greek most likely reflects a significant which the political structure at Entella was ex-
stitutions inferred from the Mendolito text.

The surviving Greek writers, on the other hand, were separated from the actual events and sociopolitical schemes of the Sikels. The term Sikel itself, like the other names that Greek writers used for the non-Hellenic, indigenous peoples of Sicily, probably hides in its generic character a great many differences and divisions that were evident and important.142 Diodorus Siculus, writing over four cen-
turies after Ducetius at a time when Sicily was firmly under Roman control, leaves us with two impres-
sions. First, the Sikels appear to be an amorphous group of individual towns rather than a cohesive

140 This is found in the so-called Nakona decree (Decree III); Nenci 1997, 585.

141 Other legal terms regarding intermarriage and political equivalence between citizens of Greek Selinus and Elymnian Segesta, which appear in the Entella decrees and which are mentioned in Thucydides (6.6.2) would lead one to believe that the Elymnian centers had a relatively complex political structure; Marconi 1997, 1094–5.

142 Outside parties often resorted to individual treaties with each city rather than a single treaty with the “Sikels” as a whole; e.g., Magon the Carthaginian general (Diod. Sic. 14.96.3). Likewise, Dionysius I had to make treaties with other tyrants (Agyrion of Agyris) and dynasts (τὸν δυναστεύοντα Κεντορχίδον) who may have been figures somewhat like himself, as well as with other groups which are described only with a collective name, such as the Herbitians, the Assorians, the Cephalaedians, Solunto (an Elymnian city), Enna, and the

body.145 By describing Sikel centers as συντελείας, Diodorus (e.g., 14.7.5) places them outside any sort of state-like hierarchy—only the συντελεία promoted by Ducetius resembled anything more complex.144 Second, when a common effort was made by the Sikels, one or more cities apparently could dissent without suffering any significant sanction.145

Within each Sikel town, allegiance appears to have been a tribal matter with loyalties following lines of familial descent.146 Two monumental tombs in contrada Caratabia, which lies in the hills to the east of Menai and certainly within the territory of ancient Palikè, illustrate the importance of family line and prominent ancestors in this age.147 One of the tombs has a large rear chamber where a limited number of bodies may have been laid to rest, while both have large main chambers that may have been visited regularly for remembrance or religious observances. At least two phases of incised drawings, dated roughly to the fifth century B.C., decorate the walls of these main chambers. The first is a series of concentric circles, grain motifs, and other schematic figures; the second, superimposed on some of the original incisions, includes figural drawings (interpreted as horses, some with riders, and other human and animal figures) in complex compositions that may represent specific narratives (fig. 21).148

The complexity of the structures at Palikè contradicts the superficial impressions provided by the Herbessians (Diod. Sic. 14.78.7). On another occasion all of the Sikels allied with Carthage, except for the Assorians (Diod. Sic. 14.58.1).

143 What form would such a structure take? While the normal translation of the word ἵερων as “temple” brings to mind a periperal structure, the Greek itself leaves much greater room for architectural form, including perhaps that of an hestateri-
d騄ες, some with riders, and other human and an-
imal figures) in complex compositions that may represent specific narratives (fig. 21).148

144 The choice by Diodorus of the term συντελεία— a common end—may be significant in that it reflects the common end that bound them to a greater extent than any particular institutional obligation.

145 When a battle became disadvantageous, the Sikels seemed to have the option of escaping to safety in their respective towns (Diod. Sic. 14.75.5 and 14.75.7–8). Diod. Sic. (14.59.1) would have us think also that there was a tendency toward mass action or mob-rule in the way the Sikels held Tauromenion without a true leader or a clear line of command.

146 Bloodlines and extended family probably were the basic social and political units within each community. Decision-making may have followed an age-based hierarchy, but it would appear that self-assertion was also an important element in governance—Ducetius is described as “famous for his family line” (Diod. Sic. 11.78.11), but it would seem that he had to win rule over the Sikels through a contest of power with other individuals or even groups that we do not know.

147 These tombs were first published by Messina (1965), and they are now the subject of a documentation project by the Superintendenty of Catania. Similar illustrations are found at Cava d’Ispica (Di Stefano 1988–1989, 103ff., fig. 10).

148 La Rosa (1989, 90, with partial illustration on page 97, pl. XII) describes the tombs as heroi and the figures of horsemen as a sign of an equestrian elite in Sikel society.
literary sources, and requires a more nuanced explanation. The position of the Hestiaterion atop a series of terraces accentuates it visually and also emphasizes its functions. The kinds of functions that Diodorus himself mentions in connection with the Palikè sanctuary fit closely those that were associated with the Greek prytaneion.

Comparisons with the Greek Prytaneion

The prytaneion was a place where meals were served. Dining in ancient Greek culture is traditionally associated with both religious and political activities, and dining at state expense was considered to be among the highest privileges that a Greek polis could offer, although the actual meal was not necessarily sumptuous. This important feature of Greek civic life may be explained at Palikè as a feature of hellenizing imitation, but it may well have older indigenous roots and have been an important means of intercommunal political bonding. That such dining could also serve the needs of political gatherings is obvious and well attested for Greek city-states. In the amorphous political world of the Sikel indigenous centers a structured place would have been necessary in order for such bodies to reach more complex decisions, and the usefulness of the Hestiaterion at Palikè might lie in the flexibility of its design. Each room could accommodate 7 to 14 individuals per room, one or two to a couch. The four major dining rooms of the building thus offer an extensive series of dining combinations, a kind of flexibility that is well adapted to the loosely bonded Sikel communities.

The Greek prytaneion also served as a repository for civic memorabilia (more like a civic muse-
um than a city archives building).\textsuperscript{153} Such items were dedicated at Palikè, from the bronze belt with its dedicatory inscription of the fourth century B.C. perhaps to the robe with a purple border (a Roman \textit{togae praetextae}) that was said to have been dedicated by the leader of rebellious slaves, Salvius, late in the second century B.C.\textsuperscript{154} No such civic memorabilia has been found in situ;\textsuperscript{155} however, a likely location for such dedications would be room 7, the central room in the group of smaller rooms at the back of the Hestiaterion directly opposite its monumental entrance (fig. 22). A large concave niche with a flat, horizontal base was carved into the back wall of this room. Clearly later than the setting of the wall blocks into which it was carved, it nonetheless may represent an active element in the building’s original design.\textsuperscript{156} Holes were drilled into the same rear wall through the preparatory and finishing layers of its plaster surface, some of which clearly were intended to facilitate the removal of the wall blocks (and therefore date to after the building had been abandoned), others are found in areas away from the course and individual block interfaces. Several groupings of three or four holes can be recognized in roughly triangular or quadrangular arrangements. Could these be holes for nails or pins similar, for example, to those which presumably held (or were meant to hold) bronze plaques of the sort known from Entella? A similar variety of holes does not appear in the remaining blocks of the rear wall of room 6—only holes along the interfaces.\textsuperscript{157} Perhaps dedications or decrees and even small works of sculpture were displayed in this central room.

The prytaneion was used for special legal trials, including those of a serious nature such as certain forms of homicide.\textsuperscript{158} Many literary sources describe the juridical and oracular functions of the Sanctuary of the Divine Palikoi.\textsuperscript{159} Recourse to the Palikoi was called for in controversies regarding not only theft but especially in more serious cases. The juridical power of the lakes lay more in the determination of guilt through a process of ordeal than it did in cleansing whatever wrong-doing had been committed.\textsuperscript{160} The statement by Diodorus that the Sanctuary of the Divine Palikoi, at least in Roman times, was a place of refuge for runaway slaves corresponds to the function of the prytaneion as a place of sanctuary.\textsuperscript{161}

Furthermore, the physical form of the Hestiaterion at Palikè is consonant with certain physical characteristics of a prytaneion.\textsuperscript{162} The Greek prytaneion is located along or near the agora, and in the case of Palikè, the Hestiaterion lies near the center of the site—the so-called sacred plain with the Boiling Lakes. The prytaneion typically has a courtyard with a peristyly; the large, central room 2 of the Hestiaterion corresponds with this description. Likewise, the same room 2 could be considered the vestibule or anteroom in front of the more significant rooms set around it. The building at Palikè has at least four dining rooms and subsidiary rooms, at least one of which may have been the equivalent of a Hestia hall,\textsuperscript{163} and we have speculated already on the placement of moveable cult objects and memorabilia.

The use of the Palikè sanctuary as an explicit political center was a short-lived phenomenon of the fifth century B.C. when Ducctius led the Sikels in an apparently tyrant-like manner. Following the defeat of Ducctius, we hear no more of the Sikel \textit{ouvèleion}—only the resistance and eventual de-
feat of the Sikels at Trinakie.\textsuperscript{164} Nevertheless, the fifth century B.C. was crucial to the physical formation of the sanctuary. The lines of the layout and the actual buildings constructed at that time would remain constant features of the sanctuary for centuries to come. It is ironic that, whereas in the Greek poleis it was the tyrant who reduced the complexity of government either by abrogating it or by banaliz-

\textsuperscript{164} Supra, n. 42.
ing its institutions, in Sikel society it was the tyrant who seems to have promoted complex organization. The layout and purpose of the Paliê sanctuary fits more a tyrant’s vision of a sanctuary (clearly laid out according to a unified plan) than that of an area formed over the decades through the addition of buildings and functions that paralleled the development of a true state.

If this is the case, then we should ask where the Sikels obtained the money necessary to start construction of the sanctuary complex of the fifth century B.C. Roland Martin has outlined the sources of finance for major architectural projects in Sicily and Magna Graecia, including private contributions from wealthy individuals, and monies directly controlled by the sanctuaries from “barbarian contributions” and other sources. That Syracuse benefited financially from non-Greek territories is expressly stated by Thucydides (6.20.4). The source of such funds may have been the sale of agricultural produce and perhaps mercenary soldiering, activities that most likely would have promoted other forms of contact between the indigenous communities and the Greeks as well. Perhaps the creation of the Sikel oνυτέλαια and the extraordinary financial contributions tied to participation in the league made the renovation of this venerable sanctuary possible.

The creation of Complex P and its associated structures marks a second, major renovation of the Paliê sanctuary. The layout of Complex P recalls a type of building described by S. Miller as a “public house.” One example of such a structure is found not far from Paliê in the agora at Morgantina, the so-called prytaneion. Recent study has dated this building to the second half of the third century B.C., and it may have served as a city bank. Like Complex P at Paliê, this building was added to an earlier construction, the East Stoa, and it consists of a series of rooms set around a central peristyle. The dimensions of this structure are similar to those of the building that presumably stood on the platform of Complex P, but they are clearly linked to the earlier stoa’s proportions. Could Complex P at Paliê represent such an “emerging building type,” as Miller argued for the building at Morgantina and two others in Asia Minor? Instead of serving as prytaneia—buildings which were tied closely to the working democratic institutions of a Greek polis—such new public houses focused more on religious or other sanctuary-related activities of the Hellenistic age, in which the decisions of individual monarchs and their representatives often exerted a greater influence than surviving local, political institutions.

This kind of Hellenistic patronage described in literary sources may have financed such renovation. There was every reason for Greek rulers to pay attention to the Sikels, and there were many opportunities for Sikels to become acquainted with Greek ways, Greek markets, and Greek architecture. By the mid fifth century B.C. many Sikels already were in the service of Greeks as soldiers and laborers. Syracuse needed both financial and

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165 There is an interesting parallel between the behavior of Ducetius and that of Dionysius I, which Diodorus Siculus describes in greater detail. Dionysius is said to have given land to his supporters both in the city of Syracuse and in the countryside reserving only the best portions for himself and his friends. Given the significant time lapse between the Classical era and the time that Diodorus wrote, it would not be unusual to think that to some degree the misty figure of Ducetius the Sikel was somewhat modeled by the historian to match that of the Greek tyrant whose activities may have been better documented.

166 The buildings at Paliê do not seem to be the result of individual liturgies, planned and constructed as the need and the opportunity arose. Such agglutinative development is more in keeping with the Agora of Athens or the pan-Hellenic sanctuaries at Olympia and Delphi, as stated elegantly by Thucydides (6.20.4).


168 It is not at all clear that money was an important commodity among the indigent themselves, although it has been argued that hoards of bronze and iron dating as early as the final Bronze Age may have represented a primitive kind of measured wealth that led to the introduction of actual bronze coinage (Tusa Cutroni 1997).

169 Such an expense may be one of the reasons that at least one Sikel center, Hybba, refused to join.


172 M. Bell, pers. comm.
physical support from the Sikels, and this may hold an explanation in *realpolitik* for Syracuse’s surprisingly generous pardon and pensioning of Ducetius when he asked for clemency following his defeat.¹⁷⁷ Years later, Agathocles made architectural benefactions to Agira, apparently not forgetting the importance of the Sicilian hinterland.¹⁷⁸ Without such benefaction, construction of such a monumental scale as that of Complex P would not have been possible.

It is unlikely, however, that either the brief-lived political union of Ducetius or the interest of external patrons would have been able to promote the continuity of use evident in the sanctuary at Palikè. While cultural practice and historical memory may be kept alive by popular tradition,¹⁷⁹ a better explanation is that a much more stable sanctuary administration was in place, which pre-dated the Sikel federation and which survived the historical vicissitudes of Greek and later Roman rule.¹⁸⁰ It is surprising that even under the dominion of Rome the sanctuary at Palikè was considered a safe place to gather for what certainly were regarded by many as seditious acts.¹⁸¹ The characterization of Palikè as a place of refuge for runaway slaves and the description of a detailed procedure for their return presupposes the existence of a means to guarantee their safety and to exact in a very concrete manner the conditions imposed upon their masters.¹⁸² The historical parallel that is evident in the text of Diodorus Siculus between the choice of Palikè in the fifth century B.C. as the seat of a rebellious ethnic political federation and the choice of Palikè in the second century B.C. as a rallying point for those who rebelled against slavery in the *latifundia* cultivated by Rome may be explained precisely by the existence of a respected and powerful priesthood that over the centuries maintained an active social agenda rooted in a sense of indigenous identity which championed those who opposed control from the outside.

**CONCLUSIONS**

Research at ancient Palikè underscores the complexity of relations between Sikels and Greeks both in sociopolitical terms and in terms of material culture that we are only beginning to comprehend. The results of excavation confirm that Rocchicella di Mineo is an archaeological site with structures and artifacts that one would expect to find in a Greek sanctuary.

It is clear that the Grotto area has always been a focal point of human activity beginning early in Sicilian prehistory. Although we cannot say precisely when the cult of the Divine Palikoi first appeared, this cult and the sanctuary also may have their roots in the prehistoric past. The cult was present definitely by the seventh century B.C. when the sanctuary is said to have received its first structures.

The archaeological research presented here has documented several important aspects of the sanctuary’s long history. In the Archaic period the area in front of the Grotto was laid along the axis that would mark the orientation of all subsequent buildings. This structuring may be that referred to by Hippys of Rhegion in connection with the thirty-

¹⁷⁷ An interpretation of the pardon in terms of Syracusan corruption appears in Holloway (1991, 87). While Holloway regards Ducetius as a member of a native elite “thoroughly at home in the Greek milieu akin to those from British and French colonies who returned from Europe to their native lands to lead revolts against colonial domination,” it would seem equally plausible to the present authors that Ducetius may have had actual family ties as well as political support at Syracuse. Regarding the complexity of interpreting the sociology of colonization through archaeological evidence, see Lyons and Papa-dopoulos 2002.

¹⁷⁸ Diod. Sic. 16.83.2–3 (Agathocles is reported to have built a theater, a bouleuterion, an agora, and several funerary monuments). In the same passage we read that Agathocles was also famous for having built a lengthy 60-couch heistatetion at Syracuse. We may only speculate on what parallels this building may have had with those preserved at Palikè and elsewhere in Sicily.

¹⁷⁹ It is evident in the text of Diodorus that the Sikels had a long memory. We read of the way in which they reoccupied Tauromenion in 394/393 B.C. to avenge the offense that they had suffered generations earlier when they were driven away by the newly-arrived Greeks at Naxos (Diod. Sic. 14.88.1).

¹⁸⁰ Diod. Sic. 16.83.2–3 (Agathocles is reported to have built a theater, a bouleuterion, an agora, and several funerary monuments). In the same passage we read that Agathocles was also famous for having built a lengthy 60-couch heistatetion at Syracuse. We may only speculate on what parallels this building may have had with those preserved at Palikè and elsewhere in Sicily.

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¹⁸³ Diod. Sic. (11.89.7) describes the masters of slaves run-away to the sanctuary at Palikè as ignorant or arrogant men (*κυρίος ἀγνώµονας*), and although the power of the sanctuary is explained specifically in terms of the fear of the divinities (ἡ ἑλευθερία τῶν θεῶν ἐπιπέδη), it seems doubtful that pious self-control alone would have been sufficient to restrain individuals who may not have had much self-control in the first place. Some sort of security garrison must have existed at the sanctuary to provide physical protection for those who fled there, a force sufficient to repel whatever force a slave-owner could bring to bear against the runaway slave.
sixth Olympiad (636–632 B.C.). At this time the first settlement on the hill, perhaps named Eryx, also may have been established.

In the mid fifth century B.C. both the sanctuary and the settlement were built up once again. Diodorus says that the Sikel leader Ducetius transferred the population of Menae to a new foundation that he called Palikê near the Sanctuary of the Divine Palikoi and that he divided the surrounding land. While the creation of Palikê may have been more of a re-foundation of a town already in existence than the creation of one ex novo, the rebuilding of the sanctuary and its Classical monumentalization through the erection of new structures, of which the Hestiaterion is the most elegant example, reflects a unified program of development that would seem to step directly out of the agenda of this energetic Sikel leader. The sanctuary is likely to have served as the seat of Ducetius’s Sikel League.

During the mid fourth century B.C. significant numbers of mercenaries were present in eastern Sicily for several years. One such group may have gained control of Palikê and rebuilt the settlement and its fortification wall in woven masonry. The sanctuary at Palikê seems to have survived the final destruction of the settlement well into Roman times. It is interesting that the extensive sacrificial deposit on the ruins of Stoa B seems to have the same date as the episodes in the Second Slave War described by Diodorus. The use of buildings for cult related activity seems to have ceased by the fourth century, and the cult itself with its topographical associations was all but forgotten (or eliminated) by early Christian times.

It is clear, also, that the developments in architecture and material culture at Palikê in the Sicilian hinterland can be related to those at coastal Greek cities and other major centers beyond the shores of Sicily. Such cultural participation was maintained most likely because the sanctuary continued to be frequented regularly and because it had an administration capable of generating its own income or garnering external patronage and translating that support into concrete developments despite major social, political, and economic changes on a Mediterranean-wide scale. The discoveries that have been made to date indicate that important areas within the overall site remain to be explored. The constitution of the archaeological park marks the beginning of a new phase in the site’s history, in which such significant and unexpected monumental structures will receive the attention and the protection that they deserve.

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A Reconsideration of the Northeastern Building at Pylos: Evidence for a Mycenaean Redistributive Center

L.M. BENDALL

Abstract

The Northeastern Building at the Mycenaean palace of Pylos has long been interpreted as a workshop. The present study argues that this was not the building’s function. Using both the archaeological and Linear B data, it is argued that the building was instead a “clearinghouse” or “redistributive center” for goods and personnel, similar to the function recently suggested by C.W. Shelmerdine for the West House Group at Mycenae. It was a major storage complex and above all an administrative center, working in close association with the central Pylian Archives Complex. The article examines first the archaeological evidence. Finds thought to support the workshop hypothesis, such as chisels, knives, and obsidian flakes, are compared with distributions of such artifacts throughout the palace. It is suggested that the archaeological material alone indicates nothing for the Northeastern Building beyond administration and storage, especially of weaponry. Next the documents and sealings are examined in the context of the wider Pylian administrative system. Finally, the documents are considered individually, and it is argued that they are not “workshop” documents, but concern movements of goods and resource management. It is concluded that nothing from the building suggests on-site production, but numerous factors point to a redistributive center—a clearinghouse for goods entering the palace complex as a whole.*

The Northeastern Building at Mycenaean Pylos, commonly referred to as “the Northeast Workshop,” is a freestanding structure immediately outside the northeastern wall of the main palace block (figs. 1–2). Since the publication of the first volume of The Palace of Nestor (hereafter PoN) in 1966 no comprehensive review of artifacts and documents from the building has appeared in print. The few, brief studies that have appeared generally start with the workshop interpretation and focus on questions of organization and production.1 Most scholars consider manufacture of chariots and leather goods to be the main activities taking place in the building. The present study takes a fresh look at the data and begins with a more fundamental question—what was the function of the Northeastern Building?

* I wish to thank above all John Killen, under whose supervision this study was begun in 1997 as the first part of my doctoral dissertation, and who offered invaluable advice and commentary through to the end. I am also grateful to John Bennett, who took over supervision of my Ph.D. in 1999, for his help and advice through many drafts. The text was substantially improved by comments from R.J.E. Thompson, V. Jackson, R.T. Anderson, E.E. Adams, A.J. Hájek, I.C. Image, and especially the two anonymous reviewers for AJA. I wish to express particular gratitude to J.L. Melena for permission to cite Linear B texts from Palace of Nestor 4 (Bennett et al. forthcoming, hereafter PoN4), under his editorship, and three of his forthcoming articles. S.U. Hofstra generously agreed to my citing her unpublished Ph.D. thesis, including a study of the building based on an examination of the material and the notebooks. G. Flouda and T.G. Palaima kindly presented me with offprints of recent articles. R.T. Anderson helped with the illustrations and T.J. Stevens loaned me a computer with which to prepare the revised copy. I would also like to thank the editor and staff of AJA for their patience and assistance. This study was made possible by financial support from the British Academy (now AHRB), a Michael Ventris Award, the Faculty of Classics, Jesus and Fitzwilliam Colleges, Cambridge, and, last but not least, my family. I wish to stress that responsibility for any remaining mistakes or other inadequacies is entirely my own.

1 The principal published studies are: Milani 1958; Tegyey 1984; Jasink 1984, 1990–1991; Shelmerdine 1987a; 1987b; Flouda 2000. See also Melena 1983, 179–80; Tegyey 1987, 361–3; Shelmerdine 1997a, 394–5; 1999, esp. 567–8. Jasink (1984, 13) does phrase the question of the building’s function, but quickly finds support for the workshop interpretation, based on the Linear B evidence. Several scholars are currently working on the building. R. Schon will publish the archaeological material under the aegis of the Pylos Regional Archaeological Project (PRAP; see Davis 1998), and wrote an unpublished M.A. thesis on the building (Bryn Mawr 1995) (see AR 1997–1998, 54). S. Lupack (1999, 2002 non vidi) addresses the material in the context of a larger study, and S. Hofstra (2000) has re-examined all material from the building in the context of her Ph.D. thesis at the University of Texas–Austin. Hofstra reaches conclusions similar to mine, as does G. Flouda (2000). Hofstra, Flouda, and I began work on the building at about the same time and without knowledge of the others’ work until advanced stages. It is encouraging that we find independent agreement on substantial points, particularly as each had a different primary focus: Hofstra argues mainly from the archaeological material, Flouda from the sealings, and I from the Linear B texts.
The Northeastern Building (hereafter NEB) was excavated in 1957 by M. Rawson, under the direction of C.W. Blegen. From the beginning, the Linear B documents found within the structure influenced interpretations of its function. Blegen tentatively proposed in the initial report in 1958 that the large numbers of men “owing” on some tablets, the talk of chariotry and harnesses, and the appearance of the word o-pa, which was then (mistakenly) believed to relate to feudal service, might suggest “the quarters of the palace guard or garrison, and perhaps the armory.” He cited hundreds of arrowheads from room 100 as possible supporting evidence.

How the interpretation of the building as a workshop arose is not clear from the published literature. It first appears mentioned in passing and without explanation in the 1959 excavation report, “the Palace Workshop (as we now call the Northeastern Wing) . . .” Subsequent comments indicate that the Linear B documents were largely responsible for the change in view. For example, in the (original) official site guide, the excavators write: “This

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3 Blegen 1958, 175–7. There was a small supplementary excavation in 1958 (Blegen 1959, 124), and parts of the building were exposed in trenches in 1952 (S9, S11) and 1962 (S12) (Blegen 1953, 63; Blegen et al. 1973 [hereafter PoN3], 25). Some further work involving the building was done in 1960 and 1962 (Blegen and Rawson 1966 [hereafter PoN1], 21, 24). Recent work involving the building appears in Archaeological Reports from 1991 to the present. The Linear B documents appear in Lang 1958, 181–91; 1959, 136–7 (with new readings by Chadwick); 1965. New finds of Linear B tablets probably from the NEB are reported in, among others, AR 1992–1993, 33; 1993–1994, 29; Shelmerdine and Bennet 1995.

4 Blegen 1958, 177.

5 Blegen 1959, 121, see also 124.
inscriptional evidence is sufficient to establish the character of the building as a Workshop”6 (my emphasis). Similarly, while the final publication includes few interpretative arguments,7 of room 99 it is said: “The inscribed tablets and the sealings seem to indicate that the contents kept here came from many different places. Leather, bronze, and artisans are mentioned and all the evidence leads us to the conclusion we have already expressed in calling this the Palace Workshop.”8

“All the evidence” here must of course include the archaeological evidence, but the arguments arising from this evidence are not compelling, and it is unlikely that such an interpretation would have emerged without the documents.

The strong influence of the textual evidence underlines the need for a reappraisal for two reasons. First, a great deal more is now known about Linear B administration than when the building was excavated (just five years after the 1952 decipherment), and it is desirable to examine the workshop interpretation in the light of our current understanding. It is notable that no other examples of Linear B documents associated with workshops have ever been found.9 As Tournavitou observed, “The overwhelming majority of the securely identified workshops do not contain any tablets and sealings whatsoever, let alone any tablets pertaining to the workshop activity involved.”10 Shelmerdine similarly notes: “While tablets are occasionally found in storerooms, they hardly ever appear in workshops.”11

Second, the archaeological evidence has largely been subordinated to the documentary evidence rather than being allowed to speak in its own right. Given the epigraphic view of a possible workshop, where there were workshops was in a disturbed context—it could have come from a neighboring building (Evely 1984, 252).

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6 Blegen and Rawson 1967, 28.
7 See PoN1, 15, 299, 305, 309, 311, 316, 321, 325. None of these references includes detailed discussion of the interpretation.
8 PoN 1, 321.
9 The Linear B tablet found in the Unexplored Mansion
10 Tournavitou 1988, 456.
11 Shelmerdine 1997b, 387.
archaeological corroboration was found—chisels, blades, celts, and flint and obsidian scrap were identified and pointed to as support. Yet not one chisel, blade, or flake was mentioned in the first report before the workshop idea arose.12 I suggest that the workshop interpretation is an example of Linear B and archaeological scholarship speaking across each other. Archaeologists, relying on early interpretations of the documents, searched for corroborating evidence. The proposed archaeological support was then understood by epigraphers as confirming the workshop interpretation, and this was used as the basis for further analyses of the tablets, giving rise in some cases to questionable conclusions.13 A danger of circular reinforcement of misconceptions is evident.

What is now needed is to subject each type of data to rigorous internal analyses. The NEB yielded more sealings and Linear B documents than any other single context at Pylos outside of the Archives Complex (AC), and this large deposit of administrative material along with the high standard of excavation and publication make the building an outstanding subject for an integrated study using archaeological and Linear B data. But it is important to be clear what is meant by integration of textual and archaeological evidence. Studies seeking to integrate such data tend to begin by looking at the data sets separately. Although such a procedure may seem a failure to integrate, there is logic to the method.14 When this is done in the present case the separate data sets say something rather similar, and this is the point from which to embark on integration.

It is often said that, in order to integrate text and archaeology, the Linear B tablets must be treated as archaeological artifacts. The tablets could be analyzed in terms of their clay, or the fact of their presence used to argue for an administrative center, and so forth. But "tablets as artifacts" can only go so far. The real interest of the tablets is not as material objects, but as documents or texts, and it is these texts that we should seek to integrate into their archaeological contexts. Exemplary studies of how such an aim may be achieved succeed precisely because they read the texts in context;15 this article seeks to follow their example with the NEB. The emphasis should not be "tablets as artifacts," but "documents in context." Why are these particular documents in these particular locations? How are they associated with each other? How do they relate to other documents and uninscribed sealings found in the same building and elsewhere in the palace? How do they relate to other artifacts with which they were found, or functions to which the architecture of the building may have been suited?

Based on the present analysis, I believe the building was a "clearinghouse" or "redistributive center" for goods and personnel, similar to what has recently been suggested by C.W. Shelmerdine for the West Houses at Mycenae.16 The NEB was a major storage complex and above all a management center for goods and personnel, working in close association with the central AC. It had a particular association with military equipment, and Blegen’s original idea of an armory was, I believe, more along the correct lines than the workshop hypothesis.

The present study was undertaken in the context of broader research on the economics of religion in the Mycenaean world. The building is involved in a long-running debate about connections between Aegean Bronze Age religion and industry.17 Speculations concerning this association arose from an apparent spatial proximity between workshops and shrines at some sites and the appearance of workers in the Linear B tablets described as po-ti-ni-ja-ae-jo, probably indicating a connection with a female deity. The NEB is often cited as a prime example of a workshop-shrine association, since one of its rooms, room 93, is interpreted as a shrine. The appearance of religious figures on some tablets is considered further indicative of the building’s religious connections.18 This study will argue (1) that there is insufficient confirmation of the workshop interpretation. My own ideas about the Northeastern Building were worked out before seeing her article; I was delighted to discover the Mycenaean parallel. See also Flouda 2000, 215, 231, 235–6.

12 See Blegen 1958, 175–7.
13 See esp. the discussion below of "documents dealing with livestock."
15 E.g., Palaima and Wright 1985; Shelmerdine 1985; Palmer 1994; Bennet 1995; Palaima 1995a; Driessen 2000. Of course, other difficulties are present where the documents cannot be fully read because they remain undeciphered, as with the Minoan material. Such are still of great value as "documents."
16 Shelmerdine 1997b, esp. 389–90. Shelmerdine (1997b, 394 n. 45) refrains from extending her findings to the Northeastern Building, citing unpublished work arguing for a recon-
archaeological evidence for a shrine to warrant further hypotheses, and (2) that the tablets show no religious connections beyond what is normally observed in Linear B archives. In any case, if the building was not a workshop, the association falls. This conclusion need not mean that the workshop-shrine connection is elsewhere illusory, but if the NEB no longer provides an example, a new examination of the wider question is in order.

ARCHAEOLOGY OF THE NORTHEASTERN BUILDING

The area in front of the NEB was published in two sections: court 92, leading on from ramp 91, and court 94, the proposed “colonnade” (figs. 1–2). Room 93, opening onto court 92, was interpreted as a shrine, based on an air of “elegance and distinction” created by the “decorative antae” of its facade, and the presence of a plastered and painted stone block, labeled an “altar,” in the courtyard before it (figs. 2–3). There are several reasons for doubting that room 93 really was a shrine.

First, very little was found there. The room inventory records “chance sherds only,” including 32 kylix stems and bases, and “16 flat bases” of “dim. [= diminutive] kylix, bowl, cup, etc.” Kylikes, even where they are whole, are not diagnostic of religious observance. Indeed, in such small amounts, they do not count even as supportive evidence. Over 1,000 kylix stems were found in the NEB as a whole, with nearly 700 more from ramp 91 and area 101. Compare the 1,052 from the Wine Magazine, or the nearly 800 from courts 42 and 47. No one has argued that those places were shrines. With regard to the diminutive kylix, even if this is a “votive,” one must note the appearance of approximately 11 such items tend to be related to areas used for reception and for banquetting, but it is unlikely that feasting went on in the NEB. A reception function could be suggested, but as a general rule (at Pylos) only clusters of over 300 stems are significant. There is a good deal of “background noise,” and a figure as low as 32 suggests nothing beyond random scatter. I am grateful to E. French for first raising the issue with me that many such objects may have eroded from the mud brick. To be clear, a role of kylikes in ceremony and libation is not disputed, but it does not follow that every place where fragments appear was a shrine.

21 PoN 1, 305–6. See also AR 1992–1993, 33 (a flagstone pavement is reported).
20 See PoN 1, 303–5, esp. 304. The interpretation appears already in the initial report (Blegen 1958, 176), without supporting argument.
21 The paucity of finds is probably not a result of loss of the floor (as suggested in PoN 1, 305). Lupack (1999, 28–9) argues convincingly that the original floor is preserved.
22 PoN 1, 305. Lupack (1999, 29) reports but a single diminutive kylix (see also Shelmerdine 1997a, 573), so the remaining 15 items are presumably cup/bowl bases.
23 At Pylos, kylikes are found predominantly in pantries. They
in room 7 of the AC,25 again notably not a shrine. Further, there were no figurines in room 93, artifacts that are a common feature of Mycenaean shrines (though not exclusive to them). Three small, fragmentary figurines were found elsewhere in the NEB (which is unremarkable, given the general scatter of such artifacts throughout the palace) but none in room 93.

Second, the “altar” may be such, but has no certain parallel. Mycenaean altars commonly took the form of benches or platforms set against walls or in corners.26 Freestanding features—hearths and altars—are found at Mycenae, but none closely resembles this example. Most are inside, not outside, the rooms, and all but two of these—an important difference—are associated with burning.27 The only external feature is the “edicule” outside the Tsountas House Shrine. This was a low platform covered in stucco and lined with poros blocks fitted with dowel holes, apparently to support some further structure.28 The edicule stood to one side, not in front of, the door.29 Neither shape, nor alignment, nor fittings resemble the Pylos stone. The decoration on the Pylos stone does suggest a special use, but that need not mean it was an altar—the idea cannot be surely dismissed, but the absence of convincing parallels recommends caution.

Third, the floor between the “altar” and the “shrine” has a sharp slope (rising about 0.5 m)30 which, rather than leading from one to the other so as to emphasize a focal line between them, cuts straight across the axis (see fig. 5). The slope would have been inconvenient ground for rituals meant to unite the “altar” and the “shrine”; its real purpose seems to have been to provide a ramp ascending to room 99, perhaps to facilitate the movement of goods.31

Fourth, rather than being a sign of religious importance, the antae and “distinctive” appearance of the facade of room 93 could relate more to the fact that it lies in a continuous line with the main palace facade (cf. fig. 1). The “elegance” may reflect a desire to maintain architectural coherence for the palace’s frontal aspect.32

Thus, although the room is widely cited as a shrine, the paucity of evidence should be borne in mind when developing hypotheses based on that interpretation.

Hall 95 led on from the “colonnade.” The main items of note here were a storage jar containing a steatite sealstone33 and numerous sealings found in the doorways to rooms 96 and 97.34

Room 96 was a small room (3.38 × 2.68 m) containing only a couple of stirrup jars and some pottery debris.35 The excavators suggest it was an “adjunct to the shrine” or “the office of the management of the Workshop,” but it may simply have been a small storeroom. Not enough administrative material is present to warrant interpretation as an office,36 and there is.

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25 PoN 1, 95.
27 With burning: the Round Altar (Taylour 1983, 61); the hearth in the Room of the Fresco (Taylour 1981, 17); and the hearth in the Citadel House Megaron (Taylour 1983, 59). The low platform of the Temple had no burning, but it is nothing like the Pylos “altar” in height or size—it is much lower and longer, rather resembling a dais (Taylour 1983, 50). Also without burning was the altar in the Tsountas House Shrine, a rough semicircle with two circular attachments—again nothing like the Pylos example (Taylour 1983, 49).
28 Taylour 1983, 49; Mylonas 1972, 37.
30 PoN 1, 302.
31 The ramp and altar have various phases (PoN 1, 302; AR 1993–1994, 29), but this does not affect the main argument. It has been suggested that room functions might have changed over time so that room 93, if originally a shrine (it seems to have been earlier than the rest of the building), might have changed status by the later period. It may be so, but what is lacking is evidence for the room being a shrine at any stage.
32 Though not mentioned in PoN, the wideness of the door might be thought to suggest a “special use”—but the doorways of rooms 95 and 99, which lie immediately beside the room 93 threshold, are comparably wide. The precise door widths of rooms 93 and 95 are not given, but the rooms were completely open at front (at least as regards the stonework), so the door widths will be similar to the room widths: ca. 3 m for 93 (PoN 1, 303) and 2.80 m for 95 (PoN 1, 307). The doorway into room 99 measured 2.95 m (PoN 1, 318). Architectural unity or functional accessibility, rather than religious importance, may have been the concerns.
33 PoN 1, 307–8. The sealstone is CMS 1, 297 (PoN 1, 308; figs. 311 and 312.1).
34 The precise number and locations of these cannot be determined from the published data, which are contradictory. Cf., e.g., “Another sealing came from the doorway into Room 96 and five more from the doorway into Room 97” (PoN 1, 307); “seven . . . from doorway into Room 97” (PoN 1, 308); and “13 clay sealings” in doorway of room 97 (PoN 1, 310). But elsewhere Blegen (1959, 124) has 14 clay sealings from the doorway into room 96. Palaima (1988) resolves this type of problem for Linear B inscribed sealings; but neither he nor Pini (1997, see esp. 101–5, table 4, “Plombenformen nach Räumen geordnet”) deal with findspots of uninscribed sealings in detail. (For sealings in the Wine Magazine, see Palmer 1994.)
35 PoN 1, 309–10.
36 In speaking of an “office” here, Blegen and Rawson would not have had in mind the technical sense of bureau or depart-
no special connection with room 93 except that they share a back wall.

Room 97 (6.25 × 6.705 m) yielded artifacts of bronze, quartz, flint, obsidian, and terracotta. The floor was stained with red and yellow patches. The excavators note that "the extent of the fire damage might imply that a good deal of inflammable material had been stored here." They tentatively suggest that the room was a storage area and, perhaps, given its large size, a workroom as well.

Room 98 (7.12 × 6.25 m) was interpreted as a storeroom. Finds included sealings (some inscribed), a tablet, a mass of melted bronze, bits of obsidian, quartz and flint, a rivet, kylikes, and a piece of stone possibly from a vessel. Two storage jars were filled with "an extraordinary variety of colored earth and shiny granular matter that looked like ground up stone." Intensive burning around the jars suggested that whatever they once held was inflammable (perhaps more dyes?). Room 99 is the largest of the complex (15.725 × 6.45 m). Its door was some 3 m wide and had a wooden casing. There is extensive evidence that shelving lined the walls: carbonized wood (including pieces of planks) was associated with stone-lined pits for post-bases. Almost all the Linear B documents from the NEB came from—or can be shown to have originated in—room 99. There were also numerous uninscribed sealings and a hematite sealstone. The large amount of administrative material combined with shelving led to the room being interpreted (I think correctly) as a storeroom and an office—there was not felt to be sufficient space for this to have been a work area as well.

Room 100 was also large (minimum 7 × 6.4 m). Finds included gold foil, an obsidian core, flint, much ivory, 500+ bronze arrowheads, and a sealing. The excavators considered that "the ivories and the arrowheads certainly point to the conclusion that this was the special section in the Workshop devoted to the making of delicate objects in bronze and ivory." The proposed functions of the rooms are summarized as follows: 91, ramp; 92 and 94, court and "colonnade"; 93, shrine; 95, hall; 96, office or "adjunct to the shrine"; 97, storage and/or workroom; 98, storeroom; 99, storeroom and office; and 100, ivory and bronze work area.

That the NEB had extensive evidence for storage and administration is beyond doubt, but neither of those features need suggest interpretation as a workshop. The question may be approached by comparing artifacts from the NEB (tables 1–2) with those found elsewhere in the palace. The comparison is of value in two ways. First, where the functions of other areas are known, we can determine if the NEB assemblage resembles something already understood. Second, we might expect a workshop assemblage to be in some way distinct, and a comparison will show whether this is so.

Finds from the NEB normally cited in support of on-site manufacture are knives and blades, chisels,
### Table 1. Whole or Mostly Whole Pots from the NEB

<table>
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<tr>
<th>Type of Vessel</th>
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<th>Rm. 92</th>
<th>Rm. 93</th>
<th>Rm. 94</th>
<th>Rm. 95</th>
<th>Rm. 96</th>
<th>Rm. 97</th>
<th>Rm. 98</th>
<th>Rm. 99</th>
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<td><strong>Food bowls</strong></td>
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<td>Bowl, handmade</td>
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<td><strong>Drinking vessels</strong></td>
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<td>Cup (11)</td>
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<td>Cup (12)</td>
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<td>Krater</td>
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<td>Krater, pedestal (63) dec.</td>
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<td>Krater-bowl (60)</td>
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<td>Kylix (27)</td>
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<td>Kylix (29c)</td>
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<td>Tankard (33)</td>
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<td><strong>Pouring and serving (food and drink)</strong></td>
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<td>Bowl, deep, spouted</td>
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<td>Bowl (9)</td>
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<td>Jug (37)</td>
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<td><strong>Dipper/soop</strong></td>
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<td>Dipper (21)</td>
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<td><strong>Cooking vessels</strong></td>
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<td>Jug (39)</td>
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<td>Krater (58)</td>
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<td>Krater (59)</td>
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<td><strong>Storage and serving, liquids (drinks and oils)</strong></td>
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<td>Amphora</td>
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<td>Amphora (45)</td>
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<td>Amphora (45) dec.</td>
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<td>Jar (49)</td>
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<td>Stirrup jar, dec.</td>
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<td>Stirrup jar, lg.</td>
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<tr>
<td>Stirrup jar (65b, 1) dec.</td>
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<tr>
<td>Stirrup jar (65d) dec.</td>
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<td><strong>Storage and display</strong></td>
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<td>Storage jar (57)</td>
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<tr>
<td>Jar, wide-mouthed, sm., vert.-hdls.</td>
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<tr>
<td>Jar, wide-mouthed, med., hrzt.-hdls.</td>
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<tr>
<td>Jar, wide-mouthed</td>
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<tr>
<td>Jar/jug, high-necked, lg.</td>
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<tr>
<td>Jug or amphora?</td>
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<td>1*</td>
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<tr>
<td>Pot, closed, lg., semi-coarse</td>
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<tr>
<td>Pot, closed, lg., painted</td>
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<tr>
<td>Pot, coarse</td>
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<td>Storage jar, wide-mouthed, lg., coarse</td>
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<td><strong>Other (sherds)</strong></td>
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<td>Kylix stems</td>
<td>445</td>
<td>275</td>
<td>32</td>
<td>79</td>
<td>87</td>
<td>145</td>
<td>300</td>
<td>185</td>
<td>352</td>
<td>53</td>
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<tr>
<td>Cup/bowl bases</td>
<td>239</td>
<td>67</td>
<td>16</td>
<td>45</td>
<td>40</td>
<td>52</td>
<td>122</td>
<td>15</td>
<td>150</td>
<td>40</td>
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</table>

*Note: This table lists all pottery from the building published in PoN 1 except unjoined pot sherds.*

*Red ware.*
flakes of obsidian and flint, obsidian cores, whetstones, a stone celt, and abundant pieces of bronze and ivory. Comparison of artifacts was achieved through compiling a database of all finds in inventory lists to individual rooms published in PoN1. The database (following the inventories) was arranged by material type, then sorted according to function in order to elucidate the function of the building. Artifact distributions were then plotted on plans of the palace.

An important problem is that the inventories in PoN sometimes do not give exact numbers of items found, simply noting “many,” “few,” or the like. Where it was not possible to obtain the figures from other sources, the figures show by convention: many and numerous = 8 items; several = 5 items; some and few = 4 items. Instances where items such as “chips and flakes” are noted as present but are not enumerated are also counted as 4. This procedure introduces uncertainty in some cases, but the consistency seen in the distributions of different object types in different materials suggests that the general patterns observed are substantially valid.

The following conventions were used in creating the figures:

1. Items whose functions are only tentatively identified are surcharged with a question mark.

2. Upper and lower floor deposits are not distinguished, since in most cases the data are insufficient to identify them with certainty. The majority are not relevant to our purpose here although a few relevant instances are noted.

3. Items shown inside the wall around rooms 7 and 8 came from the so-called chasm created by post-destruction ashlar quarrying.

4. Counts for rooms 23 and 24 include the contents of pithoi.

5. Rooms 89–90 are post-Mycenaean, but are included for reference.

6. Artifacts shown on the edge of the Southwestern Area came from spill off the side of the citadel. No attempt is made to place these in individual trenches since they in any case come from mixed contexts.

The dispersal of blades and knives throughout the palace is fairly random, and there is no special association with the NEB (fig. 4). A few items come from storerooms, such as rooms 23, 31, and 105, so their presence is consistent with (though not limited to) storeroom contexts.

There is a slight concentration of chisels in the NEB (fig. 5), but two of the items are very fragmentary. The piece from court 94 is a broken bit knife from rooms 89–90 may be post-Mycenaean (PoN1, 297, fig. 274.6); it is a standard Mycenaean type that did, however, carry on into the early post-Mycenaean period (Hofstra 2000, 90). Data for flint and obsidian blades are derived from Hofstra 2000, 268–71, table 5.3, and PoN1, except where specifically contradicted by Hofstra. Bronze items are more complicated and are derived as follows. “Propylon / Chasm area”: one item (Hofstra 2000, 91). Room 3: one item (PoN1, 65, fig. 268.c). Room 4: two items (PoN1, 70–1, fig. 274.5; Hofstra 2000, 90). Room 5: one item (PoN1, 76, fig. 268a; Hofstra 2000, 90). Room 6: one possible knife, southwest section; one probable knife or weapon, southeast section (PoN1, 90). Room 7: PoN1, 94–5 describes one definite (fig. 265.3) and one possible (fig. 266.1) blade, plus a sword (fig. 274.4); only the sword is discussed by Hofstra (2000, 99–100). Room 10: Hofstra (2000, 90) confirms a knife suggested in PoN1 (105, fig. 278.6); there was also a sword (PoN1, 105, fig. 278.7; Hofstra 2000, 100–1). Room 12: two items (PoN1, 109, fig. 278.12.15; Hofstra 2000, 90). Room 24: fragments of one or more blades, possibly serrated (Hofstra 2000, 90). Southwestern Area: one item (PoN1, 1, 285, fig. 302.5). Room 99: Hofstra (2000, 90) reports one blade fragment, presumably that in PoN1, 322, fig. 316.3. She identifies the possible chisel or knife tang (PoN1, 322, fig. 316.5) as a chisel.

Chisels, or possible chisels, are reported in PoN from rooms 52, 62, 94, 99 (two items), and the Southwestern Area. A piece from the Southwestern Area mentioned as a possible chisel (PoN1, 285; fig. 302.6) is identified by Hofstra as a “slim tanged point” (Hofstra 2000, 88 n. 179), so is excluded here (the one shown is PoN1, 285; fig. 302.12). Another chisel came probably from room 76 (Hofstra 2000, 89).
<table>
<thead>
<tr>
<th>Type of Artifact</th>
<th>Material</th>
<th>Rm. 91</th>
<th>Rm. 92</th>
<th>Rm. 93</th>
<th>Rm. 94</th>
<th>Rm. 95</th>
<th>Rm. 96</th>
<th>Rm. 97</th>
<th>Rm. 98</th>
<th>Rm. 99</th>
<th>Rm. 100</th>
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</thead>
<tbody>
<tr>
<td>Arrowheads</td>
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<tr>
<td>Arrowhead (including.fr.)</td>
<td>Bronze</td>
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<td>7</td>
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<td>2</td>
<td>m</td>
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<td>12+</td>
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<td>45+</td>
<td>501+</td>
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<tr>
<td>Flint arrowhead</td>
<td>Stone</td>
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<td>5</td>
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<td>1</td>
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<tr>
<td>Obsidian arrowhead</td>
<td>Stone</td>
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<tr>
<td>Beads and Buttons</td>
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<td>Crystal bead</td>
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<td>Steatite button</td>
<td>Stone</td>
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<tr>
<td>Button, biconical</td>
<td>Clay</td>
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<td>Blades and knives</td>
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<tr>
<td>Knife blade</td>
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<td>Flint blade</td>
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<td>Celt, serpentine</td>
<td>Stone</td>
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<td>Chisels</td>
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<td>Chisel</td>
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<tr>
<td>Strip (chisel or knife tang)</td>
<td>Bronze</td>
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<tr>
<td>Clamps (to mend pots?)</td>
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<tr>
<td>Pieces, melted</td>
<td>Lead</td>
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<td>Figurines</td>
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<tr>
<td>Animal (horse?)</td>
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<td>Seated female</td>
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<tr>
<td>Head, bird-like, fem.</td>
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<tr>
<td>Gold and silver</td>
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<tr>
<td>Foil piece (probably rosette)</td>
<td>Gold</td>
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<td>Foil fragments</td>
<td>Gold</td>
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<td>Strip, thin, flat</td>
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<td>Ground stone</td>
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<tr>
<td>Whetstone</td>
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<td>Fragment/bit</td>
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<td>s</td>
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<td>Fragment, rectangular section</td>
<td>Ivory</td>
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<tr>
<td>Loomweights and whorls</td>
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<td>Loomweight</td>
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<td>Whorl</td>
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<tr>
<td>Whorl, biconical</td>
<td>Clay</td>
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<tr>
<td>Quartz flake/chip</td>
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<tr>
<td>Rivets and rivet holes</td>
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<tr>
<td>Rivet/rivet-head</td>
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<td>1?</td>
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<tr>
<td>Piece, curved, with rivet hole</td>
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<tr>
<td>Strips with rivets (chariot parts?)</td>
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<td>Sealstone (steatite?)</td>
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<td>Hematite lentoid sealstone</td>
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<tr>
<td>Wire, pins, needles, and awls</td>
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<tr>
<td>Coil of thin wire</td>
<td>Silver</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>“Slim tanged point”</td>
<td>Bronze</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>–</td>
</tr>
<tr>
<td>Wire, small piece (needle)</td>
<td>Bronze</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Pin head</td>
<td>Bronze</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1?</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>
barely 2 cm long (fig. 6, second from top left).60 One piece from room 99 is described as a “strip, possibly part of a chisel or tang of a knife” (fig. 7, second from bottom right).60 The final piece from room 99, although very small (8.7 cm) and thin (0.25 cm), is more impressive (fig. 7, far right).61 It would not have been suitable for heavy-duty manufacture, but could have been used for light work in wood or ivory.62 It constitutes the best single piece of evidence for manufacture in the NEB, but chisels are found elsewhere in the palace and one wonders whether this too might not have been an item in store.63

Figures 8 and 9 show all flint and obsidian except arrowheads and blades.64 In general, chips and

50 PoN 1, 306; fig. 307.2.
51 PoN 1, 322; fig. 316.5. Hofstra (2000, 89) includes the piece in her account of chisels, but an item described as a “fragment of blade” has the same museum number, MX 2346 (Hofstra 2000, 91).
52 PoN 1, 322; fig. 316.6. The identification as a chisel is confirmed by Hofstra 2000, 71, 89, 304, fig. 6 (showing a sharp tapered edge). For Aegean chisels see, e.g., Evely 1993.
53 Hofstra 2000, 89.
54 Flouda (2000, 222) makes an important point that the bronze items from the NEB do not comprise “tool-kits.”
flakes are found all over the palace. There is some concentration in storage areas, though the pattern is not strong—the distribution is nearly random, and the possibility of erosion from the mudbrick should be noted. The fact that chips and flakes can be associated with storerooms means that their presence in the NEB is in no way unique or exceptional for storage areas, and adds scant support to the workshop hypothesis. Chipped stone might have been a useful item to have on hand in storage areas (for instance, for cutting string) and need not be indicative of workshop production. Two points require further comment, however.

First, three obsidian “cores” come from the NEB and four from elsewhere in the palace. Two from storerooms (rooms 27 and 50) show that association with storage areas is unremarkable. There is a slight concentration in the NEB, but nothing suggests the cores were actually used there. Knapping would have left more debitage.65 Also, the PoN illustrations suggest the pieces are more “chunks” than proper cores.66 Even if the items were cores, they might have been stored rather than used in the building—or eroded from the mudbrick (see below).

Second, Hofstra now indicates the presence of more flint in the NEB than was apparent in the PoN data, but in terms of the general distribution it

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65 There is no evidence for refitting that I am aware of, though the material has yet to be examined by a specialist (noted in Hofstra 2000, 264).
66 Room 92: PoN1, fig. 306, one of 14–16, probably 14. Room 97: PoN1, fig. 308, one of 6–8, probably 8. Room 100: PoN1, fig. 319.1. Hofstra, who has examined the actual pieces, concurs: “The ‘cores’ so named by Blegen/Rawson are unusually large chunk-like pieces but do not appear to be classic conical or tabular cores” (Hofstra 2000, 265, n. 518).
should be noted that her figures are based on material currently present in the Chora Museum. The high counts for the NEB suggest that the excavators preserved chipped stone from the building, which is not the case for all areas of the palace. There are explicit references in the notebooks to chipped stone being discarded by excavation supervisors, and some material is known to have been removed to the National Museum in Athens. To give an example of missing material, PoN records 28 pieces of flint from room 23 plus 22 from room 24, but only a single piece from the two rooms now appears to be in Chora. The situation for obsidian is similar. The high counts for flint in the NEB should be seen against this backdrop, since missing material cannot now be comprehensively accounted for.

Also relevant is Hofstra’s view that the flint assemblages may include material that is not human-modified. Chert was probably obtained from local sources, raising the possibility that some of it came in as inclusions in building materials.

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67 Hofstra 2000, 268–71, table 5.3 (showing data on chipped stone from the palace LH IIIB destruction fill in the Chora Museum), occasionally supplemented with data from her discussion, 258–72.
68 Hofstra 2000, 259.
69 For instance, from the AC (Hofstra 2000, 268 n. 526, citing pers. comm. from J. Melena).
70 PoN 1, 137 records 26 pieces; there were two more in Pithos 3 (PoN 1, 138).
71 PoN 1, 140 records 21 pieces; there was another in Pithos 11 (PoN 1, 142).
72 Hofstra 2000, 268. Note some bronze from rooms 23–24 was certainly discarded (Hofstra 2000, 85).
73 Hofstra 2000, 263 n. 519.
74 Hofstra 2000, 265 with n. 522.
Hofstra remarks that even some of the worked items, particularly flint denticulates, were severely worn in a way consistent with their having been incorporated as wall fill.75 Such a phenomenon would not necessarily affect all areas of the palace with equal force. The NEB was the last structure built at the palace and its construction materials may have been selected from different sources than those used for the main building. It may be relevant that the NEB flint was mostly of a dark red type, whereas various types including buff and different shades of red were found in the remainder of the palace.

No distribution maps have been produced for the celts and whetstones. No other celts came from the palace, though a few were found elsewhere on the hill.76 Other whetstones came from the “chasm,”77 court 68,78 room 103c,79 and the southwest spill (five items).80 The one from room 97 is a bare 4.7 cm long.81 Hofstra notes that, although called “whetstones,” the function of these items has not been “comprehensively investigated.”82 One celt and two whetstones, whatever their function, add scant support to the workshop argument.

Finally, large amounts of ivory and bronze are cited as supporting the workshop interpretation. Yet such finds are consistent with storage and cannot in themselves be taken as evidence for on-the-spot manufacture. While much bronze was found in the NEB, large deposits also were found in other, non-workshop, areas of the palace.83 Ivory is found

75 Hofstra (2000, 266) notes that the presence of arrowheads of an early type may result from their erosion from walls. See also Hofstra 2000, 258–9.
76 Tholos IV (PoN3, 31, 47, 61, 102, 127); I am indebted to Hofstra (2000, 255) for bringing this to my attention. Hofstra (2000, 255) suggests the NEB item may have come from the shaft grave beneath room 97.
77 PoN1, 100.
78 PoN1, 246 (there was also a pounder).
79 Reported by Hofstra (2000, 254), but not PoN1 (see 340 for list of finds, and 337–8 for description of 103c).
80 PoN1, 284, 286 reports six, but Hofstra identifies one of these (PoN1, 284; fig. 300.2) as a section of “decorative stone moulding” (Hofstra 2000, 254 n. 499). Further examples of whetstones were found elsewhere on the hill (Hofstra 2000, 258).
81 PoN1, 311; fig. 308.5.
82 Hofstra 2000, 254.
83 E.g., literally hundreds of pieces were found in room 6 (PoN1, 90) and rooms 23 and 24 (PoN1, 137, 141). Hofstra (2000, 109) agrees; “Despite Blegen’s references to large quantities of bronze in parts of the Northeastern Building, the rooms there did not generally yield a substantially greater amount of bronze than areas of the Main Building.”
throughout the palace in areas where it was used (as opposed to worked) and especially where it was stored. It is instructive to look at other large ivory deposits outside of Pylos. The massive deposits in the House of Sphinxes and House of Shields at Mycenae (ca. 18,700 pieces) were also formerly mooted as evidence for workshop production. But a true workshop assemblage should feature a high proportion of unfinished pieces and waste (e.g., ca. 50%), while such items made up only 1.6% of the material at Mycenae. The conclusion was that they were pieces in storage and had not been worked in or near the places where they were found. Similarly, Hofstra concludes that the Pylos material does not constitute a workshop assemblage, but is made up of “finished and polished inlays,” probably belonging to items of furniture in storage.

Molds and possibly awls are absent from the building. Perhaps we should not expect molds, since it is not suggested that melting of metals took place in the building, but awls might be expected in an area where leatherworking was supposedly a main activity. Awls were reported from room 9 and the Southwestern Area, so they do occur at Pylos—but apparently not in the NEB. Finally, Hofstra notes a lack of bone tools from the entire palace.

None of the finds discussed above compels interpretation of the NEB as a workshop. In each case, the artifacts are randomly dispersed throughout the palace, are common in storerooms, or both. Randomly dispersed items tell us nothing about the function of the NEB, since they are found in rooms with a variety of functions. Items associated with storerooms suggest nothing beyond what was already
known, from evidence for shelving and so forth, that the NEB was used for storage. It is difficult to conclude on the basis of these artifacts that the NEB was also a site of manufacture. The most significant items pointing in this direction are the chisels and the obsidian cores, but both sorts of items are found also in other storage areas in the palace and the cores are more “chunks” than cores, while the chisels are few, small, and fragmentary. The archaeology alone, without the documentary evidence, does not support interpretation of the NEB as a workshop.93

Space precludes discussion of the remaining artifacts in detail; in brief, their distributions are similar to those described above—random dispersal or concentrations in storerooms—with three exceptions: arrowheads, sealings, and Linear B tablets.

Flint and obsidian arrowheads are randomly dispersed, but bronze arrowheads are overwhelmingly concentrated in the NEB (fig. 10).94 Between 500 and 600 were found there, compared with just 18 from the rest of the palace, 11 from a single context in a drain. An interpretation of the building as an armory, long ago proposed by Blegen, receives some support from the archaeological data (though, as he noted, lack of domestic assemblages precludes use as a garrison).

THE ADMINISTRATIVE CONTEXT OF NEB DOCUMENTS AND SEALINGS

Like other artifacts, the distributions of Linear B documents and sealings can be plotted (fig. 11). Most documents—some 81%—were found in rooms 7 and 8 (the AC).95 Others were scattered about in

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93 As Hofstra and Flouda also conclude.
94 Data for arrowheads is derived from PoN (except where specifically contradicted by Hofstra) supplemented by Hofstra 2000, 94–9, 268–71, table 5.3.
95 Palaima 1984, 33; 1988, 172.
small groups termed “deposits.” Palaima distinguished “deposit” groups from “archives” in various ways.96 An “archives” involves more, longer tablets, written by multiple scribes and dealing with diverse subjects. “Deposits” have fewer, shorter tablets, dealing with single subjects and involving one or a very few scribes.

The distinction between “deposits” and “archives” lies in how Pylian scribes operated and moved through the palace.97 “Deposit” records were generally written in storerooms and dealt with goods kept in them.98 “Archives” might include storeroom tablets that had been moved there for processing and storage, but would also contain important central records dealing with matters such as land tenure, taxation, and so forth. The distinction does not lie in the tablets themselves, which all belong to a single, unified administrative system, but in variations in the types of groupings, showing different aspects of the overall system.

The NEB “Deposit” versus “Archives”

Palaima’s “archives”/“deposits” distinction leads to a coherent general picture of how the Pylian administrative system operated, but within this picture the NEB presents an anomaly.99 Palaima called the NEB assemblage a “deposit,” but it is dissimilar from other deposits (see table 3).

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96 Palaima 1984; 1988, esp. 172–81; forthcoming. Specific features of the Pylian system cannot necessarily be extended to other Mycenaean palaces. Knossos operated differently, with no central archive (but see Olivier 1984, 17; Driessen 1999, esp. 221) and few deposits, but with two further levels of organization: specialized and nonspecialized bureaux or departments (Olivier 1967, esp. 101–36; 1984, esp. 14–7; Palaima 1988, 180–1, 187–8; forthcoming). Also note the Pylos “archives” are not necessarily comparable with other ancient or modern “archives” (Driessen 1994–95; 1999; Palaima forthcoming).

97 Palaima and Wright 1985.

98 Palaima 1988, 186.

99 On this see now Palaima 2000a, forthcoming.
The NEB document group differs in several ways. First, its ca. 79 Linear B documents far exceed the numbers found elsewhere. Even the Southwestern Area has only about half as many. Further, the NEB “deposit” displays some features witnessed in the AC. Palaima observes: “An archives is characterized by several of the following features: (a) records dealing with a variety of subjects; (b) coherent sets of records and dossiers of sets; (c) longer records, such as summaries, compilations, and final recensions, that are of more than temporary importance; (d) records written by different scribes; (e) evidence of scribal interaction; (f) evidence of systematic arrangement and filing.” The NEB is examined in light of each of these points.

Variety of subjects. No other “deposit,” even where more than one series is involved, deals with more than one subject—for instance, perfume, wine, or textiles. But the NEB tablets deal with men, livestock, bronze, textiles, wheels, harnesses, skins, foodstuffs, wine, bedding, and several other commodities. The variety resembles the wide-ranging interests of the central archives more than the limited scope of a “deposit.” It is worth noting that the number of subjects is not a simple function of more tablets being present: the Southwestern Area has about half as many documents as the NEB, but does not deal with half as many subjects—only textiles are represented.

Coherent sets of records and dossiers of sets. The Ac and Qa tablets each form coherent sets, and the

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100 See Flouda (2000, 237) for a similar point with regard to the inscribed nodules of rooms 98, 99, and 105.
101 Note some of the fragments in this area come from the AC, so the group is not as large as the present count seems to suggest. See Shelmerdine 1998–1999.
102 Noted also by Tegyey 1984, 75–6.
103 Palaima 1988, 180; forthcoming.
104 An important point in regard to whether the Southwestern Area qualifies as a “subsidiary archives” (Palaima 1984, 33; Shelmerdine 1998–1999).
number of tablets in the Qa series is larger than that found in any other set outside the AC. It is likely that the Sa series was originally written in the NEB (see below), and the Sh series may have been also. Palaima suggests that the Cc tablets found in the AC may have been written in the NEB, though these do not apparently belong to a single unified “set.”

Longer records of “more than temporary importance.” A majority of the longer records and page-shaped tablets found outside the AC come from the NEB. Several tablets include the word o-pe-ro /ophelos/ “debt, deficit, owing,” a common rubric in AC taxation records. Such records were kept until the debt was paid. Ub 1317 describes a debt as pe-ru-si-nwa-o /perusinwaon/ “last year’s,” indicating a significant time-span for the concerns of the document, and hence of NEB administrative concerns.

Different scribes. Other deposits have tablets written by one to three securely identifiable Hands,

105 Shelmerdine 1987b, 334–5; Palaima 1988, 91–4 (esp. 93), 156, 183; 1996a, esp. 382, 384; 1996b. See also Chadwick 1958, 4. For the importance of sets see, e.g., Chadwick 1968, esp. 11–3.

106 Palaima 1988, 85.

107 Cf. Palaima 1988, 181. Eighteen page-shaped tablets come from the NEB, 11 from the Southwestern Area (the Mn tablets—others in this area are displaced from the AC), one from room 20 and one from the doorway of rooms 71–72. Driesen (1999, 225) counts just four from room 99 and one from elsewhere, but I include documents intermediate between palm-leaf and page-shaped (see Docs2, 111, 406) that have greater affinities to the latter type. They are wider than they are high but, unlike palm-leaf shaped records, contain multiple entries and more extensive information. To count a tablet such as Ub 1318, for instance, as “palm-leaf shaped” is misleading, whatever its small letter classification.


109 Palaima (forthcoming) points out that time references are confined to the AC and room 99, marking these two collections of records as different from “strict ‘deposits’ of tablets found in areas such as the oil storeroom (room 23).”
Table 3. Pylos Deposits Apart from the NEB

<table>
<thead>
<tr>
<th>Rooms</th>
<th>Number of Documents</th>
<th>Series Represented</th>
<th>Subjects Dealt With</th>
<th>Hands and Styli Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>15 (+ 3 Xa)</td>
<td>Le, Ae</td>
<td>Textiles, textile workers</td>
<td>H13, S628-Cii, S632-Cii, Cii</td>
</tr>
<tr>
<td>20</td>
<td>1</td>
<td>Tn</td>
<td>Vessels</td>
<td>Cii</td>
</tr>
<tr>
<td>23–24</td>
<td>34</td>
<td>Fr, Wo, Wr</td>
<td>Perfumed oil</td>
<td>H2, H44, S1217-Cii, S1219-Cii, Cii</td>
</tr>
<tr>
<td>32–41</td>
<td>17</td>
<td>Fr, Wo</td>
<td>Perfumed oil</td>
<td>H2, H44, H41, H34, S1203-Cii</td>
</tr>
<tr>
<td>71–72</td>
<td>1 (+ 4 X-)</td>
<td>Fr (?)</td>
<td>Unknown</td>
<td>Cii</td>
</tr>
<tr>
<td>105</td>
<td>4</td>
<td>Wr</td>
<td>Wine</td>
<td>H13, S628-Cii, Cii</td>
</tr>
<tr>
<td>SW Area</td>
<td>37 (+ ca. 17 X-)</td>
<td>Mb, Mn, Ob</td>
<td>Textiles (*146, *166+WE)</td>
<td>H14, H43(?), S1398-Cii, Cii</td>
</tr>
</tbody>
</table>

Note: The table is based on data in Palaima 1988, 173–7 (table IV-1), but documents are included under rooms whence they probably originated, rather than strictly where they were found. Thus the count for rooms 23–24 includes one from court 63, since this tablet probably originated in room 23. Two La tablets from the Southwest Area belong to a set from room 6 and share their characteristic color (Palaima 1988, 164) so are included there, while the Eb tablet of rooms 5–6 must come from the AC and has been excluded. Two Fr tablets from Area 103 probably came from rooms 32–41. Note two Wr documents (rooms 24 and 32) are not sealings and are now reclassified Wo (Olivier 1997, 80–1). Three unprovenanced Wr documents are excluded; two are probably from the NEB. Also excluded are a few documents thought to be from an earlier phase of the palace (Palaima 1988, 169). X-Class documents are not systematically included. Data on them are derived primarily from Palaima (1988, 218–22) but this class is among the most likely to be affected by the past decade’s work on new joins, so the present account is subject to change (though the general outlines should not be substantially altered). Also, the majority of those relevant here are from the Southwestern Area, which is the subject of a new study by Shelmerdine (1998–1999), obviating the need for a detailed account here. I am grateful to C.W. Shelmerdine for making the text available to me before publication.

Evidence for NEB scribes working with scribes in the AC in terms of recording the same personnel, as discussed below.

Evidence for filing. The NEB has evidence for orderly filing and systematic arrangement (figs. 12–13). Most tablets were found in room 99 halfway along the southwest wall. They were jumbled together as they fell from the burning shelves in the final destruction, but remains of a few coherent groups indicate that related sets of tablets were originally filed together. For instance, the Ac tablets were found in Area C, and the Qa tablets were clustered in Areas A and B (the set may have been stored in two separate containers, perhaps on account of its large size, one of which fell straight down, while the other was thrown out from the wall).

Summary

The NEB deposit displays all Palaima’s criteria for an archives except scribal interaction. The criteria are not as strongly in evidence as in the AC, but they clearly distinguish the NEB group in character from any other deposit. The hybrid nature of
the group makes it begin to look like a minor or secondary archives, or perhaps something along the lines of a *bureau* or department, such as at Knossos.\(^{112}\)

Another feature of an archives is that it should be at "a point of easy access."\(^{113}\) As Palaima observes, "scribes moving to these buildings from anywhere within the palace had to pass by the AC. In fact all traffic into and out of the late LH III B palace had to pass near the all-important AC."\(^{114}\) Compare the placement of the NEB, near the main palace gate and facing onto the main courtyard (court 58).\(^{115}\) The NEB is as easy—if not easier—to access for traffic coming from outside the palace as the AC is.

One would hesitate to call the NEB an archives in its own right since important records such as those dealing with land tenure are missing, and the sheer number of texts is smaller. The place is an anomaly, calling for explanation. Tegyey proposed that the building functioned to some extent independently of the AC,\(^{116}\) and suggested its supposed religious connections might explain the phenomenon.\(^{117}\) Religious connections aside, the independence of the building is questionable. Shelmerdine rightly stressed similarities with methods and practice of the central administration.\(^{118}\) Most NEB scribes do also have documents in the AC, and at least one—Hand 21—is an important central administrator. Tegyey cited four NEB scribes without documents in the main palace,\(^{119}\) but the existence of one of these, H33, is now in question.\(^{120}\)

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\(^{112}\) Olivier (1984, 16) suggests it resembles a specialized bureau. Shelmerdine (1999, 568, 575) too speaks of it as a "department." See also Tegyey 1987, 362.

\(^{113}\) Olivier 1984, 16, n. 8; Palaima 1988, 180, n. 252.

\(^{114}\) Palaima 1988, 187.

\(^{115}\) The main gate onto the citadel was apparently near the Southwestern Area, leading into court 58 (AR 1997–1998, 56, fig. 79; Davis and Bennett 1999, 110; Nelson and Cooper 1998, 399–400).

\(^{116}\) Tegyey 1984, 75–6.

\(^{117}\) Tegyey 1984, 77–9.

\(^{118}\) Shelmerdine 1987b, 336; see also 1999, 567–8.

\(^{119}\) Tegyey 1984, 68.

\(^{120}\) See supra n. 110.
That the remaining scribes have no documents in the AC could be a matter of chance. Furthermore, there are instances of the same personnel being dealt with in both the NEB and the AC, and in at least one case we can surmise that a set of tablets (the Sa series) was written in the NEB then moved to the AC, probably for processing. These points suggest that the administrative activities of the NEB and the AC were very closely associated.

So the building was not independent, yet it is anomalous. One explanation for the anomaly is the workshop hypothesis for this assemblage. It is not clear what the administrative assemblage of a workshop should look like, since no definitive examples exist. But the assemblage does resemble a clearinghouse, an example of which is found in the West House Group at Mycenae, as elucidated by Shelmerdine.121 Like the West Houses, there are extensive storage facilities coupled with “unusual” amounts of administrative activity. The many scribes and the variety of commodities dealt with would be expected for an important center through which goods and information were processed. The semi-archival nature of the NEB documents would be explained if the NEB were closely allied to the AC as a subsidiary locus of record keeping and a primary place for receipt of goods.

The distribution of sealings supports this view of the building’s function (fig. 14).122 The NEB had more sealings than any other room or related group of rooms at Pylos. This is significant.

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121 Shelmerdine 1997b.
122 For studies of the Pylos sealings see, e.g., Aravantinos 1984; Palaima 1987, 1996a, 1996b, 2000a, 2000b, forthcoming; Palmer 1994; Pini 1997; Olivier 1997; Flouda 2000. It was my original intention to include a full account of the findspots of uninscribed sealings in the NEB, as done for documents in table 4 and figs. 12 and 13. This was, however, impossible on the basis of the published material (see supra n. 34), and it would be undesirable to publish uncertainties. I agree that much more can be done with the sealings than what is attempted here.
sealings had to do with movements of goods and information, representing an initial stage of the data recording process. While bulky, fragile tablets would not have been easily transportable, the small, compact sealings were well suited for such a purpose. It is now understood that the primary function of sealings was to convey information from underlying areas into the administrative centers of the polities—that is, the palaces. The large number of sealings in the NEB suggests that this was one of the principal places to which goods were brought when they first came onto the citadel. At the same time, the distribution of sealings throughout the palace poses problems for the workshop hypothesis. The NEB sealings often are thought to pertain to goods coming in for use in the building itself, but there is a paucity of evidence for palatial receipts. The NEB is not one of many places around the main palace block, but were received in buildings on the edges of the complex.

**THE LINEAR B DOCUMENTS FROM THE NEB**

Some 79 Linear B documents certainly or probably originated from the NEB. These are listed in table 4, arranged by scribal hand, and giving other tablets by the same hands found elsewhere in the palace. The assemblage is taken as a whole and all documents from the NEB are discussed here. The analysis is focused according to subject matter: men, foodstuffs, *livestock*, leather goods, weapons and chariots, miscellaneous, and obscure. New readings and joins since the publication of *Pylos Tablets Transcribed*, the standard edition of the Pylos documents, make it desirable to give the full texts here. Readings followed are those given in a version in progress of volume 4 of *PoN*. To facilitate comparison with the older edition, documents that have been particularly affected are noted with a character (*) and major changes are tracked in table 5. Some transcriptions are arranged schematically to aid comprehension, but nothing is altered or omitted. Epigraphic comments are included where relevant to interpretation.

Documents Dealing with Men

The Ac tablets form a coherent set; they were written by a single scribe and filed together (see data set 1 for a schematic arrangement of the texts). The force of the texts is that the toponyms listed must supply a certain number of men, and some are already supplied (or accounted for), while others are “owing.”

The 138 men supplied or expected in the Ac tablets cannot all have worked in the NEB at the same time. Table 6 gives the available space in the building taking the average of the inside wall lengths published in *PoN* 1.

The proposed workrooms, rooms 97 and 100, measure 87.05 m² combined. If 5 m² is a reason-

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125 Bennett and Olivier 1973.
126 Bennett et al. forthcoming (*PoN* 4). I am grateful to the editors for permission to cite the new transcriptions (in progress) here. Citations for sealings differ from those adopted by *PoN* 4 in that I omit arrows showing the direction of writing and add *supra sigillum* with the probable identification of the seal.
127 The majority of new joins are published in articles by Melena in *Minos* from 1992 to the present; see also Bennett 1992. The table includes new documents thought to be from the NEB and documents published in Bennett and Olivier (1973, 1976) now joined to others.
128 Some forms are ethnic adjectives (e.g., *peti-jo* for *peto-no* and *te-mi-ta-ke-e* for *te-mi-to-a-ke-e*), but not all—for instance, the ethnic of *me-ta-pa* would be *me-ta-pi-jo* (attested in An 654.3).
129 The measurement for room 100 is a minimum: the end of the building is lost, so the true dimensions of the room cannot now be determined (see *PoN* 1, 299, 325). Yet the room is unlikely to have been so large as to affect substantially our argument here.
Table 4. Documents of the NEB

<table>
<thead>
<tr>
<th>Room</th>
<th>Components (all 1957/unless otherwise specified)</th>
<th>Scribe</th>
<th>CMS 1</th>
<th>Series and Number</th>
<th>Other Documents of Same Hand or Stylus</th>
</tr>
</thead>
<tbody>
<tr>
<td>98</td>
<td>s7</td>
<td>Ci</td>
<td>324</td>
<td>Wp 1327</td>
<td></td>
</tr>
<tr>
<td>98</td>
<td>s8</td>
<td>Ci</td>
<td>318</td>
<td>Wr 1328</td>
<td></td>
</tr>
<tr>
<td>98</td>
<td>s5</td>
<td>S1331-Ci</td>
<td>319</td>
<td>Wr 1325</td>
<td>No others of this stylus</td>
</tr>
<tr>
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<td>Cn 1286</td>
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<td>Ja 1288</td>
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<td>–</td>
<td>Un 1319</td>
<td></td>
</tr>
<tr>
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<td>26.b.c* 43.a.b frr. 1962/f</td>
<td>Gi</td>
<td>–</td>
<td>Un 1320</td>
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</tr>
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<td>92</td>
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<td>Va 1323</td>
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<td>44 66</td>
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<td>Va 1324</td>
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<td>83</td>
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<td>Vn 1314</td>
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<td>Xn 1261</td>
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</tr>
<tr>
<td>99</td>
<td>41</td>
<td>Ciii</td>
<td>–</td>
<td>An 1282</td>
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</tr>
<tr>
<td>99</td>
<td>4 26.a* 30.f 98 frr.</td>
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<td>Vn 1339</td>
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<td>–</td>
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<td>Xa 1337</td>
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<tr>
<td>91</td>
<td>1956/2</td>
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<td>–</td>
<td>Xn 1261</td>
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<tr>
<td>99</td>
<td>67 68 fr.</td>
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<td>Ac 1272</td>
<td>No others of this stylus</td>
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<tr>
<td>99</td>
<td>69 72 frr.</td>
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<td>Ac 1274</td>
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<td>70 75 frr.</td>
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<tr>
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<td>71 78 80</td>
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<td>Ac 1276</td>
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<td>74 77</td>
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<td>–</td>
<td>Ac 1279</td>
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<tr>
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<td>99</td>
<td>25 45 47 49 91 frr.</td>
<td>H12</td>
<td>–</td>
<td>An 1281</td>
<td>Vn 851</td>
</tr>
<tr>
<td>99</td>
<td>33 1956/1</td>
<td>S1295-H15</td>
<td>–</td>
<td>Qa 1259</td>
<td>H15: Un 219</td>
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<tr>
<td>99</td>
<td>2 6</td>
<td>S1295-H15</td>
<td>–</td>
<td>Qa 1290</td>
<td>(Qa tablets by H33 are below)</td>
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<td>99</td>
<td>7 18 frr.</td>
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<td>Qa 1292</td>
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<td>99</td>
<td>8 21.a*</td>
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<td>Qa 1294</td>
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<td>Qa 1295</td>
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<td>Qa 1297</td>
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<tr>
<td>99</td>
<td>15 16 20</td>
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<td>–</td>
<td>Qa 1298</td>
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<tr>
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<td>46 56 84</td>
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<td>Qa 1299</td>
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<tr>
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<td>51 54</td>
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<td>Qa 1301</td>
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<td>99</td>
<td>52 53</td>
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<td>Qa 1302</td>
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<td>55 63 64</td>
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<td>Qa 1303</td>
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<td>57 58 59</td>
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<td>Qa 1304</td>
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<td>62</td>
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<td>–</td>
<td>Qa 1306</td>
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<tr>
<td>99</td>
<td>90 92 93*</td>
<td>S1295-H15</td>
<td>–</td>
<td>Qa 1308</td>
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<td>5</td>
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<td>–</td>
<td>Qa 1309</td>
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<tr>
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<td>11</td>
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<td>–</td>
<td>Qa 1310</td>
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<td>14</td>
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<td>Qa 1311</td>
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<td>–</td>
<td>Qa 1312</td>
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<td>SE of rm. 8 1962/f</td>
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<td>–</td>
<td>Qa 1441</td>
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Table 4. Documents of the NEB (continued)

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<tr>
<th>Room</th>
<th>Components (all 1957/8 unless otherwise specified)</th>
<th>Scribe</th>
<th>CMS 1</th>
<th>Series and Number</th>
<th>Other Documents of Same Hand or Stylus</th>
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<tr>
<td>47</td>
<td>1957/8</td>
<td>S4-H21</td>
<td>–</td>
<td>Cc 1258</td>
<td>S4: Cn 4, 40, 45, 254, 272, 595, 599, 600, 655, 938, 962; Cc 660, 665</td>
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<td>94</td>
<td>32</td>
<td>S4-H21</td>
<td>–</td>
<td>Cc 1283</td>
<td>S64: Aq 64, 218</td>
</tr>
<tr>
<td>99</td>
<td>86</td>
<td>S4-H21</td>
<td>–</td>
<td>Cc 1284</td>
<td>S186: all Ab; Fg 368</td>
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<tr>
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<td>99</td>
<td>S4-H21</td>
<td>–</td>
<td>Cc 1285</td>
<td>S658: Jn 658, 706</td>
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<td>98</td>
<td>81</td>
<td>H26?</td>
<td>–</td>
<td>Sa 1313</td>
<td>H26: all other Sa; Wa 1148, 1271(?)</td>
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<tr>
<td>99</td>
<td>94</td>
<td>H31</td>
<td>–</td>
<td>Cn 1287</td>
<td>No others</td>
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<td>99</td>
<td>94</td>
<td>H31</td>
<td>–</td>
<td>Ub 1315</td>
<td>No others</td>
</tr>
<tr>
<td>99</td>
<td>94</td>
<td>H32</td>
<td>–</td>
<td>Ub 1316</td>
<td>No others</td>
</tr>
<tr>
<td>99</td>
<td>94</td>
<td>Ub 1316</td>
<td>–</td>
<td>Ub 1317</td>
<td>(All formerly S1318-H32)</td>
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<td>94</td>
<td>Ub 1318</td>
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<td>Ub 1318</td>
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<td>1 22 24 ffr.</td>
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<td>Qa 1300</td>
<td>No others</td>
</tr>
<tr>
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<td>S1289-H33</td>
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<td>Qa 1305</td>
<td>No others</td>
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<tr>
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<td>82</td>
<td>H34</td>
<td>–</td>
<td>Un 1321</td>
<td>Wo 1199?</td>
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<tr>
<td>97</td>
<td>102a</td>
<td>–</td>
<td>–</td>
<td>Mb 1336</td>
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<td>s10</td>
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<td>–</td>
<td>Wr 1329</td>
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<td>1968/4 ffr.</td>
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<td>–</td>
<td>Wr 1458</td>
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<td>Wr 1459</td>
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<td>Wr 1480</td>
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<td>102.b</td>
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<td>–</td>
<td>Xa 1343</td>
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<td>99</td>
<td>x. 1995/3 (f)</td>
<td>–</td>
<td>–</td>
<td>Un 1482</td>
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<td>99</td>
<td>ffr?</td>
<td>–</td>
<td>–</td>
<td>Xn 1522</td>
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<td>–</td>
<td>–</td>
<td>Xn 1577</td>
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</table>

Notes: Several components could not be found in Palaima’s illustrations, used as the basis for figs. 12 and 13: s32 (Wr 1333) [Palaima (1988, 159) notes that only four of the five inscribed sealings from room 99 could be placed in context]; 4 (Vn 1339); 25 (An 1281); 84 (Qa 1299) [the other two components were in and near Area B, so this is the main provenance for Qa 1299]. Two components noted by Palaima (1988, 155, fig. 20) could not be found in the list of tablet components: 50 (Area B) and 36 (immediately below B).

- Un 1320 and Vn 1339 have elements given the same component number (Un 1320: 26.b and 26.c; Vn 1339: 26.a); see Melena 1996–1997a, 166.
- Corrected to S9 in PoN 4; Palaima (1988) and Bennett and Olivier (1976) have S3.
- Qa 1293 and Ub 1316 have elements given the same component number (Qa 1293: 21.a; Ub 1316: 21.f). Qa 1293 joins with a fragment in Area A; Ub 1316 presumably does not.
- Corrected to 93 (Palaima 1988, 213; see also PoN 4, citing MR, MNE p. 100) from 98 (Bennett and Olivier 1973, 256; see also Melena 1994–1995b, 287; 1996–1997a, 166).
- Olivier (1997, 81) considers the grounds to be insufficient to ascribe Un 1321 and Wo 1199 to a single Hand.

Data Set 1

The Ac Series (S1272-Ciii), room 99

<table>
<thead>
<tr>
<th>DOCUMENT</th>
<th>TOWN</th>
<th>MEN SUPPLIED</th>
<th>MEN OWING</th>
<th>EPIGRAPHIC NOTES</th>
<th>TOTAL</th>
</tr>
</thead>
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<tr>
<td>Ac 1276*</td>
<td>pi-82</td>
<td>vir[20]</td>
<td>o-pe-ro</td>
<td></td>
<td>20</td>
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<tr>
<td>Ac 1277*</td>
<td>a-ke-re-wa</td>
<td>vir[10]</td>
<td>o-pe-ro</td>
<td>6</td>
<td>10 over [6]</td>
</tr>
<tr>
<td>Ac 1278*</td>
<td>te-mi-ti-jo</td>
<td>vir[17]</td>
<td>o-pe-ro</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Ac 1279*</td>
<td>vir</td>
<td>o-pe-ro</td>
<td>vir[1]</td>
<td></td>
<td>1+</td>
</tr>
<tr>
<td>Ac 1280</td>
<td>me-ta-pa</td>
<td>vir[22]</td>
<td>o-pe-ro vir[7]</td>
<td></td>
<td>29</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td></td>
<td></td>
<td></td>
<td><strong>102+</strong></td>
</tr>
</tbody>
</table>
able space for each man to work in,\(^{135}\) only some 17 men—eight in room 97 and nine (minimum) in room 100—could work in the building. Adding room 99 (though it is not proposed as a workroom) would allow but 16 more, which must include scribes.\(^{134}\) Seventeen men (or 33, with room 99) do not account for the 138 men recorded on the Ac tablets. What were the other 121 (or 105) men doing? Even if working in shifts, at least eight shifts would be needed to accommodate all the Ac personnel. Is it reasonable to suppose that each man (some of whom came from at least halfway across the polity) worked for less than one day a week? Besides, the tablets in no way suggest a shift system. If men “owing” were not required to report yet, we might expect to see a constant proportion of men “owing” from each town. It seems rather that all the men were wanted immediately, but had not yet been supplied by the contributing areas.\(^{135}\)

If the men recorded on the Ac tablets cannot all have been working in the NEB, then some must have been assigned to work elsewhere. The implication is that Ac documents involve wider personnel movements. In fact, there is nothing in the documents that need suggest that any of the men were actually working in the building. The documents of the AC record personnel who certainly were not working in the AC. The findspots of Linear B tablets are not necessarily evidence that the matters they record were located in that area. The only person surely shown by the Ac tablets to have been working in the NEB is the scribe who placed them there.\(^{136}\)

Second, the Ac tablets are standard taxation documents for Pylos (the tax here being paid in men, probably through some sort of corvée labor obligation). The format and vocabulary of the texts (e.g., the use of o-pe-ro) are standard for tax records. Moreover, the scribe of the Ac tablets used a standard assessment method for calculating the numbers of men required from each place. The Ac tablet toponyms are capitals of some of the 16 districts into which the polity was divided for administrative purposes. In general, figures on taxation records for the district capitals follow a standard ratio such that the districts paid amounts in fixed proportions.\(^{137}\) The numbers on the Ac tablets conform to the ratio.\(^{138}\) Further, the Ac tablets involved at least six, and maybe eight, of the 16 districts, so their levy of manpower affected over a quarter, and maybe nearly half, of the entire polity. Thus, the scribe of the Ac series was versed in standard palatial practices, had access to palace accounting systems, gathered long-distance information pertaining to major palatial concerns affecting large areas of the polity, and, we can infer from the large numbers, recruited men not working in the NEB. Rather than requisitions for a single workshop, this information suggests major tax payments and polity-wide personnel redistribution.

Further involvement of the NEB in personnel redistribution is seen in An 1282 (data set 2). An 1282 has men involved in chariotry\(^{139}\) and perhaps weaponry (see below). The datives indicate disbursements, not requisitions, of personnel. While we saw men “coming in” in the Ac tablets, An 1282 shows men “going out,” that is, being assigned to work groups.\(^{140}\) Together these form a classic example of resource redistribution, the resources here being human, even if it is not necessarily the same men who are involved in each case.\(^{141}\)

An 1282 records 90 men—again too many all to have been working in the NEB. But here the problem

\(^{135}\) As proposed by Olivier (1997, 79), who makes a similar point regarding An 1282 (now see also Flouda 2000, 221). Other writers noting the high numbers do not draw the same conclusion, e.g., Tegvry 1984, 69.

\(^{134}\) Allowing half a meter along each wall for the shelves.

\(^{133}\) As proposed by Olivier (1997, 79), who makes a similar point regarding An 1282 (now see also Flouda 2000, 221). Other writers noting the high numbers do not draw the same conclusion, e.g., Tegvry 1984, 69.

\(^{132}\) One of the anonymous reviewers rightly brings to my attention that the men might have worked outside the building, as is common in modern Greece, but it is difficult to accept this scenario. If specifically connected to the NEB, they would have had to have been located in court 58—right in front of the main gates of the palace. Court 58 is not a very large area (part of it is lost down the slope, but even doubled would not constitute a particularly wide space) and 100 or so men would have been very much in the way.

\(^{131}\) Jasink (1984, 15) also notes that some of the Ac men were presumably working outside the NEB, but does not draw out the further implication that none necessarily work there.


\(^{139}\) First observed by Lang (1958, 190), followed by Shelmerdine (1987b, 339–40). Shelmerdine later (1989, 147 n. 49) abandons the idea on account of the new reading for Ac 1275 (Bennett 1992, 126) but, as J. Killen points out to me, the new figures are actually better. I am grateful for his permission to mention this here. In other taxation documents pē-to-no generally pays the same amount as me-te-pa and pi-\(^{92}\) combined (e.g., in Cn 608 pē-to-no gives six pigs, while the others give three each). Bennett and Olivier (1973) had “VIR 60” for the men of pē-to-no on Ac 1275, but it is now recognized that the correct figure is 25 over an erasure of 49. (Lang’s original reading was “49 o-pe-ro MAN 1”; 1958, 182.) It is unclear why the tax was reduced, but it is apparent that the scribe at first thought that 49 was the amount pē-to-no should pay, which is exactly the combined amount paid by pi-\(^{92}\) (20 men) and me-te-pa (29 men) on Ac 1276 and Ac 1280. Whatever the reasons for the change, the Ac numbers were conceived in the context of the standard taxation system.

\(^{138}\) Docs\(^{2}\), 522.

\(^{137}\) I mean “coming in” and “going out” in an administrative, not a directional, sense—it is not necessary that the men were ever physically located at the palace.

\(^{140}\) First observed by Lang (1958, 190), followed by Shelmerdine (1987b, 340–1).

\(^{141}\) Killen 1999b, 349–50.
is exacerbated because we know what the men were doing—fewer than eight men could work in room 97 if space was provided for a chariot too. Three men plus one chariot might have fit, leaving the other 15 of the 18 men “for chariots” working elsewhere. The size of the work force involved in chariotry attested in An 1282 indicates that the NEB cannot have been the main chariot workshop. But why then suppose that chariot production took place here at all? It is evident that NEB administrators were involved in assignment of personnel for chariot manufacture, but that does not verify that the NEB was an actual locus of production.

An 1281 (data set 3) also concerns personnel. Here men (in nominative) are assigned to persons (in dative) plus two shrines of *Potnia*. The suggestion

---

**Data Set 2**

**An 1282** (CiIII), room 99

<table>
<thead>
<tr>
<th>SIGN GROUP</th>
<th>NO.</th>
<th>INTERPRETATION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a-qî-ja-i</td>
<td>18</td>
<td>[men] for [work on] chariots</td>
<td>probable error for i-qî-ja-i dat. pl. /hiqq'iuhi/ “for chariots”</td>
</tr>
<tr>
<td>a-mo-si</td>
<td>18</td>
<td>[men] for wheels</td>
<td>dat. pl. /harmosi/ “for wheels”</td>
</tr>
<tr>
<td>ki-u-ro-i</td>
<td>13</td>
<td>[men] for wickerwork? or flints?</td>
<td>dat. pl. perhaps /skiwohi/ “for hard objects” or “for wickerwork”</td>
</tr>
<tr>
<td>do-ka-ma-i</td>
<td>36</td>
<td>[men] for shafts?</td>
<td>dat. pl. /dor(h)mahi/ “handles/shafts?”</td>
</tr>
</tbody>
</table>

---

**Data Set 3**

**An 1281** (H12), room 99

<table>
<thead>
<tr>
<th>INTERPRETATION</th>
<th>RECIPIENTS (IN DATIVE)</th>
<th>MEN GIVEN (IN NOMINATIVE)</th>
<th>VIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>/Potniâi/ hiqq'eiâî/ “to the Mistress of Horses” /opi hed(h)jî/ “at [her] shrine”</td>
<td>po-[ti-ni-ja , i-qi-ja] /qe/ “and”</td>
<td>a-ka , re-u-si-wo</td>
<td>2</td>
</tr>
<tr>
<td>To MN</td>
<td>au-ke-i-ja-te-we</td>
<td>o-na-se-u , ta-ni-ko</td>
<td>2</td>
</tr>
<tr>
<td>To WN</td>
<td>me-ta-ka-wa</td>
<td>po-so-ro</td>
<td>1</td>
</tr>
<tr>
<td>To WN</td>
<td>mi-jo-q[a]</td>
<td>e-wo-za-no</td>
<td>1</td>
</tr>
<tr>
<td>To WN</td>
<td>a-pi-e-ra</td>
<td>to-ze-u</td>
<td>1</td>
</tr>
<tr>
<td>To WN</td>
<td>[ ]</td>
<td>re-si-wo</td>
<td>1</td>
</tr>
<tr>
<td>At [place-name]: /Potniâi/ “to Potnia”</td>
<td>[ ]</td>
<td>[ ]</td>
<td>1</td>
</tr>
<tr>
<td>To MN</td>
<td>au-ke-i-ja-te-we</td>
<td>o-na-se-u , ta-ni-ko</td>
<td>2</td>
</tr>
<tr>
<td>To WN</td>
<td>me-ta-ka-wa</td>
<td>po-so-ro</td>
<td>1</td>
</tr>
<tr>
<td>To WN</td>
<td>mi-jo-q[a]</td>
<td>e-wo-za-no</td>
<td>1</td>
</tr>
<tr>
<td>To WN</td>
<td>a-pi-e-ra</td>
<td>to-ze-u</td>
<td>1</td>
</tr>
<tr>
<td>To WN</td>
<td>[ ]</td>
<td>re-si-wo</td>
<td>1</td>
</tr>
<tr>
<td>Document</td>
<td>Joins</td>
<td>Source</td>
<td>Effect on Document</td>
</tr>
<tr>
<td>----------</td>
<td>-------</td>
<td>--------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Ac 1272</td>
<td>+ fr. [+] Ac 1273</td>
<td>Melena 2000–2001, 378</td>
<td>New text (see PTT 1, 32)</td>
</tr>
<tr>
<td>Ac 1273</td>
<td>See Ac 1272</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Ac 1276</td>
<td>–</td>
<td>Bennett 1992, 126</td>
<td>New reading</td>
</tr>
<tr>
<td>Ac 1279</td>
<td>–</td>
<td>PoN4</td>
<td>New reading</td>
</tr>
<tr>
<td>Qa 1259</td>
<td>+ Xa 1335</td>
<td>Melena 2000–2001, 377</td>
<td>New text</td>
</tr>
<tr>
<td>Qa 1289</td>
<td>+ fr.</td>
<td>Bennett 1992, 126</td>
<td>New reading</td>
</tr>
<tr>
<td>Qa 1290</td>
<td>–</td>
<td>Bennett 1992, 126</td>
<td>New reading</td>
</tr>
<tr>
<td>Qa 1303</td>
<td>[+] Qa 1307</td>
<td>Melena 2000–2001, 377</td>
<td>New text</td>
</tr>
<tr>
<td>Qa 1307</td>
<td>See Qa 1303</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Un 1314</td>
<td>See Vn 1314</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Un 1321</td>
<td>–</td>
<td>Bennett 1992, 126</td>
<td>New reading</td>
</tr>
<tr>
<td>Wp 1327</td>
<td>ex-Wr</td>
<td>PoN4</td>
<td>New classification</td>
</tr>
<tr>
<td>Wr 1326</td>
<td>–</td>
<td>Bennett 1992, 126</td>
<td>New reading</td>
</tr>
<tr>
<td>Wr 1327</td>
<td>See Wp 1327</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Wr 1328</td>
<td>–</td>
<td>Bennett 1992, 126</td>
<td>New reading</td>
</tr>
<tr>
<td>Wr 1333</td>
<td>–</td>
<td>PoN4</td>
<td>New reading</td>
</tr>
</tbody>
</table>
that the shrine of the “Lady of Horses” was room 93143 depends on seeing the room as a shrine. But at least one of the shrines must have been elsewhere, again showing personnel movements outside the NEB.

Some recipients from An 1281 are found in Fn 50, from the AC (data set 4). Fn 50 deals with disbursements of grain in connection with a religious festival, as recently demonstrated by Killen. Three persons from An 1281 appear in Fn 50.11–13 as possessors of slaves (do-e-ro-i) receiving rations from the palace. Two of the possessors, mi-jo-qa and a-pi-e-ra, are women and, as Olivier has pointed out, the only other women with slaves in the Linear B archives are priestesses. It thus seems likely, especially given the religious context of Fn 50 and the mentions of Potnia on An 1281, that mi-jo-qa and a-pi-e-ra are priestesses. If so, then au-ke-i-ja-te-u may be a priest. In any case, Fn 50 shows persons present on NEB documents involved in a religious festival that must have taken place outside the NEB and is without obvious link to the concerns of a workshop.

It is significant that the management concerns of An 1281 and Fn 50 are associated. In one case personnel are assigned to individuals, in the other personnel are allocated rations. The context is personnel management, whether or not it is exactly the same persons who are being disbursed or maintained in either case. Along these lines, there is circumstantial evidence connecting the NEB with disbursements of bedding. H12, the scribe of An 1281, wrote just one other tablet, Vn 851, from the AC. This deals with issues of de-mi-ni-ja “beds or bedding” to various persons. A bed is mentioned also on a sealing from the NEB, Wr 1326 (data set 5).148

<table>
<thead>
<tr>
<th>Document</th>
<th>Joins</th>
<th>Source</th>
<th>Effect on Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wr 1458</td>
<td>–</td>
<td>PoN4</td>
<td>New reading; cf. Palaima 2000a, 265</td>
</tr>
<tr>
<td>Wr 1459</td>
<td>–</td>
<td>PoN4</td>
<td>New reading</td>
</tr>
<tr>
<td>Wr 1480</td>
<td>–</td>
<td>Shelmerdine and Bennet 1995, 125–32</td>
<td>New document</td>
</tr>
<tr>
<td>Xa 1335</td>
<td>See Qa 1259</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Xa 1343</td>
<td>ex-Xn</td>
<td>PoN4</td>
<td>New classification</td>
</tr>
<tr>
<td>Xn 1340</td>
<td>See Vn 1339</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Xn 1341</td>
<td>See Vn 1341</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Xn 1342</td>
<td>See Xa 1342</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Xn 1343</td>
<td>See Xa 1343</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Xn 1449</td>
<td>See Vn 1339</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Xn 1481</td>
<td>–</td>
<td>Shelmerdine and Bennet 1995, 133–6</td>
<td>New document</td>
</tr>
<tr>
<td>Xn 1482</td>
<td>See Un 1482</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Xn 1577</td>
<td>–</td>
<td>PoN4</td>
<td>Newly published nonjoining fragment</td>
</tr>
</tbody>
</table>

Table 6. Interior Wall-Spans of NEB Rooms

<table>
<thead>
<tr>
<th>Room</th>
<th>Interior (in m)</th>
<th>Square Meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>3.00 × 3.43</td>
<td>10.29</td>
</tr>
<tr>
<td>95</td>
<td>2.80 × 7.20</td>
<td>20.16</td>
</tr>
<tr>
<td>96</td>
<td>2.68 × 3.38</td>
<td>9.06</td>
</tr>
<tr>
<td>97</td>
<td>6.25 × 6.705</td>
<td>41.91</td>
</tr>
<tr>
<td>98</td>
<td>7.12 × 6.25</td>
<td>44.50</td>
</tr>
<tr>
<td>99</td>
<td>15.73 × 6.45</td>
<td>101.43</td>
</tr>
<tr>
<td>100</td>
<td>7.00 × 6.40</td>
<td>44.80</td>
</tr>
<tr>
<td>Total area</td>
<td></td>
<td>272.15</td>
</tr>
</tbody>
</table>

143 PoN 1, 305.
144 Chadwick restores po-ti-[a]-kesi (Docs², 484, Additional Commentary), and PoN4 now reads in the apparatus for line 9: “possibly po-ti-[a]-ke-si.” Given the uncertain reading, however, the possibility that this is an otherwise unknown toponym should be kept in mind.

145 Lang 1958, 190.
147 Olivier 1960, 134–6.
148 The only other document on which the word appears at Pylos is a new tablet, Xn 1482; see appendix.
Data Set 4

**Fn 50 (S324-Gii), AC**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a-ki-to-jo, qa-si-re-wi-ja</td>
<td>HORD[ qς</td>
</tr>
<tr>
<td>2</td>
<td>ke-ko-jo, qa-si-re-wi-ja</td>
<td>HORD[ qς</td>
</tr>
<tr>
<td>3</td>
<td>a-ta-no-ro, qa-si-re-wi-ja</td>
<td>HORD T[ qς</td>
</tr>
<tr>
<td>4</td>
<td>me-za-ne</td>
<td>HORD V2</td>
</tr>
<tr>
<td>5</td>
<td>me-ri-du-te</td>
<td>HORD V3</td>
</tr>
<tr>
<td>6</td>
<td>di-pte-ra-po-ro</td>
<td>HORD V2</td>
</tr>
<tr>
<td>7</td>
<td>a-to-po-jo</td>
<td>HORD V2</td>
</tr>
<tr>
<td>8</td>
<td>o-pi-te-u-ke-e-we</td>
<td>HORD V2</td>
</tr>
<tr>
<td>9</td>
<td>ze-u-ke-u-si</td>
<td>HORD V4</td>
</tr>
<tr>
<td>10</td>
<td>v.[</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>au[-ke-i-]ja-te-wo, do-e-ro-i</td>
<td>HORD T1</td>
</tr>
<tr>
<td>12</td>
<td>miojo[-qa]do-e-ro-i</td>
<td>HORD V3</td>
</tr>
<tr>
<td>13</td>
<td>a-pi-ε-τιλ do-e-ro-i</td>
<td>HORD V3</td>
</tr>
<tr>
<td>14</td>
<td>]-wo[</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>vacat</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>vacat</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>vacat</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>vacat</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>vacat</td>
<td></td>
</tr>
</tbody>
</table>

Wr 1326 is the only other document from anywhere in the palace written by the same scribe who wrote the Ac series, suggesting a connection between the administrative concerns of this group of texts. Two scribes, one of whom writes just two surviving tablets—H12, with An 1281 and Vn 851—and the other only a set of tablets and a sealing—S1272-Gii, with the Ac set and Wr 1326—each deal with the same two subjects (personnel and bedding) on their extant documents. Further, these subjects are plausibly related. There is a connection between requisitioning (the Ac tablets) or assigning (An 1281) personnel and disbursing supplies to them. Mycenaean scribes were often specialized. Could it be that H12 and S1272 specialized in personnel management—that is, beyond personnel connected to specific industries—and that their tablets relate to aspects of this specialization? The documents recall some of those found in the West House group at Mycenae. MY V 659 deals with bedding and Fo 101 with rations issued to some of the same named individuals. These persons were not working in the buildings. Rather, as Shelmerdine has elucidated, the buildings belonged to a clearinghouse complex, part of whose function was the disbursement of bedding and rations to personnel working elsewhere. I suggest that this was an important part of the function of the NEB too. The connections of the personnel documents with both rations and bedding strongly suggest a parallel situation. Further evidence linking the NEB to disbursements of rations will be seen in Un 1322 below.

Whether or not a connection between the various documents of H12 and S1272 is admitted, it is clear that personnel management was a significant feature of administrative activities in the NEB, and further that not all of the persons managed could actually have been working in the building. NEB scribes were involved in polity-wide personnel redistribution, operating in tandem with the AC.

Data Set 5

**Wr 1326** (S1272-Gii), room 98

<table>
<thead>
<tr>
<th></th>
<th>sigillum (CMS 1, 312)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>fo</td>
</tr>
<tr>
<td>2</td>
<td>de-mi-ni-jo</td>
</tr>
</tbody>
</table>

---

149 Tegyey (1984, 70) and Palaima (1988, 75) also link An 1281, Vn 851, and Wr 1326, but not the Ac tablets. Palaima (1988, 131) expresses the view that "the text of Wr 1326 has no obvious connection with the Ac texts." Yet they are connected if the Ac tablets have to do with requisitioning or monitoring personnel and the Wr sealing has to do with disbursing bedding for personnel.

150 See, e.g., Olivier 1967, 131–3; Killen 1979, 167; Shelmerdine 1988, 343–84. There were fewer specialized scribes at Pylos than at Knossos (Palaima 1984, 39; Shelmerdine 1988, 361; 1999, 565).

Documents Dealing with Foodstuffs

Un 1322 (data set 6) records a net-maker and weaver receiving wheat and figs, the standard foodstuffs for Mycenaean rations. An unusual feature for a rations record is the word o-no, which may be connected with ὀνίνς “I benefit,” with the sense of “consideration” or “payment.” The document may deal with (perhaps one-off) “payments” to craftsmen, presumably for their work. Possibly, the men were not ordinary palace dependents, so that their receiving foodstuffs required the explanation provided by o-no.

As with the vir documents, the men of Un 1322 probably worked outside the NEB, since there is no evidence for weaving in the building (only two loom weights were found, both in the courtyard), and net-making is normally done closer to the sea (though this point may not be pressed: nets have multiple uses, e.g., in hunting). Note the wide variety of activities attested for persons recorded in the building: weavers, net makers, chariot makers, wheelwrights, halter makers, and weapons assemblers, and others.

The context of Un 1321 is probably not industrial because vin appears together with wheat (GRA, line 3), suggesting consumption rather than manufacture. Its connection with land tenure is unlikely since no words from the specialized land tenure vocabulary are present and o-no does not appear in the surviving text. While remembering that such words might have appeared in the numerous lacunae, it is possible that the tablet concerns ceremonial banqueting. Whatever the case, since Un 1321 is probably unrelated to industry, it is not clear why it should appear in a workshop. On the other hand, it would fit well into the context of a clearinghouse, and as seen above, the building was linked to disbursements of grain. There is no reason that wine should not be added to the various commodities dealt with by the establishment.

Data Set 7

Un 1321* (H34), room 99

<table>
<thead>
<tr>
<th>Line</th>
<th>Text</th>
<th>WHEAT</th>
<th>FIGS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>.1</td>
<td>]</td>
<td>GRA [ gs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.2</td>
<td>] o-no[</td>
<td>GRA 6</td>
<td>N[</td>
<td></td>
</tr>
<tr>
<td>.3</td>
<td>]</td>
<td>GRA 2</td>
<td>N[</td>
<td></td>
</tr>
<tr>
<td>.4</td>
<td>]</td>
<td>GRA 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.5</td>
<td>] o-no[</td>
<td>GRA 5</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>.6</td>
<td>]</td>
<td>GRA 15</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>.7</td>
<td>vest[</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The variety of crafts represented makes better sense if the building functioned as a clearinghouse dealing with diverse personnel working in different locations, than as the retranscription of a single workshop.

The next document, Un 1321 (data set 7), is poorly understood. Most sign-groups here defy interpretation. to-sa-ka-pa-ra may be /tassai skaphalai/, “so many ὀκάφαλαι,” glossed by Hesychius as a sort of liquid container. Despite uncertainties, parallels with other tablets allow a guess at the probable context. Wine (vin, line 2) is a relatively rare commodity. Where found, it is generally connected with ceremonial banqueting, land tenure, o-no, or perfumery (e.g., Un 267).

Notes

152 Chadwick 1964, 19–20, also Lang 1959, 137. See Chadwick 1988 for discussion of Mycenaean rations. R. Palmer’s suggestion (1989, 1992) that GRA represents barley rather than wheat is not universally accepted (see, e.g., Halstead 1995) and I follow the traditional identification here. The argument would be unaffected in any case because, whatever GRA represents, it was the standard substance issued for rations.

153 Chadwick 1964, 21, 23. It cannot be Classical ὀνος (sale price) since this originally had a digamma. See also Docs5, 506; Killen 1995, 218, 225–4; Aura Jorro 1993, 27–8.

154 Duhoux 1976, 130–4, esp. 133.

155 See Palmer 1994, 115–6, for a recent discussion with bibliography.

156 Shelmerdine 1985, 17–9.
Documents Dealing with *189

The Qa series forms a coherent set, dealing with an unidentified commodity, *189. The documents here are arranged in groups according to types of persons appearing on them (data set 9). It is not clear whether the Qa tablets record deliveries or disbursements. L.R. Palmer argued for deliveries, without supporting discussion.\(^\text{157}\) Shelmerdine argued for deliveries on the basis that some of the sealings found in the NEB are deliveries and that “it is more likely that a workshop is receiving raw materials . . . than giving them out.”\(^\text{158}\) Without reference to the workshop issue, this argument is not convincing because we do not know that *189 is a raw material,\(^\text{159}\) and evidence for deliveries would not preclude the possibility of other documents dealing with disbursements. In fact, some NEB documents, such as Un 1322 and Ub 1318, do record disbursements.

An examination of the persons involved may help clarify the possibilities. The first group comprises officials, most of whom are known from other documents. The man called e-kə-rί-ba-we (Qa 1292) is involved in land tenure (Er 880, Un 718) and military contributions (An 610, An 724).\(^\text{160}\) He may be the king of Pylos himself,\(^\text{161}\) but is in any case an important official. a-pi-a-ro (Qa 1297) is an important regional official (On 300) also involved in land tenure (Ea 109+). ne-gu e-da-e-u (Qa 1298) is a holder of ko-ma land at pa-ki-ja-na (Eb 613, Eb 415). Two men are described as me-nu-a, an official title that appears in land tenure (Aq 218) and military contexts (An 724). The second group includes priests, priestesses, and men with possible or probable religious designations (perhaps “ritual purifier, prophet,” and probably “Potnia,” indicating some special relationship with Potnia). The third group includes persons designated by their names, none of which occur elsewhere in the Pylos documents.

Two of these men are connected with major toponyms (a-pi-a-ro and ko-ra-do-ro), suggesting that they were not normally based at the palace, again indicating wider concerns for the NEB.

Ignoring the damaged final group, which provides scant information, there are 17 Qa tablets with more or less complete data, and for 12 of these (all except the five of group three) we can say something about the persons involved. In every case where something is known, the person is either an important official or religious dignitary.\(^\text{162}\) Any explanation of the Qa tablets must account for the fact that these were not ordinary, mundane transactions, but were restricted to an elite group. Let us consider the possibilities with this in mind.

If these are records of contributions or deliveries to the palace, they are not ordinary taxes since the portion of the society that normally pays taxes is excluded. These records may be instances of honorific or privileged gifts similar to Un 138, where an official donates foodstuffs for a banquet. Another parallel might be Jo 438, where various officials (again, not ordinary taxpayers) contribute amounts of gold. (These parallels may suggest that *189, whether a raw material or not, was a valuable commodity.)

If the tablets record disbursements, they might represent instances of the palace supporting valued servants and members of the aristocracy through devices such as land tenure. In the Near East, persons who were so supported often received other goods, such as cloth and silver, in addition to land tenure grants or rations.\(^\text{163}\) It may be significant that every single identifiable individual in the Qa tablets is a known land holder.\(^\text{164}\) The title me-nu-a, priests and priestesses, and a man described as po-ti-ni-ja-we-jo, viz. (probably) “of the Goddess Potnia” also appear prominently in land tenure contexts.\(^\text{165}\)

\(^\text{157}\) Palmer 1963, 372.
\(^\text{158}\) Shelmerdine 1987b, 335.
\(^\text{159}\) The ideogram may appear on a new tablet, Xn 1482; see appendix.
\(^\text{160}\) Chadwick 1987, 78.
\(^\text{161}\) Chadwick 1975, 453; 1976, 71; Lindgren 1973, 135, 150–1; Palaima 1995a, esp. 194–5. The view is not universally accepted.
\(^\text{162}\) Cf. also Chadwick 1975, 450–1 for the “aristocratic” nature of the group.
\(^\text{163}\) Cf. e.g., Heltzer 1976, 5.
\(^\text{164}\) Note ne-gu e-da-e-u (certainly), e-kə-rί-ba-we (almost certainly) and a-pi-a-ro (probably) are the same individuals here, not different persons who happen to share the same name.
\(^\text{165}\) E.g., Eb 364, Ep 613.
### Documents Dealing with Livestock

Sheep and goats appear on three NEB sealings and a number of tablets. The sealings are seen in data set 10.

#### Qa tablets

<table>
<thead>
<tr>
<th>Data Set 9</th>
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<tbody>
<tr>
<td><strong>DOCUMENTS</strong></td>
</tr>
<tr>
<td>Qa 1292*</td>
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</tr>
<tr>
<td>Qa 1301</td>
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<td>Qa 1299*</td>
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<tr>
<td>Qa 1300</td>
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<td>Qa 1303*</td>
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<td>Qa 1294*</td>
</tr>
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<td>Qa 1304</td>
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<td>Qa 1305</td>
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#### MN’s and TN’s

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<tr>
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<tr>
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<td>Qa 1312</td>
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<td>Qa 1441</td>
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#### Very Damaged

<table>
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<tr>
<td><strong>DOCUMENTS</strong></td>
</tr>
<tr>
<td>Qa 1299</td>
</tr>
</tbody>
</table>

*Note: WN = woman’s name; MN = man’s name; TN = toponym; o.m. (= “only mention”) indicates the sign-group is not found in any other text at Pylos. All Qa tablets are by H15-S1295, except 1289, 1300, and 1305 (by H33).*

Whether the Qa tablets record deliveries or disbursements, nothing connects them with workshop activities. In general, Mycenaean documents dealing with production relate to higher-level managerial concerns, such as issuing instructions as to what goods are to be made, disbursing materials to workshops or individual craftsmen, receiving finished products, or distributing rations to workers. The Qa tablets do not share similarities with any of these types of documents. They are not rations records; nor do they involve stints or orders. As for disbursing raw materials: we do not know that *I89 was a raw material, but more important, the recipients (if they are recipients) are not craftsmen. There is thus no reason to connect the Qa tablets with production per se.

The type of record that the Qa tablets do resemble is exemplified by the Fr tablets (notably also found in storerooms), which record disbursements of finished products (perfumed oil) for actual use rather than further processing. If the parallel is valid, the items given out in the Qa records will have reached their final home/use context with the specified persons. Alternatively, if the documents do record deliveries, their parallels would be specialized taxation tablets such as Jo 438 mentioned above. Either way, these tablets are fundamentally concerned with movement of goods. Nothing suggests *I89 was made or used in the NEB; it is sufficient to suppose that the commodity was stored in, received at, or distributed from the building.

#### Documents Dealing with Livestock

Sheep and goats appear on three NEB sealings and a number of tablets. The sealings are seen in data set 10.

We will see here an instance of the workshop hypothesis exerting questionable influence on...
epigraphic interpretation. Given the difficulty of explaining live animals in the context of a workshop, it was proposed that the ideograms represent not live animals but their skins. Even if the NEB were a locus for leatherworking, tanning would seem to be excluded by the building’s proximity to the palace and lack of adequate facilities. But if prepared pelts rather than live animals were involved, the sealings could then be explained as records of a raw material coming into the workshop.

It is doubtful that ovis and cap can represent pelts. In the hundreds of examples where certainty is possible, they represent live animals. Live animals and skins are qualitatively different, and it is unlikely that Mycenaean ideograms were subject to such extreme variations in significance. Several ideograms representing skins show that the distinction was made. *152, *153, and probably *154 are drawings of skins. *152 is surcharged with WI, probably representing wi-ri-no/’rinos/ “oxhide,” and *153 is surcharged with KO, probably ko-wo/kious/ “sheepskin” (notably, a type we would be concerned with here).

It is sometimes suggested that Wr 1332 (data set 11), by the same scribe as the other sealings (S1331-G) and coming, like some of them, from room 99, confirms the interpretation of ovis/cap here as hides because it records the syllabogram WI, which, it is proposed, represents oxhides.

It is by no means necessary that WI here should abbreviate wi-ri-no. But if it does, this creates problems for the idea that the animal ideograms on the other sealings represent skins, since it seems odd that the scribe would have chosen in one case to represent “hide” with an abbreviated word and in other cases to represent “hides” with animal ideograms.

The matter is now put past reasonable doubt by the Thebes Wu sealings found in 1982, which undoubtedly record live animals, not skins. Some examples are seen in data set 12; note their close resemblance to the NEB sealings above.

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166 Duhoux 1976, 129; Melena 1983, 280; Jasink 1984, 18–22; Shelmerdine 1987b, 335, 337–8. (First proposed by Melena [1972, 34; 41–2, 51–2] for the Knossos Mc series, but for different reasons. The idea there rests on an uncertain interpretation of *150 in the Mc series and an uncertain reading of *258 in C 5669 with [uncertain] interpretation of this as an animal skin. Even if *258 is an animal skin and the ideogram is correctly read, this need not suggest that cap’ immediately following it is a skin too.)

167 See Killen 1999a, 333–4 for an important discussion.

168 Melena 1983, 279.

169 Olivier (1997, 75) points out that it is unlikely to represent wi-ri-no in Un 219.10. Killen (1999a, 335–6) suggests that WI may be a type of animal.


The Thebes sealings have nothing to do with workshop production. Their purpose was to record foodstuffs—including live animals for sacrifice—assembled for a banquet. Could the NEB sealings have served a similar function? Note both groups feature the word o-pa. Melena rightly rejected an early suggestion that this meant "workshop" but his proposal that it indicates "work assigned to be performed" is difficult to accept because such a designation already exists in the term ta-ra-si-ja. Killen proposes an alternative interpretation of o-pa as "finishing," working on items at a stage beyond that of primary manufacture. In the context of livestock, this might mean "fattening up for slaughter"; the word has the same usage in modern English. If this is correct, then o-pa on the NEB sealings could mean that the animals had been (or were to be) fattened for consumption.

Relevant to live animals, it is now understood that sealings such as those at Thebes were used as a basis for writing up tablets such as PY Un 138, a record of provisions for a banquet. The sealings were "field-records," step one in the process of conveying information into the palaces. It could be that the sealings in the NEB were eventually used to write tablets like Un 138. This practice would be consistent with an interpretation of the NEB as a clearinghouse. It is unlikely that animals would have been kept in the building—even temporarily—but they may have been dealt with administratively here. Possibly, the information about their arrival in the citadel area would be brought to the NEB, where orders would be issued about what was to be done with them, and, crucially, where the information concerning them would be received for incorporation into the administrative recording system of the palace. Such a scenario would be in keeping with the sealing distribution observed in figure 14.

177 Killen 1999a.
178 Killen 1999a, 332.
179 See also Palaima 2000a, 264.
181 Killen 1994, 73.
182 See now Palaima 2000a, 264, 266–7.
183 PoN 4: "s.u. s. but e.q. u. not entirely impossible."
184 "Secondary" refers to produce which can be obtained without killing the animal (e.g., milk or wool). Pigs provide meat and hides, both of which require slaughter.
185 Note the high number is unprecedented for a sealing (and, as one of the anonymous reviewers rightly points out, for a banqueting record). I am grateful to J-P. Olivier for many years ago stressing to me the uncertainty of the reading for the ideogram.
186 PoN 4: "Probably logogrammatic, but an animal! not excluded."
187 Bennett and Olivier 1973 reads pi-ri{.}
188 Palaima 2000a, 265.
189 The Mycenaean word for “kid” may be e-po (syncopated form of ἐρῖφος); see Aura Jorro 1985, 227–8. I am grateful to John Killen for bringing this to my attention.
190 Bennett and Oliver 1973, 265. The ligature is not used of humans.
appears elsewhere in the NEB representing deerskin (see below: Ub 1316 and 1317), uncertainty remains.

NEB tablets dealing with livestock are seen in data set 15.

The Cc tablets are fragmentary. pe-re on Cc 1284 may represent /pherei/ “he brings.” Cn 1286 has the same general form as the Cc tablets—a word or two of text, an ideogram, and a number—but the tablet is page-shaped and the scribe had ruled more lines than were actually written in, as if anticipating more information.\textsuperscript{101} The Cc tablets and Cn 1286 might also relate to banqueting. The numbers of animals recorded are all very small, and it has been observed as a general (though not absolute) rule that small numbers of livestock tend to occur on documents dealing with animals intended for consumption.\textsuperscript{102}

Cn 1287 similarly registers small numbers of animals, this time against persons who are conspicuously not goatherds: a herald (probably), fuller, potter, weaver, “slave of Di-u-ja” (a female deity)\textsuperscript{103} and “slave of MN.” The names are nominative, so it is uncertain if these are deliveries or disbursements. If disbursements, the animals might be “payments,” presumably for services rendered, possibly

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\textsuperscript{101} One wonders if this is an example of a “compilation” document—perhaps the scribe began to write a redaction from palm-leaf shaped tablets or sealings and stopped for some reason.

\textsuperscript{102} Chadwick 1985, 200; Palaima 1992, 65; Killen 1994, 77.

\textsuperscript{103} The deity also possesses slaves on An 607, while in Tn 316 she receives a woman and a golden bowl.
similar to the situation suggested for men receiving foodstuffs on Un 1322. There are, however, no sure examples of payments being made to craftsmen in livestock, so this is perhaps not the best explanation.

If Cn 1287 concerns deliveries, it is possible to argue that, as with the Qa tablets, this is no ordinary tax. Since the persons are not goatherds, why should they contribute goats? Even if some craftsmen had standing flocks or a few goats of their own (which is not unlikely), we need to explain why the palace would choose to tax just these people. There are no other Mycenaean records where taxes are paid in livestock and, if the palace had obtained animals in this way, the tax should be levied most heavily on shepherds and goatherds, not potters and weavers. Further, other tablets of the Cn series show that the palace owned huge numbers of sheep and goats in flocks all over the polity. Why would the palace bother to obtain small numbers of goats by taxation when it already possessed extensive flocks?

The small numbers of animals involved again suggest a possible connection with banqueting. A possibility in this light is that Cn 1287 should be compared with tablets such as Un 138 and Cn 418, where important officials contribute foodstuffs intended for major feasts. Provision of supplies for banqueting would not be “tax” in the ordinary sense (though it was perhaps a social obligation for some); but being able to contribute goods in this way would have been a means of enhancing social prestige, displaying personal wealth, and securing reciprocal obligation. While the donations on Cn 1287 are not as lavish as those seen in the examples cited, this could be in keeping with the lower status (and/or inferior wealth) of the contributors. It might have been considered worthwhile and prestigious to make lesser contributions, be it only a single goat. Not everyone in the society would have been in a position to give even so much—these craftsmen may have been among the wealthy and prominent of their professions.

Killen suggests a parallel for the contribution of the slave of ke-re-ta-o (Cn 1287.7) in the Knossos C(2) series, recently recognized as concerned with banqueting. C(2) 941 records a man a-pi-qo-ta who gives ten female and more than eight male sheep described as intended for slaughter or sacrifice: sa-pa-ka-ter-i-ja /phakteria/. C(2) 915 has another contribution from a-pi-qo-ta and a contribution of 10 female goats—the same type of animal seen in Cn 1287—by his slave (data set 16).

It is attractive to interpret all the NEB livestock documents as related to ceremonial banqueting; but whether or not this is correct, nothing here contributes to the workshop argument. The documents do however make sense in the context of palatial redistribution—movement and management of goods—whatever the animals were ultimately intended for. Their findspots in the NEB are explained if this was a major center through which goods (or information about them) would pass.

Documents Dealing with Leather Goods

Ub 1315 (data set 17) lists skins, reins, halters, and trappings for animals. Chadwick stresses a connection with “chariot equipment,” noting that red skins may have been used as coverings for chariots; the Knossos chariot tablets (Sd) use a word denoting a reddish color, po-ni-ki-ja. Although the possibility should be noted that the record simply relates to animal trappings in general, another NEB document dealing with chariots would be unsurprising. Ub 1315 is written by H31, the scribe who wrote Cn 1287. There need not be a link in subjects between the two tablets merely on account of shared scribal hand, but as Killen observes, if there is a link “the connection need only be that the skins of the animals on 1287 were used for leather manufacture after the animals had been slaughtered for consumption. Note that in the Classical period skins of animals consumed at sacrificial banquets were often sold to tanners by organizers of the festivities.” Whatever the case, the tablet does not directly concern actual manufacture. It is an inventory or a record of movement of goods.

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194 Or even a “confiscation” to supply the workshop, as in Jasink 1984, 21.
195 See Killen 1993.
196 A banqueting context for Cn 1287 is argued for by, e.g., Aravantinos 1990, 102; Godart 1999, 251; Killen 1999a, 334. Palaima (1992, 65) suggests, with appropriate caution, that the labyrinth on the verso might pertain to a religious context.
197 Killen 1994, 75–6; 1999a, 334.
199 Transcriptions given in the tabular breakdown are mostly those preferred in Aura Jorro 1985 and 1993. (s.v.v.). For ro-wet-wet-ja and ma-pet-e-ja, see Docs3, 520; for po-pse-wi-ja, see Docs3, 521; for ZE, see Docs3, 593; Melena 1987a; Aura Jorro 1993, 438.
200 Docs3, 519–21.
201 Killen 1999a, 334.
To clarify the structure in the next example, Ub 1318 (data set 18), personal names appear in bold type. Of the documents seen so far, Ub 1318 comes closest to having to do with actual manufacture. Various persons receive skins, and the document specifies what is to be done with the skins: they are “for saddlebags,” “for sandals,” and so forth.

Two points need to be made. First, the disbursals for the leather industry witnessed in Ub 1318 are wholly in keeping with standard palatial administrative practices. There is nothing unusual about this sort of document. Second, Ub 1318 is not strictly speaking a “workshop record.” It does not deal with processes of manufacture; rather it records the disbursement of supplies and stipulates what is to be done with them. Nothing in this text implies that

See Ruijgh 1966; Docs², 490–3; Ruipérez and Melena 1990, 172, 251; Flouda 2000, 228. Interpretations in the tabular breakdown mostly follow Aura Jorro (1985 and 1993) (s.v.s.). On e-pi-u-su-te-wi-je see now Melena forthcoming (s.v. *19); Docs² (493, 544) takes the form as nom. pl. for ze-ke-si, see Docs², 593. For the obscure words of line 3, see Docs², 491, 492, 592; Melena 1987a, 141; Docs², 491, 592; Melena 1987a, 451. For a-za, see Docs², 493, 537; Aura Jorro 1985, 142.
Data Set 18

Ub 1318* (H32), room 99

<table>
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<tr>
<th>RECIPENT POLICY</th>
<th>ITEM COUNTED</th>
<th>PURPOSE/OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>to au-ke-i-ja-te-u</td>
<td>4 skins</td>
<td>for saddlebags</td>
</tr>
<tr>
<td></td>
<td>2 skins</td>
<td>for ? (text lost)</td>
</tr>
<tr>
<td>to au-ke-i-ja-te-u</td>
<td>x skins</td>
<td>[for] support straps</td>
</tr>
<tr>
<td></td>
<td>4 skins</td>
<td>[for] bindings of pack saddles</td>
</tr>
<tr>
<td></td>
<td>4 containers</td>
<td>made of wicker</td>
</tr>
<tr>
<td>to me-ti-ja-no</td>
<td>1 skin</td>
<td>for something obscure</td>
</tr>
<tr>
<td></td>
<td>3 red skins</td>
<td>for sacks/bags</td>
</tr>
<tr>
<td>to wo-di-je-ja</td>
<td>2 sandals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 pig skins</td>
<td>oxhide wrappers</td>
</tr>
<tr>
<td></td>
<td>3 pairs of oxhide laces</td>
<td>of sandals</td>
</tr>
<tr>
<td></td>
<td>2 deer skins</td>
<td>for a garment?</td>
</tr>
<tr>
<td>to a-pe-i-ja</td>
<td>1 [pigskin?]</td>
<td>for “under fringe”?</td>
</tr>
<tr>
<td></td>
<td>1 deer skin</td>
<td>under pigskin?</td>
</tr>
<tr>
<td>to mu-te-we</td>
<td>1 lamb’s [skin]</td>
<td>for ? (text lost)</td>
</tr>
<tr>
<td></td>
<td>1 goat’s skin</td>
<td>for sandals</td>
</tr>
</tbody>
</table>

the work was carried out on the spot. Again, the presence of documents need not imply that the activities they record took place in the area where they were found. Disbursement records for perfumery and bronze manufacture were found in the AC, but such activities were not carried out there. Similarly, Ub 1318 indicates only administrative activity; it does not constitute evidence that leatherworking was carried out in the NEB. Beyond this, since disbursement documents found in storerooms do generally refer to disbursements of things that were stored there, and since the NEB—unlike the AC—really was a storage complex (i.e., for storing things other than tablets), it is likely that the materials disbursed were kept in the building. One is reminded of the red stains on the floors of rooms 97 and 98: the “red skins” of Ub 1315 and 1318 may have been among the commodities stored in those rooms.

The only other documents written by the scribe of Ub 1318 (H32) are also from the NEB (data set 19).

Data Set 19

Ub 1316 (H32), room 99

\{ a e-ra-pi-ja ra-ma-o , o-pe-ro , pe-ru-si-nu-wa \} E 8 MN: /ophelos perusinwai elaphiai/ “deficit: last year’s deerskins”

Ub 1317 (H32), room 99

\{ a e-ra-ti-ja-o\textsuperscript{203} i-wa-ka , o-pe-ro , pe-ru-si-nwao-o \} E 8 MN: /ophelos perusinwāon elaphiāon/ “deficit of last year’s deerskins”

\textsuperscript{203} ti is scribal error for pi.
These tablets record deerskins coming in. The rubric o-pe-ro pe-ru-si-nu-wo (last year’s debt) is common in tax records kept by the central administration. These are records of more than temporary importance, and reflect archival-type activities in the NEB. Together with Ub 1318, they give us another classic instance of resource redistribution, with reference to both sides of the process: deerskins come in on Ub 1316 and 1317, and are disbursed in Ub 1318.5–6.

To conclude, Ub 1315–1318 show involvement of the NEB in storage, disbursal, and receipt of leather goods, especially animal trappings. This circumstance must be related to An 1282, where men were assigned to work on “halters” and “chariots”: the NEB was clearly involved in the administration of such things. But nothing suggests that this is where the manufacture was carried out.

**Documents Dealing with Weapons and Chariots**

Sa 1313 (data set 20) deals with chariot wheels. It belongs by scribal hand and stylus (S287-H26) to a set of tablets whose other members were found in the AC. It is probable that the entire set was written in the NEB, then moved to the AC, with Sa 1313 being left behind, emphasizing the close connection and common interests of the two administrative areas.

The Sa set reveals that the chariot industry was very large. A totaling tablet for the series, Sa 787, records some 85 pairs of wheels—170 wheels. If the NEB were the chariot workshop, how many men working for what lengths of time would have needed to be present in the building to produce this many wheels? As discussed previously, space would not allow more than seven or eight men at once—and some of these should also have been working on chariot bodies and halters. It seems more reasonable to suppose that wheels were stored or monitored, not produced, in the NEB.206

The next two tablets are Va 1323 and 1324 (data set 21). e-ke-i-ja on Va 1324 is tentatively interpreted in Docs as /enkhehiai/ “spears.”207 But, as Killen has recently argued, the sense of the word is probably more along the lines of “pieces of wood for [making] e-ke-a” (i.e., for making spears). So the documents in hand probably have to do with raw materials that are to be worked on, rather than with finished products.208

Vn 10 (data set 22), from the AC, is relevant. The heading states “the woodcutters (drutomoi) give to the joiners’ or wheelwrights’ workshop [usually taken by semantic extension as the ‘chariot-workshop’] 50 young X210 and (/qe/) 50 axles (/axones/).”211 As Killen notes, a-ko-so-ne here must mean “wood for making axes” rather than the finished product,212 suggesting that this may be so for Va 1324 as well. The so-called chariot-workshop of Vn 10.2 is sometimes taken to refer to the NEB, but I have argued above that the NEB was not the main

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204 The ascription is given in Bennett and Olivier 1976, 62, followed by Palaima 1988, 214. PoN apparently calls this into doubt, but speculation here would be inappropriate.

205 Chadwick 1958, 4; Palaima 1988, 91–4, esp. 93, 156; Shelmerdine 1987b, 334–5. Two transport labels, Wa 1148 and 1271, were found with those Sa tablets in the AC, suggesting they had recently been moved.

206 See also Flouda 2000, 229–30.

207 Docs2, 542.

208 Killen 1999b, 348.


210 The meaning of e-ke-i-ja (lines 2 and 5) is unknown. It was formerly read as e-ke-i-ja, interpreted as /ekephata/ “trees/saplings.” For the new reading, see Melena forthcoming (cf. Palaima 1980, 194–9); Aura Jorro 1985, 223, 226–7 with previous bibliographies.


212 Op. cit. Cf. also Docs2, 506: /axones/ need not actually represent axles but could refer to “any round poles thicker than those used for spears.”
chariot workshop since it could not have accommodated the attested workforce. More likely, the NEB was a management center to which raw materials (or information about them) were brought and from which they (or orders about them) would be redistributed to the workshops where they were needed. The appearance of similar items on Vn 10 and NEB documents suggests a close working relationship between the NEB and the AC, administering the redistribution process in tandem. The NEB would have been a more convenient place than the AC itself for materials to be received, and that they actually were received there is suggested by a sealing from the NEB that mentions another commodity from Vn 1324214 (data set 23).

Data Set 22
Vn 10 (H3), AC
.1  o-di-dosi , du-ru-to-mo ,
.2  a-mo-te-jo-na-de , e-pi-\*\(\gamma\)9ta  50
.3  a-ko-so-ne-qq  50
.4  to-sa-de , to-u-si-jo , a-ko-ro , a-ko-so-ne
.5  100 , to-sa-de , e-pi-\*\(\gamma\)9ta  100

The word is probably an error for pe-di-je-wi-ja /pediēwia/ “infantry spear”(?), already seen on Vn 1324.215 As described above, sealings concern movements of goods, so here the NEB is involved in the movement of spears, but not necessarily their production.

The next two tablets concern wood for spears and axes and perhaps archery (data set 24).

\(e\-ke\-ja\) on Vn 1339 is a variant spelling of e-ke-i-ja on Vn 1324.216 With ki-wa-ra on 1339 and 1341 we may compare the men designated ki-u-ro-i in An 1282.217 Vn 1341 appears to be connected with archery. pa-ta-jo is /paltaion/ “dart, javelin” (presumably here in the genitive plural, since the numeral 200 follows)\(218\) and to-ka-te-rí-ja may be /stochastērīa/ “for targets,”219 po-ti-ni-ja (line 3) is perhaps a surprising entry on such a document, but it should be noted that the tablet is very broken and the reading is uncertain. New cleaning has significantly altered the text. The reading here, proposed in PoN 4, is substantially that given by Melena,220 but as he notes: “The reading is prevented by the numerous cracks which could be taken as deliberate strokes: this is the case of the -pi- on line 3, which actually could be a -ti-crossed by a horizontal crack provoked by the upper horizontal stroke of the preceding po- and the left crossing bar of following -ni.”221

In a recent reading of the tablet text by Killen the word does not appear\(222\) (see data set 25).

Given the uncertainty as to whether Potnia does appear on this tablet, I refrain from speculation here.

/pal\(ta\)ion/ in line 7 appears also in a new document from Pylos, which probably comes from the NEB.223

Like Wr 1328, Wr 1480 (data set 26) provides evidence for something recorded on a tablet from the NEB actually coming in.224 Shelmerdine and Bennet interpret the text as “of javelins/darts, handles,” and suggest that the shafts of these items were assembled separately from the points.225 They note a connection with An 1282,3, where men are not as do-ka-ma-i, i.e. “for [work on] do-ka-ma” (plural), and suggest that Killen’s tentative interpretation of ki-u-ro/ki-wa-ro as “flints” or “flint arrowheads” would provide an attractive “rationale for An 1282 (the men recorded are involved in military production to do with chariots and weapons).”226 If this is correct, we must again stress the large numbers of men recorded on An 1282. Thirteen are designated ki-u-ro-i, with 36 more designated do-ka-ma-i. These 49 men could not all have been working in up, cattle” (Hesych.), and that to-ka-te-rí-ja ki-wa-ra are wicker-work pens: /skiu̱na stonkhastērīa/.

\(211\) If we take a-mo-te-jo-na-de as referring to a place where all sorts of “joining” was carried out, the problem is only exacerbated.

\(212\) On all these documents see Palaima 2000a, 261–71; forthcoming.

\(213\) Olivier 1997, 74; see also Shelmerdine 1987b, 338.

\(214\) See Melena 1996–1997a, 165–7 for a recent discussion taking account into the new joinings.

\(215\) Killen 1999b, 349.

\(216\) Shelmerdine and Bennet 1995, 127. Note this discussion will be some sort of a hurling spear, rather than an arrow; see Docs\(^5\), 513, 515, 569.

\(217\) Alternatively, Melena (1996–1997b, 160, n. 18) suggests that this is connected with the verb στορχῦσα “to pen, shut

\(218\) Shelmerdine and Bennet 1995, 124, 126. It was found in a flowerbed some meters down slope from the NEB. Its subject matter and proximity to the building strongly suggest it originated there.

\(219\) Shelmerdine and Bennet 1995, 127. See also Palaima 2000a, 269–71.

\(220\) Shelmerdine and Bennet 1995, 131–2.

\(221\) Shelmerdine and Bennet 1995, 132, n.32, referring to Killen 1999b, 349–50 (cf. esp. n.21).
To sum up, the NEB appears to have had a strong connection with chariotry and armory, though it is implausible that such production was undertaken there. The sealings document goods coming in, which shows management of raw materials related to the industry. Sa 1313 provides evidence for finished products, possibly in store in the building, and An 1282 shows management of the relevant personnel.

Miscellaneous Tablets

Four tablets with ideograms and/or reasonable amounts of text do not fit into other categories.

Ja 1288 (e.g., data set 27) registers a measure of bronze (aes) against a man’s name, ka-ra-wi-so. The text resembles entries from the Jn tablets, recording allotments made to bronzesmiths under the tara-si-ja system. Given the similarities, the Jn series may have been a redaction based on tablets such as Ja 1288. It is was common practice for Mycenaean scribes to compile page-shaped documents—such as Jn 310—from shorter palm-leaf shaped ones—such as Ja 1288. At Pylos, such processing was normally done in the AC, often on the basis of documents written elsewhere. As mentioned above, the Sa tablets were probably originally written in the NEB, then moved to the AC—possibly for the purpose of being written up into a page-shaped tablet—leaving behind Sa 1313. Could it be that the information contained in the Jn series also originated in the NEB, written on tablets such as Ja 1288? Was perhaps the NEB the major store-room from which bronze was disbursed?

Vn 1341 may refer to medicines, if pa-ma-ko is /pharmakon/, but Janko’s interpretation of it along these lines must be reviewed in the light of subsequent substantial changes to the text (data set 29).

Compare the first few lines of Jn 310 (data set 28). Line 1 gives the heading: “a-ke-re-wa [a major toponym]: bronzesmiths having assignments,” followed by men’s names with their allotted amounts of metal. Each single entry in isolation looks exactly like Ja 1288, with a man’s name, aes and a measure. The amount issued in Ja 1288 is large, but within the range of amounts issued in the Jn series—for instance, there are numerous issues of M 5 (Jn 658, Jn 706). Given the similarities, the Jn series may have been a redaction based on tablets such as Ja 1288. It is was common practice for Mycenaean scribes to compile page-shaped documents—such as Jn 310—from shorter palm-leaf shaped ones—such as Ja 1288. At Pylos, such processing was normally done in the AC, often on the basis of documents written elsewhere. As mentioned above, the Sa tablets were probably originally written in the NEB, then moved to the AC—possibly for the purpose of being written up into a page-shaped tablet—leaving behind Sa 1313. Could it be that the information contained in the Jn series also originated in the NEB, written on tablets such as Ja 1288? Was perhaps the NEB the major store-room from which bronze was disbursed?

Data Set 24

Vn 1339* (CiII), room 99

1 e-ke-ja [32; ] [ja, 127 [“spears” or “wood for spears” (see above)
2 ki-wa-[ra ] , ki-ta-to-ka-ta , 6 [ ]
3 a-ko-so-ne[ 8 ] [ ]
4 [ ] 6 [ ]

Vn 1341* (CiII), room 99

1 deest
2 ]-t-e-de-ta , ki-wa-ra-em-u
3 po-[t]-uj-ja
4 to-ka-te-rj-a , ki-wa-ra
5 [0]-ku-da-tu-e
6 ku-[1]-ka , ki-wa-ra 5
7 tu-[ ]pa-ta-jo 200
8 [ ]

Data Set 25

Vn 1341

0 mutila
1 ]ja-ra-c[ ]
2 [pi-[ ]-to-ko 227
3 to-ka-te-rj-a , ki-wa-ra[ ]
4 [ ]ro-e
5 ]ka[ ]ki-wa-ra 5
6 ]pa-ta-jo 200
The document adds yet another dimension to activities and goods appearing in the NEB tablets. It may refer to goods coming in, if /pherei/ "he brings, delivers,"235 but these do not seem to be related to any of the goods previously observed.236 A striking feature of the NEB documents is that they deal with a great variety of goods.

Apart from noting that *146, a simple form of cloth, was already encountered in Un 1322, Mb 1336 (data set 30) is so fragmentary that little further can be inferred.

The final document, Un 1320 (data set 31), deals with something represented by the syllabogram A, the significance of which is unknown. The common rubric "pa-ro + MN" generally indicates items "from," "with" (chez) or "under the control of" the men. Un 1320 is thus probably a record of receipts or items being monitored. Without knowing what A represents we cannot say much more,237 beyond adding it to our list of different commodities.

Obscure Documents

The remaining documents (data sets 32, 33, 34, 35) include no ideograms (unless O is logogrammatic on Xa 638) and little text. They are set out here for the sake of providing a complete account of records from the NEB.

Doubts about whether Xa 639 (data set 32) originated from the area of the NEB now seem to be resolved.238 We might note the appearance of the major Further Province town a-si-ja-ti-ja, which again shows the NEB operating at a distance and making use of the standard administrative divisions, as already discussed. Also, Xa 1337 (data set 33), may include the word o-pe-ro (if the reading is correct), indicating "more than temporary" interest.239

Three sealings (data set 35) are the subject of new research by Palaima. Briefly, he suggests that Wr 1329 is related to Wr 1328 (also from room 98), recording ped-e-wi, and Vn 1324 (from room 99), recording pa-ta-jo 20240 (see "Documents dealing with weapons and chariotry"). He also suggests that Wr 1330, 1333, and 1459 belong to a unified set together with Wr 1331, 1332, 1333, 1334, 1458, and 1459241 (see "Documents dealing with livestock"). This work, though important, does not affect the central argument concerning whether or not the building was a workshop.

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234 Pini reports that the “features most closely approximate CMS I.375” (Shelmerdine and Bennet 1995, 126).

235 Although, as J.T. Killen points out to me, in KN Od (1) 562 the term seems to mean “deliveries to” (workers).

236 The possible reading do-we-n.a.-qe may now be paralleled in On 300 (from the AC); see Melena 1996–1997a, 160.


238 Shelmerdine (1987b, 333 n. 4) rightly pointed out that if the component number really were 1952S3/1, as given by Bennett and Olivier (1976, 65) and Palaima (1988, 219, see also 125), then Xa 639 could not be from the NEB. Trench S3 cut through the AC, not the NEB (see PoN3, fig. 302). However, PoN4 now has the component number as 1952S9/1. S9 did run into ramp 91, and this is presumably the tablet fragment mentioned as coming from S9 in the 1952 excavation report (Blegen 1953, 65).

239 Palaima (1992, 66) suggests a-kan-ja-o may describe some sort of animal produce, related to the commodity on Un 1320, but the sign-group could also be a man’s name.

240 Palaima 2000a, 271.

241 Palaima 2000a, 264ff.
CONCLUSION

Finds and architecture indicate the NEB was a major storage facility, perhaps especially for weaponry, and the seat of unusual administrative activity. Artifacts felt to support the workshop interpretation of the building are by no means exclusively associated with the NEB, and the identification of some of them as workshop tools is questionable.

The Linear B data show involvement of the NEB in large-scale movements of personnel—far too many to have been working in the building itself—along with evidence that NEB administrators were involved in supplying rations and bedding. Nothing compels the view that any of the personnel were working in the NEB. The tablets mention a variety of occupations—leatherworkers, chariot-makers, wheelwrights, halter-makers, men making weapons(?), a net-maker, a weaver, and (apparently) a bronzesmith. Other tablets add a herald(?), a fuller, a potter, priests, priestesses, officials, and slaves. Similarly, a large variety of commodities are mentioned: grain, wine, cloth, sheep, goats, reins, skins, headbands, sandals, wicker baskets, wheels, axes, spears, bronze, medicine(?), and unidentified commodities such as *I89, A, A, KU, PA, WQ, and KA. Leather goods, weaponry, and animal trappings are prominent, but they do not tell the whole story.

The variety and scope of goods and occupations suggest a clearinghouse rather than a workshop. The large number of sealings corroborates this interpretation—the distribution of sealings at Pylos suggests that the NEB was a point of entry for goods for the palace as a whole. Strong scribal connections between the NEB and the AC further support the conclusion. The NEB was an arm of the central administrative system.

It is consistent with this view that the NEB yielded numerous impeccable examples of redistribution-type records. Men were recruited into the system (see the Ac tablets) and were assigned to their workgroups or supervisors (see An 1281 and An 1282). Deerskins were brought in (see Ub 1315 and 1316) and transferred to workers or others who would use them (see Ub 1318). It has long been wondered where the goods recorded in the AC at Pylos were actually disbursed from and received, since rooms 7 and 8 themselves are too small to have well suited such a function.242 I suggest here that much of the physical movement of goods took place in and around the NEB. The Mycenaean palaces have long been known to be redistributive centers. The NEB, like the Mycenae West House group, was one of the physical locations through which such redistribution took place.

Finally, the presence of Linear B tablets is not evidence that activities they record took place in their vicinity. There were no bronzesmiths in the AC at Pylos, nor shepherds in the Palace of Kno-
sos (at least, not accompanied by their sheep), nor potters in the West Houses at Mycenae. Toponyms on many documents attest to the existence of workgroups outside the palaces. Women workers recorded at Pylos were spread throughout Messenia; at least 15 groups of bronzesmiths worked in other towns; shepherds are recorded at numerous toponyms, and various other occupational groups are also attested. All these persons, though located far away, are recorded in documents at the center—at Pylos. We do not assume, because the contrary is attested by the different toponyms, that these persons worked in or near where the documents were found. No such assumption is therefore warranted in the case of the NEB. Rid of this assumption, only independent internal evidence from the documents could save the workshop hypothesis. They do not provide it. Instead, they raise problems for the hypothesis and point in other directions.

A fresh look at the data suggests no reason for believing that the NEB was a workshop. The tablets do show a strong connection with the military sphere, and this was clearly an important aspect of administrative concerns of the building. While it would be misleading to see this as its exclusive function, Blegen’s first idea of the “Palace Armory” was closer to the truth than the later workshop hypothesis. The NEB may well have been a major weapons store. The workshop mentioned in Vn 10 may have been involved in chariot production, but the NEB is not to be equated with this place. The production must have been carried out elsewhere, but was supplied and monitored by the central administration working in the AC and the NEB.

The reinterpretation of the Pylos NEB as a clearinghouse or redistributive center, rather than a workshop, has various historical implications. I should like to conclude with a suggestion of five areas of research that might be affected.

First, the issue of what workshops existed at Pylos needs to be re-examined; there are important implications for the function of the Mycenaean palaces. Hofstra (2000) reaches a similar conclusion.

Second, it has been suggested that Pylos in its latter stages suffered an economic decline such that some production centers (i.e., workshops) were moved into the palace complex itself, while structural changes were made to increase workshop and storeroom space and to restrict access and traffic flow patterns. The NEB as a workshop formed an element of such arguments and the reinterpretation proposed here might suggest a review of the evidence. The theory may well stand without the NEB but, given the last decade’s ener-
getic work on Pylos, a new study would in any case be of value.

Third, there are several implications for Mycenaean bureaucracy. The interpretation of the NEB and the Mycenae West House group as redistributive centers provides at least two examples of such clearinghouses at Mycenaean palaces. This raises the question of whether such installations were standard palatial features. The possibility of clearinghouses at other sites should be examined. An obvious candidate for investigation would be the Arsenal at Knossos. Redistributive centers may be proposed as a new special type of Mycenaean administrative assemblage. Differences between Pylian and Knossian administration have long been appreciated, and indeed it has been suggested that the NEB resembles more a Knossian “department” than a Pylian “deposit.” Redistributive centers were not precisely “offices” in the sense of being groups of persons dedicated to particular united activities or industries. They were sites for the receipt of goods and personnel management, and might involve various branches of the administration as need arose. It might be possible to further refine Olivier’s classifications of Knossian bureaux in this light, with particular attention to interaction between administration and storage.

Fourth, also with reference to bureaucracy, the NEB is one of the major repositories of sealings, both inscribed and uninscribed, in the Mycenaean world. Research on Aegean sealing systems has progressed considerably in recent years and reinterpretation of the NEB as a redistributive center may have implications for such work.

Fifth, the interpretation of the NEB as a clearinghouse rather than a workshop and the doubt cast on the existence of a shrine in room 93 mean that the NEB should no longer be cited as evidence for connections between religion and industry in the Mycenaean world. It is true that there are references to the religious sphere on NEB documents, but the evidence must be seen in the context of the whole Linear B assemblage at Pylos: 16% of the NEB documents mention a religious figure of some sort. The figure for tablets from the palace as a whole is 17%. Thus, NEB documents have no religious association beyond what is typical at Pylos. To some extent, certain elements of the religious sphere were tied up with the overall economy, and Linear B references to them are thus not infrequent. There is nothing special or unusual that connects the NEB documents, or the building itself, with religion. Suggestions about a particular link between Mycenaean shrines and workshops should be re-examined in this light.

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Appendix

Two documents that may originate from the NEB appear in PoN 4, but have not been fully published. It would be inappropriate to comment on them here, but I am grateful to J.L. Melena for permission to include the texts. It should be understood that the transcriptions are subject to revision.

The text of Un 1482 (data set 36) is from PoN 4, in progress. An initial transcription was provided by E.L. Bennett in AR 1995–1996, 19.

Xa 1577 (data set 37) also appears in PoN 4.

Data Set 36

Un 1482* ( — )

.1 deest
.2 ke-ra-e-we *189[
.3 ka-tu-re-ri-ja 4 [[ ]] ta-τα-
.4 de-mi-ni-ja , a-ke-re-wi-ja [

Data Set 37

Xa 1577* ( — )

] vacat

248 E.g., Davis 1998; Nelson and Cooper 1998; Shelmerdine 1997a; Davis and Bennet 1999; and see ns. 2 and 51 supra.

249 Shelmerdine (1997b, 389) calls the Room of the Of Tablets at Thebes a “clearinghouse” as well. I fully support her view that it was a storeroom through which wool passed, rather than an archive, but I would prefer to keep the term “clearinghouse” for places that dealt with a wide variety of goods, personnel, and other administrative activities. A processing or redistributive center is not quite the same thing as a simple storeroom. I would rather compare the Thebes example with storerooms such as room 25 or room 32 at Pylos.

250 As J. Killen first pointed out to me; see now Flouda 2000, 231. See also Hiller 1992, esp. 311–4.
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The Location of Alashiya: 
New Evidence from Petrographic Investigation of Alashiyan Tablets from El-Amarna and Ugarit

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Abstract

Ancient Near Eastern archives of cuneiform texts contain tablets whose origin is unknown. Letters often do not contain the name or address of the sender. Moreover, the locations of some ancient Near Eastern countries and cities have not yet been clearly established. Hence we perform a research program that intends to fill this gap through a systematic provenance study of the Amarna letters and other Near Eastern texts using petrographic and geochemical methods. So far, over 300 tablets have been analyzed. This paper presents the provenance of the Alashiya letters from Amarna and Ugarit as well as an assemblage of Cypro-Minoan texts from Cyprus. Petrographic and chemical examinations indicate that the Amarna letters from Alashiya originate from the area on the margin of the Troodos Mountains in Cyprus. Various lines of evidence make it clear that the raw material was collected by the scribes in their immediate vicinity and not transported over large distances. Within Cyprus, either Kalavasos-Ayios Dhimitrios or Alassa Paleotaverna/Pano Manadilaris are identified as the source of official Alashiyan letters. Since the geopolitical configuration of Late Bronze Age Alashiya is still unclear, the implications of our conclusions for this vexed issue are discussed.*

For more than a century researchers have debated the location of the Bronze Age kingdom of Alashiya, “that old conundrum” as Muhly so aptly dubbed it,1 with diminishing returns.2 The textual evidence, from both Amarna and Ugarit, indicates that during the 14th and 13th centuries B.C. Alashiya maintained economic and political contacts with Egypt and north Syria. The documents testify that it produced and exported large amounts of copper. They also indicate that it was an independent state, as its king was referred to as “brother” in his correspondence with the King of Egypt, a designation that was used between rulers of equal rank.

Most scholars associate the copper producing land of Alashiya with part or all of Cyprus (fig. 1). This conclusion is supported by an overall interpretation of the relevant documents within the historical, geopolitical, and archaeological background of the eastern Mediterranean in general and Cyprus in particular.3 The place of origin of the Alashiya tablets was generally identified at Enkomi near the eastern coast of the island. A minority view considers the data circumstantial and inconclusive.4 Scholars advocating the latter view tend to identify Alashiya in either part or all of Cilicia, or part of northwestern Syria.5

Previous provenance studies have attempted to resolve the question by establishing the origin of the Alashiya clay tablets found in Amarna and Ugarit. Eight tablets dispatched from Alashiya to the Egyptian court in the 14th century B.C. were discovered in Amarna (EA 33–40). An unnamed king of Alashiya sent seven of these letters (EA 33–39) to an unnamed Pharaoh, while the governor of Alashiya dispatched the eighth letter (EA 40) to his equal in the Egyptian court. A group of scholars from the Laurence Berkeley Laboratory subjected two of the tablets (EA 34 and EA 35, now in the British Museum) to neutron activation analysis (NAA) in order to determine their origin.6 The results were compared with Late Bronze Age pot-

*We wish to thank B. Salje and J. Marzahn from the Vorderasiatisches Museum in Berlin, J. Curtis, S. Bowman, C. Walker and A. Middleton from the British Museum, P.R.S. Moorey from the Ashmolean Museum, S. Hadjisavvas and P. Florentzos from the Department of Antiquities, Cyprus, A. South from the Vasilikos Valley Project, Kalavasos, A. Caubet and B. André-Salvini from the Musée du Louvre for the permit to sample materials from their museums or excavations. The ICP analyses and the micropaleontological identifications were made by the Geological Survey of Israel. This study was supported by the Center for Collaboration between Natural Sciences and Archaeology of the Weizmann Institute of Science and the Fund for Internal Researches of the Tel-Aviv University. We thank G. Constantinou, I. Freestone, L. Grossowitz, S. Hadjisavvas, M. Huges, A. Middleton, N. Porat, I. Segal, A. Shimron, L. Smith, A. South, and S. Vaughan for their useful advice on specific topics discussed in this article.

1 Muhly 1996, 49.

2 For comprehensive and critical discussions of the data and previous literature, see Merrillees 1987; Knapp 1996a.


4 Hellbing 1979; Merrillees 1987.

5 See Merrillees 1987 for a review of literature.

6 Arzy et al. 1976.
tery from different sites in Cyprus and the Levant. The Berkeley team concluded that the two tablets, which have similar chemical composition patterns, were not made of eastern Cypriot clay and hence were not produced in the vicinity of Enkomi. Moreover, they are chemically different from the clays of Toumba tou Skourou near Morphou Bay, Lapithos and other places in the north of Cyprus, Nitovikla and other sites in the Karpas, and Kition, Hala Sultan Tekke, and Amathus on the Larnaca and Akrotiri bays in the south. Certain chemical similarities were found between the two tablets and Mycenaean IIIC1 sherds from Kouklia Palaeopaphos, although an unequivocal identity between the tablets and the Kouklia clay could not be proved. Artzy and her colleagues also concluded that the two tablets are not copies made in Egypt, since they differ from clays used for the production of New Kingdom pottery in Amarna and elsewhere in the Nile Valley. A later analysis of two additional Alashiya tablets (EA 33 and EA 38; now in the Vorderasiatisches Museum in Berlin) by the same team showed similar results.\textsuperscript{7} To sum up, the NAA investigations fell short of determining the location of Alashiya.

The present authors attempted to broaden the analytical basis established by Artzy and her colleagues by examining four Alashiya letters found at Amarna (EA 33, 34, 37, and 38)\textsuperscript{8} and one Alashiya letter from Ugarit (RS L.1) in the course of a wider project of petrographic investigation of the Amarna tablets. The following research strategies were used:

1. examination of tablets that were not included in the previous research, especially EA 37 that, as already noted by Knudtzon,\textsuperscript{9} was different in its general fabric and inclusions;
2. examination of clay documents from Late Cypriot (LC) sites in Cyprus, especially Enkomi;
3. analysis of a 13th-century B.C. Alashiya letter from Ugarit;
4. examination of the previously analyzed tablets by other methods, namely petrography and inductively coupled plasma spectroscopy (ICP).

METHODS

Various physical and chemical techniques are employed for analyzing the composition of ceramic artifacts. The former identify the minerals in the clay and temper and define the fabric of the sherd or vessel. The latter use diverse analytical techniques to measure the concentrations of the elements in the clay. In analyzing pottery, petrography is the physical method of choice, whereas NAA is the most commonly used chemical method. Petrographic analysis is particularly effective for examining coarse, poorly fired ceramics, while NAA is generally considered to be more accurate for provenance determinations, being fully quantitative and thus more precise. Usually, petrography is applied to a large number of items, and the results are used to select samples for further chemical analysis.\textsuperscript{10}

When cuneiform tablets are analyzed, the sampling

\textsuperscript{7} M. Artzy, pers. comm., see Hellbing 1979, 71, n. 103.
\textsuperscript{8} Permission to examine the letters was granted by the British Museum, the Vorderasiatisches Museum in Berlin, and the Musée du Louvre. EA 35 (British Museum) was not available at the time of sampling.
\textsuperscript{9} Knudtzon 1915, 1272, n. 2, 1275, n.1, 1276, n. 1, 1294, n. 2, 1298, n. 1.
\textsuperscript{10} Schubert 1986.
must be nondestructive and only restricted analyses can be applied. Consequently, chemical methods often are more appropriate because of the smaller sample that they require.

Accurate interpretation of provenance data depends on the availability of comparative materials. Clay types used to produce tablets, however, are not necessarily the same as those from which vessels are manufactured. This may sometimes inhibit the use of routine chemical procedures in which a database containing the elemental composition of standard pottery from known sites is compared with the samples examined. Conversely, petrography has the advantage of being independent, since the results can be interpreted on the basis of detailed and usually available geological data. Therefore, petrography has been selected as a primary method for the present research and applied on over 300 tablets. Elemental analysis by inductively coupled plasma atomic emission spectroscopy and mass spectroscopy (ICP-AES/MS) was applied on 120 of these tablets in order to confirm the petrographic grouping by multivariate elemental plots of 27 major, minor, and trace elements.11

Two new techniques were developed in order to reduce the sample size. First, scattered petrographic analysis (SPA), a technique in which the clay and the temper are sampled separately, was applied on complete tablets. The tablet is first examined under a stereomicroscope to define its texture. A tiny flake of the matrix is chipped from a hidden surface using a scalpel, and a representative sample of the inclusions is removed as single grains. In the laboratory, each is impregnated with thin section mounting material and examined with a polarizing microscope. Second, in the more common case of broken tablets, peeling was applied in order to obtain larger samples. In this analysis, a shallow lamina is peeled off the broken facet of the tablet with a scalpel, and a representative sample of the inclusions is removed as single grains. In the laboratory, each is impregnated with thin section mounting material and examined with a polarizing microscope.

Accurate interpretation of provenance data depends on the availability of comparative materials. Clay types used to produce tablets, however, are not necessarily the same as those from which vessels are manufactured. This may sometimes inhibit the use of routine chemical procedures in which a database containing the elemental composition of standard pottery from known sites is compared with the samples examined. Conversely, petrography has the advantage of being independent, since the results can be interpreted on the basis of detailed and usually available geological data. Therefore, petrography has been selected as a primary method for the present research and applied on over 300 tablets. Elemental analysis by inductively coupled plasma atomic emission spectroscopy and mass spectroscopy (ICP-AES/MS) was applied on 120 of these tablets in order to confirm the petrographic grouping by multivariate elemental plots of 27 major, minor, and trace elements.11

The results of the petrographic study of the tablets are summarized below according to an order of importance of the petrographic data and not the order of the EA (serial) numbers.

EA 37 is distinguished to the naked eye by its color and appearance from all other Alashiya tablets in the study (EA 33, EA 34, and EA 38; and the other Alashiya tables). The fabric is generally reddish-brown rather than cream whitish-gray. There are large inclusions (reaching 3 mm in size) that do not appear in other Alashiya tablets, and the texture is coarser than that of the other Alashiya tablets (figs. 2–3).

The petrographic properties of this tablet are entirely different from the other Alashiya tablets from Amarna examined here. It has a more clay-rich matrix with abundant inclusions of weathered spilitic basalt, limestone, low-grade metamorphic greywacke, quartz, and flint.12 The other Amarna tablets are divided into two main groups: those living in the water mass (planctonic) and those living on the sea floor (bentonic). The identifications were made in the Geological Survey of Israel. In many cases they either confirmed the petrographic and chemical interpretations or narrowed the range of options.

We adopted the widely accepted identification of Alashiya in Cyprus as a working hypothesis but also examined other possibilities. We compared the mineralogical and chemical data from the tablets with the geology of Cyprus as well as Cilicia and northwest Syria.

RESULTS
The Alashiya Letters from Amarna

The petrographic and chemical data are summarized below according to the order of the EA (serial) numbers.

EA 37 is distinguished to the naked eye by its color and appearance from all other Alashiya tablets in the study (EA 33, EA 34, and EA 38; and the other Alashiya tablets). The fabric is generally reddish-brown rather than cream whitish-gray. There are large inclusions (reaching 3 mm in size) that do not appear in other Alashiya tablets, and the texture is coarser than that of the other Alashiya tablets (figs. 2–3).

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letters (EA 33, 34, and 38) are characterized by marl with a few calcareous and volcanic rock fragments (fig. 4).\textsuperscript{13}

**Comparative Study of Cypro-Minoan Texts from Enkomi and Kalavasos Ayios Dhimitrios**

Two sets of Cypro-Minoan texts on clay from Cyprus were examined: an assemblage of documents from Enkomi and inscribed clay cylinders from Kalavasos Ayios Dhimitrios.

The Enkomi samples were taken from the following items (all but the last in the Cyprus Museum in Nicosia): E-1687, a Cypro-Minoan inscribed clay tablet found in Level III A (late 13th–early 12th century B.C.);\textsuperscript{14} H-1885, a Cypro-Minoan inscribed clay tablet found in Level I B (mid late 15th century B.C.);\textsuperscript{15} E-1193+Enk. F.E. 20.01, two joined fragments of a Cypro-Minoan inscribed clay tablet, one (E-1193) found in Level IIIB (12th century B.C.) and published by Dikaios,\textsuperscript{16} the other (Enk. F.E. 20.01) was found by Schaeffer;\textsuperscript{17} AM 2336, a Cypro-Minoan inscribed clay tablet (now at the Musée du Louvre).

In terms of petrography, the Enkomi documents are extremely homogeneous.\textsuperscript{19} The unimodal nature of the inclusions, in terms of shape and sorting, may be considered to represent alluviated detrital sediments. These include volcanic and sedimentary rocks of varying types. The matrix can be generally defined as marl. The inclusion deposits may have been derived from an area containing

\textsuperscript{13} The matrix of EA 34 is calcareous, pale yellow in PPL, optically active speckled b-fabric, with abundant mica flakes (both muscovite and biotite) as well as fine silt of calcite, quartz, and feldspars (fig. 4). The foraminifers include *Globigerina* and *Globorotalia* of Neogene age. The tablets are almost devoid of inclusions. Few angular grains of dolerite, micritic limestone, quartz, foraminiferous chalk, and occasionally hair appear.

\textsuperscript{14} Dikaios 1971, 881–91, pl. 317–8.

\textsuperscript{15} Dikaios 1971, 881–91, pl. 314.

\textsuperscript{16} Masson 1971.

\textsuperscript{17} Dikaios 1971, 881–91, pl. 319–20.

\textsuperscript{18} Karagorghis 1970, 249, fig. 99. For the join, see Michaelidou-Nicolaou 1980.

\textsuperscript{19} They are represented by clay that is light yellowish-tan in PPL, carbonatic and lightly optically oriented in thin section, slightly silty and stained by orange-brown clay concentrations and iron-rich (limonitic) bodies. Foraminifers are extremely rare. The inclusion suit is made of a well-sorted population of various minerals and rock fragments, all spherical to subangular and usually rounded grains, including quartz, limestone, spilitic basalt, chert, feldspars, serpentine, pyroxene, and epidote.
several lithological environments, including igneous and marine sedimentary rocks.

The effect of stream transportation may sort material by mineralogy (specific gravity), resistance to mechanical and chemical weathering, abundance along the drainage basin, and the flow regime of the conduit. The general sphericity of all the inclusion components, especially the resistant chert and quartz, may indicate a far distance between the bedrock and the depositional area where the inclusions were collected.

Enkomi is situated in eastern Cyprus, 7 km north of Famagusta. It is located in an area of Quaternary deposits containing gravel, sand, silt, and clay. Sediments now obstruct the nearby stream of the Pedhieos River, going by the southern edge of the site. During the Late Cypriot period, however, it was most likely still active, functioning as a sailing channel for boats between the coast and Enkomi, and perhaps even more inland.20 The Pedhieos river drainage system included the Mesaoria plain, the southeastern part of the Kyrenia terrain, and the northeastern slope of the Troodos massif. Because sedimentary rocks cover all the Mesaoria terrain, the Pedhieos River is the only possible supplier of volcanic rocks and their derived minerals to the Enkomi area. In conclusion, the composition of the Enkomi documents indicates a mixture of marl with well-sorted sand from the nearby channel of the Pedhieos River.

The samples from Kalavasos Ayios Dhimitrios included the following Cypro-Minoan inscribed cylinders: K-AD 82.389, K-AD 82.405, K-AD 82.404, and K-AD 82.545.22

Petrographically, the cylinders form two groups. The first is identified as originating in the autochthonous Troodos clays of the Kannaviou formation, a main fabric of the local Base Ring Ware at Kalavassos Ayios Dhimitrios.23 Members of this group are K-AD 82.389 and K-AD 82.404.

The second group is petrographically similar to EA 37 (above). It includes K-AD 82.405 and K-AD 82.405 and K-AD 82.545.22

compared by very abundant mica laths, epidote, and plagioclase. The inclusions contain quartz, plagiogranite, phyllite, epidote, chert, mica, apatite, and opaque minerals. The firing temperature is usually around 700°C. See Vaughan 1989 for comparable material from Kalavassos Ayios Dhimitrios.

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20 Catling 1964, 17; Dikaios 1969, 10.
23 This group has clayey matrix, reddish-tan in PPL, sparkled birefringent and optically oriented with silty quartz ac-

Fig. 3. Thin-section of EA 37, showing low-grade metamorphic greywacke inclusion. Crossed polarizers, bar size: 0.2 mm.
83.545. This petrofabric is also known from the Base
Ring Ware of Kalavasos Ayios Dhimitrios.24

An Alashiya Letter from Ugarit (RS L.1; AO 21087)

Most scholars agree with the hypothesis put forth
by Nougayrol and others that RS L.1 was sent from
Alashiya and that letter 20.238 from Ammurapi King
of Ugarit responded to it.25 Yet, a minority view op-
poses this explanation. Because the letter lacks any
toynom of the sender, Singer26 and Yamada27 sug-
gest that RS L.1 must have been a letter from the
King of Carchemish, the overlord of Ugarit at the
time of Ammurapi. Malbran-Labat28 and Yon29 re-
cently have accepted this theory.

The clay of the tablet is light reddish in color
with badly sorted dense inclusions, up to 1 mm in
size. The great majority of the inclusions are doler-
ite fragments and their derived minerals, perhaps
with some additional gabbroic inclusions (fig. 5).
Serpentine is common in lesser grain sizes. Lime-
stone and chert form a minority of the inclusions.30
These characteristics accord well with the dolerite-
derived reworked clay from the Troodos contact
zone between the volcanic series and the sedimen-
tary formations (below).

Before using the petrography of RS L.1 as evi-
dence for the location of Alashiya, it is mandatory to
examine the possibility of an origin in Carchemish.
The geological mappings of the area between Ga-
ziantep and Carchemish indicate that the sedi-
ments around the site and upstream the Euphrates
are very homogeneous.31 Carchemish is located on

24 This group is characterized by carbonatic matrix, tan in
PPL with silty quartz accompanied by mica laths, pyroxenes,
and calcite. The inclusions are made of spilitic basalt and dis-
integrated minerals derived from these rocks (clinoptyroxenes,
amphiboles, and feldspars), foraminiferous chalk fragments,
quartzitic microgranular sandstone, and replacement chert. See
Vaughan 1989 for comparable material from Kalavassos Ayios
Dhimitrios.


29 Yon 1999, 118.
30 The matrix is dense, tan in PPL and containing opaque
minerals and silty quartz, twinned plagioclase, biotite, epidote,
calcite, and serpentine. The inclusions are badly sorted, includ-
ing an assemblage of angular igneous and sedimentary rock
fragments and their derived minerals including dolerite to
microgabbro and their derived minerals, fossiliferous limestone,
serpentine, replacement chert with iron mineral stains, and
quartz.
31 Tolun and Pamir 1975; Ulu 1996a, 1996b.
recent Euphrates fluvial sediments; immediately next to it lies the Gaziantep Formation of the Upper Eocene, composed of silty, clayey, or chert-including limestone or chalk with glauconite concentrations. North of the site, Quaternary “Old aluvium” with partly consolidated clay, sand, and gravel can be found. Igneous rocks are exposed only 45 km to the north as the crow flies, near Hamut Daği. They include tholeiitic and alkali olivine basalts but neither dolerite nor gabbro. Ophiolitic exposures of the Koçali complex appear only some 34 km further north, near Yaylaek, but like the Tauric ophiolites they contain only serpentinized ultrabasics, silicified shale, radiolarites, and very limited pillow lavas. Therefore, the lithology indicated by RS L.1 is nonexistent around Carchemish.

Fabrics of ceramics that are made of Upper Euphrates sediments are expected to reflect some of the above-mentioned components. Although no petrographic reference to the Carchemish ceramics has been recorded so far, relevant data are supplied by the Bronze Age pottery from Tell Hadidi, located somewhat south of Carchemish but still within the same geological environment. There is no reference to any fabric resembling RS L.1 in these data.

The final and decisive blow to the Carchemish alternative for the origin of RS L.1 is given by a contemporary letter—RS 8.333 (AO 19.955, PRU III, 7–8), which was written by the King of Carchemish. The petrographic traits of RS 8.333 resemble those of the Mesopotamian (Babylonian and Mitannian) tablets from the Amarna archive. They indicate that the Euphrates clay-silt was used without any intentional addition of sand inclusions, as a result of the silty nature of these sediments. Similar characteristics are known from the pottery that was produced in this general region. This, again, stands in contrast to the characteristics of RS L.1.

In conclusion, the theory connecting RS L.1 to Carchemish should be readily dismissed. Since no other interpretation has ever been suggested for the origin of this letter, and taking into consideration the textual evidence in it, we take it for grant-
ed that this is a letter from Alashiya that can and should be used in the search for the political center of Alashiya in the Late Bronze Age.

THE ORIGIN OF THE ALASHIYA LETTERS

Petrography and the Gilician and North Syrian Theories for the Location of Alashiya

A macroscopic comparison of the fabric of the eight Amarna tablets from Alashiya indicates that all except one (EA 37) are homogeneous in terms of color of clay, quality, type of inclusions, polish, and texture. EA 37 differs in its fabric, grits, and general texture.35

A preliminary petrographic observation of EA 33, 34, and 38 supplies inconclusive evidence for the nature of the geological environment from which their clay was derived. Neogene marl and limestone (the latter seen in EA 34) are too widely distributed to pinpoint a specific geographical location within the Near East. Even if we exclude the Enkomi area on the basis of the NAA results,36 the petrographic data still leaves open many other possibilities within the various regions that were suggested in the literature for the location of Alashiya.

The two remaining tablets—EA 37 and RS L.1—are coarser and gritty and therefore enable better petrographic determination. Both tablets share the same affinity: the main inclusion constituents were derived from an area consisting of basic igneous rocks (dolerite, gabbro, spilitic basalt, and volcanic glass), with a set of sedimentary rocks (limestone, chalk, sandstone, mudstone, and chert) accompanying the igneous assemblage. These compositional, textural, and mineralogical characteristics suggest that the source area includes the margin of an ophiolite complex37 where pillow lavas and dolerite are exposed. Therefore, the lithology reflected by the raw materials of these two tablets points to a contact zone between an ophiolitic complex and a sedimentary area containing carbonatic, argillaceous, and siliceous sedimentary rocks.

Of all the typical components of the ophiolitic succession, a very limited range of rock types is represented in EA 37. The magmatic constituent includes only spilites, or rather their weathering products (with the minute addition of some other mafic minerals), with the addition of a set of sedimentary rocks. This hints at a clay type that is directly derived from the weathering of pillow lavas, in a zone that is proximate to exposures of marine sedimentary rocks, which include limestone and replacement chert. The very limited distribution of the clay and the selection of the inclusions indicate that the area from which they were derived was bounded within the margin of the ophiolite complex. The data supplied by RS L.1 supplements this picture. The homogeneous assembly of inclusions, dominated by basic volcanic/intrusive rocks (dolerite-microgabbro), indicates an area where these rocks form the dominant constituent of the local lithology. Apart from their degree of weathering and the relative proportions of the accompanying sedimentary rocks, the two tablets seem to have been derived principally from closely related geological environments.

In the eastern Mediterranean region, ophiolite complexes are found in Cilicia, northwest Syria, and Cyprus. Ophiolites form the Troodos massif in southwestern Cyprus, the Mersin and Pozanti-Karsanti massifs in Cilicia, the Kizildağ massif in Hatay Province, Turkey, and the Baër-Bassit massif of northwest Syria.38 Thus, it is an amusing coincidence that ophiolitic occurrences can be found in each and every area suggested for the location of Alashiya. Nevertheless, a closer examination of the geological data enables the elimination of most of these locations and a rather explicit identification of the source area of EA 37 and RS L.1.

Hall first raised the hypothesis that Alashiya was located in Cilicia,39 and Merrillees later advocated it.40 Merrillees suggested identifying it with the Gulf of Iskenderun, possibly with a site such as Kinet Höyük, but admitted that this proposal must await further archaeological inquiry.41 To test this hypothesis, the geology of the area that extends between Mersin on the western Gilician coast and the Gulf of Iskenderun must be examined.

31 Hellbing 1979, 71–2.
37 Ophiolite complexes are presumed to represent oceanic crust, which was thrust onto continental crust. When complete, an ophiolite consists of a thin uppermost veneer of oceanic sediment (which may include oceanic clay and radiolarian cherts) overlying quenched pillow lavas and more mature lavas, which in turn overlie a sheeted dolerite complex. Beneath the dolerites are texturally isotropic gabbros, which overlie layered gabbros, peridotites, and pyroxenites. These largely basic and ultrabasic components are cut by late-stage intrusions of coeval plagiogranite and overlay older oceanic sediments including radiolarites and limestone. As a consequence of its formation at spreading ridges, oceanic crust—and therefore ophiolites—experience ocean-floor metamorphism, which characteristically produces assemblages of greenschist and amphibolite facies. These metamorphites are often undeformed.

38 Whitechurch et al. 1984.
39 Hall 1913.
41 Merrillees 1972, 118.
The Mersin and Pozanti-Karsanti massifs are part of the “median” or Tauric ophiolitic belt of Turkey.\textsuperscript{42} They form the most southeastern front of the Taurus ridge, between Faraşa and the plain north of Silifke.\textsuperscript{43} The two ophiolites are in structural continuity with each other but are separated by the strike-slip fault of Ecemiş. The Mersin ophiolite exposes northwest of the city of Mersin, under the Miocene and Oligocene conglomerate reworking of the ophiolite. To the north, it lies on the Tauric limestone series. The Mersin massif continues the corresponding lithology of the Pozanti-Karsanti ophiolite north of it. It is made of a pile of tectonic slices, mostly of serpenitized harzburgite interleaved by isolated tholeiitic dolerite dikes. In the western part gabbroic and pyroxenic cumulates appear, interbedded with pillow lavas and radiolarites. In this complex the basaltic component is therefore minor and interlayered with the far more dominant peridotitic constituent.\textsuperscript{44} Consequently, it is very unlikely that this assembly would supply a sediment in which basalt clasts would be dominant. This is especially true for the post-tectonic Miocene sedimentary plain of the Cilician coast.

The same applies to the more northeastern area of Pozanti-Karsanti. This ophiolite outcrops over more than 100 km in length, covering more than 1500 km\textsuperscript{2}. Tectonically it lies over a series of limestones and radiolarites. Here too, thick outcrops of harzburgite form the main lithology, overlaying a crushed series of tectonic slices made of pillow lavas, radiolarites, pelagic limestones, and metamorphic rocks. Apart from these infra-peridotitic slices, the rest of the massif is formed entirely of coarse-grained ultramafic rocks.\textsuperscript{45} Therefore, the same arguments raised against the Mersin ophiolite—namely, that the basalt clasts present in the tablets are devoid of the local geology—are equally true for this region.

In sum, the petrography of EA 37 and RS L.1 does not match the Cilician ophiolitic complex. Therefore, a coastal site in the Mersin Gulf of Iskenderun is unlikely to be the source for these tablets, especially in the case of RS L.1, which portrays a localized assembly of materials adjacent to the massif rather than materials that were washed off it into a sedimentary plain.

According to a second theory, first raised by Wainwright\textsuperscript{46} and later supported by Merrillles,\textsuperscript{47} Alashiya was located in northwest Syria or the Hatay. Two ophiolitic complexes expose in this area: the Kızıldağ massif in the southwestern part of the Amanos range in the Hatay, and the Baër-Bassit massif west and south of the lower Orontes plain.

The Kızıldağ massif forms the westernmost extension of the Amanos range and stretches onto the gulf of Iskenderun. A rich body of geological data enables a detailed investigation of this area.\textsuperscript{48} The constituent rock types of the ophiolite complex crop out over an area of approximately 1,100 km\textsuperscript{2} and although they resemble those of the Troodos massif in Cyprus (below), the effects of ocean-floor metamorphism is significantly more developed. It is unlikely that the source of the Alashiya tablets was in the plains around, or in the Kızıldağ massif itself, because the pillowed basalts crop out over a very limited area on the mountaintop, which makes up under 0.5% of the region.\textsuperscript{49} In other words, it is difficult to see how an alluvial clay could be formed that would contain the required percentage of pillow lava clasts. Moreover, the same arguments that were raised against the Cilician coastal sites—namely, that the basalt clasts are not dominant enough compared to what we see in the tablets—can be applied against northwestern Syrian coastal sites as well.

The Baër-Bassit massif of northwest Syria lies south of the Kızıldağ massif, with the lower valley of the Orontes river and the plain of Antioch separating the two. Chenevoy,\textsuperscript{50} Parrot,\textsuperscript{51} and Whitechurch and Parrot\textsuperscript{52} have described the geology of this massif, which covers an area of about 112 km\textsuperscript{2}. It differs from both the Troodos (below) and the Kızıldağ massifs. Firstly, the constituent rock types are more strongly deformed. Secondly, they are more varied in composition because the ophiolite was tectonically interleaved with a variety of older sedimentary, igneous, and medium to high-grade metamorphic rocks. None of these rock types have been detected from both the Troodos (below) and the Kızıldağ massifs. The Baër-Bassit massif, therefore, is more varied in composition because the ophiolite was tectonically interleaved with a variety of older sedimentary, igneous, and medium to high-grade metamorphic rocks. None of these rock types have been detected from both the Troodos (below) and the Kızıldağ massifs.

Matson presented detailed petrographic data on the pottery assemblages of all stages at the Amuq Valley. Additional information was retrieved from our thin-section collection of about 100 represen-

\textsuperscript{42} Thierry 1980, 205.
\textsuperscript{43} Thierry 1980, 213–20.
\textsuperscript{44} Thierry 1980, 216.
\textsuperscript{45} Bingöl 1978; Thierry 1980.
\textsuperscript{46} Wainwright 1914–1915.
\textsuperscript{47} Merrillees 1987.
\textsuperscript{48} Dubertret 1955; Erendil 1984; Robertson 1986; Tekeli and Erendil 1986.
\textsuperscript{49} Erendil 1984.
\textsuperscript{50} Chenevoy 1959.
\textsuperscript{51} Parrot 1974.
\textsuperscript{52} Whitechurch and Parrot 1974.
\textsuperscript{53} In Braidwood and Braidwood 1960.
tative Amuq ware fabrics (made from a systematic study collection prepared in the 1960s for the Israel Department of Antiquities). Both sources of information militate against the possibility that EA 37 and RS L.1 originated in this region. The ceramics of the Amuq sites are characterized by an entirely different clay and different temper types, in which serpentine predominates in the inclusions. A wide range of metamorphic facies is also represented in the inclusion assemblage. These components are not represented in the paste of EA 37 and RS L.1. Conversely, basalt and dolerite clasts, when appearing in the inclusions in the Amuq ceramics, are marginal. Additionally, in the Amuq pottery the chert fragments are always of the radiolarian class, an occurrence that stands in line with the radiolarian oceanic chert formations that are preserved near the Baër-Bassit and Kızıldağ ophiolites.54

In conclusion, the areas of the plain of Antioch and the Hatay are not likely to be the source of EA 37 and RS L.1, despite the nearby ophiolitic complexes. Hence the only option left for the provenance of EA 37 and RS L.1, and consequently all the Alashiya tablets, is the island of Cyprus.

THE ORIGIN OF THE ALASHIYA LETTERS WITHIN CYPRUS

The geology of Cyprus indicates that the ophiolitic complex of the Troodos massif occurs in the central-western part of the island. 55 The massif forms much of the Troodos Mountains, the outcrop covering an area of 3,000 km². Two small outliers occur in the Akamas peninsula and at Troulli. Erosion has exposed all the constituent rock types of the ophiolite complex, which is exceptional for its little deformed state.

The concentric arrangement of the members of the ophiolite succession in the Troodos massif provides the most refined control on the mineralogical content of the alluvial deposits that develop both within and on the periphery of the moun-

tains. The pillow lava series form the outer, incomplete ring that completes the structural units of the massif.56

A significant feature of the pillow lava outcrops of the Troodos range is that the rocks alter to form fine plastic clays, some of which have been used for pottery, tile, and brick production.57 One of the most important clay deposits is near Kornos, where alluvial clays and silts from the river valley support one of the best known pottery and brick production centers in Cyprus.58 Among other uses, these clays were known to serve until the 1960s for the production of pithoi (locally termed pitharia) in large quantities. The main production centers functioned in Kornos, Phini, and Ayios Dhimitrios in the Troodos area.59

For the sake of our discussion we have adopted the results of the comprehensive research made by Vaughan, primarily on Cypriot Base Ring Ware.50 We have also used our own reference collection of clays from the relevant formations. The petrographic data concerning pottery production around the Troodos in all periods clearly indicate similar clays and clastic assemblies to the ones observed in EA 37 and RS L.1. The inclusion composition of both tablets suggests a contact area between the volcanic and marine sedimentary terrains. In the case of EA 37, another significant trait is the presence of the low-grade metamorphic greywacke. Contact regions between marine sedimentary and volcanic lithologies appear around the Troodos Mountains. The combined lithology of EA 37 and RS L.1 indicates that their origins should be looked for inland, not on the coast. The immediate contact zone between the dolerite and the basalt outcrops on the one hand, and the limestone exposures on the other, can be found in the northern, southern, and eastern edges of the Troodos area.

Tablets EA 37 and RS L.1 represent two related, but still different, fabrics indicating different origins. The fresh detrital igneous inclusions that

dolerite, and quartz-microgabbro. Of these the most common are the andesitic basalts. These lower division rocks are silica-rich and contrast with the younger Upper Pillow Lava (UPL) series, which are basic in composition, with olivine as one of the most common constituent minerals. The rock suit includes olivine-basalts and mugearites. An inner ring of the Troodos succession is formed mainly of sheeted dolerite dykes. See Gass 1980 for further details.

characterize RS L.1 indicate localized colluvial clay, which overlies the dolerite series of the Troodos. The presence of carbonates and chert, however, is incompatible with the use of locally available dolerite-derived clays that have been utilized in the Troodos area for pottery production. Therefore, the origin of this tablet should be looked for in an area where the dolerite-derived clays are reworked and mixed with components of the supra-ophiolitic sediments that surround the Troodos complex. This area should contain limestone, reefal limestone, and chert. These requirements suit the region of the southern Cypriot coast from Petra tou Romiou to the Tremithes River, following through the eastern Troodos foothills to Petrofani in the north. In this region, the Lefkara and Pakhna formations contain a set of limestone, biogenic and coralline limestone, chert, and marls that may contribute these components. The dominance and fresh state of the dolerite clasts suggests an area in the immediate contact zone between the igneous and sedimentary outcrops. This area should be looked for inland, where the Lefkara and Pakhna formations overlay the dolerite series.

The petrography of EA 37 indicates an assemblage of volcanoclastic, calcareous, siliceous, and argillaceous rock fragments. These include weathered basalt clasts, radiolarian mudstone, chert, limestone, fine-grained low-grade metamorphosed sandstones, and detrital minerals. This set corresponds with the data supplied by Vaughan for the typical clays of the Moni Mélange in the southeastern flanks of the Troodos massif. An additional example of this set includes one of the inscribed cylinders from Kalavasos Ayios Dhimitrios (K-AD 82, 405, see above), which contains exactly the same inclusion suit as EA 37. This unique combination, all of which is represented in EA 37, is directly linked with the Moni formation.

The Moni formation is exposed over restricted areas along the southern and southeastern foothills of the Troodos (fig. 2). Although the nomenclature and subdivision of this formation is somewhat complex, it is obvious that the sediments reworked by the mélangé form the origin for the petrofabric of EA 37. Exactly the same petrofabric was found to characterize the Late Cypriot IIC vessels at Kalavasos Ayios Dhimitrios; a natural exposure is found just southwest of the site. On a broader scale, the distribution of pottery that is made of the Kannaviou clays of the Moni Mélange is characteristic of the south coast area, but the outcrops of the formation are restricted to the Troodos foothills between Yerasa and Pentacorno.

With the likely origin of EA 37 and RS L.1 found in the southeastern slopes of the Troodos, we started our search there for the source material of the Amarna letters from Alashiya that were made of pure marl (EA 33, 34, and 38). When the NAA study of the Amarna tablets was carried out, no major site in this area had been excavated; hence ceramic material from the region could not be compared with the clay of the tablets. Still, the correlation between the Alashiya letters and some of the pottery from Kouklia Paleopaphos hinted that the clay type that was used for some of the vessels at that site should be associated with that used for the tablets. The petrographic examination of EA 33, 34, and 38 indicates a type of cream-colored marl with occasional volcanic clasts. The paleontological data from EA 33 (the only case where the foraminifers were in an identifiable state of preservation) indicates Neogene marl. In the general area of the southern Troodos foothills, there is only one possible location for such a clay source: the marl member of the Pakhna formation (fig. 1), dating to the Lower Miocene. This formation is distributed both in Kouklia and below the Troodos slopes, but it does not extend to Enkomi or other sites that were surveyed in the NAA analysis. The apparent but vague relation between the Alashiya tablets and the Kouklia pottery suggests that they were both made of marl of the same formation, but of different exposures or localities.
Marl deposits form part of the lowest chalk-marl member of the Pakhna formation.\textsuperscript{70} The marl is remarkable by its cream to buff color, by its plasticity and, similarly to the tablets, by the relatively hard fabric that it forms after hardening.\textsuperscript{71} The plasticity of the Pakhna marls is one of their most prized features, containing as they do significant percentages of the Troodos-derived montmorillonite. The shrinkage of this mineral seems to be naturally tempered by its mixture with illitic components from the carbonate sediments, making it an ideal potting material.\textsuperscript{72}

Based on the above conclusions, we compared clays from the Pakhna and Moni formations as well as the lava-derived clays from Kornos and Phini. Samples of the Pakhna marl were taken from selected locations between Kouklia and Larnaca, especially near relevant Late Cypriot sites (table 1). The Moni formation was sampled in several locations around Moni and Pentacomo. The samples were soaked in water, formed into small briquettes, and fired at 600°C. The fired clays were thin-sectioned and examined petrographically. The study confirmed that RS L.1 is similar to the clay from the ceramic workshop at Kornos (sample CY-24 in table 1), although the latter lacked the sedimentary rock fragments. EA 37 is similar to a sample of re-worked exposure of the Moni Mélange that was partly covered by the Lefkara formation chalks (sample CY-23). Tablets EA 33, 34, and 38 are petrographically similar to many of the samples taken from various sections of the Pakhna marls.

\textit{Chemical Analyses of the Alashiya Letters and Selected Cypriot Clays}

We supplemented the results of the petrographic study with a chemical analysis, but did not carry out additional NAA study to the one conducted by Artzy et al.\textsuperscript{73} The chemical analysis was therefore aimed at disclosing the elemental compositions of the tablets and comparing them with the relevant Cypriot clay types that were suggested by the petrographic results.

Table 2 presents the elemental composition of several Alashiya letters, as revealed by ICP-AES/MS. For two of the tablets we were able to extract only a limited sample—60 mg each for EA 34 and EA 37. This may have had some effect on the accuracy of the measurements, especially for EA 37, though the results indicate that the concentrations of most elements are presented in true numbers (except for P and Co). Therefore, this deficiency did not affect the results severely. We could not examine RS L.1 because it was immersed in glue in the process of conservation. The NAA study revealed that EA 33, 34, 35, and 38 were chemically very similar.\textsuperscript{74} In light of this observation we found no point in examining EA 35 in the British Museum and EA 38 in the Vorderasiatisches Museum in Berlin; they were obviously produced of a similar clay type. Though our chemical analyses disclosed some differences in the chemical composition of EA 33 and 34, the results are closely related.

In order to cross-examine the petrographic results, we sampled marl of the Pakhna formation and clay of the Moni Mélange in various locations between Kouklia \textit{Palaeopaphos} and Larnaca. In addition, we collected a few samples of the pillow lava and dolerite-derived clay that are still used today in the workshops of Kornos and Phini (table 1). By measuring the elemental composition of the Pakhna marl from several outcrops, preferably near the relevant Late Cypriot sites, we hoped to identify differences between the various locations, and accordingly to suggest a better-refined origin for EA 33 and EA 34. Similarly, we wished to check the likeness between EA 37 and the clay of the Moni Mélange in its limited area of distribution.\textsuperscript{75}

Using logarithms of the measured concentrations, the relations between the analyzed specimens may be examined by cluster analysis. The Alashiya tablets cluster with the Cypriot clays: EA 33 and EA 34 cluster with samples of the Pakhna marl, while EA 37 clusters with samples of the Moni Mélange (fig. 6). It becomes evident that the Pakhna formation includes two differing marl categories. One (represented in our collection by samples CY-8, 9, 11, 14) has excellent plasticity and bright (even whitish) color. This type was not utilized for the...
production of tablets. The letters belong to a second marl category within the same formation, which is typified by good plasticity (though it is not as “fat” as the former type) and a more creamy color. Within this subgroup, both EA 33 and EA 34 are most closely related with sample CY-10 from right above the site of Alassa Paliotaverna. The other samples (from Kouklia, Kalavasos, and Kofinou) are more remote, although they are closely related to each other.

These results do not necessarily mean that EA 33 and EA 34 were made in Alassa Paliotaverna. The fact that the samples from Kouklia Palaeopaphos and Kalavasos Ayios Dhimitrios, both from within this clay member of the Pakhna formation, are closely related means that the formation is extremely homogeneous in its composition over broad areas. We can only establish that EA 33 and EA 34 (and the like) were made of a member of the Pakhna formation that exposes in various locations between Larnaca and Kouklia. Thus, although the ICP analysis indicated the relation of EA 33 and EA 34 to a certain member of the marl unit within the Pakhna formation, the homogeneity of this member over southern Cyprus prevented the identification of a more specific provenance for the tablets.

In order to investigate the reason for the preference of the less plastic, creamy marl over the brighter and more pliable one, we simulated the production of a tablet-like shape and its incision with a sharpened stick. This experiment made it obvious that incising cuneiform signs in wet, very plastic clay is very frustrating; the very plastic type of clay tends to cling to the stick and make unclear signs. The moderate plasticity of the clay was a desired trait that scribes must have been aware of when preparing the tablets for writing.

Tablet EA 37 clearly falls within the cluster of the Moni Mélange samples that come from pure outcrops of this formation. Sample CY-23, which is reworked under the overlying Lefkara formation, is more related with the pure sample of the Lefkara formation (CY-2). Therefore, although too small in size, the sample taken from EA 37 confirms the petrographic interpretation that associated it with this clay type. Of the Moni clay samples only CY-19 showed good plasticity. We therefore suggest that the clay that had been selected for EA 37 was taken from a field rather than from an in situ exposure of the clay.

**DISCUSSION**

The Government of Cyprus in the Late Bronze Age: An Overview of Current Opinions

It is widely accepted that the political system of Late Bronze Age Cyprus should be reconstructed on its own terms without a priori reference to the palatial polities of the ancient Near East or the Aegean.76 In addition, since the archaeological record changed considerably toward the Late Cypriot IIC (13th century B.C.), Peltunberg77 and Knapp78 warned against extrapolation back into the Middle Cypriot III–Late Cypriot IIB periods (17th–14th centuries B.C.), and envisaged diachronic political changes during the Late Cypriot period.

The key issue for this discussion has always been copper production—the economic backbone of Cyprus in antiquity. The earliest commercial exploitation of Cypriot copper ores took place along the northern rim of the Troodos Mountains at the beginning of the second millennium B.C. Although the main settlements along the northern coast of the island are still unexcavated, the rich cemeteries of Lapithos Vrski tou Barba, Bellapais Vounous, Vasilia Kaphkalla, and Karmi Palealona testify to their economic importance. Indeed, all known imports into Cyprus during this period—from the Aegean, the Levant, and Egypt—were found in these four sites, considered to be the primary foci for external trade.79

During the first half of the second millennium B.C., however, the center of gravity of both settlement and economy shifted from the northwest to the central and eastern parts of the island. This is clear from the clusters of settlements at the north-eastern foothills of the Troodos Mountains south of Nicosia, and in the eastern Mesaoria, as well as from the heavy concentration of Near Eastern imports in these regions. It is certainly not a coincidence that the early references to copper from Alashiya in Syrian and Babylonian cuneiform documents appear at the same time (late 19th–17th centuries B.C.).80 Kalopsidha might have been the main Middle Cypriot gateway for copper export to the Levant. The archaeological record suggests that in the early part of the Late Bronze Age (Middle Cypriot III–Late Cypriot I, ca. 1700–1400 B.C.) Enkomi Ayios Iakovos replaced it as the most important site in eastern Cyprus.

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76 See, e.g., Knapp 1996a, 4; Peltunberg 1996, 27; see, however, Åström 1966, 10, 12.
77 Peltunberg 1996, 28.
Table 1. Cypriot Clays Sample List

<table>
<thead>
<tr>
<th>Sample</th>
<th>Formation</th>
<th>Location</th>
<th>Grid (UTM)*</th>
<th>Ceramic Behavior</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CY-1</td>
<td>Pakhna</td>
<td>Khirokitiya</td>
<td>053152.385061</td>
<td>Insoluble in water</td>
<td>Near the site</td>
</tr>
<tr>
<td>CY-2</td>
<td>Lefkara</td>
<td>Khirokitiya</td>
<td>053038.385104</td>
<td>Moderate plasticity, dries without cracking, slightly sinters at 500°C</td>
<td>In the village</td>
</tr>
<tr>
<td>CY-3</td>
<td>Pakhna</td>
<td>Khirokitiya</td>
<td>053149.384938</td>
<td>Gritty, plastic but crumbles in drying</td>
<td>In the village</td>
</tr>
<tr>
<td>CY-4</td>
<td>Pakhna</td>
<td>Near Kofinou</td>
<td>053283.385189</td>
<td>Good plasticity, slightly cracks in drying, sinters at 500°C</td>
<td></td>
</tr>
<tr>
<td>CY-5</td>
<td>Pakhna</td>
<td></td>
<td>053156.384780</td>
<td>Insoluble in water</td>
<td></td>
</tr>
<tr>
<td>CY-6</td>
<td>Pakhna</td>
<td>Amathus</td>
<td>051261.384102</td>
<td>Insoluble in water</td>
<td>Car parking near the Agora</td>
</tr>
<tr>
<td>CY-7</td>
<td>Pakhna</td>
<td>West of Kourion</td>
<td>048817.383664</td>
<td>Insoluble in water</td>
<td>Road section</td>
</tr>
<tr>
<td>CY-8</td>
<td>Pakhna</td>
<td>Alassa Pano Mandilaris</td>
<td>049250.384700</td>
<td>Excellent plasticity, dries without cracking, sinters at 500°C</td>
<td></td>
</tr>
<tr>
<td>CY-9</td>
<td>Pakhna</td>
<td>Alassa Paliotaverna</td>
<td>049295.384630</td>
<td>Excellent plasticity, dries without cracking, sinters at 500°C</td>
<td>Section of the northern wall foundation trench</td>
</tr>
<tr>
<td>CY-10</td>
<td>Pakhna</td>
<td>Alassa cardboard factory</td>
<td>049240.384700</td>
<td>Good plasticity, dries without cracking</td>
<td>North of Paliotaverna, from a section</td>
</tr>
<tr>
<td>CY-11</td>
<td>Pakhna</td>
<td>Alassa cardboard factory</td>
<td>049240.384700</td>
<td>Excellent plasticity, dries without cracking, sinters at 500°C</td>
<td>North of Paliotaverna, from a section</td>
</tr>
<tr>
<td>CY-12</td>
<td>Pakhna</td>
<td>Kalavasos</td>
<td>052648.384453</td>
<td>Good plasticity, dries without cracking, sinters at 500°C</td>
<td>Near the old road crossing the site (east of Ayios Dhimitrios)</td>
</tr>
<tr>
<td>CY-13</td>
<td>Pakhna</td>
<td>Road section</td>
<td>053149.384863</td>
<td>Rather gritty, good plasticity, dries without cracking, cracks at 500°C</td>
<td></td>
</tr>
<tr>
<td>CY-14</td>
<td>Pakhna</td>
<td>Koulkia</td>
<td>046059.384086</td>
<td>Excellent plasticity, dries without cracking, sinters at 500°C</td>
<td></td>
</tr>
<tr>
<td>CY-15</td>
<td>Pakhna</td>
<td>Koulkia</td>
<td>046050.384088</td>
<td>Good plasticity, dries without cracking, sinters at 500°C</td>
<td></td>
</tr>
<tr>
<td>CY-16</td>
<td>Pakhna</td>
<td>Koulkia</td>
<td>046073.384098</td>
<td>Insoluble in water</td>
<td></td>
</tr>
<tr>
<td>CY-17</td>
<td>Doleritic reworked clay</td>
<td>Kato Platres</td>
<td>048668.385999</td>
<td>Gritty but plastic, dries without cracking</td>
<td>Upper (humic) layer from a road section</td>
</tr>
<tr>
<td>CY-18</td>
<td>Dolerite derived clay</td>
<td>Phini</td>
<td>Village</td>
<td>Excellent plasticity, perfect sintering at 500°C</td>
<td>Potter’s workshop clay, said to be locally collected</td>
</tr>
</tbody>
</table>
About the same time that Enkomi was established as a center on the eastern coast of the island (ca. 1600 B.C.), Toumba tou Skourou was founded as the main center of the Morphou Bay. Only scant remains of metallurgical activity were discovered at this site, however, as compared to the proliferation of such remains at Enkomi, found already in its early phases (though it should be remembered that large parts of Toumba tou Skourou were bulldozed away prior to excavation).81 Thus, it appeared to many that in the beginning of the Late Bronze Age Enkomi controlled the copper industry of the entire island and served as its main seat of power.82 The emergence of Enkomi as a new and dominant center may have been accompanied by the establishment of a network of hinterland forts aimed to secure control of the mines and the communication lines connecting them to the coastal gateway.83 Merrillees,84 and especially Keswani,85 advocated against the existence of a unified, island-wide polity founded and dominated by a paramount center at Enkomi. Peltunberg refuted their arguments on the ground that they pertain to the situation in the later part of the Late Cypriot period.86 Most scholars have argued that the political situation in Cyprus did not change during the 15th–14th centuries B.C. and is still reflected in the Amarna tablets. They have suggested that a king, most probably seated at Enkomi, controlled the copper production of the island and participated in the international trade in the eastern Mediterranean.87 The political and economic situation seems to have changed considerably in the Late Cypriot IIC period (13th century B.C.). New data from recent fieldwork points to fragmentation of central authority. Many urban sites, some of them much larger than Enkomi, were established, mainly along the southern coast.88 Their monumental ashlar architecture, large storage facilities, industrial installations for olive oil and copper processing, administrative technology (e.g., seal impressions and Cypro-Minoan inscriptions), as well as rich burials, seem to indicate that they must have been centers of regional polities and the seat of local elite. It has therefore been suggested that power and the island’s resources were shared in the post-Amarna period by a group of peer-polities.89

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### Table 1. Cypriot Clays Sample List (Continued)

<table>
<thead>
<tr>
<th>Sample</th>
<th>Formation</th>
<th>Location</th>
<th>Grid (UTM)*</th>
<th>Ceramic Behavior</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CY-19</td>
<td>Moni</td>
<td>SE of Pentacomo</td>
<td>052250.384300</td>
<td>Good plasticity, shrinks in drying, sinters at 500°C but slightly cracks</td>
<td>From a mining area, section</td>
</tr>
<tr>
<td>CY-20</td>
<td>Moni</td>
<td>SE of Moni</td>
<td>051900.384350</td>
<td>Moderate plasticity, cracks while drying, crumbles in firing to 500°C</td>
<td></td>
</tr>
<tr>
<td>CY-21</td>
<td>Moni</td>
<td>SE of Moni</td>
<td>051900.384325</td>
<td>Moderate plasticity, cracks while drying, crumbles in firing to 500°C</td>
<td></td>
</tr>
<tr>
<td>CY-22</td>
<td>Moni</td>
<td>Pentacomo</td>
<td>052218.384453</td>
<td>Moderate plasticity, cracks while drying, crumbles in firing to 500°C</td>
<td></td>
</tr>
<tr>
<td>CY-23</td>
<td>Moni</td>
<td>West of Moni</td>
<td>051785.384229</td>
<td>Good plasticity, dries without cracking, sinters at 500°C</td>
<td>Reworked under the Lefkara formation</td>
</tr>
<tr>
<td>CY-24</td>
<td>Dolerite/pillow lava derived clay</td>
<td>Kornos Village</td>
<td>051265.384582</td>
<td>Excellent plasticity, dries without crumbling, perfectly sinters at 500°C</td>
<td>Potter's workshop clay (said to be from near Stravovouni)</td>
</tr>
</tbody>
</table>

* GPS extracted locations are in Universal Transverse Mercator (UTM) grid, zone 36, International Spheroid European Datum.

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83 Merrillees,84 and especially Keswani,85 advocated against the existence of a unified, island-wide polity founded and dominated by a paramount center at Enkomi. Peltunberg refuted their arguments on the ground that they pertain to the situation in the later part of the Late Cypriot period.86
88 Negbi 1986; Åström and Herscher 1996.
Since the political reconstruction, which has just been delineated, suggests that the focus of power in Cyprus had continuously shifted during the second millennium, scholars reason that Alashiya may have been a designation for the entire island rather than a name of a city.\(^{90}\)

In a few texts, Alashiya appears with the URU determinative. But in certain cases, scribes who worked in the peripheral kingdoms did not distinguish between determinatives, and sometimes used URU, or KUR.URU, for KUR. An examination of all the references where Alashiya appears with the URU determinative reveals that no single text refers unequivocally to a city. In other words, a town named Alashiya is not borne out by the textual evidence.\(^{91}\) We conclude that Alashiya was a name for the island of Cyprus, or sometimes (possibly) for a part of it. Whether a certain city was also called Alashiya cannot be established.

The Political Center of Alashiya during the 14th–13th Centuries B.C. according to the Analytical Results

The petrographic and chemical results presented above make it possible to attribute all the Alashiya letters that we examined to the southeastern margins of the Troodos Mountains. Before we try to locate a possible candidate site for the origin of the Alashiya tablets, we must review the conventional identification of the capital of Alashiya in Enkomi.

A general look at the geological map of Cyprus\(^{92}\) reveals that Pleistocene to Holocene sands, silts, and sedimentary calcareous rocks, including mainly biocalcarenites and marl, characterize the whole area of eastern Cyprus, and Enkomi in particular. Thus the source materials of the tablets are far beyond the exploitable ranges of Enkomi, Kalopsidha, or in fact any other site in the eastern part of the island. But is it possible that carefully selected clay sources were imported to Enkomi from other parts of the island in order to produce clay tablets? This possibility—raised by V. Karageorghis in a discussion of our results—cannot be dismissed on petrographic considerations alone. Nonetheless, we are confident that this is not the case for three reasons.

First, the local marl at Enkomi is highly suitable for tablet production under the restrictions that we suggested above, that is to say, high plasticity, low shrinkage, light color, and no inclusions. Creamy color and fine texture distinguish the pottery produced at Varosi, the Greek quarter of Famagusta. Potters who fled from Varosi during the civil war in Cyprus testify that one of their main sources for the high quality “white earth” was at Enkomi.\(^{93}\) Therefore, we see no reason why a scribe should prefer remote sources of clay to this high quality and easily available source.

Second, while the locally produced pottery and Cypro-Minoan tablets at Enkomi are characterized by a fine texture and light shades, EA 37 and RS L.1 are dark in color and contain coarse inclusions. The scribes who produced these two tablets no

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\(^{90}\) Cf. Masson 1973; Knapp 1996a, 8.

\(^{91}\) Knapp 1985, 236–7; 1990, 779; 1996a, 4; Na’am 1997, 611. It may be noted that the colophon in KTU 4.102 (Walls 1996a, 40) is broken on both sides. It is possible that a KUR sign appeared on the left side, or that a post-determinative KI sign appeared on the right side (as restored in KTU).

\(^{92}\) 1:250,000, 1995 ed.

\(^{93}\) Ionas 1998, 133.
doubt selected the clay—which typifies the margins of the Troodos—in hand.

Third, all the Alashiya tablets discussed here differ drastically in their materials from the tablets found at Enkomi. The Enkomi tablets that we examined cover a time-span of ca. 300 years, which overlaps the periods of the Amarna and Ugarit letters, and display an extremely homogenous composition. It is clear that the raw material selected for tablet production at Enkomi remained the same throughout those periods.

Combined, these factors suggest that the Alashiya tablets from Amarna and Ugarit were produced far from the Enkomi region (as already hinted by the NAA study of the Berkeley team\(^94\)). Further examination of the southwestern margins of the Troodos Mountains is warranted in order to locate the place from which the Alashiya tablets were sent. The two different clay types that were used for the production of the Alashiya tablets, namely the predominantly calcareous fabric derived from the Miocene Pakhna marls and the igneous-derived clays from the ophiolite margins, can be interpreted in two different ways. They can be understood as representing two different sources of clay for the tablets, or a single location where both clay types were used simultaneously. Since the igneous-derived tablets were also made in the contact zone with the sedimentary area where both clay types are exposed in near proximity, the second possibility should be favored. Indeed, in sites located on the margins of the Troodos, this twofold use of clay types for pottery production was customary from the Early Bronze Age through the Late Bronze Age.\(^95\) Therefore, it is very likely that all the Alashiya letters originated from a single site.

The combination of Pakhna marl and the Moni Mélange clay is limited in distribution. In the immediate area where the Moni formation is exposed there are only a few large Late Cypriot II sites that may have served as administrative centers. These include first and foremost Kalavasos Ayios Dhimitrios and Amathus. Maroni Vournes (on the coast) and Alassa Paliotaverna/Pano Mandilaris (in the piedmont) are located in an exploitable range of 10 km, where Moni clays and Pakhna marls are bounded in the CTF (Clay-Temper Factor, above). Adding the doleritic-derived clay of RS L.1 as another possible resource (though in a tablet sent about a century later than the Amarna letters) does not change this picture significantly, though it makes the coastal sites (Maroni and Amathus) less probable.

Fig. 6. Cypriot clay samples and the Alashiya letters, tree diagram, Ward’s method, squared Euclidean distances

Historical and archaeological data help to narrow the possibilities. The historical sources indicate that copper played a major role in the relations between Alashiya and its eastern neighbors. A site that is directly related to copper production may therefore be favored. In the area limited by the

\(^94\) Artzy et al. 1976.

distribution of the above clay types, the sites of Kalavasos and Alassa are the best candidates to answer this description. Maroni Vournes, though located only several kilometers east of Kalavasos, is a coastal site, too remote from the Troodos margin zone.

Kalavasos Ayios Dhimitrios is situated in the Vasilikos Valley, northeast of the Akrotiri Bay. It is located in an area of exposure of the Lefkara formation of the Paleogene age, dominated by chalks and marls, and is adjacent to the Kalavasos copper mines of the southeastern corner of the Troodos massif. Imposing ashlar masonry, as well as extensive evidence for olive oil production and storage facilities, make this site identifiable as a major administrative center. It flourished in the Late Cypriot IIC, though excavations beneath and around ashlar Building X indicated that it was occupied already in the Late Cypriot IIA. The interpretation of this site as a major center is corroborated by the evidence from the tombs, which exhibit the wealth and international contacts enjoyed by the local elite. Though located not far from the coast, Kalavasos Ayios Dhimitrios is close to the volcanic complex of the Troodos massif. Therefore it is suitable for the identification of the origin of EA 37.

The site of Alassa Paliotaverna/Pano Mandilaris was discovered in 1983 in the course of a salvage survey prior to the construction of the Kouris dam. The excavations exposed a considerable Late Cypriot IIC–Late Cypriot IIIA site, the only one in the hilly, mountainous zone of the Troodos piedmont excavated thus far. The site is situated in proximity to an area rich in sulfide ores and other copper alloys, and the excavations revealed rich evidence for metallurgical activities. At Paliotaverna, impressive architecture characterized by ashlar masonry was exposed, dating mainly to the 13th century B.C., but apparently showing indications of 14th-century B.C. activity as well. The pottery from the foundation trenches of Building I is attributed to the Late Cypriot II. New 14C dates seem to support a 14th-century B.C. date for the foundation of building II. Moreover, the long sequence of the burials from Alassa Pano Mandilaris starts at Late Cypriot IB. The imposing architecture and the impressive storage facilities for olive oil (i.e., pithoi, some bearing seal impressions), indicate that the site was a major administrative center.

Geologically, the site of Alassa is located in an area dominated by the Pakhna formation. The first exposures of the pillow lava series appear only several kilometers to its north, and the westernmost margins of the Moni formation can be found at Yerassa, 10 km to the northeast. In terms of CTF these clays are within the exploitable territory of the site.

CONCLUSIONS: THE ORIGIN OF THE ALASHIYA TABLETS

Our analysis proves that Alashiya, acknowledged in the Amarna correspondence as a member in the “club” of great powers of the Late Bronze Age, must be located in Cyprus. It also indicates that the political and administrative center of Alashiya in the 14th–13th centuries B.C. was situated in the mountainous region of the island.

The similarity between the ancient name Alashiya and modern Alassa may help to bolster this argument; however, this similarity cannot decisively identify the location of Alashiya. The name Alashiya designated a vast area, and it could have been preserved in any part of the island. Even if preserved in the name Alassa, it would point only to a general area in which the political center of the island could have been located.

Some textual evidence lends support to the identification of the capital of Alashiya in the mountainous area, away from the coast. Letter RS 20.18 was sent by Eshuwara, the chief prefect of Alashiya, to the king of Ugarit. It was probably written at the same time as RS L.1, in the last days of Ugarit. In the rele-
vant passage (lines 16–28), Eshuwara reports of a threat to his place, located in a mountainous area, which was avoided because the 20 ships of the enemy moved on to threaten Ugarit: "But now, (the) twenty enemy ships—even before they would reach the mountain—have not stayed around but have quickly moved on, and where they have pitched camp (?) we do not know. I am writing you to inform and protect you. Be aware!"108 Having Enkomi in mind, scholars have translated “the mountain (shore).” One should follow the verbal translation “mountain,” however, because there is no “shore” in the text. This evidence fits the location of the Alashiyan political-administrative center at Alassa or Kalavasos, as established by the petrographic study.

Other textual references to Alashiya indicate that, in addition to the need to keep a close eye on copper production, ongoing security problems at the coastal regions of the island may have dictated an inland location for its capital. In the famous Hittite “Indictment of Madduwatta” text, which is dated to the end of the 15th century B.C., we read of pirates’ raids on Alashiya by people from western Anatolia.109 A few generations later, the king of Alashiya complains that Lukkians (people from Lycia in southwestern Anatolia) continuously raid his villages.110 Apparently, hostages were the main booty of these sea-born raids.111 Christodoulou has noted that fear from piracy or invasion inhibited coastal Cypriot villages in some later periods as well.112

Sociopolitical Organization of LBA Cyprus

Keswani113 and Knapp114 proposed updated reconstructions of the settlement hierarchy in Late Bronze Age Cyprus constructed on Catling’s seminal threefold division of Late Cypriot settlement system and economy: (A) coastal industrial, administrative, and trading urban centers; (B) inland rural settlements; (C) copper production sites at the Troodos foothills.115 The essence of their models, which added to the settlement structure proposed by Catling the important category of ceremonial or “sanctuary” sites, has served as a tentative explanation of how subsistence goods, raw materials, and luxury items were produced, distributed, transported, and administered within the Late Cypriot settlement system. Interwoven within these models are suggestions about the sociopolitical and economic mechanisms (e.g., staple/wealth finance) that integrated a variety of functionally different sites on a regional scale. Both scholars, however, have emphasized the dynamic nature of their constructs, whose configuration and elements must change as new data emerge.116 Knapp noticed that Kalavasos and Alassa, defined in the above model as “primary” centers, do not conform to the “ideal type” of such centers and are unique in their multiplicity of functions.117 Closer to the copper mines than “primary” coastal centers, these two sites must have controlled the mining, production, and transport of copper and served as centers of commercial administration. Knapp further suggested that Maroni Tsaroukkas and Kourion Bamboula could have served as intermediary coastal sites for these inland centers (Kalavasos and Alassa, respectively).118

Three alternative models for Cypriot sociopolitical organization are proposed in light of the present evidence.

The first model proposes a single centralized authority for the island polity of Alashiya during the 16th–13th centuries B.C. The seat of power had been located in the mountainous area throughout this period, but the pre-14th-century center has not been located yet.

The second model acknowledges a single centralized authority for Alashiya during the 16th–13th centuries B.C., but argues that the location of the center of power within this polity and its internal organization have changed in the course of time. Possibly emerging about 1600 B.C., together with the establishment of Enkomi, the rulers of Alashiya may have established their government at this early stage over the eastern part of the island if not already throughout the island. As Dikaios claimed, copper ores could have been transported to Enkomi from the Skouriotissa mines, which lie on the northern foothills of the Troodos.119 Other coastal urban centers emerged later, and one may wonder if their foundation was initiated by the central government or by the local elites. Because of their lack of storage facilities and reliance on transport from the hinterland, the coastal cities must have been

110 EA 38; Moran 1992, 111–2.
112 Christodoulou 1959, 62.
113 Keswani 1993.
119 Dikaios 1969, 11.
integrated within the overall settlement and economic system for their livelihood. In the late 15th century to the beginning of the 14th century B.C., the main seat of power moved inland to Alassa (Finkelstein, Goren, and Na’an), or to Kalavasos/Alassa (Bunimovitz). Four letters sent from Alashiya to Niqmaddu III of Ugarit (ca. 1225/20–1215 B.C.) were recently discovered, one of them dispatched by a king of Alashiya named Kushmeshusha. It seems, therefore, that the picture of political fragmentation in 13th-century B.C. Cyprus is exaggerated, if not completely wrong. The unprecedented urban flourishing during the Late Cypriot IIC reflects the expansion of the commercial system in the eastern Mediterranean region and the success of the Alashiyan rulers in capitalizing on the expanding commerce. Enkomi continued to serve as a gateway community for the Cypriot copper trade with the Levant.

According to the third model, Alashiya comprised a number of competing regional factions or a federation of such independent polities. However, since Near Eastern rulers of the 14th–13th centuries B.C. acknowledged a king of Alashiya, who according to our research was situated in Alassa or Kalavasos, he must have either been the overlord of the other Cypriot polities or a primus inter pares.

It is difficult to decide which of the above scenarios is closer to the Late Cypriot reality. The confirmation of the identification of Alashiya with Cyprus and the location of its capital in the mountainous inland region are essential steps in the process of unraveling the complicated picture of the government of Cyprus in the Late Bronze Age. Many questions are still to be answered. In the meantime we may be comforted by Cadogan’s optimistic view: “it is a good sign that Late Cypriot society and history become ever more complicated to explain. It means that we are coming a little closer to the realities of those days.”

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122 Cadogan 1996, 15.


Reading Babylon

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Abstract

A combined investigation of the archaeological remains and the ancient testimonies of the city of Babylon in the days of King Nebuchadnezzar, during the sixth century B.C., allows us to read the city’s multiple ideological messages. The concern of the article is not with the identification of specific monuments, but with the ideological notions that the monuments conveyed to the ancient viewer. This issue is examined on various levels, from the city in its entirety to the ephemeral appearances of monuments during religious processions.1

“Babylon the great, mother of harlots and of earth’s abominations”; this image from the biblical Book of Revelation (ch. 17) dominated Western thought on Babylon for centuries. The city was the trope of evil and decadence; it was the place of sin, which had fallen under the vengeful hand of God. It was the place of exile, the antithesis of Jerusalem or of Christian Rome, the place where apostate popes resided.1 Not only was the behavior of its inhabitants ungodly, but the city itself, with its tower threatening heaven, was also an indication of arrogance. Such an image flourished within a discourse that built fantasy upon fantasy, in the absence of any concrete knowledge of what the city really looked like. But when the Deutsche Orient-Gesellschaft started to unearth Babylon’s massive remains at the turn of the 19th century, and hauled off parts of it to a newly built museum in Berlin, a new view began to emerge. Pieter Breugel’s fanciful Tower of Babel gave way to the majestic dark-blue Ishtar gate with its bulls and dragons as the image of the city. Another biblical verse became Babylon’s epigram, from the mouth of King Nebuchadnezzar: “Is not this Babylon, which I have built by my mighty power as a royal residence and for the glory of my majesty?” (Daniel 4:30). Its enormous size, its massive walls, palaces, and temples, made it an icon of royal power.2

Was this all the city signified, however? Was it only the expression of the power of its builder who thus exemplified the oriental despot whose megalomania is demonstrated by the grandeur of his city? This article will provide an alternative semiotic reading of Babylon, one based on the Babylonian ideology of the city’s role in the universe rather than being rooted in the idea of absolute royal power. The ideology regarding the city will be pried from the extensive ancient literature that deals with Babylon. Such literature was written both by what we might call insiders, Babylonians to whom the city was the norm, and outsiders, forced or voluntary visitors who looked upon it as something new and strange (fig. 1).

HOW TO READ BABYLON?

That a city can be the subject of a semiotic analysis has become a familiar idea since Roland Barthes called for it in a lecture in 1967, later published as “Semiology and Urbanism,”3 and Umberto Eco devoted an entire section of his introduction to semiotics to architecture.4 A semiotic reading of Babylon is certainly very different from what Barthes called for when he urged us to look at the cities we inhabit. Despite the intricate models built of parts of the city or the restorations of buildings on the site itself (fig. 2), we cannot walk through Babylon’s streets, we cannot see the details of buildings or the effects of nature and man on its monuments. Even compared to other cities that have disappeared or changed fundamentally over time, our access to Babylon remains very limited. Augustan Rome, for example, can be visualized much better: we know the city plan in detail and some of its buildings and monuments are still standing.5 For the Babylon I will discuss, the visual evidence is much poorer. Often only a ground plan exists, if that

1A preliminary version of this article was delivered to the Canadian Society for Mesopotamian Studies at the University of Toronto, at the invitation of Grant Frame. Jeremy Black provided me with some of his personal photographs taken at the site of Babylon, one of which is reproduced here. After reading an earlier version of the article, Zainab Bahrani urged me to push the analysis further than I had done. Seth Richardson’s insightful editing of the manuscript clarified the argument, and Mara Horowitz produced the map and plans. I am very grateful to these people for their interest and advice.

2For Babylon in Middle Eastern and European traditions, see Rollinger 1999. For the reception of Babylon and Babylonian culture in European literature, see Haas 1999.

3For the idea that all Mesopotamian cities express the power of the king in their layout, see Novák 1999.

4The essay was translated into English and reprinted several times; see, e.g., Barthes 1988.

5Eco 1972, 259–317.

6Favro 1996.
While archaeological plans of the city are published with various levels of detail, a closer look at them will show a set of lines with many empty spaces in between. Very little of the city’s enormous surface of close to 900 ha has been excavated. We may know the location and plan of some major streets and buildings, but can only imagine what the layout of most neighborhoods was. We may think that we can reconstruct the facade of some temples, but we cannot envision their colors or ephemeral additions, officially sanctioned or not, of stalls, awnings, flagpoles, and the like. On the other hand, the distance from the hustle and bustle of daily life may be an asset. In a passage that has gained greater poignancy after recent events, Michel de Certeau takes the viewer up to the 107th floor of the World Trade Center in New York in the introduction to his essay “Walking in the City,” where the walk is compared to a rhetorical act: “His altitude transforms him into a voyeur. It places him at a distance. It changes an enchanting world into a text. It allows him to read it.”

Similarly, we look at Babylon from a distant and Olympian point of view.

What is available to us of ancient Babylon falls primarily in the categories that make up the image of a city: paths, edges, districts, nodes, and landmarks. The access roads and streets form the paths the visitors would take. The walls, of the entire city and of certain of its monumental buildings, and the riverbanks form the edges that create boundaries. We can recognize neighborhoods (albeit not in detail), and we see crossroads and gates where the visitor had to decide how to proceed. The Babylon known to us is primarily one of landmarks, the large monuments that draw the archaeologists’ attention—palaces, temples, and gates. They are external points of reference to the observer who often cannot enter them.

We are fortunate having some ancient written testimonies on Babylon. These accounts fall into two distinct categories, those written by Babylonians and those written by outsiders. Because of the city’s special status in politics and religious life, the Babylonians themselves devoted an extraordinary amount of attention to Babylon compared to other cities. The unusual interest is not evident in the royal building inscriptions, which are quite conventional and do not deal with the city as a whole, but in what modern scholars call topographical
texts. In typical Mesopotamian fashion these are lists, the most important among them called “Tintir = Babylon,” a five-tablet compendium mostly made up of names and epithets of the city and its temples. Tablet IV gives the names of 43 temples grouped according to their city-quarter, for instance, four in the quarter called Ka-dingirra. The fifth tablet lists the names of city-walls, waterways, and streets without giving their locations. It ends with a description of the location of the 10 city-quarters by stating two landmarks in each of them, most often city-gates. For example:

- From the Market Gate to the Grand Gate is called Eridu;
- From the Market Gate to the Urash Gate is called Shuanna;
- From the Grand Gate to the Ishtar Gate is called Ka-dingirra.

This information allows us to put names on the archaeological map of the inner city.

Individual religious buildings can be likewise described: great emphasis is given to their dimensions. There are, for instance, several tablets that give measurements for the ziggurat of Babylon. The topographical texts are not the equivalent of Pausanias’s travel descriptions of Greece, but they do indicate to us that the Babylonians also recognized that the elements mentioned above made up the image of the city. These records allow us to

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6 de Certeau 2000, 102.
7 Lynch 1960.
10 E.g., Wiseman 1985, 71–3.
name many of the features we observe on the city map, and the name was considered to be crucial for the nature of the named in Mesopotamian tradition. Nor should we forget that Babylon, as political capital and religious center of the Babylonian state, appears in a great number of literary compositions. It was prominent in the minds of poets and authors, many of whom may have lived and worked in the city in the service of the king.

The accounts by outsiders are narrative in nature and more directly informative on the subject of what impression Babylon or one of its features made on the observer. Most prominent is the account by Herodotus in the first book of his Histories (chs. 178–183). Scholars have debated passionately over whether or not Herodotus ever visited the city,11 but this is not relevant to the analysis here. What counts is the impression the city made on the viewer, and it does not matter whether Herodotus tells us this first- or secondhand. Herodotus was in awe of Babylon, as were other classical authors who mentioned it. To the Greeks it was an extraordinary sight, an opinion certainly connected to their misapprehension of the Eastern world, where everything was different from their own world. Another outside group that saw Babylon wrote or inspired the Biblical narrative. A strong image of the city existed in this milieu and, although the attitude toward it was negative, the voice represented helps us to determine how Babylon was perceived by people who saw it in reality.

Even taken together, this diffuse and multifaceted evidence does not replace a walk through a living city for the purpose of a semiotic analysis. Reading Babylon is like reading a fragmentary text—the usual situation for the student of ancient Mesopotamia. What remains of its literature, for example, is incomplete. Even when numerous manuscripts are preserved of a literary composition, as in the case of the well-known Epic of Gilgamesh, there are gaps where the cuneiform tablets are broken and illegible, or the signs are too opaque for our comprehension. Mesopotamian works of art are most often incomplete and damaged. This incompleteness must become part of our appreciation of the Mesopotamian remains: it cannot be avoided and should not be ignored, as is usually done. We cannot fill in the gaps, nor should we regard the remnants at our disposal as a seamless whole. What we have is incomplete; and yet the subject itself remains as valid a topic of

research as does a complete work. Nor should Mesopotamia be regarded as worse off than other historical cultures in that respect. All evidence, even the most abundant, must always be supplemented by readers to fit their logical patterns. The aim here is to seek in the architecture of Babylon a guide to the ideas its builders wanted to convey and its visitors received. Since we are not people of Babylon, we will never truly grasp their thoughts, but we may get an idea of the directions these took.

**WHICH BABYLON?**

The city of Babylon had a history that spanned at least 2,000 years, if we exclude its modern use as a tourist destination and presidential residence. Babylon came into being in the late third millennium B.C., if not before. It became the political center of southern Mesopotamia from the 18th century on, and survived in that role until around 300 B.C. So which Babylon are we to study here: an amalgam of neighborhoods and buildings that developed over time, or a city planned in its general layout by one or a few individuals? The answer is neither: the city cannot be seen as having gradually expanded, as being a mere agglomeration of constructions by successive inhabitants. Nor can it be seen as planned anew by one person or by committee. Its growth over time was interrupted by political events, and radical changes took place in its layout. On the other hand, its major builders never saw the city as a new one: restoration, not renovation, was their goal.

Within its long history, Babylon received the attention of many kings who embellished it with monuments in order to guarantee their personal glory in the future. But others targeted it to steal its wealth, or wanted to punish its inhabitants for their political disobedience. The most dramatic example of the last attitude dates to the seventh century B.C. when the Assyrian king, Sennacherib, exasperated by his inability to control Babylonia, turned against its capital and sacked it. His own description of the events in the year 689 is very detailed. He states that he razed all buildings from top to bottom and dumped their rubble into the river. Like a flood he wiped the city off the face of the earth. Even allowing for hyperbole, the action seemed to have left the city indeed desolate, and provided an opportunity for its rebuilding. It is this new city that we now know best in archaeological terms, the result of a long-term reconstruction that culminated in the reign of the Babylonian king Nebuchadnezzar II (ruled 604–562). Even if his city used a plan that had existed before and re-erected buildings originally built a century earlier, Babylon as excavated can be regarded as the work of the new native Babylonian dynasty that arose during the last decades of the Assyrian empire and became its heir. Of that dynasty, Nebuchadnezzar was the greatest builder, who left numerous inscriptions announcing what work was his. He was also the foremost military campaigner of his dynasty, most infamous for his destruction of Jerusalem, and it is well known that Mesopotamian rulers often used the spoils of their conquests for building purposes at home.

Nebuchadnezzar’s Babylon is thus the subject of this analysis. The king never claimed that what he had built was an entirely new city. He only boasted of the individual buildings, streets, or walls that he constructed. That attitude was not unusual in ancient Mesopotamia. On the contrary, most kings did not boast of the fact that they founded a new city. The reasons for this diffidence will become clear through this reading of Babylon’s messages about order and power.

That city was enormous, close to 900 ha in size (fig. 3), which made Babylon the largest city of the ancient Mediterranean until imperial Rome. Its general plan incorporated two geometrical figures (fig. 4). A large triangle (ca. 2,850 × 4,050 × 4,500 m) abutted the east bank of the Euphrates river as its longest side, and the two other sides were made up by walls with a moat. It is unclear why this rather strange layout was chosen, but it seems to have some connection to the wish to integrate the so-called summer palace some 2 km north of the inner city. Partly within this triangle was the rectangular inner city (ca. 2,750 × 1,625 m), spread out on both sides of the river, which contained the largest concentration of monumental buildings. At its center was the main sanctuary of Babylon, the Esagila-temple with its massive ziggurat, the Etemenanki, devoted to the city-god Marduk. The major streets led to that central location. Two walls and a moat surrounded the inner city, and one or more bridges connected the eastern and western parts.

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12 Black 1998, 38–42.
14 George 1999b.
15 Miglus 1999.
16 Van De Mieroop 1999a, 53–61.
17 Remarkably divergent numbers are published for the size of Babylon in this period, cf. Nagel and Strommenger (1978–1979, 70–1). I follow their suggestion, which is also used by Novák (1999, 96).
**A VISIT TO BABYLON**

*A View from Afar*

Approaching Babylon a visitor would walk, ride, or sail through a very level countryside, a hallmark of the lower Mesopotamian plain, and see the city from a great distance. The entire city itself then is a landmark that determines its surroundings from as far as the eye can see. A first aspect that would have struck the visitor was its size. From whatever angle the city was viewed, its outer walls stretched over a distance of some 3 to 4.5 km, far surpassing those of any contemporary city. This enormity made a great impression on classical authors who used fantastic figures to describe Babylon's extent. Herodotus is very explicit on this matter. He starts by stating that Assyria, his name for Babylonia, is a country remarkable for its great cities, but that Babylon stands out among them: "Babylon lies in a wide plain, a vast city in the form of a square with sides 120 stadia long; the circumference of the city is thus 480 stadia" (Hdt. 1.178). Depending on the basic length of the stadium he uses, the length of one side is between 21 and 24 km for a total of some 90 km.18 Even Ctesias, more likely than Herodotus to have visited Babylon in person, makes the combined length of the four walls 360 stadia, some 66 km.19 These figures led late 19th-century scholars to believe that the entirety of northern Babylonia, incorporating the cities of Kish, Borsippa, and Babylon, was surrounded by a massive square wall (fig. 5). As he refers to a square city, Herodotus probably was thinking of the inner city, whose four walls together measured only 8 to 9 km. We need not seek an archaeological correlate: to the Greeks, at least,

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18 Nesselrath 1999, 190 n. 4.

19 Boncquet 1987, 72.
Babylon was immense in size, and the figures given are so enormous that they convey the idea to its fullest extent. Aristotle describes it as a “city that has the circuit of a nation rather than a city” (Pol. 3.1.12). The size had consequences for its inhabitants. Herodotus states that it led to people in the city center being unaware that the outskirts had been captured by Cyrus (Hdt. 1.191) and Aristotle claimed it took three days for the news to reach everyone (Pol. 3.1.12).

Babylon did not only make an impression because of its horizontal extent; it also stood out vertically. In the flat countryside—Herodotus talks of a vast plain—it formed a vertical marker, again visible from a great distance. There are several ideological aspects to this dimension. Babylon’s walls demarcated its edges, and moats surrounded the walls. Nebuchadnezzar imagined these as forming a large swamp. He states: “Alongside Babylon great banks of earth I heaped up. Great floods of destroying water like the great waves of the sea I made flow around it; with a marsh I surrounded it.” Herodotus wrote, “Babylon . . . is surrounded by a broad deep moat full of water, and within the moat there is a wall fifty royal cubits wide and two hundred cubits high” (Hdt. 1.178). The city walls rose out of the water surrounding them, and they were enormous in height as well. Herodotus’s figure would be about 100 m, an unbelievable number, but indicative of the fact that they made an awesome impression. Combined with the moat, they created a vision of the primordial sea out of which arose Babylon. So Nabopolassar could call the inner city wall “the firm frontier as old as time itself.”

By this likening, the city became the primordial mound that had arisen out of the water at the beginning of creation itself, the geographical and temporal point from which all else was made. This pri-

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20 Rackham 1977.
21 Langdon 1912, 93, col. 2, 10–4.
mordial mound remained physically included in Babylon for its entire history: in the courtyard of the Marduk temple was a platform given the Sumerian name du₃-ki₃u₃, “the pure hill.” The hill, which arose at the time of creation, was imagined to have emerged from the Persian Gulf as a result of the deposits of silt by the Tigris and Euphrates rivers. By perpetually making up this vertical point located within the primordial ocean, Babylon became the axis that joined the universe together. To the Babylonians the universe was multilayered, containing three levels of heaven and three levels of earth. Humans lived on the upper level of earth, with the heaven above them. Beneath them was the underworld sea, called apsu, where the god Ea resided. According to the Babylonian creation myth, the city of Babylon was built upon the apsu. Marduk, Babylon’s god, stated in the myth:

Above Apsu, the azure dwelling,
Opposite Esharra, which I built above you,
Below the sacred places, whose grounding I made firm,
A house I shall build, my favorite abode.

And that house was Babylon: It was the linchpin that connected all the layers of the universe. In the

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26 Foster 1993, 382.
lists of the city’s epithets are included “the bond of the heavens,” or “which grasps the bridle of heaven and underworld,” and “the bond of heaven and the underworld.” Architecturally this image was conveyed by the city walls rising out of the water surrounding them, but of course, also by its buildings reaching into the heavens. And here the ziggurat, clearly visible from afar, was crucial. Its Sumerian name, Etemenanki, meant “House, Foundation Platform of Heaven and Underworld.”

The Ziggurat

We have little idea exactly what the ziggurat looked like, but it was certainly imposing. Today it is a pitiful flat heap because Alexander of Macedon dismantled it in preparation for a rebuilding that never took place; its ruins were dumped on a hill called Homera. In Nebuchadnezzar’s day it must have been a truly impressive sight, however. There is no doubt that the Biblical authors of the Tower of Babel story had the ziggurat of Babylon in mind. It was an attempt by humans to reach the heavens. Its builders state, “Come, let us build ourselves a city, and a tower with its top in the heavens” (Gen. 11:4). This plan worried God to such an extent that he confused the tongues of men to diffuse their power. “This is only the beginning of what they will do; and nothing that they propose to do will now be impossible for them” (Gen. 11:6). Herodotus, or his source, was equally impressed by the tower. He wrote:

( the temple) has a solid central tower, one stadium in length and one in width, with a second erected on top of it, and then a third, and so on up to eight. All eight towers can be climbed by a spiral way running round the outside, and about halfway up there are seats for those who make the ascent to rest on. On the summit of the topmost tower stands a great temple with a fine large couch in it, richly covered, and a golden table beside it. The shrine contains no image and no one spends the night there except one Assyrian woman, all alone, whoever it may be that the god has chosen (Hdt. 1.181).

The reconstruction of the ziggurat is a highly debated question in the discipline. There is only one ancient visual representation of it, whose details are unclear. It appears on a relief that remains partly unpublished, which was excavated by the German expedition in 1917, but is now part of a private collection. It shows king Nebuchadnezzar next to a typical Mesopotamian stepped tower with seven stages, and contains a short inscription identifying the tower as Etemenanki. A longer inscription on the relief, not published, contains a building account of King Nebuchadnezzar. The relief also shows a plan that is very difficult to read. Other plans are found on a variety of cuneiform tablets, which provide some measurements, but these leave a lot of room for interpretation. On this evidence we can envision Babylon’s ziggurat as a seven-stepped tower that reached high into the sky, but we do not know its actual height or the details of its appearance. By itself the ziggurat has become the trope that defined Babylon in western European thought, and as such it has been represented numerous times in Western art. Naturally, the lack of actual remains had allowed artists’ imaginations to run wild; Pieter Breugel’s versions were more inspired by the Islamic minaret at Samarra than by anything ancient Mesopotamian. The tower was a sign of man’s hubris, but also of ingenuity and progress, ideas we find in Western literature as well. The actual appearance of the ziggurat was thus forgotten and replaced by an idea: an amazing monument that represented the upper limit of what humankind could accomplish.

The verticality of the ziggurat was its dominant visual feature, and its presence in a wide, flat coun-

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27 George 1997, 127.
28 Koldewey 1925, 301.
30 The relief is in the privately owned Schøyen collection (Oslo and London) and can be seen at http://www.nb.no/bas-
er/schoyen/4/4.2/ms2063.jpg. I owe this reference to an anonymous reviewer for A/J.
tryside made this aspect even more eye-catching. Recently an interesting suggestion was made that ties this vertical axis together with a horizontal one. The profile of the ziggurat with its seven stages can be seen as the ground plan of a temple, where the stages correspond to courtyards and rooms. The ziggurat itself can be seen as a vertical temple. 34 The top stage, where Herodotus places the shrine that no one but a priestess enters, corresponds then to the inner cella of the temple, inaccessible to all but a few select priests, set at the rear of a linear series of rooms.

The City Walls

The same complementarity between vertical and horizontal axes can be applied to Babylon in its entirety. Vertically, it was the mound rising out of the waters of the primordial sea—but simultaneously, horizontally it was the center of the earth. We as viewers take on now an Olympian view, looking down upon the city from high above. Striking from this point of view are the walls, not in their monumentality, but in their linearity. The straight walls form a border between city and countryside. In the Mesopotamian view, within the walls there is order, outside them is chaos. The countryside is the place where enemies, barbarians, animals, and ghosts live, all to be kept out. The walls provide that security, clearly delineating the two spheres.

As the site map shows, there were many city walls in Babylon, all of them magnificent. The outer defenses, forming a large triangle with a perimeter of 18 km, were made up of three lines of walls. The innermost was 7 m wide and made of sun-dried brick, and had towers attached to it 44 m apart. A gap of 12 m separated it from the outer two walls, both in baked brick and running adjacent to one another. The middle one was 7.8 m wide, the one at the edge of the moat, 3.3 m. 35 The 12 m gap was filled up with rubble, probably to the top, so that Herodotus’s claim that Babylon’s walls were 50 royal cubits wide (25 m) and allowed a four-horse chariot to ride on them was probably not a fantasy. It is no surprise, then, that Babylon’s city walls ranked among the seven wonders of the ancient world in most early versions of that list. 36

The inner city also had monumental walls, less elaborate but more symmetrical (fig. 7). The inscriptions tell us that the outer one was called Nim-it-Enlil “Bulwark of Enlil,” the inner one Imgur-Enlil, “Enlil showed favor.” The archaeological remains show that they were 7 m apart, both made of sun-dried bricks, and respectively 3.7 and 6.5 m wide. 37 While less impressive than the outer defenses, their plan more clearly showed that they delineated a place of order. Since the size of the city was so enormous, that order could extend over the entire world, and the four walls suggested the four edges of the universe. Throughout Mesopotamian history totality was expressed by that concept: a truly great king was a “king of the four quarters of the universe,” 38 but what we translate as quarters the Mesopotamians called edges. That Babylon could be seen as the entire civilized world is perhaps also expressed by the length of its inner walls. A small fragment exists of a tablet that originally had a plan of Babylon on one of its sides. 39 The text on it gives these dimensions (in nindanu) for the walls:

- Upper East wall: 450 nindanu
- Lower East wall: 250 nindanu
- Upper West wall: 300 nindanu
- Lower West wall: 200 nindanu

In cubits, with 1 nindanu equaling 12 cubits, this amounts to 5,400, 3,000, 3,600, and 2,400 cubits, a total of 14,400. That figure is 4 × 3,600, the number that the Mesopotamians equated with totality. 41 While the individual measures given do not reflect the archaeological reality, the fact that other sources give the same aggregate length for Babylon’s walls, 1,200 nindanu, 42 indicates that the number had an importance. Sargon II of Assyria, the builder of another city, Dur-Sharrukin, stated explicitly that the measure of the city walls was significant. In his case it was 16,280 cubits, which he called “the numeral of my name,” a reference we unfortunately do not understand. 43

The City Gates

Walls protect, but they need to be crossed to enter and exit the city. Gates are needed, and they present a paradox. They provide access, but they also exclude. The last role is especially crucial for

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34 Allinger-Csollich 1998.
35 Koldewey 1925, 1–6.
36 E.g., a second-century B.C. poem by Antipater (Ekschmitt 1984, 9).
37 Koldewey 1925, 148–53.
38 Oppenheim et al. 1971, 331–2.
40 George 1992, 135.
41 The idea that the combined length of the walls given in the tablet BM 35385 amounts to four times 3,600 derives from Unger (1932, 335). I have not found it repeated elsewhere.
43 Van De Mieroop 1999b, 336–7.
how the city interacts with the chaos outside its walls. Gates need to hold back external enemies. On the one hand they breach the security provided by the city walls, thereby reducing their effectiveness; on the other hand, gates are great protectors themselves. The tablet that lists Babylon’s gates provides almost each one of them with an epithet that highlights its ability to keep the enemy out.

City Gate: “The Enemy is Abhorrent to it” the Urash Gate;
City Gate: “It Hates its Attacker” the Zababa Gate;
City Gate: “Ishtar Overthrows its Assailant” the Ishtar Gate;
City Gate: “O Adad, Guard the Life of the Troops!” the Adad Gate;
City Gate: “O Shamash, Make Firm the Foundation of the Troops!” the Shamash Gate.\(^4\)

Babylon’s gates were so effective that, according to Herodotus and Xenophon, when Cyrus wanted to enter the city, he did not even try to capture them, but instead diverted the water of the Euphrates and marched his troops through the riverbed. The cuneiform record does not agree with this story,\(^4\) but its existence again shows what an impression the city made on outsiders.

The gates provided access as well, however, and with them we can start a more detailed reading of the city, with a walk along some of its monuments. Herodotus states that there were 100 gates in Babylon, a fantastic figure, as the inner city had only eight. The most striking one known to us was in the northern wall, the Ishtar gate. It made such an impression on the German excavators that they

Fig. 7. Partly hypothetical plan of the inner city of Babylon. (After Oates 1986, 148; George 1992, 24)

\(^4\) George 1992, 67.

\(^4\) Beaulieu 1989, 225–6.
shipped it in its entirety to Berlin to join the Pergamon altar and the market gateway from Miletus as monuments of the accomplishments of the ancients (fig. 8). What one can see in Iraq today are the remains of an earlier version, still preserved to a height of some 12 m. The Ishtar gate was one of Nebuchadnezzar’s favorite projects, and building inscriptions state that he rebuilt it several times. Before reaching it, the visitor walked for some 200 m in between two high walls on which were represented 120 lions striding forward, molded in bas-relief and brightly colored on a glazed blue background. At night only the brightly colored bands and animals would have been visible, the blue of the walls merging into the dark. During the day the glazed bricks of the background wall shone like the stone of a seal. This calls to mind the passage in the Erra-epic where the god Ishum likens Babylon to “a gemstone seal on the neck of the sky.” Visitors feel surrounded by the goddess, walking among her lion symbols confronting them. Then, one faces the gate itself, also colored dark blue. It depicted some 150 dragons and bulls, the symbols of the gods Marduk and Adad, protectors of the city. Nebuchadnezzar states that he also stationed at its sills “fierce bulls of copper and frenzyed dragons,” metal statues most likely long since plundered by invading armies. The paradox of the gate is very strong here. The enemy felt surrounded and confronted by divine creatures protecting the city from his attack. On the other hand, the visitor was drawn into the city, already enveloped by its protective spirit for 200 m before entering its gate (fig. 9).

As a means of entrance, the Ishtar gate was important in the annual New Year’s festival. It was the point at which the statue of Marduk, which had dwelt in the New Year’s temple outside the walls for a while, reentered the city. Another name for it was “the entrance of kingship” and passing through it reconfirmed the king’s power as it did for Marduk. The gate protected a processional way, as Nebuchadnezzar indicates in an inscription on the sides of the stone slabs that were used to pave the street. On the edge of each slab, unseen to the person walking over them, was written this text:

Nebuchadnezzar of Babylon, son of Nabopolassar, king of Babylon, I am. In the street of Babylon used for the procession of the great lord Marduk I made the road smooth with limestone slabs. May Marduk, my lord, give a long-lasting life.

Fig. 8. The Ishtar gate as displayed in Berlin. (Photo by the author)

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46 A member of the audience pointed this out to me when I lectured at the University of Toronto. I apologize for being unable to thank him properly by name.
47 Foster 1993, 796.
49 George 1992, 341.
50 Koldewey 1925, 25.
51 Langdon 1912, 199, no. 30.
The street itself made progress easy. Its center was paved with large white limestone slabs, its sides with slabs of red breccia veined with white. Once inside the city walls, the street led straight to the center of the city where the sanctuary of Marduk was located.

The Palaces

Traveling toward the city center, the first monumental building we encounter is a large royal residential/defensive complex, located on both sides of the city walls, that Nebuchadnezzar built to control the point at which the Euphrates entered the inner city. The main part is what we now call the Southern Palace, which stood inside the city walls and centered around a sequence of five courtyards. One entered the complex from the east, in other words from the street beyond the Ishtar gate. The throne room was located on the south side of the third courtyard, its facade decorated with glazed bricks representing lions and stylized trees. The room itself was enormous, 52 × 17 m, which "compares in size not unfavourably with the Gallery of Mirrors at Versailles (73 × 10.4 m)."

The Northern Palace, or Hauptburg, was located outside the city walls. The structure is not well known, as it remains partly unexcavated, but the remains uncovered suggest that it was similar in plan to the Southern Palace and even more luxurious, with fragments of lapis lazuli-colored glazed reliefs and stone floor tiles found in it. Nebuchadnezzar built this palace late in his reign, perhaps in imitation of Assyrian palaces, which typically overlaid the city wall as if to indicate their importance both to the city and the countryside. The Hauptburg is often thought to have been the royal residence, while the Southern Palace would have been reserved for official business. Within the Northern Palace’s ruins were found a number of objects ranging from the late third millennium B.C. to Nebuchadnezzar’s time. Some scholars, especially Eckhard Unger, once thought these artifacts formed a type of museum. Now it seems that this interpretation was a figment of the imagination. The objects were not found together, nor were many of them visible in the days of Nebuchadnezzar. On the other hand, the presence of such ancient objects in the Neo-Babylonian palace should not be fully discounted as meaningless. They included what might have been war booty: late third-millennium statues and an eighth-century relief from the land of Suhu on the middle Euphrates, and early

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Koldewey 1901.
55 Langdon 1912, 112–21.
56 Oates 1986, 152.
57 Van De Mieroop 1999a, 91–2.
58 Klengel-Brandt 1990.
first-millennium reliefs from northern Syria. A building inscription by king Adad-nirari II (ruled 911–891) was brought from the Assyrian capital. A number of objects also were recovered from Babylonian cities, however. The oldest of these was a weight inscribed with the name of the 21st-century king Shulgi. Some building inscriptions commemorated work in Babylon itself, including by the Assyrian ruler Assurbanipal (ruled 668–627) and his brother Shamash-shuma-ukin, who governed Babylonia from 667 to 648. Inscriptions of Neo-Babylonian building activity in other cities were kept there as well. The most recent find was a copy of the Bisutun inscription left by the Persian ruler Darius in the early fifth century when the palace was still in use. This collection can still be regarded as evidence of the antiquarian interests of the period. The objects came from a wide geographical area and covered a long time span from the third millennium to the period when the Northern Palace was in use. Living kings added pieces of great political significance, such as the Bisutun inscription, to it. The collection tied the kings of the moment to those of the past; while ruling they could see physical evidence of their predecessors’ existence. It is perhaps then not such a surprise that they tried to establish how long ago these others had lived. The last Neo-Babylonian king, Nabonidus, thought that the Kassite king Shagarakti-Shuriash ruled 800 years before him, Hammurabi some 1,500 years, and Naram-Sin 3,200 years. While these numbers are highly inaccurate, they do show a serious concern on the part of this king to connect his own rule to that of the rulers of the past.

This palace complex is often mentioned as the possible location for the famous Hanging Gardens of Babylon, another wonder of the ancient world, which is enigmatic in many respects. Berossus, quoted by Josephus, states that the gardens were laid out by Nebuchadnezzar in order to please his Median wife, who felt homesick for the mountains; other classical authors, mostly inspired by Ctesias, talk about them as well. But several prominent classical sources that describe Babylon, including Herodotus, fail to mention the gardens altogether, and no archaeological evidence is known that clearly suggests their location. Much ink has flowed (with little progress) in determining their exact whereabouts in Babylon and the technology used to water them. In desperation, perhaps, it has been suggest-ed by one scholar that they never were in Babylon, but in the Assyrian city of Nineveh. This proposal would take away some of Babylon’s luster, however, and we might persist in looking for them in that city, keeping in mind this statement in a recent investigation: “Whatever the Hanging Gardens really looked like, there is no basis for the idea, widely current, that the excavators at Babylon have failed to produce any likely site for them.”

The palace complex was the most prominent secular building in the city. Its location at what seems to have been one of the crucial access points, the Ishtar gate, does indicate that royal power was not absent in the image of Babylon. Yet the visitor’s attention would not be detained long by it. Beyond the Ishtar gate, the 200 m long facade that lined the street was interrupted by only one small gate. Access was probably denied to most. Instead the visitor was urged on to the center of town as the processional road continued for at least 800 m with its smoothly paved surface. First a narrow canal was crossed, called Libil-hengalla, “May it bring abundance.” Along the street a number of small temples, to the gods Ninmah, Nabu, and Ishtar of Agade were located, but it is unclear whether they would have been visible, since some lay at a distance from the street, and we do not know whether other buildings would have blocked the view. Also a domestic quarter was passed; it is called Merkes today and is the only excavated residential area in Babylon. The layout differed from that of the overall city in that the plan was less regular and the streets not always straight. Yet this area was made up of large courtyard houses that are grouped into city blocks and show a greater uniformity than other residential neighborhoods known from Mesopotamia.

The Marduk Temple Complex

Just south of the Nabu temple was a gate, the “Grand Gate,” that indicated the border between two city quarters: the northern Ka-dingirra with its palace, and the central Eridu. The latter was the religious center of Babylon. According to the texts it contained 14 temples, including the most important ones of Babylon, the Marduk temple and the ziggurat (fig. 10). The two were separated by a street 80 m wide. The Marduk temple, called Es-agila “House whose Top is High” was essentially a square building with a courtyard surrounded by rooms, and two large courts on its eastern side. High

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60 E.g., Koldewey 1925.
62 Reade 2000, 213.
walls enclosed the complex, and its access was most likely restricted to select cult personnel. Its outer wall was pierced with seven gates, protected by statues of dragons, as we know from an inscription of King Neriglissar (ruled 559–556), who states that he placed two dragons each on four of the gates, all made of copper.64

Similarly, high walls protected the ziggurat called Etemenanki. Nine gates provided access to its courtyard. The main one, on the eastern side, was set 80 m away from the street deep into a niche flanked by high walls surrounding the courtyard. As with the Ishtar gate, the visitor would have to walk between these walls, probably also decorated with divine symbols, before gaining access, and the same paradox of exclusion and invitation would be felt here as well. The ziggurat complex had a large open courtyard (some 350 m²), but it is unclear who was allowed entrance to it. The viewer outside may not have been able to really appreciate the high structure within it. The ziggurat may only have been fully visible from a distance, from well outside the city.

The New Year’s Festival

There is no doubt that this area was the center of the cult and that the religious focus of Babylon was here. Year-round the gods of the pantheon found their home in this central city. The Esagila was the “palace of the gods.”65 The centrality of Marduk’s sanctuary for the entire city and its surroundings became especially prominent during the New Year’s festival. That festival took place during the first 12 days of the month Nisannu, which included the spring equinox, around March 21. The details of the festival are relatively well known, since the ceremonies of days 2–5 are described on two tablets.

64 George 1992, 85.

65 George 1999a, 69.
from the later Seleucid period, but probably reflect older practices as well.\textsuperscript{66} The festival dates back to the early history of Babylon, however, and probably the general outline of the ceremonies remained similar over time. New Year festivals also were important in the cultic calendars of other cities, and from the third millennium on, a parallel festival took place around the autumn equinox.\textsuperscript{67} Sometimes information from the other festivals at Assur or Uruk, for example, helps us to reconstruct the events in Babylon. There were multiple natural, cosmic, and political aspects to the festival, summed up as follows:

1. an attempt to celebrate or ensure the success of the spring harvest of barley,
2. a patronal festival of the city-god, Marduk, including his enthronement,
3. a symbolic representation of certain episodes in the Epic of Creation,
4. the marking of the calendrical New Year,
5. the affirmation of the king as high priest of Marduk, owing his kingship to the god: but not as a substitute for or representative of the god, and
6. the reception and enthronement of the god Nabu.\textsuperscript{68}

I focus here on how the space of Babylon was used in the ceremonies and how the latter enhanced the architectural image of Babylon on a cosmic and political level. While the Marduk temple was the physical center of the festival, two aspects linked it with the rest of the city and the wider world: the other gods visited Marduk in Babylon; and he traveled with his entourage outside the city to stay overnight in a building called the akitu-house. The voyage was a procession that presented the visual high point of the festival and used the city as its background.

During the festival, gods from all over Babylonia visited Babylon. Most prominent in the rituals was the visit of Marduk’s son, Nabu, who was brought in from the neighboring city of Borsippa by the king. He arrived with his wife Tashmetum on the fifth day, but had to wait one night at the city gate.\textsuperscript{69} Other deities arrived as well: Anu from Uruk, Enlil from Nippur, Nergal from Cutha, Zababa from Kish, and so on.\textsuperscript{70} They were represented by their statues, which were brought to the capital probably by boat, following a tradition that dated back to the third millennium. The connection between the god of Babylon and those of other cities was not limited to the time of the festival alone. Several of the city gates of Babylon were named after the gods who visited at the time: Ishtar, Zababa, Urash, Shamash, Adad, and Enlil.\textsuperscript{71} They connected Babylon permanently to the dwellings of these deities in other cities, such as Enlil in Nippur, Shamash in Sippar, and so on, like the spokes of a wheel radiating from the hub.

The gods’ visit had both a cosmic and a political meaning. In cosmic terms it repeated the gathering of the gods described in the Babylonian creation myth. That composition was important in the New Year’s festival, and it was recited on the evening of the fourth day. In the story, Marduk defeated chaos, personified by the sea goddess Tiamat and her demons, and as reward he was granted kingship of the gods by the assembled deities. They built the city of Babylon as his royal residence. The recital of the literary composition reminded the audience of the beginning of the time when Marduk organized the universe, and of the status of Babylon created then. The original assembly of the gods, as described in the creation myth, took place in a place named ubshu-ukkina (Creation Myth, Tablet 6, lines 162 and 165). The Sumerian term, not fully clear to us, was given the Akkadian paraphrase kisal puh īli, “the court of the gods’ assembly.”\textsuperscript{72} As we have seen for the primordial hill of creation, du₇-kù, the specific historical moment became continuous within Babylon’s temple. So we find in the Marduk temple a shrine called ubshu-ukkina, where the gods assemble in perpetuity. It is simultaneously the place where the great gods established destiny; the du₇-kù acted there as the seat of the seven deities who decree fate.\textsuperscript{73} Three aspects of time merged together: the specific moment, the cyclical, and the eternal. The specific was the moment at the beginning of time when the gods in assembly decreed the fate of Marduk to become their king. The cyclical was the annual repetition of that event during the New Year’s festival. The eternal was the constant presence of a divine assembly in Marduk’s temple, constantly re-establishing the god’s function as king.

Politically, the visit by gods from other cities of the state during the New Year’s festival indicated

\textsuperscript{66} For an English translation of the text, see Sachs 1969. There is a large literature on the akitu-festival, which has not been systematically used in the discussion here.

\textsuperscript{67} Thureau-Dangin 1921, 87.

\textsuperscript{68} Black 1981.
Babylon’s role as the capital of a wider territory. Only those cities that were under its control would send statues, so the presence or absence of a god was a meaningful indication of Babylon’s political strength.\(^{74}\) We can easily imagine that when Nippur, for example, was outside Babylon’s control, the god Enlil did not attend the ceremonies. Another political aspect of the gods’ assembly is clear from the events at the akitu-house. During their stay there, part of the ritual included the distribution of the previous year’s campaign booty to the assembled gods, and a request for predictions about the success of future campaigns.\(^{75}\) The king used the New Year’s festival as an occasion to provide individual cults with donations and to obtain the religious and local support for his military plans.

The New Year’s festival took Marduk and his companion deities outside his city. They would spend three nights in the akitu-house, a temple whose exact location we do not know. A procession with carefully marked stages took the statues there late in the festival,\(^{76}\) starting inside the temple itself, moving from the cela to the ante-cella and into the courtyard with rituals at each stop. The statues then came into public view, moving along the processional road, in between the temple and the ziggurat and then northward. This was probably the only moment in the year when the general public could see the statue of the god Marduk. Unfortunately we do not know the details of the event, but we can piece together information using a variety of sources on Babylon and assuming that the processions at other Mesopotamian cities were comparably organized.\(^{77}\) The king probably accompanied the statues, since his role was crucial in the festival, and we know that without him the akitu-rituals could not take place.

The visual importance of the event cannot be underestimated. What was usually invisible to the public became visible. Both the temple and the palace were well-guarded, walled complexes with very restricted access, and most people were barred from them. Thus their only opportunity to see the god and the king may have been at this time. Marduk was accompanied by the gods from other cities, and their voyage through Babylon took place in special chariots, which were luxuriantly decorated. No single well-preserved text describes such a chariot, but references in fragmentary records are numerous. For example, a royal inscription from the second half of the second millennium relates that the king constructed for the god Enlil a chariot of dark wood, covered with a variety of semiprecious stones, so that it would shine like the light of day and the crescent of the new moon.\(^{78}\) Nabu’s chariot was elsewhere said to be of shining bronze, and when Assurbanipal brought Marduk’s statue from Assur to Babylon he stated that it was covered with gold, silver, and precious stones.\(^{79}\) Seleucid period texts from Uruk indicate that the beer brewers of that city had obtained the right to pull the chariot of the local god Anu, something that brought great prestige.\(^{80}\) That the same privilege with Marduk’s chariot was sought after at Babylon is clear from a prayer by Nebuchadnezzar\(^{81}\) and other passages from that king’s inscriptions.\(^{82}\)

Since war booty was distributed to the gods when they spent the night in the akitu-house, it is likely that it was carried alongside the statues, adding a rich visual dimension to the procession. Nebuchadnezzar mentions that every year he brought “gold, silver, splendid gems, shining sapšu, the bounty of mountains and seas, the best of all that is good, fattened choice bulls, fine long-fleeced sheep, a variety of fish of the sea and birds of the sky, geese, ducks, wild birds, turtle-doves, gerboas that flourish in the swamps, abundant vegetables the delicacies of gardens, red-gold fruits, abundant produce of the orchards, dates, Dilmun-dates, white figs, raisins, beer, honey, butter, sweet cakes, milk, the best oil, splendid abundance, luxuriant produce, the best of all lands, countless libations of beer and wine as if it were water.”\(^{83}\)

If this was offered during the New Year’s festival, the convoy itself must have been an incredible sight, carrying animals, garden produce, metals, and stones along in wagons. Moreover, the city’s monuments probably provided a background for rituals. The inscriptions regarding the Ishtar gate emphasize its position on the processional road, so one would imagine that some important episode of the festival occurred there in that stage setting. The real Ishtar gate in this sense does not seem that far removed from D.W. Griffiths’.\(^{84}\)
When the procession reached the Euphrates, the divine statues boarded ships that were also lavishly built. King Nebuchadnezzar boasted that he had made a boat for Marduk using 14 talents and 12 mina of red gold (426 kg) and 740 semi-precious stones, so that the ship would shine like a blinking star. He decorated it with the representations of spades and dragons, insignia of Marduk. For other deities, similar ships are attested. Once the procession left the inner city, it took on larger dimensions. Its aim was to reach the uncultivated steppe, far outside the city walls, and by doing so, it turned the entire countryside into a sacred landscape. As in other ancient cultures, such as Rome, natural phenomena were turned into a context for the cult. They were tied together in being visited by the procession, and specific features gained a cultic role.

The fact that the procession left Babylon for the countryside was very important, as it crossed from the world of order into that of chaos. By visiting the countryside Marduk extended his organizing powers into disorder itself. In some texts, Marduk’s boat is said to be the body of Tiamat, the sea monster that embodied chaos and whose defeat was thus made permanent: Marduk repeated his conquest of chaos as depicted in the Babylonian creation myth. This brings us full circle: the role of the city as an organizing principle in the universe was also the role of its god Marduk, the one who brings order to the universe. Both god and city were forces of order in a world of chaos. The entire layout of Babylon and the cult that dominated it emphasized this message.

Certainly, other visual messages were to be found in Babylon as well. After all, it was an enormous city with many neighborhoods. People with various occupations inhabited the city, and undoubtedly specific streets were reserved for some trades: blacksmiths, potters, shoemakers, and so on. It was a city with people from all over the Babylonian empire and beyond: Medes from western Iran, Judeans from the Levant, Egyptians, and others, rubbed shoulders with Babylonians and other long-term residents of the region. Many still spoke their native languages—“a confusion of tongues”—and probably wore their distinctive dress. City quarters with people of diverse origins existed, each with their own atmosphere, smells, and sounds. This is a Babylon we can only imagine.

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84 Pongratz-Leisten 1994, 78.
86 Pongratz-Leisten 1994, 78.
87 Reiner et al. 1999, 410a.
88 For a survey of the city’s name in Sumerian and Akkadian, see George 1992, 253–6.
duk had done this by defeating Chaos as repre-
sented by Tiamat. That work was constant, however;
it never ended. The city continued to defeat chaos,
through it the gods continued to select Marduk as
the one who fulfilled this role. The cosmic impor-
tance was so great that no mortal could be responsi-
ble for it; it was a task for the gods. Babylon, found-
ed at the time of creation, was a pivot of the uni-
verse, a fortress that kept chaos at bay. All mortals
could do was to help the city in perpetuating its
beneficial role, by carefully repairing the damage
done to individual buildings. The emphasis was
not on innovation, but on a careful copying of the
old. The kings realized that temples like the Esagi-
la dated back to very early times and were careful
not to alter their plan, but to follow the ancient
foundations. The Assyrian king Esarhaddon, who
rebuilt Babylon after the violent destruction his fa-
thor wrought, stated: “I laid its foundation platform
directly on top of its ancient footings, according to
its original plan: I did not fall short by one cubit,
nor did I overshoot by half a cubit.” Some 120 years
later the Babylonian Nabonidus said: “As a facsimi-
le of its blueprint I drew up its plan [...] I measured
its dimensions [with] the large aslu cubit-standard,
according to its ancient designs.”

When looking at Babylon, one saw how the world
benefited from its existence: as the place of origi-
nal creation it continued to bring order forever.
This plan was visible from afar when looking at the
entire city, and nearby when looking at its details. It
was revealed in its festivals, ephemeral ceremonies
that were repeated every year and tied the entire
cultic year together. That message would have been
presented loud and clear to all who saw Babylon
and understood the cosmology that inspired it.
Even the Biblical authors may have perceived this,
and turned the message around: while the Babylo-
nians sought to establish order, God punished them
with confusion. The Greeks seem to have missed
the message, however. They could only marvel at,
or disapprove of, Babylon’s enormous size.

Today we can no longer see that city as it was in
the sixth century B.C. Only ruins remain, massive
in the surface they cover but paltry when compared
to what the buildings originally were. Modern re-
constructions and archaeologists’ plans add some
substance, but cannot recreate the city. Yet reading
the traces carefully in conjunction with the state-
ments of those who saw the city (or had heard about
it from people who did) allows us to uncover some
of its original message. Neither record is superior
to the other: the archaeological remains seem too
scanty, the ancient testimonies too muddled by
hyperbole and misunderstanding. But jointly they
lead us to understand the ideological role of Baby-
lon, especially its relationship to order and creation.
Other ancient cities may reveal their own message
to us if we read the textual and archaeological evi-
dence together, as we did here for Babylon.

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89 George 1992, 123.


The 104th Annual Meeting of the Archaeological Institute of America

The 104th Annual Meeting of the Archaeological Institute of America was held in conjunction with the 134th Annual Meeting of the American Philological Association in New Orleans, Louisiana, on 3–6 January 2003.

On 5 January, Nancy C. Wilkie, President, presented the Institute’s 38th annual Gold Medal Award for Distinguished Archaeological Achievement to Philip Betancourt and the seventh annual Excellence in Undergraduate Teaching Award to David W. McCreery of Willamette University. Anna Marguerite McCann presented the Martha and Artemis Joukowsky Distinguished Service Award to Gertrude Howland. Jane C. Waldbaum, First Vice President, presented the 22nd annual Pomerance Award for Scientific Contributions to Archaeology to Peter Ian Kuniholm. Naomi J. Norman, Vice President for Publications, presented the 14th annual James R. Wiseman Book Award to Cyprian Broodbank for *An Island Archaeology of the Early Cyclades* (Cambridge 2001). Ricardo J. Elia, Vice President for Professional Responsibilities, presented the Outstanding Public Service Award to Lyndel Prott. The texts of these award citations are printed below.

On 4 January, at the 124th Meeting of Council, the following were elected to the Institute’s Governing Board: Jane C. Waldbaum, President; C. Brian Rose, First Vice President; Malcolm Bell, III, Vice President for Professional Responsibilities; Susan Kane, Vice President for Publications; Cameron J. Walker; Vice President for Societies; Elie Abemayor, Charles La Follette, Dorinda Oliver, Paul Rissman, and Michael Wiseman, General Trustees (three-year terms); Robyn Webby, General Trustee (one-year term); John McK. Camp II, Michael Cosmopoulos, and Wendy Ashmore, Academic Trustees (three-year terms); Alexandra Cleworth and Kathleen Donahue Sherwood, Society Trustees (three-year terms). Elizabeth Bartman, Anne Salisbury, Harrison “Nick” Eiteljorg, II, and Ellen Herscher were elected to the Nominating Committee (one-year term). The Outstanding Local Society Prize was presented at the Meeting of Council to the Orange County Society.

On 4–6 January, 244 papers were delivered in 51 sessions. The *104th Annual Meeting Abstracts* (Boston 2002), containing abstracts of these papers, of the Poster Session, and of the Colloquia and Workshops, is available online or in print; see the Publications section of the Archaeological Institute of America’s Web site (www.archaeological.org) or contact the Institute for more information. Twelve Roundtable Discussions were also held: The Role of Food and Drink in Ancient Religion; Getting a Job: Career Strategies for Archaeology Graduate Students; Considerations of Archaeological Tourism; Pondering the Past: Why Archaeology Matters; Getting Back to the Source: Useful and Unusual Readings for Teaching Classical Mythology; Greek: Teaching Programs, Readers, Techniques, and Web Resources; Greek Language Programs; Initial Greek Readers; Techniques in Teaching the Language; Web Resources for Greek Language Teachers and Students; Library Careers for Classicists; NEH Funding Opportunities for Classicists and Archaeologists.
Philip P. Betancourt gets things done. While serving as the Laura H. Carnell Professor of Art History and Archaeology at Temple University, where he has taught since 1970, he also has held the position of Adjunct Professor in the Department of the History of Art at the University of Pennsylvania, and he has served as Acting Dean in the Tyler School of Art of Temple University (1983–1984). In addition, since 1990 he has served as the Executive Director of the Institute for Aegean Prehistory.

His excavation experience began in the United States with work at various sites under the auspices of the University of Missouri and the National Park Service. Thereafter, two field seasons in Italy and a summer at Halieis in Greece preceded his move to Crete, which has been the focus of his research since 1976.

Philip Betancourt has been the author and/or editor of an extensive series of books and other scholarly publications, which since 1965 has grown to number well over 100. Early studies include The Aeolic Style in Architecture: A Survey of Its Development in Palestine, the Halikarnassos Peninsula and Greece, 1000–500 B.C. (Princeton 1977), Vasilike Ware: An Early Bronze Age Pottery Style in Crete (Göteborg, Sweden 1979), and East Cretan White-on-Dark Ware: Studies on a Handmade Pottery of the Early to Middle Bronze Age (Philadelphia 1984). For his basic handbook on The History of Minoan Pottery (Princeton 1985), he not only wrote the text but also took all of the photographs himself, working directly from the showcases in the Heraklion Museum. During the same time period he edited 10 volumes in the annual series of the Temple University Aegean Symposium (1976–1985) and wrote numerous monographs and journal articles.

He is now completing a series of final reports on his excavations at a number of Minoan sites on Crete, which he began in 1985. To date five volumes on Pseira are published (1995–2001) as well as a multimedia CD-ROM presentation of the site. Chrysochristo has been accepted for publication, Hagia Photia is in the works, and a second excavation season, in 2003, is planned at the new site of Haghios Charalambos. From this record it is clear that we can look forward to many more years of excavation and publication from Philip Betancourt.

But this is only the beginning. Everyone who has had the privilege of working with Philip Betancourt in the field realizes that what sets him apart from all of his colleagues is his dedication to the art of teaching, in the field as well as in the classroom. Every Betancourt field project is a training excavation. All of his students learn how to do things themselves. Although he instructs and gives guidance and encouragement, in the end it is his students who must produce the final product on their own. This holds for training in all aspects of contemporary fieldwork, both traditional methodology and modern scientific technology. Through his efforts and dedication Philip Betancourt is producing students who are qualified to deal with all aspects of Aegean archaeology as it will be practiced in the third millennium A.D.

The Archaeological Institute of America has had, from its founding in 1879, a dual commitment to the promotion of both research and teaching, involving all aspects of that complicated academic enigma that we call archaeology. Today we honor this commitment to its fullest extent by awarding to Professor Philip P. Betancourt the Institute’s Gold Medal for Distinguished Archaeological Achievement.
The AIA is pleased to present the Pomerance Award for Scientific Contributions to Archaeology to Professor Peter Ian Kuniholm, director of the Malcolm and Carolyn Wiener Laboratory for Aegean and Near Eastern Dendrochronology at Cornell University. The focus of the laboratory, organized and led by Kuniholm for 30 years, has been the building of long tree-ring chronologies for the eastern half of the Mediterranean from the Neolithic to the present. Over 10 million tree-ring measurements have led to the successful compilation of chronologies spanning, but not wholly covering, 9,000 years. At first studies concentrated on the Iron Age period of Turkey using conifers; now partial chronologies have been constructed using samples from seven species of trees spread over the eastern Mediterranean from Georgia near the Caucasus to Italy and from Cyprus and Lebanon to the former Yugoslavia and parts of Bulgaria.

Kuniholm has pioneered the cross-dating of wood over considerable distances, not only establishing dates for microclimatic zones, but also leading to evidence for macroclimatic patterns. He also uses instrumental neutron activation analysis (INAA) of trace elements to more accurately date volcanic eruptions based on sampling of a single tree ring and correlating an increase in gold concentration caused by the eruption. To accomplish this, he focused on careful collection of wood samples, full documentation of archaeological context, and the preparation and measurement of samples using standardized protocols. Many Cornell University undergraduates and graduate students have been trained in his laboratory in the scientific measurements necessary for reliable dendrochronology. He and his students have dated tomb and building timbers, fishing gear and shipwrecked hulls, Ottoman monuments, panel paintings, charcoal, and icons. The results have been communicated faithfully and promptly in yearly reports and in an active, user-friendly Web site. His Web site has 145,000 hits annually, this year from 72 countries. Kuniholm has produced many review articles, special topical articles, and appendices in archaeological reports, totaling almost 100 peer-reviewed papers. In addition, Kuniholm has contributed major chapters and encyclopedia entries on dendrochronology and other applications of tree-ring studies in archaeology.

Recently, Kuniholm investigated dendrochronological evidence for climate change and found remarkably stable conditions over millennia, with the extremes of previous warm periods matching those of our present time. He has addressed questions of forestation, volcanic activity, statistical analysis, the sharing of data among laboratories, and the cross-comparison of tree-ring dates with radiocarbon dates. The laboratory's activities are now broadening to include projects centered in Europe and North America.

Kuniholm has transmitted to his students the discipline and excitement of field research. For instance, his 2001 Progress Report states that with three students, “14,500 kilometers of driving in the summer of 2001 produced 395 sets of samples from 43 sites in Italy, Greece and Turkey, with promises of more to come.” In addition to providing site-specific dates, Kuniholm emphasizes long-term testing of microclimatic models that refine the chronology by adjustments for variable lengths of growing seasons and the relationship to carbon uptake, as reported recently in the journal Science.

Kuniholm is indeed the proselytizer for dendrochronology, a distinguished and enthusiastic teacher of archaeological science, and a scholar who has contributed to many of the hot topics in environmental, landscape, and site-based archaeology. He has certainly become a spokesman for the integration of science and archaeology.
The Martha and Artemis Joukowsky Distinguished Service Award of the Archaeological Institute of America recognizes volunteers who have furthered the work of the Institute and have improved its effectiveness through their sustained exceptional service. The Institute is very pleased to present this year’s award to Gertrude duPont Howland in recognition of her many years of service as trustee on the national board as well as her many contributions to her local AIA societies. Gertrude exemplifies such service and has been a pioneer in establishing new directions for the AIA. She first became an AIA trustee in 1968 and served until 1970. But Gertrude is especially distinguished as our first Society Trustee, a position she held from 1984 through 1990. This position was created particularly to address the needs of our lay membership in our now 102 local societies and to link the local chapters more closely to the national organization. Gertrude laid such a firm foundation for this position that in 1993 the AIA designated a Vice President for Societies, an important part of our organization today.

While a trustee, Gertrude also had the vision to establish our first book award in 1989, the James R. Wiseman Book Award, which continues to bring prestige to the Institute. As chairman of the Tours Committee in 1988–1989, she further developed this area of outreach. In addition, she served on the Development and Membership Committees. Gertrude is further distinguished as being one of our oldest members still actively involved, and at age 92, the oldest to receive this award. Her continued enthusiasm for archaeology, her sense of service, and her generosity both to archaeology and to the AIA over the years are an inspiration to us all.

But Gertrude is much more than a volunteer archaeologist. She has achieved for herself a reputation as an international conservator, specializing in the restoration of ancient pottery. She has worked for 32 seasons on nine different archaeological sites from Majorca to Jerusalem. Gertrude began her long career in conservation in 1965 with Ross Holloway from Brown University, who was then working on an excavation in the Athenian Agora. She worked with him several more seasons in southern Italy at Satrianum and at Buccino, where her work is still exhibited in the local museum. From Italy she went to Jerusalem and restored the pottery from Ashdod, later returning to Italy to work at Cosa. She spent three seasons at Split with Sheila McNally, three seasons in Sardinia with Miriam Balmuth, and 14 seasons in Majorca, Spain with Dan Woods, working on material from Pollentia. She also helped establish the local museum there where her work is exhibited.

Throughout her career Gertrude also found time to be active in her local AIA society, first in Greenwich, Connecticut and since 1990, in Richmond, Virginia, the city where she was born. She has served as president of the Richmond Society, and she is currently the Hospitality Chairman and a board member. Many speakers lecturing in Richmond have enjoyed her gracious southern hospitality.

On the personal side, Gertrude has raised three sons and worked for 50 years contributing to the civic life of Greenwich. In recognition of these accomplishments, the Greenwich public library published a book about her civic work entitled Missions Accomplished.

Gertrude duPont Howland is unique. The Institute is delighted today to recognize her unique and generous contributions. She has enriched our organization as our first Society Trustee. Through her vision, dedication, and enthusiasm she laid the groundwork for this important position. Gertrude’s innate social and diplomatic skills and sense of fun have made the AIA a warmer, more hospitable, and effective organization. Working with local societies, she helped establish as part of the annual meeting the hospitality we all now enjoy with informal places to gather, have refreshments, and go on guided tours to local sites. I do not believe that Gertrude has ever missed an annual meeting. Her many friends over the years are delighted that she is receiving the AIA’s Distinguished Service Award today.
DAVID WARREN MCCREERY

It is with great pleasure that the Archaeological Institute of America names Professor David Warren McCreery as the winner of the Award for Excellence in Undergraduate Teaching for 2003. Professor David Warren McCreery is a specialist in the Early Bronze Age archaeology of the Near East with an emphasis on palaeoethnobotany and early agricultural practice. He has worked in Cyprus and Jordan since 1975, and he is currently the co-director of the Tell Nimrin excavations, a position he has held for the past 13 years.

After receiving his Ph.D. from the University of Pittsburgh, he continued to study at universities in Geneva, Leiden, Zurich, Heidelberg, and Edinburgh. He then moved on to Amman, Jordan, to become the Director of the American Center of Oriental Research from 1981 to 1988. In 1988 he joined the faculty of Willamette University in Salem, Oregon, where he is a professor in the Department of Religion.

Among his many professional contributions, Professor McCreery has been active in several organizations, including the American Schools of Oriental Research, the American Center of Oriental Research, and the AIA. He has been the president of the Salem Society of the AIA since 1997.

The Undergraduate Teaching Award Committee chose Professor McCreery for this award from a field of outstanding candidates based on his record of undergraduate teaching at Willamette University. His nomination was accompanied by an unusual number of supporting letters from administrators, colleagues, and students familiar with his teaching. These letters document, to quote from his nomination, his “strong commitment to quality undergraduate education in a small liberal arts school where he distinguishes himself as an educator by consciously integrating his own research and the most current research of others into course development and classroom teaching, and as a result encourages and inspires young undergraduate scholars to pursue archaeology and to contribute to the enhancement of the discipline.”

Professor McCreery offers a two-semester sequence in archaeology every year (with an emphasis on Syro-Palestinian archaeology) as well as courses in religion, Hebrew, and archaeological methods. He also conducts a campus dig and takes students with him to his excavations in Jordan. He emphasizes hands-on training in field techniques and laboratory work. Students stress his “innovative teaching methods, including oral final examinations, writing-centered projects, and laboratory training in the analysis of soil samples (among other things).” They find his courses to be “challenging, interesting, and exciting.”

In addition to being described as committed and innovative, David McCreery is also described as “kind,” “attracting the best students,” and “stimulating students to think in new ways.” His courses are characterized as “legendary.” He has been known to conduct excavations on the Willamette campus where students excavate the “ancient buildings” belonging to the university. Once he led his students in discovering forgotten 19th-century time capsules, providing them with, in the words of one writer, an “unforgettable taste of the excitement of discovery in archaeology.”

Students are unanimous in their praise. One letter informs us that to explain why Professor McCreery should win this award was like being asked “to explain in 500 words or less why Michelangelo is a great artist . . . there are too many wonderful things to say!” He embodies, we are told, the “special Willamette spirit of caring, competence, creativity, and compassion.” Professor McCreery is also characterized as a “catalyst for interest” in archaeology for the larger community. As the enthusiastic president of the Salem AIA society, he oversees a program with up to 13 events per year that attract an average attendance of more than 100 people for each session.

In short, it is abundantly clear that Professor McCreery is the kind of teacher who has made the discipline of archaeology “come alive” for generations of undergraduate students. The final word best comes from one of the letters of support, where the writer says, “I look with some envy at the courses he has taught and the excavations he has directed . . . sometimes one would like to turn the clock back and be an undergraduate again oneself, just to experience the sudden enthusiasm that comes from being in the presence of a person of rare knowledge who possesses the capacity and desire to share his understanding with others as David McCreery does in every avenue of his professional life.”
The Archaeological Institute of America is pleased to present the 2003 James R. Wiseman Book Award to Cyprian Broodbank for *An Island Archaeology of the Early Cyclades* (Cambridge and New York 2001).

Broodbank’s analysis of the human presence and activities in the prehistoric Cycladic islands combines archaeological, environmental, and geographic data in innovative and often unexpected ways. Starting with the landings of the earliest seafarers, *An Island Archaeology of the Early Cyclades* takes the lacunose archaeological and environmental data and poses new questions to explain how these islands interacted among themselves and eventually integrated into the network of the wider Aegean world.

The book is informed, but not straitjacketed, by theories and models of island archaeology developed in other archipelagoes, and its well-structured archaeological analyses seamlessly blend into the larger cultural, historical, and theoretical picture.

Most importantly, Broodbank has sailed these shores, looked out over these hills, and discerned the sight-lines that are so important for the development of Cycladic contacts. He has a real sense of place, and is able to bring that immediacy to his lucidly presented analyses, allowing his readers a truly new perspective.

*An Island Archaeology of the Early Cyclades* will determine the direction of research in the Aegean islands for years to come.

The Local Society Prize Committee is pleased to award the 2003 Local Society Prize to the Orange County Society. The Orange County Society will receive $1,000.

The Orange County Society is commended for the quantity and variety of its well-planned activities. Besides hosting a regular series of lectures and interesting field trips, the Society has instituted a yearly Ancient Writing Workshop. The fall 2001 workshop, entitled “Learn to Write Cuneiform!,” attracted society members, Orange County residents, and teachers. The Ancient Writing Workshop, after just two years of implementation, is proving to be not only a highly effective venue for educational outreach but also the Orange County Society’s best fund-raiser.

Founded in 1992, the Orange County Society has achieved significant membership numbers and retained a large group of actively involved board participants. The Society has done an excellent job of promoting the objectives of the Archaeological Institute of America.
Since 2001, Lyndel Prott has been the Director of UNESCO’s Division of Cultural Heritage, which carries out projects to protect the world’s cultural heritage, including the safeguarding of archaeological sites and monuments and the strengthening of museum operations. Before her promotion to Director in 2001, Dr. Prott headed the Division’s International Standards Unit, which is responsible for the legal protection of the cultural heritage, and which provides the Secretariat for the UNESCO Intergovernmental Committee for Promoting the Return of Cultural Property to Its Countries of Origin or Its Restitution in Case of Illicit Appropriation.

Dr. Prott received a Dr. Juris from the University of Tübingen, Licence spéciale en Droit international from The Brussels Free University, and a B.A. and LL.B. from the University of Sydney. From 1991 to 1996, she held a Personal Chair in Cultural Heritage Law at the University of Sydney; she has held academic positions at Syracuse University, The Hague Academy of International Law, and Stanford University; and she has acted as a legal consultant to UNESCO, ICOM, the Council of Europe, and the Commonwealth of Australia. Among the many honors Dr. Prott has received is Officer of the Order of Australia.

She is the author of more than 150 publications in the fields of law and the cultural heritage, jurisprudence, and international and comparative law. Her books include the major, multi-volume work, Law and the Cultural Heritage, written with her husband Patrick O’Keefe, and the Commentary on the UNIDROIT Convention.

A tireless proponent of the protection and return of displaced cultural property, Dr. Prott was a member of the UNIDROIT Study Group on the International Protection of Cultural Property and helped promote the adoption of the UNIDROIT Convention on Stolen or Illegally Exported Cultural Objects (1995). She has sought and won additional State Parties to the 1970 UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property. Recently, she was instrumental in the successful effort to adopt the UNESCO Convention on the Protection of the Underwater Cultural Heritage (2001).

In connection with the 1995 New York symposium, “The Spoils of War,” Dr. Prott proposed eight “Principles for the Resolution of Disputes concerning Cultural Heritage Displaced during the Second World War.” Since that time, these principles have been used by governments in negotiations for returns.

Lyndel Prott is one of the most intelligent, energetic, and effective forces in the world today campaigning for the protection of the archaeological and cultural heritage of the world’s peoples. The year 2003 marks the 20th anniversary of the United States’ implementation of the 1970 UNESCO Convention. It is especially appropriate that in 2003 the Archaeological Institute of America has chosen to honor Dr. Lyndel Prott with its award for outstanding public service.
BOOK REVIEWS


The sleaze, dishonesty, and corrupting forces of the antiquities market are unmasked in this frank assessment of the impact of forged antiquities on the interpretation of the ancient Near East. The intellectual consequences of incorporating unprovenanced antiquities, that is to say artifacts that do not possess an archaeological context, into any assessment of ancient culture and art history have been rehearsed elsewhere (e.g., Christopher Chipindalle and this reviewer, AFA 97 [1993] 601–59, and 104 [2000] 463–511; and International Journal of Cultural Property 10 [2001] 1–31, and 11 [2002] 50–64).

Muscarella has pinpointed the central intellectual issue of artifacts derived through “bazaar archaeology” in an anecdote about a conference on ancient bronzes where he challenged the alleged Luristan findspots for objects bearing Mesopotamian inscriptions. An anonymous colleague (whom perceptive readers will try to identify) is reported to have responded with: “What then can we say about them? What can we say about Mesopotamian contacts with Luristan?” (14). Unprovenanced material, whether or not it is forged, can only serve to corrupt and distort the intellectual interpretation of artifacts, and Muscarella reminds scholars of the danger of using unprovenanced comparanda in catalogues (205, n. 1).

The Lie is divided into two parts. The first, “Introduction and Polemic: The Forgery Culture” (1–29), maps out many of the methodological issues faced by scholars dealing with material that has surfaced on the antiquities market. The emphasis is on Near Eastern material, but the processes at work in authenticating, acquiring, and advertising will be unsettlingly familiar to museum curators and archaeologists. The issue of scholars publishing in popular magazines that have close links with museum curators and archaeologists. The issue of scholars publishing in popular magazines that have close links with museum curators and archaeologists. The issue of scholars

The bulk of The Lie is devoted to a catalogue of forgeries divided into six cultural broad areas: Iranian cultures (31–133), Anatolian cultures (155–57), Mesopotamian (159–87), north Syrian (189–99), Phoenician, Syrian, and Levantine (195–201), and Sasanian (203–5).

The catalogue entries are enlivened by some entertaining asides not normally found in scholarly works. A gold and lapis lazuli “caprid/ibex protoime” rhyton in the Abegg collection was given the alleged findspot: “Presumably from Eastern Iran, near the Afghanistan border” (53, no. 6). Muscarella adds: “Kipling could not improve on this.” There are also some important insights into the authenticication process of antiquities (of modern manufacture) and their acceptance into the canon of genuine objects. One of the most bizarre was the publication of two items on the postage stamps of Israel (55, no. 33; 63, no. 11), which meets with the observation, “another foolish example of favoring the unexca
vated over the excavated.”

For Anatolian archaeology there is an observable link between the excavation of archaeological sites and the provision of “antiquities” with believable (but false) findspots. Hacilar pottery was explained in terms of the plundering of the site after excavation, though TL testing identified large numbers of forgeries surfacing in the market (135–41). The presentation of reconstructed frescoes allegedly from Çatalhöyük is also brought into question (141–5). Glyn Daniel reminded the readers of Antiquity (December 1971) that the man arrested for the Hacilar “scam” was Sevket Cetinmaka, who was “deliciously described” by the reporter of the London Times as “a peasant of no specific occupation” but able to become “a business man of independent means, owning one or more blocks of flats and a travel agency” (Sunday Times [London] 8 August 1971).

There is a “concordance of museums and collections” (537–40) listing objects that Muscarella considers to be fakes; the list of present proprietors includes antiquities dealers (some now use the euphemism, “Ancient Art Consultants”) and galleries. The concordance might have been enhanced by including accession numbers, and having a separate section for museums and dealers. Among the dealers listed is Jerome Eisenberg, who has perhaps prided himself on avoiding handling forgeries (see Butcher and Gill, Antiquity 64 [1990] 946–50): 23 items appear in Muscarella’s catalogue, most passing through Eisenberg’s hands in the early to mid 1960s, though one as recently as 1992 (164, no. 35). The scandal surrounding the antiquities department of Sotheby’s in London has done much to throw light on the ungentle(wo)manly world of the auction houses, and Sotheby’s (London) seems to have had its fair share of apparent forgeries. As the sale of antiquities moves onto the Internet (see Chipindalle and Gill, Culture without Context 9 [2001] 4–15), so the problem of forgeries increases as autopsy is made impossible.

Muscarella will not be thanked in some circles for compiling this substantial catalogue, which charts greed, gullibility, dishonesty, and lack of integrity. His study needs to be read in conjunction with the “Code of Ethics for Professionals Concerned with the Antiquities of the Near and Middle East” developed at the “Symposium on the Looted Antiquities of Baghdad, December 1994” (and conveniently reprinted in Patrick J. O’Keefe, Trade in Antiquities [London: Archetype; UNESCO, 1997] 119–20). The Lie should be compulsory reading for any ar-

This book should disabuse either advocate or critic of any notion that the city-state is defined by the polis or civitas of Classical antiquity. This idea began with Fustel de Coulanges’ classic Le Cité antique (1864) and continued through Max Weber’s fundamental study of the city and state (1921) in which he viewed the city as a peculiarly Western phenomenon. But by and large it ended with Weber, because, as Hansen points out in this volume, archaeological research subsequently forced a global focus on the origins of urbanism and the state and thereby challenged scholars to come to terms with the “city-state” as a real and widespread phenomenon in human history. In this study Hansen brings together a diverse group of experts to consider both the city-state and the city-state culture in 30 different case studies. The result is a rich and dense study, carefully edited and thoughtfully presented, that largely succeeds in its task. It is an indispensable source for any scholar archaeologist, historian, sociologist, anthropologist, or political scientist who is interested in cities and their relations to states and empires.

Under Hansen’s direction the Copenhagen Polis Centre has been researching over the last decade two related issues: the ancient Greek polis and the notion of the city-state. The project has been aimed at disentangling them and providing each with a solid grounding. In the process Hansen has differentiated the concept of city-state from one he terms “city-state culture,” and it is this distinction that will fundamentally change the debate, in large part because of the truly comparative basis on which it is grounded. The 30 case studies are drawn from around the globe and range chronologically from the earliest urban city-states of Mesopotamia to those of the 18th-century Dutch Republic. Naturally the Old World is thoroughly represented, but also, among others, the “Celtic” oppida, Mecca and Medina, Viking Dublin, and Italian and Swiss city-states. In North Africa we read about city-states in the Wadi Mzâb, the Hausa and Yoruba states from sub-Saharan to southwestern coastal Nigeria, and those of the eastern Niger delta. The 17th- to 18th-century Fante federations of the Gold Coast are considered and on the East African coast the Swahili states. Three urban cultures of Asia during the first millennium B.C.E. are included, those of Spring–Autumn China, the Tarim Basin, and Mahajanapada India. There are chapters on the archipelago polities in southeast Asia prior to and including the 15th- to 16th-century Malay city-states and also the earlier Tai-muông peninsular ones. Finally the archaeologically known Maya, Mixtec, and Aztec city-state cultures of the New World are discussed.

Each participant was asked to evaluate the social, political, and economic form of his subject area according to Hansen’s analysis of the “concepts of city, state, city-state and city-state culture.” Hansen charged his colleagues to consider their cases according to the variables of size, territory, population, ethnic and political identity, name, settlement pattern, urban form, economy, defense, government, self-government, and self-sufficiency. These are the core criteria decided upon by Hansen on the basis of his extensive winnowing of the evidence. They form his definition of the city-state (19):

A highly institutionalised and highly centralised micro-state consisting of one town (often walled) with its immediate hinterland and settled with a stratified population, of whom some are citizens, some foreigners and, sometimes, slaves. Its territory is mostly so small that the urban centre can be reached in a day’s walk or less, and the politically privileged part of its population is so small that it does in fact constitute a face-to-face society. The population is ethnically affiliated with the population of neighbouring city-states, but political identity is focused on the city-state itself and based on differentiation from other city-states. A significantly large fraction of the population is settled in the town, while the others are settled in the hinterland, either dispersed in farmsteads or nucleated in villages or both. The urban economy implies specialisation of function and division of labour to such an extent that the population has to satisfy a significant part of their daily needs by purchase in the city’s market. The city-state is a self-governing but not necessarily an independent political unit.

Hansen’s introductory and concluding chapters are indispensable to this volume. He provides a brief consideration of the history and meaning of the terms urbanization, city, state, and city-state. He defines the difference between the concepts of city-state culture and city-state: “that a city-state is a micro-state composed of one town with its immediate hinterland, and a city-state culture is a civilisation which, politically, is organized as a system of city-states” (17). The distinction is important since it links the two metonymically, and permits an assessment of the city-state as a dynamic system operating in different settings around the world at different times in the past. By spelling out the concept of city-state culture and providing dozens of case studies for inspection in this volume, Hansen directly confronts the criticisms that have been leveled against the use of the term city-state. Because of this bipartite distinction and by use of the many criteria that define his model, Hansen avoids both the essentialist and inclusivist failings of previous studies of the city-state. In his concluding chapter he returns to this distinction, first by considering studies by such authors as Toynbee, Griffith and Thomas, Burke, Renfrew and Cherry, Maisels, Trigger, and Nichols and Charlton. These he points out encompass three approach-
Despite this careful analysis of the issues and the abundance of information provided by the many authors in their case studies, there remain challenges to the study of city-states. The evidence pulled together in these case studies is highly varied: some instances are only known archaeologically, others through a combination of archaeology and contemporary texts as well as later historical documents. Some are known primarily through religious texts or from early historical sources, others are richly documented historically. In consequence not all cases are equal, and in fact it is clear that in many of the primarily archaeological or merely textually supported instances the evaluation can scarcely be made. In contrast, some of the historical examples are so richly documented (the Medieval Italian city-states, the Imperial and free towns of the Holy Roman empire, the city-state culture of the Dutch Republic) that they permit very complex, variable, and dynamic analyses that demonstrate how difficult it is even for the most robust model to encompass all candidates. These suggest that models of political economy may be of most utility for focusing research on identifying diagnostic and comparative features of instances known only from limited sources, whether historical or archaeological—in other words, those cases where a general and initial classification is required. In richly documented, and generally more recent, historical settings the model is of less value, although very useful for stimulating comparative debate. In the end, the careful reader will recognize a divide between the archaeological and historical, where for the former structural and functional descriptions, the question of comparability, and the desire to assess different forms of human sociopolitical integration are all paramount, while for the latter these matters are of less utility than a richly reasoned historical explanation of the distinct characteristics of the instance under consideration.

Despite these continuing difficulties the case studies presented here demonstrate that city-states and city-state cultures are real entities. Each essay in this volume bears careful reading, and because all were written with Hansen’s model in mind, the similarities stand out even when different circumstances present extraordinarily different forms. Future work on this problem will necessarily take these studies and Hansen’s important analysis as fundamental for continuing debate.

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The excellent introduction to this volume, the second in Sarah Milledge Nelson’s “Gender in Archaeology Series,” brilliantly summarizes the strengths of each of
the 10 single-author papers. Arnold and Wicker extract and distill salient points while effectively highlighting areas of difficulty within the various approaches used by the contributors. As the reviewer, I only have the task of providing brief notes and a few critical comments on some of the papers. These comments include tempering my laudatory remarks about the introduction with a concern for the use of undefined and unindexed terms, such as "patriarchal systems" (vii), and phrases such as the "multivocality of objects" (xv).

Many of these papers effectively use ethnographic data to interpret the always ambiguous archaeological evidence. Others would have benefited from the use of appropriate anthropological models. More effort should have been directed toward editing some of the papers and emphasizing that the limited database may lead some authors to stretch our archaeological imaginations.

O’Gorman’s paper provides a beautifully edited summary of her dissertation. She examines excavation data from pre-Contact houses in Wisconsin (Oneota Tradition) to decode social organization, and finds that gender is strongly indicated both by placement of objects in burials and in the settlement pattern used by these people.

Stalsberg’s focus is on high status females noted in early Medieval runic texts. The evidence presented suggests numbers of questions not even broached by the author. Her work is marred by the suggestion that “women evidently are overrepresented” (69) in the cemetery, a conclusion not clearly supported. Balance scales are found in women’s graves, but where are the weights and what did they weigh?

Gräslund’s excellent review of data from runic texts infers female roles played in Iron Age Scandinavia. Her description of these roles appears identical to those I have decoded for farm wives in the Palatine and English colonial settlements in Pennsylvania of the 17th and 18th centuries.

Crass’s useful paper indicates that in the Arctic, biological sex and cultural gender are interestingly juxtaposed and variable in children. Is this a useful cultural adaptation for a small population under stress? Gender is represented in organic burial goods that are well preserved in the Arctic, but objects often were removed from burials for reuse. Were they returned, and did returns result in gender “mixing”? The anaerobic, waterlogged, Early Archaic period (5500 B.C.E.) Windover site in Florida also has excellent artifact preservation, revealing items simply not seen in most archaeological sites. Hamlin’s careful and balanced analysis of the possible uses for these tools helps her to infer gender roles.

Hollimon reviews bone studies from the Northern Plains of America and finds evidence that women were scalped. Her suggestion that women joined raiding parties may be correct, but the frequency appears extremely low.

Jiao’s paper supposedly focuses on Neolithic China, but rambles through time and space while adding comments on gender. Jiao and others note the problem of recognizing social classes in the records, where elites often are the only people known. Arnold and Wicker (xvi) point out the problems of generalization about a society as a whole based on patterns observed in the mortuary ritual of elites.

Eleanor Scott’s lead paper, “Killing the Female? Archaeological Narratives of Infanticide,” examines the origins of what she identifies as the pervasive myth of female infanticide. This paper would have benefited from rigorous editorial oversight as it is not an effective summary of her extensively documented recent monograph. Compounding this problem are her reliance on Marvin Harris’s (1989) popular work and poor use of contemporary theory on dowry to address that issue.

In archaeology as in other areas of scientific research one often finds what one looks for, and sometimes we even see what is not there. I believe, as do both editors and many others, that it is time to put questions regarding gender into the archaeological mainstream, among the many issues now commonly discussed. Many of these papers touch on important issues and offer useful information. However, papers that provide few if any insights into cultural behaviors relating to gender are not necessarily the best way for archaeology to move forward.

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ARCHAEOGENETICS: DNA AND THE POPULATION
PREHISTORY OF EUROPE, edited by Colin Renfrew
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What is (or are) archaeogenetics? The neologism seems to announce a new subdiscipline. As in other such cases, however—such as sociobiology a quarter-century earlier—this is a case of giving a new name to a field that has been active for some time. Its beginning could fairly be put, as Sykes does in a contribution to Renfrew and Boyle’s volume, at the work of Ludwik and Hanka Herschfeld in the laboratories of the Royal Serbian Army. Their 1919 paper in The Lancet compared the differing blood groups of Allied soldiers in the First World War, gathered in the Balkans from many parts of the world. Never mind that the Herschfelds’ conclusions about human history and evolution now look outlandish. The concept that the genes of living populations contain decipherable traces of their pasts was the seed from which archaeogenetics has grown.

And so what does archaeogenetics look like now, in the DNA era? These two volumes from the McDonald Institute for Archaeological Research in Cambridge, edited by Renfrew and Boyle and by Renfrew, on Europe and the Americas respectively, offer us a sampling of re-
cent work and an opportunity to consider that question. It has been a weakness of the field at times that research has been scattered through many (mostly human genetics) journals—not brought together except by chains of cross-reference, and sometimes not scrutinized by the criteria of disciplines other than the journal’s own. So these two volumes are very welcome, offering as they each do, a conspectus of research and opinions on the past of the continent in question, from the perspectives of several disciplines. Both include well known specialists and research teams. The resulting collections are inevitably heterogeneous but interesting and useful nonetheless. Libraries of institutions active in the field will wish to acquire one or both, according to their regional interests.

The more substantial volume is the handsome one on Europe, based on a Cambridge conference on “Human Diversity in Europe and Beyond.” At 342 pages, it boasts 41 chapters, which include dozens of tables and many dozens of figures, plus a foreword by Colin Renfrew and concluding remarks by Luca Cavalli-Sforza, symbolizing the meeting of archaeology and human genetics. Authors come from a wide range of European organizations themselves, from Iceland to Russia and from Sweden to Sicily—as well as beyond Europe.

Most chapters approach the issues of Europe’s remotest past from a genetic perspective and discuss the spatial patterning of variation in one or more genetic system, either on a continental or a regional scale. Unsurprisingly, there is a strong bias toward studies of uniparental genetic systems (mitochondrial DNA and Y chromosome), and Sykes strenuously defends reconstructions of prehistory based on single systems, including these. Many of these chapters are quite technical. One knows that impressive-looking techniques do not automatically mean unshakeable inferences, and that dates in particular should be taken with a pinch of salt. But it would often take a specialist in the relevant genetic system and mode of analysis to identify some of the potential limitations, when the analyses are as complex as they are here. In general, though, it is possible for the nonexpert to see some of the authors’ thinking and their “take-home messages,” and there are introductory chapters to make this easier. This book is therefore a more helpful point of entry for the non-geneticist into the genetics literature than simply delving into the journals.

Otte, Pinhasi et al., Zvelebil, Lahr et al., and Collard and Shennan contribute more archaeologically oriented overviews and case studies, mostly concerned with cultural change and the agricultural transition. There appear to be no contributions from linguists, although linguistic considerations are invoked by some writers. Outliers to the main theme include van Andel on paleoclimatology, Calafell et al. on central Asia, Kivisild et al. on India, Bradley on animal domestication, and Allaby on wheat domestication.

The modern phase of European archaeogenetics began with the collaboration between Ammerman and Cavalli-Sforza, which culminated in an influential book, *The Neolithic Transition and the Genetics of Populations in Europe* (Princeton 1984), reviewed by myself among others (*Canberra Anthropology* 9 [1986] 102–14). They argued that patterns in Europe’s Neolithic archaeology and in its present-day population genetics can both be explained as the outcome of a slow ripple of complex prehistoric change spreading from southeastern Europe to all other parts. This hypothesized change involved the spread of agricultural concepts, practices, and materials, but also the local migration of agriculturalists into new territories and their interactions with preexisting hunter-gatherers, including the eventual absorption of hunter-gatherers into the denser agricultural populations.

The Ammerman/Cavalli-Sforza model, based on analysis of classical genetic markers, quickly became controversial—challenged by some, broadly supported by others (including Sokal), and elaborated by yet others (e.g., Renfrew himself, with the notion that Indo-European languages diffused with agriculture). That this debate has continued with undiminished vigor into the DNA era is shown by a number of the contributions to Renfrew and Boyle’s book. In 1996 Richards et al. inferred from their mitochondrial DNA findings that the contribution of pre-Neolithic hunter-gatherers to the European gene-pool was approximately 85%, in which case demographic changes associated with the Neolithic could not have been as important as Ammerman and Cavalli-Sforza believed; Richards and Macaulay restate and refine their argument here. But Barbujani and Chikhi restate and refine the argument from the Cavalli-Sforza camp. For them, the clinal pattern (a relatively smooth and consistent spatial gradient) that is predicted on the demographic diffusion model is observed in the nuclear data, both classical and DNA, so that mitochondrial DNA constitutes an exception. The resolution is not yet clear to see, and is bound to be at least partly technical in nature. Renfrew offers the beginnings of one, but it surely needs more working through. In the meantime, despite Sykes’s reassurance, this reviewer can only express some reserve about conclusions reached on the basis of mitochondrial DNA where support from other systems is lacking.

While the debate about the broad sweep of Europe’s prehistoric colonization constitutes the most salient single theme in the book, it does not wholly dominate it. Many chapters address smaller-scale issues in the peopling of various parts of western and eastern Europe. There is particular concentration on the Mediterranean, but coverage ranges to Ireland, the Arctic, and Bulgaria. DNA recovered from skeletal samples plays only a small part. Other issues altogether surface too, for example, the prehistory of dairying and the genetics of lactase persistence.

Renfrew’s other edited book, on the Americas, is less comprehensive at 175 pages but still far from lightweight. It also derives from a recent McDonald Institute meeting, one whose background themes were linguistic (Greenberg’s postulated Amerind macrofamily) and genetic (population-specific polymorphisms). The book is in much the same style and mold as Renfrew and Boyle’s, and indeed it shares some of the same authors. There is a significant and welcome difference in this book’s substantive inclusion of linguistics. On the other hand, the profile of archaeology here is low.

A broad correlation between linguistic and genetic groupings was anticipated by Darwin and claimed by Cavalli-Sforza and colleagues in 1988. It is this concept, as applied to the Americas, that is under scrutiny here. If
(linguistically defined) tribes or populations have been in existence long enough to develop "private" genetic polymorphisms, that clearly has implications for the processes that maintain their distinctiveness over the long term, and ultimately for the archaeology of the Americas on a macro-scale. It is in that sense, more than any direct statement about archaeology, that this book will hold a real interest for many Americanist archaeologists. The book also offers perspectives on the dating of earliest human arrivals in the Americas, with molecular geneticists tending to favor earlier dates than are accepted by most archaeologists; and there are discussions on the power of historical linguistics to detect relationships at such remote time depths, with (thankfully) a skeptic's views (Ringe's) presented alongside an optimist's (Ruhlen's). Perhaps it hardly needs saying, however, that archaeologists are better off than either linguists or geneticists when it comes to the security of their datings. Another dimension of the debate lies in the polarity between macro- and micro-scale studies, and the book also includes Merriwether et al.'s important micro-analysis—limited to mitochondrial DNA, however—of variation within a single population, the Yanomama.

In short, these are two substantial and scholarly collections, on the archaeology and genetics of Europe and the linguistics and genetics of the Americas, which specialists in those fields will want to be able to consult, and which do more than many a journal article to facilitate communication across disciplinary boundaries.

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Studies of ancient states and the concomitant rise of social complexity typically have treated, in a comparative manner, issues of increasing power, order, and wealth, as well as the stabilization and legitimation of the state. Many such studies, furthermore, have focused on the highest social stratum within the state, and on the "high culture" associated with such "inner elites." Given current emphases in archaeology on social and contextual approaches, with their aversion to generalization and their attempt to understand peasants, commoners, communities, rural interests, and ideologies, and with their focus on variability in social formations and diversity in politico-economic positions (from heterarchies to early state hierarchies), readers might criticize this volume for being old-fashioned and totalizing. Although this work does continue the rather conservative trend taken by Cambridge University Press’s New Directions series in recent years, it would be a mistake to dismiss it out of hand: the contributors question, manipulate, reformulate, reject, or reinvigorate the main thesis in a series of empirically rich and theoretically astute papers that will enrich archaeological understandings of the emergence and development of early state societies.

So, just what is this volume’s main thesis? What is new about it, and how do the volume’s contributors take exception to and expand upon the main thesis? In an earlier paper (published in G.M. Feinman and J. Marcus, eds. Archaic States [Santa Fe 1998]), John Baines and Norman Yoffee identified and elaborated upon several elements—especially art, ideology, and elite practices—that uniquely distinguished Egyptian and Mesopotamian “civilizations” from other states or less hierarchically organized polities. They termed these elements “high culture” and “inner elites.” They maintained not only that civilization is coincident with high culture—a materialized ideology based on everything from architecture and art to food and landscapes—but also that the production and consumption of such items and ideas are the exclusive domain of the inner elite. Baines and Yoffee, moreover, restate their position in chapter 2 of this volume: they see the interplay of order, legitimacy, and wealth (hereafter, OLW) as exemplified by high culture, and focused on an inner elite that both constitutes the cultural, administrative, and executive core of a society and comprises less than 1% of its population.

The editors, Janet Richards and Mary van Buren, invited specialists in the study of Old and New World state formation to consider these concepts (originally in a symposium at the 1994 meetings of the American Anthropological Association) as a platform for a comparative study of Mesoamerican, Andean, Near Eastern, Indus Valley, Mediterranean, and Chinese societies, looking at both shared organizational principles and context-specific situations. In their own introduction, the editors provide a concise and valuable, historically-based discussion on the study of "civilizations," including evolutionary (Childe, Redfield, Service, and Fried), culture historical, and worlds systems approaches. Their comment, however, that postprocessual approaches “are primarily ethnographic in origin and scope” (7) misses the mark widely; it is simply unacceptable to lump together and criticize (as many American archaeologists continue to do) the diversity of ideas and methodologies involved in social archaeology today by referring to a few works published in the 1980s by Hodder, Shanks, Tilley, and Miller. That said, the editors are correct to state that postprocessualism eschews the comparative approach, because material and meaning are culture specific.

Leaving aside such labels and internecine debates, how do the volume’s contributors see the significance of OLW in the societies they study? Most studies take exception to Baines and Yoffee’s boldly exclusionary and elite-driven vision of OLW, and point out in several different ways that emergent elites often were severely limited in the strategies they could use to maintain their social positions, and that elites, managers, workers, farmers, and other commoners usually had much more interaction and communication than Baines and Yoffee propose. David
O’Connor, for example, argues that for the Egyptians of the Old Kingdom, the notion of cosmic order was a concern for the whole of society, not just its pharaohs. Janet Richards, in her study of the subsequent First Intermediate Period and Middle Kingdom of Egypt, questions the notion of an exclusive, high culture ideology, and argues that elites had to contend with “bottom-up” processes and forces over which they had no control. Rosemary Joyce perhaps comes closest to accepting the Baines-Yoffee thesis in considering how categories of valuables were constructed in Mesoamerica, and the diachronic relationship of such valuables to establishing wealth and order. In so doing, however, Joyce is concerned more with politico-economic factors than with the social construction of meaning and she relates wealth to evaluation rather than to modes of communication. Mary van Buren utilizes ethnohistoric documents to consider the production of high culture among the Inka, and argues that the ideological practices of regional elites, and indigenous resistance to elite control, both were crucial in the long-term development and maintenance of Andean civilization. Andean studies by Mark Kenoyer (Indus Valley), Susan Alcock (Imperial Rome), and Bennet Bronson (Han Dynasty China) round out the volume, and demonstrate—each in their own way—that OLW were concepts more complex and contested than the Baines-Yoffee model allows. Kenoyer argues in a long and detailed study that wealth, in the form of non-exotic and manufactured goods, and in both public and private contexts, was directly associated with status and the legitimation of authority in the Indus Valley. Alcock combines the study of monumental art and documentary evidence to consider how the Greeks capitalized on the nostalgic use of their own high culture both to accommodate and deny the realities of Roman imperial rule. In his ethnohistoric analysis of Han China, Bronson points out that order, cosmology, legitimacy, and wealth were indeed critical for the inner elite but that, for elites and commoners alike, the “grand abstractions of political theory and ritual” were less important than the perception that the system was functioning, the economy was prospering, and that life was secure.

Both the editorial introduction and the concluding overview by Elizabeth Brumfiel (which also includes an Aztec case study) give distinctive assessments and/or summaries of the papers in the volume; they almost preempt the need for an independent review. Although in principle I do not approve of editorial summaries, in this case van Buren and Richards have provided very thoughtful evaluations of the papers. Brumfiel discusses the Aztec concept of tonalli, a “heat-light” energy force that was indispensable for existence and with which all Aztec rulers were, unsurprisingly, much better endowed than were their subjects. Tonalli, you might say, encapsulates concepts of OLW in a state ideology as effectively as does the Baines-Yoffee notion of high culture and the social structuration of meaning. Tellingly, however, tonalli was not confined to the inner elites but affected the lives and fortunes of other segments of society, not least the soldiers who captured people for human sacrifices or shed their own blood for their Aztec rulers. Aztec leaders understood the importance of high culture in creating and maintaining order, legitimacy, and wealth.

Certainly (inner) elites create many distinctive forms of high culture, but emulation by others ensures that it will never remain their exclusive domain, and the manipulation by others of the forms and categories of high cultures is often critical in the development and legitimation of alternative social and political alignments. Baines and Yoffee’s original conceptualization of OLW may not prove to be widely acceptable in the archaeological climate of the 21st century, but the editors and contributors to this volume have ensured that it will take its place alongside peer polity interaction, center and periphery, specialization and exchange, and several other concepts, in fostering new and dynamic studies on the emergence and development of social complexity in early state societies.

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Metals Make the World Go Round represents the publication of the proceedings of a conference held at the University of Birmingham in June 1997. The conference, devoted to “The Supply and Circulation of Metals in Bronze Age Europe,” was organized by Christopher Pare (then at the University of Birmingham and now professor at the Institut für Vor- und Frühgeschichte, Johannes Gutenberg Universität Mainz), who has also edited the proceedings for publication.

This conference was the third in a series of meetings sponsored by the Directorate General X of the European Commission, Brussels. The first two meetings, held in Mainz and then in Athens, focused on Eliten in der Bronzezeit and have been published in the JRGZMM for 1999. This background is essential for an understanding of the publication under review, which represents the new world of European archaeology, organized and funded by the European Union with the participation, for the most part, of scholars from member countries. Gone are the days of “east Mediterranean archaeology,” or the “archaeology of northern Europe.” This is “European archaeology,” from Cyprus to Spain and from Greece to Denmark. All of this will come as something of a shock to Aegean prehistorians, not accustomed to dealing with Bronze Age Spain and Portugal or with axe hoards in northeastern Europe.

In organizing such a conference Pare did a splendid job of bringing together many of the leading scholars from nine different countries (including the United States, here represented by the Turkish scholar Cemal Pulak) to discuss in detail current research problems and the results of the scholarship published within the past
decade or so. The result is a remarkable survey of current work on Bronze Age and Early Iron Age archaeology within the European Union. As nothing is said about translation and no paper reads as if it had been translated, one has to assume that all 18 papers published here were written and presented in English, a not entirely welcome feature of the new European archaeology. France is conspicuous by its absence at this conference.

In a short review it is impossible to deal, in any significant way, with all the contributions to this volume and, as all the papers are of considerable importance, it would be invidious to discuss just a few of them. It is better, in my opinion, to concentrate upon the two main themes of the conferences, hoards and balance weights.

Much of the archaeology of continental Europe during the Bronze Age, especially the Late Bronze Age, is still devoted to the subject of hoards. Hoards of bronze, buried in the ground or thrown into lakes and rivers, are the dominant element of almost every archaeological context. Compared with the mere handful of hoards from Cyprus and the Aegean (for which see A.B. Knapp, J.D. Muhly, and P.M. Muhly, “To Hoard is Human,” RDAC [1998] 233–62), the sheer number of European hoards is astonishing. From LBA Brittany alone J. Briard, in 1965, counted over 300 axe hoards, containing over 30,000 bronze axes. That number, by now, must be in excess of 35,000. The size of these hoards is also remarkable, with individual hoards containing over 4,000 axes, often arranged in the ground in very precise patterns.

The weight of metal being buried in the ground is also unlike anything known from the Mediterranean world. The largest hoard known from the LBA Mediterranean, that from the island of Lipari, dated to ca. 1200 B.C.E., has 75 kilos of bronze. The contemporary hoard from Gușterița, Jud. Sibiu, in Rumania, had a total of 800 kilos of copper and bronze. What do such hoards represent? Why were such vast quantities of copper and bronze buried in the ground, or otherwise disposed of? These are questions that European scholars have been trying to answer ever since C. Thomsen discussed the hoards of Denmark in the mid-19th century. What has emerged, with great clarity, in recent scholarship is a major increase in the intensity of hoarding at the end of the Bronze Age, in the late second millennium B.C.E., an increase that is, in some way, associated with the introduction of iron.

But what was cause, what effect? Was bronze being taken out of circulation in order to maintain the value and prestige of the metal under the impact of the appearance of utilitarian iron? Was there simply too much bronze in circulation, as Susan Sherratt now claims (83), or was there a shortage of bronze, resulting in increased recycling? If hoards are to be seen as representing disposal of wealth (in bronze), it is curious that the bronze being disposed of had such a high lead content, with 30–40% lead being common and with examples as high as 80% (Christoph Huth, 186). Since Thomsen’s day scrap hoards (or founder’s hoards) have been seen as assemblages of discarded, broken, and unusable pieces of bronze, intended for recycling by a bronze smith (Koen Verlaeckt, 292). But what of a hoard of hundreds of bronze axes fresh from the cast, often with their clay cores still in place (Huth, 186)? This seems to be a case of “from the mold to the ground” and raises the obvious question: why bother to cast the axes in the first place? Why not just bury copper ingots? In fact, ingots are quite rare. In the Baltic area no single ingot has ever been found; even hoards of scrap metal have pieces of cut-up artifacts, not pieces of ingots (Andrzej Pydyn, 230).

Scholars cannot agree upon the relationship between intensification of hoarding and the amount of metal in circulation. Some argue that hoards represent exactly that, the hoarding of metal in times of scarcity. But single-ix hoards, composed either of axes or sicks, must represent abundance of metal in circulation, not scarcity (Verlaeckt, 292–3). All the contributors agree that metal was buried in the ground for many different reasons, that there are many different categories of hoarding, that the relationship between hoards and grave goods is important but complex, and that we are badly in need of some sort of international inventory of hoards, in which the catalogue of the contents of each hoard would give not only the number of objects but also the weight.

Three papers in Metals Make the World Go Round deal almost exclusively with balance weights and weight systems. Cemal Pulak publishes the 149 weights from the Uluburun shipwreck (247–66), Hanne Lassen publishes the weights from the LBA Cypriot site of Kalavasos-Ayios Dhimitrios within the context of weights from contemporary Cypriot sites and from Ugarit (233–46), and Marisa Ruiz-Gálvez discusses weight systems from the Iberian peninsula (267–79). Pulak and Lassen conclude that the predominant weight system in the LBA eastern Mediterranean was that based upon the Syrian shekel of 9.3–9.4 grams. This is, however, also the weight of the Egyptian qedet. Moreover, 10 qedets equal one deben, of 94 grams, and there are a number of balance weights of exactly this weight. Both the famous bronze head of an African male (Kalavasos-Ayios Dhimitrios 454) and that of the head of a bull (KAD 446) are just over 94 grams. Many weights of 94 grams, made of stone, are also known from Pyla-Kokkinokremos, Maa-Palaëokastro, Enkomi, and Ugarit. The Syrian and Egyptian weight systems seem to have been interchangeable.

Absent, however, from Cyprus, Ugarit, and the Uluburun cargo, were weights of the Minoan and Mycenaean systems. Aegean balance weights do not seem to have been used within the interregional trade systems of the eastern Mediterranean LBA. Is one to conclude from this that Aegean traders themselves did not take part in such trade?

Ruiz-Gálvez, however, does find evidence for the use of Aegean weight systems in the Iberian peninsula, in contexts dating before the period of Phoenician colonization (277–8). This she relates to the “amber route,” bringing Baltic amber into the Aegean, and, I would add, to the expansion of Mycenaean commerce toward the northwest, in a quest for new sources of raw material, notably tin (from Cornwall and Brittany). Ruiz-Gálvez believes that, long before the westward expansion of the Greeks and the Phoenicians (starting in the ninth century B.C.E.), “raw material, perishable items, persons and know-how circulated from the East Mediterranean corner of Europe to the Baltic one” (298). This represents the spirit of globalization promulgated by the Birmingham conference.
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"Just as historical narratives make the bare facts about the human past come alive, the union of mythic imagination and scientific reason gives meaning to the bare bones of prehistory" (253). The theme of The First Fossil Hunters is aptly summarized in the closing statement of this intriguing book by Adrienne Mayor, a classical folklorist and amateur palaeontologist. Mythic imagination and scientific reason are combined in this volume to get to the roots of the creation of monsters, mythological creatures, and composite human/animal beings in the classical world. The multidisciplinary nature of this book provides perspective from many angles of inquiry into the world of ancient cryptozoology. It is refreshing that scientific evidence has been married with ancient testimonia in this study to provide new and exciting interpretations of the work by classical authors. This book will be of interest to scholars in the fields of classics, palaeontology, archaeology, and anthropology. The book has been written in simple language, defining basic classical and palaeontological terms so that the general public can be included in the target market. The work of Aristotle and Herodotus, for example, are introduced and explained briefly so that lay people not familiar with these ancient authors can benefit from the authority of the citations. Thus, this book should have a long shelf life and be referred to widely in relevant fields of study.

Like Adventures in Unhistory by Avram Davidson (Philadelphia 1993) or Monsters, Tricksters and Sacred Cows edited by A. James Arnold (Charlottesville 1996), The First Fossil Hunters seeks to identify the source of inspiration for mythical beasts. Mayor's work, however, is unique in examining the impact of the discovery of fossil bones of large extinct species on human cultures in antiquity. She argues that palaeontology, in a crude form, existed in the classical world, and that the accidental uncovering of giant bones compelled ancient people to create myths explaining their existence, "geomyths" as she describes them. Mayor uses convincing arguments to walk the reader through the palaeontological and literary evidence. Norman MacLeod, a palaeontologist at the British Museum of Natural History in London, has fittingly described this book in his own review as "one of the best non-fictional detective stories I've read recently." And it's true: although written as a scholarly work, Mayor begins with mythical creatures and stories and follows a trail of fossil clues from the Greek islands, the Black Sea, and farther east through the Tien Shan Mountains of Kazakhstan to the foot of the Altai Mountains of Mongolia. At the end of these ancient trade routes connecting the Greeks to eastern cultures lie the Siwalik Hills of Pakistan, a rich source of fossil bones from the late Tertiary period. It is along these trade routes that remarkable fossil beds would have been observed in antiquity, much as they are in plain view today. Here many giant, dragon, and griffin-like skeletons can be observed by the passer-by. Mayor makes a convincing case that these bones would not have been disregarded in antiquity, but rather, complex stories and myths were created to explain them. Classical authors, she argues, have made a considerable number of references to fossil bones in their writings, only that these references have been misinterpreted by classicists. A reasonable position to take, since classicists are no more equipped to interpret palaeontological evidence than palaeontologists are expected to be familiar with classical writings. To join these fields into one useful manual of classical palaeontology, Mayor adds appendices of both "Large Vertebrate Fossil Species in the Ancient World" (organized by country), and "Ancient Testimonia" (alphabetically arranged by author).

The foreword, by Peter Dobson, a respected palaeontologist, introduces the history of palaeontology, setting the scene for Mayor's examination of fossils in a classical context. As a student of palaeontology, Dobson was taught that the study of fossils began with Conrad Gesner, who in 1565 wrote De rerum fossilium "On Fossil Objects"). Even authors like Martin Rudwick in his Meaning of Fossils (London and New York 1972) attribute the beginnings of palaeontology to Gesner's work, neglecting to delve into the ancient world of fossil interpretation. Rudwick's work focuses on the history of palaeontology, a theme which should now be revised in light of Mayor's findings. Admittedly, Dobson oversteps his duties in his foreword by presenting Mayor's clever thesis on griffins in her first chapter: the fossil remains of Protoceratops, an extinct reptilian dinosaur, could have been the inspiration of the gold-guarding Scythian griffin. His intention is to discuss his contribution to the book through his extensive knowledge of palaeontological expeditions in the Gobi desert by the American Museum of Natural History. But in doing so, Dobson essentially defeats Mayor's 25 excitement-building pages leading up to her intriguing thesis about griffins. His discussion of the griffin hypothesis also results in repetition in the volume. Facts and evidence are, in general, presented repeatedly throughout this volume, but it is clear that the intention of the author is to allow chapters to be independent of each other as case studies, should readers wish to read on a single topic in the book at different times.
Mayor’s goal is clear: “to recover the long-neglected evidence of human encounters with fossils from the time of Homer to the late Roman Empire (ca. 750 B.C.—A.D. 500).” Her goal is admirably achieved, her scope extending even into modern times. She makes parallels between the classical and modern worlds to illuminate aspects of our own monster culture. In chapter 1, for example, she states that the Chinese traditionally refer to all fossil extinct animals as “dragon bones.” Of course the Chinese are aware of differences in species, but we, as Mayor points out, also call all large Jurassic/Triassic bones “dinosaurs” even though we are aware that all species are not “terrible lizards” (21). In chapter 6, she draws parallels to ancient human/animal composite hoaxes, like tritons, satyrs, and centaurs, to our modern composite hoaxes of mermaids, Bigfoot, and aliens (236). Mayor is thus successful in also showing the reader that the human fascination with monsters and tendencies to forge fakes and report sightings of strange creatures are timeless and part of human nature.


Mayor dives into her material in the first chapter with her most compelling hypothesis in the whole book: that Protoceratops, the most common species found in the deserts between the Tien Shan and Altai Mountains, is the likely inspiration for griffin motifs after 675 B.C. She also mentions Psittacosaurus as another local species possibly contributing to the griffin image. Both species are beaked and appear to have lion-like bodies six to eight feet long. A photograph of a Psittacosaurus specimen would have been helpful instead of a hand drawing of a skull (fig. 1.14). She shows with her use of maps that these fossils are abundant in the gold-mining regions of the seventh-century B.C. Scythians, and miners would have encountered the beaked skulls frequently. The combination of finds could have resulted in the myth of the gold-guarding griffins reported by Aristeas in his epic poem of 675 B.C. The fossil finds may also have been the inspiration for Aeschylus’s Prometheus Bound where Prometheus is chained to a cliff in Scythia, “a land of gorgons and griffins” (29). Mayor is convincing in her thorough account of all the paleontological and literary evidence, but does not address the Bronze Age images of the griffin methodically. While she mentions the Mycenaean and Near Eastern griffins in passing, she does not discuss the griffin motifs after the seventh century B.C., but griffins were very popular in the Bronze Age as well. How then can we be sure that the griffin was not borrowed from earlier representations, perhaps a renaissance triggered by Scythian folklore? The lamassu of Mesopotamia, geographically closer to these fossil beds, is a very popular creature in Iron Age Near Eastern art and architecture. Apart from the human head, the winged body of lions and bulls is reminiscent of a griffin-like composition. Did this motif play any role in the Greek griffins emerging two centuries later?

Mayor’s griffin hypothesis is convincing for the Scythian gold mining myths and the reports of Pausanias, Pliny Pomponius, Aeschylus, Aristeas, Philostratus, Ctesias, Herodotus, and Pliny. At least some of these travelers/writers would have seen evidence for the myths before accepting them, and fossils bones would have been very believable.

In the second chapter, Mayor deals with fossil beds in Greece, specifically the islands of Chios and Samos, and the Pekermi and Megalopolis deposits. In these deposits, fossil elephants, giraffes, and rhinoceroses are common. Mayor discusses geological processes by which these bones are preserved in these locations. I particularly appreciated her insight into taphonomic processes of fossils, how a whole heap of extinct animals is discovered in one deposit. Her explanations range from tectonic movements, to landslides either on land or into the sea causing a rush of water, pooling the animals together in one area, the changes in the Tethys Sea that once covered Eurasia for 150 million years, or forest fires that caused stampedes and strandings. She has clearly thought about these aspects of deposition. She mentions that Bos primigenius, massive prehistoric cattle, disappeared in Greece and Italy around 1850 B.C. We know, however, that this prehistoric cattle was the same species of the European wild auroch, the last of which was hunted in A.D. 1627 in Poland.

The third chapter again deals with giant bones, but this time, Mayor discusses the ancient discoveries of fossil mammoths, elephants, rhinoceros, and giraffes. She leaves no doubt that heroes and titans survived as giants in myths because of the discovery of massive bones. Mayor presents even testimony about giant bones having been unearthed and reburied with honors as hero/ancestor burials. We are reminded of the scene from Homer of the Trojan seer who advised the Greeks to fetch a huge bone of Pelops displayed at Olympia in order that the walls of Troy should fall (104). The Delphic oracle told the Spartans to find the large bones of Orestes if they were to be defeated by the Arcadian Tegea (110). Ajax’s giant bones were uncovered on the headland of Rhoiteum (115). More relevant myths are presented and are all geographically correlated with areas of Greece and Anatolia at which known fossil beds exist even today. The evidence is so clear that one wonders how these paleontological clues could have been missed in centuries of classical studies. From the Monster of Joppa (Tel Aviv) myth with Perseus/Andromeda to the Dragons of Chios described by Apollonius of Tyana, Mayor shows that these myths were not only fantastical accounts, but based on paleontological discoveries in these fossil rich areas.

Mayor reviews the iconographic representations and archaeological finds of fossil bones around the Aegean in chapter 4. The famous Caeretan column-krater (BMFA 63.420) depicting Herakles and Hesione confronting the Monster of Troy is the most compelling evidence that the ancients did notice and incorporate fossil finds in their oral and literary culture. The Monster of Troy represented on this krater has traditionally been interpreted as a feeble attempt to render a monster coming out of
a cave entrance, based on oral descriptions. Mayor, however, shows that the white-painted monster skull jutting out of a stone outcrop is a realistic rendition of a fossil skull of a Miocene giraffe with a broken premaxilla. The jagged teeth are much like the seladodont teeth of the giraffe in profile, and the jaw connects to the cranium with a morphologically correct mandibular hinge. The comparanda of fossil finds from archaeological sites is equally as useful in this chapter.

Chapter 5 discusses natural history in light of mythological tales. “Greek myth,” Mayor states, “is a complex skein of tales about the origins of the natural world and the history of its earliest inhabitants” (193). She continues to illustrate her point, referring to specific myths and their ramifications in the natural world. For example, myths of destruction like the Gigantomachy and the “burning fields” may have been inspired by the large fossil beds often located in lignite (coal) deposits (198). The flood myth of Deucalion may be another example of how large animals can become extinct and how they have come to be buried together in one place. Not all myths, Mayor accepts, refer to giant heroes or mythical beasts; some may attempt to explain life on earth or previous species no longer living. Writers such as Anaximander of Miletus, Empedocles, and Lucretius remarked on the fossil evidence of creatures no longer existing. Perhaps they are the real fathers of paleontology.

Finally, in the last chapter, Mayor presents the centaur and other composite human/animal creatures as hoaxes rather than interpretation directly from natural finds. Both Lucian and Aelian wrote of monster forgeries on display in the Roman world. A pickled triton on display in antiquity sparked much awe for a few centuries while it was preserved. Mayor suggests that it was a deliberate fabrication of two species sewn together (much like the centaur in the University of Tennessee’s Library at Knoxville). Peter Levi suggests that it may have been some mutation of nature preserved (232). From the ancient description of the remains and the story surrounding them, I believe that the remains were no more than a half-decomposed fish or cetacean, like the New Zealand Monster, once believed to be a survivor of the plesiosaur, which turned out to be a half-decomposed cetacean of about 10 m long. The photographs, however, fooled the world because plesiosaur features were clearly present in the remains of the creature.

This book is a pleasure to read and I recommend it to classicists and to folklorists interested in the classical world. The insight into human behavior is enough to attract anthropologists and laypeople to read this fascinating account of paleontology in ancient times. As the author states, “The desire to somehow bring vanished creatures back to life is an essentially human dream as ancient as Greek myths and as modern as Hollywood films about the lost worlds of dinosaurs” (227).

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Since 1992, the Wiener Laboratory has gained recognition as a promising research facility of the American School of Classical Studies at Athens. As a research institution, it organizes well-attended conferences which chart the growing impact of the natural sciences on archaeological research, especially in the eastern Mediterranean area. The proceedings in the volume under review belong to a series dealing with the comprehensive excavation techniques required for the recovery and treatment of organic and inorganic coarse finds, such as seeds, grass grains, ash, bones, glass, pottery, and building materials debris (also see S.J. Vaughan and W.D.E. Coulson, eds., Paleodiet in the Aegean [Oxford 2000]).

Scott and Gitin have collected the papers from a conference held in Israel, on the campuses of the Hebrew (Jerusalem) and Tel Aviv Universities in 1996. These studies bring to light the trends toward open investigation and reconstruction of past cultural and economic processes, founded upon high-standard interdisciplinary studies. In addition to the fundamental applications of chemical and physical investigation, taphonomy, petrography, and biology also play an extensive role, as in “The Application of Ancient DNA Analysis to Archaeological Problems” by P. Smith and others (71–3). Archaeobotanical and archaeobiological strategies combine archaeological awareness and up-to-date experimental techniques, and need to be integrated into excavation planning from the start.

The volume divides the studies into three comprehensive thematic sections: “Botanical Remains” (diet and agriculture), “Osteological Remains” (farming and burial), and “Geological and Other Material Studies” (construction and artifacts production). Changes in subsistence patterns, climatic variations, and alterations in the community structure can be inferred from the geographic and chronological distribution of bioarchaeological finds, and the diversity of species can be deduced if an orderly classification is envisaged. Such an approach is most appropriate in regions that are dry in summer and sustain high evaporation rate—the Middle East thus presents a trove of organic remains. This is particularly true for the contribution that archaeobotany can provide, when climate is favorable to natural carbonization processes. Durable preservation of the green parts of ancient plants is therefore ensured by their transformation in phytoliths. Their analysis and the ensuing reconstruction can rebuild former vegetal environments and past human-plant relationships: “The Contribution of Palynology and Anthracology to Archaeological Research in the Southern Levant” by U. Baruch (17–27).

Common features in the papers include discussions about accurate sampling, the recovery of all informative details, and the need to incorporate sampling into the
whole archaeological design. The studies stress how sampling and implementation are as fundamental as feasible. While the collected data produce valuable complementary ethnographic evidence, recovery methodologies that ensure basic quality and completeness of the sample assemblage, are available to the excavators at relatively low additional cost.

Most authors sketch the peculiarity of their investigative approaches, stressing aspects that are unique to the analysis of their archaeological materials, and warning about those anthropogenic and natural sources that might induce alterations on the constituents of the finds. As an example, recent advances in forensic anthropology and taphonomy show that recovery and documentation of skeletal remains can offer much more information than knowledge on age, sex, stature, and pathologies (e.g., D. Collins Cook in “Physical Anthropology in the Field: Recognizing Cremation, Defleshing, Exposure and Secondary Burials,” 43–6).

Regarding inorganic materials, the archaeological record can imply organizational relationships of contemporary crafts and industries. The authors suggest that systematic sampling and geological analysis of the site are important, especially if the data are to be exploited to infer reliable insights into spatial and diachronic patterns of technology and social developments. Sarah J. Vaughan, in “Contributions of Petrography to the Study of Archaeological Ceramics and Man-made Building Materials in the Aegean and Eastern Mediterranean” (117–25), cogently recommends that the analyst must be familiar with the geological setting and the materials resources of a site. Analytical results are greatly reduced when local geological conditions have not been fully explored before samples are brought to the laboratory and the excavation is closed.

Even when multidisciplinary advances in archaeological science and archaeology are predictable, it is important to develop and maintain an integrated and systematic framework for archaeological science, as archaeologists strive to blend contributions from different disciplines. From this viewpoint, the importance of this collection of papers is straightforward: they contribute complementary schemes of classification, specific to each discipline and they hint at standardized and integrated advances in methodology. The papers continually present not just measurements and other raw data, but also sampling procedures, methodologies for gathering results, and developments in technical terminology, as well as current references.

This collection, a useful source to archaeologists concerned with the Near East and the Aegean, is recommended especially to those specialists engaged in teaching field investigations.

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Andrew Robinson, author of The Story of Writing (London 1995) and an unproduced film script on the life of Michael Ventris entitled “The Boy Who Beat the Experts,” gives us now the full life of the man who deciphered Minoan linear script Class B. Ventris succeeded by using his distinctive intellectual gifts, his willingness to learn from others, his need for play, and his commitment to methods of architectural problem-solving known as “group working.” Robinson explains (160) that his book is not written primarily for scholars, but his account of how work on the decipherment proceeded in the crucial years between 1947 and 1952 is clear, insightful, accurate, and honest—and human. Of already published accounts, I recommend M. Pope, The Story of Archaeological Decipherment, rev. ed. (London 1999) and E.J.W. Barber, Archaeological Decipherment: A Handbook (Princeton 1974). Both do proper honor to Alice Kober’s contribution to the decipherment. Both set the Ventris decipherment alongside other decipherments of ancient scripts. Readers also should explore Robinson’s recommendations for further reading on Ventris’s personal life and architectural work (160–4). Any truly scientific account of the decipherment will be formidable even to specialized scholars. It will require detailed exegesis of Ventris’s “Work Notes” and the letters and papers and publications of his closest collaborators (Alice Kober, Emmett L. Bennett, Jr., and Sir John L. Myres).

Having been over the same ground and in contact with many of the same informants—including Prudence Smith, Oliver Cox, and Andrew Robinson—for my own work on Ventris, Kober, and Bennett (cf. T.G. Palaima et al., Unlocking the Secrets of Ancient Writing [Austin 2000]), I can attest that Robinson has made judicious use of the archives of Ventris and his contemporaries at Cambridge University, the Ashmolean Museum, the Institute of Classical Studies, and the Program in Aegean Scripts and Prehistory. Robinson’s achievement here is best understood by Oliver Cox, Ventris’s personal friend and architectural partner, and by Bennett, the professional scholar whose spirit of work and play—and isolation—brought him into close rapport with Ventris. Robinson makes clear that Ventris’s decipherment methods were not entirely logical. Ventris simultaneously used imaginative thinking, group working, and eventually the precise techniques of analysis that he literally learned from Kober and Bennett. By example, he also induced wary scholars to share their ideas openly with one another.

The myth that the decipherment was logical and inevitable grew up naturally in Ventris’s own succinct post hoc discussions and was canonized in John Chadwick’s The Decipherment of Linear B (Cambridge 1958). But Chadwick was never part of Ventris’s “Minoan Scripts Work Group” and was writing when the Ventris decipherment was under attack, often unconsciously personal, by scholars ignorant of the mechanics of syllabic scripts and
the history of writing (153–8). Robinson helps us to see the decipherment for what it was: a magnificent human intellectual feat by a genius who inspired awe and affection and who sought and ably used the help of others.

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EXCAVATIONS AT FRANCHTHI CAVE, GREECE. Vol. 12,
DEPOSITIONAL HISTORY OF FRANCHTHI CAVE:
SEDIMENTS, STRATIGRAPHY AND CHRONOLOGY, by

Franchthi Cave is without a doubt among the most important prehistoric cave sites in southeastern Europe, providing rich and detailed windows on Upper Paleolithic, Mesolithic, and Neolithic peoples and their environments in the southern Argolid. Beyond the wealth of archaeological and paleoenvironmental information yielded by the site, its importance grows with the steady stream of high-quality monographs that have appeared at an average rate of almost one per year since T.W. Jacobsen and W.R. Farrand published the first fascicle in 1987 (Franchthi Cave and Paralia [Bloomington]). William Farrand was one of the first practitioners and innovators in the field of geoarchaeology, and has consistently set the standard through a series of ground-breaking studies of cave sediments in France, southwestern Asia, and now Greece. His fascicle on the geoarchaeology of Franchthi Cave is thus a most welcome addition to the Franchthi library.

The monograph contains seven chapters and three appendices. The first four chapters provide background information about the organization of the Franchthi project (written by Jacobsen), excavation history, geological setting, and “lithostratigraphy.” Lithostratigraphy is a bit of a mouthful, but Farrand is at pains to provide as objective a description as possible without recourse to the biostratigraphic or ethnostratigraphic (a.k.a., cultural, historical, or typological) determinations of his colleagues. Each material type has its own story to tell; those hoping for a unified stratigraphic scheme will have to wait a little longer. Creation of a lithostratigraphy for the site must have been a Herculean task. Having joined the project only for the last excavation season (1976), Farrand had to contend with illegible and mobile unit labels on sections, field notebooks of variable quality and completeness, and the ubiquitous problem of correlating what was dug with what was drawn in section. Farrand used sedimentological analyses in the laboratory and radiocarbon dates to corroborate independently and test the validity of his lithostratigraphy. Many of the significant strata and sections are illustrated with photographs; further plates and especially color photographs would have been welcome. Nonetheless, the result is a convincing scheme of 15 strata for interpreting the sedimentary history of the site.

In chapter 5 Farrand presents his sedimentological analyses; he clearly describes his sampling and analytical methods, and focuses interpretation around issues of sediment source and post-depositional modification. Farrand’s analyses of sediment sources show that deposition in the cave was episodic, even catastrophic, as when an estimated 1800 metric tons of cave roof collapsed in the center of the cave beneath one of the “windows” at or near the end of the Neolithic occupation of the cave. Earlier episodes of bedrock collapse capped the top of Upper Paleolithic as well as Mesolithic occupations at the cave. While these rocky strata with little fine matrix resemble the *eboulis* sec formed in caves by freeze-thaw processes in cold climates, a genesis of such deposits in the southern Argolid is not plausible, even during the rigors of the last glacial maximum approximately 20,000–15,000 years ago. Farrand suggests earthquakes as the most likely cause of these rockfalls. In a rare moment of speculation, Farrand further suggests that the observation and memory of such geological catastrophes may have discouraged local people from using the cave for a number of generations, thus accounting for the apparent breaks in occupation that followed on each major rockfall episode. Human activities provide other important sources of sediment and their modification. Farrand suggests that land-snail shells are an important index of human activity at the site (making the assumption that *Helix figulina*, at times hyper-abundant, was a food resource) as well as source of sediment. In fact, many of the sand-sized particles in some strata derive from crushed snail shells, leading Farrand to run many of his granulometric analyses a second time on decalcified samples. Farrand thus uses a range of lines of evidence to begin to reconstruct the tempo and intensity of human activities at Franchthi Cave.

Farrand integrates the rich radiocarbon record from Franchthi with the lithostratigraphy and sedimentology in chapter 6. The 60 absolute dates (59 radiocarbon, one thermoluminescence) make Franchthi one of the most intensively dated prehistoric sites in Greece. Farrand uses the dates to show that his inter-trench stratigraphic correlations are correct. More significantly, he uses these absolute dates in conjunction with other indicators of depositional hiatuses to reconstruct sedimentation rates. The results are remarkable, showing that sedimentation rates varied from a quiet trickle of only 4.2 cm/100 years to a veritable deluge of 250 cm/100 years. High sedimentation rates are associated with other indicators of intense human activity during the lower and middle Mesolithic occupations; this correlation is not surprising, although the magnitude of the increase is. On the other hand, sedimentation rates during the formation of the snail-shell middens of the Upper Paleolithic were not particularly high. This observation raises further questions with regards to how and why such snail-shell middens were forming. If the episodic nature of human activities at Franchthi had not already become clear, Farrand provides a telling illustration at the end of the chapter (fig. 6.4): most of this timeline is taken up by hiatuses in deposition/habitation, regardless of whether one...
book reviews


The first part of the book begins with a summary section (7–8) dealing with clays, paints, and surface treatments, on the basis of which most pieces are assigned to one of six ceramic classes. Next comes a brief section on the vase shapes represented, open or closed, among which kraters predominate. Then follows the catalogue which is organized according to pictorial motifs with the vases in chronological order: chariots (34 examples), human figures (31), hunting dog (3), lion (1), bulls (60), deer (11), goat (11), hare (1), hedgehog (2), unidentified animals (58), birds (129), fish (23), octopus (45), and unidentified motifs (23). It may be noted that the material is mostly dated on stylistic rather than stratigraphical grounds, the find contexts providing no more than a terminus post quem non (15). The catalogue descriptions are in the main excellent and to the point.

Several pieces stand out: early (LH III A1) fragments of different vase shapes showing human figures (Mensch 1–3), krater fragments depicting rowers (Mensch 17 and 18), a horse rider shown next to a chariot (Wagen 7), or a human figure apparently being attacked by a (winged?) creature behind a chariot (Wagen 15), and an octopus stirrup jar decorated in the Close Style (Vogel 87). Also included are the intriguing jar fragments showing a chariot race along with a seated, probably female, figure holding up a kylix, that have already been discussed by Kilian and others (Wagen 17).

Omitted from the catalogue and illustrations but repeatedly mentioned later in the text are the fragments of a bull rhyton decorated with a procession of goats and a flute-playing “demon-like” creature from an early LH III C shrine in the Unterburg (252, 256, Ziege 56).

Each entry is illustrated by one or more scale drawings, presenting both profile and frontal views. Where possible, the drawings include helpful partial reconstructions of the original shapes and designs. Photographs are altogether absent, in sharp contrast to Tiryns 7 where the excellent photographs were supplemented by profile drawings of rim sherds and by only a few drawings of the decoration. The new book would have profited from the inclusion of at least a selection of photographs, partly in order to illustrate the fabric and surface finish or the three-dimensional curve of the fragment.

In the second part of the book the new Tiryns material is given its place alongside Mycenaean figure-style pottery, considering the entire sequence or just the Holocene portion of it. Farrand weaves these different arguments into a single narrative of the “Evolution of the Cave Filling” in chapter 7. This chapter is an excellent summary of the sedimentary history of Franchthi. It stands very well on its own if one does not have the time and luxury of reading the entire monograph.

Farrand has treated us over the last 12 years to occasional glimpses of Franchthi’s geoarchaeology through several preliminary articles, and it is a pity that the production of this fascicle was also episodic and marked by hiatuses. Nevertheless, the monograph was certainly worth the wait, and overall it is an excellent study of the geoarchaeology of Franchthi Cave. Using granulometric techniques and low-budget geochemistry, Farrand paints a convincing, well-documented, and well-supported picture of the history of the interplay between sedimentation and human activities at the site. Farrand by no means exhausts the list of “scientific” techniques he could have employed, and some researchers might find the study limited by its close attendance to traditional approaches and methods. In the present case, vive la tradition! By keeping it simple, Farrand’s study is cost-effective (in execution) and elegant, but most importantly, equally understandable to both specialists and generalists. Farrand’s study serves as an excellent introduction to cave geoarchaeology, and I would not hesitate to assign it in its own if one does not have the time and luxury of reading the entire monograph.

Like the earlier publication, the one under review has its origins in a doctoral thesis which, after having been reworked and shortened, was accepted for publication in 1990. Because of the untimely deaths of two editors of the Tiryns series, Drs. Kilian and C. Podzuweit, and for other reasons beyond the author’s control, it has taken another ten years for the book to appear in print. As stated in the preface, dated January 1995, studies on Mycenaean pictorial pottery published since 1990 have either not fully been taken into account or not considered at all. This applies in particular to The Mycenaean Geoarchaeology of Franchthi Cave. Using granulometric techniques and low-budget geochemistry, Farrand paints a convincing, well-documented, and well-supported picture of the history of the interplay between sedimentation and human activities at the site. Farrand by no means exhausts the list of “scientific” techniques he could have employed, and some researchers might find the study limited by its close attendance to traditional approaches and methods. In the present case, vive la tradition! By keeping it simple, Farrand’s study is cost-effective (in execution) and elegant, but most importantly, equally understandable to both specialists and generalists. Farrand’s study serves as an excellent introduction to cave geoarchaeology, and I would not hesitate to assign it in its own if one does not have the time and luxury of reading the entire monograph.

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pottery from earlier excavations at the same site as well as from other sites in mainland Greece, the Aegean islands, Cyprus, and the Levant.

First, there is an extensive discussion of the individual iconographical motifs and of stylistic developments in general. The latter are traced through seven chronological phases: LH III A:1, LH III A:2, LH III B:1, LH III B:2, end LH III B, early LH III C, LH III C:1, and LH III C:2. The latter phase is equivalent to LH III C Middle, a term used by P.A. Mounjoy and others. Some confusion exists as to the distinction between the stylistic phases “end LH III B” and “early LH III C”; while mostly treated separately in the book, they are grouped together on pages 332-3.

Güntner’s treatment of stylistic developments presents an important advance on the scheme presented by E. Vermeule and V. Karageorghis in their comprehensive 1982 study Mycenaean Pictorial Vase Painting (Cambridge, Mass.). There, the finds from Greece and those from Cyprus and the Levant were largely viewed separately, while here they are fully integrated, which results in a fuller picture within a revised chronological framework. Of note is the fairly large number of pieces from Tiryns and elsewhere that are attributed to early LH III C, apparently again mainly on stylistic rather than stratigraphical grounds. It is not made fully clear, however, how to distinguish early LH III C figure-style pottery from that of middle LH III C, the latter being a phase of increased production of often elaborately and imaginatively decorated pictorial and other ceramics, attested at Tiryns and elsewhere. Thus, we may question whether the attribution of certain elaborate pieces to early rather than middle LH III C is in fact correct. Such pieces are, for instance, the above-mentioned jar fragments with a chariot race (from an unknown find context in the Unterburg at Tiryns), chariot krater fragments (Wagen 23, from a middle LH III C context also in the Unterburg) and another krater fragment showing a fleeing deer (Jagd 2, from an unknown context at Tiryns). In this connection, no products of early LH III C have been identified among the two sizeable collections of pictorial pottery most familiar to this reviewer, from nearby Mycenae or from Euboea. None of the pictorial finds, however, from Tiryns is assigned by Güntner to late LH III C. In contrast, there are a few pieces from Mycenae and other sites in the Peloponnese which have been dated to this phase (see Mounjoy, Regional Decorated Mycenaean Pottery [Rahden 1999] figs. 58:439, 59:448, 123:132, 124:139, and 125:141–2).

A section on individual painters and workshops includes a well-balanced appraisal of earlier attributions. Particularly interesting is the discussion of the Painter of the Shield Bearers, known mainly from finds at Tiryns and Mycenae, and his “circle” (354–7). Among the newly proposed artists is the Painter of the Tiryns Sphinx, to whom no fewer than 11 pieces are assigned (357–8).

The next section, on the distribution of Mycenaean pictorial pottery, is accompanied by maps designed according to the stylistic phases identified earlier. After a brief summary, there are concordances relating Güntner’s list of motifs to earlier publications of pictorial pottery from Tiryns and to entries in that other standard work by Vermeule and Karageorghis.

Tiryns now firmly ranks first in terms of the amount of published Mycenaean pictorial pottery. The recently published results of neutron activation analysis of a selection of Güntner’s pieces confirm that many of the finds were indeed produced at or near the site and not at the other two major find places of this class of ceramics in the north-east Peloponnese, Mycenae and Berbati (H. Mommens and J. Maran, “Production Places of Some Mycenaean Pictorial Vessels,” OpAth 25–6 [2000–2001] 95–106).

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This volume brings together in English translation the work of nine Greek scholars at various stages of their careers, from Ph.D. candidates to senior researchers. Its aim is not to analyze but to inform: to draw together evidence from the Stone and Bronze Ages for craft items and how quantities of them were measured and recorded. This prosaic subject was in need of such treatment, and it is good to have the evidence for a variety of crafts drawn together in a single volume. At the same time, the efforts by several authors to reach the human mind behind the practical efforts of measuring and recording enrich the enterprise.


Marangou offers a useful theoretical discussion of the cognitive function of artifacts, and of basic forms of counting. She then turns to the realia of the Paleolithic to Neolithic periods, giving a thorough review of evidence from the Near East, Greece, and the Balkans. Also presented are the pros and cons of such theories as the use of clay (rarely stone) tokens in the Near East as a precursor of writing, to signify various commodities and tallies of them. Karnava explains why “klamasitograms” (script signs that occasionally follow numerical entries) on hieroglyphic documents are best understood as fractional signs. From this general relationship between the act of measuring and the act of writing as a means of recording measurements, Michailidou turns to their point
of intersection: balance weights inscribed with script signs. She discusses nine possible such artifacts from the Aegean (some more doubtful than others), and concludes from their rarity and the diversity of their shape, size, and inscriptions (in contrast to Egyptian and Near Eastern examples) that inscribing balance weights was not a regular practice in the Bronze Age Aegean.


Michailidou includes valuable comparative evidence from the Near East and Egypt for the values and quantities of different metals. A comparison between metals recorded in Linear B and those in circulation in LM IA Akrotiri sheds interesting light on the private sector of the Mycenaean economy that is not well represented in the texts. Dialismas recapitulates the Linear B evidence in more detail, and with good sense. Voutsa collects tablet references to 52 craft occupations (I count 47 in her discussion). It would have been helpful to give a table of the various terms and the site(s) where each occurs, on which part of her analysis depends (160). This could have included the partial information she does tabulate, sorting the occupations by their derivations (from raw materials, finished products, or tools used). Her decision (148 n. 16) to use the term “rations” for payments to all kinds of workers leads to some confusion, since the term is conventionally restricted to monthly allocations to fully dependent workers. In her short first chapter, Tzachili offers the interesting correlation that archaeological evidence for spinning and weaving is most frequent in Aegean island ports, and that the dependent textile workers in the Pylos Aa/Ab/Ad tablets also come from port sites (Knidos, Chios, Lemnos, etc.). Her conclusion (173) that the textile trade was exclusively intra-Aegean, however, will meet with some skepticism. This is one of only a few large-scale industries conducted and monitored in great detail by the palace administrations, and on a scale apt for long-distance exchange. Tzachili’s second chapter reaches only limited conclusions, but covers how textiles were grouped (by kind, quality, and color). The last two chapters include a fascinating array of information from archaeobotany and archaeozoology, as well as comparanda from the Near East and from classical Greece and Rome, to accompany the discussions of Linear B terms. Sarpaki also discusses various interpretations of debated Mycenaean Greek words, and offers four new ones (summarized, 235–6): that sa-so-men need not mean sesame; that ki-na-no is lebanum, a product of the rockrose; that sa-fi-dr are boxes of opium; and that po-ni-ki-jo is silk thread dyed with purple from the murex shell. The first two proposals are linguistically problematic, and the last seems difficult in that po-ni-ki-jo seems to be a raw material, not a finished product. Readers will form their own opinions, though, from the evidence presented. Trantalidou has fewer tablet references to work with than Sarpaki, so that the relevance of comparanda to Mycenaean society can be suggested but less often demonstrated.

The book ends with an appendix by A. Dialismas (“The Databases on the Quantities Recorded in Linear B Tablets”), describing the searchable database project that gave rise to this publication. The result (in Microsoft Access) will be a valuable source of information (for readers of modern Greek) on what commodities the tablets mention, and how their quantities were recorded. At the time of publication the project covered raw materials (only those certainly or possibly recorded by weight) and the finished products made from them. An extension to cover other goods will require further funding. The database also includes sections on bibliography and occupational terms. The project also has compiled a separate, more general database of bibliography on the recording of measurements (I assume this is what is meant by “the central aim of our research,” 323). Each chapter is provided with its own bibliography. There is an index of Linear B tablets, words, and logograms, but no general index.

The volume is extremely helpful, then, in focusing attention on the mechanics of counting, weighing, and recording quantities, and the cultural implications of choices made in this regard by the Mycenaean and other ancient societies. Beyond this, it will be useful chiefly as a repository of information, both about the commodities themselves and about their occurrences in Linear B. There is little analysis in some chapters, and conflicting views may be presented with little assistance to the reader in choosing between them. But the variety of information is interesting, and sometimes surprising: for example, evidence from Old Assyrian Kanesh leads to the suggestion that Mycenaean palaces controlled weapons production more tightly than other bronze working (92); the limited use of wool in Egypt should be considered in evaluating Aegean exports of this material (170–1); and Pylos and Mycenae deal more with exotic, imported condiments than Knossos (236). The range is so wide that all readers will find new things to learn, and perhaps something from their own knowledge to add. Let me offer an example here: there is, in fact, archaeological support (denied, 125) that the palace distributed alloyed bronze to smiths; LH IIIB smiths at Nichoria were remelting bronze, not smelting copper and tin (C.W. Shelmerdine, AJA 85 [1981] 319–25). This evidence supports taking ka-ko and its ideogram AES as bronze (with Dialismas) rather than copper (with Michailidou).

Along with these virtues, however, the book is marred by a disturbing number of inaccuracies, particularly in regard to Linear B data and their interpretation. A few examples in four areas will show where caution is needed.

Conventions. Dotted quantities are rarely noted, as are the brackets that indicate a word or number is or may be incomplete. Logographic conventions are also sometimes misused (e.g., coriander is quantified with dry measure symbols, so cannot be oil (216 n. 175); table 3 with nn. 4–5 misrepresents PO, which is actually an adjunct to the oil logogram, and thus quantities of oil on tablets Fr 1203

Oman is mostly known to scholars involved in Near Eastern archaeology as ancient Magan/Makkan, mentioned in different cuneiform texts. It was the region known for its copper production and as possible purveyor of diorite. But how many scholars know anything about its archaeology? Too often the varied and various material cultures of the Arabian shores of the Persian Gulf and Oman are not considered in most works dealing with the Near East. Ongoing research over a couple of decades demonstrates, however, the basic interest of this area, which was actively involved with trading and exchange activities between the Indus, Iran, Mesopotamia, and even beyond.

The difficulty of access because of the mountainous terrain hampers research, although in recent years numerous roads have been made, and villages are rapidly expanding, quickly destroying numerous sites. Since the 1970s different teams, local as well as foreign, have been trying to get a clearer archaeological picture of the different cultural developments that took place.

A German team, directed by Gerd Weisgerber, from the Deutschen Bergbau-Museum (“German Mining-Museum”) in Bochum has in no small way contributed to a better knowledge of Oman. Paul Yule, who participated in several expeditions, publishes now the results of this research in the Samad area, central Oman, between 1980 and 1991. The lavishly illustrated and well-documented publication is the result of Yule’s “Habilitation” thesis at Heidelberg.

In the Samad area 15 cemeteries were researched, containing 361 tombs to be dated in terms of Omani archaeology to the Wadi Suq (Middle/Late Bronze Age; mainly second millennium), Lizq-Rumeilah (Iron Age up to ca. 300 B.C.) and Samad periods (last centuries B.C./first centuries A.D.; roughly the Seleuco-Parthian and eventually Sasanian periods). Most of the tombs were badly robbed and several contained a mix of material of different periods. Of these periods the Samad is best represented by some 2,356 objects, Lizq by 168 items only, and Wadi Suq by 205, beads excluded.

Chapters include the history of research of the area, the environment, burial architecture, the finds, distribution and chronology, sexing and age determination as well as an historical-sociologic analysis. An elaborate descriptive catalogue of almost 200 pages is also included in the text volume. Numerous tables and charts accompany the different parts. Volume 2, with the illustrations, contains good drawings of all tombs and objects, as well as clear maps, a good range of black and white photographs, and some color plates of major objects.

Besides the fact that the book is written in German (but there are summaries, English in 7 pages, and Arabic in 6), which might unfortunately be a problem for some scholars, it is also far from user-friendly. There are no less than 224 different abbreviations, which have been used for different purposes, and no less than 2,214 footnotes, which is too much of a good thing. This publication represents certainly an enormous and painstaking work by the author, but it resulted in a rather hermetic text. Scholars interested in this area and these periods should, however, not be daunted too quickly, since it contains a wealth of information. In consulting it, take your time, make a photocopy of the list of abbreviations, and keep calm when you first glimpse the numbering and coding system. A separate user manual could have been useful in the introduction. The information on the applied system is indeed provided in the different chapters, but one has to search carefully for it and write it down, before forgetting it again.

Also, readers should not expect to find a clear presentation of which material belongs to which period. What differences can be traced in pottery or metal objects, one wonders? The reader is kept in the dark, hungry,
Although a simple visual presentation on separate plates of a theoretical burial assemblage for each period could have easily remedied this shortcoming. This would have been of great help, particularly for scholars who are not acquainted with the Oman material and who wished to see immediately a classification by period of the most typical objects. Material of some 2,000 years is presented now as a cocktail of 497 find-classes, and an additional 157 ones for the heads, which renders it difficult to swallow. Also, Yule follows an alphabetical order for the different categories of objects or types, which creates a strange presentation; why did he not make a much simpler division by material? On the other hand, a less confusing presentation could have been obtained by simply concentrating on the material of the Samad period and by eventually keeping the objects of the Wadi Suq and Lizq/Rumeilah periods for another publication.

Numerous tables are included in the volume, but once again several are so complex that one can doubt their functionality. A simpler presentation could have been much more relevant and easier to handle for the reader.

Also, I wonder why the author extends the date of the Samad period into the 10th century A.D., although there is no material to be dated later than the second, or perhaps even the third–fourth centuries A.D. The bulk of the Samad material is certainly of the first century B.C. to the first century A.D.; it can be dated by the imported objects, which came in during the heyday of international trade between East and West.

Yet, in spite of these criticisms, this volume is certainly a fundamental and most welcome contribution to the study of a remote and relatively little explored area, which is too often ignored. The Near East is larger than just Anatolia, Syria, or Mesopotamia.

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Originally delivered as papers at the AIA meetings in 1997, the eight contributions to this volume present studies of pre-monetary silver and its function, arranged in five subject areas: Iron Age Israel (E. Stern, “The Silver Hoard from Tel Dor”; S. Gitin and A. Golani, “The Tel Mieque-Ekron Silver Hoards: The Assyrian and Phoenician connections”; W.G. Dever, “The Silver Trail: Response to the Papers of Ephraim Stern and Seymour Gitin”); pre-monetary silver usage in Greece (J.H. Kroll, “Observations on Monetary Instruments in Pre-coinage Greece”); the concept of coinage and its relationship to the ancient Greek economy (B.M. Schaps, “The Conceptual Prehistory of Money and Its Impact on the Greek Economy”); early electrum coinage in Greece (P.T. Keyser and D.D. Clark, “Analyzing and Interpreting the Metallurgy of Early Electrum Coins”; R. Wallace, “Remarks on the Value and Standards of Early Electrum Coins”); and lead-isotope analysis of pre-monetary silver and early silver coinage in the Mediterranean (Z.A. Stos-Gale, “The Impact of the Natural Sciences on Studies of Hacksilver and Early Silver Coinage”). Published in an explicitly numismatic series, this volume may not attract the attention it most definitely deserves from archaeologists, ancient historians, and classicists, but the content is uniformly interesting.

The German term Hacksilver refers to scrap silver—pieces of broken bracelets, bits of ingots, attachments from earrings, sheet metal—which were valued by weight and functioned in silver payments before the invention of coinage. As Miriam Balmuth says in her preface (9), “The purpose of the colloquium [at the AIA meeting] was to bring together scholars who have been involved in the analysis and interpretation of evidence of the use of silver as monetary material.” As Balmuth notes, there are now more than 50 sites extending from Cyprus and Israel in the west to Bahrain and Media in the east, at which hoards of pre-coinage Hacksilver have been documented. The study of such hoards, combined with new thinking on the origins of coinage, led to the 1997 colloquium and the present publication.

Stern opens the substantive portion of the volume with his chapter on an 8.5 kg silver hoard found in a jar at Tel Dor (Israel) and dated, on stratigraphic and ceramic grounds, to the late 11th to early 10th century B.C. Happily for the archaeologist, not only was the hoard contained in a linen bag, sealed with a clay bulla, but the bulla was stamped with a scarab seal which had familiar Middle Bronze Age II designs. Atomic absorption analysis of silver (actually electrum, with at least 11% gold) samples points to the Rio Tinto mines of southern Spain as a possible source for some of the material, an observation which leads Stern to speculate on Phoenician silver production in Spain as early as the 11th century B.C.

Six more hoards from Israel are presented by S. Gitin and A. Golani, this time dating to the Iron Age. These hoards, found at Tel Mieque, the ancient Philistine city of Ekron, are extremely important, for they allow us to see just how variable the composition of Hacksilver hoards might be at one site and, more or less, at one historical moment in time. The percentages of Hacksilver, silver ingots, complete silver jewelry, broken or cut jewelry, and non-silver items varies considerably in each hoard (table 2.1). In raw, numerical terms, the hoards contain as few as 12 and as many as 786 pieces, and the silver weight ranges from 19 to 1419.6 gr. Interestingly, Assyrian sources record payments in silver to Sennacherib by a king of Ekron in 699 B.C. (37).

In his commentary on the papers by Stern and Gitin and Golani, W.G. Dever makes a number of interesting observations. For example, he refers to the long-standing debate over the means by which the Proto-Canaanite...
alphabet was spread to Greece, Sardinia, and elsewhere, in the context of the potential trade between southern Spain and the Phoenician east implied by the atomic absorption analysis of some of the Tel Dor electrum finds (49). Dever also notes that the concept of “Dark Age,” into which the Tel Dor hoard would surely fall, is being steadily eroded as more and more discoveries illuminate an era which, quite obviously, suffered as much from a lack of data as from the depredations of the Sea Peoples.

The question of provenance is the primary concern of Z. Stos-Gale in her paper on lead-isotope analysis of silver, lead, and Hacksilber from sites in Greece, Israel, Spain, Cyprus, and Iran. While controversial, these analyses suggest that at Tel Qudrack, for example, the silver in circulation may have originated in Greece, Spain, and Iran (72). Clearly the data must be interpreted with care, but the study is helpful in that it provides a wealth of material and brings together much of the work carried out in the past 20 years by N. Gale and Z. Stos-Gale.

In a wide-ranging and extremely stimulating paper, J.H. Kroll discusses Phoenician antecedents of the Eubo-

ic state; the more broadly Near Eastern antecedents for the use of pre-coinage silver in Greece; the Archaic Greek usage of iron spits as “primitive currency”; and the Saroni-

an laws in relation to silver usage. As Kroll concludes, “Like other influences from the East such as the alpha-

bet, the monetary use of silver was not so much adopted by the Greeks as it was adapted, as in the case of southern Greece where the monetary use of silver was adapted to a pre-existing value system based on iron spits” (88). Kroll’s paper is critiqued by D.M. Schaps, however, who rejects the notion that a bullion economy existed in Greece, “of the sort that we see in Mesopotamia and in Phoenicia” (95), in which silver was weighed, prior to the introduction of full-blown coinage. Rather, according to Schaps, “it was the inefficiency and clumsiness of utensil money for the growing internal trade that made coinage so attractive to the Greeks” (96), and “if there had been a fully developed bullion economy in Greece, coinage would not have spread as it did” (97).

The last two papers in this collection examine early electrum coinage in Greece. As Keyser and Clark point out, Pliny’s definition of electrum as gold alloyed with a minimum of 20% silver is problematic, given that “gold from the earth is a continuum ranging from mostly sil-

ver through nearly pure gold; one ought to speak of natural (or ‘native’) electrum, and only of ‘gold’ or ‘sil-

ver’ when it is artificial, i.e. when it has been purified or refined. Thus any ancient artifact described as ‘gold’ is probably not gold but is instead electrum” (105). The puzzle of the early electrum coins issued by Lydia is clear. The coinage contained what was to the consumer an indeterminate percentage of gold and silver (with copper added for hardening); the coins were thus “produced from a valuable material” (116), but one which the Lydian state overvalued (i.e., in relation to purer gold); and the coinage did not circulate outside of Ly-

dia. Taking these factors together, Keyser and Clark suggest that Lydia’s electrum coinage was issued by a “politically isolated state” (116, emphasis theirs), in effect, a cash-poor state, “to raise funds for a war effort” against the Cimmerians, thought to have been engaged in war with Lydia during the seventh century B.C. Thus, Ly-

dia’s electrum coinage was “semi-ficullary,” because it was “produced from a valuable material but one over-

valued by the state” (116).

As much of this explanation takes issue with two papers by R.W. Wallace (AJA 91 [1987] 385–7; JHS 108 [1988] 203–7), it is appropriate that he have the last say, although in his paper he does not engage Keyser and Clark, but rather ranges widely across a whole series of fascinating issues, from the differential silver; gold ratios of electrum in different times and places, to the rationale behind their weights. Indeed, Wallace investigates comparative metrol-

ogy and the logic of the electrum standard (14–14.2 g for a stater), drawing in a wide range of comparative evidence from both Greek and Near Eastern sources.

In conclusion, Miriam Balmuth has put together an extremely interesting collection of essays in this beauti-

fully produced volume that will be of interest to a diverse body of scholars with numismatic, metallurgical, archaeo-

logical, historical, and philological interests. There is much food for thought in this volume, and not a little controver-

sty. Let us hope that the studies contained in Hacksilber to Coinage find the wide audience they so clearly deserve.

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This study, the published version of the author’s 1995 dissertation (Freie Universität Berlin), is concerned with the origin and development of cylinder seals of so-called classic style belonging to Middle Bronze Age Syria and dated to ca. 1800–1730 B.C. The book presents a corpus of Syrian “classic” style seals (a term devised in earlier scholarly literature, 24–34), consisting of 479 seal imag-

es (363 seals and 116 ancient impressions). This work will be of particular interest to those who follow trends in ancient Near Eastern cylinder seal research.

Based on motif, iconography, and style, the seal im-

ages are divided into six main groups, presumed to be regional, and 27 subgroups (40–1, 109–59). Otto fURther divides the material into three chronological divi-

sions, Early (ca. 1830–1790), High (1795–1760), and Late Classical (1760–1730). Her work departs from earlier studies on MBA classic Syrian glyptic by excluding material uncovered by Sir Leonard Woolley from Alalakh level VII (1730–1650), which she attributes to a post-

Classical period.

The catalogue presents the seals sequentially in tabu-

lar form (70–108). Each entry provides the most accessi-

ble reference, material and size (when known), basic literature (when published), the provenience (if exca-

vated), contextual or dynamic dating (infrequently
known), inscription (relevant for 67 of the catalogued items, 13 of which are seals rather than impressions), and a brief but complete description.

Approximately one third of this corpus consists of excavated material from some 40 different sites, including Mari (35 examples), Tell Leilan (18 examples), and Kältepe (11 examples), and the majority of this glyptic material consists of ancient impressions. The most significant new material comes from the excavations at Tell Bi‘a (ancient Tuttul) in northern Syria (16 examples). Otto has been entrusted by E. Strömmer, the director of the Bi‘a excavations, with the publication of the glyptic material from this site, and we learn that some 100 individual seal images from a well-dated palatial complex of the early 18th century B.C. are to be included in Otto’s final publication (46, n. 214). Of the 16 images from Tell Bi‘a in this study (309–10), half are seal impressions not previously published. The others were included in various articles by Otto, especially the important “Local, Regional, and International Seal Impressions from the Palace of Šamsi-Adda in Tell Bi‘a/Tuttul,” in K. Van Lerberghe and G. Voet, eds., Languages and Cultures in Contact (Leuven 1999) 337–53.

The excavated material is discussed in two main ways: seals from contexts that provide chronological evidence (ch. 6) and seals from specific sites but without helpful stratigraphic value (ch. 7). In the latter category is placed Ugarit, for which Otto notes P. Amiet’s statement that none of the loci for the Middle Bronze seals from there provides a precise dating (63). In Amiet’s Sceaux-cylindres en hématite et pierres diverses (Paris 1992) 25–31, nos. 27–44, 18 cylinder seals were classified as classic Syrian. As only six of these are included in Otto’s study, an explanation of how this evidence was handled would certainly have been of interest. She mentions in her section on the formation of the corpus and the various groups (36–41) that after collecting as many of the relevant seals as possible, some were discounted because of their poor state of preservation or because they did not add anything meaningful to the specific groups (37, n. 190). An addendum of this excluded material would have been useful for future work and to understand that decision-making process.

Other seals of interest include ones excavated recently at Lidar Höyük (no. 141) and Tell Ahmar (no. 158) as well as seals that traveled far and were used over a long period of time. For the latter, contemplate the cylinder excavated by the Metropolitan Museum at the North Pyramid site of Lish near Cairo (no. 53) and those found in a Punic grave in Carthage (no. 367) and a Roman period grave in Georgia (no. 52).

The unprovenanced seals in Otto’s corpus are now in some 60 different museums and private collections. All of these have been published before except for one in Munich (no. 189).

The excavated glyptic for this period remains limited. One cylinder seal comes from the important site of Tell Mardikh (ancient Ebla, no. 182), discovered in 1992 and published in 1994; another from Ebla, published in 1994, is, however, excluded (H. Hammade, Cylinder Seals from the Collections of the Aleppo Museum 2: Seals of Known Provenance [Oxford] no. 35). Otto knows the Ebla seal and mentions it in another study (Abr-Nahrain 35 [1998] 120–34, esp. 125, n. 19), but when she was writing her thesis (1991–1995), perhaps this publication was not known to her. In any case, it appears that when she was reworking the thesis for publication (1998–1999), she added no more seals to her corpus.

In any case for Ebla, the reality as reflected in the published glyptic evidence of many decades of excavation is that far more MBA seals of the popular style have been uncovered there than those of classic styles. My own Ph.D. dissertation (“Old Syrian Popular Style Cylinder Seals,” Columbia University 2001), deals with 396 MBA Syrian seals of non-classic styles. There is an overlap of six seals between our two studies; one of these (Otto no. 6) is of hematite, not serpentine as originally documented, and I now agree with Otto that this cylinder rightly belongs to her elite seals, in part because of its delicate manner of carving but also because it is of hematite. Otto has a section that analyzes seal material by group (180–5), and she quantifies what has long been known for elite seals of the early second millennium B.C.: the majority of them are of hematite. An important contribution in this section is her reference to the recently documented hematite sources in northern Syria (186, n. 412).

Otto’s study discusses the iconography of various groups, and sometimes links them to provenience (109–68). For example Group 1, comprising 84 seals with four subgroups, is characterized only iconographically: small motifs in rows or columns divided by various rope-like divisions or guilloches. The first three subgroups of Group 3 are also iconographic: 3a, kneeling heroic figures with fantastic creatures; 3b, kneeling griffins and female figures with veils; and 3c, simple worship scenes. Subgroup 3d, however, is called northwest Syrian with complex representations. Other groups combine descriptive and geographic terminology (e.g., 2a, early north Syrian [Carchemish and Yamhad]; 2b, Carchemish court style; 5b, Qatna court style).

Since the core of Otto’s thesis revolves around these groups, the geographic specificity of some of them makes them difficult to accept fully. The most problematic group is the Qatna court style (5b), consisting of 20 seals primarily from the art market and one each from Tell Bi‘a, Mari, Jericho, and Karahöyük near Konya (145–8, nos. 375–94, pls. 30–1). Otto believes that these seals represent a fine court style distinguishable from the other groups ascribed to Mari, Aleppo, and Carchemish. Since there are many Egyptian elements in the group, Otto suggests a western location and picks Qatna, a major Amorite royal center of the early 18th century B.C. in western Syria, partly because no court style has hitherto been ascribed to it (one cylinder from the 1920s excavations at Qatna is attributed to her west Syrian Group 5c, no. 414). From Qatna itself, however, new glyptic evidence comes from recent excavations (M. Novák and P. Pfälzner, MDog 133 [2001] 185–90) and includes impressions with high quality, classic style Syrian seals, but none so far seems to belong to Otto’s Group 5b, the Qatna court style.

Though Otto finds attribution to carvers of limited value, she does suggest that two seals (nos. 340 and 376) might have been carved by the same hand, albeit placed in two different groups at two different courts (Groups...
BOOK REVIEWS

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Intensive archaeological survey in Greece has become an “archaeology of guilt,” as a second generation of surveyors attempts to meet the methodological expectations of survey’s “new wave,” fulfilling the prophecy of Cherry’s “Frogs Round the Pond” (D.R. Keller and D.W. Rupp, Archaeological Survey in the Mediterranean Area [Oxford 1983] 375–416). What may not have been foreseen two decades ago are the problems facing survey in a modern world. The mantra of inexpensive, administratively and logistically simple, nondestructive, and unobtrusive fieldwork had become quickly squelched by the high cost of projects (and the difficulty of securing long-term funding), and the complexities of fielding dozens of students and specialists (and multiple directors). Since the 1970s the political implications of a new awareness of the density of antiquities in the Greek countryside as well as the apparent seamlessness of the archaeological landscape have become central issues in an era of a rapidly expanding rural economies and an urbanized rural environment. The costs of survey to the researcher also have become costs to the Greek Archaeological Service, which courteously but cautiously accepted the responsibility (and expense) of overseeing the work, keeping track of and protecting the new sites, storing and caring for the finds, as well as weathering the resultant impact on the modern landscape—mediating between landowners, civic building projects, and the archaeologists themselves. Finally, the interdisciplinarity mingling of talents—geologists, soil scientists, environmental scientists, botanists, anthropologists, historians, archaeologists, ceramic and lithic specialists, and so on—during the fieldwork stage have become ultimately difficult to synthesize during the publication phase, presenting in many ways the same kind of delays in publication, paratactic presentation of data, and methodological schizophrenia seen in publications of large-scale multidisciplinary excavations. One has to admit that the survey publications to date, while excellent pieces of fieldwork, are generally not easy to handle—especially for one not trained in archaeology or survey methods. Their length, format, and self-conscious style may limit their potential use by more traditional classical archaeologists and historians.

Cosmopoulos’s The Rural History of Ancient Greek City States, presenting the results of the six-year intensive survey of the ancient Oropia in central Greece, must be read in the light of this changing modern academic and sociopolitical climate. The book effectively rides out the “new wave” of survey (and its myriad of problems) bringing us back safely to the shores of Greek history, emphasizing the importance and indeed imperative of continuing regional studies in Greece.

In a succinct and well-written seven chapters—in addition to an epilogue, site catalogue, and chronological tables—the book describes the topography, environment, methods and problem orientation of the survey, the character of the finds and sites, and the history of settlement in the region of Oropos. The brevity of the book (180 pages) may be one of its strong points. Recent survey publications try to do too much in too many pages, while the vision of the director, the problem orientation, and even the data themselves get buried or obscured in the dizzying array of specialist chapters, discourses on method, and diverse interests of various researchers. Cosmopoulos gets to the point throughout, never losing sight of his data, his main research questions, or his readers. The survey zone itself is also something of considerable importance, encompassing both the territory of a Greek city as well as a regional sanctuary, the Amphipreon, eliciting questions of rural responses to political and cultic socioeconomic systems. Cosmopoulos is interested in the area not as a bounded cultural region, self-contained political territory, or closed research universe, but rather as a complex cultural landscape affected by numerous and varied external political and economic factors.

Aply and unpretentiously titled, the book explores a small corner (some 22 km²) of central Greece that is a physical extension of Boiotia, a political extension of Attica, and an economic extension of the Euboian Gulf.
Cosmopoulos takes us beyond the myopic scope of survey’s microrregional focus and the inherent limitations of the research universe, requiring the reader to consider scale as the crucial variable in the collection of regional data and analysis of settlement patterns.

Early in the book (ch. 2) the author inserts a “Historical Outline of Oropos,” oddly before introducing any archaeological material at all. Most surveys to date have subordinated their “history” section, placing it in a chapter at the end of the book or even in appendices. With this chapter, Cosmopoulos sets the stage, emphasizing the area’s essential liminality. Sometimes part of Athens, sometimes part of Boiotia, and only occasionally independent, Oropos is perennially an extension of broader cultural and political landscapes. Cosmopoulos’s survey is thus the study of a cross-section of this liminal zone, a means of reading a complex landscape and the impact of changing and overlapping cultural and political spheres of influence.

In my opinion, the only weakness in this book is the brevity of chapter 1 on “Landscape and Environment.” This provides a nice overview of the physical terrain, vegetation, modern land use, and geomorphology, but makes little effort to relate these features and contexts to cultural landscapes or historical processes. In the book’s preface we get a sense of the changing character of the environment of Oropos and the impact of modern economic development; and in the chapter on methodology (ch. 4) we are given a perspective drawn principally from the *Annales* school, preparing us for the embeddedness of rural cultural systems in a dynamic and changing landscape. But in the end, Cosmopoulos’s view of the Oropia all but ignores the physical environment as a particularly important predictive variable in the analysis of settlement patterns or in the course of the settlement history.

For the author, inter- and extra-regional sociopolitical and economic systems (20–1) have guided both the interpretation of the data as well as his view of the human history of this region. While I am not disagreeing with Cosmopoulos’s refreshingly non-processual perspective here, I would have enjoyed a bit more descriptive detail on the landscape itself to get a clearer picture of the relationships between sites and soil types, and a better understanding of the potential impact on site recoverability. For example, while he assures his readers that there has been minimal site loss—given that the majority of sites are located in “young alluvial substrates” (23)—we are still given no clear picture of how the geomorphology relates to landscape stability, land use, or land-use and settlement histories, nor are we really given the tools to do this for ourselves.

The section on geomorphology (authored by Stene) is by admission of the authors only a preliminary handling of the material. But without a soil map or detailed discussion of differential agricultural potential, site-soil correlates, landscape stability, and hydrology, it is frankly impossible to relate the excellent overview descriptions of geology and geomorphology to a settlement history. Nomenclature is also a problem here: phrases like “base level control,” “lithologic resistance,” and “planation level” are meaningless as included without context and explanation for nonspecialists. Cosmopoulos’s assurances notwithstanding, I am still left to wonder, given the physical and geomorphologic diversity of the area, if the weak representation of Neolithic–Early Iron Age and Archaic sites may not be related to variable stability and productivity of soils selected for intensive use in certain periods.

The project’s theoretical and methodological frameworks are clearly and succinctly outlined in chapter 4. While the severest adherents of the “new wave” might not be satisfied with the survey’s handling of off-site material or the problem of visibility (scatters were painlessly designated either “findspots” or “sites”), they will approve of the intensity of field walking (15 m intervals) which was also adjusted for low-visibility environments. The chapter also brings to the forefront both the conditions of modern settlement in Oropos as well as the idiosyncrasies of the project’s field methods and sampling strategies which may have affected both recovery and interpretation of sites (23, 27). These issues are further explained in the “epilogue” at the end of the narrative (82–3), which offers an unusually detailed overview of practical and methodological problems encountered by the survey. Perhaps feeling the burden of the “new wave,” Cosmopoulos is evidently compelled to explain why he made the decision not to survey the entire Oropia or to collect and study post-Roman and recent pottery; why field walking was conducted to find sites, rather than to quantify sherd densities; why the on-site sampling was weighted toward flaked-stone tools rather than sherds; and why a comprehensive collection and museum-style study of the pottery could not be conducted (we are told that the fieldwork was carried out as a condition of a topographical survey permit, and only stone tools [evidently not ground-stone] and “special” artifacts could be collected and stored; pottery analysis had to be conducted in the field). Cosmopoulos bravely calls for greater flexibility in the Greek archaeological laws, perhaps allowing for collection, temporary storage, and then redeposition of survey finds.

Even though the discussion of pottery does seem somewhat less than that of the chipped stone in chapter 5 (“Findspots and Finds”), throughout the site catalogue there are excellent photographs as well as detailed descriptions of diagnostic pottery from each site. Cosmopoulos’s handling of the pottery is sophisticated and his definition and dating of sites is well argued. I especially liked his candid explanation and reflection on the potential problems in establishing the chronology of sites (esp. 23–4), not least of which is the inability of most researchers in Greece to handle local wares, coarse wares, and the large range of non-diagnostic fine wares, which has always seemed to me to be a bigger problem than quantification of sherd density, visibility, or even field-walking intensity. Perhaps in many areas of Greece extensive excavation should precede survey, instead of the other way around.

The implications of such problems, however, do call into question the comparability of survey data and emphasize the difficulties we face in the Aegean in trying to implement consistent field methods. Recognizing the diversity of physical environments, permit constraints, goals, and limitations of time, funding, and expertise, can we expect to conduct survey in exactly the same way in all areas of the Aegean? And if not, are survey results (and the uniquely complex narrative histories of each region) compara-
ble? I think that Cosmopoulos’s results in chapters 6 (“The Rural History of Ancient Oropia”) and 7 (“Conclusion”) demonstrate emphatically that they are.

The Oropia’s settlement patterns mirror the results of other surveys in Greece: an increase in settlement density from the Neolithic through Early Helladic, with a clear drop off in population by EH III–MH. The concentration of EH II sites on the coastal plain suggests the importance of exchange routes along the Euboian Gulf, while the lack of hierarchy in the dispersed pattern could indicate connections to higher-order centers outside the survey zone. Although Cosmopoulos is reluctant to call Lofos Taktikou a regional center in EH II, he admits the possibility that the site could be a gateway community for the receipt and redistribution of goods such as obsidian.

Unusual is the extremely nucleated pattern in Late Helladic. Although there is evidently a population increase from the Middle Helladic period, the relatively small number of rural Mycenaean sites and the overall lack of hierarchical structure suggest to Cosmopoulos both a low level of agricultural intensification (and extensification) as well as a low level of integration (73). He admits that the Mycenaean sites in the Oropia could have been commercial outposts of a Boiotian palace, bringing to the forefront again the issue of scale as a significant variable in reading the settlement patterns. The author’s lucid presentation of these formally different patterns make me wonder if the Mycenaean nucleation could actually be functionally similar to the dispersal of settlement of Early Helladic II—sites in both periods being connected to extra-regional settlement structures. In this case, the lack of integration that Cosmopoulos sees in his Mycenaean data may in fact be a sign of integration but simply on a broader regional scale than that included in the survey. This wider regional connectedness is perhaps reinforced by the extreme depopulation of the Oropia in the Early Iron Age, a wide-scale abandonment of Mycenaean sites that accords well with Foxhall’s interpretation of the Bronze Age–Early Iron Age transition in palatial territories (cf. BSA 90 [1995] 239–50). Cosmopoulos’s data fit the model well; we simply have to look outside the survey zone for the other parts of the structure, and consider nucleation and dispersal completely scale dependent.

Nucleation—to sites such as Skala Oropou—seems to be the pattern in the Early Iron Age in the Oropia. What is interesting here is that the pattern remained nucleated until the establishment of the Amphiraeion in the fifth century. The author links the process of settlement expansion to an intensification of land use driven by Athenian agricultural interests in the region, abated only in the Hellenistic period, when again external socio-political changes affected the local settlement patterns.

Cosmopoulos’s book is a welcome and significant contribution to a rapidly growing mass of survey data from the Aegean. As a representative of the “new wave” of survey, the scale and methods of the project differ markedly from that of many large mainland and Cretan projects, which have placed issues of visibility, intensity, and off-site sherd density as central in creating quantitatively comparable results. These methodological differences notwithstanding, Cosmopoulos’s field methods are clearly and carefully described and his data are presented with remarkable detail. The end result is a compelling narrative, a fascinating regional history of an important area of central Greece, which not only is immediately comparable to that of other regions, but also will be a fundamental source for both historians and archaeologists working in Boiotia, Attica, and Euboia.

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Cretan exploration has immense attractions; the surprises, which its little explored soil gives to anyone who seeks to open it up, are among the deepest satisfactions of one’s life as an archaeologist. (F. Halbherr, AJA 11 [1896] 537).

The AJA does not always review the first issues of a journal, but I think an exception is warranted here because Halbherr was one of the first Europeans to contribute to the AJA and in fact was among the first to contribute steadily to what is now without a doubt the leading publication in North America in archaeology. Creta Antica seeks to fill a void left by the passing of Dolf Hakkert, who held a Ph.D. in the Byzantine archaeology of Crete and edited the now moribund Cretan Studies, and to bring more information to the public on principally Italian excavations in Crete while awaiting fuller and formal publication.

The first volume of Creta Antica is a charming and disarming retrospective on Halbherr, which merits publication as a volume on its own so that it can stand alongside recent biographies of early giants in this field, such as Evans, Schliemann, Harriet Boyd, and others. The volume presents the Atti of a conference held in 2000 in honor of the centennial of the excavations of the Scuola archeologica italiana di Atene at Phaistos; the title of the conference, “La figura e l’opera di Federico Halbherr,” celebrated the founder of the Italian mission in Crete. Gentle persistence was among his best traits, as well as patience—16 years elapsed between his first visit to Phaistos and final acquisition of the site. Disarming anecdotes are retold of Evans, Halbherr, Hatzidakis, Xanthoudides, and others criss-crossing the island trying to establish rights to excavate in anticipation of Cretan independence. One forgets that Halbherr nearly acquired Knossos rather than Phaistos, and it often bears remembering that these men were quietly but decisively active in rebellion from the Sultan and in mosaic with Greece. Halbherr seems to have been a genuinely nice man, and so it is perhaps a bit unfair to be able to peer at some of his grammar school reports cards along with teachers’
The opening statements in the preface, declaring the author to have been trained as an architect in an engineering faculty, sets the tone for this modest and yet effective book. It analyzes the siting of classical architectural faculty, sets the tone for this modest and yet effective book. It analyzes the siting of classical architecture. Vitruvius's testimony requires more attention than it received; and there is no index. The chapter on drawing notation is therefore of great help in understanding Roman Crete as perspectives gained from earlier eras. More balance on other chronological divisions would be welcome.

The quote from Halbherr at the top of this review is to appear in the flyleaf to every volume of the series. It is truly emblematic of the man and of the series. Congratulations are due at its launch.

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The opening statements in the preface, declaring the author to have been trained as an architect in an engineering faculty, sets the tone for this modest and yet effective book. It analyzes the siting of classical architecture “from a technological and practical viewpoint,” in keeping with the premise that “it was essential for architects to decide the position, sizes and orientations” of buildings in a manner conducive to their execution by organized teamwork. Although the English expression has minor flaws, the meaning of the text is consistently clear, while its structure follows a sensible sequence. This begins with three chapters covering general background and scholarship (“Introduction,” “Previous Discussions and Their Problems,” and “Ancient Documents and Hypothesis of Planning”), moving on to the two main chapters of substance (ch. 4, “Axis and Alignment,” and ch. 5, “Grids in Sanctuary Complexes”), and finishing off with a complementary chapter (6) on “Grids in Single Buildings” and the Conclusion (ch. 7).

While the conclusions reflect the author’s background, they also conform to received wisdom about Greek and Roman planning in general, and that of temples and sanctuaries in particular. In Ito’s view the arrangement of buildings in Greece prior to the Hellenistic period, save for a few precocious exceptions (the sanctuaries of Aphaia at Aegina and of Poseidon at Sounion ca. 500 B.C.), tended to be “random,” “chaotic,” and “arbitrary” (22–3). This follows the judgments of scholars such as Lawrence, Robertson, and Wycherley, as typified by the latter’s statement that the “cumulative effect of a number of buildings, each a masterpiece of proportion and harmony itself was apt to be something of a jumble” (25).

In his introduction Ito may take care to note that “the lack of geometrical regularity does not mean there was no ‘planning,’” but in reality there is the danger that his relatively narrow definition of the symptoms of planning—orthogonality, axiality, alignment, and regularity—could leave out of the picture other kinds of intention. The main alternative interpretation that Ito considers is Doxiades’ proposal in favor of a polar system of planning, in which buildings would be disposed so as to take up certain privileged segments of vision (typically “pie-slices” of 30 or 36°), and certain privileged dimensions too, measured from the vantage point of a spectator emerging into a sanctuary from its main entrance. It is probably right to dismiss Doxiades’ specific version of view planning, but this does necessarily disqualify less dogmatic and more subtle observations (as made for example by Manolis Korres and Lise Bek, neither of whose work is mentioned), nor related issues that bear on the perception of architectural sculpture. Given that it used to be more popular than Doxiades’ book, at least in schools of architecture, a more surprising omission perhaps is any treatment of the enigmatic ideas promoted in Vincent Scully’s The Earth, Sky and the Gods (New Haven 1969).

There are other weaknesses of omission: Doxiades’ proposals are not repudiated on the grounds of accuracy (which in some cases could have been tested rigorously); Vitruvius’s testimony requires more attention than it received; and there is no index. The chapter on drawing and architectural technique misses some recent important publications: J. Heisel, Antike Bauzeichnungen (Darmstadt 1993); L. Haselberger, “Architectural Likenesses,” JRA 10 (1997) 77–94; Las Casas del Alma: Maquetas arquitectónicas de la Antigüedad (Barcelona 1996); also see a volume that has appeared post publication: B. Muller, ed., Maquettes architecturales de l’antiquité (Paris 2001);
and Filippo Coarelli’s intriguing suggestions relating to the siting of the Dying Gaul statue group in Pergamon (Da Pergamo a Roma: I Galati nella città degli Attalidi, with an appendix by M. Fincker, “Il diagramma inciso sul pilastro del Galata morente,” [Rome 1995]). Another cause for concern is the jump from the examination of Hellenistic sanctuaries (e.g., at Kos, Lindos, Magnesia) to those of the high Imperial period (e.g., at Aizanoi, Gerasa, Baalbek); this leaves out of account late republican and early imperial sanctuaries in and around Rome—and thus the major set pieces at Tivoli and Palestrina. Nor is there any treatment of Caesar’s Forum and the succession of imperial fora in Rome; even if they do not conform to the sanctuary type that is Ito’s main focus, they surely pertain to some of the themes that he develops.

The layout of Augustus’s Forum displays, in fact, an instance of just the kind of phenomenon that Ito highlights, namely the alignment of the front of the Temple of Mars Ultor with the central axis of the exedrae to either side, providing at the entrance into the temple a moment of revelation—in terms of both space and sculptural program. In collecting together various categories of alignment in the Hellenistic and Roman periods, chapter 4 of Ito’s book makes a definite advance clearly stated. He highlights not just axial arrangements of a relatively obvious kind (e.g., in alignment between temple and altar), but also oblique, frontal, and flanking alignments. Chapter 5 goes on to advance some convincing examples of grid planning, provided the reader gives the author the benefit of the doubt in some cases as regards the specific dimensions that he supposes to have been involved. These grids, ones based on large-scale rhythmic site-lines linked to the overall width or length of a temple, often convince at least in one direction (at Priene, for example), and sometimes in both directions (Kos, sanctuary of Asklepios; Gerasa). It may be that Ito sees a grid system where an ancient planner only had in mind more limited relationships, as where a temple is placed into a precinct three times its width, which is the same as saying that the temple and the space either side are equal. Nonetheless, the author is surely right to identify such tripartite schemes in sanctuaries like those at Magnesia and Aizanoi. It would have been instructive to have had an evaluation of the extent to which the phenomena described were representative of general practice (an issue that could have been tackled in appendices, perhaps by lists checking off some of the salient characteristics emerging from the main case studies). More use might also have been made of appendices in order to siphon off from the central text some of the more extensive coverage of dimensions, since it is a sure, if regrettable, fact that many readers “go blank” when faced by more than a few numbers in succession.

To some degree this book falls between two stools. With its selection of examples and its incomplete grasp of the bibliography it may disappoint the specialist; at the same time the general audience will miss discussions that seek to relate the art of formal composition to the orchestration of space and sculpture for programmatic and propagandistic aims. Yet in assembling clear analyses largely unhindered by polemical agendas or personal whimsy, Ito has provided scholars with a useful service, and he does succeed in raising issues that deserve to be verified or borne in mind when making future analyses of architectural complexes. It is most encouraging that a scholar from somewhere other than Europe or North America has been able to make such a contribution in spite of reduced research resources available for studying the classical legacy. Archaeologists and classicists who are not themselves specialists in architectural planning may well find here common sense conclusions that strike a happier chord than some of the more elaborate and at times contorted proposals to be found in the literature.

—Mark Wilson Jones


This volume, which initiates an entire series on Greek architecture by the same author, also serves as a successor to two still important but now dated studies: R. Martin, Manuel d’architecture grecque 1 (Paris 1965) and A.K. Orlandos, Les Matériaux de construction et la technique architecturale des anciens Grecs 1 and 2 (Paris 1966 and 1968). Throughout the text, Hellman makes clear her debt to these earlier works. Yet she also recognizes—and satisfies—the need for a book that incorporates more recent discoveries and scholarly contributions, while taking a comprehensive approach to the subject.

The volume is divided into four parts. The first, on the process of construction, benefits particularly from Hellman’s own previous research on inscriptions. Here her discussion ranges from the training and role of architects, to the cost and financing of constructions, the extraction and working of stone, and the materials and execution of the structure. Clearly, the content is not limited to materials and techniques, although these issues are addressed throughout, especially in part 4, on roofs.

The breadth of this book is also apparent from the subjects of the remaining parts: the architectural orders (2) and the various types of decoration (3). Even Hellman’s treatment of the orders is at least partly historical, although she does not ascribe to traditional evolutionary views. In each case the evidence for origins is explored and compared (unfavorably) with the statements of Vitruvius. For both Doric and Ionic she emphasizes regional variations and anomalies, thus assigning the Aeolic capital (with vertical volutes) to the chapter on Ionic and treating the Corinthian order and leaf-type capitals as variations of the two orders. Since she interprets (correctly, in my opinion) the Archaic anomalies as an indication that the architectural orders are still in the process of definition, but then traces their mixture from the second half of the fifth century, one wonders when, and if, the canonical orders actually existed.
In fact, much of the focus of this book is on material that, for typological or geographical reasons, often receives limited attention in handbooks. Thus, Hellman’s discussion of roofs includes, besides the better-known types, also those with lanterns, cones, and pyramids. She draws her examples from a wide range of sites, including the Cyclades, where she has worked extensively, but also Thasos and even Thrace in the north, as well as western Greece. Numerous references and copious illustrations aid the reader in understanding these monuments and the details discussed.

Although the broad scope of this book requires the author to rely heavily on the work of other researchers, she cites the latest sources and includes even unpublished articles and dissertations. This is particularly important for areas where scholarship and knowledge have increased markedly in recent years, as with arches and vaults or roof-tiles. The specialist may miss the detailed tables offered by Martin and Orlando, but this omission is offset by a very readable text and a well designed layout. Anyone interested in Greek architecture will certainly find this book useful.

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An iconographical study of Nike in the fifth century B.C. is timely because of the abundance of material now available for consideration, particularly in vase painting. Previous publications devoted to the topic were brought out mostly in the latter half of the 19th century, while in the 20th century she has been treated within a larger discussion of cult personifications, as a lexicon entry, or within a broader time frame. Thöne’s study is most welcome for its specific focus on the fifth century and for the author’s thorough examination of the numerous representations known today, as well as her proposed interpretation of Nike’s significance by the second half of the century in Athens, when democracy was the political structure.

This monograph for the Archäologie und Geschichte series is a reworking of her 1992 dissertation at Ruprecht-Karls-Universität Heidelberg. Thöne’s main inquiry concerns Nike’s meaning in the fifth century, especially in Athens, and how it is linked to the increased number of settings and themes in which Victory is portrayed. By turning to numerous representations on vases, Thöne establishes typologies that highlight the different roles Nike played in Greece during the time under consideration. Through this method the author investigates the transformation of Victory’s personification from the Archaic period to the end of the fifth century B.C., from a more restricted and formulaic representation to one with political dimensions.

The book is organized into 10 chapters, with a thorough list of vase representations, of which only a limited selection is illustrated. Her list is noteworthy for its comprehensive nature and for going beyond what is illustrated in LIMC; it also includes some unpublished material. The quality of the plates is very high, yet one wishes that more examples could have been illustrated.

Thöne begins with a brief discussion of literary sources and Archaic representations, before turning to the transformation of Nike from a more conventional form in the knielauf pose of the sixth century to an increasingly versatile and active figure shown in a greater variety of settings starting in the early decades of the fifth century. With the advent of democracy in Athens, representations of Nike assume a greater significance: a new emphasis is given to achieving one’s potential abilities. Victory’s presence can serve as a testament to that achievement, at the same time she can indirectly allude to one’s weaknesses—failure in attaining achievement.

Since the early fifth century, lyric poets had placed Nike in association with contests or competitions, whether for athletics, poetry, music or theater, but only rarely in a military setting. Thöne creates additional categories for her study of Nike, such as a sacred context, cult worship, mythological representations, participation in events with Olympian divinities, and political victory monuments, with these categories forming the subsequent chapters. Worth mentioning here is Thöne’s observation that it is Nike, by her presence, who functions as a guarantor of eternal glory within the sacred association. Also, in cult worship, Nike is not worshipped by herself but in her linked relationship to Athena, as with the Athena Nike cult on the Athenian Acropolis. In this latter context, according to the author, Nike would serve to glorify the ability and potentiality of Athens.

In turning to Nike’s connection with the political structure of Athens, Thöne observes a change from the first to the second half of the fifth century. Relying on preserved representations, Nike appears in a military milieu only in the minor arts in the private sphere. In contrast, the second half of the century can be characterized by more public art, particularly such sculptural monuments as the Nike by Paionios at Olympia.

From these investigations the author concludes that Nike’s presence in representations signifies the potential for successful accomplishment, not that she necessarily brings success by her presence. Furthermore, this personification of Victory functions as an active agent to effect victory in contexts associated with competitions. Glory and honor can be bestowed on those who attain their abilities, and in a similar vein, what applies to the individual can apply equally to the society at large.

In Thöne’s conclusion, she draws parallels between Nike and Eros—both winged figures share several traits. The author makes a compelling observation that representations of Eros also reflect a transition and development during the fifth century. In addition, to the cited oinochoe in Spina where the two winged figures appear together by an altar, it may be worth noting here that both deities are introduced as integral forces in the gi-

The Trojan War was one of the most powerful subjects for ancient Greek artists and poets. The *Ilioupersis* was particularly poignant in merging the horrors of war with the beauties of visual and textual representation. While the popularity of the iconography has been well attested and well studied, the relationship between Homeric epic and the beginnings of narrative art remains unsettled. The war, set in Asia Minor, engaged Greek memory both ancient and modern, both mythological and psychological. Even the modern Greek painter Theofilos depicted the heroic duel of Achilles and Hector with the walls of Troy as a theatrical backdrop. In his 1930 version the military garb of the Greek and the Trojan is nearly identical, and the same yet again as the painter himself was known to sport on occasion in imitation of Alexander the Great. Without the addition of the walls and the handy inscription along the painting’s upper border it would be impossible to determine an exact ancient moment in the mind of the modern painter, and how this cocktail of text and image might further be construed as a commentary on the present. In much the same way, it is text and image, narrative and landscape, memory and imagination that propel Hedreen’s new book.

From a basic scholarly perspective, this book is groundbreaking. Hedreen combines theoretical, art historical, and conventional classical approaches in his discussion of what some might consider a stale subject. Quite the contrary: moving beyond the what of iconography and the why of iconology, the author argues for a “cause-and-effect logic that governs the unfolding of the stories” (1). He is adamant in claiming a “distant and indirect” (2) relationship of visual and literary traditions, and dismisses strongly the assumption that painters and viewers learned stories from poetry. The elements of a particular story were not random or individual (he speaks little of the artists themselves), but function in an analeptic/proleptic interpretative framework. Thus, trees, rocks, altars, statues, and furniture signify specific settings or narratives, while alluding to others within the Trojan repertoire. They function not only in storytelling and composition, but also to link events temporally and spatially. The resulting case study sets out to prove how a definable system of iconography lends itself to explanation in multiple layers.

The chapters are organized by stories or clusters of stories, rather than by motifs. The best known themes are chosen as leaders: the Rape of Kassandra, the Death of Priam, the Game Table (of Ajax and Achilles), the Ambush of Troy, the Judgement of Paris. In turn these are bound to episodes (e.g., the Recovery of Helen, the Death of Achilles), to particulars of setting (e.g., sanctuaries of Zeus and Apollo), or to individual motifs. The chapter headings do not always make obvious exactly what is to come. For example, in chapter 2, “The Death of Priam, the Sanctuary of Zeus, and the Building of Troy,” there is a lengthy section entitled “tripods, palm trees, and altars.” We learn that the meaning of these individual motifs changes when shown solo, combined, or elsewhere. We are reminded of other places in the heart of Greece (Delos and Delphi) where these occur, and it is suggested that Troy may not have been the exotic setting we thought it was. A similar importance is attributed to the gaming table of Ajax and Achilles. It is associated with another piece of furniture—the voting table on which the fate of Achilles’ armor was decided—and may even be, according to Hedreen, the very same table transported from one story to another, from one vase to another. The conclusion in this instance might seem a little forced, and the use of archaeological evidence for support might have been expanded. The final chapter, “Setting, Character, and Action in the Judgement of Paris,” is an instance of saving both the first and the best for last.

Hedreen’s visual evidence is drawn primarily from vase painting, mainly Athenian, mainly red-figure. That being said, his inclusion of ancient textual sources is both useful and competent. However, when speaking about vases we hear little, if anything, about technique, style, shape, or scale of individual objects, and how any combination of these will have influenced and dictated a painter’s choices. Nor is there comment on attributed painters and groups, or the amount of attention given to Troy in their overall output. Vases and other arts produced outside Athens, revealing both Trojan and non-Trojan themes, are given minimal attention, if any at all. The Boeotian lekanis in the British Museum (B 80), showing what might be a local festival of Athena, seems relevant to the discussion of striding Athena figures (on Panathenaics and other vases) in relation to the story of Kassandra. It is highly appropriate that the recently discovered Gömüşçay sarcophagus depicting the sacrifice of Polyxena (fig. 37, *Studia Troica* 6 [1996] 251–64), as well as a

This second volume of papers delivered at the 15th International Bronze Congress contains 41 contributions, including 5 abstracts. As in the case of the first volume (rev. AJA 106 [2002] 337–8), all papers were accepted for publication, resulting in great variety of subject and approach. There is some chronological overlap with the subjects of volume 1; volume 2 starts with a paper on Late Iron Age Portugal (Judice Gamito) and extends to three contributions on Renaissance topics (Korshak, Cohen, Mendelsohn), and another on 19th and 20th century derivations from antiquity (Teegen). The preponderance of papers treat Roman subjects over a broad geographical range, with bronzes from eastern European (Poland, Bulgaria), Balkan (Slovenia) and North Pontic sites, as well as sites in Germany, Switzerland, Portugal, Spain, France, and Italy.

While the overall emphasis of the 13th congress was on large bronzes, that orientation is less evident than it was in volume 1. Most of the seven papers that treat large bronzes in volume 2 present fragments—or bases with vestiges of statues long gone (Treister). Nevertheless, contributions such as Parisi Presicce and Touchette’s paper on a Classical Greek bull from Rome, and A. Giuimilia-Mair’s explanation of production strategies for Roman equestrian statues demonstrate how much can be learned from parts of statues. Extrapolating from one type of appendage, Jurgeit identifies 14 life-size Etruscan hands as evidence of sphyrêlata. Da Palma and Fiorentino report on conserving two spectacular life-size heads from the group of hundreds of bronze fragments found in the sea near Brindisi in 1992. Oddy also discusses conservation and technical issues, in fragments from large gilded bronzes of the third century A.D. or before. Both papers include fine photographs documenting physical evidence of indirect casting, the technique that makes possible serial production.

Deriving dates and provenance for bronzes from compositional analysis is complicated by the ancient reuse of scrap metal. However, data on changing proportions of copper, lead, zinc, and tin in bronze alloys can be informative, as summarized by Giuimilia-Mair, in her own paper and in her supplements to papers by Plesničar Gec and by Sivec. Amid more complex analyses, Giuimilia-Mair notes that more lead was used in cast bronze, less in hammered, and that alloys rarely included zinc before the first century B.C.

The nine papers on statuettes and small sculptural objects highlight the critical importance of provenance and context. Contributions by Tykot, Prados Torreira, and Balmuth, by Maule, and by Warden entail scholars’ efforts to establish pedigrees for statuettes of unknown provenance in museum collections. Using established provenances, Pop finds such close parallels of form in objects widely dispersed about the Roman empire that he proposes toreutic series, evidently distributed far and wide. Kaufmann-Heinimann presents assemblages of lararia from known closed contexts, private and public. Sets of bronze vessels from sealed contexts (tumulus graves in Bulgaria) allow Nenova-Merdjanova to establish that several types of vessels, formerly considered tableware, instead should be associated with bathing and grooming. Tomasevic Buck’s classification of the vessel called atthêpsa, expands its usage to include personal toilette and medical functions. Contextual information enabled Dyczek to differentiate uses for small wooden caskets with bronze fittings from a hospital setting. The material on appliqués is especially rich, with papers on chariots (Pozo) and braziers (Erie Lacabe) decorated with bronze, as well as papers by R. Thomas and von Prittwitz und Gaffron on individual attachments, both of females.

Issues of authenticity appear throughout the volume. DePuma presents a fine exposition of forgeries of Etruscan mirrors, while Eisenberg identifies Etruscan repoussé reliefs in Munich and New York as 19th- and 20th-century fakes. Loomis’s abstract cites Entella Tablet VII as a fake. Balmuth and Tykot raise questions about the authenticity of two Sardinian statuettes, based on atypical alloys. The distinction between fakery and replication is not always clear, however, as shown by Teegen’s study of 19th- and 20th-century imitations of Roman brooches. More intriguing is E. Thomas’s suggestion of ancient
excavation depots, museum storerooms, and private collections (even if the rest of the amphora and other such coarse pots rarely won such preservation). Many collections have been published in much the same format as Jöhrrens presents here, though often with less detail or care (only the Latin stamps, nos. 888–894, suffer from insufficient bibliography). Even so, many modern scholars express uncertainty as to what can be done with these collections (e.g., J. K. Davies, “Hellenistic Economics in the Post-Finley Era,” in Z. H. Archibald, J. Davies, V. Gabrielsen, and G. J. Oliver, eds., Hellenistic Economics [London and New York 2001] 27–9; and V. Gabrielsen, The Naval Aristocracy of Hellenistic Rhodes [Aarhus 1997] 65). Jöhrrens provides an important view of the origins of this current problem and the documentation he provides for each stamp is thorough; the data, however, remain difficult to apply to broader issues of Hellenistic economic history.

Lolling was born in 1848, first traveled to Greece in 1872, and died there in 1894 shortly after leading an excursion to Salamis to view an archaic inscription (P. Wolters, AM 19 [1894] xiii). His earliest research was largely topographical (e.g., AM 1 [1876] 67–94 and 127–38). Indeed, Lolling’s handwritten guide to Greece has been transcribed and published recently by B. Heinrich (Reisenotizien aus Griechenland 1876 und 1877 [Berlin 1989]). Lolling was equally active in excavations, with work first as the German Archaeological Institute’s representative at Pergamon in 1878 (U. Jantzen, Einhundert Jahre athener Institut 1874–1974 [Mainz 1986] 17) and subsequently at Menidi, Nauplion, and Euboea (see Lolling, R. Bohn, A. Furtwängler, and U. Köhler, Das Kuppelgrab von Menidi [Athens 1880]; AM 5 [1880] 143–63; AM 8 [1883] 7–23 and 200–10). Epigraphical research, however, dominated his 22 years in Greece. His many epigraphical publications deal entirely with stone inscriptions, and yet at some point in his time in Greece he began to transcribe stamped amphora handles as well. Lolling eventually built a collection of 2,969 drawings of amphora stamps from handles collected by the Greek Archaeological Society during its excavations within the city of Athens as well as from other private collections and antiquities dealers.

Such a career was not unusual for his day. In 1886, Lolling’s younger contemporary, Carl Schuchhardt, copied roughly 900 stamps as part of his stipendiate year’s work at Pergamum. Schuchhardt, like Lolling, made extensive studies of the ancient landscape, but he then turned his archaeological attentions to Europe (H. Grünewalt, Das Altertum 33 [1897] 104–13). The combination of amphora stamps and stone epigraphy emerged clearly at this time both with Schuchhardt’s contribution to Inschriften von Pergamon 8, ii and with various corpora of Greek and Latin inscriptions that included “inscriptions on clay.” Publications of the texts of amphora stamps began to appear already in the late 1830s and became relatively common by the 1870s (Jöhrrens provides many of the references; see, too, references in Y. Garlan, Amphores et timbres amphoriques grecs [Paris 2000] 11–32; A. Bon and M. Bon, Les timbres amphoriques de Thasos [Études thasiennes 4; Paris 1957] 49–55; and JG 12.8, 82-3).

The immediate effect of this interest in the texts of the stamps but not in the pots themselves is seen most clearly in the illustrations in these early publications.
The stamps themselves are drawn with great care. Even in Lolling’s sketches, despite errors in readings, the particular stamp die in question can often be determined from the drawing. The carefully rendered engravings that illustrate Albert Dumont’s influential *Inscriptions céramiques de Grèce* (Paris 1872) show what such sketches could lead to. And yet, the illustrations of the jars themselves in Dumont’s volume are hardly comparable (the illustration of a “Rhodian amphora bears a close resemblance to Dressel form 6). A similar impact is seen in J.H. Krause (Angiologie [Halle 1854] 200–7) and S. Birch (History of Ancient Pottery, rev. ed. [London 1873] 134–43) where discussion of commercial wine jars concentrates on the stamped handles with minimal attention to the shapes of the vessels themselves.

There is no risk of exaggeration in projecting this impact directly to the modern tendency to inventory and publish jars from before ca. 400 B.C. but only stamps after that date (there are exceptions, of course). As a result, for the nonspecialist amphoras have become synonymous with amphora stamps. Much of the recent commentary on the use of amphoras as a source for economic history addresses, instead, the use of amphora stamps. While there is acceptance of the idea that some Rhodian and Knidian jars were not stamped (Davies 2001; Gabrielsen 1997), there is scant recognition among ancient historians of the fact that many Aegean amphora producers, even in the Hellenistic period, rarely or never used stamps.

The background of this current state of affairs is clear, and Jöhrens has brought the primary evidence for these origins very accessibly to modern readers’ attention. And yet, what is one to do with these data? Lolling may have intended his documentation to be further evidence toward determining why the jars were stamped, developing the history of various magistracies and calendars, and documenting broad patterns of ancient commerce. At any rate Dumont, one of Lolling’s models (noted by Jöhrens, 1), took these as the major issues for stamp studies (1872, 50–47).

Jöhrens himself keeps any further interpretation of the collection to the barest minimum (5–7). The dominance of Knidos in Lolling’s records is entirely in keeping with other Athenian, Delian, and Tenian collections of stamps. Rhodes and Thasos hold second and third ranking for Lolling’s group as they do elsewhere in Athens and at Delos and Tenos.

And yet these points of similarity are misleading. In so far as one might use Jöhrens’s selection of examples from Lolling’s collection (894 out of the original 2,969), there are significant differences between the statistical patterns in Lolling’s collection and patterns from specific excavations. For example, one can compare the numbers of Knidian stamps per periods III, IVA, IVB, V, and VI in Jöhrens’s catalogue with similar data from the Athenian Agora and the Kerameikos (as reconstructed from C.G. Koehler and F.M. Wallace Matthesen, “Imports of Knidian Wine at Athens and Corinth,” *The Amphoras Project*, a Web site [http://www.chass.utoronto.ca:8080/amphoras/ aaia00.htm, last accessed 29 October 2002], graphs “Knidian Imports into Athens: Agora” and “Knidian Imports into Athens: Kerameikos”). While at both the Agora and Kerameikos only 30% of the Knidian stamps fall into periods III–V, Jöhrens’s catalogue has 75% within those periods. The two samples provided by the Agora and the Kerameikos are not significantly different from one another in terms of the distribution of Knidian stamps through these periods. Lolling’s collection, however, is completely different. J. Lund (“Rhodian Amphorae in Rhodes and Alexandria as Evidence of Trade,” in V. Gabrielsen, P. Bilde, T. Engberg-Pedersen, L. Hannestad, and J. Zahle, eds., *Hellenistic Rhodes: Politics, Culture, and Society* [Aarhus 1999] 197–8) has demonstrated the same problem in comparing excavated Rhodian handles from Alexandria with the patterns seen in “collections.”

As documentation of the origins of modern Aegean amphora studies, this book is extremely useful. The thoroughness of the catalogue entries makes this an invaluable resource for research on particular stamps (brief lists of corrections are provided by Y. Garlan, *REG* 115 [2002] 158; and N. Conovici, *Gnomon* 74 [2002] 434–5). As a tool for the economic historian, however, this collection should be used with caution.

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This is the catalogue for an exhibition devoted entirely to the city of Ostia, the port of Rome. The exhibit was organized jointly by the Soprintendenza per i Beni Archeologici di Ostia, L’ Unité d’ archéologie classique de l’ Université de Genève, and the Musée d’art et d’histoire, Geneva. The expressed hope for this volume is to serve not simply as the catalogue for a museum exhibition, but as a major work of reference on Ostia—in that, it is singularly successful since it summarizes the current state of work on the port of Rome. While the volume has been written by, and for, those who specialize in Ostia, there is nonetheless something here for everyone, no matter what approach to Roman archaeology one espouses. As Pliny the Younger said of some books at his Laurentine villa (appropriately enough, located not far from Ostia), this is a book “which should be not just read but studied.”

The book is divided into 10 sections: “History of the City and Port,” “History of Discovery and Research,” “Urbanism and the Techniques of Construction,” “Public Life and the Professions,” “Private Life, Habitat and Daily Life,” “Religious Life,” “Sculpture, Painting and Mosaics,” “World of the Dead,” and the catalogue. Though several of the contributions are republications of studies that appeared elsewhere, there is virtue in presenting a unified volume of important recent papers on Ostia so that they could be appreciated together. It is also advantageous for contrib-
In a short review, it is impossible to do justice to the variety of contributions; I therefore focus on highlights (including the excellent illustrations that grace the volume). The opening section gives an excellent summary of the issue of origins and early development of the city. Contributions by F. Zevi (3–19) and A. Giovannini (36–8) provide the evidence that suggests that Rome (via the appropriation of the territory and salt resources of Ostia) truly was a gateway city, as the term is used in urbanization studies—a city flourishing in response to increases in trade and standing on the fringe of an existing network of exchanges between Etruscan and Greek urban centers. The second section on the history of research is informative, singling out V. Kockel on Ostian buildings and Italian architecture of the Fascist era (66–73). This study presents a convincing sociological argument for why ancient and modern Italian buildings resemble one another (note how the reconstruction Ostian buildings gets higher, i.e., I. Gismondi’s taller second House of the Thermopolium, figs. 2–3 [68]). F. Zevi (114–120), P.A. Verducchi (131–6, greatly enhanced by figs. 1–5), and G. Boetto on preserved boats at Fiumicino (121–30) provide an excellent overview on port and transport issues; Zevi and Verducchi clearly delineate the character of the Claudian and Trajanic ports, and Boetto gives a good précis on the neglected topic of the nature of the transports that unloaded the seagoing ships and took cargo up the Tiber to Rome. A. Schmölder presents the water delivery system (excellent maps, figs. 1 and 3); G. Poccardi discusses baths in a summary that is not only useful for Ostia but also for Roman baths in general (with excellent plans, figs. 2, 3, and 9). A. Gering on private space (199–211) and T.L. Heres on rental properties (221–9) give praiseworthy versions of “household archaeology.” C. Pavolini (212–20) discusses common ceramic wares and asks whether the interregional appearance of similar common ceramic forms results from simple borrowing, modeling, or “true commercialization” (i.e., the direct choice of copying or adapting forms, a consequence of deliberate marketing strategies). C. Liedtke points out how the decoration of secondary rooms in maeniana ground floor apartments was strikingly standardized. The last section on funerary questions is worthwhile reading, both specifically for Ostia and on Roman burial practice as a whole.

Although the exhibit itself was small, the items were well chosen to illustrate effectively a cross-section of life in port cities. And, as noted by the organizers in the introduction, only two pieces included were “masterpieces,” the rest simply ordinary objects of daily life. The inclusion of the “Forma Urbis” (cat. IV.1) and a relief of Portus (cat. IV.3) documented two critical pieces of evidence for the nature of the ports and Roman urbanism in general.

The layout of the volume and its illustrations (especially the maps that accompany the separate studies) are all excellent. Footnotes and the bibliography are comprehensive and informative, offering many details for the specialist. One desideratum would have been to have marked all the places discussed in the papers on the fold-out map; without mapped locations even specialists will be hard pressed to recall exactly the locations described, and those not intimately familiar with the ruins of Ostia will find it difficult to visualize the spaces discussed.

Perhaps it is time to stop searching for the successor to R. Meiggs’s Roman Ostia (Oxford 1973) and simply appreciate each new major contribution on its own terms. This outstanding volume rightfully takes its place at the forefront of recent research focused on the port and gateway of Rome.

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This beautiful and well-researched volume follows the publication of 40 pieces in Greek Sculpture in the Art Museum, Princeton University (Princeton 1994), which resulted from a graduate seminar held in the Department of Classical and Near Eastern Archaeology at Bryn Mawr College, directed by Professor Brunilde S. Ridgway. Together, these two volumes provide a welcome, up-to-date view of sculptures in the Princeton Art Museum, replacing Frances Pollin Jones’s Ancient Art in the Art Museum (Princeton 1960).

In the foreword, Padgett reviews the history of the collection and the use of the word Roman in relation to it. He argues in favor of including all sculptures of Roman date in such a catalogue, with attention to their Roman context and country of origin. This volume comprises sections on portraits, deities and ideal types, animals, sarcophagi, sculpture from Antioch, grave stele from Antioch, Hauranite sculpture, Palmyrene sculpture, and Etruscan sculpture, and finishes with an addendum that presents three pieces of Greek sculpture acquired after the aforementioned Greek catalogue appeared. Excluded are: Cypriot sculptures, which will appear in a fascicle of the Corpus of Cypriot Antiquities (SIMA); most Byzantine sculpture, which appeared in the exhibition catalogue Byzantium at Princeton, edited by S. Ćurčić and A. St. Clair (Princeton 1986); architectural fragments from Antioch and Sardis; carved gemstones; ivory, bone, and amber carvings; terracotta sculptures; small bronzes; and modern fakes and dubitanda, which include the bust of Caracalla (inv. 51–72), now recognized as a work of the 18th century.

Princeton’s catalogue of Roman sculptures treats 163 pieces. Among entries written in very different styles,
those by M. Fuchs stand out as exemplary for their scholarly interpretations. Each piece is illustrated with consistently high quality photographs, many with two, and even some with seven photographs. Most are of white marble (some identified as Carrara or Luna, Dokimeion, Parian, Pentelic, and Proconnesian), some exceptional pieces are in bronze, and others are made of brown basalt, giallo antico, gray marble, and white and gray limestones, with a few unusual pieces in alabaster, chalk, gypsum plaster, and brown volcanic stone (nienfrö); the collection thus provides a representative view of materials employed for sculpture. Particularly important are sculptures found by Princeton-sponsored excavations in Roman Syria—at Antioch, Palmyra, and in the Hauran—many published here for the first time, with an emphasis on the archaeological context, where possible. Introductory essays to the sections on Antioch, Antiochene grave stelae, and Hauranite basalt sculpture from southern Syria provide excellent background for understanding statuary from these areas. An introduction to Palmyrene sculpture and reference to publications about Palmyra and its sculpture would also have been useful.

Throughout the volume, remarks on technique are useful, such as indications of ancient reuse and ancient piecing or repair—an index of these would have been helpful. No. 49 once had a separately attached veil, and no. 163, a Potemianic piece, is said to be of Egyptian origin because of its small size and piecing, although Hellenistic Delos has produced numerous examples of pieced sculptures (cf. J. Marcadé, *Au Musée de Délos* [BEFAR 215] Paris 1969). Similarly, concerning the remarks for no. 3, Roman reuse of sculptures from an earlier period does not occur exclusively in Egypt; reuse is more likely to reflect Roman economic conditions than a shortage of marble. Examples of such reuse come from Corinth, Crete, and Olympia (C.E. de Grazia, “Excavations of the American School of Classical Studies at Corinth: The Roman Portrait Sculpture,” Ph.D. diss., Columbia University [1973] 286–95, nos. 90–5; M. Weber, “Sabina aus Gortyn: Portrait Sculpture,” Ph.D. diss., Columbia University). Introductory essays to the sections on Antioch, Antiochene grave stelae, and Hauranite basalt sculpture from southern Syria provide excellent background for understanding statuary from these areas. An introduction to Palmyrene sculpture and reference to publications about Palmyra and its sculpture would also have been useful.

In summary, this volume on the Roman sculptures in the Art Museum of Princeton University is handsomely produced and contains much good research and analytic discussion. The Princeton museum possesses an important collection of classical sculpture, and it is well served by its two recent volumes.

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Roman art has long been classified as class conscious. Sponsored by men and women of sundry social and ethnic backgrounds, the art of Rome was undeniably shaped by the societal rank of its patrons. It was the eminent Italian scholar Ranuccio Bianchi Bandinelli who, already in the 1960s, coined the terms “patrician” and “plebeian” to distinguish the varied art commissioned by aristocrats and freedmen and set in motion an assiduous quest to characterize the latter.

Prior to that, privileged Romans reigned supreme. The history of Roman art was the history of art commissioned by elite Roman emperors and other noble Roman families. Bianchi Bandinelli unleashed the Roman proletarian art, and what followed was an international obsession with the art of the dispossessed—slaves brought from foreign lands and the Italian poor. As those individuals and their art were revealed, it quickly became clear that while their monuments often mimicked those of their Roman social
saviors, they partook of their own traditions and distinctive artistic predilections.

The art honoring Rome’s slaves and freed people was above all sepulchral—marble memorials situated on the facades of and inside tombs and carved with portraits and figural scenes. These grave monuments preserved the features of the deceased for posterity and accompanying Latin epitaphs memorialized their family relationships and professional accomplishments.

Henning Wrede has been one of the foremost contributors to understanding this nonelite group of Roman patrons, publishing notable articles and books on portraits of departed persons reclining on funerary beds (AA [1977] 395–431; [1981] 86–131), residing in tomb pediments (RM 78 [1971] 125–66), and assimilated to divinities (Consecratio in Formam Deorum [Mainz 1981]).

Wrede has now turned his attention back to the Roman elite but not as a monolithic phenomenon. He draws a distinction among art created at the behest of emperors, senators, and equestrians. This is not a new approach. Already in 1966, F.J. Hassel (Die Trajansbogen in Benevento [Mainz 1966]) presented the Arch of Trajan at Benevento as the product of a senatorial workshop, and other scholars have followed suit.

Yet Wrede’s tactic is different. He eschews arches and other great state monuments in favor of private senatorial funerary commemorations, namely stone coffins carved with figural scenes and portraits. The book’s subtitle, “Der Beitrag des Senatorenanstages zur römischen Kunst der hohen und späten Kaiserzeit,” underscores the author’s intention to focus on art as self-representation among the senatorial class and its effect on the art of Rome and the provinces.

Wrede’s theories about Roman senatorial art are predicated on the change in the senate’s status beginning in the third century. Under Augustus, the senate retained its position as Rome’s most potent and significant legislative body. Augustus pared the senate’s size and raised the level of resources needed for membership. He also strengthened a son’s hereditary right to follow in his father’s senatorial footsteps. Furthermore, Augustus fortified the emperor’s right to adlect new men into the senate, invigorating his own powers of patronage.

New men continued to be inducted in the first and second centuries, increasingly from the provinces. By Severan times, nearly half the senate had non-Italian origins. Senators retained significant power in the second century and emperors without sons even selected senators to succeed them.

As Wrede points out, all of this changed in the third and fourth centuries. Third-century emperors came and went and, by Tetrarchic times, Rome’s supreme leaders did not even live in the capital. Some senators were demoted to equestrian status, the two ranks began to blend, and the senatorial title was increasingly granted to military men. Augustus’s senate of 600 men grew to around 2,000 in the fourth century. In addition, Constantine founded a second senate in the empire’s new capital at Constantinople, which also had about 2,000 members. Patricians served in the senate check by jowl with military men of humble origin. While this might seem refreshingingly democratic, it actually paved the way for the emperor’s acquisition of awesome imperial authority, without the senate’s earlier checks and balances.

As these new senators looked for ways to memorialize their new-found prominence in art, they were first drawn to the earlier visual vocabulary of Antonine and Severan Rome’s senatorial elite. This featured the vita humana of a Roman aristocrat on sarcophagi—battles, weddings, and the birth and education of children—and reached its apex under Gallienus. The second and early third-century examples are part of a subset of surviving Roman coffins, which Wrede associates with senatorial patrons. He bases his hypothesis on a smattering of epitaphs and the coffin’s subject matter (generals in battle and senatorial processions), a cache of sarcophagi belonging to the patrician family Calpurnii Pisones, and the relief depictions of such senatorial paraphernalia as the sella curulis or sella castrensis.

Wrede treats a suitable succession of topics in part 1: the interest and relevance of the book’s subject, scholarship to date, and methodological challenges in identifying senatorial sarcophagi and discerning senatorial status symbols and other imagery. Wrede notes, as many scholars have before him, that the vita humana’s biographical episodes, repeated on one coffin after another, are not only standard war and family vignettes but emblems of manly virtue—the granting of mercy to a worthy foe (clemens), loyalty (pietas), peaceful union (cordiorum), and valor (virtus). This canon of virtues is spread across the main bodies, sides, and lids of a veritable who’s who of Roman sarcophagi: marriage sarcophagi in Mantua, Florence, and Los Angeles, and the Portonaccio and Ludovisi battle sarcophagi. In part 2, Wrede discusses other kinds of senatorial coffins in which wedding scenes and the lives of children predominate.

Wrede makes his case for senatorial commissions. Some arguments are convincing, others somewhat less so. The Balbinus sarcophagus makes a fascinating case study. Most scholars, myself included, have presented it as one of the most important imperial commissions of the third century. It stands out as a masterpiece in an otherwise barren artistic milieu. Yet, as Wrede points out, the main protagonist’s identification as the emperor Balbinus is not secure. While there is a general similarity between the sarcophagus portraits and Balbinus’s likeness on coins, there is no recognized portrait replica series for the short-lived emperor. In addition, Wrede suggests that the coffin’s scenes—marriage and crowning by Victory—are standard for senatorial sarcophagi by this time.

The book culminates in part 3, where Wrede surveys the impact of these senatorial sarcophagi on Roman private and public art of the mid and late empire. What he deduces is that the change in the Roman senator’s role was reflected in his concomitant attempt as patron to redefine himself in sepulchral art. New themes and motifs were developed to reflect this transformation. The new senators jettisoned the aristocrat’s vita humana in favor of presenting themselves on their sarcophagi as civic leaders, namely cultivated officials bearing scrolls. These new men were also depicted as hunters and in bucolic settings, both genres subsequently adopted, according to Wrede, in public art in Rome.

Wrede’s Senatorische SARKOPHAG RIM is an important book because it boldly attempts a more nuanced understanding of elite Roman art. Despite Gerhard Rodenwaldt’s proclamation in the 1940s that Roman sarcophagi were “an aristocratic form of art” (JdI 55 [1940] 12; RM...
58 [1943] 4–5) and the likelihood that many Roman coffins housed the remains of the Roman elite, I continue to believe that many others belonged to the long and unbroken continuum of showy funerary art commissioned by freedmen. Nonetheless, I find myself swayed by Wrede’s compelling arguments, and I look forward to the future work on the subtleties of elite Roman art that this first-rate book will likely inspire.

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This collection of essays aims at an audience of “nonspecialist readers” (xvii), defined more specifically as “students of ancient history, general classicists, and any others interested in learning what kinds of historical evidence Greek and Latin inscriptions provide” (xix). As a defense of the use of epigraphy in the discipline of history, the book seems behind the times, posing a challenge, explicating the wealth of surviving Greek and Latin inscriptions, it is generally assumed, were meant to emerge when he puts theory to practice. The statements of their reach. Making a headlong rush from epigraphical evidence, of its bibliography, and of its study. Encouraging the nonspecialist, as Epigraphic Evidence will probably succeed in doing, is a fine thing. Discounting “the technical training required of those who would call themselves epigraphists” (xvii) is not. I am afraid that it encourages folly and failure for the editor to urge that “for all the potential pitfalls into which the unwary may stumble, the vast, rich territory constituted by the wealth of surviving Greek and Latin inscriptions contains many more deposits of valuable information than fool’s gold.” (55) While the encouraged unwary are sent out to stumble into pitfalls, which they assuredly will, the vast, rich territory of Greek and Latin inscriptions will remain, but it will remain largely closed to them and out of their reach. Making a headlong rush from Epigraphic Evidence into the epigraphical fray will not prepare the nonspecialist to read nor to write discerningly about ancient history in the light of epigraphical evidence.

One historiographical clarification (1–2): it was with tongue in cheek that J.E. Sandys wrote of “Epigraphy . . . unduly encroaching on the provinces of History, and of Public and Private Antiquities” (Latin Epigraphy [Cambridge 1919] 1)—friend, not foe. (See ibid, 2–3.) The book is now in a second edition, revised by S.G. Campbell [Cambridge 1927, repr. Chicago 1974], and recommended.

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After Waterworld, here is Hengeworld. While not a Hollywood blockbuster, the title of this book sets the tone for the enterprise—intended for the general read-
er, the interested amateur, and the U.S. market. Mike Pitts has become known as one of the leading English-language “popular” writers of prehistoric archaeology, and this, his latest effort, will be guaranteed a wide audience through its title alone. This is in fact a revised and updated edition of a work that first appeared in 2000 and immediately went into the list of archaeological bestsellers.

As a professional archaeologist who has published on the topic covered by this book I should declare an interest at the start. In 1981, I published a report on a group of henge monuments in northern England, and in 1987 a catalogue of all henge sites. The first is not mentioned at all, and the second is referenced just once in the endnotes. While Pitts clearly did not think this material relevant to his theme, it did engender some questions in my mind about the coverage of the work, and due allowance should be made for any possible bias in what follows.

The book’s “popular” tone is unremittingly familiar. We have Mark and Tim and Andrew working away at geophysical surveys; Paul and Janet doing soil analysis; Terry and Jackie doing bones; and Robin doing facial reconstructions. We are even treated to the curious spectacle of figures long dead referred to by their Christian names: Ben and Maud (Cunnington). Little vignettes are provided of some of the principal players: Richard Atkinson, “cigarette in long holder”; Geoffrey Wainwright, a “miner’s son” who “felt little need to consult older archaeologists” and “no intellectual”; Jeremy Dronfield, “laid back in collarless black shirt . . . gray-blue eyes peering through boyish fringe.” Many of the chapters start with a little scene-setting, in the now-clichéd manner of much popular science: “Joe Bloggs was just sitting down to dinner when the phone rang. It was Bert Smith at the other end. ‘You had better come down to Salisbury straightaway. We have made an extraordinary discovery.’ Joe’s life would never be the same again.” This is a caricature but not, I think, an inaccurate one.

On the other hand, Pitts really is an authority on Stonehenge and Avebury, which form the principal focus of the book. Formerly Curator of the Alexander Keiller Museum at Avebury, he conducted an excellent and highly important excavation on the roadside at Stonehenge in 1979–1980, published in exemplary fashion (ly important excavation on the roadside at Stonehenge Museum at Avebury, he conducted an excellent and high-

The book’s “popular” tone is unremittingly familiar. We have Mark and Tim and Andrew working away at geophysical surveys; Paul and Janet doing soil analysis; Terry and Jackie doing bones; and Robin doing facial reconstructions. We are even treated to the curious spectacle of figures long dead referred to by their Christian names: Ben and Maud (Cunnington). Little vignettes are provided of some of the principal players: Richard Atkinson, “cigarette in long holder”; Geoffrey Wainwright, a “miner’s son” who “felt little need to consult older archaeologists” and “no intellectual”; Jeremy Dronfield, “laid back in collarless black shirt . . . gray-blue eyes peering through boyish fringe.” Many of the chapters start with a little scene-setting, in the now-clichéd manner of much popular science: “Joe Bloggs was just sitting down to dinner when the phone rang. It was Bert Smith at the other end. ‘You had better come down to Salisbury straightaway. We have made an extraordinary discovery.’ Joe’s life would never be the same again.” This is a caricature but not, I think, an inaccurate one.

On the other hand, Pitts really is an authority on Stonehenge and Avebury, which form the principal focus of the book. Formerly Curator of the Alexander Keiller Museum at Avebury, he conducted an excellent and highly important excavation on the roadside at Stonehenge in 1979–1980, published in exemplary fashion (PPS 48 [1982] 75–132). After a spell as a restauranteur (proprietor of “The Stones” at Avebury), he went into private consultancy and authorship, and is now Consultant to English Heritage on the archaeological contents of the proposed new Visitor Center for Stonehenge (which is inching its way toward the top of the administration’s agenda). Few people know Stonehenge as well as he does. Which makes it all the more frustrating that one has to dig so hard in this book to find out the facts that are novel. A good many of them relate to the history of Stonehenge and Avebury, in particular the rediscovery of human skeletal material from these sites in the Natural History Museum in London, and the excavations conducted by Colonel Hawley in the 1920s. Some of them relate to Pitts’s views on the Stonehenge sequence and the relative dating of the monuments. The later parts of the book, and in particular chapters 28–29, are scientific in tone and could almost be published in a scientific journal. The casual reader will find them relatively hard going after the “voyage of discovery” of the earlier parts of the book, but they do contain some matters of real interest. Pitts himself clearly regards the book as representing a scientific contribution: I heard him say in a recent lecture, “As I demonstrated in my book Hengeworld . . . There is science here, but you have to work to dig it out. The strange mismatch of popularization and science is nowhere more evident than in the long lists of radiocarbon dates, which can be of no conceivable interest to the general reader, but are indispensable for the specialist. The latter is also well served by the extensive set of endnotes (35 pages of them). So Pitts regards this as a serious work, and we are entitled to judge it as such. Here, my main criticism is not of what Pitts says (any inaccuracies I noted were minor), but of what he does not say. If there was such a thing as “Hengeworld” (i.e., Britain in the Late Neolithic and Beaker period), then presumably it was represented by the area covered by henge monuments.

Though you would not think it from this book, that is the whole of Britain, and arguably the east of Ireland as well. But references to sites outside Wessex (where Stonehenge and Avebury lie) are few and far between. There is no distribution map of henge sites; there are no plans of any sites outside Wessex (Stanton Drew lies on the fringes); mentions of sites in other areas are restricted to brief sentences or at most a paragraph. In this respect, Pitts had a model to follow: Wainwright’s The Henge Monuments (London 1989) was also almost entirely about Wessex and mostly about the large sites of Durrington Walls type that I have termed henge-enclosures, and which Wainwright excavated himself. Where is the bigger picture here? We now appreciate that the henge phenomenon was a complex one, with a continuum of practice linking the concepts of “henge,” “stone circle,” “timber circle,” and the like. Stonehenge was assuredly the most complex and most hybridized of this continuum, but it was merely one part of a practice that extended from Cornwall to Orkney, changed over time and space, and may or may not have originated in Wessex. You cannot do justice to the henge concept (or indeed any other aspect of prehistoric Britain) by talking solely about Wessex; unfortunately, archaeologists based in southern England have extraordinary difficulty grasping this simple fact.

In spite of all this, I enjoyed reading the book. Its racy style mixes hard fact and anecdote easily, and it makes no concessions to the lunatic fringe who want to see Stonehenge as a launch pad for spaceships or an eclipse predictor—he is particularly hard in chapter 24 on Alexander Thom, Gerald Hawkins, and Fred Hoyle, and, later on, the ideas of Mirecia Eliade. “It doesn’t matter how many times the claims are made, how superficially persuasive they look or how apparently convinced their promoters are of their veracity, they are all complete fantasy. When we read these accounts, we have to ask ourselves, what do we really want to do? Learn about the people who built Stonehenge? Or play games?” (227). Quite so.
The general reader will learn much from this book, and the specialist will come away having spent an enjoyable couple of hours. This, presumably, was the object of the exercise.

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Salona, the capital of the Roman province of Dalmatia, is perhaps less well known than the nearby royal Palace of Diocletian, which became the nucleus of the Medieval town of Split. Manastirine, whose name derives from the supposed Medieval monastery that the ancient ruins were thought to represent, lies on the northern outskirts of the city in the vicinity of an ancient cemetery, which probably stretched from its northern to its eastern suburbs. John Wilkes, one of the principal scholars writing on Dalmatia in English, has said, with reference to Salona: “as a place for the study of early Christian archaeology, it is second only to Ravenna” (Dalmatia [London 1969] 428). In terms of present, the present publication certainly does this claim justice. The scope of the archaeological evidence is immense. Not only is there a basilica (color pls. 1, 2), whose rich architectural remains are available for public viewing, but there is a large number of early Christian burials, many in decorated sarcophagi, numerous funerary inscriptions, even painted tombs (fig. 94).

Tradition held that Domnio, a missionary from Nisibis in Mesopotamia, and arguably the first bishop of Salona, was martyred in the city’s amphitheater in 304 C.E., along with four Christian soldiers who belonged to Diocletian’s personal bodyguard and a Christian priest called Asterius. Some scholars have argued (notably J. Brøndsted, R. Egger, and E. Dyggve) that their remains were buried in a chapel at Kapljuć, closer to the site of the amphitheater, and were later transferred to Manastirine. The legendary identification of Manastirine with the final resting place of the martyrs was well known locally, even before investigations of any serious kind began. Jacob Spon and George Wheeler, traveling to Greece in 1676, were shown a hole in the ground amid the ruins, which their local guides indicated as the tomb of Domnio, along with tombs attributed to other distinguished local prelates. Over the next two centuries, occasional investigations took place, particularly after the establishment of an archaeological museum at Split in 1820. The structural remains were still largely concealed below, and protected by, several meters of silt. But the main challenge to all investigators was the division of the locality into fields owned or leased by different families. The determination of museum curators to investigate, and the willingness of local farmers to comply, increased with the discovery of a number of inscribed sarcophagi, which made it clear that an important Christian cemetery did indeed underlie these fields.

Regular excavations began in 1865 and continued until 1906. A series of major publications followed, by J. Bervalidi, R. Egger, Fr. Bulić (based on the excavations conducted by him, initially under the direction of M. Glavinic, director of the Zagreb Museum), and E. Dyggve. At first, it is not clear to the reader why the first 85 pages of this monograph are taken up with a detailed description of early investigations of the site. The reason for such copious references do become clear, when, in the second half of the book, the Croat and French team that re-investigated the whole site under a joint program between 1983 and 1997 reveal just how different their interpretation of the remains is, compared with that of their predecessors.

Chapter 2 (in Croat, with French summary), describes the new trenches investigated under the direction of E. Marin and J. Mardešić, who intended to keep intervention to a minimum; the burials thereby discovered, their anthropological and ceramic contents. These provided the first evidence of pre-Imperial occupation of the site, in the form of wall sections, transport amphoras, and coarse ceramics, dating to the late second century B.C.E., and ending in a violent destruction, which seems contemporary with the defeat of the Dalmatians in 78–76, when Salona was captured by the victorious Roman proconsul, C. Cosconius. (These ephemeral remains correspond with the “établissement préromain” in the monograph’s title, and tentatively are identified as a rural property or dwelling [620].) I found it extremely difficult to identify in the text the interesting ceramic material illustrating this early phase, the only evidence of the pre-Imperial age so far identified from Salona as a whole. The skeletal data from the Roman cemetery examined so far provides a useful beginning to a longer-term study of anthropological evidence, not least because it includes infant and young children’s burials, as well as adult male and female samples.

There follows a review by the excavation team of the cemetery (ch. 3), including a resume and catalogue of sarcophagi, dated between the second and fourth centuries C.E. (N. Cambi), and of older finds: sculpted urns, and small finds from burials, a bronze horse bit and hammer, minor items of jewelry, coins, stamped bricks (mainly of north Italian manufacture), and glass paste infills. Their chrono logic spans the entire use of the cemetery, from the first to fifth centuries.

Chapter 4 provides a detailed survey of the architectural remains and forms the largest part of the book (283–617). All earlier publications were restudied, new plans...
and drawings prepared, partial and complete reconstructions attempted. The clarity of this section has been enhanced by the joint investigating team’s keen awareness of the ambiguous nature of the evidence on less well-preserved sites. Hence, much attention is paid here not just to the sequence of structures, or to the coexistence of different structures, but also to the finishing materials of floors, walls, and ceilings. The investigators have worked hard to combine the richness of earlier finds, whose significance or purpose was not always understood, with exact contexts and a structural rationale. The elaborate interlaces of mosaic floors are reunited with their marble counterparts from the choir stall. The drawings and photographic record are far more complete and coherent than anything previously attempted. The monumentalization of the martyrs’ memorials, by the addition of successive superstructures, has been rethought. Below tomb “O,” a grave on three levels forms the earliest burial in this location. But one or more reliquaries, probably those of Domnio and of five military martyrs, were placed in a vaulted construction, evidently marble revetted, which was inscribed. The sarcophagus of Primus, Domnio’s successor, is the first clear sign of high status accorded to the interred individuals, and constitutes the best evidence for the beginnings of monumental treatment of the martyrs’ tombs. The assumption of the investigators is that the first monumentalization of this small nucleus of tombs occurred after Primus’s death, ca. 350, when his tomb was covered up and became inaccessible, whereas the reliquaries were, at least for a while, accessible. His memorial is still quite simple: “Depositus Primus episcopus, [date], nepos Domnionis martore.” This is the principal evidence for Primus’s status in the early church. It is striking that the lintel slab over the main doorway into the basilica was inscribed, “Deus noster propitius esto rei publicae romanae” (O God, be merciful to the Roman republic,” fig. 130).

Since the main plan of the basilica was investigated in the 19th century, before the development of relative ceramic chronologies, the previous dating of the various architectural phases relied on a combination of historical data, architectural analogies, and internal evidence (the dating of sarcophagi and inscriptions within the basilica). The recent investigations have made it possible to bring together information from the widest body of sources, which were only available in part to previous synthesizers. The concluding section (by N. Duval and E. Marin in French, resume in Croat) summarizes these findings. The earliest burials outside the city walls date back to the first century, and belong, perhaps predictably, to soldiers and a veteran. A further group of monuments, with conventional pagan dedications, dates to the second century. During the third, and especially the fourth century, the cemetery expanded dramatically, with pit and tile graves and sarcophagi nesting cheek by jowl. Although the layout of tombs is hard to reconstruct in places, it seems that there is a distinction between more distant areas and those adjacent to the basilica itself, where recognizably Christian tombs aligned themselves in relation to the martyrs’ monuments. As R. Egger argued, perhaps some sarcophagi were moved to make way for the new building. From the fourth century onward, the orientation of burials changed dramatically. Monuments datable to the second half of the fourth century and beginning of the fifth, mainly sarcophagi belonging to distinguished individuals, were grouped around an open “area” east of the later basilica.

The investigators reject the idea, postulated by Egger, and elaborated by Dyggve, that a rural property existed in the late third century (Egger’s “Landhaus”), where the earliest Christian burials were located. Instead of the peristyle building with an apse on the east side, as postulated by Egger and Dyggve, the current investigators propose a walled precinct adjoining the martyrs’ memorials (tomb O, attributed to Domnio, and the sarcophagus of his nephew and successor as bishop, Primus), located west of the said area. The presumed martyrs’ memorials formed the center of an arc of chapels belonging to the first monumental phase (639, fig. 246), beginning perhaps in the early fourth century, but continuing to develop, as privileged burials were added, into the 430s. The open plan arrangement was reconfigured in the early fifth century, when the first basilica was created, with the “transept” overlying the martyrs’ monuments. The western chapels were eliminated and the easternmost excluded from the covered plan. But chapels VII and VIII, on the northern flank, were retained in the basilican plan throughout the fifth and sixth centuries (Dyggve included these in his fifth century phase only). The church was abandoned ca. 600, probably in the aftermath of Slav invasions. The press that Egger identified as belonging to his “Landhaus” dates in fact to a later reuse of the ruined remains, in the late sixth or more likely seventh century.

The comparatively complex presentation of the data means that many potential readers may lose heart before they have reached a clear appreciation of what this book contains. This would be a pity, as the contents are truly extraordinary, and of exceptional interest to social historians and archaeologists alike.

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