FROM THE LAND OF THE LABYRINTH

MINOAN CRETE, 3000–1100 B.C.

ESSAYS

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ALEXANDER S. ONASSIS PUBLIC BENEFIT FOUNDATION (USA)

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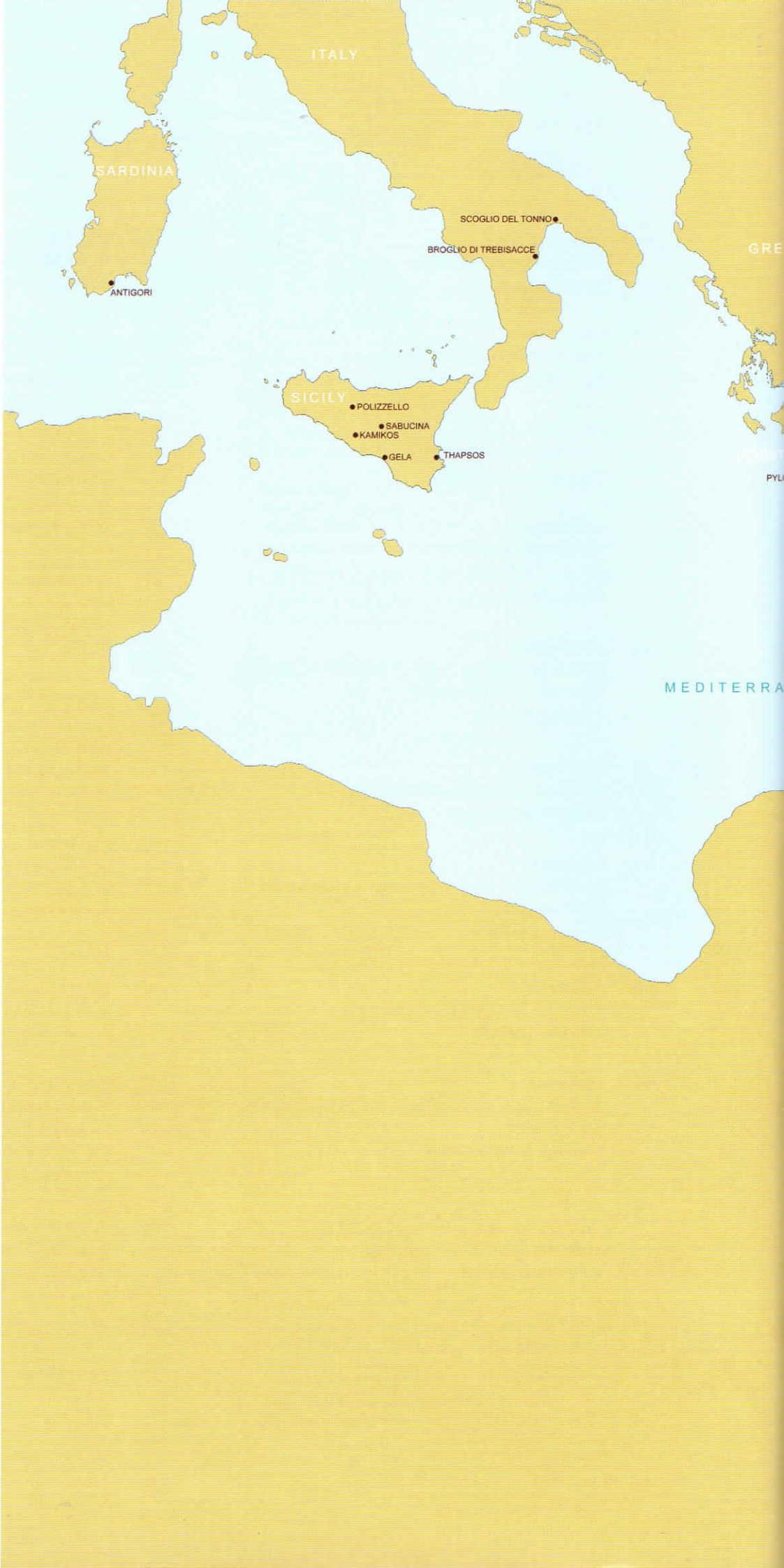


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Detail of fig. 11, page 60


GRAMVOUSA
HAGHIOI THEODOROI
KHANIA
MALEME
STERNES
NOPIGIA
KYDONIA
VRYSES
KISSAMOS
NEROKOUROU
KALAMI
PLATYVOLA
STYLOS
NEA ROUMATA
APOKORONAS
RETHYMNON
STAVROMENOS
KHAMALEVRI
PANGALOCHORI
GERANI
MAROULAS
MARGARITES
ELEUTHERNA
VRYSINAS
PHYLAKI
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ARMENOI
ELAPHONISI
PANTANASSA
AMARI
Mt. PSILOREITIS
(IDI)
PATSOS
MONASTIRAKI
SFAKIA
IDAEAN CAVE
HAGHIOS VASILEIOS
ELLENES
NIDA PLATEAU
KAMARES
ORNE
APODOULOU
KLIMA
KALOCHORAPHITIS
GALIA
HAGHIA TRIADA
PHAISTOS
KAMILARI
KOMMOS
SIVA
PLATANOS
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PAXIMADIA
M. ODIGITRIAS
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KALOI LIMENES
GAVDOPOULA
GAVDOS


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AMNISOS
GOURNES
EILEITHYIA CAVE
NIROU CHANI
PRASSAS
KAVROCHORI
SKOTEINO
KNOSSOS
STAMNIOI
AITANIA
EPISKOPI
HAGHIOS SILAS
JOUKTAS
ARCHANES
VATHYPETRO
SAMBAS
KASTELLI
GALATAS
METOCHI KALOU
ARKALOCHORI
PARTIRA
MILATOS
VRACHASI
MALIA
DREROS
PHOURNI
OLOUS
KRASI
KARPHI
PAPOURA
TRAPEZA
HAGHIOS CHARALAMBOS
LASITHI PLATEAU
DIKTAEAN CAVE
MAGOULAS
KAMINAKI
KRITSA
Mt. DIKTI
GALANA CHARAKIA
SYMI
CHONDROS
MYRTOS
(PHOURNOU KORYPHI)
GRA LYGIA
MYRTOS (PYRGOS)
HIERAPETRA
PROTORIA
PYRGOS
TSOUTSOUROS
DRAKONES
KOPHINAS
PRINIATIKOS PYRGOS
VROKASTRO
SPHOUNGARAS
GOURNIA
VASILIKI
EPISKOPI
CHRYSOKAMINO
KAVOUSI
SKOURIASMENOS
PACHYAMMOS
CHALASMENOS
HAGHIOS NIKOLAOS
PSEIRA
MOCHLOS
MYRSINI
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PISKOKEPHALO
ACHLADIA
MOULIANA
ZOY
KRYA
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HAGHIA PHOTIA
MODI
AZOKERAMOS
EPANO ZAKROS
ZIROS
DIONYSADES
ELASA
GRANDES
PETSOPHAS
TRAOSTALOS
KATO ZAKROS
KOUPHONISI
GAIDOURONISI (CRYSI)

CHRONOLOGICAL CHART

Early Minoan I	3000–2600 B.C.	**Prepalatial Period**
Early Minoan II	2600–2300 B.C.	
Early Minoan III	2300–2100 B.C.	
Middle Minoan IA	2100–1900 B.C.	
Middle Minoan IB	1900–1800 B.C.	**Protopalatial Period**
Middle Minoan II	1800–1700 B.C.	
Middle Minoan III	1700–1600 B.C.	**Neopalatial Period**
Late Minoan IA	1600–1525/1500 B.C.	
Late Minoan IB	1525/1500–1450 B.C.	
Late Minoan II	1450–1400 B.C.	**Final Palatial Period**
Late Minoan IIIA1	1400–1375 B.C.	
Late Minoan IIIA2	1375–1300 B.C.	
Late Minoan IIIB	1300–1200 B.C.	**Postpalatial Period**
Late Minoan IIIC	1200–1100 B.C.	

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CHAPTER 1

THE NATURAL SETTING

Peter Warren

The island of Crete (fig. 1) enjoys two great natural advantages, each with potential for successful human development. The first, recognized since antiquity, is its geographical position in the southern Aegean basin, far enough away from the land masses of Asia Minor and the Near East, including Egypt, to deter large-scale enemy attack under Bronze Age conditions, yet near enough to permit and promote participation in trading and resource networks with those regions and with the Aegean Islands and mainland to the north. The second advantage is the island's size: at 8,336 square kilometers, it is the fifth largest island in the Mediterranean after Corsica, Cyprus, Sardinia, and Sicily.

Fig. 1. Satellite view of Crete (© NASA).

Such a size, with a structure of six mountain blocks (from west to east: the White Mountains [Lefka Ori, fig. 2], Psiloreitis [2,456 meters], the Talea Ori north of Psiloreitis, the Asterousia Mountains above the southern central coast, and the Lasithi and West Siteia [Thriphte] Mountains) split by

Fig. 3. Mesara Plain (by Chr. Stephanakis).

gorges and streams, enabled the geomorphological development of innumerable areas of fertile land for agriculture and pasturage. This land varies from steep slopes, requiring terracing, to easier inland plains and valleys down to flat coastal plains. Some of the latter are quite large, notably those running west from Khania and east for about twenty kilometers from Rethymnon. Two inland plains, both in central Crete, were larger still: the Pediada southeast of Herakleion (approximately 120 square kilometers) and the Mesara (over 200 square kilometers) in the south (fig. 3). Another valuable landform is the karstic basin or upland plain, ideal for summer pasturage. The large number of such basins in the limestone mountains—those of Omalos, Anopolis and Askyphou in the White Mountains, Nida in the Psiloreitis massif, Lasithi and Katharo to the east (fig. 4) and Ziros on the eastern

Fig. 2. North slope of the White Mountains looking toward Fournes and Zourva, Kydonia (by J. Moody).

Fig. 4. Looking into the Katharo Plain from the north with an ancient prickly oak in the foreground (by J. Moody).

Fig. 5. Patsos-Haghios Antonios rock shelter (by V. Niniou-Kindeli).

Fig. 7. The sheltered anchorage of Kaloi Limenes (by Chr. Stephanakis).

plateau of Siteia are well known—is again a product of the island's size. A further resource, for domicile, shelter, burial or the exposition of belief, lay in the island's numerous limestone caves (fig. 5).

This environment readily promoted communication. Routes—tracks and paths in the Bronze Age—ran east to west along the coastal plains and through the Mesara, the latter assisted by its small rivers Ieropotamos and Anapodaris, and north to south through mountain gorges (fig. 6) or over easy passes like that of central Crete east of Psiloreitis or those south from Siteia. Along with these land routes, coastal sea passage with beaches or sheltered anchorages for ships and boats were an obvious attraction (fig. 7).

All these geomorphological characteristics were as available for the populations of the Bronze Age as they are today, although localized erosion and hill wash have raised ground levels by up to eleven meters since the Final Neolithic period of the later fourth millennium. Tectonically, western Crete has been uplifted (fig. 6) and eastern Crete has subsided a few meters since the Bronze Age, and eustatic sea level rise of perhaps a meter a millennium has also occurred. Subtraction of these events to reveal the Bronze Age coastline actually means negligible difference from today in terms of human settlement; indeed, there may have been a little more coastal terrain in antiquity, especially in eastern Crete (fig. 8).

Fig. 6. Trypiti gorge and the White Mountains, Sphakia (by J. Moody).

What resources did this environment make available for human exploitation, in addition to the fundamentals of fertile land and rendzina soils and the marine dimension? There were many. The island was at least as wooded in earlier times as it is today (and woodland has been increasing in recent decades), trees growing in mosaics of woodland and open ground. The main ones were and are cypress (*Cupressus sempervirens*), pine (*Pinus brutia*), maple (*Acer sempervirens*), and several species of deciduous and evergreen oak (fig. 9), today mainly in the west and central western areas. Juniper is present but much less common; chestnut woods grow on the phyllites of the far western area; the Cretan endemic *Zelkova abelicea*, from the elm family, is found more widely but is still rare (fig. 10). Three species now extinct—birch, hazel, and lime—existed in earlier times, an indication that the climate was less arid. Cypress, pine, and olive were exploited for building timber (and a stake of deciduous oak was used in the earliest Neolithic level at Knossos). There was thus also plenty of timber for ships and boats.

Building stone was also abundant, from easily worked gypsum to relatively easily worked poros limestone and hard, therefore unworked, gray limestone. Attractive green schists and polychrome metamorphic rocks, including breccias and serpentines, were employed for decorative architectural elements or, where abundant, for Early Bronze Age tomb construction. Many more humble stones were picked up and fashioned for tools. Erosional and sedimentary processes and differing local geologies had created potting

Fig. 8. Cavo Sidero, Siteia (by J. Moody).

clays excellent for a wide range of uses. These enabled manufacture of coarse wares, such as pithoi, as well as fine wares in highly levigated clays. Ocher earths for red, brown, and yellow pigments were available as well.

Another resource of constant value, range, and variety was the island's exceptionally rich flora. Of Crete's 1,875 species, about 1,735 (93 percent) are native, though some of these were probably ancient and undocumented human introductions. Of the 1,735 species, 159 (9.2 percent) are endemic to the island. This abundance of plants was available in the Bronze Age for numerous purposes: food and drink; medicine; manufactures such as ropes, baskets, and other containers; decoration; personal adornment, including perfumes; dyes for textiles; textiles themselves; and constituents of religious belief. Pollen from a wide range of aromatic plants in the phrygana (fig. 10)—one thinks of thyme (*Coridothymus capitatus*) and thymbra (*Satureja thymbra*) in particular—encouraged bees, so that honey could be made. Organic residue analyses have indicated production and storage of honey, probably in significant quantities. In addition to wild plants, domesticated species grown on the fertile Cretan soils were a further major resource; these were chiefly cereals, olives, and vines. Wild fauna such as boar, deer, goat (the endemic Cretan agrimi, *Capra aegagrus cretensis*) (see chap. 7, fig. 7), and birds as well as domesticated animals provided food, clothing, transport, and traction. The accessible sea provided fish, huge and small, as well as abundant mollusks for purple dye.

A word must also be said on a different kind of natural resource, the Cretan climate. In broad terms there is abundant evidence that the climate was at least as equable and as conducive to successful agriculture and to rural and urban living as today's classic Mediterranean climate of hot, dry summers and cool winters, with about 70 percent of annual precipitation falling from November to February. Naturally, there is much local variation—Anogeia, for example, receiving an

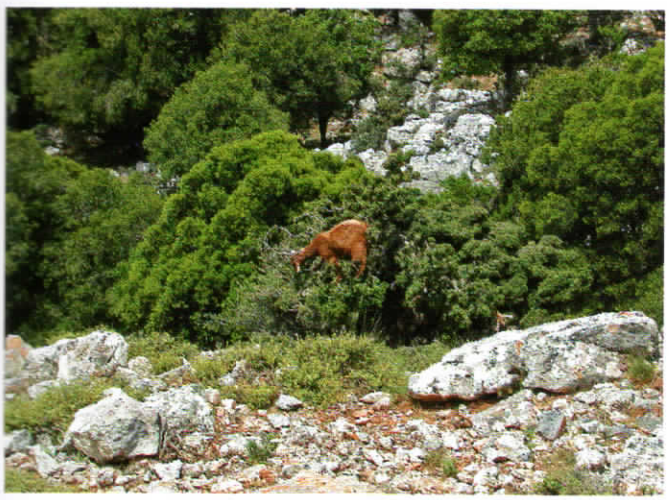

Fig. 9. Goat browsing prickly oak, Lasithi (by J. Moody).

Fig. 10. Phrygana of *Coridothymus capitatus* and *Euphorbia acanthothamnos* with the endemic tree *Zelkova abelicea var. cretica*. Abelitsolakouda, Sphakia (by J. Moody).

Fig. 11. *Phoenix theophrasti*. Preveli, Haghios Vasileios (by O. Rackham).

annual mean of 1,115 millimeters of rain and Hierapetra a mere 206 millimeters in the earlier part of the twentieth century (but 423 millimeters today). For the Bronze Age climate, the evidence comes from pollen cores (as yet few) and plant material, wild and domesticated, recovered in excavations. Depictions on Minoan pottery, wall paintings, and other artifacts add indirect evidence (see cat. nos. 24, 33, 95, 157, 158; chap. 6, fig. 4; chap. 14, figs. 1, 7, and 8). One fascinating detail is the representation of palm trees (see cat. nos. 23, 39; chap. 17, figs. 1, 2), probably the Cretan palm *Phoenix theophrasti Greuter*, on pottery. They are shown much as they grow today in Crete (fig. 11)—that is, without or with only poorly developed fruit. If the Bronze Age climate had been significantly hotter, they are likely to have been depicted with abundant fruit; if significantly cooler, perhaps not depicted, since they would not have grown at all.

In terms of the potential for human development, we must also note what was not available. If we distinguish between desirable items, such as exotic foreign raw materials or artifacts, and necessities for levels of living beyond mere subsistence, then unavailable resources come down to two classes: metals, which were needed for a wide range of purposes, and a plentiful supply of stone for cutting tools. Crete has insignificant supplies of copper, mere traces of lead, and no tin or arsenic for bronze (let alone silver or gold for prestigious objects). It has some chert for cutting tools, but it was a negligible match for the myriad tasks that could be, and were, performed by imported obsidian, chipped or flaked into blades (see cat. no. 54), scrapers, and other tools.

The natural setting and its available resources sketched out here, with all their advantages for successful human development in material culture, do not in any way guarantee the emergence or realization of such development, let alone any achievement of civilization. They simply offer potential means. Turning potential into reality can come only from a combination of human choices, decisions, actions, and labors, both collective and individual. We turn next to the first stage of that process, the rise of civilization.

Selected Bibliography

Fielding–Turland 2005; Myers–Myers–Cadogan 1992; Rackham–Moody 1996.

CHAPTER 2

THE RISE OF CIVILIZATION

Peter Warren

In the centuries around 3000 B.C., profound changes occurred in the Neolithic way of life. This is not to diminish the achievement of the Neolithic Cretan population over nearly four thousand years. We know, for example, that the first Neolithic settlers journeyed with incredible courage over open sea from Anatolia, bringing with them domesticated cattle and cereal grains, such as barley, emmer, einkorn, and bread wheat. After an interval—our evidence comes mainly from the deep, stratified levels below the Bronze Age palace at Knossos (fig. 1)—they were making pottery. Recent research in ceramic fabric analysis has revealed the exciting and unexpected fact that some of this earliest pottery is in nonlocal fabrics—that is, it (or its clay) was conveyed to Knossos from other parts of Crete. Thus, almost from the beginning of settlement, different production centers and exchange networks can be postulated. In addition, already in the earliest, aceramic settlement, obsidian for tools was being brought from Melos, some 120 kilometers away, again across open sea to the north of Crete.

In the late fourth millennium, population began to increase, with numbers of small Final Neolithic settlements being placed on low but naturally defensible hills along the coasts of the island, as well as in near-coastal inland caves—for example, Amnisos. Their pottery has analogies with that of contemporaries in the islands of the eastern Aegean, and they are likely to have come from there or from western or southern Anatolia. They may have lived in symbiosis with the older Neolithic population—there was plenty of good land and material resources for everyone—and the occupation levels at Knossos do not show marked breaks or signs of conflict. There may, nevertheless, have been some tension and insecurity. It is otherwise seemingly impossible to explain why a Final Neolithic group should have chosen to live on the extremely inaccessible, precipitous cliff ledge of Katalimata in the Ha Gorge of the Hierapetra isthmus.

The two best examples of Final Neolithic open settlement revealed by excavation are those on the hill of Phaistos and on the Kephala Hill at Petras, Siteia. Phaistos includes a round house partly built in stone and, in another area, a set of fine red burnished vessels used in ritual. Farther south, on the Asterousian coast at Kala Selia, stands a Final Neolithic farmstead. As for pasturage, there was not only local grazing

Fig. 1. Kairatos valley and Knossos palace (Myers–Myers–Cadogan 1992, fig. 17.2). Courtesy G. Cadogan (also for J.W. and E.E. Myers).

but already, on the evidence of the Sphakia Survey, transhuman penetration into the high Madara of the White Mountains.

Soon after this, in Early Minoan I about 3,000 B.C., more new settlements were founded on open ground. The Petras, Kephala, site, recently excavated, is particularly interesting, since its Early Minoan I buildings, their organization, the pottery, and the worked obsidian are different from those of its Final Neolithic period. Herakleion, Poros, we shall look at below. But we know of Early Minoan I settlements, largely indirectly, from the burial places. These take three forms. The first is the use of caves (fig. 2) or rock shelters, which must have been adjacent to settlements. They are found especially in central Crete, at Kyparissi (see cat. no. 2) and Pyrgos, with Partira just a little earlier in Final Neolithic. Others were in eastern Crete, at Haghios Nikolaos (Palaikastro) and Pseira, Final Neolithic–Early Minoan I.

Fig. 2. Entrance to the Trapeza cave on the Lasithi plateau (by Chr. Stephanakis).

Second is the construction of cemeteries on flat ground with small chamber tombs, probably for family burials, at Gournes on the north coast east of Herakleion, with 36 tombs in two areas, and at Haghia Photia on the coast east of Siteia, with 263 excavated tombs. The relationship, if any, of this cemetery to the Petras, Kephala settlement remains to be established. Kephala, following upon its Neolithic predecessor, may be earlier; they may also be too far apart for the one to serve as the burial place of the other. The vast majority of the burial goods in the two cemeteries have very close links with those of the Cycladic Kampos Group on Ano Kouphonisi, contemporary with later Early Minoan I in Cretan terms (see cat. nos. 5, 6, 7). It is very probable that the virgin settlements consisted of settlers from the southern Cyclades. The contents of the Pyrgos cave are more a mixture of Minoan and Cycladic forms (see cat. no. 4).

Fig. 3.
Large mottled pyxis with its lid. Lebena, Gerokampos tomb (ca. 3000 B.C.). Herakleion Archaeological Museum.

The third form is also new, and its origin has been much debated. It is the circular round tomb with a corbeled stone vault, as that at Lebena, Gerokampos, demonstrates. This tomb was far from the only one constructed in Early Minoan I, but because of its carefully documented excavation by St. Alexiou, its well-preserved pottery may serve as an example. It is a revelation—technologically, aesthetically, and functionally. For Early Minoan I, alongside black burnished vessels, many with pattern-burnished decoration in reserved panels, there were dozens of finely made vessels, bowls, jugs, elaborate pyxides, two-handled tankards, and theriomorphic vases in buff fabric with red painted decoration. In similar shapes but far fewer are red or red-brown painted pieces with white-painted decoration. One vessel, in the Final Neolithic tradition of red-and-black mottled ware as seen at Phaistos, stands out—a large and elaborately handled pyxis with its lid (fig. 3). It was found on the floor of the tomb and may be the burial accompaniment of a community founder.

The extent of any metallurgy in Early Minoan I remains to be established. A Final Neolithic copper axe from Knossos could well be an import. Commencement of copper-ore processing at Chrysokamino in the Final Neolithic has been proposed but remains open to question. A simple dagger in the Early Minoan I level of Lebena, Gerokampos, tomb II indicates some beginnings there before the end of the period. The later Early Minoan I Haghia Photia cemetery has no fewer than thirty-three pieces of metalwork, including long daggers, and the Gournes cemetery has a silver necklace, but in both cases the question of Cycladic origins arises. The best evidence to date comes from the Early Minoan I–II A levels at Herakleion, Poros, with a wide range of metalworking by-products and arsenical copper-alloy production. Here again, however, there are very strong Cycladic links, and the ores themselves would have been imported from the islands. Nevertheless, there is much in these Poros assemblages that is purely Cretan. As at Pyrgos, not far to the east of Poros, a mixed community of Cretans and Cycladic islanders seems implied, while at Gournes and Haghia Photia the Cycladic character seems overwhelming.

It is an open question whether the concept of separately defined identities was meaningful to the inhabitants of these new north coast foundations. The demography becomes more complex when the fact of northeast Aegean and northwest Anatolian links is taken into account. Several Early Minoan I pottery forms, barrel vases (see cat. no. 3), spouted jugs, various forms of lids, and theriomorphic vases have clear morphological parallels in that region (and no precursors in the Cretan Final Neolithic), though their painted decoration is a Cretan development. It may well be that populations of new settlers viewed themselves simply as neighbors in a strongly interacting cultural region in which the sea was a physical, but not a social, divider. There may, however, have been societal distinctions. The settlements without a Cycladic component—that is, the great majority—seem to have consisted of a few families or an extended family. But even if families made up the basic social unit, the collective form of burial in communal tombs, caves, or rock shelters indicates a society with a strongly communal framework, with little evidence of marked social differentiation, except possibly for community founders who were ascribed or acquired higher status. The cemeteries of Gournes and Haghia Photia, on the other hand, may well imply a somewhat different social structure, again not one of differentiated social status but one with families more differentiated from each other, being buried in small, separate tombs. Even so, a deliberately chosen and apparently defined cemetery area, divided into two parts at Gournes, implies a collective community decision.

Fig. 4. Mochlos island in eastern Crete (Myers–Myers–Cadogan 1992, fig. 25.2). Courtesy G. Cadogan (also for J.W. and E.E. Myers).

The Final Neolithic and Early Minoan I communities, seemingly of mixed Aegean, northwest Anatolian, and local Neolithic origins, immediately established themselves as independent villages, farming and grazing their own lands for their food supplies. The same must have been as true for the north coast settlements, with their strong maritime links, and, in the case of Poros, industrial activities, as it was true for those on the rest of the island.

By the middle of the third millennium, the successes of these older settlements had expanded in every direction. Increased population is implied by many new foundations, especially in eastern Crete (for example, Malia, Myrtos, Palaikastro, Vasiliki, and Zakros), as well as by the expansion of older ones far beyond their earlier beginnings (as at Gournia, Haghia Triada, Khania, Knossos, Mochlos [fig. 4], and Pseira) or by the addition of a second collective tomb (Lebena, Gerokampos, tomb IIa). Other new foundations are known from their cemeteries—for example, Koumasa.

While food production through farming, pasturage, hunting, gathering of wild plants, and fishing continued as before, there was a huge expansion of craft production, implying a richer material culture in the worlds of the living and the dead and perhaps greater social differentiation through display. The finest expressions of this expansion are three new, highly skilled, and, as we may infer from their range, aesthetically pleasing industries. These were gold jewelry—simple and intricate, the best from the Early Minoan II tombs of Mochlos (see cat. nos. 131a–b, 132a–b, 133a–b) and Platanos—the manufacture of stone vessels, and the carving of seals. For the vases, the most attractive local rocks, single-colored or polychrome, were chosen, such as banded tufa, breccia, green chlorite and chlorite schist, limestone, banded marble, serpentine, and steatite (see cat. nos. 43–45). Lapidaries sometimes carefully related the structure of a rock to elements of a vessel's shape, using contrasting colors of marble bands for rim and body or the opposite—using a kaleidescope of colors for an entire surface, in banded tufa or breccia. This latter aesthetic choice is a harbinger of the technique of "unending rapport" used later in Minoan vase painting. Soon after its start, with simple shapes and unelaborate decoration in cross-hatching, seal carving in bone,

ivory, and softer local stones such as serpentine and steatite becomes one of the glories of Minoan civilization. Tiny surfaces incised and sculpted with curvilinear geometric patterns or processions of insects or lions or three-dimensional shapes, such as a monkey or a fly, demonstrate skill and sensitivity (see cat. no. 111).

Other specialist craft industries included a wide range of copper or arsenical bronze tools and perhaps weapons, an expanded ceramic repertoire, and stone as well as gold bead production. At this date there was less attention to the production of figurines, though imported Cycladic white marble folded-arm figurines of the Keros-Syros culture generated a local variant, the Koumasa variety, in white marble (see cat. no. 171; cf. also cat. no. 170: bone idol of "Siva" variety).

Excavated settlements are still remarkably few. Myrtos, Phournou Koryphi (0.125 hectares) (fig. 5; see also cat. nos. 10, 11), Trypiti (much smaller) (fig. 6), and Vasiliki (fig. 7) would have been typical villages. Although architectural units ("houses") can be determined, the social correlate of which is usually taken to be a small number of nuclear families, the dominant characteristic is the compact, communal form of the entire settlement, with conjoined buildings divided by a few arterial passages. An open central area at Myrtos must have been deliberate and could well have served as a communal focal point. The continuous external wall of the same settlement, with a probable bastion at the southern entrance, indicates importance ascribed to protection and defense.

Religion and rituals other than funerary are not well evidenced. Myrtos, however, did have a community shrine at its southwestern corner. A female terracotta figure on a low stone stand against the east wall of the main room of this unit held a jug (a miniature version of painted jugs from the site) and vessels, perhaps for offerings, were spread on the floor around her (fig. 8). She was clearly intended as the focus of attention and can be taken to represent a divinity promoting and protecting the production of liquids, wine, oil, and water.

This figure has several companions of Early Minoan II and, important for continuity, Early Minoan III date. One (EM IIA) from Koumasa is entwined with a snake; those from Malia and Mochlos have prominent breasts, emphasizing female fertility. Whether the figures represent a single great female divinity or polytheism cannot be determined. Taken together, however, they demonstrate that fundamental elements of religious belief in the Palatial period existed already in the Prepalatial.

Fig. 5. Myrtos region. South coast in eastern Crete (Myers–Myers–Cadogan 1992, fig. 27.2). Courtesy G. Cadogan (also for J.W. and E.E. Myers).

Fig. 6. Trypiti settlement in South Central Crete (by Chr. Stephanakis).

While communities thrived and expanded and while there was perhaps a developing degree of social differentiation and of symbolic meaning through the display of the material creations described above—seemingly more in funerary and burial contexts than in the houses of the living and thereby strengthening the ancestral stability of the community—what of external connections? Some growth in intensity and in geographical spread is indicated, but more in the form of imports rather than the production of common types. A fine example of the latter is the earliest class of stone vessels, elegant forms carved in green chlorite schist and decorated with incised patterns or spirals in relief. Pieces are found equally in the Cyclades and Crete. Obsidian continued to be brought from Melos, whether by simple acquisition or by exchange (see cat. no. 54). Early Cycladic II pottery sauceboats reached Knossos and symbolic artifacts, the Cycladic white marble figurines, were arriving at a wide range of sites. This situation contrasts markedly with that of later Early Minoan I: the 263 excavated tombs of the "Cycladic" cemetery of Haghia Photia contained not a single marble figurine. Import of metals—copper, lead, silver, and probably arsenic ores— must have increased greatly, to judge by the range and number of artifacts; all of them probably came from the Cyclades. Gold appears to have been new in Early Minoan II. Its source (or sources) has not yet been established, but one factor suggests a Near Eastern or Egyptian rather than a north Aegean or northwest Anatolian origin. The factor is the almost complete absence of goldworking, in contrast to that of silver, in the intervening Cyclades. More distant and exotic links are indicated by the presence at Knossos already in Early Minoan IIA of a piece of hippopotamus ivory and of an obsidian vessel, imported (the vessel originally whole) from Egypt or the Near East.

Fig. 7. Vasiliki Early Minoan settlement on Hierapetra isthmus (Myers–Myers–Cadogan 1992, fig. 41.2). Courtesy G. Cadogan (also for J.W. and E.E. Myers).

Fig. 8. "Myrtos goddess": female figurine holding a jug (ca. 2400–2300 B.C.). Haghios Nikolaos Archaeological Museum.

Fig. 9. Archanes, Phourni hill. Early Minoan cemetery (Myers–Myers–Cadogan 1992, fig. 3.4). Courtesy G. Cadogan (also for J.W. and E.E. Myers).

Diorite vases came from Egypt within the Early Minoan II–Middle Minoan I period. At least one community, Mochlos, may have been a small port town rather than a coastal village, with developing international links. Along with its gold came one or two Near Eastern seals.

The period from about 2300 to 1900 B.C. is the final stage in the long and continuous process that ended with the emergence of dominant social groups or powerful families. That is the postulated model for the initial construction of buildings that have crossed a significant social, as well as architectural, threshold into monumentality and an equally important one into complex storage. These buildings are usually called the first palaces.

There had been destruction at the end of Early Minoan II about 2300 B.C. at Myrtos, Pyrgos; Myrtos, Phournou Koryphi; and Vasiliki. But Pyrgos and Vasiliki continued, the latter at first on a lower level. Elsewhere in eastern Crete, settlements flourished. Traces of a monumental building already in Early Minoan II were found at Palaikastro; at Haghia Photia, Siteia, a substantial building with a rectangular central court was erected before the time of the first "palaces" in central Crete. On the windy bluff of Chrysokamino, the copper-smelting installation, its ore imported from the Cyclades, must have serviced the surrounding district with metal. In south central Crete, the Mesara and Asterousia tombs show that their settlements lasted through Middle Minoan IA before coming to an end, with probable nucleation around Phaistos. An important new site at Kamilari seems to have been established at that time, to judge from the first use of its circular tomb. The port of Kommos seems to have begun in this period, whereas Haghia Triada continued from the Early Minoan. Knossos had a substantial building at the northwest corner of the subsequent palace. Khamalevri in the west had a thriving settlement, apparently with a perfume industry (see cat. no. 94). Overall, despite some settlement disruptions, Cretan material culture shows continuity of forms from those of Early Minoan II (see cat. nos. 47, 48, 112, 134, 135).

A new social and spiritual phenomenon is found in the creation of mountain peak sanctuaries, perhaps even during Early Minoan II at Jouktas. The thousands of terracotta votives of humans and animals are witness to apotropaic and curative beliefs on a regional scale. Society was now organizing itself beyond the independent village or small town level. Overseas trade is hard to document through specific imports, but clues are given by the first appearance of masted sailing ships engraved on seal stones, by imported Egyptian scarabs (the amulets of traders) in the southern Cretan tombs, by several stone vase types imitating Egyptian First Intermediate Period and early Middle Kingdom forms, and by the use of tin for bronze.

It was in this complex context of continuities, new cemeteries of individual burials in pithoi in parallel with continuing collective tombs (some recently excavated at Petras, as earlier at Archanes [fig. 9; see chap. 16a, figs. 4 and 8], showing clear evidence of wealth), new regional concepts, disruption here, and new foundations there that stronger social differentiation promoted the emergence of powerful leaders or families. One of them constructed a new building with a monumental façade, imitating Near Eastern types, and a staircase fronting a large paved court at Phaistos. Added on to over the next two hundred years, the structure became the first palace. Analogous developments were taking place at Knossos and doubtlessly elsewhere. Civilization had arisen.

Selected Bibliography

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CHAPTER 3

THE MINOAN PALACES

Giorgos Rethemiotakis

The Minoan palaces are large building complexes of sophisticated construction that were the centers of religious, economic, and social life in a relatively wide urban area, into which they were architecturally and functionally integrated. The architecture and layout of the palace type are a visible outcome of developments that took place at the apex of the social hierarchy, specifically in the exercise of control and authority by powerful ruling groups that gradually imposed distinctive codes of social behavior. This consolidated model, which was promoted through various means of communication, affected all aspects of private and public life in both the cities and the countryside, where local elites, ideologically dependent on the centers, emulated the modes and manifestations of the palatial protocol.

The first faint traces of ways in which social differences were promoted can be observed in the early third millennium B.C. and are concomitant with the development of the technology of mass production of metal objects, which was made possible by casting in molds. The bronze and especially the silver daggers found in Prepalatial tombs (see cat. nos. 73, 74) were not only personal weapons but were also means of displaying power and prestige, because the precious material of which they were made represented a significant investment of real value.

During the course of the third millennium B.C., with the opening of the maritime trade routes to the East, precious materials such as gold and ivory began to be imported to Crete. Artifacts, jewelry, and seal stones were also fashioned and used as insignia of office and tokens of wealth and social superiority (see cat. nos. 111, 112, 131–135). These developments can be clearly seen in the ensembles of grave goods from the Prepalatial period, mainly in eastern Crete and the Mesara Plain, where precious objects of gold, silver, bronze, and ivory have come to light. Dwellings of corresponding level, for the members of the local ruling groups, may have existed too, but none has been uncovered in excavations.

The first tangible evidence of the existence of palatial buildings and of their basic structural characteristics dates from the early second millennium B.C. (MM IB). It seems that these structures already had the form of large building complexes within the urban tissue, facing large open spaces and courts. Their inclusion in the urban plan and their direct functional relationship with the surrounding urban space indicate the intentions of their builders and users.

The palace, apart from being a luxurious residence of the ruling group and court officials, was a reference point for every communal, social, and religious activity taking place in the city around it. Consequently, the palace did not function as an autonomous entity but was a field of projection where the urban social hierarchy and its values were codified and promulgated to its wider lebensraum. This was achieved by extolling "monumentality" through the complex architectural design, the selection of high-quality materials, the emphasis on the size and volume of the structures, and the spaciousness of the internal spaces. The sense of abundance and surplus was completed by the conspicuous use of elaborate objects wrought in precious materials. Very few of these have survived, but they are sufficient to show the aims and dispositions of their users. The polychromy of the painted mural decorations, primarily the pictorial wall paintings in the apartments in which power was wielded or projected, and in which its bearers resided, also contributed to this effect (fig. 14; see also cat. nos. 157–159). The dominant "dynastic" message was transmitted not only by compositions inspired by the complex ceremonial of the palace, but mainly by symbols of the ruler's power and prestige, including aggressive or rapacious creatures—real or imaginary—that were emblems and protectors of the throne, such as the bull and the griffin (fig. 7), as well as by apotropaic and protective symbols, such as the figure-eight shield.

A display of concentrated power on this scale surely had its corresponding economic arm. The wealth from the countryside controlled by the palace was gathered in large magazines (fig. 5), and precious raw materials, including copper (see cat. nos. 64, 65), gold, ivory, and semiprecious stones, were acquired through overseas trade. The products and the payments in kind were monitored by a complex bureaucracy that assiduously recorded incoming and outgoing goods on clay tablets and guaranteed transactions through the system of sealed receipts, stamped on clay sealings (see cat. nos. 101–107).

The palatial civilization of Crete, which developed inside and around the palaces and the centers of authority, lasted for more than seven hundred years, from about 1900 to 1300 B.C. During the course of this long period, the palaces were rebuilt or repaired repeatedly after destruction caused by either natural phenomena or human agency. Other centers that had a briefer life span presumably served certain strategic choices, which over time proved to be nonproductive or ineffective.

The rise, consolidation, and collapse of such systems of authority are usually accompanied by dramatic historical events that result in violent social changes, which can reach the point of total destabilization and overturn the social pyramid. In the end, the palatial world of Minoan Crete was unable to escape this adverse finale, which is an inherent malaise of all centralizing systems of authority.

Fig. 1. A general view of the palace at Phaistos from the southwest (Hellenic Ministry of Culture–Archaeological Receipts Fund).

The "Old Palaces"

The period of the "old palaces" in Crete spanned three centuries, from about 1900 to 1700 B.C. (MM IB–MM IIB). It was during that time that palaces were first erected at the three major palatial sites in central Crete—Knossos, Phaistos, and Malia. The destruction of these palaces, probably caused by a severe earthquake, marks the end of this period. The heavy structures of the "new" palaces were raised upon their ruins, and only scant remains of the first "old" palace have survived under the later floors and walls of the palaces at Knossos and Malia. Stratigraphical research conducted at various times has revealed that these palaces had a paved west court, ashlar-masonry façades, and ceremonial halls in the interior. The bronze "Acrobat's Sword," with its gold-sheathed pommel bearing a repoussé representation of an athlete, found in the palace at Malia, was probably used in ceremonial displays in such reception halls as an insignium of authority and power (see chap. 11, fig. 7).

The west courts of the palaces had elevated causeways to facilitate circulation. At Knossos and Phaistos, they also had circular pits sunk in the ground and may have been used as silos for storing grain. The large capacity of these outdoor storage spaces prompts the suggestion that the early palaces exercised direct control over agricultural production by gathering a strategic surplus of produce, which served as a kind of bonded stock to regulate consumption and secure self-sufficiency in the event of failed harvests.

In contrast to the palaces at Knossos and Malia, the palace at Phaistos yielded far more and more impressive architectural evidence, as well as assemblages of finds and information relating to the structure and organization of the palatial class. This is due to the fact that the west front of the second "new" palace, which was built after the destruction of the old, was set several meters further back, leaving a large part of the West Wing of the latter accessible to archaeological investigation (fig. 1).

The palace also had paved central and west courts. On the north side of the West Court was a broad stepped construction, which recalls a theater. Indeed, it may well have been a venue for theatrical events of religious or secular character. The west façade of the palace, built of massive ashlar blocks, is preserved for almost its entire length at two levels, following the gradient of the hillside. At the lower level, in front of a smaller paved court, is a narrow

entrance leading to a basement suite of magazines below the level of the Central Court. The preservation of this sector is impressive, since it stands to a height of two stories and has walls of brick on a dense timber frame. Here were uncovered the hundreds of Kamares-ware vases, beautifully made and in excellent condition; now in the collection of the Herakleion Archaeological Museum (see cat. nos. 12–21). These vases were used in lavish banquets held in the palace halls. The large number and the variety of shapes and decoration attest to the scale of the banquets, as well as to specialized uses, possibly with semiotic allusion to the social rank of the diners. It appears that those who partook of communal meals had imposed rules and codes of refined banqueting behavior on the immediate palatial milieu, through a specific etiquette of mass eating and drinking. It is characteristic and indicative of their use as luxury and prestige vessels that vases of such quality have been found only at Knossos and Phaistos, which were the biggest and most important palatial centers in Protopalatial Crete.

In addition to the famous Kamares vases, several hundred clay sealings were also found in the same rooms, evidence of the direct administrative control that the palace exercised in the wider hinterland, in order to exploit production and to acquire the economic means that would ensure the stability and longevity of the system of authority.

An assemblage of domestic vases, seal impressions (see cat. no. 115a–b), and storage jars (pithoi) in spacious magazines, similar to those at Phaistos, was brought to light in a large building at Monastiraki, Rethymnon. This seems to have been used as an intermediate control center in the region for collecting the agricultural produce. Corresponding functional features existed in the palace at Petras, Siteia. The palatial character of this building from the Protopalatial period is verified by the existence of a central court. A cache of clay sealings, with impressions of seals and hieroglyphic inscriptions, found in one room, points to bureaucratic control over the plain of Siteia.

Of the urban buildings of this period, the most extensive is Quartier Mu at Malia, which had high-quality architecture, reception rooms, a lustral basin, workshops, and magazines, proof that it served diverse needs, both official and everyday. In an adjacent space was excavated an underground "hypostyle crypt," which is linked functionally with a large enclosed square, a kind of agora or arena in which athletics contests may have been held.

The experience gained through exercising authority, the techniques of administration, and the planning and construction of large buildings prepared the ground for an even more dynamic fresh start immediately after the destruction of the "old palaces."

The "New Palaces"

After their destruction in about 1700 B.C., the three palaces of the Protopalatial period were rebuilt on an even larger scale and with impressive constructional innovations, at the beginning of the seventeenth century B.C. (MM III). In addition to the three big palaces of central Crete, two smaller ones were built, at Galatas in central Crete and Zakros in east Crete, whereas the little palace at Petras, Siteia, was also rebuilt. The palaces, as well as other peripheral buildings and settlements, were destroyed about 1450 B.C. (LM IB).

Only Knossos escaped general destruction and remained in use until about 1350 or 1300 B.C. (LM IIIA2), under Mycenaean administration, as the Linear B tablets attest. On present evidence, after the final destruction by fire of the palace at Knossos, no other important palace remained functional in Crete.

A definitive element for qualifying the aforementioned building complexes as palaces is the existence of a central court and four wings, whose fronts run along its sides. Essentially these are four conjoined buildings that housed diverse activities and shared an open space between them. Apart from the complexes that exhibited the "canonical" architectural plan of the palaces, there are several other large buildings of luxurious construction, which deviate from the palatial architectural "formula" but nonetheless display clearly palatial structural and functional characteristics. Such buildings, which are usually considered palatial, will be described later in this essay.

The increase in the number of palaces identified after recent investigations, the evidence that other palaces existed in addition to the three major ones in a decreasing scale of size, and the typological pluralism of the buildings with palatial features bear witness to the existence of a hierarchy of buildings, perhaps corresponding to the ranking at the apex of the social hierarchy. This two-way relationship and association must have operated as a code of recognition and projection. The palace, as a canonical type, architecturally and functionally complete, must have had a particular symbolic value as actual seat of authority and residence of the ruling class, the court, and the dignitaries who were directly dependent—perhaps also with family ties—on the central authority. The other "palatial" buildings may have housed powerful local rulers, and their occupants may have played a special role in the internal system of administration, the control of production, and the accumulation and distribution of wealth.

Of all the buildings of this level, by far the most impressive, with the most innovative architectural applications and the most extravagant use of luxurious materials and wall paintings, is the magnificent palace at Knossos (fig. 2; see also chap. 4, fig. 1). Seat of the legendary king of Crete, Minos, it

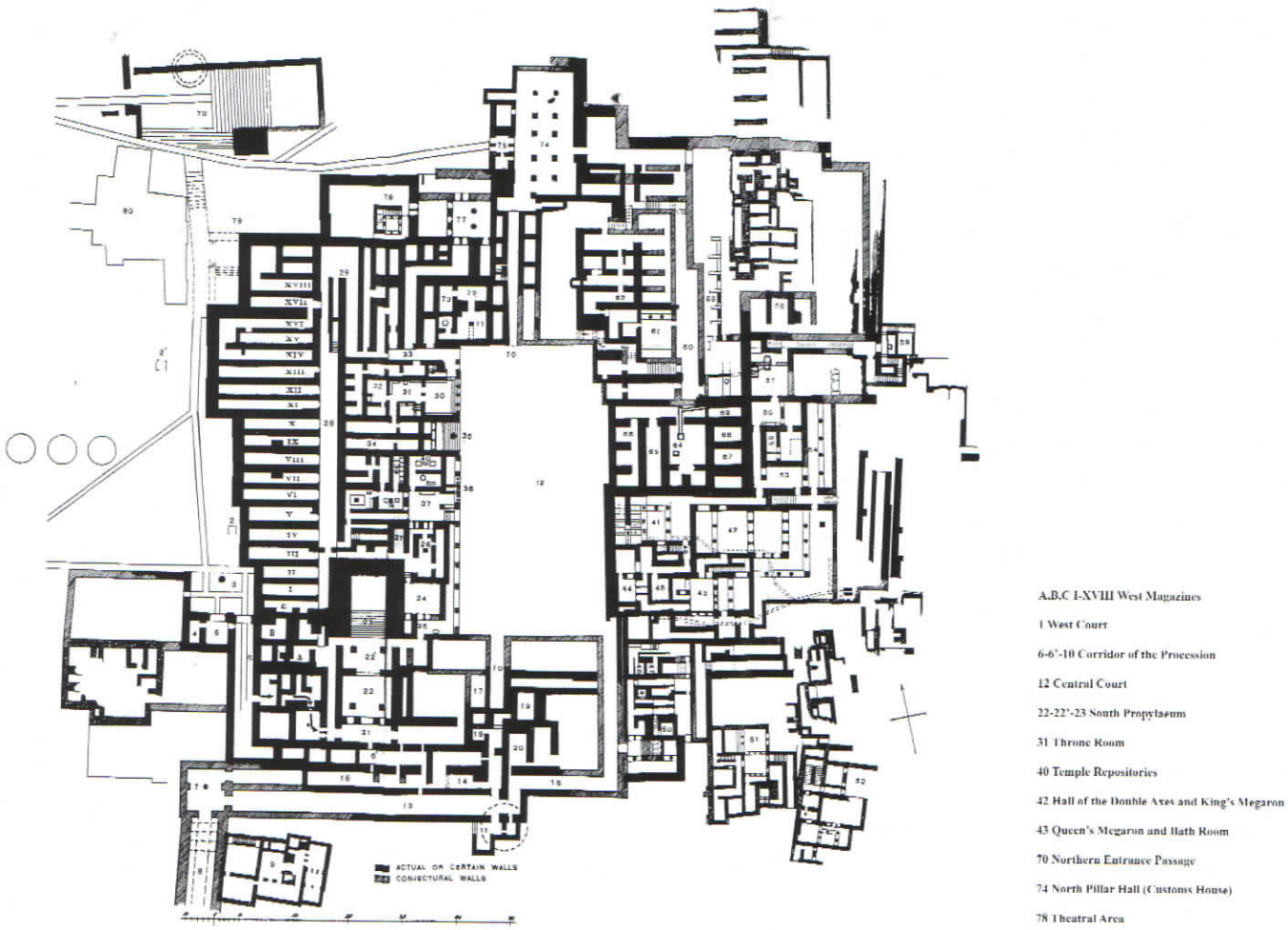

Fig. 2. Plan of the palace at Knossos.

is perhaps the only center of real authority that controlled directly or exercised influence over the whole of Minoan Crete.

The architectural history of the new palace at Knossos is complicated, since its component buildings were rebuilt or repaired many times over the four hundred years or so of its continual use. It is certain that the first Neopalatial complex, put up about 1700 B.C. (MM IIIA), was destroyed, probably by earthquake, and rebuilt about 1600 (MM IIIB–LM IA). With numerous repairs, reconstructions, and changes in use, the palace remained in the form seen today until its final destruction by conflagration about 1350 or 1300 (LM IIIA2).

The palace functioned as a single building complex, with no gaps between its wings and with imposing fronts of composite construction facing onto the large paved Central and West Courts. The West Court was open toward the surrounding urban tissue and accessible from the city along at least two road axes, whereas the Central Court was enclosed and approached only by narrow corridors, which were presumably under surveillance.

The entrance to the southwest corner of the West Wing, the West Porch, was arranged as a propylon, opening toward the West Court. Here started the so-called Corridor of the Procession, which was named after the huge wall painting on both side walls that depicts the procession of hundreds of male and female figures, in groups and carrying precious vessels, advancing toward the inside of the palace (see chap. 9, fig. 7). In general, and on the basis of Levantine and Egyptian models, this representation is considered to be of an actual procession that entered the palace from the side of the West Court, bearing gifts for the ruler (*anax*). The procession concluded at the so-called South Propylon (fig. 3), the internal monumental entrance to the spacious halls in the "Piano Nobile" of the West Wing. These halls were the formal reception rooms of the procession, in which banqueting and libation ceremonies were organized, as attested by the rhytons and other alabaster vessels found fallen from the upper storey in the ground-floor apartments of the wing.

A second entrance to the palace from its west side is defined by the course of the "Royal Road," a long road artery with a central causeway. A short distance before the entrance to the northwest corner of the palace, the road meets the "Theatral Area" (fig. 4), which has two sets of steplike seats on two sides and a "Royal Box" for attending the welcoming ceremonies. The road then enters the palace,

in a large hypostyle hall, the so-called Customs House. It was given this name by the excavator of Knossos, Sir Arthur Evans, because of its position in front of the main entrance to the Central Court and the possibility that it was used for checking merchandise that reached here from the harbor of Knossos, at Poros, Herakleion. The north entrance to the palace (see chap. 6, fig. 1), from the side of the Customs House, was the most monumental, built in the form of a ramp between two bastions with porticoes, the walls of which were decorated with frescoes of a bull hunt, perhaps a pictorial allusion to the power of the Knossian dynasty, which was symbolized by the strongest and most aggressive animal.

The north entrance passage led to the paved Central Court, which is 1,440 square meters in area. This was a place of assembly for a large crowd, as illustrated in the miniature wall painting of the "Grandstand Fresco," which, it has reasonably been argued, renders a close-packed gathering in the Central Court (see chap. 9, fig. 9). This court also played a nodal role in circulation inside the palace, as it gives access to all the wings. On its west side is the entrance to the Central Sanctuary, inside which, in the Temple Repositories, the famous "snake goddesses" were deposited (see chap. 6, fig. 9, chap. 9, fig. 3), along with many objects in the minor arts and a host of vases. The space in which the goddess figurines were found served as an antechamber to the complex of the west magazines, in which there were hundreds of pithoi. Here were stored agricultural products for feeding the palace, whereas the sunken chests in the floor of the magazines and the corridor in front of them may have been used for the safekeeping of precious objects (fig. 5). A second suite of apartments, north of the sanctuary, had an entrance from the court in the form of a pier-and-door partition (*polythyron*) (fig. 6). This was the famous Throne Room, with the antechamber and the ancillary rooms (fig. 7). According to Evans, the alabaster throne that rests against the north wall of the room was the seat of the "Priest-King," who presided over a council of nobles and

Fig. 3. South or Great Propylon. Palace at Knossos.

Fig. 5. Pithoi and sunken chests in the floor, West Magazines. Palace at Knossos (Hellenic Ministry of Culture–Archaeological Receipts Fund).

Fig. 4. General view of the "Theatral Area" with two causeways. Palace at Knossos (Hellenic Ministry of Culture–Archaeological Receipts Fund).

Fig. 6. The entrance (*polythyron*) to the Throne Room complex, west side of the Central Court. Palace at Knossos (Hellenic Ministry of Culture–Archaeological Receipts Fund).

Fig. 7. The Throne Room. Palace at Knossos.
Restored drawing (*PM* IV.2, frontispiece).

priests, who sat around him on benches along the walls, after first participating in a purification ritual in the sunken lustral basin opposite the throne. However, it is considered equally possible that a woman sat on the throne, a high priestess, perhaps the earthly representative of the goddess of nature. The goddess's presence is perpetuated by the heraldic griffins painted on the wall symmetrically flanking the throne as her supernatural guardians and companions, as well as by the rest of the mural decoration that renders a riparian environment with reeds and palm trees, conveying the immediate sense of the natural landscape surrounding her.

There is a second entrance on the south side of the court, where was found, fallen from a wall, the relief wall painting of the "Prince of the Lilies," in Evans's view the emblematic figure of the Priest-King of Knossos (see chap. 5, fig. 2).

The East Wing, which housed the domestic quarters, is the largest in area, multistoried, and labyrinthine, with two stories below the level of the court that survive on this side for their entire height. In order to bridge the difference in level, and to heighten the sense and the psychological impact of a tortuous route toward the center of authority, the builders of the palace applied bold and original innovations. The first was the Grand Staircase, a monumental achievement, which gave access from the court to all stories of the wing (see chap. 4, fig. 7). The entire inner side of this heavy construction, which is the solid sloping infrastructure of the staircase, as well as the gypsum treads of the steps and the parapets and the lateral porticoes of its light well, are supported on a succession of overlying colonnades of wooden columns. Of comparable complexity in design and construction is the system of multiple polythyra and light wells around the so-called King's Megaron, on the east side of the ground floor of the wing. This permits endless permutations of controlling circulation, illumination, heating, and ventilation of the internal spaces. This hall, together with the adjacent smaller Queen's Megaron, most probably constituted the chambers of power, which accommodated the ruler of Knossos and his high-ranking entourage.

In other parts of the East Wing there were workshops, such as the Lapidary's Workshop, in which were found large blocks of *lapis lacedaemonius*, raw material for making stone vases. There were also magazines, such as the Magazine of

Fig. 8. The Grand Staircase and the monumental Propylon. Palace at Phaistos.

Fig. 9. The Central Court from the north. Palace at Phaistos.

Fig. 10. The "Granaries" complex. Southwest corner. Palace at Malia.

the Medallion Pithoi and the Magazines of the Giant Pithoi, with huge storage jars, impressive not only for their size and capacity, but also for the richness of their relief decoration.

The most serious change in use of the palace before its final destruction was the installation and operation of a complex bureaucracy, which was particularly conscientious and remarkably efficient (to judge by the thousands of clay tablets and clay sealings found at various points in the palace) in recording and archiving incoming products, livestock, weaponry, missions to sanctuaries, and allocations to officials controlled by the palace. The use of Linear B (cat. nos. 107a–b), which is the earliest Greek script and replaced the Minoan Linear A script, shows that after the destruction of the Minoan centers about 1450 B.C. (LM IB) and until the final destruction of the palace at Knossos about 1350 or 1300 (LM IIIA2), a Mycenaean *anax* occupied its throne.

Large and luxurious urban residences have been explored around the palace. One of these, the South House, which has been restored, offers a vivid picture of a multistory Minoan house with a staircase and comfortable well-lit rooms. A larger space, and possibly the seat of a palace official, is the Little Palace, a complex with large hall, pier-and-door partitions and light wells, which is reminiscent of the King's Megaron in the palace at Knossos. The importance of this building was confirmed by the discovery of the famous stone rhyton in the form of a bull's head (see chap. 6, fig. 6).

The palace at Phaistos is smaller and had a shorter life than that at Knossos, lasting only about one hundred years, from 1550 to 1450 B.C. (LM IA/B). Particularly prominent is the west front onto the court, which is constructed of large ashlar blocks and has a monumental propylon with a wide staircase (fig. 8). The monumental stepped approach brings to mind, in size and form, the neighboring theatral area of the Protopalatial palace, which is why it is possible that, in addition to being a flight of steps leading up to the palace, it was used as a grandstand by palace dignitaries during the rituals and ceremonies performed in the West Court. Equally monumental is the façade of the North Wing onto the Central Court. The entrance is along the central axis, with two engaged columns contiguous with the antae and two symmetrical bays decorated with painted geometric motifs. The Central Court, with colonnades down the long sides, preserves the original pavement (fig. 9). In the West Wing there is a suite of magazines with a spacious antechamber, whereas the North Wing housed the official apartments, comprising two halls with *polythyra*, walls and floors paved with gypsum slabs, and a large lustral basin.

The palace at Malia was built about 1650 B.C. (MM IIIB) and was destroyed in 1500 or 1450 (LM IA–B). As in the palace at Phaistos, the official quarters were in the North Wing and the magazines in the West Wing. There were also magazines in the East Wing, as well as externally, at the southwest corner of the palace, in a complex of "granaries," circular structures above ground (fig. 10). The North Wing

Fig. 11. The "Loggia." West Wing façade, Palace at Malia.

having a circular offering table (*kernos*) with round depressions for placing offerings. The picture is completed by an altar with *eschara*, for burnt offerings and sacrifices in the Central Court, opposite the monumental propylon, the entrance to the West Wing, and a small hemispherical *baetyl*.

In addition to the palace, several houses in the wider area of the town have been excavated at Malia. Generally of careful construction, large and certainly multistoried, with many rooms and halls with *polythyra* and lustral basins, they bear witness to the dissemination of the palatial life style and the corresponding behavior patterns to the urban environs.

The palace at Galatas was built about 1700 B.C. (MM IIIA) and destroyed by earthquake about 1500 (LM IA). The East Wing includes a suite of magazines, a kitchen, and a large hypostyle hall with a rectangular hearth between four

Fig. 12. A general view of the Palace at Zakros from the northwest. (Hellenic Ministry of Culture–Archaeological Receipts Fund).

includes a large hall with pier-and-door partitions and light wells, a lustral basin, a large hypostyle hall, and a peristyle court, as well as ancillary rooms. The Central Court has colonnades on the east and north sides, and was a venue for rituals—ceremonies whose focal point was the façade of the West Wing. This conclusion is drawn from the formation of the "loggia" on its north side (fig. 11)—an elevated roofed space open to the Central Court, with a base for a throne or an altar—and a second stepped construction on the south side, which recalls the theatral areas of the other palaces, pillars, an arrangement reminiscent of the combination of circular hearth and columns in the Mycenaean *megaron*. The West Wing and the West Court have been largely destroyed. The North Wing, which is the largest, has an impressive tripartite façade constructed of massive ashlar blocks that faces the Central Court. The wing was certainly multistoried, as can be deduced from the thickness of the walls and the dense timber frame that bore their weight. As at Phaistos and Malia, it housed the formal apartments and the seat of the local ruler in a large hall with *polythyron*, portico, and light

well, as well as rooms in the upper stories. South of the hall is a row of three rooms with rectangular plaster panels on the floor, with carbonized remains of wooden planks. Outside the palace there was a perimetric system of circulation with roads and platforms to accommodate ceremonial appearances and attendance at cultic activities, as well as pitlike *bothroi* for performing offerings and sacrifices.

The palace at Zakros (fig. 12; see also chap. 4, fig. 3), on the east coast of Crete, was built about 1550 B.C. (LM IA) and was destroyed by earthquake about 1450 (LM IB). The closest parallel for the layout of its internal spaces is the palace at Knossos, with the official quarters in the East Wing and the central shrine with the banqueting halls in the west. In the East Wing, apart from the badly damaged halls with pier-and-door partitions, there are two underground spring chambers, one circular and the other rectangular, which were used for recreation by the occupants of the official apartments, as well as for performing rituals. In the West Wing (fig. 13) were state apartments with complex meander patterns of stucco on their floors and friezes of relief spirals on the walls. The propinquity to the large kitchen to the north attests that these halls were intended for organizing banquets. Superb stone vessels were found in the rooms to the west. Numerous rhyta and chalices, outstanding among them a chlorite rhyton covered in gold leaf, with the relief representation of a peak sanctuary, and a delicate rhyton of rock crystal (see chap. 7, figs. 5–7), another rhyton shaped like a bull's head (cat. no. 205), as well as an elegant stone amphora, masterpiece of decorative art. These are evidence that the halls in the West Wing were the venue for official ceremonies and rituals in the palace. The class that organized these events must also have been responsible for trade in precious materials, such as the copper ox-hide talents (ingots) and the elephant tusks found in the royal treasury, together with the precious vessels (see chap. 12, fig. 5).

The palace stands in the middle of a large settlement. In one of the houses, a large archive of clay seal impressions was brought to light, demonstrating that the occupants were involved in important administrative activities, perhaps in collaboration with corresponding officials of the palace.

Fig. 13. The West Wing of the Palace at Zakros from the southwest (Hellenic Ministry of Culture–Archaeological Receipts Fund).

The palace at Petras, Siteia, also had a small Central Court accessible from the north via a wide staircase. At a lower level on the north side there was a suite of magazines containing many pithoi. Like all the centers in Minoan Crete, it was destroyed about 1450 B.C.

Palatial Buildings—"Villas"

This category includes buildings that deviate to a greater or lesser degree from the canonical palace type described above, or that present palatial characteristics in their architectural

Fig. 14. Lilies fresco. Villa at Amnisos (ca. 1550–1500 B.C.). Herakleion Archaeological Museum.

design and construction. In some cases, their complete excavation is not possible because they have been found in modern settlements, and for the present there is no clear and full picture of their architectural form and uses. To this category may belong the palatial compounds at Khania and Archanes, whose excavation is still in progress. Therefore, it is highly possible that it will be proven that they are palaces of the proper type, once their central courts come to light.

Recent research has shown that buildings of this kind were central buildings in settlements and that their occupants were in control of a specific region. They were once thought to have been isolated or at least not in the middle of a settlement, which is why they have been called villas, an allusion to European Renaissance or Victorian models of aristocratic country houses. The largest buildings of this category, displaying the most overtly palatial features, are located in central Crete.

The closest to the palace model in size, architectural type, and construction materials is the large central building at Kommos, obviously the "palatial" administrative center of the populous harbor town on the south coast of Crete. Its plan is rectangular with impressive external masonry of dressed stone blocks on a robust orthostat (see chap. 4, fig. 8), a large internal court with colonnades on the narrow sides, and two wings of oblong spaces, kind of large magazines of which the east one has survived. It was built about 1650 B.C. (MM IIIB) and was abandoned gradually until about 1450 (LM IB). It was rebuilt with more or less the same basic architectural characteristics, and presumably for analogous use, about 1400 (LM IIIA1), and abandoned altogether about 1300 or slightly later (end of LM IIIA2).

Of all the buildings in this category, the one with the richest content is the Royal Villa at Haghia Triada, close to Phaistos. It comprises two building complexes in an L-shaped arrangement, each with its own halls with pier-and-door partitions, ancillary spaces, and magazines. It was built about 1600 B.C. (LM IA) and was fully active when it was destroyed by fire about 1450 (LM IB). The Villa yielded outstanding works of art and ritual vessels, such as the "Boxer Rhyton" (see chap. 11, fig. 1), the "Harvester Vase" (see chap. 6, fig. 5), and the "Chieftain's Cup" (see cat. no. 163), as well as numerous bronze and clay figurines, evidence that the occupants engaged in diverse religious activities. Excellent-quality wall paintings of religious subjects and natural landscapes were also found, as well as copper talents (ingots) representing hundreds of kilos of the raw metal. Of significant scope and certainly of strategic importance was the Villa's control over collecting and circulating considerable quantities of agricultural produce, primarily grain. The Villa was also engaged in intensive correspondence with other Minoan centers, as documented by the tablets in Linear A script and the seal impressions, more than twelve hundred examples, which make up the largest known archive of this kind found in Crete. Such is the wealth, the quantity, and the quality of the works of art and the size of the archival material that it has reasonably been suggested that the Villa had gradually taken over the functions and the most important uses of the majestic, but poor in content, palace at Phaistos nearby. After the destruction of the Minoan Royal Villa, a large megaroid building reminiscent of the corresponding Mycenaean megara and perhaps the seat of a local ruler, was built upon its ruins. Around this spread a settlement and the so-called Agora, a complex that brings to mind Graeco-Roman porticoes with shops. These were abandoned shortly after about 1300 B.C. (end of LM IIIA2).

A large building complex with high-quality palatial architecture is the Palatial Building at Archanes, which has been partially excavated. It has a monumental south façade of excellent ashlar masonry and a propylon-type entrance with two columns that leads into spacious halls and magazines. Many pithoi, lovely stone and clay vases and vessels, and fragments of ivory figurines have come to light. South of the propylon opens a court with a large dais and a built runnel to receive libations. Four stone biconcave altars found placed on the stylobate of the propylon, possibly supports of

Fig. 15. A general view of the town of Gournia.

a wooden dais like the one depicted in the large wall painting composition from Xeste 3 at Akrotiri, Thera, appear to have been functionally associated with open-air rituals. The palatial character of the ceremonies and rituals is reinforced by the large circular spring chamber preserved in the basement of a neighboring house, which brings to mind the corresponding one at Zakros. Excavations in other plots in the modern village have yielded an archive of tablets with Linear A script and a paved court with elevated causeways. The Palatial Building was destroyed by fire about 1450 B.C. (LM IB).

The Megaron at Nirou Chani, a small building in which there was copious use of gypsum slabs for floor paving and veneering—luxurious elements presumably aimed at promoting the status of its users—seems to have served mainly religious functions. The monumental propylon and the paved court in front of it, with a stepped dais or altar, as well as the contents of the building, corroborate this view. The oversize bronze double axes (see cat. no. 196) and the numerous stucco offering tables stored in the building's interior must have been used in rituals performed in the court and focused on the stepped construction.

A picture of comfortable and refined urban life is presented by the so-called Villa at Amnisos, which included a large hall with *polythyra* and reception rooms adorned with wonderful wall paintings depicting gardens with flower beds planted in lilies and irises (fig. 14). The urban models of the houses of Knossos are also reproduced in the opulent "houses" at Tylissos, with excellent ashlar masonry, halls with *polythyra*, and lustral basins. The oversize bronze cauldrons and some fragments of wall paintings with miniature representation of carrying vessels attest that the occupants of the houses were involved in organizing large-scale banquets.

Control of the economic exploitation of the highland zone of Mount Ida (Psiloreitis) was evidently the raison d'être of the two large buildings at Zominthos and Sklavokampos, on the road to the Nida Plateau. What is impressive about the building at Zominthos is its preservation to the level of the floor and the outside windows. Inside there were dozens of rooms, some with walls decorated with colored plaster, among them a potter's workshop. It was destroyed by earthquake about 1500 B.C. (LM IA). The building at Sklavokampos has a central hypostyle hall in which banquets may have been held, given the proximity to the kitchen, and ancillary spaces. The discovery of an archive of sealings attests that bureaucratic activities had developed in connection with the circulation of products (see chap. 11, fig. 2). The building was destroyed about 1450 (LM IB).

The "Country House" at Vathypetro, close to Archanes, controlled and exploited the production of a fertile region. This is borne out by the installations of a grape-pressing

floor and an olive press, as well as a magazine with large pithoi. The existence of a hypostyle hall and a kitchen indicates that here too the occupants organized banquets, and the propylon-type entrance with columns, a borrowing from urban architecture, denotes, as in other analogous cases, the occupants' desire to emphasize their relations with the central core of authority. The destruction of the "Country House" is dated to about 1450 B.C. (LM IB).

Other large "central" buildings were involved in similar activities in the regions of the Kastelli plain and the eastern Mesara. At Kastelli, Pediada, the building stood on the flat top of a knoll at the center of a large settlement. It included a hall with pier-and-door partition and a dais, in which banquets were held and libations made, as inferred by the runnel at the base of the dais and the discovery of many libation vases, jugs, chalices, and tubular vessels, as well as *kalathoi* and cooking pots. To the south was a paved and pebbled court with an elevated "walkway" below a columned portico. The building was erected about 1600 B.C. (MM IIIB/LM IA) and destroyed by fire about 1450 (LM IB).

The large building at Protoria in eastern Mesara has a monumental propylon with columns, an antechamber with a bench, and a hypostyle hall with pillars, as well as a large suite of magazines that contained pithoi and other vases. To the north opens a paved court with colonnade along the outside wall. The building was destroyed by fire about 1450 (LM IB).

In east Crete, several buildings of country house type have been located and explored, primarily in the region of Siteia. Some are related to the control and collecting of agricultural yields from the small plains and plateaus of Siteia, while others likely controlled the road axes and the passes. They have installations, magazines, and grape-pressing floors. The "villa" at Epano Zakros is the most impressive example of a rural building of this category, with large storage spaces and manufacturing installations, as well as rooms for formal use, as attested by the discovery of wall paintings with composite motifs (cat. no. 159).

A building of palatial character stood at the center of the Minoan town at Gournia (fig. 15). Its outside walls were built of ashlar blocks, and inside it had a large hypostyle hall and magazines. Its entrance was arranged as a propylon, with a stepped construction in front of it, in the type of a dais or a small theatral area, which was functionally contiguous with a large rectangular court, a place for assembly and events corresponding to the courts of the palaces.

In the settlement at Palaikastro there are elements of an organized urban tissue. The houses are large and some have internal peristyle light wells, facades of ashlar blocks looking onto paved streets intersecting at right angles. The destruction of all the above settlements and buildings is dated to about 1450 B.C. (LM IB).

In western Crete, in the Khania district, a large villa with urban architectural features, specifically a Minoan hall with pier-and-door partitions, has come to light close to the village of Nerokourou. It proves the expansion westward of the type of rural villa with pronounced architectural and functional characteristics.

In the old town of Khania, close to Splantzia Square, a large building complex, perhaps part of a palace, is now being excavated (see chap. 14, fig. 5). So far the investigation has revealed an intricate suite of halls with *polythyra* and a lustral basin, the latter decorated with wall paintings imitating marble dado, as well as rooms in which ceremonial banquets were held and libations made. The libation ritual focused on a large paved dais with a channel around, perhaps to receive the liquids. The complex was destroyed by fire about 1450 B.C. (LM IB). At other places in the modern town, parts of Minoan buildings have been investigated, one with a pier-and-door partition and a light well. A large archive has also been found, with sealings and inscriptions in Linear A (see cat. nos. 102–106, 117, 118). The recent discovery of Linear B tablets means that the city and perhaps a palace complex continued to exist after the destruction of about 1450 B.C.

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CHAPTER 4

PALATIAL ARCHITECTURE: THE CREATION OF A SOPHISTICATED URBAN SOCIETY

Clairy Palyvou

The study of Minoan civilization is more than a century old, yet its exquisite architecture has still to find its proper place in the history of the architecture of the Western world. This lacuna may have been caused by a time lag between field research and academic processing of data, but it is also a result of the shadow that the classical spirit and architectural marvels of the Perikleian "golden age" have cast on Aegean prehistory. It is no coincidence, however, that Arthur Evans used the same term, "golden age," to describe an earlier era of great creativity and marvel in this part of the world, the so-called Neopalatial (or Second Palace) period, about the first half of the second millennium B.C.

At that time, Crete was throbbing with life; large urban centers, numerous smaller settlements, and rich country houses were spread all over the island, especially in the central and eastern areas. Architecture, as an expression of the lifestyle of the era, speaks vividly of a sophisticated urban society in which high living standards, art, and luxury items were shared by many members of the community. It was a time of economic affluence and, presumably, political stability for Crete.

The accomplishments of the Neopalatial period—the Late Bronze Age, in archaeological terms—did not happen overnight but rather developed gradually. Interestingly, some of the main characteristics of the Minoan style of life—and therefore of its architecture—seem to have been established quite early; dense habitation, interior zoning according to function, and intricate circulatory patterns are attested in Neolithic houses excavated under the palace at Knossos.

The construction of the palaces signals a breaking point in the architectural history of Crete. Sophisticated concepts of space made their appearance, triggering bold innovations in building technology. The ruins we see today belong to the second palaces (fig. 1). These large building complexes were built

Fig. 1. A general view of the palace at Knossos from the northeast (Hellenic Ministry of Culture–Archaeological Receipts Fund).

Fig. 2. A general view of the palace at Phaistos, from the northwest. The West Court on the right and the Mesara Plain in the background.

along the lines of the first palaces, for which our information is poor, deriving mostly from Phaistos (fig. 2). The town of Malia is helpful in this respect. Although little has survived from the first palace itself, there are well-preserved civic buildings and public open spaces that speak of changes in the life of the community as it prepared for developments to come. The First Palaces are believed to have been fatally hit by earthquakes, but the erection of the Second Palaces was more than a reconstruction: it marks the crystallization of urbanization as a process that found its full expression in both the public and the private domains.

The sophisticated architectural design and costly building technology of the new palaces were now also integrated into numerous villas and mansions. The proliferation of a palatial style of life reaching beyond the limits of Crete—as attested at Akrotiri, Thera—is a significant characteristic of the "golden age" and has important sociopolitical implications. The interpretation of these observations, however, is not easy, for it will always be hampered by the lack of written evidence. Moreover, interpretation is greatly influenced by the trends of the time and therefore may change. It is only natural, therefore, that we have been questioning some of the interpretations given in the early days of Minoan archaeology, at the dawn of the twentieth century. The term "palace," as the seat of a king, along with many architectural names given by Arthur Evans and J. W. Graham ("piano nobile" and "lustral basin," for example) have been criticized as unsupported and misleading. As the wheel turns, however, some of these terms—or at least the ideology behind them—are gaining acceptance once again.

From an architectural point of view, the buildings themselves cannot give definite answers to questions about the identity of their inhabitants or users nor can they specify functions for each space. Be that as it may, there is still much to say about the architecture of the elusive "Minoans" in terms of concepts of space and building technology, as we attempt to understand the ambience of Minoan architecture as a whole. Surprisingly enough, this ambience (at least in its material form) appears very familiar to us today, as we enter the second millennium A.D. in the reverberation of the "modern" movement.

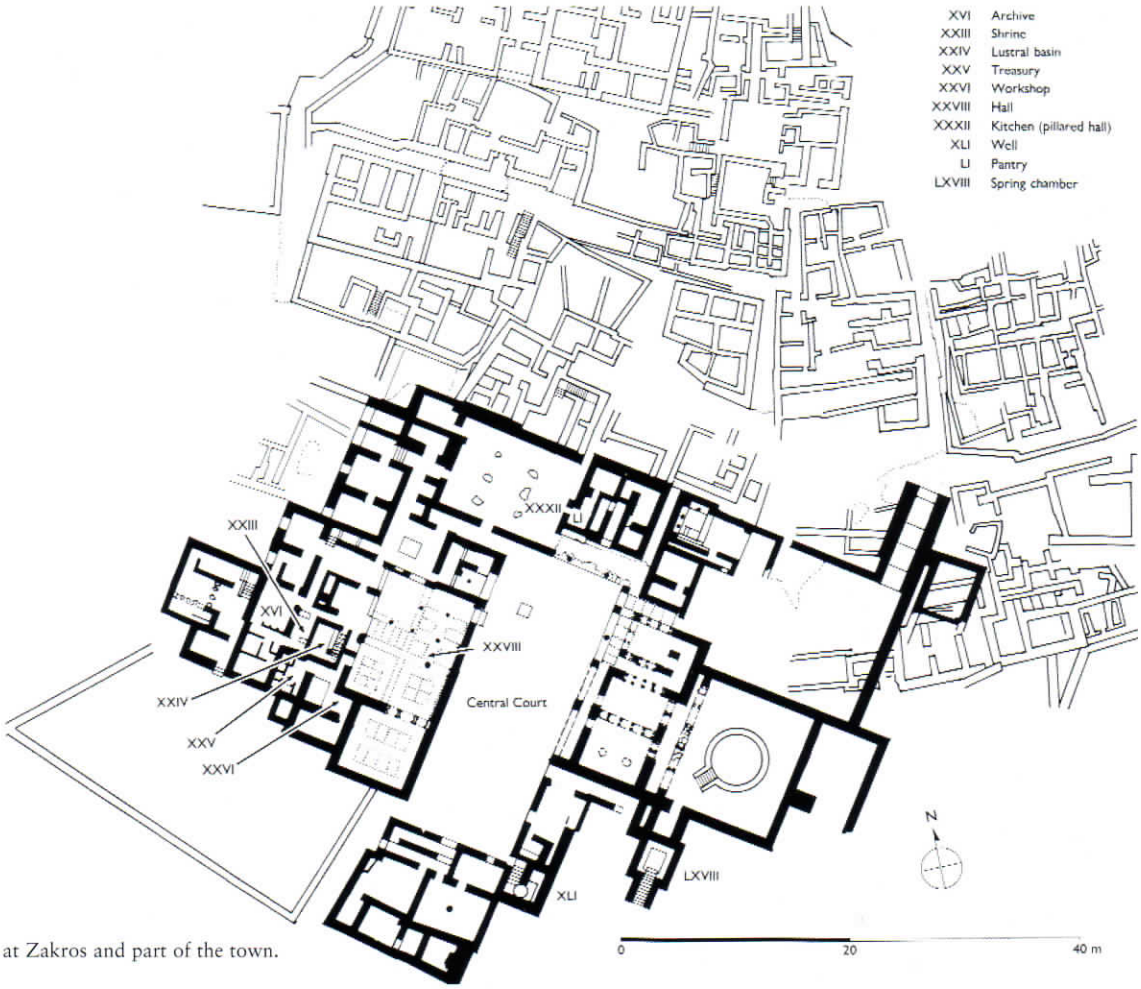


Fig. 3. Plan of the palace at Zakros and part of the town.

The "Palace": An Urban Design Concept

Although we are still lacking a widely accepted definition of a "Minoan palace," it would be safe to describe the building complexes of the major urban sites of Crete (Knossos, Malia, Phaistos, and Zakros) in terms of an urban design concept (fig. 3).

The Minoan palace cannot be thought of as a building: one can hardly define its outer limits—not to mention distinct façades, except for the west front, and even that not always—and in most cases it blends inextricably with the surrounding city. The skyline is also softly gradated, since the houses surrounding the palace are just as tall, and just as impressive, for that matter. Moreover, it consists of distinct clusters or zones of spaces that correspond to different functions and are arranged next to one another, though not always in direct communication.

The main focus and reference points for the layout and cohesion of these clusters are the large open-air spaces included in their fabric, especially the central court. Outdoor space plays a primal role in Minoan palatial architecture, and it exists in various forms and sizes, from the broad west court to the smallest light well planted deep in the heart of the building. The central court, however, is by far the most characteristic outdoor unit. It is "the diagnostic feature of a Minoan palace," in Davis's words, but also the hub of the town and the nucleus of the Minoan world. It is a strictly designed orthogonal open space, with dimensions proportioned very close to 1:2 and with an orientation along a north-south axis. In an architecture of approximation, such as Minoan and prehistoric architecture in general, it is of great importance that *the only absolutely predetermined and strictly designed space is, in fact, an open-air space.* This fact alone reflects the great significance that outdoor activities must have had in the Bronze Age and shows that an unbuilt space can be even more important than a built space.

The central court is truly both central and a court. The latter is attested by the fact that this large open space is well defined on all sides, and access to it is restricted and controlled. As an open space, it acquires its architectural identity through the buildings that surround it. The façades rising on all four sides provide the third dimension and determine the architectural character of the place. It is here that we find the most sophisticated and magnificent façades of the Minoan world—elegant perforated façades composed of numerous

Fig. 4. Knossos. Restored drawing of the façade of the West Wing of the palace looking on the Central Court (by Piet de Jong).

openings, colonnades, and piers that form sheltered stoas, balconies with wooden balustrades, and verandas (fig. 4). The façades stand in strong contrast to the strictness of the layout of the court and provide a subtle gradation from the open-air space to the inner compartments. It is no wonder that most of the sophisticated architectural depictions of Bronze Age art have been identified with these very façades.

The other important large open-air space related to a palace is the west court (fig. 2; see also chap. 3, fig. 2). In this case, the term "court" is misleading, for it is an open public space with loose boundaries and unrestricted access. It borders the west façade of the palace and functions as the meeting point between the palace and the town. It is the only place where the two domains—the town and the palace—actually confront each other. In this confrontation, the palace has raised an imposing and impregnable façade, whereas the town keeps its distance, instead of encroaching on the palace as it does on all other sides.

Circulatory Patterns

Circulation control in Minoan architecture is of major significance. It is sometimes compared to a labyrinth in a rather negative way, as confusing and misleading. That is far from true; on the contrary, Minoan architecture exhibits a very sophisticated understanding of circulation within a building compound as a means to facilitate movement and intercommunication by providing alternative routes arranged in a meaningful manner. The system provides a hierarchy of movement according to the identity of the user and the functions involved. Circulatory patterns involve a large number of doors, corridors, and staircases. These staircases function as "doors" by providing direct communication between functionally related zones set at different levels.

A special feature that characterizes the urban environment of the Minoan towns is the causeway, which is made of large, dressed stones, approximately one meter wide, slightly raised in relation to the ground level (fig. 2; see also chap. 3, fig. 4). These walkways provide a clean, even surface on which to walk, and they define directions as they run through loosely defined streets and open areas, leading to the entrances of houses and, ultimately, of the palace. Like Ariadne's thread, these causeways can guide a visitor or a newcomer to the town straight to the entrance of the palace, whereas on special occasions they may also acquire a more formal function as "Corridors of Procession."

Some of the causeways continue within the palace compound, though surely not for practical reasons, as they are no longer raised. Rather, they seem to penetrate the building

Fig. 5. Knossos, Royal Villa: a typical Minoan hall with a pier-and-door partition (Michailidou 1997, p. 110).

compound in a symbolic manner, as if the town were invading the palace (further evidence of the close relation between the two). At the South Entrance of Knossos, the causeway continues into the Corridor of Procession and stops only when it reaches the Central Court. The corridor itself, in its width and length and the way it turns at right angles, just like a street, is an urban element transposed indoors.

Concepts of Space: Soft Gradations and Interlocking Architectural Elements

Outdoor living was always favored in this part of the world, and the architecture of the Aegean Bronze Age is a vivid manifestation of it. This kind of living became so characteristic that a traveler visiting Greece in the nineteenth century wrote: "The Greeks build their houses so that they can sleep outdoors!" An effective remark, indeed, for outdoor space is defined in juxtaposition to indoor space, and thus architecture is understood as an integral entity of both its built and its unbuilt components.

Each pair of opposites (built/unbuilt, outdoor/indoor, exterior/interior, open/closed, open-air/sheltered) defines a spectrum of intermediate situations. In Minoan architecture these situations are extremely rich in nuances. The best example—and, at the same time, the most typical architectural feature of Bronze Age Crete—is the Minoan hall (fig. 5). It comprises three units in juxtaposition: a room, a sheltered porch, and an open-air space, usually in the form of an enclosed court. What is special about this formal tripartite compartment is that one, two, or even three sides of the main room have rows of doors, instead of walls, leading out to sheltered porticoes. This structural element has been dubbed *polythyron*, or "pier-and-door partition," and is an ingenious technical invention of the Minoans. It consists of an intricate load-bearing timber frame that usually comprises four doors. Depending on which doors are open and which remain shut, the partition can provide a large variety of indoor/outdoor communication systems. It also provides a soft gradation from open-air to sheltered space and hence to indoors, from bright light to shadow and darkness, from warmth to coolness, from the soft earth to the hard pavement, and so on. This ingenious device has also been used to join interior rooms, thus providing large intercommunicating spaces. A further variation is the pier-and-window partition, like those seen at the upper floors of the houses at Akrotiri.

Fig. 6. Archanes clay model of a house (ca. 1600 B.C.). Herakleion Archaeological Museum.

Another typical feature of Minoan architecture is the light well. This term needs to be clarified, however, because it has been misused. "Light well" here refers metaphorically to a well that has been "drilled" into the mass of a building in order to provide light and air to rooms that have no other means of securing it. Many of the Minoan open-air spaces that have been dubbed light wells are, in fact, areas that provide primarily privacy rather than light. Such is the case with many Minoan halls, where the outdoor space is secluded by walls in the form of a court or a garden; see, for example, the Archanes clay model of a house (fig. 6). True light wells do exist in Minoan buildings, however, the best example being the light well of the Grand Staircase at Knossos (fig. 7). Staircases had strict regulations regarding lighting standards, and the magnificent Grand Staircase is no exception. The ingenious idea of substituting the interior walls of the staircase with superimposed colonnades winding around a light well not only insured ample light to the structure but also created a unique feeling of lightness and transparency.

Fig. 7. Palace at Knossos. The Grand Staircase (Michailidou 1997, p. 77).

Building Techniques and Materials: Wood, the Inconspicuous Hero

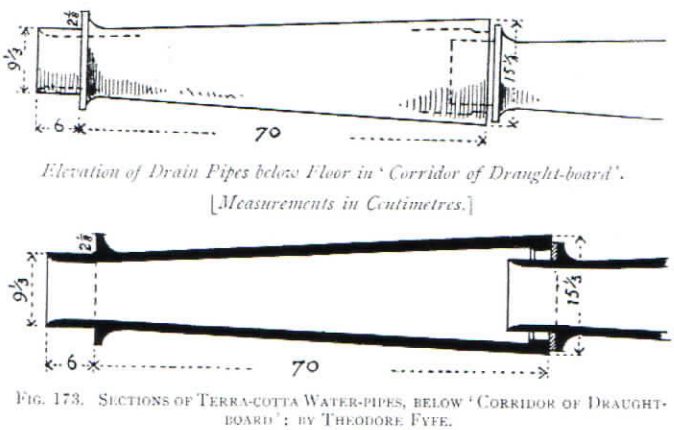
The extraordinary building technology that the Minoans had developed by the time of the second palaces can be discussed only briefly. The architectural style described above—multistory buildings; numerous columns and freestanding supports; far too many openings, including doors and windows and highly pierced walls even on ground-floor level—was very demanding from a structural point of view, let alone for buildings in an earthquake-sensitive region. In an era as prolific as the Late Bronze Age, however, difficulties of this sort became a stimulus for further efforts and technological improvements.

Earthquake-resistant concerns form an integral part of the ultimate goal of building in a durable and long-lasting manner. It is often difficult to tell, therefore, if the builders were aware of the earthquake-resistant contribution made by certain structural details they adopted. It is no coincidence, however, that the material that played the most defining role in the formation of the Minoan architectural idiom was wood: the colonnades, the numerous doors and windows, the floors, and the staircases are all made of wood. Moreover, many walls are reinforced with timber elements, some of which include vertical posts. Wood adds elasticity to a structure and also helps ensure the collaboration of all parts of an edifice in case of severe strain.

Fig. 8. Ashlar orthostates from Kommos (Shaw 2006, fig. 19). Permission by Princeton University Press.

Another characteristic feature of Minoan Neopalatial architecture is the ashlar technique. The ashlar façades, in both palaces and houses, are of exquisite craftsmanship—the best in the eastern Mediterranean world. Well-dressed orthostates topped by rubble walls (or mud bricks, in some cases) are yet another type of wall construction. Those at Kommos are of extraordinary dimensions, with some more than three meters long (fig. 8).

What best manifests the high living standards of the Minoans is their water-and-waste technology. Water-supply systems bringing fresh water from nearby springs are attested only at the palace at Knossos (fig. 9). Pipes and channels are wisely calculated and designed, even by modern standards, and so is the drainage and sewage system, which extends not only under the large palace compounds but under the streets of the towns as well. However, the technical device that shows beyond any doubt the high living standards that those people enjoyed in their cities is the indoor toilet. The best-known example is in the palace at Knossos. At first, the existence of this toilet was attributed to the high status of its user—presumably the "queen"—but only a few years later an even more sophisticated counterpart was found on the upper floor of an ordinary house at Akrotiri, Thera (this one was equipped with a siphon!). Naturally, we may well guess the presence of such facilities in the houses of Crete as well.



Elevation of Drain Pipes below Floor in 'Corridor of Draught-board'.
[Measurements in Centimetres.]

FIG. 173. SECTIONS OF TERRA-COTTA WATER-PIPES, BELOW 'CORRIDOR OF DRAUGHT-BOARD': BY THEODORE FYFE.

Fig. 9. Drawings of clay water pipes from Knossos (*PM* III, p. 253).

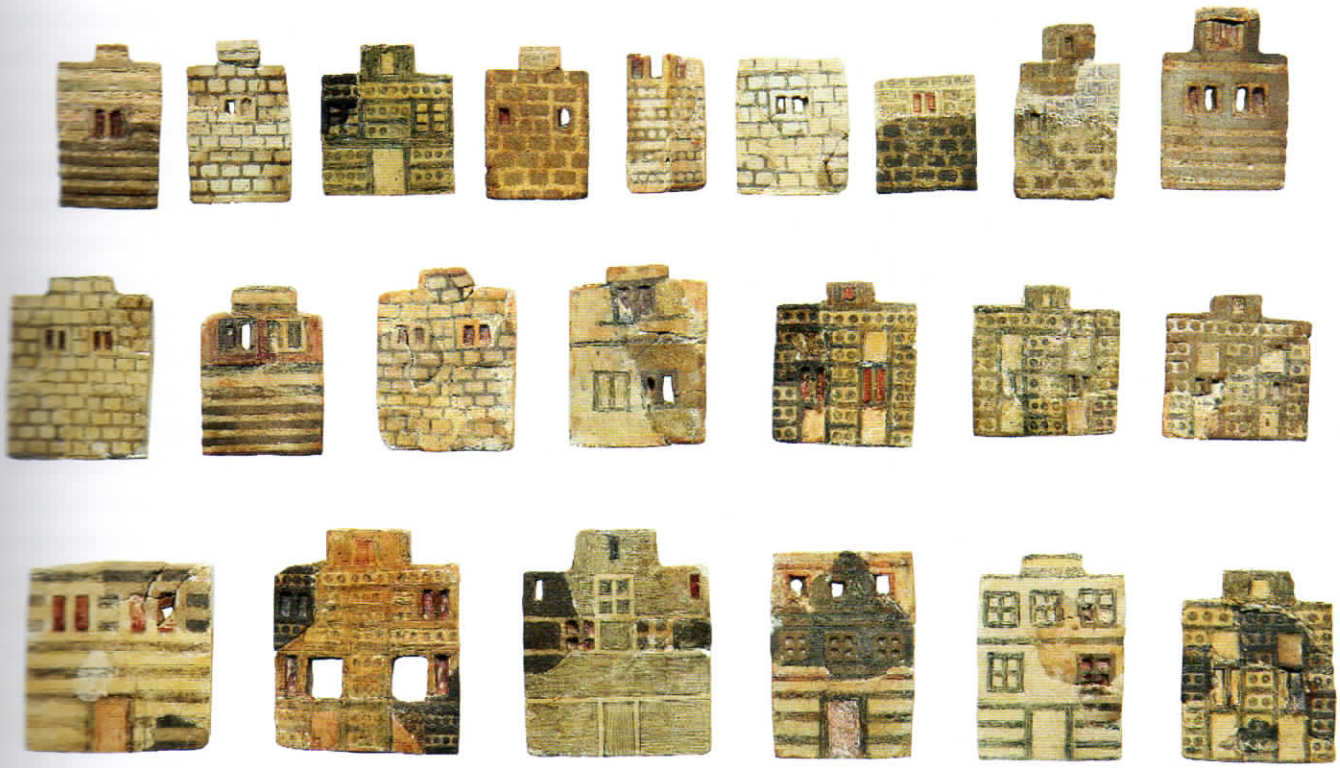


Fig. 10. "The Town Mosaic." Faience plaques depicting two- or three-storied houses. Knossos (ca. 1600–1500 B.C.). Herakleion Archaeological Museum.

Unity and Diversion

The sophisticated style of architecture and the technology described above applies to what is vaguely called "palatial architecture." The term "palatial" refers to a broad range of buildings, some of which are unanimously accepted as "palaces" (whatever the precise definition of that word is); other buildings are a matter of debate among scholars, whereas many more are large mansions (often called "villas") in the countryside or in the towns. The latter are thought to be the residences of the Minoan elite.

The difficulties in defining clear borders between types of buildings reflect not only our limited understanding of the architectural relics of the Minoan world but also a real situation: the subtle and gradual transition from the most humble hut in the countryside to the palace at Knossos is, indeed, a basic component of the architecture of the time. The unity of Minoan architecture is clearly recognizable in terms of the fundamental principles of design and building technology. Diversity, however, is an essential part of its identity. The impressive variety of forms is well attested in the art of the period as well. Architectural representations are abundant and show an amazing awareness of structural details; see, for example, the Archanes clay model of a House and the Town Mosaic (figs. 6 and 10). This awareness shows not only a strong affiliation between artists and architects but also a technical knowledge shared by a more general public.

There is no doubt that the works of the Minoan "golden age" speak of bold and ingenious craftsmanship. The people involved in the building industry were in direct contact, exchanging knowledge and experience, and probably formed a body of specialized artisans. Their knowledge, however, was not restricted to a set of formal prototypes; it allowed for experimentation, innovation, and the creation of new variations of existing models. We are witnessing, then, an era of versatile thinking and uninhibited creativity, when new ideas were being born based on a long-lasting tradition. Palatial architecture, therefore, is the creation of a robust urban society at its peak of intellectual power.

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CHAPTER 5

FROM MYTHICAL MINOS TO THE SEARCH FOR CRETAN KINGSHIP

Christos Boulotis

Minos through the Mirror of History

In the Aegean world, the ancient institution of kingship found an almost archetypal expression in the person of Minos, the legendary king of Knossos. Originating in Cretan palatial civilization, he is mentioned explicitly by name in the Homeric poems. The famous passage of the *Odyssey* (XIX, 172–79) that mentions Crete with its ninety cities names only Knossos and its king, Minos, who is referred to as *enneoros*—one who holds office for a nine-year cycle—and also as *Dios megalou oaristes*, he who is conversant with the great Zeus. In the *Iliad* (XIV, 323), Zeus himself is heard telling Hera that his union with Europa produced Rhadamanthus and Minos, who was *isotheos*, equal to the gods. In the same poem (XIII, 450), the brilliant warrior Idomeneus, king of Knossos and the whole of Crete at the time of the Trojan War, brags about being the grandson of Minos, whom Zeus had placed on the island as *epiouros*—that is, as supervisor and guardian and, consequently, the one responsible for enforcing Zeus's law. Another passage of the *Odyssey* (XI, 322) presents Minos as *oloophron*, an ambiguous adjective meaning both keen-sighted and sinister, which suggests that he had both political and military power.

A little later, in a passage preserved in the pseudo-Platonic dialogue *Minos* (320d), Hesiod praises Minos by saying that he was the strongest among the mortal kings (βασιλεύτατος γένετο θνητῶν βασιλήων) and that he ruled over a great number of people and cities, wielding the scepter that he received from his father, Zeus, as a symbol of power. Minos's direct descent from the supreme god (who was born, according to widespread ancient traditions, in Crete, in a cave on Mount Dikte) and his god-given and therefore sacred scepter gave him undisputed divine prestige, which legitimized the superiority of his rule in the eyes of the world. This reputation undoubtedly led also to his fame, which lasted well into the historical period, as a model of the wise legislator, since his laws were believed to be the first in human society and to have provided the Cretans with enviable prosperity. His laws were wise and just, since behind them stood the figure of Zeus, with whom Minos met periodically in order to renew his power, as well as to consult on the art of ruling and discuss matters of his kingdom.

Plato admired the Cretan institutions, since they were based on the laws instituted by Minos (*Laws* I, 624: *τοῖς πόλεσιν ὑμῖν θέντος τοὺς νόμους*). The pseudo-Platonic dialogue mentioned above informs us that Crete remained prosperous because of the ancient king's legislation and that Minos had appointed his brother Rhadamanthus as law keeper (*Minos* 320c). Aristotle commented in his *Politics* (II, 1271b) that Crete's class system relied on laws that Minos had introduced. This wise legislator of prosperous Crete was fortunate enough to be able to continue his divine work posthumously in the Underworld, having been appointed by Zeus to be the supreme judge of souls. In this Minos was aided by Rhadamanthus, whose sense of justice was also legendary, as well as by the just King Aiakos of Aigina. It is precisely in this role of *themistes*, or judge, that we encounter Minos in the *Odyssey*'s Nekyia (XI, 568–70), where he is seated on a throne and holding a gold scepter. Again, according to ancient tradition, Minos and his brothers, Rhadamanthus and Sarpedon, inherited their rule from Asterion or Asterios, the ancestral king of Crete, to whom Zeus had entrusted his former lover, Europa, as wife. Asterion, being childless, adopted the great god's offspring (Diodorus of Sicily 4, 59, 3), and Minos was the son who prevailed in the disputes that broke out over the succession and dominion of the island. According to one version of the myth, Asterion divided his kingdom into three parts before his death, but, according to another, Minos himself divided the kingdom and kept Knossos as his own seat.

In the rich and complex mythology of Crete, as it is known to us through a number of ancient authors, beginning with Homer, and particularly through the biased Athenian filter, Minos appears as an imposing central figure, with a positive image in the early sources, but a controversial one later on. A multitude of legends grew up around him that had originated in different traditions and periods and had served different purposes on various occasions. Of the eight children whom Minos had with his wife, Pasiphae, the best known are Ariadne, Phaidra, Glaukos, and Androgeos. Two other figures, however, became emblematic of Minos's tumultuous reign. First was the double-natured Minotaur, a monstrous beast with a man's body and a bull's head, which was named for Minos himself and the bull, Minoan Crete's primary sacred animal. The other figure was Daedalus, the ingenious architect, craftsman, and inventor who is mentioned explicitly for the first time in the *Iliad* (XVIII, 592). According to legend, Daedalus sought refuge at Knossos and in King Minos's court after he was exiled by Athens for having thrown his nephew and disciple off the Acropolis in a jealous rage because of the latter's increasing fame.

The Minotaur was the illegitimate result of Pasiphae's union with a powerful bull sent by Poseidon to Minos as a divine sign of kingship (a union achieved through Daedalus's famous trick with the wooden cow). Minos hid the Minotaur inside the Labyrinth, the most complex and enigmatic build-

ing in antiquity, another of Daedalus's creations. Working primarily for Minos, Daedalus became an archetype of human ingenuity throughout the ancient world. Among other achievements, he was the first to attempt human flight when he fashioned wings for his son Icarus based on his observation of the flight of birds.

As presented in Athenian versions of the myth, both the Minotaur and Daedalus served Athenian propaganda, primarily through its poets, who discredited Minos for having attacked Attica, on which he had imposed an unbearable tax. Athens responded to the mighty king of Knossos with its own hero, Theseus, who slaughtered the Minotaur and, with the help of the love-struck Ariadne and her famous clew (another of Daedalus's inventions), escaped the Labyrinth and saved seven young men and seven young women whom Minos intended to feed to the beast. Humiliated by Ariadne, who secretly eloped with the Athenian Theseus, and by Daedalus, who escaped Knossos and sought refuge in the court of King Kokalos of Kamikos in Sicily, Minos frantically chased Daedalus with his fleet and died tragically in Sicily by the hand of Kokalos's daughter. Minos was buried there in an imposing grave that matched his stature, and a sanctuary of Aphrodite was constructed next to his tomb. After the loss of Minos, the Cretans dispersed and founded several colonies in Sicily and southern Italy, naming one of them Minoa after their king.

The extent to which Minos and his entourage were an endless source of dramatic inspiration is evidenced by their ample representation in works of ancient drama. Most of these are now lost: Antiphanes's *Minos*; Alexis's play by the same title, Alkaios's *Pasiphae*; Sophocles's *Daedalus*; and the homonymous comedies by Aristophanes, Plato the Comic Writer, Philip, and Euboulos. Also lost are Euripides's *Theseus* and *Cretans*, Aristophanes's *Kokalos*, and Sophocles's *Kamikoi*. Socrates, in the pseudo-Platonic dialogue (*Minos* 320–21) and, later, Pausanias (*Theseus-Romulus* 16) relate the reason why Minos was purposely slandered on the Athenian stage as violent and wicked. Indeed, Pausanias, in recalling early written sources, comments that neither Homer's nor Hesiod's high opinion of Minos as *Διός ὀαριστὴν* (conversant with Zeus) and *βασιλεύτατον* (greatest ruler) was able to protect the Knossian king.

Myth and Archaeological Reality

Greeks of the historical period did not doubt that Minos had really existed in the distant heroic past. They even attempted to define the period of his reign according to his mythical genealogy and by using the Trojan War as a chronological milestone. Because deeds of different times and tendencies were attributed to Minos, however, the Parian chronicler reconciled the conflicting traditions by assuming that there were two kings of the same name, of which the second was the famous king's grandson (*Marmor Parium* 11, 19). It is the great Athenian historians of the fifth century B.C., however, who gave veracity to Minos's "historicity." Both Herodotus (*Histories* III, 122), the father of history, and Thucydides, author of the *Peloponnesian War* (I, 4)—in whose footsteps other ancient authors, such as Strabo, Diodorus of Sicily, and Pausanias, largely followed—praise among other things the mighty king's Aegean thalassocracy, within the framework of which Minos, his brothers, and his descendants founded numerous colonies.

The question of Minos's historicity and all that he represented at an institutional level is inscribed within the greater issue of the possibility for a historical reading of mythical tradition. But because nothing comes from nothing, it would be disparaging to deny entirely the historical background. The Cretan myths and the early testimonies of Homer and Hesiod reflect or are certainly based to some extent on historical events, political institutions and geostrategic policies, religious beliefs, and important ritual practices, as well as technological achievements of the distant Cretan past. The historical record, however, has undoubtedly been altered and revised according to the facts of later periods.

Between myth and reality, Minos—whether it be a dynastic title analogous to the Egyptian pharaoh, as suggested by Arthur Evans and others, or a personal name—continues to shed his enigmatic, despotic shadow over the Minoan world. The archaeological spade has given indirect support to the written sources of the historical period. The unquestionable superiority of Knossos over the other Cretan palatial centers, which is apparent in all sectors, clearly implies the superior role of its rulers, particularly in the Neopalatial period and, more specifically, the Middle Minoan IIIB–Late Minoan I periods (ca. 1650–1450 B.C.), during which the island became centralized under Knossos. But Knossos continued to dominate the historical scene during the last period of palatial life under Mycenaean rule, from 1450 B.C. on, with centers of comparatively lesser importance, such as Haghia Triada near the south coast of central Crete and Kydonia (modern Khania) in western Crete.

Linear B tablets of this period from Knossos (KN Vc 73, Vd 136, Ga 675) provide the earliest explicit reference to the title of the city's Mycenaean ruler, the *wanax* (*wa-na-ka*), who is also known by the same title in Mycenaean Greece as the supreme figure of the palatial societies. Although the close association, and even identification, of the labyrinthine Knossian palace with the mythical Labyrinth, which according to Evans's questionable etymology would mean "house of the *labreis*" (house of the double axes), remains a seductive hypothesis, the Labyrinth, both as a word and a linear

symbol, greets us as early as the second millennium B.C. The phrase *da-pu2-ri-to-jo po-ti-ni-ja* on a Linear B tablet from the Knossos palace (KN Gg 702) suggests that the Labyrinth was the place where Potnia, an important female deity, was worshiped. At the same time, linear representations of the angular labyrinth, similar to those of the historical period, are known from both Knossos and the Mycenaean palace at Pylos, where a scribe carefully incised its symbol on the back of a Linear B tablet. Moreover, a wall painting from Tell el-Dab'a (ancient Avaris), in Egypt's Nile delta, which represents bull-leaping and was allegedly painted by a Knossian artist, has as a backdrop the form of an angular labyrinth (see chap. 12, fig. 4).

As for the Minotaur's demonic hybrid nature, expressed by the combination of a bovine head and human body, it too appears early in Minoan art, most characteristically in three representations of the bull-man, on two sealings from the Knossos palace and Kato Zakros and on a seal stone in the Mitsotakis collection (Khania Archaeological Museum) (fig. 1). A prominent figure of Cretan mythology, the bull is ubiquitous in Minoan religion and art, particularly in the murals in the palace at Knossos, and plays an almost emblematic role, as we will see later in this essay. But even the name of the mythical craftsman Daedalus is identified indirectly on Linear B tablets, again from Knossos (KN Fp 1 and Fs 723), which list shipments of oil donations: *da-da-re-jo-de* (meaning *Daidaleionde*, or "for the sanctuary of Daedalus"). If we interpret the word correctly and not simply as an indication of some ornate sacred building (from the verb δαιδάλλω, *daidallo*, or "to process artfully"), then we have reason to believe that a divine craftsman, such as the later Hephaestus of the Olympian pantheon, was worshiped in a sanctuary named after Daedalus. Indeed, the impressive development of the arts, including architecture, in palatial Crete would fully justify the worship of a god-craftsman. Minos's name does not appear in Linear A and B texts, the nature of which, in any case, makes this unlikely. The name of his divine father, Zeus, however, occurs in the archival tablets of Knossos and Khania. The Knossos tablets in particular refer to Zeus as Diktaian (KN Fp 1, *di-ka-ta-jo di-we*)—a cult adjective that associated him with sacred Mount Dikte, on which, inside a cave, he was said to have been born, according to historical tradition, as mentioned above.

Although it need not be taken literally, Minos's legendary thalassocracy left tangible evidence in the Aegean, especially in the southernmost islands of Kythera, Thera, Melos, Kea, and Rhodes. There was a drastic expansion of Minoan cultural elements (art, iconography, script, the metric system, architectural forms, etc.), especially during the height of Minoan Crete—from the seventeenth to the mid-fifteenth century B.C., most of them originating in Knossos.

Fig. 1. Minotaur. Seal stone (ca. 1400–1300 B.C.). Khania Archaeological Museum (Mitsotakis Collection).

Although some of these elements merely suggest a beneficial influence of the superior palatial Cretan civilization, particularly among the elites of these insular communities as well as in the Mycenaean Peloponnese (an influence accurately described by Malcolm Wiener as the "Versailles effect"), other elements point decisively to trade hubs and colonies, as clearly were the island of Kythera and Miletus on the coast of Asia Minor. Minoan interests reached as far as the northern Aegean, as demonstrated by recent finds at Mikro Vouni, Samothrace, and the harbor settlement at Koukonisi, Lemnos, where ports of call seem to have been established.

The Aegean toponyms "Minoa," as well as the Minoa allegedly founded by Minos's companions in Sicily after his death, reflect the seafaring vitality of the Cretans. In order to be efficient and profitable, a maritime policy that spread beyond the Aegean into regions such as Egypt and the Near East would have required a powerful fleet like the one that historians of the fifth century B.C. associated with Minos. If we read the archaeological reality in historical terms, and given that Crete's natural borders are the sea, such a fleet would protect the Minoans against possible foreign threats and largely explain the lack of defensive structures around their cities and palaces. This lack of fortification, together with the absolute cultural uniformity throughout the island, also suggests the prevalence of peace on Crete, a kind of *Pax minoica*, as it has been characterized, in which the ruler at Knossos had supremacy over other local rulers. Of course, it is possible that unrest and armed conflict occasionally occurred on the island, but mostly during the extra-Cretan operations of the Minoans. We should not think of the Minoans as simple "flower lovers," since the exercise of power, often in a violent way, is an unavoidable condition in complex societies, particularly palatial ones. Although purely Minoan art does not emphasize military scenes or

Fig. 2. "Prince of the Lilies." Relief fresco. Palace at Knossos, South Wing (ca. 1650–1450 B.C.). Herakleion Archaeological Museum.

armed episodes in the way that Mycenaean art does, they are not entirely absent. The famous faience "Town Mosaic" from the palace at Knossos (see chap. 4, fig. 10) inaugurates an important Aegean iconographical cycle in which coastal towns are sometimes depicted as being besieged or at least as having a military presence. Some Cretan clay sealings also represent dramatic scenes of armed conflict. Moreover, the elaborate Minoan swords, which are considered symbols of high office and are known from both actual finds and representations, as well as the other military gear with religious and symbolic associations (daggers, spears, figure-of-eight shields, helmets), suggest that these objects were originally used for military purposes.

Evans's "Priest-King" of Knossos

Within this mytho-archaeological landscape, one may ask what identifiable evidence did King Minos or any similar ruler leave in Crete of the second millennium B.C. The answers to this question, which is an extremely complex one, are crucial for any general understanding of the Minoan world, much of whose social structure remains vague and intangible as yet because of the lack of relevant written sources.

By following the prevailing theory that Minoan Crete was not a flagrant exception within the general phenomenon of the institution of kingship, as exercised in all the great civilizations of Egypt and the Near East, as well as by the Mycenaeans, we must accept the existence of societies on the island that were organized according to a more or less pyramidal structure. It appears, however, that although Cretan rulers shared some of the characteristics typical of Eastern despotism, they were markedly different in other respects, which may result from specific features of Minoan economic and social development, as well as the island's geographical peculiarities. But what was the nature of Cretan kingship? How is it reflected, actually or symbolically, in the iconography and architecture of that period? How did the institution develop from the Protopalatial to the Neopalatial period, and what was its physiognomy after the establishment of an Achaean dynasty at Knossos in about the mid-fifteenth century B.C.? When, where, and how was Minos's image forged into the archetype of the almighty king of divine descent with tripartite functions in the religious, military, and judicial-administrative spheres? These and other related questions, which have led to conflicting theories, can be examined only briefly in this essay.

From the outset of his excavations, Arthur Evans searched relentlessly for tangible evidence of a royal ideology in both imagery and palatial architecture, using as a fixed point of reference the figure of Minos, whose name and myths he projected with an admittedly exaggerated emphasis on historicity in his various discoveries. The undoubtedly religious character of the Knossian palace, with its incorporated small shrines and numerous ritual spaces, the predominantly sacred iconography of its murals, the widespread evidence of ritual paraphernalia and such sacred symbols as the double horns and double axe, led Evans as early as 1903 to believe that the ruler of Minoan Crete was a "Priest-King." This opinion, presented at that time as a theory, permeated all of his work and was expressed succinctly in 1935 in the last volume of *The Palace of Minos at Knossos:* "The whole course of the excavations at Knossos has emphasized the fact that the 'House of Minos' was a sanctuary quite as much as a palace. It was in fact a home of a succession of Priest-Kings" (*PM* IV, p. 960).

Evans was clearly influenced by the ideas of Sir James Frazer and Arthur Bernard Cook regarding priestly kings at the head of primitive communities, as well as by his own understanding of the markedly religious role of the kings in Anatolia, Egypt, and Mesopotamia. He used the term Priest-King vaguely, as demonstrated by Emmet L. Bennett, in order to emphasize the close relationship between the Knossian sovereign's two apparent functions, the purely royal and the markedly sacerdotal. Evans directly attributed the term Priest-King to the reconstructed monumental figure of the "Prince of the Lilies," which appears in a relief fresco found in 1901 in the palace's South Wing and has been dated to the acme of Minoan art (MM IIIB–LM I). The princely figure,

which Evans believed headed a religious procession, wears a necklace and an elaborate crown decorated with a waz-lily and peacock feathers (fig. 2). He considered them to be the figure's regalia, and at first he added a hypothetical scepter in its left hand. Characteristically, Evans summarized his opinion on this subject in 1928 and even proposed a specific name for the figure: "We have here surely, the representative on Earth of the Minoan Mother Goddess, a Priest-King after the order of Minos. In other words we here recognize Minos himself in one of his mortal incarnations" (*PM* II, p. 779).

In a similar manner, Evans attempted to identify the "portraits" of a Knossian king and his young successor in clay sealings from the palace's "Hieroglyphic deposit," the royal title in Hieroglyphic seals also from the palace, and the symbolic association of the throne and scepter in a Linear A syllabogram. Furthermore, he gave the name "Young Prince" to the youth pictured in relief on the "Chieftain's Cup" from Haghia Triada. In an eloquent pose and gesture of authority, the young male figure wears elaborate necklaces, armlets, bracelets, a dagger at his belt, and a long scepterlike staff in his outstretched hand (see cat. no. 163). Finally, among other iconographical pursuits, Evans sought to identify "Priest-Kings and princes" with both religious and secular-military functions in a series of LM IB/LH IIA seals from the palace at Knossos (fig. 3a-c), from Vatheia, near Knossos (fig. 3d) from Malia (fig. 3e), and from the tholos tomb at Vapheio, Lakonia, in the Peloponnese (fig. 4a-b). All of these depict an isolated figure wearing a long, orientalizing robe with oblique bands and, on three examples, holding a single axe of Syrian type at the shoulder as an emblem of power. In the Knossian examples of this highly interesting iconographical cycle, of which more will be said later, Evans saw possible royal members of what he called the Minoans' "last Dynastic period."

With the royal model in mind, Evans applied himself to identifying the living quarters of the royal family, particularly of the king in his various roles and functions, using as his guide the architectural design, the portable finds and installations, and the relevant murals. He thus claimed that the king and queen's official quarters were located in the palace's East Wing with its idyllic views of the adjacent Kairatos River. He placed particular emphasis on the so-called Hall of the Double Axes, below the Great East Hall, the preeminent area in which to exercise political power. He identified the anteroom of the hall as the Audience Chamber by hypothesizing, on the basis of remains on the north wall, a wooden throne covered by a wooden canopy. The architectural unit that most denotes authority at Knossos, however, is the Throne Room (fig. 5; see also chap. 3, fig. 7), which is located behind the façade of the palace's East Wing toward the Central Court and which functioned over a long period of time until the palace's last days under the Mycenaeans.

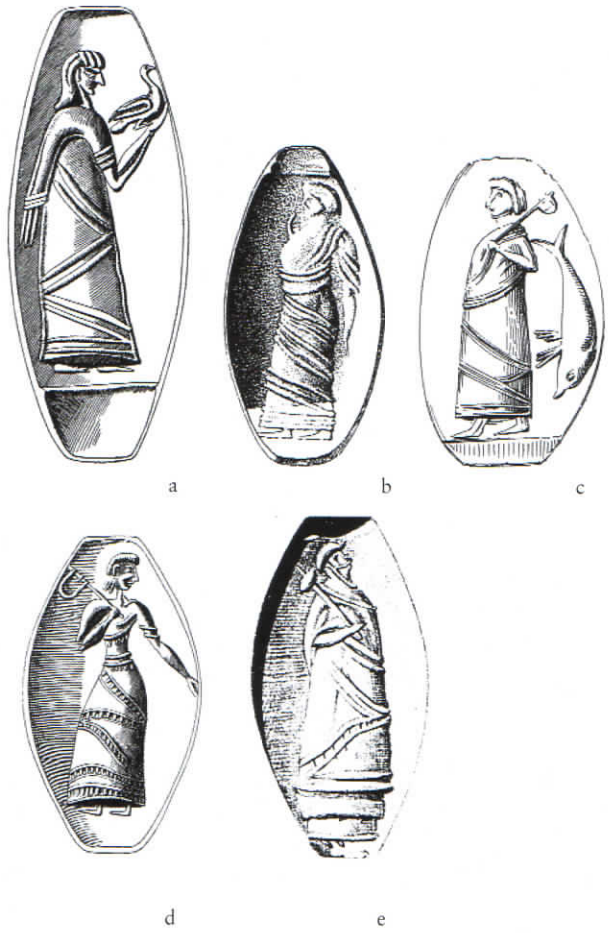

Fig. 3. "Priests" in long garments. Drawings of seals from Knossos (a–c), Vatheia (d) and Malia (e) (*PM* IV.2, figs. 336, 342, 343 a–b; *CMS* II.3, no. 147). © CMS Archive, Marburg.

Evans never doubted that the fully preserved alabaster "Throne of Minos," flanked as it is by two painted heraldic wingless griffins, was the seat of the king himself in his role as supreme religious leader and chief priest, surrounded by a *sacrum collegium* of approximately sixteen figures sitting on the room's built benches. Opposite the throne, the Lustral Basin and the alabaster oil vessels found inside the anteroom (see cat. no. 200) further supported Evans's hypothesis that the Throne Room was the scene of rituals related to the anointment of the Priest-King. He believed that the Throne Room's anteroom, with its built-in benches for approximately twelve persons and its wall painting of a bull, housed a second wooden throne for a prince or regent. Evans imagined similar wooden thrones in the so-called Royal Villa just north of the palace and in the House of the Chancel Screen to the southeast as symbols of some kind of authority. The other Cretan palaces have provided no material evidence on this matter. So the alabaster throne at Knossos remains the preeminent throne throughout the Minoan world. Its shape is based on that of a wooden model, however, which expands the potential range of similar thrones constructed of

a b c

Fig. 4. "Priests" in long garments (a, b) and charioteer (c). Drawings of seals from Vapheio, Laconia tholos tomb (ca. 1500–1450 B.C.) (*CMS* I, no. 223; *PM* IV.2, fig. 343c; Kenna 1960, fig. 113). © CMS Archive, Marburg.

perishable materials. For Knossos at least, under Mycenaean dominion, the Linear B tablets attest the craft specialization of *to-ro-no-wo-ko* (θρονουργός), the maker of thrones, obviously of the luxurious kind.

Doubts, Critiques, and Dilemmas

Although Evans's views on the nature of Minoan kingship are still widely accepted (including by such experts as Martin Nilsson, the authority on Minoan religion), they have come under attack in recent years by a number of scholars who, with a certain amount of justification, have questioned his exaggerated interpretations. Some of these scholars, however, have further complicated the question of the Minoan administrative model. By stripping the palaces of their role as centers of political and religious authority and by considering them simply as ritual spaces, they have either rejected entirely the institution of kingship or denigrated in various ways the religious role of the leader. By focusing on a strictly intra-Cretan interpretation of archaeological evidence, they have effectively cut the Minoans off from their eastern contemporaries and from the tradition of the historical period, while undervaluing the ecumenical phenomenon of the use of religion in the exercise of political authority, particularly in antiquity.

It is true that the Minoan ruler is not particularly evident in the archaeological record, especially when compared to the means of expression in other contemporary palatial civilizations. There, the king's effigy as the incarnation of absolute power is often monumental, and, either because of the king's religious or administrative-military functions, it is stereotyped, much like the representations of deities. It is also accompanied by inscriptions that leave no doubt as to the identity of the figure. By contrast, such elements were foreign to the Minoans and cannot be found in their expressive tradition. The image of the Minoan ruler, particularly as a political authority, is largely obscured by an omnipresent religious component and by pronounced ritualization, which was especially noteworthy during the Neopalatial period with Knossos at the epicenter.

Ellen Davis, in her search for the "missing ruler," rejected almost all of Evans's interpretations, although she did not deny the institutional necessity of a king in Minoan Crete. She has claimed that the ruler is "elusive in architecture and in pictorial art," a remark that seems largely correct at first glance. On the other hand, the obvious female predominance in the Minoan pantheon and ritual scenes has led some scholars to detach a large segment of the Minoan king's religious authority and attribute it to a powerful female priesthood. Helen Waterhouse favors the idea of a theocratic state run by priestesses, although she accepts that kingship was the normal and traditional form of government

Fig. 5. The Throne Room. Palace at Knossos.

in the Bronze Age. She supports the predominance, at least until the end of the Late Minoan I period, of the female priesthood, which probably coexisted alongside the male hierarchy, including priests, of whom Minos may have been one.

Robert Koehl breaks up the authority of the "Priest-King" and distributes it to a number of more or less equally powerful "priest-chiefs" of lesser rank in palatial and non-palatial communities. In doing so, however, he opens up new and unanswerable questions of a socio-historical nature. Similar ideas were formulated by Paul Rehak, who beginning with Minoan Crete questioned even the pyramidal structure of Mycenaean society and supported the administrative system of collective rulership. He claimed that the *megaron* of the Mycenaean palaces served not as the formal hall of the king, or *wanax*, but as a communal feasting area, whose throne the queen (Potnia perhaps), in her priestly function, occupied absolutely.

Such interpretations were largely sparked by the recent "dethronement" of the Knossian king and his replacement by a female figure, a highly subversive scheme first proposed by Helga Reusch. Using as evidence a series of seals that

depict a standing female deity framed by winged griffins, Reusch imagines a ritual taking place in the Throne Room, where the high priestess or the queen-priestess plays the role of goddess seated on the alabaster throne framed by painted griffins. Wolfgang-Dietrich Niemeier has furthered this idea, taking into account the earlier views of Friedrich Matz, as well as those of Robin Hägg and Nanno Marinatos on the dramatized epiphany of divinity. He even reconstructed, hypothetically, the various stages of this ritual by considering together all of the available iconographic and archaeological evidence, as well as the Throne Room's greater architectural unity. His interpretation is, however, reconciliatory: although he accepts a female hieratical figure on this particular throne of Minoan Knossos, he sees a male Mycenaean *wanax* exercising his power from that same throne during the last phase of palatial life, under the Achaean dynasty.

Although no one denies the possibility and significance of dramatized female appearances in Minoan ritual, it is highly likely that the king was also involved in such rituals and to a greater extent, as in the palatial civilizations of Egypt, Anatolia, and Indo-European societies. This is even more likely, as it seems that religion was used in Crete as a stable base for the king's political power. The symbolic strengthening and legitimization of his authority, at least in its religious aspect, was achieved in many ways, especially through regular rituals. This regularity is reflected in the epithet *enneoros* used by Homer in reference to Minos. In this respect, the throne is, according to the universal codes of the expression of authority, a polysemic *locus*, which, together with the scepter and crown, is diachronically a *regalium* par excellence. The Homeric poems provide the first explicit literary evidence of the throne and especially of the scepter in its various forms and functions, whereas a Linear B tablet from Pylos (PY Fr 1222) records the name of a Mycenaean palatial celebration, *to-no-e-ke-te-ri-jo*, which may be ritually related to the throne. Seated on the alabaster throne between the painted griffins, which in Egypt symbolize both divine and regal authority, the Minoan king would automatically come under the protection of the appropriate deity and thus witness the continuing source of his legitimate authority. The same would apply later to his Mycenaean successor. The griffin and the lion that flank the throne of the Mycenaean *wanax* in the *megaron* of the Pylos palace, which echo the wall decoration of the Knossian throne room, reflect concepts of similar meaning.

Religious and Military Symbols of High Authority: A View from Mycenaean Greece to Knossos

Although most representations associate female figures with griffins, such hybrid creatures, like the sphinx, also accompany some male figures in Aegean iconography. The subject matter of a seal stone from the tholos tomb at Vapheio,

Fig. 6. Copper-alloy Syrian axe. Vapheio, Laconia tholos tomb (ca. 1500–1450 B.C.). National Archaeological Museum, Athens.

Lakonia, is particularly important for our topic. The seal depicts a "priest" in a long garment, holding a winged griffin on a lead (fig. 4a). This image inspired Evans to imagine that a griffin may have accompanied the Knossian Priest-King on the famous relief fresco in the palace.

The unmistakable Cretan character of the Vapheio seal stone and of other grave goods from the same tomb, the dating of the seal stone to the LH IIA period (1500–1450 B.C.)—that is, before the establishment of the Mycenaean dynasty at Knossos—as well as its affinities with a number of seal stones with similar "priestly and royal personages," as Evans believed, offer a credible picture of Minoan rulership and its iconographical expressions. In other words, they shed light on Minoan rulership from the perspective of the Mycenaean Peloponnese. If read correctly, the images on these seals may very well illustrate the two basic aspects of the same high authority: the religious-hieratical and the political-military. The long robe with oblique bands worn by all of the figures, which was known then and later on to be a male garment with religious associations, appears to indicate above all their hieratical function. Of clearly religious significance are the griffin on the Vapheio seal stone, the bird presented as an offering by a figure on a seal stone from Knossos, and possibly the dolphin on another Knossian seal stone from the area of the Throne Room (figs. 3a and 3c). In this last example, the dolphin may have been added as a symbol of maritime authority, behind a figure carrying a Syrian axe, a sign of office carried in exactly the same manner by two other figures, from Vatheia and from the Vapheio tholos tomb (figs. 3d and 4b). This peculiar weapon, a recognized military emblem of both the kings of Byblos and the pharaohs, would indicate political-military authority if it had been adopted in the Aegean with similar symbolic connotations, even though it was never actually used as a weapon. The bow held by the figure on another

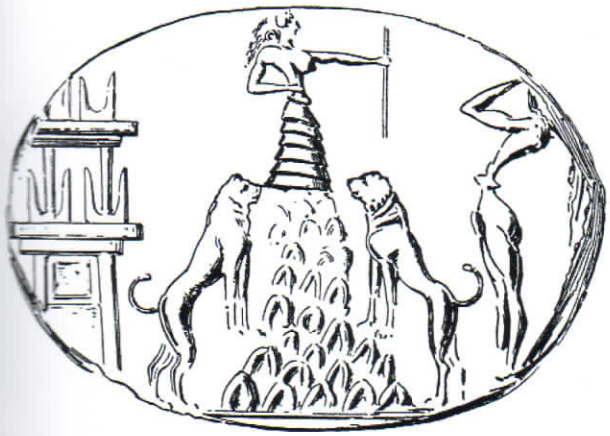

Fig. 7. "Mother Goddess." Drawing of a clay sealing. Knossos, Central Palace Shrine (*PM* II.2, fig. 528).

Knossian seal stone and the spear carried by a charioteer from the Vapheio tholos tomb (fig. 4c) denote similar functions.

Finally, a seal stone from the palace at Malia shows the same "priest" in a long garment carrying a hammer on his shoulder instead of a Syrian axe (fig. 4b; also cf. cat. nos. 199 and 200). The presence of a copper-alloy Syrian axe—the only true example so far found in the Aegean—among the grave gifts of the illustrious deceased buried in the Vapheio tholos tomb (fig. 6) proves that this coherent series of seals directly reflects the ideology and practices of high authority during the first half of the fifteenth century B.C. Clearly, this particular symbol of high office was carried around by the living person in the same way as shown on the seal stone from the individual's tomb; the representation of the seal stone was intended, in a sense, as a portrait of the deceased. The two other seal stones from the same tomb—with the griffin and the charioteer carrying a spear—also evoke images of the dual authority of the deceased, further supported by the numerous remaining seal stones and other grave gifts, all systematically studied by Imma Dirlmeir-Kilian. The tomb's imposing architecture and the types and opulence of the grave gifts clearly suggest that the deceased was a ruler of Mycenaean Lakonia, one who had contacts with Knossos.

The question remains whether the comparable figures on the Cretan seal stones, particularly those from the palace at Knossos, are also "portraits" of the palatial society's leading figure in his different roles, or whether they represent princes of the ruling family or high officials in the palatial hierarchy. There is not sufficient space here to expand on crucial socio-historical matters relating to the transition from early Mycenaean chieftaincy to rulership and kingship or to the intensity and manner in which Minoan Crete influenced the Mycenaean Peloponnese during this period (LM I). Either way, all the evidence suggests that the illustrious deceased at Vapheio relied largely on Creto-Knossian models for the symbolic expression of his dual authority. It should be noted that his apparent functions, particularly his religious role, were consolidated later, according to the Linear B evidence, in the person of the Mycenaean *wanax*. They can already be traced, however, in the grave gifts of the wealthier shaft graves at Mycenae, where Minoan religious and status symbols are strongly present. Among them is a gold staff-scepter from Grave IV, the only one of its kind preserved *in corpore* in the prehistoric Aegean, which is a well-known symbol of high authority mostly in Minoan iconography, particularly in religious and ritual scenes.

The Scepter of Gods and Rulers: The Iconography of Royal Legitimacy

Because they illustrate important palatial beliefs and practices, the Minoan depictions of staff-scepters of various sizes actually lead us to the heart of the matter concerning the image of the "missing ruler," and also to the nature of Minoan kingship, particularly its religious aspect. The obviously ceremonial scene on the "Chieftain's Cup" from Haghia Triada (see cat. no. 163) provides a characteristic example for the earthly sphere: a standing young man holds a long staff-scepter with his outstretched arm as he receives a procession of men offering animal hides. Although various interpretations have been put forward for the young man, the overall scene, particularly the way in which he holds the scepter in an eloquent gesture of high authority—a "gesture of command," according to Niemeier—largely justifies his identification as a young prince or ruler. Even more eloquent expressions of the high symbolic value of such a scepter are the seals depicting epiphany scenes with male or female deities holding scepters in their outstretched arms in the same manner.

One of the most famous scenes from a now-lost gold ring, known only from sealings discovered in the Central Palace Shrine at Knossos, shows the Minoan "Mother Goddess" holding a staff-scepter on a rocky peak as she stands between guardian lions and receives the adoration of a young male votary (fig. 7). The young man's relatively large size and his direct relationship to the goddess in a place that strongly recalls a peak sanctuary, one of the most typical settings for Minoan worship, strongly suggests, as pointed out by Evans and others, that he is not just any worshiper but possibly the Knossian ruler himself in a visionary encounter with the goddess. The representation on one side of the composition of an abbreviated palacelike structure with horns of consecration recalls the well-known deep political-religious link between the palace as a religious center and the peak sanctuaries, particularly that on Mount Jouktas, near Knossos (see chap. 9, fig. 1). The same is also indirectly suggested by the elaborate relief representations of mountainous sanctuaries

on palatial stone rhyta of apparently Knossian origin (see chap. 7, fig. 7). Peak sanctuaries, palaces, and scepters, on the Knossian sealings at least, seem to provide the central message of the representation and form part of the symbolic trappings that support and affirm the institution of Minoan kingship—a figurative concept, which Kathleen Krattenmaker accurately dubbed "the iconography of legitimacy." The discovery of the sealings in the palace's Central Shrine supports such an interpretation, which in any case is not affected by the later dating (LM II) attributed to the sealings' context, since the ring used for them could just as well have been earlier. On another Knossian gold ring, now in Oxford (fig. 8), the roles are inverted: a young god holding a staff-scepter with his outstretched arm appears to descend from the sky before a female votary of high rank in an open-air sacred place.

It is, however, the sealing from a large, probably Late Minoan I, gold ring, the so-called Master Impression from Khania (fig. 9), that provides the most powerful and emblematic image in all Aegean art of high authority expressed through the scepter. An oversized male figure stands on top of the central section of an extensive symmetrical building, holding a long staff-scepter with his outstretched arm. Erik Hallager, who published the sealing, interpreted the complex architectural compound as a palace or a city and rightfully wavered as to whether the sealing depicts the epiphany of a young protector god or the symbolic image of a ruler as dominator. The question remains open, although most scholars now favor the former interpretation.

The scepter, if we recall also Minos's god-given power, is decidedly the instrument by which power and religious authority was transferred from the divine to the human sphere. Because it is carried by both deities and rulers, however, we are led to a common ground, particularly for theocratic kingship, where roles and paraphernalia are exchanged between divinity and ruler, both in ritual practice and in imagery. Thus, the dilemma of whether the young male figure on the Khania sealing is a deity or a ruler does not really matter in the search for the latter's image, since the pictorial representation of the deity would be a projection of the ruling class of the palatial society. The staff-scepter held by the supreme deity (or deities) in this characteristic formulaic manner is, in fact, nothing else but the scepter of the supreme archon, the ruler.

Given such an iconographical fusion, one might ask whether the "young prince" on the "Chieftain's Cup" from Haghia Triada might not actually represent the young god receiving offerings, or even the ruler himself in his religious role as the deity's representative. This ideal youth with robust body, characteristic in Minoan art, would be shared by god and ruler alike in a further symbolic merger, just as

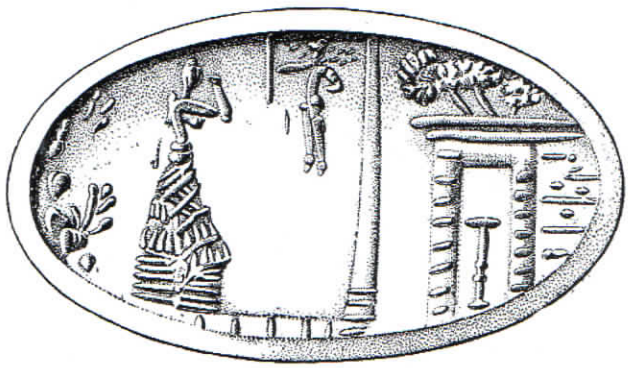

Fig. 8. "Epiphany Ring" from Knossos. Drawing. Ashmolean Museum, University of Oxford (Kenna 1960, fig. 155).

female deities do not differ significantly, in iconographical terms, from their priestesses.

The "Prince of the Lilies" (see fig. 2) which Jean Coulomb interpreted as a young boxer by depriving him of his impressive crown of waz-lilies, displays the same robust youthfulness. By keeping several elements of Coulomb's reconstruction and then assigning the crown to a hypothetical sphinx, Niemeier identified the "Prince of the Lilies" as a young god with a long scepter in his outstretched arm analogous to the male figure in the Khania Master Impression. In her recent alternative view, however, Maria Shaw defends the accuracy of Evans's reconstruction and suggests only minor improvements. Clinging to the idea of the "Priest King," she proposes an interesting new interpretation, according to which this relief fresco preserves the image of the Knossian ruler as a crowned leaper after he has successfully taken part in a bull-leaping event. Her interpretation is based primarily on the impressive crown with its decoration of sacred waz-lilies, a humbler version of which can be seen on the head of an athlete, specifically a tumbler, on a wall painting from Tell el-Dab'a, which appears to be part of a series of depictions of games, including bull-leaping.

Given the ritualization of sports, particularly bull-leaping, in Minoan Crete, where the games may have taken place under the tutelage of religious and divine authority, the king's participation in athletic events could indeed signal a symbolic reaffirmation of his office, of his renewal, or even of his election. For example, foot races were held in Egypt with the pharaoh's participation during the Sed Festival in order to celebrate his regeneration. If the king were a victorious leaper, the emphasis on bulls and bull-leaping in the wall paintings on the new palace at Knossos (see chap. 6, fig. 11) and on the finest Knossian gold signet rings (which John Betts considers the chief insignia of the rulers within the framework of a centralized bureaucracy at Knossos) takes on a deeper meaning (see cat. no. 117; chap. 11, fig. 2).

Fig. 9. "Master Impression." Clay sealing (ca. 1450 B.C.). Kastelli Hill, Greek-Swedish Excavation. Khania Archaeological Museum.

Indeed, it seems that the bull and especially bull-leaping functioned as an important symbol of power for the local sovereign at Neopalatial Knossos, projecting, according to Hallager, a kind of political propaganda. If indeed this is true, then the larger-than-life "Prince of the Lilies" is the preeminent image of the Knossian ruler, depicted in full grandeur during a ritual event, according to the Knossian representational spirit and the related religious ideology. It is possible that other, similar depictions existed among the palace's opulent wall paintings and relief frescoes, of which only fragments survive, although such a tendency would be rare in a people like the Minoans, who did not insist upon large-scale representation of their deities. The apparent iconographic fusion of the ruler with the young god, as reflected primarily in the minor arts, combined with the evident ritualization on the one hand and a general emphasis on the symbolic affirmation and propagation of supreme authority on the other, shows the "missing" ruler as an omnipotent being through his religious function. From this point of view, one could say that he is in step with his eastern royal models, from which his greatest departure, as Marinatos rightly remarks, is the absence of the pictorial formula of the "king as warrior smiting enemies."

The Prominent Sacred Aspect of Cretan Kingship: From Minos to the Mycenaean *Wanax* of Knossos

Whichever chronological direction we follow in searching for the nature of Cretan kingship—whether from Homer and Hesiod to the Minoan past or from the Minoan palace period to early Greek poetry—it is certain that the ruler's sacred aspect presents particular requirements. This applies particularly to the rulers of Knossos, exemplified in the legendary Minos, who may share common characteristics with the Homeric scepter-holding kings but who also differs from them, as the Mycenaean rulers do. Having received his scepter directly from his divine father, Zeus, and renewing his kingship after an eight-year cycle through a meeting with him, Minos corresponds indeed to the model of sacred kingship, which, as repeatedly argued by several scholars, goes back to palatial Crete of the second millennium B.C.

Although the archaeological evidence for the early rulers of the Protopalatial period (1900–1700 B.C.) is slight, it seems likely that the palaces, along with an extensive network of peak sanctuaries that spread throughout Crete during this period, were primary religious centers. This suggests that the ruling class had religious authority somewhat analogous to that of the Neopalatial period. The close association attested in the Neopalatial period (1700–1450 B.C.) between the obviously dominant role of Knossos and the noticeable increase of all kinds of religious phenomena conceals a possibly profound socio-historical change in Cretan life, a kind of political-religious reform. Religion was now used even more emphatically to legitimize and propagandize the superior authority of the Knossian ruler as a real or symbolic *primus inter pares*. In other words, the strong centralization of Neopalatial Crete under Knossos should be largely interpreted as a strong religious centralization with whatever this entails at the administrative, economic, and social level. In fact, the idea of the Knossian king's divine origin may have been formed during this period. The fact that tradition considers Minos not as the first Cretan king but as the first one of divine origin with a god-given scepter, may reflect a period of transition and Knossos's claims for hegemonic precedence over the island. Blood ties between the Cretan rulers, like those described in the myth cycle of Minos, as well as intermarriages, would render such domination more easily acceptable.

The creation in the palace at Knossos of a sacred iconography and symbolism, and their diffusion even beyond Crete in a complex process that Nanno Marinatos called "threskeiocracy," reinforced by extension its political authority. Within such a framework, the royal family's ties to the divine realm would be strengthened even more by the participation in the higher priesthood of some of its members, particularly women in the service of the large number of goddesses—led by the queen in the most important position—with the result that the iconography of the period gives us the misleading impression of a theocratic state run by priestesses. What went on at Knossos, where the resident king in his religious functions served as a model, would apply throughout the island and its local rulers, a situation that could explain the widespread extent of religious expression. The apparent

association of palace and peak sanctuaries since the Proto-palatial period seems now to intensify and lead to the formation of a network of beliefs, which is reflected, as we have seen, in the royal authority's "iconography of legitimacy."

It is possible that, in his sacerdotal role, the king was responsible for establishing the calendar that formed the basis for the organization of various aspects of social, economic, and religious life—in other words, the social fabric of the community. The Cretan calendar, first attested explicitly in the Mycenaean Linear B tablets from Knossos but clearly of Minoan origin, required the systematic observation of the movements of the sun, moon, and constellations. Peak sanctuaries were ideal for this kind of observation, as demonstrated by Mary Blomberg and Göran Henriksson's archaeo-astronomical observations. It may be that Minos's *enneoros* title reflects the institution of a lunar-solar calendar on an eight-year cycle, at the end of which there was a ritual renewal of the divine monarch. If this is indeed the case, then the Cretan rulers probably used astronomical knowledge as an additional support for religious and, by extension, political power.

It is only natural that the Mycenaeans of Knossos should stand upon these tested Minoan models to establish their authority and a more effective control of the local population, regardless of the fact that the reasons that lead them to conquer Crete were primarily economic. In this transitional historical-political setting, they would have continued to promote the idea of the divine origin of the Knossian king as part of a legitimization strategy of the new order, but now they made their own ruler a son of Zeus, whose worship they introduced into Crete. The explicit mention of Diktaian Zeus (*di-ka-ta-jo di-we*) on a Linear B tablet greatly supports such a view and reveals, at the same time, the mechanisms of an intentional religious syncretism in which a typically Mycenaean god is associated with a traditionally Minoan mountainous place of worship, such as Dikte.

The religious aspect of the Mycenaean ruler of Knossos is also inferred by the term *wanax*, which is the ruler's title, as attested in the Linear B tablets. It should be stressed that, from the Homeric poems onward, the term *anax-wanax* characterizes both deities and dominant kings, a verbal demonstration of the close association between these two realms of authority. This semantic coincidence, rooted possibly in the Creto-Mycenaean world, has its iconographic counterpart in Minoan iconography, where, as mentioned above, the young male god and ruler have been merged. A textual analysis of the Linear B tablets from the Pylos palace in particular produces the image of a *wanax* involved variously in religious matters and ritual practices, even receiving offerings together with deities. For this reason, several scholars have been led to believe that the *wanax* was primarily a religious figure, whose powers and authority were intimately connected with and originated from his divine affiliation. The non-Indo-European origin of the term *wanax* and, therefore, its incorporation into the Mycenaean Greek language as a loan from foreign cultures, led Thomas Palaima to adopt the reasonable hypothesis that the Mycenaeans borrowed it from palatial Crete, regardless of its true origin. This also applies to the term *basileus*, attested in Linear B as *qa-si-re-u*, which originally meant "head man of a tributary village" or "provincial dignitary" but ended up signifying, in the Homeric poems, the king proper, an approximate synonym for *wanax*. In this case, within the chronological framework of the newly evolving palatial system and in their need to establish and legitimize the primacy of the chiefs of their own social hierarchies, the Mycenaeans would have adopted both the term *wanax* and its related Minoan kingly ideology, including the characteristic emblems of high status.

Among these emblems, the scepter, the most distinctive of all of the regalia, is not pan-Indo-European as a term (*skeptron*), but specifically Greek, closely related in its religious significance to the concept of *anassein* (to reign). Without a doubt, the establishment of the Mycenaeans in the preeminent religious and palatial center of Knossos contributed significantly to the shaping of the character and consolidation of their institution of kingship, especially of its divine aspect. Seated on his throne, framed by griffins, the Mycenaean *wanax* would have retained, as his equivalent did later in the throne room of the palace at Pylos, earlier Minoan religious beliefs and their projection in symbolic iconography. However, the process by which the Minoan elements were adopted by the ruling class of the Greek mainland for the expression of their ideology of authority would have begun earlier. The gold staff-scepter, together with other religious and status symbols from the shaft graves at Mycenae, as well as the finds from the Vapheio tholos tomb mentioned above, must be considered in this regard among the most significant evidence.

The fluidity that prevailed in the Minoan ruler's iconography, as expressed primarily through his religious role and the related symbolism, deprived the Mycenaeans of legible, consolidated models for the representation of their own *wanax*. According to the widespread Indo-European and, it seems, Minoan model of kingship, we must accept tripartite functions for the *wanax* like those that emphatically characterize Minos. If, in the Linear B tablets, the *wanax* appears in his prominently religious role, there is also evidence for his authority over judicial matters. Although the *ra-wa-ke-ta*, second in the Mycenaean palatial hierarchy, was the supreme executive authority in military affairs, the *wanax* would naturally have had overall responsibility. Nevertheless, because of their purely economic nature, the Linear B texts provide little evidence on this matter. The void is filled indirectly by the pictorial programs of the palaces and of the *megaron*

itself—the *wanax*'s administrative seat—where military scenes coexist with religious ones, thus celebrating two of the ruler's primary responsibilities. Even in the Mycenaean palace at Knossos, where the predominantly sacred iconography continues, new military scenes appear, as in the composition of "The Captain of the Blacks" (see chap. 11, fig. 6). It is, however, the so-called warrior tombs and the lists of various kinds of weapons (swords, spears, arrows, corselets) and chariots on Linear B tablets that confirm beyond any doubt the military supremacy of Knossos, where the *wanax* was surrounded by a military aristocracy.

A Historical Outline and a Legislative Echo of Minos

With the memory of an almighty palatial Knossos alive, tradition condensed through time the clearly Minoan version of kingship with the Mycenaean reality, as it was formed on Cretan soil from about the middle of the fifteenth century B.C. onward. The changes experienced by the institution and its related ideology and their subsequent impact on mainland Mycenaean kingship, up to the dawn of the historical period and the emergence of the city-state, were imprinted on the figure of Minos as the archetype of the king of divine origin with pronounced tripartite authority. In clearly historical terms, Minos who had dominion over land and sea, the *epiouros* and *oloophron* according to Homer, and also the *enneoros*, the *Dios megalou oaristes*, and the *themistes*, could very well have been a historical person and not a generalizing dynastic title. He might have been a distinguished Knossian king of the luminous Neopalatial period, more or less contemporary with the Egyptian pharaohs of the 18th Dynasty, who impressed his name on posterity, overshadowing other Cretan kings of his time. Tradition reserved a distinctly lesser role for his brothers, Radamanthus and Sarpedon.

On the other hand, his grandson Idomeneus, who as a Knossian king controlled the whole of Crete, clearly belongs to a later period. His importance and his heroic deeds are restricted almost entirely to the *Iliad*, since he participated in the Greek expedition against Troy with eighty ships, a respectable fleet, the third largest after those of Agamemnon of Mycenae and Nestor of Pylos. If his presence in the Homeric poem reflects, as it seems to do, the last phase of the acme of Knossos under Achaean rule, with elements of the Postpalatial period incorporated into his persona, then he is the only leading eponymous Mycenaean *wanax* of the island. If tradition recognized Idomeneus as grandson of the great Minos, this was a Mycenaean tactic to establish the genealogical legitimacy of their authority over Crete, the same tactic that had recognized Minos as son of their leading god, Zeus. Such an abridgement of time and of stately political formations does not surprise us, given the historical setting, particularly when it serves the purpose of propaganda.

The image of the almighty king and wise legislator-judge Minos, starting with Homer and Hesiod, certainly owes a great deal, as an elaborated and obviously exaggerated concept, to Herodotus and Thucydides, Plato and Aristotle, as well as to later authors. Archaeology has provided a certain historicity, as we have seen, to his leading role within Crete and to his legendary thalassocracy. But what remains of his famous laws, which ancient authors praise so highly yet so vaguely? The origin in the second millennium B.C. of various institutions and much of the customary law for the regulation of social relations is generally accepted. For historical Crete in particular, the wealth of legislative inscriptions found in many of its cities, with Gortyna leading the way, greatly surpasses in number the bulk of the inscriptions from all other Greek cities and suggests an even stronger line of tradition. This cannot be fortuitous, nor is the fact that in the framework of the city-state, where the ideal of law and order was greatly cultivated, the mythical king of Knossos emerged as the archetypal figure of the legislator—the first one to create and impose laws. Such laws, which would have taken the form of orders, regulations, prohibitions, and clauses—having descended from the complex palatial societies and been both enriched and modified in subsequent centuries—have been generally attributed to Minos, the regulator and guarantor of social order. Of his legislative work, however, only the homonymous pseudo-Platonic dialogue preserves in explicit terms a customary prohibition stating that "in Crete, among the laws instituted by Minos, there is one that stipulates that one should not drink to intoxication at symposia" (*Minos* 320a). An archaic inscription of the sixth century B.C. from Eleutherna in western Crete confirms the veracity of this testimony and the undeniable Cretan origin of the prohibition. With characteristically similar phrasing, the inscription repeats the prohibition of drunkenness, but it is carved in stone, which gives it longevity and validity at a time when the city-state was passing from spoken customary law to written laws. From that point, the transition to the Creto-Mycenaean past becomes easier to accept, even if it represents only the faintest trace of a judicial Minos, who existed somewhere between myth and reality.

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CHAPTER 6

MINOAN ART AND ARCHAEOLOGY

Philip P. Betancourt

Between 3000 and 1200 B.C., the Bronze Age inhabitants of Crete developed the first sophisticated civilization of Europe. We call these people the Minoans after the legendary King Minos, who is said to have ruled the island of Crete in Greek mythology, but we do not know what these early people called themselves, where they originated, or what language they spoke. What we do know is that their art includes some of the most dazzling masterpieces from the ancient world.

Fig. 1. The north entrance to the Minoan palace at Knossos.

The Minoans supported themselves with a diversified economy. The island of Crete is over 250 kilometers long, which is large enough to support several cities and hundreds of towns, villages, and farmsteads. The population during the Bronze Age seems to have been substantial. The land had little mineral wealth, but its low hills and fertile valleys provided enough good land for a sound agricultural base, and the higher mountains were able to grow grass and other pasturage for large flocks of sheep. The Minoans grew grains and vegetables, and they raised olives both for food and for oil. Crete became wealthy by developing an economy that seems surprisingly modern. With a land challenged by limited natural resources, the Cretans processed agricultural products and imported raw materials to supply their workshops, and they developed an economy based on trade, exporting finished products of the highest quality: woolen cloth woven with elaborate patterns in many colors, perfume manufactured from olive oil, spices and medicines from the herbs that grew wild, and a long list of metal tools, household vessels, jewelry, and weapons made by combining imported copper and tin to make bronze (quite a few of them are included in this exhibition catalogue).

Although more than a century of archaeological exploration has provided a great amount of information about the Minoans, they remain an enigma. Their art is very different from that of their neighbors, and its celebration of nature in colorful and attractive ways finds no parallels in the stiffer and much more formal art of Egypt and western Asia or in the simplified and symbolic art of the rest of Europe at that time. The clay tablets of the Minoans have not been deciphered.

Minoan society was probably always a seafaring one. Minoans traveled widely and absorbed influences from several places, but they always adapted foreign ideas to their own purposes. Crete was strategically placed between the older civilizations of Egypt and western Asia to the east and the western Mediterranean and Europe to the north and west. The island acted as a bridge between the older cultures of the east and the younger ones in the west.

Several palaces dominated Crete's society by the Middle Bronze Age, and by the Late Bronze Age they had reached their mature form. Their architecture opened up many of the indoor spaces to the wonderful south Aegean climate, with columns replacing some of the solid walls to welcome light and air into bright rooms with attractive painted scenes (fig. 1). By the middle of the second millennium B.C., Minoan influence had spread well beyond the home island. Cretan ideas were influential both in the Cycladic Islands and on the peninsula of Greece; several of the local palaces were decorated with paintings in Minoan style in places as far away as Egypt, Syria, and Turkey.

Fig. 2. Bull-shape clay vessel with acrobats from Koumasa (ca. 2000–1900 B.C.). Herakleion Archaeological Museum.

The visual arts occupied a special place in this society. Even objects from the early part of the third millennium B.C. at the beginning of the Early Bronze Age (ca. 2800 B.C.) already show glimpses of future excellence. A small bird from the cemetery at Haghia Photia (see cat. no. 6) provides a whimsical view of how a few details added to a clay vase—head, tail, wings, and three feet—can turn an ordinary bottle into a fanciful little bird. Stone vases (see cat. nos. 43–46, 204), attractive pottery (see cat. nos. 2–5, 7, 9–11), and other Early Bronze Age art objects use attractive patterns and interesting materials.

Minoan sculpture was very simplified until the opening years of the Middle Bronze Age (ca. 2000 B.C.). The animated little figures hanging onto the horns of a bull from this period (fig. 2) manage to capture the essence of man's struggle against the forces of nature with a sense of whimsy, but they create a compelling image. The sculpture is an early version of an athletic event often called bull-leaping, which would be an important part of Minoan rituals for many centuries.

During the Middle Bronze Age, the art became more complex. The clay jug shown in figure 3 is in a style called Kamares ware. It comes from Phaistos, a palace in south-central Crete where it was made in Middle Minoan IIB (about 1700 B.C.). Its colorful motifs in red, orange, and white are applied on top of an overall coat of dark-firing slip, and the vase is then fired in the kiln to make the colors permanent. The motifs take their inspiration from the floral kingdom, but the leaves and flowers and tendrils are so simplified and schematic that they are scarcely recognizable. The curved shapes flow across the vase, making a complicated design that is balanced and carefully composed to echo and enhance the rounded shape of the vessel as a whole.

Fig. 3. Kamares Ware jug from Phaistos (ca. 1750–1700 B.C.). Herakleion Archaeological Museum.

The height of Minoan power was at the beginning of the Late Bronze Age, in the period we call Late Minoan IA (LM IA, ca. 1625–1525 B.C. by the traditional chronology). Probably all of Crete was unified by this time under the rule of Knossos, and Crete enjoyed a time of unparalleled peace and economic prosperity. Knossos and the other Cretan palaces supported a large number of artists and craftsmen whose workshops turned out a steady supply of pottery, wall paintings, metal objects, seal stones, woven goods, and many other products.

Fig. 4. Section of a fresco from Knossos showing a blue bird in a rocky landscape (ca.1550–1500 B.C.). Herakleion Archaeological Museum.

One of the paintings that decorated the palace at Knossos at this time is illustrated in figure 4. It depicts a bird painted in blue—probably a rock dove—that sits within a rocky landscape from which flowers sprout. The rocks are shown with irregular contours, and their flat areas of paint provide an attractive setting for the colorful blossoms, including roses and iris. The technique of the wall painting is true fresco, with the paint applied over lime plaster while it is still wet, so that the colors will become permanently sealed within the wall when the lime dries and changes chemically. Like most of the paintings from Minoan Crete, the fresco survives only as fragments that fell from the walls when the architecture was destroyed. The style of the painting reduces the birds and the plants and rocks to flat areas with interesting contours, especially curvilinear ones. The artist then arranges these flat motifs in intricate and informal ways. This is a pure landscape, with not a single human figure, and its message is the beauty of glorious nature, untouched by man.

When the Minoans of Late Minoan I portrayed human figures, they often tried to depict their subjects' anatomy. The three-dimensional plaster reliefs of the "Prince of the Lilies" (see chap. 5, fig. 2) use sculptured shallow reliefs to show the man's muscular frame, with painted details added over the relief. The pieces were found in fragments, and the headdress may go with a different figure, but the solidity of the lifelike rendering of the body still produces an interesting effect even if the total composition remains uncertain.

The individuality of Minoan art is apparent in small objects as well as in larger ones. The "Harvester Vase" (fig. 5) shows a musician rhythmically shaking a sistrum to keep time for men marching in unison in a religious procession (for examples of this instrument, see cat. nos. 190, 191). The three-dimensionality of the small figures on the carved stone jar is a tour de force, but it is the emotional exuberance of

Fig. 5. The "Harvester Vase," a carved stone rhyton from Haghia Triada (ca.1500–1450 B.C.). Herakleion Archaeological Museum.

Fig. 6. Stone rhyton in the form of a bull's head from Knossos (ca. 1600–1500 B.C.). Herakleion Archaeological Museum.

the tiny figures—with those on the rank at the left straining to open their mouths in song—that draws the viewer's eye. One can contrast the rugged beauty of the carved stone bull in figure 6. Like the "Harvester Vase," the bull is a rhyton, a vessel with a hole in the base so that liquid will flow through it constantly. The rhyton shape was probably used in Minoan rituals, although the details of the ceremonies are not clear. Many other objects in carved stone also became popular at this period (see cat. nos. 163, 199, 200, 205, 208).

Pottery also reached new heights of expression during Late Minoan I. Elaborate pottery vessels were needed for display as well as for use in ceremonies. The most distinctive examples were made in the palatial workshops and shipped to outlying towns for use in local ceremonies. The flask shown in figure 7 comes from Palaikastro, a town in far eastern Crete. The vase, which was made at Knossos, is decorated in the fashion we call the Marine Style. It has a frontally facing octopus whose tentacles wrap around the vase. Because the head of the creature is placed diagonally at the center, the eyes become the center of attention and the curving tentacles fit well on the rounded sides of the vase (see cat. no. 32).

An impression from a seal stone found at Khania is a miniature masterpiece (fig. 8). It shows a seated woman, perhaps a nature goddess, reaching out from her throne to feed

a timid goat. In a study of the body language of contradictory emotions, the shy animal leans backward, but it still reaches out to take the food that is offered.

Faience is a man-made material created from powdered sand and fluxes and fired at low temperatures in a potter's kiln. The process, borrowed from Egypt, was used to create the series of small female figurines buried in rectangular boxes called the Temple Repositories at Knossos. A large number of other ceremonial objects were found in the same context. The example shown in figure 9, dressed in the elaborate female costume used for special occasions, holds a snake in each hand. She has often been regarded as a priestess.

The Mycenaeans from mainland Greece reached Crete at the end of Late Minoan IB. Linear B, an early form of Greek, replaced the local writing in Linear A. Crete now participated in a vast Mycenaean trading empire that reached

Fig. 7. Marine-Style flask from Palaikastro (ca. 1450 B.C.). Herakleion Archaeological Museum.

from Italy to western Asia, and even more wealth flowed into the south Aegean island. In art, the Minoan exuberance and love of nature was tempered by a little restraint and Mycenaean formality, but the blend of Cretan and mainland ideas still produced great images.

The young female figure in the fresco fragment shown in figure 10 was probably a goddess. When she was discovered at Knossos at the beginning of the twentieth century, the local workmen nicknamed her "the Parisienne" because of her red lips and fancy coiffure with a little curl in front of her forehead. The elaborate knot that the figure wears behind her back signifies her divine status.

Fig. 8. Drawing of a clay seal impression from Khania (ca. 1450 B.C.). (*CMS* V. Suppl. 1A, no. 175). © CMS Archive, Marburg.

Fig. 9. Faience figurine holding snakes, from Knossos (ca. 1600 B.C.). Herakleion Archaeological Museum.

Fig. 10. Fragment of a fresco with a female head ("the Parisienne"), from Knossos (ca. 1400–1350 B.C.). Herakleion Archaeological Museum.

Fig. 11. Bull leapers and bull from Knossos ("Toreador Fresco") (ca. 1450–1400 B.C.). Herakleion Archaeological Museum.

The "Toreador Fresco" (fig. 11) also belongs to this period when Mycenaean and Minoan ideas were fused together. It depicts the Minoan acrobatics involving bulls that had been part of Cretan customs for many centuries. In this version, some of the athletes are painted white and others are reddish brown, following the use of colors to distinguish between men and women in artistic representations, a practice that was common in Egypt and elsewhere during the Late Bronze Age. The sport was certainly dangerous, and it must have had ceremonial connotations affirming human dominance and rule over the powerful forces of nature.

The Minoans and their customs were gradually assimilated into the later societies of the Greek-speaking parts of the Aegean. All of the Aegean changed during the first millennium B.C. By the Classical period, the palaces of Crete were only a distant memory, perpetuated in mythology by tales of a wonderful past age when King Minos ruled the seas and presided over an early period of Cretan history.

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CHAPTER 7

SHEPHERDS AND FARMERS, CRAFTSMEN AND ARTISTS

Lefteris Platon

Although the tablets in Mycenaean Linear B script represent a more advanced palatial system than what the Cretans were the first to establish in the Aegean region, they nonetheless provide significant information about the economic structures on the island of Crete in the time of the Minoan palaces. First, they confirm explicitly the existence in the prehistoric Aegean of certain categories of specialized individuals who could be characterized—even in today's terms—as "professionals." Indeed, in some cases at least, these professional categories are defined by exactly the same words as those used for corresponding professionals in historical times in Greece. Typical of these early epigraphic testimonies is the inclusion of categories of professionals with various degrees of specialization and possibly, in each case, a different status within the palatial economy. For example, in these records the shepherd (Mycenaean: *po–me*; transcription in Greek: *ποιμήν* [poimen]) coexists with the *ka–ke–u* (Greek: *χαλκεύς* [chalkeus])—probably to be identified as the specialist metalworker—and even with the worthier *ku–ru–so–wo–ko* (Greek: *χρυσουργός* [chrysourgos]), which is the goldsmith.

Second, a reading of the tablets yields important information about the degree of specialization of the said professionals. In one case at least, a tablet from Knossos, there is a recognizable recording of apprenticeship—confirmed for the craft of weaving—involving a number of young individuals under the guidance of an instructor (Mycenaean: *di–da–ka–re–i*; transcription in Greek: *διδασκαλεί* [didaskalei]). Consequently, it seems likely that some professionals were taught their skills in "guilds," under the control of the palace, something that may have made them dependent economically and administratively on those who had been responsible for their training.

The purely archaeological data now confirm that, despite the development of trade and the existence of a well-organized network of economic transactions inside the administrative districts, agriculture and stock raising were in all periods the backbone of the Minoan economy. During the period that preceded the founding of the palaces, there were well-organized installations for producing dietary staples, such as olive oil and wine. These were located inside the settlements in specific building complexes, the occupants of which were apparently charged with supplying the entire community with their produce. The importance of agricultural production—particularly of wine—for these early communities is indicated by the dedication in tombs of models of the clay tubs used for pressing grapes. A similar picture with

Fig. 1. Votive basin with the modeled figurines of a herd of goats and their herdsman. Palaikastro (ca. 2000–1900 B.C.). Herakleion Archaeological Museum.

a

b

Fig. 2. a. Drawing of a clay seal impression with a scene of the milking of animals. Khania (ca. 1450 B.C.).
b. Modern scene (*CMS* V. Suppl. 1A, no. 137).
© CMS Archive, Marburg.

regard to the distribution of production installations can also be seen in palatial times, although the management of collecting and possibly redistributing the products was, in most cases, controlled by a central authority. The accumulation of a great volume of basic foodstuffs inside the palaces confirms the centralizing character of production and underlines the importance of arable farming for the palatial economy.

Animal husbandry also seems to have been a primary economic source since Prepalatial times, judging by the modeled figurines of a herd of goats and their herdsman found inside a votive basin from Palaikastro (fig. 1). Representations of the milking of animals, on seal impressions brought to light in excavations at Khania (fig. 2), confirm the importance

of stock-raising products during the Palatial period as well and indeed in the framework of economic control exercised by the ruling class. The recent identification of an important, possibly palatial, installation for managing livestock, at the site of Zominthos—between Anogeia and the Nida plateau, a region that is still today an important place for stock farming in Crete—supports the existence of a complex network of control for a corresponding production in Minoan times. The scale of animal husbandry during this period is difficult to determine, but a few later tablets from Knossos refer to palatial flocks and herds numbering (perhaps in their entirety) more than one hundred thousand sheep and goats.

Fascinating insights into the specialization demanded by professions in the crafts sector are provided by the wide variety of tools, mostly made of bronze, brought to light in excavations. The types represented vividly recall those in today's tool kit of specialist craftsmen, leaving no doubt about the existence of analogous categories of professionals in Crete in Minoan times. Hammers (cat. no. 55), single and double

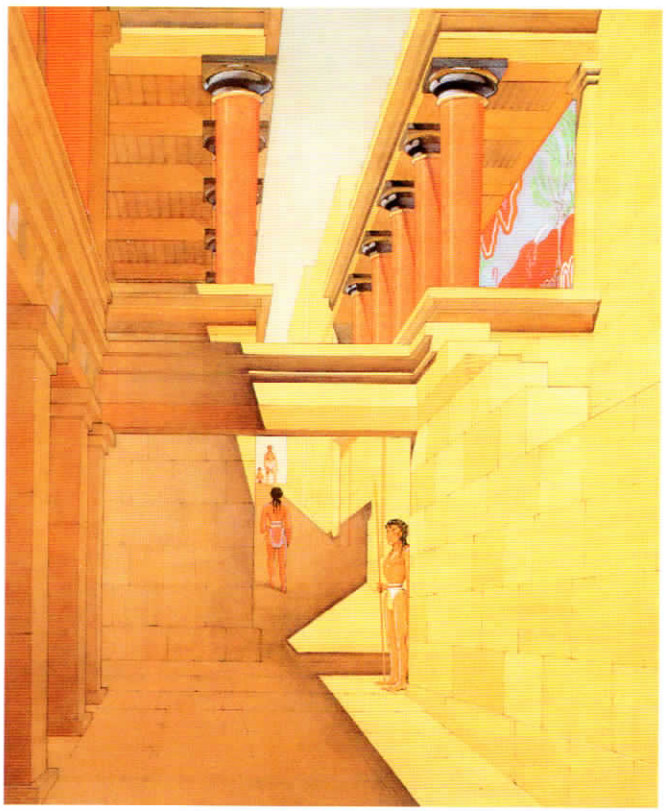

Fig. 3. Palace at Knossos. North Entrance. Restored drawing (Piet de Jong).

axes (cat. nos. 56, 57), anvils, and nails were evidently among the metalworkers' tools, along with open and closed stone and clay molds for casting metal objects or sheets (cat. nos. 67, 68a-b, 69). Chisels of assorted types (cat. nos. 59a, 59b), hollow drills, and special stone wedge-slats—to stabilize them in use—clearly belonged to stone carvers. Scudding knives, half-moon knives, and special scrapers made up the tool kit of the tanners and leather workers. Large two-handled saws were used by both stonemasons and carpenters. Some very fine tools, among them solid bow drills, awls, and burins, were probably used by seal engravers. At this point it should be noted that the most important sets of bronze tools have been found at palatial sites, such as Knossos, Malia, and Zakros, as well as in the Minoan villa at Haghia Triada.

The image of the Minoan craftsman appears to be preserved in later Hellenic tradition in the mythical figure of Daedalus. The Greek authors, of course, gave Daedalus an Athenian origin, perhaps in an attempt to usurp values on behalf—and to the benefit—of ancient Athens, the new dominant power in the Aegean region. What is most interesting is that they present him as a person with diverse skills, the master of virtually all the known crafts of his day. More specifically, the historian Diodorus Siculus, after first assessing that Daedalus's abilities were the result of natural talent, goes on to inform us of his sophisticated achievements not only in architecture but also in sculpture and stone carving:

> . . . in natural ability
> he towered far above all other men and cultivated
> the building art and the working of stone
> . . . regarding
> the carving of his statues he so far excelled all other
> men that later generations invented the story
> about him that the statues of his making were
> quite like their living models.
>
> Diodorus Siculus (Book IV.76)

Diodorus's choice of three specific crafts does not seem to be fortuitous. For the Greeks, the myth that attributed to Daedalus the construction of the Labyrinth, a mazelike building that no one could get out of without the help of a guide, illustrates the mythical craftsman's involvement with architecture. The myth that Daedalus sculpted a wooden cow for Minos's consort, Pasiphae, which made possible the infatuated queen's union with the bull of the sea god Poseidon, is surely the reason for the reference to the sculpting of statues that were "identical to their living models" (*ομοιότατα τοις εμψύχοις*). Moreover, sculpture was of all the arts the one that would have interested Diodorus's readers most, in a period when the creation of statues of white marble was their supreme expression. Finally, the Greek writer's special reference to the art of stone carving (*λιθουργίαν*) is at first glance surprising, given that this art does not appear to be identified with that of sculpting statues, which is mentioned separately.

Excavation finds confirm the succinct, if relatively terse, description of the abilities of the Minoan craftsmen—or rather "artists"—which the Greeks attributed entirely to

Fig. 4.
A half-sawn block of veined marble. Zakros. South Workshop Quarter (ca. 1450 B.C.).

Fig. 5.
Veined stone rhyton. Palace at Zakros (ca. 1500–1450 B.C.).

Daedalus. It is easy to understand why the palace at Knossos, a multistory building with more than fifteen hundred rooms, was crystallized in the consciousness of every visitor as an "architectural miracle" (fig. 3; see also chap. 3, figs. 2–7; chap. 4, figs. 1, 3, 7). Articulated around the large Central Court, with four wings up to five stories high, and constructed with light materials where possible and an antiseismic frame of rows of wooden posts and beams that intersected within the walls, Knossos was for its time a towering architectural achievement. Porticoes, verandas with colonnades, and wide staircases all created an impression of monumentality. Architectural inventions, such as the pier-and-door partition (*polythyron*), bespeak the ingenuity of the Minoans (see also chap. 4, fig. 5). Spacious internal courts and columned light wells enhanced the complexity of the construction as they ensured a pleasant ambience for the occupants. Many of the building materials, including different kinds of marble and shimmering white gypsum, had been chosen intentionally to convey a sense of luxury, while vivid colors—red, yellow, and blue—frequently covered wooden architectural members and walls. And not least of all, wall paintings of superb art, with vibrant colors and impressive representations from nature and the Minoans' religious cosmos, complemented the magnificent presence of one of the most important buildings in the ancient world (cat. nos. 157–159; see also chap. 6, figs. 4, 10, 11; chap. 9, figs. 7–9).

Is it really possible that such a demanding architectural achievement as the construction of a palace might be the work of just one person? There is no doubt that large teams of craftsmen—and even larger forces of manual laborers—had undertaken to procure and to process the materials according to categories. The quarrying and rough working of the stones to be used for building and revetting walls, or constructing more specialized architectural members, certainly took place at the extraction sites, in order to avoid the arduous task of transporting huge blocks to the construction site. Some of the exploited quarries are known to have been at considerable distances from the palace, so the transport of material would have demanded large-scale communal effort. For example, the quarry of poros stone, which provided the raw material for building the façades and fashioning the most opulent architectural members in the palace at Zakros, has been located along the length of the rocky coast about three nautical miles north of the homonymous bay. The only logical way to transport vast amounts of material to Zakros was by sea, but this presupposes an operation organized by those in authority, which most probably lasted several weeks or even months. The transporting of raw materials would have been followed by the further preparation of the building material on the construction site, with the participation of special teams of masons and builders. The placing of the prepared building material in the prescribed position—perhaps on the basis of a design—may be denoted by the presence, usually on the unseen surfaces of the courses, of the so-called masons' marks, that is, signs incised by the masons. According to another viewpoint, the masons' marks, among them the cross, the arrow, the star, the trident, and the double axe, were emblems of guilds, which collaborated on erecting the same building, namely the Minoan palace.

Despite the unquestionable participation of a large number of people in the building and decorating of the palaces, it is obvious that the projects were the result of a highly coordinated plan. The complexity of the structures presupposes the devising of architectural solutions and applications "on paper" by small teams of "architects" or other individuals. For example, the inspired integration of the so-called Domestic Quarters in the East Wing of the palace at Knossos, located at a level lower than the Central Court, may have been the result of a high-quality architectural study produced by a single mind. The use of stereotyped models of palatial architecture in several variations throughout Minoan Crete (such as that of the so-called Minoan *megaron*), points to the existence of one, probably small, group of architects who were privy to commonly elaborated ideas and experiences. For the palace at Zakros (figs. 12, 13; see also chap. 3, figs. 12,

Fig. 6.
Rock crystal rhyton.
Palace at Zakros (ca. 1500–1450 B.C.).
Herakleion Archaeological Museum.

Fig. 7.
Stone rhyton with relief representation of a shrine. Palace at Zakros (ca. 1500–1450 B.C.). Herakleion Archaeological Museum.

Fig. 8.
The "Palaikastro Kouros": chryselephantine statuette of a god or an adorant (ca. 1500–1450 B.C.).
Siteia Archaeological Museum.

13; chap. 4, fig. 2), which was built in a rather advanced phase of the life of the Minoan settlement, there appears to have been a relatively precise preliminary design, which could be implemented in only one available building plot, in the valley running between two densely settled hills. The building tools, most of them bronze—large saws with a serrated blade for timber and a smooth blade for stone, as well as chisels of various types and scrapers—were found inside the palace, possibly belonging to its residents.

The excavation at Zakros has also yielded some indications of the social status and significance of the palace artisans. One wing of the palace seems to have been both the workplace and the living quarters of these valuable "servants." In the so-called South Workshop Quarter were found raw materials in stages of processing—such as a half-sawn block of veined marble (fig. 4)—and other unworked material, together with the finished products of stone-carvers—such as a piece of rock crystal from which pinheads of different size had been fashioned (cat. nos. 147a–e)—along with some of the craftsmen's bronze tools. These and adjacent rooms also contained domestic vessels, including bronze and clay trivets for cooking pots, and querns, which indicate that the same complex, which was architecturally and functionally independent, might also have housed the craftsmen. However, neither the available spaces nor the number of tools and the quantities of materials found in them, nor even their permanent equipment, permit us to speak of large teams. Traces of working stones were also found dispersed at different points in the West Wing of the palace, where excavations brought to light most of the precious raw materials, as well as numerous specialist tools made of bronze.

Comparable to the picture at Zakros are those from the palace of Knossos, and to a lesser extent from Phaistos and Malia. Two unfinished gypsum amphorae were uncovered in one room of the East Wing of the palace at Knossos, whereas a large quantity of worked stones of the kind named Spartan basalt (after its place of provenance) was revealed in a nearby ground-floor magazine. Other stone-carving workshops were identified in the South and West Wings of the palace. However, in none of these does provision seem to have been made for permanent workshop equipment or for a spacious room that was easily accessible and had good natural light, essential preconditions for the operation of a satisfactory workshop.

Only the Lapidary's Workshop at Malia, which dates to the period of the First Palaces, presents a different picture of organization. Here raw materials, unfinished objects, finished products, and tools were found in the same room of one building, in a quarter relatively far away from the palace. For some scholars, this building was the house of a craftsman who specialized in seal carving and who probably worked in situ, within the narrow framework of a family enterprise. For others, however, the Lapidary's Workshop—like those of the "potter" and the "bronze smith" in the

same sector—belonged to a chain of specialist workshops. According to this hypothesis, the bronze foundry operated under the supervision of the religious leadership, which in this particular period was independent of the corresponding political leadership and possibly had its seat in this quarter of the Minoan city.

Traces of specialized working of rare materials, such as bronze, various kinds of semiprecious stones, and ivory, have come to light in settlements that do not seem to be associated directly with a palatial center, at least topographically. Such cases include Poros near Herakleion, Palaikastro, and Mochlos; Gournia (see chap. 3, fig. 15), on the isthmus of Hierapetra, was characterized during its excavation as an "industrial town" on the basis of the sporadic discovery of tools in various houses in the settlement. To date it has not been possible to elucidate the relationship between the installations at Poros, a site near the natural harbor of Knossos, and the palatial authority. On the other hand, the traces of working materials at Palaikastro and Gournia are so fragmentary that it is not possible to assume the presence of permanent, specially equipped workshops capable of serving social groups larger than a nuclear family.

Although evidence for the functioning of organized stone-carving workshops in Minoan Crete is rather scant, the stone carvers' achievements are, without doubt, remarkable. More than fifty stone ceremonial vases of exquisite art, representing a wide variety of shapes and materials, were recovered from the treasury of the palace at Zakros (see cat. no. 215). The utilization of the physical properties of each material, through the choice of shape, is truly admirable. The darker veins of the various marbles are enhanced to give the impression that they were designed to emphasize the curves or angles of the selected forms (fig. 5). The technology applied in making these vases is also very advanced. The walls of one libation vase of rock crystal have been carved with unimaginable patience to appear almost transparent (fig. 6). The high level attained by the art of carving is exemplified by a stone libation vase with relief representation of a shrine (fig. 7)—originally gilded—and by a bust of a bull (cat. no. 205), which imitates another from Knossos (see chap. 6, fig. 6). The fact that creations very similar to those from Zakros have been found not only at Knossos but also at other sites in Crete makes it likely that all the outstanding works were fashioned by a limited number of artists, whose prowess had been acknowledged—and then appropriately exploited—by the rulers of the palaces.

Consequently, the excavation finds tend to validate Diodorus Siculus's claim concerning Daedalus's achievements in *λιθουργίαν* (stone carving). Certainly part of the Minoan artists' aptitudes in the art of sculpture is represented by the stone vessels carved in relief or in the round. It seems that the effigies of Minoan deities and simulacra of worshipers were not made of stone, nor were they usually rendered life size. Consequently we cannot speak of "statues," a term that was introduced in Greece with Archaic art. Minoan artists appear to have conquered the plasticity of the human figure by working softer materials. The relatively limited potential of clay was surpassed by using faience, an easily modeled material made of pulverized quartz grains, the technical know-how of which the Cretans most probably brought to the island from Egypt. Some of the best-known Minoan artworks are made of faience, among them the famous "snake goddesses" from Knossos (see chap. 6, fig. 9; chap. 9, fig. 3). Ivory too, most probably imported from the Syro-Palestinian littoral zone, was used for making ornaments as well as figurines, from as early as the third millennium B.C. It was a precious material, which is why it was kept in the safest magazines of the palaces, as indicated by the discovery of four elephant tusks in the West Wing of the palace at Zakros (see chap. 12, fig. 5). A relatively recent find from Palaikastro that epitomizes the aesthetic conceptions of the Minoan artists is a figurine of a god or an adorant in a pose of veneration, fashioned from assorted materials (fig. 8): ivory, two kinds of stone, wood, and gold. It is undoubtedly the creation of one exceptionally accomplished artist, a master in working a whole range of materials and understanding their use and their potential. Some of the anatomical features, such as the muscles and tendons of the limbs, are rendered so naturalistically that one cannot help but recall Diodorus's phrase: "the statues of his making were quite like their living models" (*τα κατασκευαζόμενα ομοιότατα τοις εμψύχοις υπάρχει*).

At Zakros pieces of ivory and faience in different stages of being worked were uncovered in the South Workshop Quarter, in the same space where the lump of rock crystal was found. Relief representations of birds on ivory jewel caskets from the same site display such close stylistic affinity to the stone vase with the gilded relief representation of the shrine that it is reasonable to conclude the craftsman who made the latter specialized also in other materials, such as ivory and possibly faience. Given this evidence, it seems likely that there was only one principal palatial craftsman who created objects in the minor arts and stone vases for the rulers of Zakros, at least in the period just before the destruction of the palace.

Analogous hypotheses have been suggested in regard to the artists who painted the pottery found in the palaces. The renowned Kamares Ware vases, with their polychrome decorative motifs (cat. nos. 12–21), have been attributed to a relatively small number of painters, and the same is true for the products of the so-called special palatial tradition, which includes the extravagant Marine Style—with octopuses and other marine creatures whirling in a rich seabed (cat. nos. 29–32,

212, 213)—and the more refined Floral Style—with plants drawn sensitively, as if they were being blown by a faint breeze (fig. 9). However, the manufacture of this pottery presupposed special technological knowledge and spacious open-air installations, preferably near a water source and clay deposits. The discovery of a potter's wheel (see cat. no. 26), an essential tool of the vase maker, in a metalworking workshop at Knossos prompted the suggestion that smiths and potters were the same individuals, familiar with pyrotechnology and involved with one or the other craft according to the season.

All the above hypotheses seem to confirm, in general outline, the picture that the Greeks had formed of the mythical Daedalus. Finds from excavations point less to organized, well-equipped workshops with many workers and more to gifted artists with prolific output in various mediums and genres. These artists were probably not numerous, and in all likelihood they lived inside the palaces, thus enjoying the rulers' favor. It is very possible that they were selected from many candidates at a young age to learn their craft through apprenticeship to experienced masters. Economically, at least, they must have been totally dependent on the central authority, which would explain the tradition that Daedalus was a bondsman of King Minos. We know that the materials for their art were under strict state control, as is borne out by the hoard of four elephant tusks and six talents (copper ingots weighing 29 kilos each: see cat. nos. 64, 65 from Mochlos) revealed in the West Wing of the palace at Zakros.

It is believed that tasks not requiring special knowledge or experience were undertaken, on the orders of the central authority, by teams or families living outside the palaces. In many of the houses in the Minoan settlement at Zakros, installations for the production of basic foodstuffs, such as olive oil, wine, and flour, have come to light (cat. nos. 87, 88). The absence of analogous installations within the palaces may indicate that the palace authorities simply managed the agricultural wealth, gathering the greater part of the yields in their huge magazines. It has been estimated that the magazines in the palace at Knossos could accommodate more than four hundred large storage vats (pithoi), which must have contained the harvest of the land cultivated by the inhabitants of the surrounding area on the orders of the palace. However, this production also provided sustenance for the palace personnel and, of course, the craftsmen charged exclusively with "artistic creation." It has been argued that the palaces also functioned as distribution centers for the food products, at least for those citizens who did not have the opportunity to till the soil.

On the other hand, there is still no agreement as to the character and the form of the economy in the urban or rural sites located at a distance from the palatial centers of authority. With the decipherment of the Linear B tablets, an absolutely

Fig. 9.
Jug with Floral-Style decoration by the "Reed Painter." Palace at Phaistos (ca. 1450 B.C.). Herakleion Archaeological Museum.

centralizing character of the overall economy, which was under strict state control, has been accepted for the heyday of the Minoan palaces, as well as for Knossos during the period of expansion of the Mycenaean element in Crete. However, on present evidence, the purely Minoan system of managing the economy does not appear to have been so centralizing. Cities such as Palaikastro, Mochlos, and Pseira present a picture of economic self-sufficiency, at least at the subsistence level. The presence of a relatively small number of installations for producing basic foodstuffs, such as the grape-pressing floors and the olive presses, as well as the supposed identification of some "shops" in which there may have been exchange of products, hint at the existence of a partially free market, which would at least have functioned as a means for redistributing goods within the communities. The possibility of the existence of a class of merchants, which had the right—as well as the opportunity—to do business with the palatial authority, is supported by the discovery, in a building at Akrotiri on the island of Thera, of tablets in Linear A script, on which are inscribed large numbers of textiles (in addition to considerable quantities of olive oil), which were surely intended as a commodity to be traded with some important center in Crete.

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CHAPTER 8

THE ART OF CRETAN WRITING

Christos Boulotis

From Cretan Hieroglyphics to Linear A and B

The ancient beliefs that attributed the invention of writing to divine or mythical personages evaluated it as one of mankind's greatest cultural achievements. The Egyptians considered writing a gift of the god Thoth, protector of scribes, and the Greeks of the historical period attributed at least part of the alphabet to Palamedes, the mythical hero of the Trojan War, who was also credited with inventing, among other things, weights and measures, dice, and the strategic game of checkers. The Aegean was the first area in Europe to have acquired, as early as the end of the third millennium B.C., the gift of writing, in its pre-alphabetic form, thanks to Minoan Crete. The use of writing is one of the most eloquent indicators of the island's high cultural standards, marking its passage from prehistory to protohistory.

Early pictographic signs, dating to the end of the Prepalatial period, were found incised on seven bone seals from the Phourni cemetery at Archanes, near Knossos. After that time, during the period of the First Palaces, the Cretan script developed quickly into an organized system, primarily to cover the needs of a complex economic mechanism and an increasingly demanding administrative bureaucracy. This pronounced accounting/archival character is obvious in all three types of script that developed on the island and are known by their conventional names: Cretan Hieroglyphics, Linear A, and Linear B. It is noteworthy that approximately 95 per cent of the preserved Cretan inscriptions of the second millennium B.C. concern economic transactions.

When the first written documents appeared sporadically in Crete, cuneiform script in Mesopotamia and Egyptian hieroglyphics had already developed into stable systems with long traditions behind them. We must, therefore, accept that in the systematization of writing during the Protopalatial period, the Minoans were stimulated by the great palatial civilizations of their time. They probably saw foreign scripts during their travels, but inscribed objects must also have occasionally ended up in Crete as commercial goods. Such must have been their contact with, for example, Egyptian hieroglyphics on scarabs, stone vases, figurines, and papyri or with the cuneiform script on cylinder seals. The Minoans did not, however, borrow any of the developed foreign scripts, nor did they invent writing and numerals overnight. As times changed, they adapted to their current needs various scribal practices that already existed in Crete in an elementary form from the Prepalatial period and then systematized and developed them, according to their own genius.

Arthur Evans, in his *Scripta Minoa* I of 1909, was the first to distinguish between the three scripts that developed in Crete in the second millennium B.C., characterizing them, in their evolutionary succession, with the conventional names mentioned above: Cretan Hieroglyphics, because of its pictorial nature, by analogy to Egyptian hieroglyphics, and Linear A and B, because of the linear simplification of their various symbols. The first two scripts, which remain undeciphered, primarily because of the relatively small number of extant documents, were invented by the Minoans in order to render their own language. By contrast, Linear B, an adaptation and improvement of Linear A, is the script used by the Mycenaeans for the earliest rendering of the Greek language. Linear B was deciphered in 1952 by the ingenious English architect Michael Ventris, whose decipherment was almost instantly supported philologically by his compatriot John Chadwick. In any case, all three scripts are fairly similar in their general principles.

Although Cretan Hieroglyphics predated Linear A, they were both used simultaneously during the Protopalatial period. Their coexistence, often in the same archives, raises crucial questions about the need for two different scripts and whether these correspond to one uniform Minoan language or to two different languages. An early linear script appears to have developed from the pictographic Hieroglyphics as some of its signs were simplified and schematized. Characteristic examples of this early linear script, which is considered an archaic form of Linear A (termed Protolinear), come from the Phaistos palace (Middle Minoan II, ca. 1800–1700 B.C.). In the Neopalatial period, however, and until the end of the Late Minoan IB period (ca. 1450 B.C.), Linear A overtook the Hieroglyphic script and became the dominant form of writing in Crete, but it was also occasionally present in sites of the southern Aegean that were in close contact with the island. Most Linear A documents date to the Late Minoan IB period, particularly toward the end, which was marked by a series of great, obviously natural disasters. Although most of these documents are clay tablets from sites in central and eastern Crete (see cat. no. 101a–b), in recent years an increasing number of archival documents from ancient Kydonia (modern Khania) show that Linear A was also practiced extensively in western Crete (see cat. nos. 102–105). The total number of Linear A tablets, however, is considerably smaller when compared to the number of Knossian Linear B tablets. Apart from the large group from the Haghia Triada Royal Villa, near Phaistos (about 150), a group of thirty-one tablets from the Zakros palace, and approximately one hundred complete and fragmentary tablets from Khania, no more than ten tablets have been found in each one of the remaining archives. Even from Knossos only five Linear A tablets have been unearthed, probably because of the circumstances of preservation.

Fig. 1a–b.
Phaistos disc. Unique Hieroglyphic script on two sides. Palace at Phaistos (ca. 1550 B.C.). Herakleion Archaeological Museum.

A script, however, does not disappear from one day to the next, particularly when its users are of the same racial stock and the palatial system that created it has not changed substantially. Therefore, if we accept that two of the most important Hieroglyphic archives, those of Knossos (Hieroglyphic Deposit) and Malia (Room of the Archives), date to the beginning of the Neopalatial period, as suggested by some scholars, and not to the end of the Protopalatial period, then the Cretan Hieroglyphic script must have survived the first great palace destruction about 1700 B.C. Moreover, Hieroglyphic sealings from House A at Zakros and a recently discovered clay medallion inscribed with hieroglyphs from the small palace at Petras in Siteia demonstrate that Hieroglyphics were used occasionally for archival purposes until the end of the Late Minoan IB period (both contexts also yielded Linear A documents). A peculiar type of Hieroglyphic script seems to have continued in use, at least in religious contexts, during the first Neopalatial phase, as indicated especially by the enigmatic Phaistos disc (fig. 1a–b), discovered in the Phaistos palace in 1908, and by the inscription on a votive copper alloy double axe from the Arkalochori cave (fig. 2).

The establishment of the Greek Mycenaean dynasty on the island, with Knossos as its seat, toward the middle of the fifteenth century B.C., marked the definitive predominance of Linear B and thus placed the written documentation of the Greek language six centuries before the time of Homer. Linear B was also used in the Mycenaean palatial centers of the Greek mainland and almost exclusively for archival purposes on clay tablets, related sealings, and a few ceramic stirrup jars. Linear B occurred in Crete in the rich Knossian archives until the collapse of the palatial system in the second half of the fourteenth century B.C. or, possibly, the very beginning of the thirteenth century B.C. The Knossian archives contained more than three thousand tablets in all (see cat. no. 107a–b), and probably many more originally. Apart from the extensive Knossian archive, which greatly exceeds in size those of the Mycenaean palatial centers of the Greek mainland, Khania is the only other Cretan site to have yielded Linear B documents in recent years, with two complete and three fragmentary tablets and inscribed stirrup jars (see cat. no. 108) dating to the early thirteenth century B.C.

Like the Cretan Hieroglyphics, Linear A did not vanish suddenly but continued to be used, at least sporadically, during the Mycenaean occupation. This may be inferred from the inscription incised on a storage jar from a Late Minoan II context of the Unexplored Mansion at Knossos, provided of course that the inscribed jar is not a survival from the previous Late Minoan IB period. To the Mycenaean period also belongs an inscription consisting of two incised signs on the doorway of the Kephala tholos tomb, north of the Knossian palace. The latest evidence, however, for Linear A is a painted inscription on the skirt of a clay female figurine from Poros, near Herakleion (fig. 3b), which dates to the Late Minoan IIIA1 period (ca. 1375 B.C.).

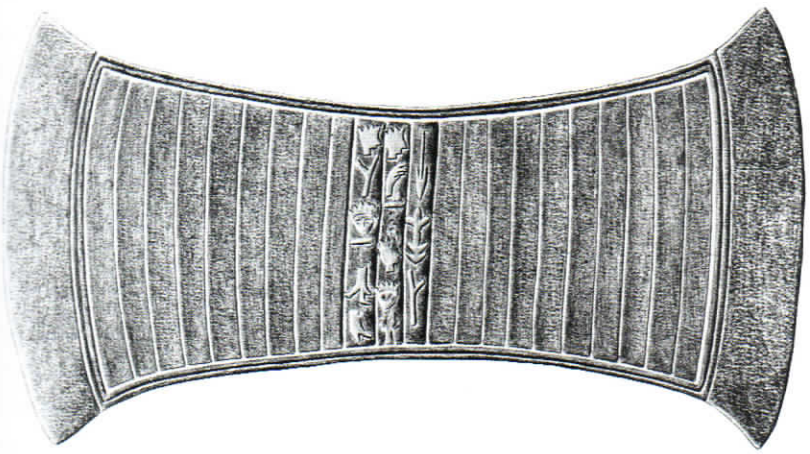
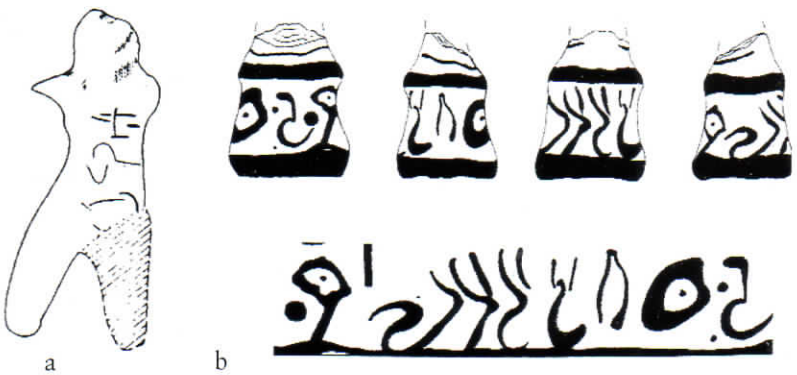


Fig. 2. Votive bronze double axe with a peculiar Hieroglyphic inscription. Arkalochori cave (ca. 1700–1600 B.C.). Herakleion Archaeological Museum.



a b

Fig. 3a. Clay figurine from Tylissos with painted inscription in Linear A. Tylissos. Herakleion Archaeological Museum (*GORILA*, IV, p. 170). Permission by S.N. Libraire Orientaliste Paul Geuthner.

Fig. 3b. Skirt of a clay female figurine with painted inscription in Linear A. Poros, Herakleion (ca. 1375 B.C.). Herakleion Archaeological Museum (Dimopoulou–Olivier–Rethemiotakis 1993, p. 510, fig. 8).

Syllabograms, Ideograms, and Numerals

The number of signs in each of the three scripts reveals their syllabic character, confirmed in the case of Linear B by its decipherment (fig. 4). Unlike the signs of Egyptian hieroglyphics and hieratic, or those of the cuneiform script, which indicate only consonants (and some semivowels), the signs of syllabic scripts each render a vowel or an open syllable consisting of a consonant and a vowel (i.e., *pa, ta, ro, ti)*. The nearly one hundred signs of Cretan Hieroglyphics, the forty-five signs of the Phaistos disc, the approximately seventy syllabograms of Linear A, and the eighty-seven syllabograms of Linear B would indeed be far too many if they belonged to phonetic alphabetic scripts, of which the known examples usually have between twenty-four and thirty two signs; on the other hand, they would be far too few for ideographic scripts, which require hundreds of signs, one for each word.

The phonetic values of the deciphered Linear B syllabograms were applied by scholars with great expectations to the equivalent Linear A syllabograms, which had served as a basis for the creation of the Mycenaean script with the addition of about twenty new signs. The reading of a script, however, does not always entail its decipherment. The Minoan language of the Linear A inscriptions remains unintelligible to date, despite real progress in understanding its structure, thanks to the systematic publication of the corpus of inscribed documents by Louis Godart and Jean-Pierre Olivier, who subsequently also published the corpus of Cretan Hieroglyphic inscriptions.

Fig. 4. Linear B syllabograms (Hooker 1980, 38). Permission by Gerald Duckworth & Co. Ltd.

Several opinions have been expressed about the nature of the Minoan language that Linear A renders. Some consider it part of the eastern family of Indo-European languages and have attempted to connect it to Sanskrit and, more specifically, to one of the Asia Minor dialects (Luwian or Hittite), while others connect it to Semitic. It is possible, however, that the Minoan language comes from a pre-Hellenic Aegean linguistic substrate, which was enriched over time through possible migrations to the island, as well as various extra-Cretan contacts with other linguistic elements, including Greek words. Thus, we could be speaking of an age-old indigenous "Minoan" language that survived in some parts of Crete until the first millennium B.C. and appears as "Eteocretan" on inscriptions such as those from Praisos and Dreros.

The abbreviated nature of all three scripts, particularly in their accounting/archival application, was rendered even more flexible by the use of numerous ideograms—that is, schematic pictures of artifacts, animal and vegetal products, human figures, and so on (see chap. 14, fig. 6). In the case of Cretan Hieroglyphics, however, it is often difficult to distinguish ideograms from syllabograms (their identification is certain only when these also occur in Linear A and B, as with the fig and wine ideograms). Linear A script, in particular, also makes liberal use of so-called ligatures, which involve a close combination of an ideogram and an acrophoneme—that is, the first syllable of a word, which defines more precisely the type of the pictured ideogram. Some ligatures, however, resulted from the combination of two syllabograms. This highly abbreviated manner of providing information diminished considerably in Linear B, which used only a few ligatures.

The establishment of a numeric system was an economic necessity from the start. The decimal system was already in use in Cretan Hieroglyphics, where specific signs, or arithmograms, denote single units, tens, hundreds, thousands, and even fractions. The two Linear scripts used the same semiotic system, with variations in the form of the signs. The most significant difference was introduced in Linear B, which no longer used fractions but developed a graded system of metrograms for measuring volume, capacity, weight, liquids, and solids. Characteristically, the largest weight used for things like copper is a sign representing a balance. The discovery of actual scale discs and weights of various shapes (discoid lead weights are typical of the Neopalatial period) (see cat. nos. 109, 110) provides a tangible dimension to the economic and commercial practices in which writing was so decidedly involved.

Writing Practices

The Protolinear inscriptions from Phaistos and the linear Hieroglyphics—incised with a sharp metal, ivory, or reed stylus on small rectangular tablets; on the more common four-, three-, or two-sided small bars (fig. 5); or on roundels, cones, and nodules, all of unbaked clay—are the earliest Minoan financial documents. The use of unbaked clay tablets and related supports continued in Linear A and also in Linear B. The latter used elongated tablets shaped like palm leaves (see cat. no. 107a–b) for documenting short, related types of information and rectangular, pagelike tablets, some quite large, for listing numerous data (figs. 10, 11). Abundant, inexpensive, and recyclable (used unbaked tablets were reworked into new ones), clay was the most common medium for inscriptions. In fact, for Linear B it is practically the only known medium, since apart from the numerous archival clay tablets and inscribed sealings, only a few instances are known of short painted inscriptions on stirrup jars, the containers used for storing and trading liquids, primarily oil (see cat. no. 108). By contrast, Hieroglyphics, and especially Linear A, present a much wider variety of media for incised and, occasionally, painted inscriptions, a fact that coincides with its greater geographical distribution and definite use of script in areas other than economic and archival (see cat. nos. 98, 103–106). Thus, concerning Linear A in particular, apart from pottery and various archival documents (tablets, seals, nodules, and roundels), short inscriptions were also occasionally incised on stone ritual and votive vessels (fig. 6; see cat. nos. 99, 100), metal vessels, and even jewelry, such as the pins and the well-known gold ring from a grave at Mavrospelio, near Knossos (fig. 7). Short inscriptions on wall plaster (the Haghia Triada Royal Villa) or on ashlar blocks around the entrances of buildings (such as the northwest entrance of the Malia palace, the northeast entrance of the Knossos palace, and the doorway of the Kephala tholos tomb) represent a more exceptional but most interesting practice.

For a better comprehension of the document, Linear B tablets with long texts were arranged in consecutive rows and used horizontal dividing lines in the rule, a practice that also occurred sporadically in Linear A. The text is written on one side of the tablet and occasionally also on the obverse, which sometimes served for hasty notes. This practice goes back to the Protopalatial period, when Hieroglyphic inscriptions usually covered all sides of clay bars and roundels or of prismatic stone seals, in order to record as much information as possible. The Phaistos disc (fig. 1a–b), however, is the most characteristic example of a Cretan document inscribed on both sides. Its significant, possibly religious, text required the firing of the clay after the stamped inscriptions were completed, so that it would last throughout time. By contrast,

Fig. 5. Four-sided small bar with linear Hieroglyphic inscriptions (KN Hh 01 01). Palace at Knossos (ca. 1750–1700 B.C.). Herakleion Archaeological Museum (Olivier–Godart 1996, p. 100). Permission by École française d'Athènes.

Fig. 6. Stone vase with Linear A inscription. Apodoulou, Amari (ca. 1600–1500 B.C.). Herakleion Archaeological Museum.

Fig. 7. Gold ring with Linear A inscription. Mavrospelio, Knossos (ca. 1600–1500 B.C.). Herakleion Archaeological Museum.

the unbaked tablets were preserved entirely by accident, after having burned in fires that destroyed the buildings in which they were kept. In this respect, they differ significantly from the Eastern clay tablets with cuneiform script, which were fired intentionally for permanent archiving.

Text is usually arranged horizontally and from left to right, although *boustrophedon* writing—named after the direction an ox turns in plowing: from left to right, then from right to left, and so on—occurs occasionally in Linear A. Sometimes the available surface dictated a spiral arrangement, as with the Hieroglyphics on the Phaistos disc (fig. 1a–b), the Linear A inscriptions on the circular bezel of the gold ring from Mavrospelio (fig. 7), and the interior of two clay conical cups from the basement of the Monolithic Pillar Basement in a house southeast of the Knossos palace (fig. 8). Another, rare deviation from horizontal writing is the vertical arrangement, as with the peculiar Hieroglyphics on the copper-alloy votive axe from Arkalochori (fig. 2) or the Hieroglyphic inscription on a stone "offering table" from the town of Malia. Separation marks between the words, such as dots and short vertical lines, made reading much easier. In the Hieroglyphic script, marks in the form of small x's were used to indicate the direction of writing or the beginning of a sentence.

The close relationship between script and seal, first documented in the earliest written documents from Phourni, near Archanes, is strengthened in the Protopalatial period, with the proliferation of Hieroglyphic inscriptions. Many of these were carved calligraphically on three- or four-sided stone prisms (fig. 5) and occasionally on seals of different shapes (see cat. no. 98), the clay sealings of which demonstrate their prevalent sphragistic use in an economic, archival context. The brevity of about two hundred Hieroglyphic inscriptions and, therefore, of the message they conveyed when stamped onto clay, as well as the character of the seal as a personal symbol, equivalent to a kind of signature, lead to the plausible assumption that they might correspond to the names, traits, responsibilities, or office of their owners. Evans even recognized among them the royal title. In Linear A and B, carved inscriptions are no longer found on seals, but seals and gold signet rings with figured scenes continue to be used in various ways in the purely commercial, economic, and archival apparatus, and also for the sealing of boxes, vases, doors, and so on. Occasionally, the brief message was now incised secondarily on the clay sealing.

Writing in Ink and a Document of Early Typography (the Phaistos Disc)

In the scriptural "landscape" defined by the needs of the complex palatial society, one inevitably wonders whether writing was also practiced in other ways on perishable materials. All evidence suggests that it was. First of all, the early development of the pictographic signs of the Hieroglyphic script into linear, and therefore easier to use, forms for faster recording strongly suggests the existence of texts on such materials as papyrus or parchment. The cursive form of the Linear A and B signs, as known from incised texts on clay, presupposes the scribes' familiarity with "painted" text. Evidence for this is provided as early as the Protopalatial period by a one-word painted Hieroglyphic inscription on a miniature clay vase from Malia, a painted inscription consisting of three signs in early Linear A on a sarcophagus from Phourni, Archanes, and an analogous inscription on a sarcophagus from Trypiti. Painted Linear A inscriptions also appear later, as for example on a pottery fragment from Palaikastro and on a Late Minoan IIIA1 terracotta figurine from Poros, near Herakleion (fig. 3b). This practice continues, as mentioned earlier, with the painted Linear B inscriptions on the stirrup jars of the Mycenaean period (see cat. no. 108). Decisive evidence, however, is provided by the spiral Linear A inscriptions written with sepia ink inside two clay cups from Knossos (fig. 8) and subsequently covered with a thin layer of glaze for protection.

Fig. 8. Clay conical cup with spiral Linear A inscription in the interior, written with sepia ink. Knossos (ca. 1600–1500 B.C.). Herakleion Archaeological Museum.

Naturally, ink lends itself to supports other than clay, namely parchment or papyrus. The term *di-pte-ra-po-ro* (he who bears *di-pte-ra*), attested in Linear B, probably denoted the scribe, specifically one who wrote on processed leather—that is, parchment—assuming that the Mycenaean word *di-pte-ra* (*diphtera*) had the same meaning as it did in the historical period. As for the papyrus as a writing medium, it was doubtlessly known to the Minoans very early on. Egyptian illuminated papyri may occasionally have ended up in Minoan Crete, and processed papyrus was probably imported into the Aegean, as evidenced by a few recently examined and identified pieces from Mycenae's Grave Circle B. As a symbolic motif with obvious Egyptian influence, the aquatic papyrus plant appears in all forms of Aegean art (see cat. nos. 23, 136, 156, 159), and it is likely that papyrus grew in some areas of the southern Aegean. The use of parchment and papyrus for texts written probably with ink and rolled up is also indirectly suggested by the various small, often inscribed clay sealings, particularly those with a small hole for the string by which they were attached to perishable documents. One may assume that the texts on the unbaked clay tablets of large archives had a provisional character, and that only some of them, or a synthesis of them, would be subsequently transferred to other perishable media. In the case of Linear B at least, we know with certainty that the clay tablets of the palatial archives were kept for only one year, at which time they were dissolved, after the selective transcription of information for a more permanent archive. It appears, therefore, that the preserved documents represent only part of the writing activities of the Minoans and, subsequently, of the Mycenaeans.

For the universal history of writing, one must point out a remarkable innovation employed for the Hieroglyphic text of the Phaistos disc (fig. 1a–b). Despite controversy over its Cretan identity and particularly its connection with southwest Asia, the disc is apparently of Minoan origin, as suggested by the comparison of its signs with the Hieroglyphics on the Arkalochori axe (fig. 2) and the Hieroglyphic inscription on the stone "offering table" from the town of Malia. The 242 signs, which cover both sides of the disc and make up sixty-one words divided by vertical lines, are not incised, as was the common practice for that period but are literally stamped onto the clay surface, with a direction from the periphery toward the center. The impressions were made, that is, with moveable elements, or stamps, each of which was carved with one of the forty-five signs used for the text. However, this ingenious invention, which predates Gutenberg's use of typography by thirty-two centuries, remained unexploited.

Linear A's Commercial Journey

In the Late Minoan I period (ca. 1600–1450 B.C.), during Crete's greatest brilliance, the practice of keeping financial records in Linear A on clay tablets spread to the nearby Cyclades, as evidenced by two fragmentary examples from Phylakopi in Melos and Haghia Irini in Kea, and several examples from Akrotiri in Thera, sites in close contact with and deeply influenced by Minoan Crete. This, together with the parallel "export" of the Minoan metric and weight system at the same time, indicates clearly that the main motivation for the wondrous Aegean voyage of writing, which began in Crete, was in fact commerce. Clay sealings with Cretan Hieroglyphics had traveled earlier, during the Protopalatatial period, through the Minoan commercial network, all the way to Mikro Vouni in Samothrace in the northern Aegean, where the number of Cretan written documents has increased with recent excavations. But for the first time now, with Linear A, the act of writing according to the principles of Minoan cadastral deontology was witnessed outside Crete. In particular, the fragmentary tablets from Akrotiri discovered together inside a clay basin in the House complex Delta (Room 18a), which was rich in stored luxury goods and vases, belong to a small "private" archive, which, according to the preserved ideograms, listed a flock of sheep, olive oil, and textiles. The great quantity of similar textiles recorded (at least two hundred pieces) and the discovery, only a few meters away, of a large group of sealings made by Cretan signet rings indicate that the building's inhabitants traded with Crete, especially with the Knossian palace.

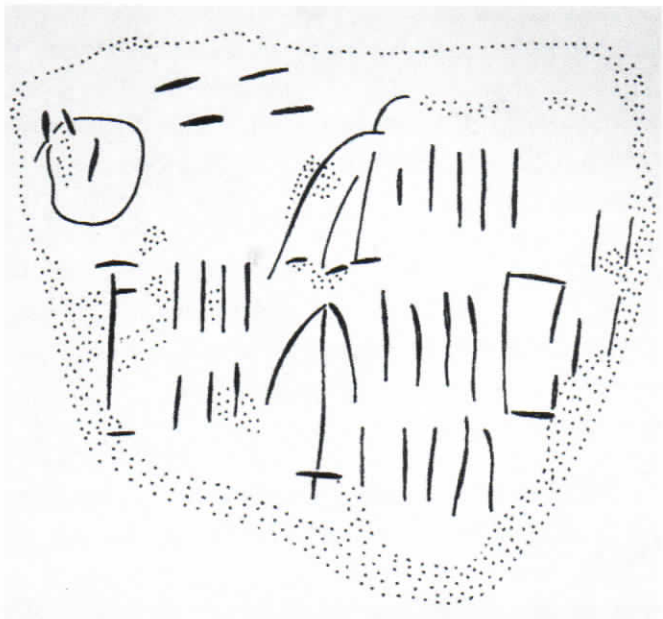


Fig. 9. Pottery sherd with Linear A inscription recording quantities of goods. Akrotiri, Thera. Late Cycladic IA (2nd half of 16th c. B.C.) (Michailidou 1992–93, fig. 1).

In historical terms and bearing in mind Minos's legendary thalassocracy, such a dissemination of writing, combined with all kind of influence in these extra-Cretan sites, could mean either simple commercial exchange with palatial Crete; the infiltration of Cretan merchants into the local insular communities; some kind of Minoan control; or even colonies, as is clearly the case at Kythera and Miletus. Although nearby Kythera, located directly opposite Khania, has not yielded clay tablets, a ceremonial stone vase with a Linear A inscription from the local peak sanctuary proves beyond doubt the presence of writing on the island. The short Linear A inscriptions incised on clay vases, both local and imported, from Akrotiri, Thera, together with other examples from extra-Cretan sites, shows that, as in Crete, writing was not limited to tablets. Indeed, a pottery sherd from Akrotiri listing quantities of goods that had been hastily incised on its surface, gives a valuable hint that writing was incorporated in the daily economic transactions (fig. 9).

The Formative Influence of Linear A: Cypro-Minoan script and Linear B

With short incised inscriptions on vases and other artifacts, Linear A also traveled to several other Aegean sites, such as Haghios Stephanos in Lakonia, Mycenae's Grave Circle A (Grave IV), Tiryns, Miletus, and possibly even to the eastern Mediterranean. In Cyprus, an important trade partner for the Minoans, especially because of the island's rich copper deposits, Linear A provided a stimulus for the creation of a new script, which Arthur Evans called "Cypro-Minoan" and which remains undeciphered. This is also a syllabographic script with three distinct variants comprising about eighty-five signs, of which many resemble the Linear A syllabograms and some linear Cretan Hieroglyphics. Apart from Cyprus, where it was widely used from the sixteenth to the eleventh century B.C., the Cypro-Minoan script also appeared in Syria, particularly in thirteenth-century B.C. Ugarit (Ras Shamra), where it is thought to have been brought by Cypriot colonists at the turn of the sixteenth–fifteenth century B.C. The possible merger of the local Cypro-Minoan script with Linear B, which was brought to Cyprus by the Greeks, who systematically colonized primarily the southern part of the island from the twelfth century B.C. on, resulted in the so-called classic Cypriot syllabary, used for rendering the Greek language, attested in Cyprus by written documents from the eighth to the third century B.C. The Cypriots' conservative persistence in using the old Bronze Age syllabic script to write Greek into the historical period, while the rest of the Greek-speaking world used the convenient alphabet, remains largely unexplained. The script's 1871 decipherment by George Smith, based on a bilingual votive inscription from Idalion written in the Cypriot syllabary and in Phoenician, proved invaluable to Michael Ventris for his decipherment of Linear B, since the two scripts shared some similar syllabograms.

On the Aegean stage at that time, however, the second great event in the history of writing was undoubtedly the creation of Linear B, which also derived from Linear A. The close commercial contacts between the dynamically emerging Mycenaeans and palatial Crete, attested particularly from the sixteenth century B.C. on, as well as the socio-economic process that gradually led to the establishment, about 1400 B.C., of the first palaces in Mycenaean Greece (Mycenae, Tiryns, Pylos, and Thebes) demonstrated the necessity for writing to deal with complex administrative transactions. But where and when did the modification of the Linear A system and its adaptation to the Greek language take place? Although Linear B first appears fully developed with the earliest tablets at Knossos toward the end of the Late Minoan II period (ca. 1400 B.C.), the Mycenaeans must have encountered Minoan script earlier, both in Crete and, possibly, the Cyclades, where it was written, as we have already seen, on clay tablets for economic transactions. Some inscribed artifacts occasionally ended up in their hands. It has been suggested that Linear B was first created in the Cyclades or on the Greek mainland and was transported ready-made to Crete with the establishment of the Mycenaean dynasty, in a kind of "return journey."

In this context, a pebble inscribed on both sides discovered recently at Kafkania, near Olympia, was considered the earliest (ca. 1650 B.C.) attestation of Linear B on the Greek mainland, until the find's authenticity was strongly contested. In fact, the creation of the new script in Crete itself appears to be a more reasonable hypothesis, strongly supported by the general semiotic, linguistic, and cadastral uniformity between the Knossos and Khania texts, on the one hand, and those of the Mycenaean palatial centers on the other. This striking uniformity also suggests that Linear B was not developed gradually and in different places simultaneously, but at a specific moment, for particular administrative purposes, and at one location, from which it subsequently spread. From this point of view, Knossos is the most likely candidate. The possibility that a Mycenaean "commercial quarter," which first made use of the new script, may have traditionally existed in the area would explain several aspects of the matter. It is even more likely, however, that the script was created with the establishment of the Mycenaeans (in Late Minoan II) at Knossos, a place with a centuries-old writing tradition that maintained its vitality after the other palaces were destroyed at the end of the Late Minoan I period. It is even possible that the first people to have converted the Minoan Linear A system into Linear B were well acquainted

with writing, especially with the cadastral deontology; they were probably Minoan professional scribes, alongside whom the first Mycenaean scribes were trained. The resemblance of certain Linear B signs to Cretan Hieroglyphs rather than Linear A signs further supports this hypothesis.

Writing and Religion

Although the Cretan scripts, according to the surviving documents, served primarily for administration and accounting, they undoubtedly had other uses as well. In this respect, Egypt and the other great civilizations of the Levant provide a clear picture of the widespread use of writing in several domains, such as court correspondence, law, poetry, and, above all, religion. The interpretation of Linear A and Cretan Hieroglyphic inscriptions that lack specific ideograms of commodities and numerals indicating a clearly financial character largely depend on the medium on which they were applied and on their findspot. Thus, the short inscriptions on Hieroglyphic seals may relate to their owner (name, profession, responsibilities, etc.). But what, for example, was the meaning of the one-word Hieroglyphic inscriptions usually incised, and in one case painted, on oddly shaped small or miniature clay vases with spherical bodies and long necks produced at Malia? A religious interpretation cannot be excluded.

The similarly one-word early Linear A inscriptions on the sarcophagi from Phourni, near Archanes, and from Trypiti most likely refer to the afterlife, possibly mentioning a divinity of the afterworld or phrasing a farewell prayer. A number of inscribed documents, particularly those in Linear A, point more specifically to the religious realm and eventually to magical practices. These include the incised inscription on a clay figurine from Tylissos and the painted inscription on the female figurine from Poros, near Herakleion (fig. 3a–b). Magic spells of a wishful or apotropaic character can be recognized in the incised inscriptions on metal jewelry, such as the pin and gold ring from Mavrospelio (fig. 7). In the latter, the spiral arrangement of the inscription, without separation marks of the words, further supports the hypothesis of a magic spell related to the ring's owner. Maintaining the analogy, we can apply the same to the two spiral inscriptions written with sepia ink inside the two Knossian clay cups (fig. 8). In these examples, the text may lend special properties to the cups' contents or relate to rituals in which the cups were used. The magic healing spells of the Keftiu—that is, the Cretans—were famous in Egypt, as suggested by a medical papyrus of the time of either Amenhotep III (1408–1372 B.C.) or Tutankhamun (1358–1349 B.C.), now in the British Museum (inv. no. 10059). Written in hieratic, the papyrus records magic words in their original language for the healing of various illnesses. Indeed, the Cretans were also famous as healers and exorcists in the historical period. Other incised inscriptions, such as the one below the rim of a copper alloy bowl in the Mitsotakis collection (Khania Archaeological Museum), probably fulfilled a similar function.

A more specifically religious, probably votive, character is suggested by the Linear A inscriptions on small stone ceremonial vessels, which have cavities at the top for receiving small quantities of liquid or solid offerings. Most of these vessels belong to the "ladle type," which is particularly widespread in Crete, with several examples from sacred sites, such as peak sanctuaries (see cat. no. 99). Known as "libation formulae," the incised inscriptions vary in form and length but always contain a succession of four syllabograms, which, according to the phonetic values of Linear B, can be read *a-sa-sa-ra* or *ja-sa-sa-ra*, most probably the name of some female deity, with the added argument of its close resemblance to the name of the Hittite goddess Ishassara. The latest reference to her name in Linear A is painted on the Late Minoan IIIA1 clay female figurine from Poros, near Herakleion, in the type *a-sa-sa-ra-a325* (fig. 3b). The long tradition of *a-sa-sa-ra* or *ja-sa-sa-ra* in a usually religious context may suggest that this is indeed a supreme Minoan deity, possibly even the great mother goddess, worshiped throughout the Near East under the name of Ishtar, Astarte, and Ishassara. Moreover, the incised inscription *da-ma-te* on the stone ceremonial ladle from the peak sanctuary at Kythera is generally interpreted as the name of the goddess Demeter, a Greek theonym. Its resemblance to the word *i-da-ma-te* (*Ida+mater?*), identified on two miniature votive axes from the Arkalochori cave, makes the similarity of their meaning most attractive. In this case, *da-ma-te* and *i-da-ma-te* may refer to the great mother in its close relation with Mount Ida, the tallest and most imposing mountain in Crete and, consequently, to the mountain deity who manifests herself on mountain peaks, as in the characteristic epiphany scene on clay sealings from the Knossos palace (see chap. 5, fig. 7). The pictographic signs on seals from Phourni, near Archanes, are thought to represent an early variant of the libation formula, thus confirming the formula's Prepalatial origin. However, the practice of incising inscriptions on ceremonial vessels does not begin with the Linear A libation formula; the stone "offering table" from Malia with a circular cavity on top carries a Hieroglyphic, most probably religious, inscription incised vertically on one side.

The Hieroglyphics on the two faces of the Phaistos disc (fig. 1a–b) represent the longest surviving possibly religious text from Minoan Crete. The challenge of penetrating in its meaning has led both specialists and dilettantes alike to a multitude of interpretations, from the relatively reasonable to the most eccentric, all of which remain hypothetical until

the script can be actually deciphered. According to the most plausible opinion, however, the text must be a religious hymn, probably for some deity. The repetition of certain words and a certain proportional distribution of the signs give the impression that the entire text is rhythmically organized. The religious nature of the text is also suggested by its unusual spiral arrangement, which parallels the Linear A inscriptions on the Mavrospelio ring (fig. 7) and the Knossos conical cups (fig. 8), as well as by the fact that a variant of its peculiar Hieroglyphic script appears on a clearly votive object, namely the copper alloy axe from the Arkalochori cave (fig. 2).

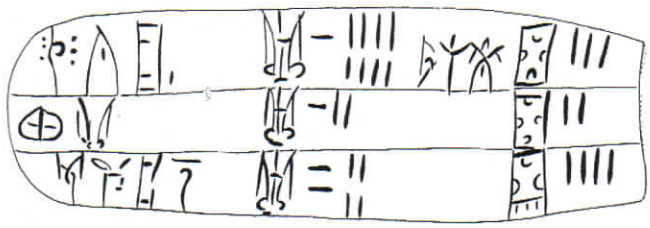
The existence of a possibly large corpus of sacred texts, now lost because they were written on perishable materials, is also indirectly suggested by the diffuse religiosity and ritualization that characterize the Minoan world and are reflected primarily in the rich iconography of the period. The "sacred word," recited or sung with or without accompanying musical instruments (lyre, flute, sistrum), was undoubtedly a basic ingredient in such rituals as the adoration of deities, sacrificial acts, processions, dances, and so on. The palatial priesthood must have seen to the written conservation of religious hymns, ritual canons, and even religious myths, among other things.

Explicit references to religion survive only from the period of Mycenaean rule in Crete, thanks to the Linear B tablets from Knossos and Khania that mention names of deities, members of the priesthood, sanctuaries, and celebrations in the local ritual calendar. But they are not, strictly speaking, religious texts, since they are all extremely short and result from the palace's interest in registering and controlling the offerings sent off by the royal stores.

Linear B: A Script in the Service of the Centralized Economy of Knossos

Apart from the handful of tablets from Khania, Linear B as a necessary tool for the efficient functioning of the central administration was used, as we have seen, intensively and systematically only at Knossos. This fact, combined with the volume and variety of the textual records, confirms the picture sketched by the archaeological evidence—the Knossian palace's continued leading role in Crete during Mycenaean rule and its resulting economic strength. The three chronologically sequential groups of preserved tablets, ranging from about 1400 B.C. to the palace's final destruction in Late Minoan IIIA2 (end of 14th century B.C.) or Late Minoan IIIB1 (very beginning of 13th century B.C.), provide glimpses into the centralized economic-productive apparatus and, on a second level, into sociopolitical structures. The various Cretan toponyms recorded on the tablets—both those near Knossos (*ko-no-so*), such as Tylissos (*tu-ri-so*) and Amnisos (*a-mi-ni-so*), and those further away, such as Phaistos (*pa-i-to*) and Kydonia (*ku-do-ni-ja*), possibly even Siteia (*se-to-i-ja*)—demonstrate the territorial range of the Knossian palace's economic activities and suggest indirectly a possible administrative authority over the whole island. Combined with other textual evidence, the references to specific pastures where the numerous palatial flocks grazed, to a variety of agricultural produce from different localities, and to a number of vineyards, olive groves, and fig groves around the island support the suggestion that control was both economic and political. Therefore, the Mycenaean ruler of Knossos, the *wa-na-ka* (*wanax*) emerges through the Linear B documents primarily in his role as a great producer who was involved in different kinds of industries, the most important of which was textile production, which engaged large groups of women. It is characteristic that approximately one fifth of the entire corpus of tablets concerns this industrial activity (fig. 10a–b).

Although the preserved tablets provide only random examples, the large number of commodities recorded demonstrates that agriculture and animal husbandry were the basis of the palatial economy. For example, the total number of sheep listed runs close to 100,000, with similarly large quantities of wool. A badly damaged tablet (KN Gv 862) refers to 1,770 fig trees, 405 olive trees, and other fruit trees (fig. 10c), while another fragmentary tablet (KN Gv 863) records 420 vines and 104 fig trees. Large quantities of figs, as much as 7,200 liters, must represent shipments of the fruit. One locality in southern Crete that was important for the palatial economy and known by the toponym *da-wo* provided Knossos with large quantities of wheat and, together with *pa-i-to* (Phaistos) and other regions, of olives as well. On the basis of the 81,261 liters of olives recorded in the Knossian tablets, the number of olive trees is calculated to be at least 3,300. Moreover, a fragmentary tablet (KN Gm 840) with the stores or receipts of the latest vintage mentions four entries that amount to a total of more than 14,000 liters of wine. The surplus would have fed the palatial commerce both within and beyond Crete, all the way to the markets of the eastern Mediterranean. The 1,800 or more (possibly 2,400) clay stirrup jars (see cat. no. 108), probably for oil or wine, recorded in a single instance on a fragmentary tablet (KN K700; fig. 11a), were probably employed in such a broad commercial network. Indeed, the inscribed Cretan stirrup jars discovered on the Greek mainland illustrate in the best possible way the routes of Cretan export commerce. Olive oil, honey, wine, wheat, figs, condiments, aromatic herbs, and the extremely valuable crocus (saffron), but also animal skins and especially textiles, are only some of the basic products listed on the tablets. Of these, textiles and oil formed the basis of the palace's commercial activity.



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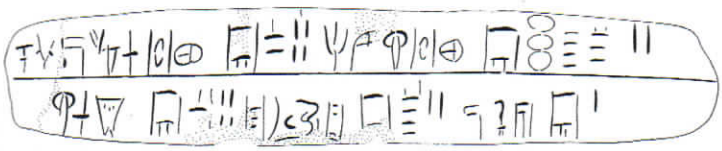

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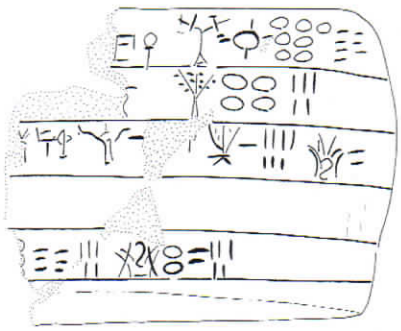
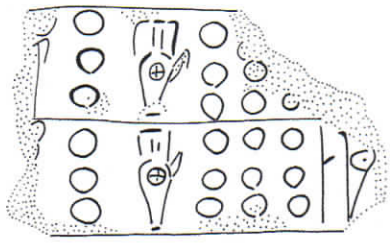


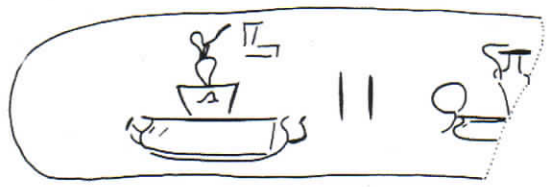
c

Fig. 10a–c. Three clay tablets with Linear B inscriptions. The first two refer to textile production (KN L520 and KN Ld1 587). The third one records 1,770 fig trees, 405 olive trees, and other fruit trees (KN Gv 862). Palace at Knossos (ca. 1450–1375 B.C.) (Chadwick et al. 1986, pp. 188, 212, 346). Reprinted with the permission of Cambridge University Press and Edizioni dell'Ateneo, Roma.



a. KN K700 records 1,800 or more clay stirrup jars.

b. KN K(1) 872 refers to bull's-head rhyta and Vapheio-type silver vases.



c. KN K93 records sets of metal vases. Palace at Knossos (ca. 1450–1375 B.C.).

Fig. 11a–c. Three clay tablets with Linear B inscriptions (Chadwick et al. 1986, pp. 266, 352, 47). Reprinted with the permission of Cambridge University Press and Edizioni dell'Ateneo, Roma.

Records of various luxury goods, such as elaborate sacred rhyta in the shape of bulls' heads, silver vases of the Vapheio type (KN K1 872; fig. 11b), and sets of metal vases (KN K 93; fig. 11c), enrich the textual evidence concerning material culture. These were probably items crafted in palatial workshops or ordered from localities beyond Knossos, according to the *ta-ra-si-ja* (*talansia*) production model, in which the palace distributed raw materials to the artisans, who returned the finished artifacts. Precious objects and exotic raw materials also would have streamed into the palace as gifts through exchange, a widespread practice in the palatial civilizations of that period and among the elites in general, both within and beyond the Aegean. Additional evidence for this practice is provided by the large pictorial compositions with processions of men bearing gifts at Knossos and Akrotiri (Xeste 4), in Thera, and the similar processions of the Cretans (Keftiu) in the Egyptian tombs of the 18th Dynasty. The acquisition and processing of metals, particularly copper, was undoubtedly of major importance for the palace. However, unlike the Linear B tablets from Pylos, the Knossian archives, while registering numerous metal artifacts, provide no information on metallurgy itself, except for references to the professions of the bronze worker (*ka-ke-u*, *chalkeus*) and metalsmith (*me-ta-ri-ko-wo*, *metalichoos*). Apart from textiles, most of the information on artifacts concerns chariots and military equipment (body armor, such as corselets and helmets, and weapons, namely swords, arrows, and spears), an indirect reference to the palace's military aspect, which coexisted with its economic side.

From the herdsman, hunter, and peasant to the ruler (*wa-na-ka*), the Linear B documents mention numerous individuals of different status, with various functions and institutional and economic relationships to the palace; some are even referred to by their personal names. Among them are mentioned, always in regard to economic matters: priests (*i-je-re-u*) and priestesses (*i-je-re-ja*), all sorts of officials (for example, *te-re-ta*, *da-mo-ko-ro*), and even the *ra-wa-ke-ta*, the second in command in the palatial hierarchy, who was responsible, as on the Greek mainland, for military affairs. One of the largest groups is that of the highly specialized artisans who fashioned raw materials into artifacts in exchange for basic foodstuffs, such as cereals and figs. All together, these individuals constitute the highly stratified Cretan society as reflected in the palatial archives, a society bound together, as in earlier times, by religion.

The Question of Literacy

The history of ancient writing teaches that its use was not widely disseminated to various social groups. The degree of literacy is often difficult to investigate, and this applies also to Aegean scripts of the second millennium B.C. Although, with Linear B, writing reached its greatest level of systematization and intensification, it also met with its greatest level of restriction, since it remained in the privileged hands of professional scribes who were in the exclusive service of the palaces. The term *di-pte-ra-po-ro* may, as already stated, denote a staff of scribes who wrote mainly on parchment. The palaeographic study of the Knossian tablets in particular allowed Jean-Pierre Olivier to distinguish the individual hand of several scribes who were involved simultaneously in archive keeping, as in the Mycenaean palaces of the Greek mainland. The training of young scribes alongside their teachers (*di-da-ka-re-i*, at the school-master's), such as those mentioned on two Knossian Linear B tablets (KN Ak 781, Ak 783) on other occasions, was probably a matter of the central authority, which recognized their great usefulness in the efficient functioning of the complex economic and administrative machine.

It is reasonable to believe, therefore, that the social status of the scribes was relatively high, equivalent to the importance and power of writing, as in Egypt and Mesopotamia. Professional scribes probably also existed earlier in Crete, during the chronological horizon of the Cretan Hieroglyphic and Linear A, particularly for keeping large, primarily palatial archives. But what about the smaller, "private" archives that were occasionally kept? Is it possible that traders (agents or merchants) or at least some individuals in their employ were literate? The answer is not clear, although those actively involved in economic/commercial activities must at least have been able to use numerals and ideograms for simple notes, a hypothesis confirmed by the inscribed pottery sherd from Akrotiri, in Thera, mentioned earlier (fig. 9). The Hieroglyphic inscriptions on seals (see cat. no. 98) and the Linear A inscriptions on stone and metal prestige artifacts (figs. 6, 7; see cat. nos. 99, 100) also confirm the occasional infiltration of writing into certain groups of artisans. It remains uncertain, however, whether these inscriptions were made by seal engravers, stone carvers, and metal workers who were literate to some degree, or whether they were incised by merely copying inscriptions written by professional scribes. The same question applies to the potters, since incised or painted inscriptions in all three scripts specify the use of some vases, from the smallest pots to storage jars. Because these inscriptions were usually applied before the clay was fired, it must be assumed that some potters knew the basics of reading and writing. The long tradition of potters' marks, some of which resemble specific writing signs, being incised on vases further supports this hypothesis. Masons' marks and the few incised, usually one-word, Linear A inscriptions on ashlar blocks at the entrances of buildings also indicate the partial literacy of some architects or master builders. When of an economic nature, however, the inscriptions on vases were probably applied by professional scribes who worked for the productive-commercial network, or by the producers or traders themselves, who knew a vase's destination immediately after it was made.

In any case, the practice of writing requires in principle a circle of people that could read and, therefore, write. This circle would have included, for example, the official surveyors and controllers of the large archives, but also other members of the elite, such as the high priests and, of course, the rulers. The prestige objects with Linear A inscriptions, particularly the personal ones, such as the metal pins or the ring from Mavrospelio (fig. 7), point indeed to the Minoan elite. The same applies to the inscribed stone ceremonial vessels, particularly the stone ladles (see cat. no. 99), which, whether they were palatial offerings or not, presuppose a wealthy votary or owner who was able to read the inscriptions.

The limitation of Linear B to a cast of professional scribes resulted in the extinction of the art of writing when the palatial structures whose bureaucratic machine it served collapsed. The reappearance of script in the second half of the eighth century B.C. in a more flexible alphabetical form, which became the base for the European alphabets, opened a new grand chapter in the history of writing in Greece. The new socio-historical conditions gave script a far more significant role. Rather than remaining a script for commerce and administration, it became a script for poetry, history, philosophy, and law with a much wider readership. It is characteristic that the earliest Greek alphabetic inscriptions occur on two ordinary clay vases, namely a small jug from the Athenian Kerameikos and the so-called Cup of Nestor from Ischia, in Italy. The first speaks of a dance contest with the jug as the reward, and the second of the desire sent by Aphrodite to whoever drinks (wine) from that cup.

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CHAPTER 9

MINOAN RELIGION: DEITIES, SANCTUARIES, AND CULTS

Giorgos Rethemiotakis

Neolithic-Prepalatial period (ca. 7000–1900 B.C.): The Origins of Religious Thought

The development of religious consciousness arose from an inability to cope with the uncontrollable powers of nature that define and regulate human existence, especially when that existence is dependent entirely on maintaining fertility and successful agricultural and livestock production.

It is for this reason that the earliest evidence for religious belief in the field of material remains appears to be associated with the so-called proto-urban phase of prehistoric society in Crete. The population of settlements and the emergence of the first organized communities of farmers and shepherds took place on the island at the beginning of the Neolithic period, about 7000 B.C. The presence of human and animal figurines in domestic contexts may reflect the appeal of protective or fertilizing powers to guarantee survival and sustenance. This is vividly demonstrated by the clay female figurine with plump thighs from Hierapetra in eastern Crete, a visual reference to the abundant fertility of both women and nature. These two aspects of fertility eventually became one in the human mind, as hunter-gatherers of the Paleolithic period abandoned their nomadic life and settled in communities that set about defining appropriate patterns of behavior for their members.

These associations deepened and broadened during the third millennium B.C., when a dramatic social reshuffling took place and gradually led to the formation of palatial societies in the second millennium. The divine figure in the form of a clay figurine would be placed in one of the settlement's rooms—its shrine—where it was worshiped by votaries. A typical example is a female figurine from Myrtos, which carries a jug, a direct iconographical reference to the act of worship through the offering of a libation (see chap. 2, fig. 7). Ancestors and the deceased were also worshiped during this period in the large communal chamber tombs of eastern Crete and in the tholos tombs of central Crete (see chap. 16a, fig. 2). The existence of many vases for the transport and consumption of drinks, of tableware, and of ceremonial vessels, such as kernoi made of clay and stone (see cat. no. 204), is evidence for the performance of libation rituals and the organization of funerary feasts in honor of the dead. Communal tombs provided a space for the practice of public worship by the entire community, perhaps for their dead ancestors.

Protopalatial Period (ca. 1900–1700 B.C.): Outdoor Cults and the Beginning of Ritual Worship

This period saw the flourishing of the popular Cretan phenomenon of public worship out of doors on mountain peaks and hilltops. Groups of mostly small agricultural settlements seemed to support the operation of these open-air sanctuaries. In eastern Crete in particular, where the landscape is marked with small isolated valleys and uplands along with mountain crags, this kind of collective, communal worship in local sanctuaries developed in a major way, among which the peak sanctuaries of Petsophas and Traostalos are the most important. There are fewer examples in central Crete, however, perhaps because of its extensive flat lowlands, the most significant one being that of Mount Jouktas (fig. 1). The westernmost peak sanctuary discovered to date is situated at Vrysinas, Rethymnon, whereas no traces of similar activity have yet been found in the region of Khania.

The space for cult practice was made up of flat surfaces and fissures in the natural rock, where votives were either placed or discarded. Only in a few cases rubble walls were used to form rudimentary spatial arrangements. The principal and most frequent offerings at peak sanctuaries were human and zoomorphic figurines made of clay. Human figures were usually depicted with their arms on the chest, perhaps summoning votaries or anonymous worshipers to a deity that had not been given anthropomorphic form (see cat. nos. 172–178). Disembodied human limbs, including legs and arms, sections of body parts, and whole torsos of figurines, seem to represent explicit appeals or requests for the healing of fractures, hemiplegia, damaged internal organs, and other ailments (see cat. nos. 181–184; chap. 15, figs. 2, 4). Animal figurines (see cat. nos. 185–189), mainly of cattle and goats, may indicate a belief that the deities of nature will permanently protect productive animals against disease and barrenness.

Cult practice developed in both the newly erected palaces and the urban settlements of the period. It focused especially on the palatial courts, primarily those in the west, where special "theatral" areas were defined by the construction of stepped platforms to facilitate the viewing of outdoor ceremonies (see chap. 3, figs. 4, 8; chap. 4, fig. 4). Areas for rituals were also provided in small roofed spaces attached to the façades of the palaces, such as the sanctuary of the West Court at Phaistos, where ceremonial vessels of the kernos type and tables of offerings were deposited.

Fig. 1. Mount Jouktas, close to the settlement of Archanes, north-central Crete. At its peak lies an open-air sanctuary (by K. Athanasaki).

Fig. 2. Clay bowl showing a female figure flanked by two dancers (ca. 1800–1700 B.C.). Palace at Phaistos. Herakleion Archaeological Museum.

Two clay vessels from the palace at Phaistos demonstrate that, alongside the growth of the outdoor cult, the existence of the divinity was becoming transformed for worshipers from an implied presence to the focus of religious ritual. On one vessel from Phaistos a hieratic divine figure is depicted: on the upper surface of a circular altar a female figure, perhaps a priestess performing the role of a goddess, with flowers in her raised arms appears with two female figures dancing in rhythmic movements to the right and left of her. At the side of the altar more female figures are pictured bending over at the sight of the miracle of the divine presence, and four other females join together in another dancing group. This is the first composite version of the ritual of epiphany, the apocalyptic presence of the Minoan goddess in human form by way of a theatrical performance with female adorants or priestesses. The second vessel from Phaistos, a clay bowl (fig. 2), depicts a female figure painted red and flanked by two dancers. As in the scene on the other vessel, a lily blossom signifies the place where worship is practiced—a flowering meadow in the spring. This image seems to represent a direct iconographic link between the presence of the goddess and the regeneration of nature after winter.

Neopalatial and Final Palatial Period (ca. 1700–1250 B.C.) During this period, the dual system of outdoor worship and palatial cult extended farther in range and depth as the ceremonial rituals of the palatial court became established. Large

groups of ritual vessels and pictorial compositions from palatial sanctuaries, wall paintings, gold signet rings, and seals, along with architectural forms and appropriately designed palace interiors, provide us with an abundant composite view of religious beliefs and patterns of worship at the beginning of the Late Bronze Age. And at the center of the official palatial religion stands the great Minoan goddess of fertility.

The Temple Repositories of Knossos: The World of the Great Goddess

A significant cultic assemblage comes from the so-called Temple Repositories, or the crypts of the central sanctuary of the palace at Knossos. This find is of particular importance for the study of Minoan religion, since it serves as a compendium of the religious symbols entailed in the worship of the great goddess of nature. The objects uncovered here came from an unidentified area of the West Wing of the palace that was destroyed about 1600 B.C. What survived had been deposited reverentially in the crypts rather than discarded or destroyed. The focal point of the collection is a group of faience female figurines, two of which have been restored, with another five or six preserved in fragments. Holding snakes in their hands, the faience figurines were the preeminent emblem of the Minoan religion and were known as "snake goddesses" (fig. 3). Snakes depicted in relief encircle the upper body of the largest figurine, which is thought to represent the great goddess. The second largest figurine (see chap. 6, fig. 9), perhaps an inferior deity or priestess, bears a feline figure on her head, a symbol of the goddess's animal attribute as "mistress of wild animals" and of her control over the adverse and aggressive powers of nature. The snakes signify the terrestrial, chthonic aspect of the cult, while the bare breasts of the figurines seem to be a direct reference to the concept of fertility.

The cosmic domain of the great goddess is reflected in an array of objects also in the same group, including a stone cross that serves as a symbol of the nocturnal sky, and a disc that was once coated with silver and gold and has radiating beams of rock crystal, a brilliant symbol of the sun. Fruits and crocus, papyrus, and lily blossoms represent earthly flora, and two faience plaques depicting in relief a wild goat and a cow nursing their young represent the fauna. Symbols of the marine world are here as well—argonauts, flying fish, and a great many seashells, some painted in vivid red—serving as meaningful indications of the relationship between the goddess and the sea. Two other faience plaques, shaped like female robes and decorated with flowers, may reflect an actual custom in which sacred robes decked with flowers were brought to the sanctuary.

The content of the Temple Repositories provide a partial picture of a larger system of religious beliefs and rituals, but the exact composition of that system remains unknown. In terms of meaning, however, the objects reveal the structure and the symbols surrounding the visual presence of the goddess, as well as a "divine" cosmography, which was perceived as a global order of natural elements—the sky, the earth, and the sea—and rendered by means of representative species of flora and fauna.

Fig. 3. Faience figurine of a "snake goddess" (ca. 1600 B.C.). Palace at Knossos, Temple Repositories. Herakleion Archaeological Museum.

Fig. 4. The "Ring of Minos" (ca. 1500–1400 B.C.). Knossos (said to be found close to the Temple Tomb). Herakleion Archaeological Museum.

Fig. 5. Gold signet ring depicting a "Sacred Conversation" between a male and a female deity, epiphany, and a tree-cult scene (ca. 1450 B.C.). Poros cemetery. Herakleion Archaeological Museum.

Gods and Adorants: The Iconography of Gold Signet Rings

Depictions of the ways in which the gods appeared on the earth and the ceremonies relating to the miraculous appearance of the divine can be found on gold signet rings of this period. It has been reasonably claimed that gold rings derived their themes and compositions from the iconographic program of the palaces, primarily Knossos, where there must have been larger compositions reflecting the religious ideas of the Minoans. Since the rings pictured the essence of the religious ideology of the palatial system, they must have been used by highly ranked officials to seal objects and secure transactions at the upper level of the palatial bureaucracy. They also served as grave gifts for prominent deceased individuals as symbols of power and prestige.

The "Ring of Minos" (fig. 4) is one of the most celebrated pieces of Minoan art and by far the most important ring, as it plays a key role in understanding the iconography of other rings with relevant representations. It was found by chance near the Temple Tomb at Knossos eighty years ago and became known only from copies and photographs since the original disappeared soon after its discovery. Recently, it was delivered to the Herakleion Archaeological Museum and its authenticity was re-examined and verified. Its bezel bears the most composite representation so far attested on Minoan rings.

Like the assemblage of the Temple Repositories, the ring displays a concise version of the three levels of Minoan cosmology. The goddess is shown in small scale at the upper right, hovering above the earth with her hair flying as she makes her descent. The central zone of the bezel, rendered in larger scale, depicts the goddess seated on a stepped altar watching a tree-cult ritual being performed by a man dressed in a loincloth who appears to be offering a fruit or a ceremonial vessel to the goddess. A similar tree-cult scene with a naked or half-naked woman can be seen at the left. A large part of the composition is occupied by trees growing within enclosures. The movements, positions, and twisted bodies of the two adorants vividly demonstrate their excitement at the advent of the goddess to the visible world. The lowest level of the composition presents a seafaring scene in which the goddess steers a boat that has a seahorse at its stern and a shrine with horns of consecration on its deck. The effective rendering of the sea as a net of lozenges, which imitate the iridescence of sunlight on the surface of the water, transforms a natural phenomenon into an artistic expression.

In essence, the depictions on this ring seek to celebrate the unity of the natural world by recording the passage of the goddess through the cosmic elements of earth, air, land, and sea, an image that summarizes the significance of the divine presence in the world of mortals.

The tree-cult scenes on the "Ring of Minos" and the depictions of the goddess both seated and hovering serve as a linchpin for clarifying the images on the "Sacred Conversation" ring from Poros (fig. 5). This ring features a male figure who seems to be in conversation with the goddess. He must be of equivalent status, because he confronts her with a commanding gesture. As on the "Ring of Minos," the goddess is presented both hovering and seated, in the latter case flanked by two heraldic flying birds, symbols of her divine presence. Although other representations of a male-female dialogue are known, the composition on the Poros ring provides the clearest evidence for the existence of a male deity of equal importance, who was privileged to converse directly with the goddess. The position of the two gods may imply their forthcoming intercourse, a clear reference to the insemination of both nature and women.

Fig. 6. Gold signet ring bearing epiphany of a goddess and male votaries in tree and *baetyl* worship (ca. 1600–1400 B.C.). Phourni cemetery, Archanes. Herakleion Archaeological Museum.

The prominent position of the male deity, who may have an additional or parallel attribute as the god-protector of cities, is revealed on a famous clay sealing from Khania known as the "Master Impression" (see chap. 5, fig. 8). The term derives from the authoritative position of a male figure with a scepter who stands on top of a multistoried building, which represents a palace or a city. This prominent male god-protector may be the same as the figure carved in ivory and decorated with gold bands in the well-known "Palaikastro Kouros," a splendid piece of Minoan art (see chap. 7, fig. 8). The figurine was initially placed in a room with a bench on one of the roads of the Minoan town at Palaikastro and was therefore directly approachable by votaries seeking protection.

Three more gold rings from the cemeteries of Phourni at Archanes (fig. 6), of Sellopoulo at Knossos, and of Kalyvia at Phaistos (cat. no. 160) portray scenes of the tree cult, along with the worship of the sacred stone, the *baetyl*, which was believed to have divine powers. A seafaring image like the one on the "Ring of Minos" is repeated on seals and on another ring, this one from Mochlos in eastern Crete. Scenes depicting the connections between dancing and the acts of appeal by female priestesses and between epiphany and the figure of the hovering goddess are also found on a gold ring from the Tomb of Isopata, Knossos (see chap. 16b, fig. 6).

Plants and flowers in many of the scenes indicate that these ceremonial rituals took place out of doors, occasionally in front of a built enclosure with a tree in its interior. In a clay sealing from Knossos, which is so far unique, epiphany takes place in the mountains (see chap. 5, fig. 7). These representations indicate that epiphany and its accompanying rituals were conducted in the countryside or on mountains, away from urban settlements.

Outdoor Rituals

Outdoor cult rituals continued well into the Neopalatial period (ca. 1700–1450 B.C.), although they became less spontaneous and developed a more formal and organized structure. Of the few large open-air sanctuaries and temples that continued to operate, those of Jouktas (fig. 1) and Symi, Viannos, were the most important. Both sanctuaries had a "processional" road and a large outdoor platform bordered by a built enclosure, inside which the ceremonies took place. Supplementary buildings were used to house the priests, either temporarily or permanently, and to store equipment and votive offerings. Countless ordinary offerings and many precious ones, such as ceremonial communion cups, tables of offerings, bronze and clay figurines, weapons, jewels, and seals, testify to the different social background of the votaries who visited the sanctuaries.

Similar rituals were observed in sacred caves, where the cult developed as in the outdoor temples. Many similar offerings, mainly bronze tools, weapons, and figurines, have been discovered in the cave of Psychro. Some votive objects have also been found in the Idaean cave. In other caves, such as those of Kamares and Skoteino (see cat. no. 179), clay vases and vessels were more frequently deposited. A unique case is the cave of Arkalochori, which was found to contain an impressive hoard of metal objects—hundreds of bronze, gold, and silver double axes (see cat. nos. 194, 195), bronze replicas of swords, bronze strips, and copper ingots—although there were no ritual vessels or other pottery. These metal finds seem to have been carefully selected from the offerings of some open-air sanctuaries for the purpose of exploitation, but they ended up in the cave, either accidentally or because of unpredictable factors, before they could reach their final destination. The contents of the cave of Arkalochori thus offer relatively direct testimony to the wealth in metals that could be accumulated through worship, as well as of the role that the high priesthood played in handling and circulating precious materials, a process that granted prestige and power.

Palatial Ceremonies and the World of the Court

The palaces were the center of all official religious activities and of Minoan court life during the Neopalatial period. Great public ceremonies and popular spectacles attended by the court and the priests were organized out of doors, either in the palatial courts or in enclosed spaces. Ceremonies for the king and high palatial officials took place inside the palaces, in halls or other specially arranged areas. The content and character of these various ceremonies are reflected in the architectural arrangement of the interior and exterior of the palaces, in the wall-painting programs of the palace at Knossos, and in the elaborate ceremonial vessels that were used for these rituals.

Fig. 7. The "Cupbearer." Fresco fragment of a large composition depicting a ceremonial procession (ca. 1525/1500–1450 B.C.). Palace at Knossos. Herakleion Archaeological Museum.

The most significant, intricate, and glorious palatial ceremony was without a doubt the procession in which the dynast-king displayed his power, prestige, and wealth. Its origins can be traced in Egypt and the Levant, where emissaries and tributaries brought luxurious objects into the palaces as gifts for the ruler. At Knossos a similar procession of hundreds of people was depicted on the walls of the Corridor of the Procession, which led from the West Court of the palace and the arterial roads of the city to the interior, the grand South Propylaeum (see chap. 3, fig. 3) and the Piano Nobile, the official entrance and reception halls of the palace. Several fragments of this long mural have survived, mainly from its lowest part. Men and women in richly decorated loincloths and skirts proceed in groups carrying precious vessels. The best-preserved figure is that of the "Cupbearer" (fig. 7), most of whose body is visible; he bears an oversized rhyton, possibly made of silver and gold, as indicated by the colors of blue and red, respectively. The shape of the vessel indicates a libation ritual, which in turn reveals the dominant and influential role that religion played in these royal processions.

The same conclusion may be drawn from the ceremonial ware of the palace, which was initially stored at the Piano Nobile, the official quarters and halls where the procession ended. Stone rhyta, some of them masterpieces (see cat. no. 208), including those carved to depict the heads of a bull and a lioness, reflect the special importance and solemnity of libation rituals. A group of rhyta, communion cups, a ceremonial amphora, and ceremonial jugs—in other words, a collection of libation and ritual vessels—was also found in the repository of the palace at Zakros, suggesting that they were used in rituals that took place in the nearby official banquet hall of the palace (see cat. nos. 200, 205, 215). The fragmentary "Camp-stool Fresco" (fig. 8) from the palace at Knossos gives an idea of the way in which ceremonial feasts were organized. Some of the vessels that were used in the palatial ceremonies have relief decoration, which confirms their religious character. One exquisite example is an ovoid stone rhyton from Zakros, which was originally covered with gold and which depicts a sacred enclosure with altars inside and flagpoles in front of the façade (see chap. 7, fig. 7).

Ceremonies of a ritual and purificatory nature were held in "lustral basins" or "adyta," specially arranged rooms of the palaces and the lavish urban mansions. These apparently non-utilitarian spaces were sunk into the ground and approached from floor level via a small staircase. The direct access of one of them from the Throne Room of the palace at Knossos (see chap. 3, fig. 7) supports the hypothesis that the basin was used in ceremonial rituals under the supervision of the king or the priests, who were seated on the throne and adjacent benches.

Other structures resembling raised platforms with balustrades of the so-called chancel-screen type have been found in three urban mansions surrounding Knossos; they may have served as podiums for officials or priests during theatrical performances. Similar elevated structures both inside and out of doors, uncovered at Kastelli, Pediada; Splantzia, Khania; Archanes; and Nirou Chani, the first three with drains for canalizing liquids, may again have been used for projection of individuals, who stood or were seated on them and watched or received libations and offerings taking place.

Fig. 8. "Camp-stool Fresco." Restored wall painting showing palatial feasting (ca. 1400–1375 B.C.). Palace at Knossos. Herakleion Archaeological Museum.

Ceremonies attended by large crowds were organized in open-air spaces around the palaces and in front of their façades in the West and Central Courts. Evidence for this exists in wall-painting fragments found in the palace at Knossos that depict rows of columns with horns of consecration and double axes. These have been interpreted as representations of the colonnades which existed along the facades of its Central Court. The palace, therefore, appears to have been both a receptacle and a transmitter of religious symbolism. Other Knossian frescoes represent in miniature scale large concentrations of men and women closely grouped in a setting with paved areas and groves, possibly the West Court of the palace. Raised platforms, grandstands, and loges provided vantage points from which palatial personnel could conveniently observe the major public ceremonies (fig. 9).

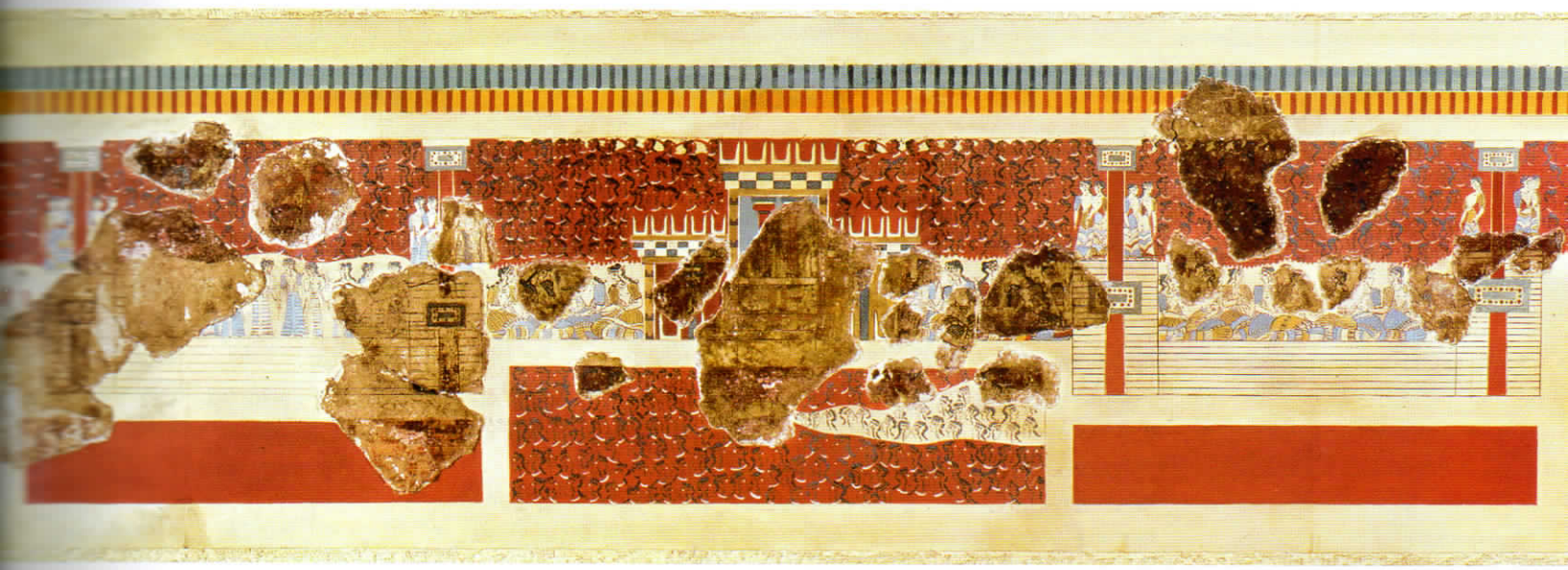

Fig. 9. "Grandstand Fresco." Miniature fresco depicting a columnar construction with horns of consecration, standing and seated figures on grandstands, and a gathered crowd underneath (ca. 1600–1500 B.C.). Palace at Knossos. Herakleion Archaeological Museum.

Daemonic Figures—Sacred Symbols

Figures of daemons—imaginary creatures and unearthly companions of the Minoan goddess—participate in her miraculous appearances and in the symbolic ceremonies of fertility. Minoan daemons, with the head and limbs of a lion and a carapace cover on the back, are benevolent beings associated with fertility and are usually depicted offering libations with jugs. Griffins are also imaginary creatures, with the body of a feline and the beak and wings of a vulture (see cat. no. 126). Their nature is aggressive, and they are often shown attacking other animals. They too appear to be escorts of the goddess, as depicted on the gold ring from the cemetery of Phourni, Archanes (fig. 10), where the deity is shown hovering along with a griffin.

Religious symbols are repeatedly used in pictorial representations to denote their sacred character or to define the sacred status of a building or a place where ceremonies are held. These symbols are attested on pottery, wall paintings, and seals, but they are also reproduced as insets or miniature works of art on precious and semiprecious materials. The most important religious symbols are as follows:

Horns of consecration. This symbol is a schematized version of the horns of the bull, the sacred animal of Minoan Crete, although another interpretation is that the horns symbolize the cosmic horizon, corresponding to the meaning of an Egyptian hieroglyph of a similar shape. The horns of consecration are found in both pictorial iconography and in works of architecture, where they are carved in limestone (see cat. nos. 42, 192, 201, 202, 214, 225, 226, 228). They decorated the façades of the palaces and were occasionally oversized, like the horns that measured 2.2 meters in height that were found at the Great Propylaeum of the palace at Knossos, where they may have fallen from the western façade. The horns of consecration were also produced in the form of ritual articles, such as those from the Shrine of the Double Axes at Knossos. Holes in their centers indicated that these objects served as bases for poles that supported double axes.

Double axe. This is the emblematic symbol of Minoan religion. Placed on top of poles, as depicted on the sarcophagus from Haghia Triada (see chap. 16b, fig. 8), double axes served as landmarks of sacred places devoted to worship. Oversized bronze axes were found at the villa of Nirou Chani (see cat. no. 196); examples with elaborately incised decoration were found at the palace of Zakros (see cat. no. 197), and many hundreds of them in various sizes, made of bronze, silver, and gold, were recovered in the cave of Arkalochori (see cat. nos. 194, 195). Double axes are also depicted on clay sealings as being carried by a procession of priests to a place of worship.

Biconcave altar. This is a type of portable stone altar with a concave profile. Four such altars were found at the entrance of the palatial building at Archanes and were probably used to support a wooden platform in a nearby open-air space, as suggested by the iconographic parallel in a fresco of the seated goddess from Xeste 3, Thera. As a symbol of sacredness, the altar was also placed on building façades, as on the entrance gate of one of the cities that are depicted in the "Fleet Fresco" of the West House at Akrotiri (see chap. 13, fig. 5), over the two gates of the multistoried building at the "Master's Impression" (see chap. 5, fig. 8) and on the famous relief of the "Lions' Gate" at Mycenae.

Fig. 10. Gold ring with a hovering goddess and a griffin (ca. 1600–1500 B.C.). Phourni cemetery, Archanes. Herakleion Archaeological Museum.

Sacral knot. Initially developed as a textile, the sacral knot is a symbol of sacred or protective use. It is found in wall paintings and on seals, ivory plaques, and ceremonial vessels.

Figure-of-eight shield. This is a symbol of defense and protection. Its form and function derived from real shields, which were made of ox hides attached to wood or metal frames, as seen in the fresco from the Grand Staircase at Knossos. The shield is attested on seals and pottery, where it carries a symbolic meaning or is used simply for decoration.

A Creto-Mycenaean Pantheon in the Linear B tablets of Knossos and Kydonia

For the first time, during the Mycenaean period, specifically from about 1450 to 1300 B.C., gods and sanctuaries named for them appear in the Linear B tablets of Knossos. Somewhat later (ca. 1300 to 1250 B.C.) are tablets with similar

contents, found in Kydonia in western Crete. The recordings on the tablets take the form of catalogue lists, in which the palatial bureaucrats register offerings to sanctuaries, usually quantities of olive oil, wine, honey, and aromatic substances, as well as equipment and personnel. The registers are limited to the use of titles and place names, with no details about the attributes of the gods or the priests. Some of the names have been identified with those of gods of the classical period, but others are of unknown pre-Hellenic, perhaps Minoan origin.

Administrative records show the payments made to and debts incurred by the palace in regard to the sanctuaries. Occasionally, lists are entered with the name of a month (*meno*, or μηνί, in the month), which implies that transactions may have been carried out on a monthly basis. The mode of registering reveals the existence of a religious monthly calendar, by which payments were made to the sanctuaries and ceremonies were organized according to a regular schedule.

One of the great sanctuaries that were dependent on the palace at Knossos seems to have been that of Amnisos, where the goddess Eileithyia, protector of birth, and the god Enesidaon, possibly the Poseidon of Classical Greece, were worshiped. Of particular interest is the direct relationship between Amnisos and the neighboring sanctuary or sacred cave of Eileithyia, which is found in Homer's *Odyssey*, indicating that both the tablets and Homer refer to actual worship in a sanctuary with a specific place name. Another register relating to Amnisos appears on a series of tablets that cites offerings to "all gods," signifying the introduction of a pantheistic doctrine in religion and reflecting an atmosphere in which older deities were fused with new ones, with Mycenaean gods being worshiped at the same sanctuaries as the Minoan deities.

Zeus, the great god of the Greek pantheon, is also recorded in both the Knossos and Khania tablets, in the former with a Cretan toponym, from which he acquired the name "Diktaios." Another temple of Zeus, the "Dion," which is recorded on a tablet from Kydonia (Khania), seems to have housed two gods, Zeus and Dionysus, who received offerings in honey.

The name of a female goddess, "Potnia" (Mistress), is attested several times on tablets from Knossos and on those of the second largest Mycenaean archive, at Pylos, accompanied by specific adjectives, possibly a preexisting divine name or attribute enriched with new content upon meeting the gods of the Greek pantheon at the end of the Bronze Age. This is also implied by the references to "Athena Potnia" in the tablets from Knossos, which indicates that the name Athena defines one of Potnia's qualities. In a second relevant case "Potnia" is named as the "Mistress of the Labyrinth," hence the goddess protector of the home of the *labrys* (the double axe), and perhaps of the palace at Knossos itself.

Another inscription on the tablets appears to bring an archetypical Cretan myth all the way to the reality of a bureaucratic procedure: this is a reference to the "Daedaleion," which may be a temple of the god Daedalus or an architectural creation by the builder who, according to Greek mythology, constructed the Labyrinth for Minos. Judging from the tablets, it is almost certain that the name Daedalus existed in Mycenaean Knossos, as did the name of the maze created by the legendary builder.

A "priestess of the winds," who is mentioned in the tablets, adds a poetic dimension to worship and recalls the Homeric *Iliad*, in which the winds are said to receive offerings, like real gods. The beneficial or harmful effect of the winds in practical terms is underlined by Hesiod: winds may be mild and helpful, but also hostile and unfavorable for sailing, as any prudent seafarer should know. For a maritime state with large fleets and open sea routes, like the Minoans and their Mycenaean successors, it would be necessary to forecast the weather and appease the winds with ceremonies and offerings by specialized priests in order to ensure safe navigation and calm seas.

Postpalatial Period (ca. 1350/1250–1100 B.C.): The Dissemination of Communal Worship

After the collapse of the palaces, the great public palatial ceremonies, the precious votives, and the riches of the king and the priests gradually vanished. Worship was now decentralized, practiced on a communal basis within the boundaries of individual settlements, which acquired their own self-supporting shrines. The center of worship became rooms with benches in small roofed shrines, where clay idols, or models of the goddess, were placed, with ceremonial vessels and offerings deposited before them. The most common vessel found in the shrines of the period is a tubular clay one made to receive and channel liquid offerings to the ground. The figure of the goddess eventually merged with the type with raised arms (see cat. nos. 167–169; chap. 14, fig. 8), which represents a summoning gesture or one appealing to or accepting worship from the votaries.

The earliest attestation of the new type of shrine, along with the new type of goddess with raised arms, is at the Shrine of the Double Axes in the palace at Knossos, dating to about 1350–1300 B.C. Here the goddess is surrounded by four more figurines of votaries—one male, two females, and a schematized figure—that appear to be offering worship to the goddess by means of stationary images, figurines in clay that represent perpetual adoration, unlike the traditional transient act of real adorants. The goddess (see cat. no. 167) wears an array of jewelry, including necklaces, bracelets, and seals, as well as a richly decorated cloak, which indicates her

significance in this group. A model of the horns of consecration was placed on the bench, together with the figurines, and many clay vessels were on the floor. Similar arrangements have been found at Kannia of Gortina, Gazi, Kavousi, Karphi, Gournia, Prinias, and recently at Chalasmenos and Kephala, Vasiliki, all dating to about 1300–1100 B.C.

As the narrative elements of ritual worship lessened or disappeared, symbolism came to occupy a predominant place in religion. The goddess at this time appears as an idol, a static effigy receiving worship in a roofed shrine with a variety of symbols that represent her qualities; some even define other versions of a female divinity. These traditional attributes, placed prominently on the head of the goddess in the form of a diadem or tiara, are birds (escorts of the deity), snakes (symbols of her chthonic nature), the horns of consecration, and even floral attributes, a reference to the fertilizing aspect of cult. Over the course of time, clay idols increased in height from 0.20 meter (the earliest figurine at the Shrine of the Double Axes) to 0.90 meter (the latest examples from Karphi), and this indicates their increasing importance not only as images of the goddess, but also for their functionality in cult practice. The size of the head and hands increased notably as well, apparently because these are vital parts of the figure and the means by which the deity maintains direct contact with the votaries.

Owing to the limited space of the Postpalatial shrines, it is assumed that the clay idols of the goddess in the settlements were carried to areas that could accommodate large numbers of spectators. It is possible that the main part of the ritual, especially the public aspect of worship, took place out of doors.

Once again, the outdoor cult flourished in settlements such as Haghia Triada; in mountain sanctuaries such as Jouktas (fig. 1) and Symi; and in caves such as Patsos (see chap. 1, fig. 5). Typical votives at these sanctuaries would have been animal figurines, mostly bulls, which were much larger than their earlier counterparts and apparently had greater importance. Creatures combining human and zoomorphic features appear as well, perhaps representing daemon protectors of animals and nature. Sophisticated vessels were also used, such as clay horns of consecration with facial features painted and depicted in relief. Figurines of adorants were small and lacked precise anatomical details. The nudity of the male figurines, enhanced with the rendering of male genitals, may refer indirectly to the state of maturity and coming-of-age rituals, which were established in the early Greek period that followed.

The impressive and domineering presence of the mother goddess gradually disappeared from assemblages of religious objects. Small, coarsely made figurines with raised arms continue to be produced until the Archaic period (seventh century B.C.), but they convey only a faint memory of the intensity with which the almighty Minoan goddess of nature had once been worshiped.

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CHAPTER 10

CHILDREN AND ADOLESCENTS IN MINOAN CRETE

Irini Papageorgiou

The image of a child, one of the most eloquent coded meanings in the communication network of modern Western societies, invariably identifies childhood with the "age of innocence," but it certainly did not conjure the same associations in the collective consciousness of historic and prehistoric societies in the Greek region.

The exceptionally rare occurrence of the figure of a child in the art of the Aegean Neolithic (ca. 6500–3000 B.C.) and Early Bronze Age (ca. 3000–2100 B.C.), combined with the scarcity—until recently at least—of studies of skeletal remains, prevents us from even imagining the likely status of children in early Aegean social systems. Burial customs of the third millennium B.C., however, offer us some slight indications of an attempt to single out the very young from more mature members of the family.

We can suggest that the same happened in Minoan society, where, as early as the Protopalatial period (ca. 1900–1700 B.C.), children are depicted in art in a variety of media. A clay sealing from the Hieroglyphic Deposit of the palace at Knossos depicting the head of a small boy (fig. 1), which Arthur Evans identified as the head of a young prince, and two bronze figures of adorants (one without provenance, the other from the peak sanctuary of Mount Jouktas, which was closely linked with the Knossian palace), clearly record the

Fig. 1.
Clay sealing depicting the head of a small boy. Knossos, Hieroglyphic Deposit (ca. 1750–1700 B.C.). Herakleion Archaeological Museum (*PM* I, p. 272, fig. 201).

characteristic features of a child—a large head on a comparatively small body, with short legs and narrow shoulders. The figure of a child with precisely the same characteristics, but this time as a writing symbol, occurred once among the stamped signs of the enigmatic text of the Phaistos disc (see chap. 8, fig. 1a–b). To these characteristics should be added carefully shaved hair, an iconographic convention indicating youth (not unknown in the contemporary palatial cultures of the Near East and Egypt), which in the context of Minoan society is probably connected to a particular age level in the early years of a child's life, as we shall see.

Minoan artists used the same devices to portray the child during the Neopalatial period (ca. 1700–1450 B.C.), although now we see the sinuous plasticity and masterly naturalism that are found in ancient art many centuries later. In several examples, the figure of the child is indicated by more than just the iconographic conventions. These include the bronze crawling infant in an offering in the Psychro cave of Late Minoan I (fig. 2); the ivory boys from the town of Palaikastro

Fig. 2.
Bronze figurine of a crawling infant. Psychro cave (ca. 1600–1450 B.C.). Ashmolean Museum, University of Oxford.

Fig. 3. Ivory figurine of a seated boy. Palaikastro (ca. 1600–1450 B.C.). Herakleion Archaeological Museum.

Fig. 4. Ivory head of a boy, once inserted in a now-lost body. Palatial building at Archanes (ca. 1525/1500–1450 B.C.). Herakleion Archaeological Museum.

of the same period (fig. 3); the ivory head of a boy from the palatial building of Archanes of Late Minoan IB (fig. 4); and boys depicted apparently at play on the Neopalatial miniature fresco from the Northwest Fresco Heap at Knossos. The realistic rendering of a child's anatomy combined with age-appropriate poses reveals a high level of careful observation, which artists demonstrated in the faithful rendering of different ages. In the examples cited, all of which have shaved heads, the body is completely naked, which makes these images particularly rare under the rules of Minoan symbolism, in which total nudity appears in only a few instances, either within a religious or ritual context or in the depiction of young people in whom the sense of modesty has not yet been instilled.

The significance of the naked body in representations of male children is strengthened by the fact that all known images of young girls from the Neopalatial period show typical Minoan female dress. Clearly, these are the result of rules of Minoan iconography, in which the ideal male body appears with the least possible clothing, whereas the female is covered with richly decorated clothes. Clothing typical of the period appears on the few bronze figurines of girls that survive from the Middle Minoan III/Late Minoan I period (ca. 1700–1450 B.C.), as well as on the small-scale figures of young acolytes that accompany goddesses or priestesses on Neopalatial seals and sealings (fig. 5); on a gold signet ring from Mycenae, that is probably a shining example of Minoan workmanship (fig. 6); and on the Minoan-inspired ivory group of goddesses from Mycenae. The kind of clothing typical of the period, with a bell-shaped or flounced skirt, and bare breasts denote sexual differentiation, which is underlined by the rendering of the breasts, relatively flat for the young girls and barely defined for older girls on the threshold of puberty. The hair, for the most part shaved, is another indication of youth. An exception to this is the figurine in figure 7, which depicts a little girl, probably four to eight years of age, who is completely nude and whose head is shaved, apart from a small curl on the back. This curl is reminiscent of the "lock of youth," an iconographic device for indicating youthfulness found in Egypt as early as the Old Kingdom.

It is interesting that the children depicted in a religious context are chiefly female, which reflects the important role played in rituals by adult women of the Minoan elite. The reason for this can probably be found in the social structure of Minoan Crete. Without referring to the evidence of other cultures, it is useful to remind ourselves that in the contemporary palatial systems of the Near East, the strengthening of ties between the royal family and the divinity was successfully managed by the presence of young women of the ruling class in the higher priesthood.

Fig. 5. Lentoid seal stone with goddess or priestess and two girl attendants. Mochlos (ca. 1700–1450 B.C.). Herakleion Archaeological Museum.

Fig. 6. Gold signet ring depicting a procession of females bringing flowers to a seated female figure, possibly a goddess. Mycenae (ca. 1700–1450 B.C.). National Archaeological Museum, Athens.

In any case, all iconographic data concerning the position of children in society during the Minoan era derive from a palatial art that was both produced and consumed by the elite or ruling class. As in all epochs, however, children's games were no doubt played on a daily basis. Evidence of this is virtually nonexistent, either because children's toys were made of perishable materials (cloth, wood, etc.) or because they have not been properly evaluated (pebbles, rounded potsherds, etc.). The clay model of a wheeled cart from Palaikastro of the Middle Minoan IA period (ca. 2100–1900 B.C.) and a group of one astragal and four conical pillars of a gaming board, which may relate to a Late Minoan II–IIIA (ca. 1450–1300 B.C.) child's burial from Katsambas, reveal to some degree the kinds of toys preferred by Cretan children in the second millennium B.C.

Nevertheless, the daily life and activities of the children who lived on the fringe of palatial life remain largely obscure. Apart from the high mortality rate, indicated by the analyses of osteological material and hypotheses regarding the participation of children in household or agricultural activities—as in all traditional societies—the Knossos archives shed light on the subject to a certain degree after the island came under Mycenaean domination.

Fig. 7. Bronze figurine of little worshiper (ca. 1700–1525/1500 B.C.). Khania Archaeological Museum (Mitsotakis Collection).

Fig. 8.
Boxing children. Wall painting from Akrotiri, Thera (Late Cycladic I). National Archaeological Museum, Athens.

Finger and hand impressions of children between the ages of eight and twelve that have been recognized in the clay of Linear B tablets from Knossos certainly indicate the preparation of clay by children working next to experienced scribes. Four hundred children (230 girls and 170 boys) are also referred to in the Knossian archives near references to adult women specializing in the art of weaving, although we cannot say whether the children were slaves or merely dependent on the palace. Carefully separated by gender and age, the girls (*koure*) always appear in the archives before the boys (*kouros*), and older children always appear before the younger ones. When there is a natural kinship, this is specified. In any case, we can hypothesize that the boys and girls of Knossos, who usually worked anonymously, did so alongside older women, who taught them skills under the immediate supervision of the palace. Supporting this conjecture is a reference to the term *di-da-ka-re-i* (διδασκάλει, "at the schoolmaster's"), which is applied as much to women as to children undergoing instruction. Even though there are frequent references to women "who have completed their instruction," such references are rare in connection with children, yet it is highly likely that they entered the professional class of adults after completing their preparation and reaching maturity.

Children who learned the art of weaving were referred to as recipients of rations (figs and cereals), which the palace took care to supply to them. We cannot know at what age they began to be trained or, of course, what ages correspond to "older" and "younger" children. In Near Eastern archives, however, children up to the age of five who are listed in the workshops, even if they did not work, were taken care of by the palace.

The rigid division of children according to age and gender, which is not found in other palace archives of the Mycenaean period, is probably related to the estimate of expected production or to the distribution of labor. However, it is important to stress the interest of the community in age structure, which is probably a Minoan phenomenon, as the art of the preceding centuries indicates.

If this hypothesis stands, we may also be able to trace age classification in the links between social, professional, and religious relationships. The iconographic signposts of adolescence in Minoan art—even if those of childhood and early adolescence were firmly codified—are not very different from those of young adults. A broad chest with accentuated shoulders and a young athletic body for men and a slender build with a narrow waist and firm bosom for women (sometimes a bit heavier to indicate a relatively advanced age) are clearly recognizable traits of an ideal youth.

The variety of male haircuts (hair carefully shaved or with one or more locks of different lengths, short hair with a topknot, or long hair with wavy locks) has been associated with three basic age groups in the life of a man—childhood, adolescence, and maturity. If this observation is accurate, the advancement from one age group to the next was accompanied by a haircut, a ritual that we must view within the context of specific initiation processes. Ritual initiations "accompany every change of place, state, social position and age," according to Arnold van Gennep, who studied this phenomenon over a broad cultural spectrum and identified a consistent three-part structure in rites of passage: the extraction of the individual from the community, his education or apprenticeship outside the boundaries of the community, and his reintegration as an educated and now mature member.

According to written sources, rites of passage from one age level to another in Athens and Sparta during the Archaic and Classical periods included cutting and dedicating locks of hair and, as a final indication of entry to the next stage, ritual dressing with new and sometimes elaborate clothing, all of which served to signal the identity of the new member.

Without a doubt, it was the rich iconography of the Late Cycladic wall paintings of Akrotiri on neighboring Thera (at the end of LM IA) that was the spark for understanding what was going on in the Aegean during the second millennium B.C. The exceptional state of preservation and the narrative consistency of the paintings make it possible to recognize many of the rites of passage in which children and adolescent figures of both sexes and with partly shaved heads took part. Depending on the number and length of the locks, the height, the build, and the breast size (for females), these figures have been classified at different age levels, from six or seven to eighteen or twenty, when the hair was fully grown, indicating maturity.

Small boys, still children, are depicted taking part in acts of an initiatory character by carrying out some secondary services or boxing, as in figure 8, demonstrating vigor and dexterity, in order to pass to the next age level. Girls of a corresponding age collect crocus stamens within the context of some religious festival, as indicated by the presence of the Great Goddess of Nature, who oversees the crocus picking, an important activity for the economy of the town. Girls wearing luxurious clothing are also depicted taking part in ritual activities, probably denoting a passage of some sort.

Adolescents radiating the vigor of youth were apparently subjected to trials of greater difficulty. Youths hold in their hands fish they have caught in deep waters, an action that presupposes daring and experience. Boys probably at the end of their adolescence are depicted catching a bull and *agrimi*—the Cretan mountain goat—as they practice hunting, a highly symbolic act in the ascending scale of nature and consequently a step up in the hierarchy of traditional social systems, since on a symbolic level hunting is the equivalent of possessing power. A crowning moment of all the rites of passage is the clothing of the boy in his first codpiece, which will ceremonially cover his nakedness, thus announcing his entry into the ranks of adults and the productive segment of the community. Adolescent girls with priestly robes offer incense to the goddess according to the rules of a particular ritual convention, or they take part once again in crocus gathering, this time, however, carrying the precious material or emptying it into baskets under the gaze of the goddess, who is herself shown with youthful characteristics.

In the prosperous society of the Minoanizing settlement of Akrotiri, it appears that rites of passage, which were carefully narrated in public and private buildings, were of great significance, the reason for which must be sought in the urban character of the settlement, as well as in the need to maintain the cohesion of the social structure. Evidence of the same rites is few and far between in the palatial society of Minoan Crete, however, not only because of the fragmentary state of preservation of the Cretan wall paintings but also, and perhaps chiefly, because Minoan art functioned as the main ideological and religious propaganda of the palaces and was strictly codified. Organized by the palaces, coming-of-age rituals and other initiations must have taken place incorporated into religious ceremonies.

Several scholars have considered athletics as a vehicle of the initiation process from adolescence to the adult male state, since sports appear to have taken place under the mantle of religion in the course of public or more restricted palatial festivals. This interpretation is based on the fact that those who took part in Minoan sports are always shown as young and male (the isolated cases of female bull-leapers dressed like men from Knossos may reflect the phenomenon of cross-dressing as an act of role reversal) and on the indisputable fact that athletics as an alternative form of aggression contributes to establishing social hierarchy.

The most popular sports, namely bull-leaping and boxing, are mostly depicted on palatial and primarily Knossian wall paintings, as well as on stone rhyta (a piece of ceremonial equipment), gold signet rings, seals and sealings, luxury items, and three-dimensional compositions (see cat. nos. 117, 122–124; chap. 6, fig. 11; chap. 11, figs. 1–3). Those who took part in these sports were members of the aristocratic class, as one can deduce from the jewelry they wear and, indirectly, from the kinds of objects chosen to bear the iconography. It is worth noting that in many of the representations of sports, the artist has shown an obvious interest in revealing or predicting who the final victor will be. For all these reasons, it is reasonable to suggest that the significance of these scenes must be sought in the realm of initiation rites, not necessarily those concerning coming of age. In particular, this must be true in the case of bull-leaping, a highly dangerous sport, depicted in the Prepalatial (see chap. 6, fig. 2) and Protopalatial periods on rhyta and figurines from different regions of Crete and transformed during the Neopalatial period into a symbol of exclusively Knossian ideology. In the bull-leaping and its depictions, it may be possible to trace evidence of the rites of passage to the consolidation of political authority.

Scenes of hunting and capturing wild animals seem to be of more relevance to rites of passage in age and social terms, even if their precise meaning continues to elude us. Hunting, an age-old activity linked to the survival of the community and even today the nearly exclusive preserve of the male sex, is connected with rites of passage from adolescence to manhood on an ethnographic level. A large number of historical sources emphasize its importance for the physical and spiritual development of young men, and in myths, hunting alone is one of the trials imposed on youths in order that they may become men.

Once again, the most illuminating pieces of information come from the Minoanizing settlement of Akrotiri. Two wall paintings come from the antechamber of Xeste 3, a public building, the iconographic program of which is connected with sacred rites of an initiatory character. Two youths are depicted in these scenes capturing a bull and a wild goat, respectively. The action does not take place within a domestic context, but rather, as one might expect, in the border zone of a mountainous region familiar to hunters. It is more than likely that this is a reference to the borderline age of adolescence, between the recklessness of childhood and the adult state of a mature member of the community. The adolescents of Akrotiri were trained in hunting, perhaps isolated for a time on the mountain, in full accordance with the three-part process that governed rites of passage. The point of this initiation process was the demonstration of prowess and, on a second, more symbolic level of reading, the appropriation of power and agility from the animals they capture. The choice of the bull and the *agrimi*, the most sacred animals in Minoan iconography, strongly indicates the religious character of this specific activity. At the same time, it relates these compositions to the wall painting of the so-called precinct-altar from the *adyton* (lustral basin) of the same building, on which drops of blood are depicted, probably from a sacrifice that has just taken place. The relationship between hunting and sacrifice is already well known and attested.

Similar scenes of young male figures hunting wild animals are known to have existed in Minoan Crete, the best known of these illustrating the capture of bulls with net and rope on two gold cups from Mycenaean Greece, probably of Cretan manufacture from Late Minoan IA (ca. 1600–1525/1500 B.C.; fig. 9). The subject has not been found on Minoan wall paintings, except, of course, the scene of bull capture on a wall painting from the palace at Avaris (Tell el-Dab'a) in Egypt, a work by Aegean artists. On daggers, seal stones, sealings, stone vases, and ivory objects, depictions of the hunting of lions, bulls, wild goats, boar, and deer appear as early as the Protopalatial period. Assuming an underlying correspondence between the power of the animal and that of the hunter, we may look here for specific references to rites of passage, which as depicted in palatial art would refer to members of the elite and would have taken place, not with age initiation in mind, but rather as ascending the social hierarchy—in other words, the acquisition of power and authority.

The final scene of such a ritual act may be what is depicted on the stone "Chieftain's Cup" of Late Minoan I from the villa at Haghia Triada (see cat. no. 163). Between two columns of a structure, a procession of three young male figures carrying animal skins, probably of bulls, is led by a young man with short hair wearing a codpiece and boots and holding a sword and a crooked instrument, perhaps a whip. They stand in front of a fifth figure, also a male with a codpiece, boots, a dagger at his waist, and a staff extending in front of him. This last figure, referred to as the chieftain, is differentiated from the others not just by his greater height but primarily by a range of features that are found on all depictions of the young male Minoan god—coiffured long hair, elaborate jewelry, and a characteristic gesture

Fig. 9. Gold cup with scene showing capture of bull with a rope, from the Vapheio Tholos, Laconia (ca. 1600–1525/1500 B.C.). National Archaeological Museum, Athens.

denoting authority. He obviously represents the aristocracy or a divine figure to whom the bull skins will be offered—remains of the sacrifice of animals captured during a successful hunt. This particular representation has been considered, perhaps not inaccurately, as the Minoan prelude to rites of passage that took place in Crete in historic times, as the written sources attest and as confirmed by the finds of the Geometric and Archaic periods from the rural sanctuary of Hermes and Aphrodite at Syme, Viannos.

As in later periods, the initiation rites of the second millennium B.C. must have had a corresponding religious manifestation, which can be deduced with a fair amount of certainty from the presence of the seated goddess in a monumental composition in Xeste 3 at Akrotiri. The best example of this, however, is the chryselephantine *kouros* from Palaikastro (see chap. 7, fig. 8), a statuette of worship of the Late Minoan IB period—perhaps the most important work of Minoan sculpture. The work, which is of high artistic quality, is thought to depict a young male Minoan god who dies and is reborn according to the eternal cycle of plant growth. The head of the *kouros* is carefully shaved, except for the central section, so the figure is believed to represent the age of entry into adult life.

However, the question remains open as to what governs the relationships of rites of passage to the internal needs of Minoan society. It is reasonable to assume that, in the urban settlement of Akrotiri, initiation ceremonies were an integral part of the mechanism that controlled the preservation of social status, since it is likely that they determined entry into professional or social classes. Given the fact that, in neighboring Crete, it is the palace that completely controls the hierarchy, it is possible that rites of passage, if they existed, were related to the consolidation of authority or of social roles. Needless to say, many scholars have tried to identify marriage as the conclusion of Minoan initiatory rites. Nevertheless, without discounting this possibility, one must recognize the Minoan indifference to the depiction of the nuclear family. The complete absence of the *kourotrophos* (mother-and-child) figure in Minoan art continues to puzzle researchers. The single appearance of the mother-and-child theme in a clay figurine of Late Minoan II–IIIA—i.e., during the Mycenaean period on Crete—from the Mavrospelio cemetery in the Knossos area (see cat. no. 164), in no way serves as an answer. Based on the manner in which the woman is holding the child, which is quite different from the standard form of *kourotrophos*, in which the child is always held in the mother's arms, scholars have suggested that the figure either represents one of the basic principles of Minoan religious dogma, the epiphany of the divine couple, or was commissioned by a Mycenaean newcomer from a local craftsman who ignored the figure desired by the client and gave it a hybrid form.

In any case, it is reasonable to suggest that behind these initiation rites lie specific mythological references, which when transferred into a physical image call to mind a string of associations at the level of both the individual and collective memory of the spectators of this era. Such associations would certainly have reaffirmed the feeling of social coherence. As noted by Walter Burkert, "initiation ceremonies are . . . the main celebrations of the tribe, the definitive life experiences for everyone; since in these, nothing less than the renewal of the community is acted out."

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CHAPTER 11

ATHLETES AND SPORTS

Lefteris Platon

Ancient Greek tradition has it that the founders of the Olympic Games were Cretans. These were the mythical Kouretes—also known as the Idaean Daktyloi—five brothers to whom Rhea had entrusted the newborn Zeus for safekeeping in the sacred cave on Mount Ida. Pausanias relates that after completing their mission, the Kouretes visited Olympia, where the eldest, Herakles, organized an impromptu footrace for his brothers and crowned the victor with a wreath of wild olive (*oleaster*). Idaean Herakles, who is merely a namesake of the well-known demigod and hero, was also the first to make sacrifice to Zeus at Olympia, placing the ash from the sacrifice on an altar close to the tomb of the hero-king and chariot-race victor Pelops.

These myths obviously reflect traditions deeply rooted in prehistory. Minoan iconography provides an appreciable number of representations of athletic contests of various kinds, confirming prehistoric Crete's decisive contribution to creating the "athletic ideal," as well as the close relationship between athletic activities and religious rituals, which is attested in the historical period.

The inclusion of Minoan sports in the sphere of religion is supported by the fact that sports are represented on several vessels indisputably designated for ritual or ceremonial use, such as the "Boxer Rhyton" from Haghia Triada (fig. 1) or the plastic rhytons, with scenes of capturing or contests with bulls from the beehive tombs of the Mesara (see chap. 6, fig. 2), as well as by the presence of symbols or objects of religious significance in many representations of athletic contests. Also, some works depicting athletes and sports have been found in spaces in direct affinity with shrines, either in the open air or inside buildings.

Although the numinous character of athletic contests in Minoan Crete is beyond doubt, their precise nature and the specific occasions on which they took place have not been thoroughly explained. Sir Arthur Evans believed that, initially at least, athletic contests were associated with funerary or memorial rites. This view is corroborated by the offering made to the dead of bull models rendered in "agonistic movement" in the famous representation on the Haghia Triada sarcophagus. Moreover, the originally mortuary character of games in major Greek sanctuaries of the historical period is verified by both literary sources and archaeological finds.

Over time, athletic contests seem to have become linked primarily with initiation rites in which boys passed to manhood, a passage that assumed specific duties or offices. This view is supported by the youthfulness of the figures involved

Fig. 1.
"Boxer Rhyton" from Haghia Triada (ca. 1500–1450 B.C.). Herakleion Archaeological Museum.

in sports—in the wall painting of the "Boxing Boys" from Akrotiri on the island of Thera they are, in fact, children—and by the exclusive participation of male individuals in the rituals. An exception to this is the sport of bull-leaping, although the female figures in this case may be substitutes for men, since they are dressed in masculine attire (see chap. 6, fig. 11). The dedication of clay male figurines of boxers in the peak sanctuary at Kophinas, Asterousia, suggests that boxing contests may have been held there in the context of festivals with mass public attendance. These festivals would have culminated in the initiation of a number of individuals through the trial of athletic contests. Bull-leaping may have had an analogous function, although the mortal dangers involved in such a contest would have limited the circle of initiates to a select few. If the proposed interpretation of the representation on the bezel of the gold "Runner's Ring"—a precious votive offering to the pan-Cretan sanctuary at Symi, Viannos (see cat. no. 161)—is correct, success in such trials or victory in competitive sports may have been the final step for the social recognition or even advancement of initiates. In this unique representation, a young runner pictured in an extended stride seems to be ending his race as he approaches what may be a sacerdotal figure. According to the excavators who published the ring, the figure of the runner is rendered in such a way that it represents the ideal image of a "victor-athlete."

The repertoire of sports represented in Minoan works is not extensive, but the bull games—displays of agility and daring that are reminiscent of today's Spanish bullfights—are the most common images. On the basis of the many extant representations on wall paintings, seal rings, seal impressions (fig. 2; see cat. nos. 117, 122–124), and vessels of stone, ivory, gold, and rock crystal, as well as compositions with ivory figures in the round (fig. 3), Arthur Evans deduced that the bull-leaper would rush head-on at the charging bull, grasp it by the horns, vault onto its back by using the thrust of the bull's head as it butted the athlete, and then leap onto the ground. The dangerous nature of such an act has led many scholars to doubt the realistic dimension of the representations and to maintain that the images were intended to function only on a symbolic level, in an attempt to convey human domination over wild nature. But the fact that several representations show athletes that fail, often with fatal consequences, and the discovery at Knossos and Tylissos of sawed-off tips of the horns of *Bos primigenius*, a species of big-bodied bull, attest that this hazardous sport actually took place in Crete, in all probability under the aegis of the palatial authority. Indeed, according to one hypothesis, the performance of bull-leaping in Crete is connected with the myth of Theseus and the sacrifice of seven youths and seven maidens from Athens to the hybrid monster—half man and half bull—the Minotaur. It

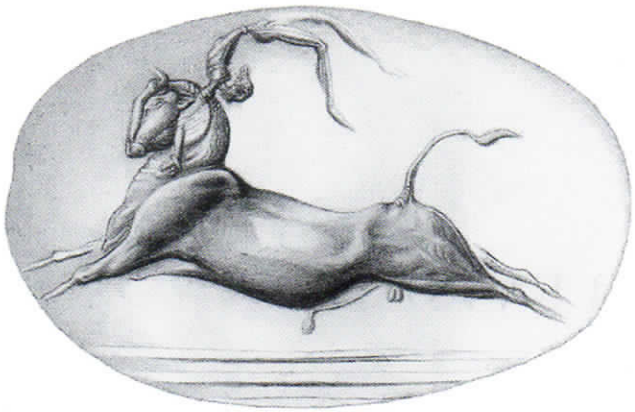

Fig. 2. Clay seal impression with bull games. Sklavokampos (ca. 1450 B.C.) (*CMS* II, 6, no. 255). © CMS Archive, Marburg.

Fig. 3. Ivory figure of a bull-leaper. Palace at Knossos (ca. 1600 B.C.). Herakleion Archaeological Museum.

Fig. 4. Sealstone with runners. Zakros (ca. 1500–1450 B.C.) (*CMS* II 7, no. 15). © CMS Archive, Marburg.

Fig. 5. Sherd with relief depiction of a runner holding a wreath. Prasas, Herakleion (ca. 1600–1450 B.C.).

was perhaps the perilous nature of the sport that obliged the rulers of Knossos to substitute bull-leapers from other regions for their own young people, a practice that could have been preserved as a painful remembrance of "irrevocable loss" in the minds of men who had never visited Crete.

The second most popular sport in Minoan representations is boxing. Boxers are depicted in relief wall paintings that adorned the palace at Knossos, including—in one view—the controversial representation of the "Prince of the Lilies." Boxing is also illustrated in regular wall paintings, from Tylissos and from Akrotiri on Thera, and on seal stones, as well as in figurines that served as votive offerings in the peak sanctuary at Kophinas. However, the fullest representations of boxing are found in the relief on the stone libation vase from Haghia Triada, on which three of the four pictorial zones feature various figures and phases in the sport (fig. 1). In some cases, the athletes wear protective helmets with cheek pieces and boxing gloves. Some have long tresses and wear necklaces and bracelets that denote their high social status. The religious significance of the representations is underlined by the presence of a column with a square capital, an architectural element that, according to the prevailing view, is reserved only for buildings of sacred character.

Some scholars have interpreted one of the three representations of boxing on this ritual vase as that of a wrestling contest, but the athletes' poses do not seem to support this contention, since no actual bodily contact is visible. By way of comparison, bodily contact is explicitly indicated on the fragment of a relief vase from Knossos, where one of the two athletes preserved has seized the other and lifted him high off the ground. This representation is unique, however, and gives no clues as to the rules of the sport or how it was conducted.

Fig. 6. "The Captain of the Blacks." Fresco wall painting from Knossos (ca. 1350–1300 B.C.). Herakleion Archaeological Museum.

Fig. 7. Gold covering of the pommel of a great bronze sword. Palace at Malia (ca. 1800–1700 B.C.). Herakleion Archaeological Museum.

The representation of the runner on the above-mentioned ring from Symi (see cat. no. 161) represents another sport in Minoan Crete—footraces. The manner in which the movement is rendered in this depiction supports the view that the athlete is competing in a sprint, in which speed rather than stamina is measured. By contrast, the figures on two seal impressions from the archive at Zakros—providing, of course, that their identification as runners is correct—appear to be competing in a long-distance race (fig. 4). A final example, shown in relief on a clay vase from Prasas, Herakleion (fig. 5), is the schematically rendered figure of a runner who holds a wreath and seems to be participating in a contest of special significance. If one may assume that this was a depiction of an individual competition, it should perhaps be compared with the wall painting "The Captain of the Blacks," in which running figures are shown holding long objects, which have been tentatively identified as spears (fig. 6).

Other sports represented in Minoan art include several kinds of somersaults (acrobatic leaps), hunting, and possibly also long jump, fencing, and archery. An especially outstanding image, on the gold covering of the pommel of a "royal" sword from Malia, shows an athlete performing a somersault over an upright sword (fig. 7).

A few words can be said about the spaces in which various sports took place. Boxing contests seem to have been held near sacred buildings or areas, judging by the presence in the representations of sacred columns with square capitals, as well as by the discovery of boxer figurines in the remote peak sanctuary at Kophinas. Footraces would, of course, have taken place in the open air, perhaps on paved tracks in the case of sprints, as the representation on the Symi ring suggests. More complex is the issue of the venue for bull-leaping, a sport that demanded a large, flat space, as well as safety measures to protect spectators. The central and west courts of the palaces, a man-made terrace east of the palace at Knossos, and a robust building with square court and high verandas, possibly for spectators, close to the palace at Malia, have all been proposed as places where such contests took place.

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CHAPTER 12

MINOANS AND THE MEDITERRANEAN

Jean-Claude Poursat

Since the Neolithic and Early Bronze Ages, the Mediterranean Sea has been a locus of contact and exchange for the populations living around it. The island of Crete, which is linked to the Anatolian coast by a series of islands (from Kasos and Karpathos to Rhodes) and situated equidistantly between the Levantine coast, the Nile delta, and southern Italy, enjoys a privileged position. Throughout the Bronze Age, maritime routes allowed Minoan Crete to acquire the materials it lacked (such as obsidian and metals), to export its own products (textiles, agricultural goods, and wood), and to enter into contact with the cultures of the Near East and Egypt. These contacts varied over time with changes in political and economic conditions; but texts, objects, and works of art from the east bear witness to a constant Minoan presence beyond the Aegean.

The Minoans and the Eastern Mediterranean at the Beginning of the Second Millennium

In the Early Bronze Age, Minoan maritime activity was focused primarily in the Aegean, notably the Cyclades and the Anatolian coast. But even from the third millennium B.C., the first links, possibly indirect, with the Near East and Egypt are signaled by the appearance on Crete of such objects as a Syrian silver seal found at Mochlos, one of the entry points in that period for Near Eastern products and techniques, and of such raw materials as hippopotamus ivory.

Yet it is at the time when the first palaces on Crete were built—at Knossos, Malia, and Phaistos—that the island found itself drawn into the exchange networks spanning the eastern Mediterranean. Minoan objects found on Karpathos and Rhodes indicate the creation of a maritime route hugging the Anatolian coast and extending toward Cyprus to reach as far as the Syrian coast, notably the city of Ugarit, the most important harbor site of the Levant. This sea route went further still along the Syro-Palestinian coast to link up with the Nile delta and Egypt.

Why was Minoan Crete suddenly interested in the East? Metallurgy saw significant innovations at the very beginning of the Middle Bronze Age; and in order to produce weapons and tools in bronze, the Minoan palaces had to obtain metals that were not available in the Aegean, in particular tin. The port of Ugarit was one of the most important trading stations for the caravans transporting tin from Mesopotamia. These commercial relations are well attested by the inscribed tablets from the palace of Mari, in which Crete is described as "Kaptara." Thus we know that Cretan merchants had "set up shop" at Ugarit, where they made use of an interpreter in order to procure tin. Even after the destruction of the palace of Mari about 1760 B.C., Ugarit remained one of the principal transit points for commerce in the eastern Mediterranean. In addition to metal, the Minoans at this period also brought prestige goods, such as lapis lazuli, from the east. The Mari archives, moreover, tell us of the finished products that moved the other way: cloth, leather shoes, weapons, and metal vessels. Indeed, "Cretan" (*Kaptaru*) decorated gold or silver vessels are mentioned in the inventories of the royal treasure of the palace at Mari; acquired at Ugarit, Aleppo, or Carchemish, they testify to the spread of Minoan artworks in the east.

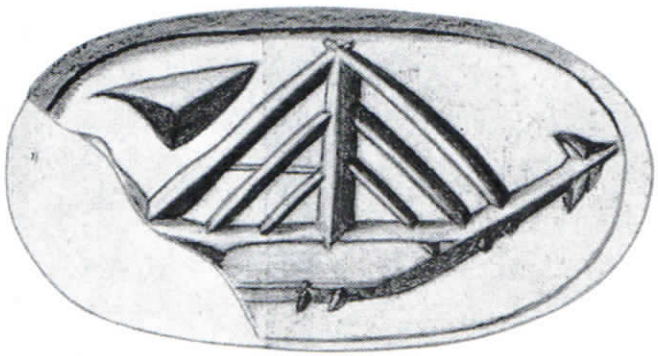


Fig. 1. Prismatic seal with the representation of a ship (ca. 1800–1700 B.C.). (*CMS* II,2, no. 100a). © CMS Archive, Marburg.

Could the Minoans have navigated directly from Crete to Egypt? It is likely that a north-south sea route did exist, at least during the months with fair winds, from March to November, with the return trip following the Syro-Palestinian and Anatolian coastlines. In any case, during the Middle Bronze Age, images on seals suggest that the Minoans had boats with sails, which would have performed better than the oared boats of the Early Bronze Age (fig. 1). Whether direct or indirect, contacts with Egypt are well attested. Kamares ware, the fine polychrome pottery of the Protopalatial palace period (see cat. nos. 12–21), is found at sites along the Levantine coast, from Ugarit to Byblos and as far as Tell el Dab'a, and along the Nile valley as far as Aswan. A treasure hoard, made up of many silver cups that could be of Minoan origin, was discovered at Tôd, to the south of Luxor. Other indirect evidence confirms the existence of relations between Crete and Egypt. The ceiling of an Egyptian 12th Dynasty tomb at Assiut (tomb of Hepzefa) probably imitates, with its spiral decoration, motifs on imported Minoan textiles. At Malia on Crete, a series of vases with

Fig. 2. Lid with appliqué decoration of two confronted falcons. Malia, Quartier Mu (ca. 1800–1700 B.C.). Herakleion Archaeological Museum.

Egyptianizing decoration—a relief sphinx and a ceramic lid decorated with falcons (fig. 2)—suggest that Minoan artisans had firsthand knowledge of Egyptian art. Jewelry also shows the influence of Egyptian iconography, as in the case of the bee pendant from Malia (see chap. 16a, fig. 7). From this period Crete is known in the Egyptian texts as the land of the Keftiu.

From the Height of the Minoan Palaces to the Decline of Knossos

After the destruction of the First Palaces on Crete in about 1700 B.C., the so-called Neopalatial period (ca. 1700–1450) represents the peak of Minoan influence and power and has often been considered a period of Cretan maritime hegemony—what is referred to, following the writings of Herodotus and Thucydides, as the "Minoan Thalassocracy." Even if the character and indeed the reality of this thalassocracy remain a matter for debate, the period does at least see Crete's cultural influence extend beyond the Aegean as far as the east Mediterranean littoral. Wall paintings that adopted not only the specific fresco techniques but also the iconographic motifs of the Minoans have been found in the Orontes valley of North Syria at the site of Alalakh (Tell Atchana), at Tel Kabri in Galilee, and at Avaris (Tell el Dab'a) in the Nile delta. The Alalakh frescoes (ca. 1650–1550 B.C.), which adorned the palace of King Yarim-Lim, were destroyed by the Hittite King Hattushili I; some pieces show stems of plants bending in the wind, a rocky landscape, and a griffin (fig. 3). The Tel Kabri paintings, including a floor decorated with flowers and some fragments of miniature frescoes, also belonged to a palace destroyed about 1600 B.C. Like those from Alalakh, they would have been contemporary with the Knossian frescoes of Middle Minoan III.

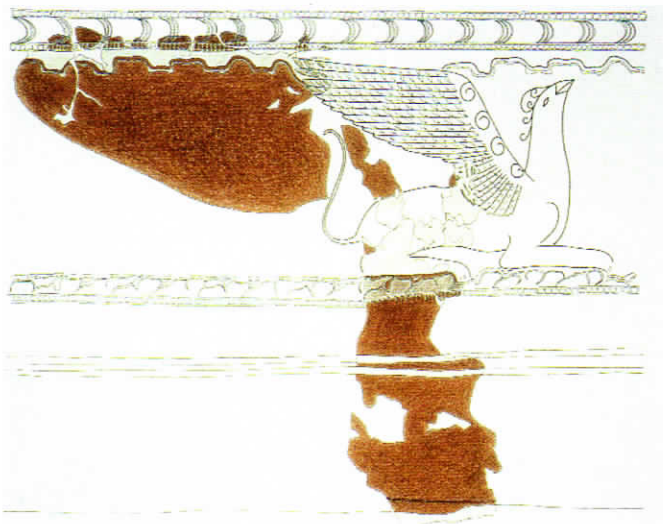


Fig. 3. "Couchant griffin" fresco. Alalakh (ca. 1650–1550 B.C.) (restored drawing by B. Niemeier and photo by W.-D. Niemeier).

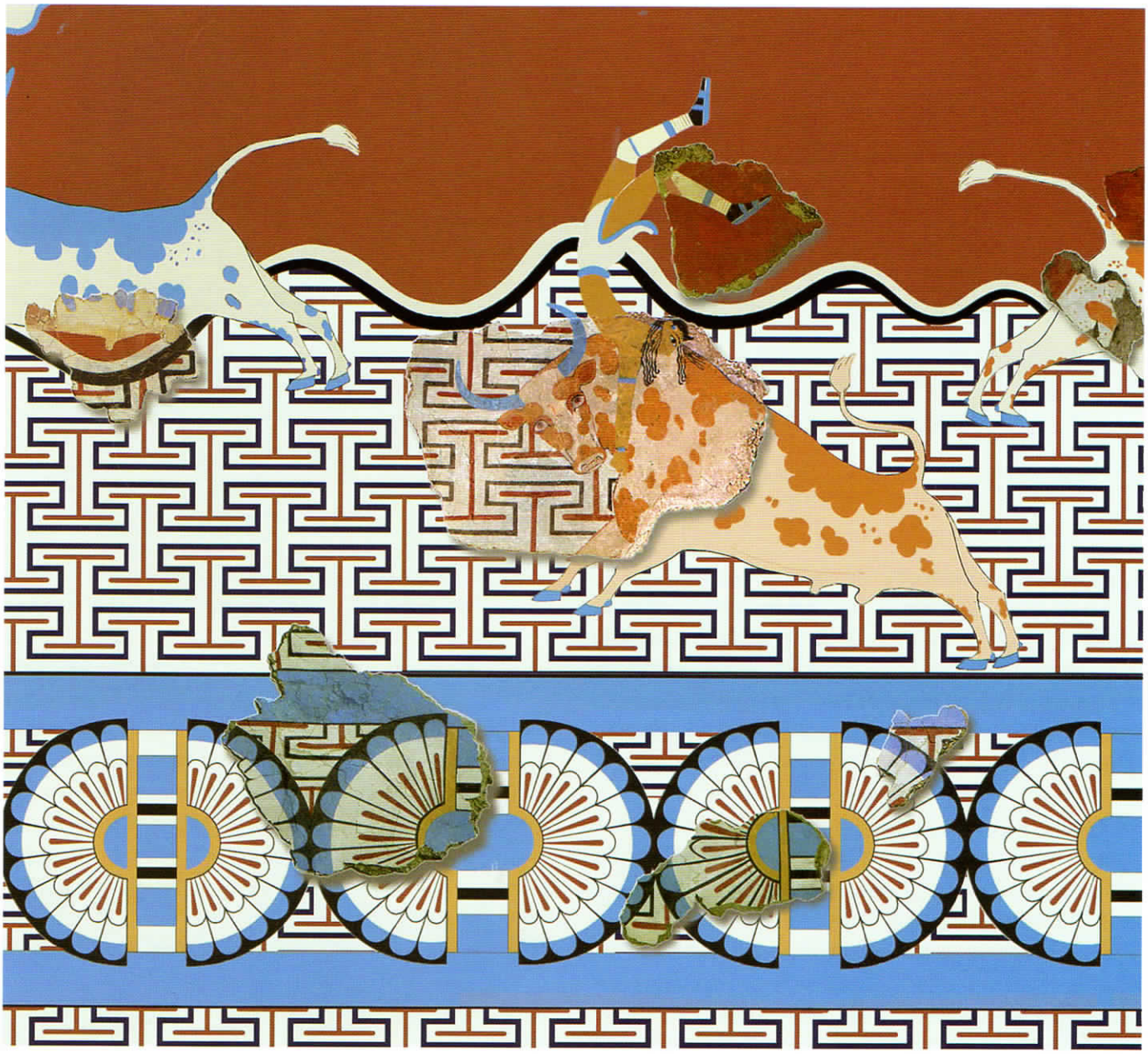


Fig. 4. Wall painting with part of the "Bull and Maze" scene. Tell el Dab'a (ca. 1600–1400 B.C.) (Karetsou–Andreadaki–Vlazaki–Papadakis 2000, fig. 277a).

Finally, at the site of Avaris, the ancient capital of the Hyksos, wall paintings have come to light in a royal citadel and palace of the 18th Dynasty. They belong for the most part to a period that stretched from the reign of Tuthmosis I to the beginning of the reign of Tuthmosis III, between about 1500 and 1450 B.C. A scene of bull-leaping shows groups of bulls and acrobats in a rocky landscape, its lower part decorated with a labyrinth design. A hunting scene, griffins, half-rosette motifs, and a frieze of spirals complete the repertoire of Aegean–inspired frescoes (fig. 4). Since these frescoes adorning royal palaces can be attributed to artists schooled in Minoan styles and techniques, they may be considered in the context of kingly diplomatic exchange, particularly as we know from Eastern texts that these trades could be accompanied by the exchange of craftspeople. Indeed, a myth from Ugarit states that the craft god, Kothar wa-Khasis, lived on Crete and was brought to Ugarit to build for the god Baal a splendid palace furnished with precious works of art. For Avaris, it has even been suggested that a royal marriage took place between an Egyptian prince and a Minoan princess. There is no question but that these frescoes point to the prestige enjoyed by the Minoan elites in the Mediterranean world.

Fig. 5. Elephant tusks. Palace at Zakros (ca. 1450 B.C.). Herakleion Archaeological Museum.

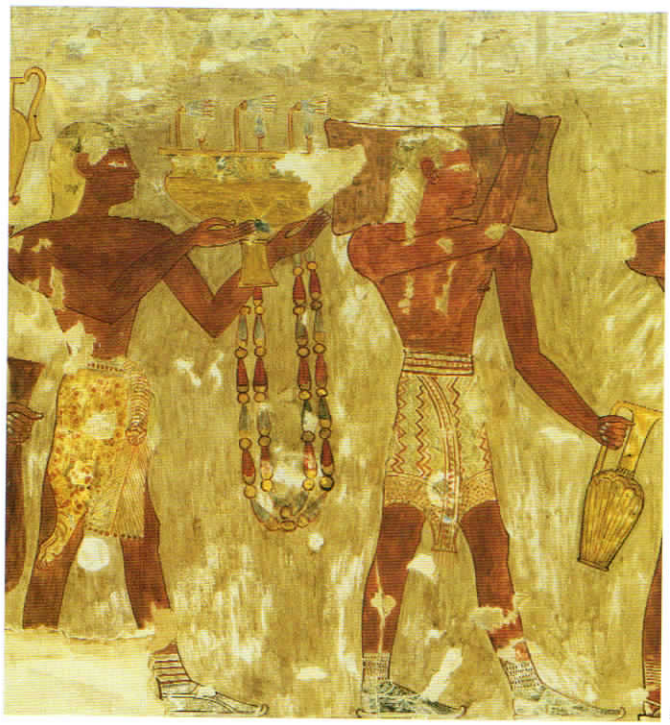
This was also a period of intense economic activity, in the East as in the Aegean. Consider the growing influence of the Hittites in Anatolia and the Egyptian pharaohs, who defeated the Hyksos and extended their influence as far as Byblos. Even the island of Cyprus, which seems previously to have been little more than a stepping stone, took on a new importance. In Crete, where the production of luxury goods reaches its highest point, the growth of international commerce is attested by the development of coastal sites such as Zakros, where the palace, built about 1500 B.C., probably as a dependency of Knossos, received elephant tusks imported from the East (fig. 5). Another example is the site of Kommos, which was near Phaistos and Haghia Triada and was also an active port. Moreover, copper ingots found at sites such as Haghia Triada, Mochlos, and Tylissos testify to the importance of the circulation of metal resources (see cat. nos. 64, 65).

A major event—the volcanic eruption of Thera and the destruction of the town of Akrotiri about 1530 B.C.—modified exchange routes within the Aegean and reinforced the importance of mainland Greece and its relations with the Cyclades. Yet this event does not appear to have affected the connections between Crete and the eastern Mediterranean. It is toward the end of the Neopalatial period, in the reign of Tuthmosis III in particular (1479–1425 B.C.), that relations with Egypt were at their closest. Paintings from tombs at Thebes (Egypt) show envoys from the land of the Keftiu (Crete) and from the "islands in the middle of the sea" coming to bring their tribute to the pharaoh in the form of textiles; vases that are clearly Aegean; jugs or cups decorated with chevrons, spirals, or bull's heads; and cups adorned with rosettes and arcades, as well as products of international trade, such as elephant ivories and copper ingots (fig. 6). The mention of Keftiu ships in the Egyptian texts indicates that at the very least there was a regular sea route between the eastern Mediterranean and Crete, whether or not the boats were actually Minoan.

The final destruction of the Minoan palaces of Phaistos and Zakros about 1450 B.C. and the simultaneous installation at Knossos of Mycenaeans using the Linear B script (Mycenaean Greek) did not immediately affect the role of Crete in the Mediterranean. At least until the serious destruction it suffered about 1370 B.C., the palace of Knossos remained an influential center in the Aegean. Mention of the inhabitants of the land of the Keftiu was still made in Egypt until the reign of Amenophis III (1388–1350 B.C.), and a list engraved on the funerary monument of this pharaoh at Kom el Hetan (Egyptian Thebes) seems to represent the itinerary of a journey he made to Crete and Mycenae; it bears the names of a series of Cretan sites (Amnisos, Knossos, Kydonia), which are all possible stopping-off points on the way to mainland Greece (see cat. no. 121).

The Minoans in the Mycenaean World: Between East and West

From the end of the Middle Bronze Age, about 1600 B.C., mainland Greece had some limited links with the central Mediterranean, southern Italy, and Sicily, connections that multiplied from the beginning of the fourteenth century. The search for metals in particular could be one of the contributing factors in this turn toward the west. From the Peloponnesian coast, sea routes led to the straits of Messenia, Sicily, southern Italy, and Sardinia, where the Adriatic coastline can be followed up to northern Italy, and these regions in turn were in contact with central Europe. Even though Crete's political elites were weakened at this time at the expense of the Argolid, the island nevertheless maintained a key role on the Mycenaean periphery, thanks to its location, ports, and economic output (textiles and olive oil). Crete's links with Cyprus and the Levant were still active. A text from Ugarit mentions a rich merchant of the thirteenth century, Sinaranu, whose ships traded with Crete. Cyprus, moreover, with its southern coastal towns such as Kition, played an increasingly important part



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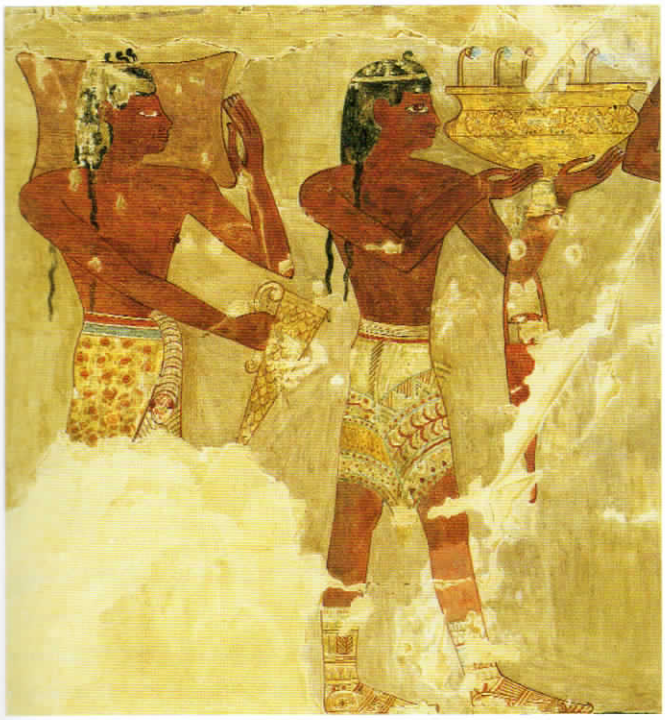
Figs. 6a–d. Wall paintings depicting Keftiu bringing tribute to the Pharaoh. Tomb of the official Rekh-mi-re. Thebes, Egypt (1490–1412 B.C.). Copies in tempera by Nina de Garis Davies. © The Metropolitan Museum of Art (Rogers Fund, 1931), New York.

in Mediterranean trade and had close ties with mainland Greece. Syrian or Cypriot ships were occasionally shipwrecked while traveling the Anatolian coastline, as attested by wrecks found at Ulu Burun (second half of the fourteenth century) and Cape Gelidonya (ca. 1200 B.C.). Ingots of Cypriot copper and tin made up the bulk of the two cargoes of Ulu Burun and Gelidonya; they are associated with Syrian amphorae, Cypriot and Mycenaean vases, hippopotamus and elephant ivory, and ingots of glass paste. In the Argolid at Cape Iria, at the end of the thirteenth century, the wreck of a ship destined for Cyprus was found to be carrying Mycenaean pottery, Cypriot transport jars, and Minoan stirrup jars.

On the south coast of Crete, the port of Kommos flourished particularly during the second half of the fourteenth century B.C. An enormous building, "Building P," housing six large galleries 40 meters long, was probably designed to shelter Minoan ships over the winter, ships that carried wine and oil abroad. A large number of goods also reached the storerooms of Kommos, including Cypriot vessels and Canaanite and Egyptian amphorae containing perfumes and agricultural products (fig. 7). A stone anchor in all likelihood comes from a boat from Ugarit. Indeed, it seems possible that the Ulu Burun boat could have had Crete as its destination. On the Egyptian coast to the west of the delta, on the islet of Marsa Matruh, located on another sea route, Minoan sherds have been found, as well as Mycenaean and Cypriot pieces.

During this same period, the town of Khania also took on an important role. Khania had a Linear B administration and took part, as did Knossos, in trade with the major Mycenaean centers at Mycenae, Thebes, and Tiryns, exporting large stirrup jars full of oil and wine (see cat. no. 108). Khania's proximity to Kythera and the Peloponnese enabled it to slip into Mycenaean trade routes with ease. The products of its pottery workshops are readily recognizable and reach as far as Cyprus to the east, but also to southern Italy and Sardinia to the west (see cat. nos. 41, 97). Both Cypriot pottery and a plain ware of the "Italian" type have also been found at Khania (see cat. no. 38), as well as at Knossos, Kommos, and Tylissos, indicating relations with southern Italy and Sardinia. At the end of the thirteenth century, Khania was Crete's most active port.

Although the troubled times of the second half of the thirteenth century and the beginning of the twelfth did not totally interrupt trade relations between the Aegean and the Levant, they did cause interference. The Hittite-Egypt conflict, the incursions in the Levant of the "Sea Peoples," and the destruction of the Mycenaean palaces about 1200 B.C. and of Ugarit about 1185, led to the collapse of the centralized trade networks that had been characteristic of much of the Bronze Age. But Minoan voyages into the Mediterranean persisted into the eleventh century, albeit less regularly, and the material that found its way as far as Karphi or the Psychro cave—



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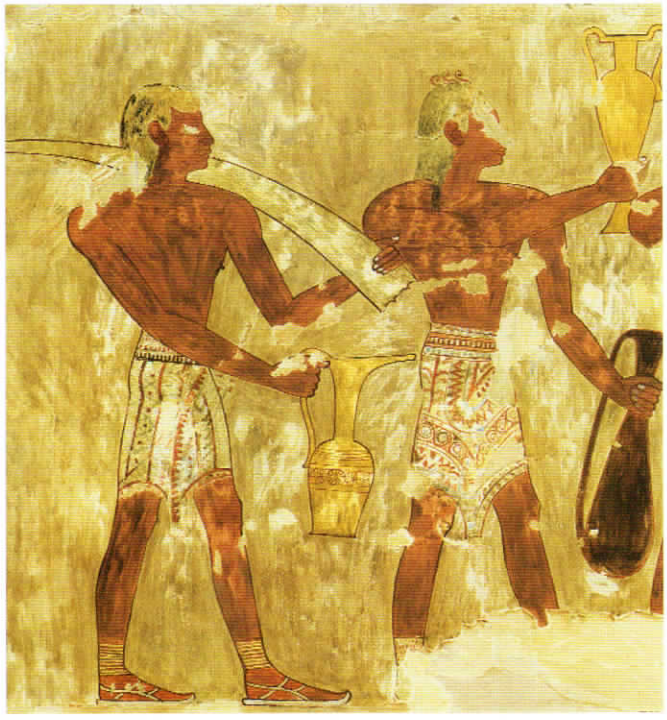

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bronze objects imitating Cypriot types, fibulae and knives of the Italian type, and even amber from central Europe—demonstrate that Crete was not isolated in this Postpalatial Mycenaean world.

Following a period of recession, these sea routes underwent a revival at the beginning of the Iron Age, when the Phoenicians recommenced sea trips and exploratory journeys across the entire Mediterranean, even as far as Spain and North Africa. A temple of Phoenician type was built at Kommos in the ninth century B.C. Crete once again found itself, as in the second millennium, in a privileged position of having many contacts within the Mediterranean.

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Fig. 7.
Canaanite amphora. Port of Kommos (ca. 1400–1370 B.C.).
Herakleion Archaeological Museum.

CHAPTER 13

MINOAN CRETE AND THE AEGEAN: A RECIPROCAL RELATIONSHIP

Giorgos Rethemiotakis

Fig. 1. "Spring Fresco" (detail). Akrotiri, Thera (17th–16th centuries B.C.). National Archaeological Museum, Athens.

At the beginning of the third millennium B.C., the civilization on Crete began to acquire what would eventually become a Minoan character. Its development and enrichment at this early stage in both technological progress and artistic creation, as well as in ideology and its relative impact upon the social sphere, owes much to Crete's productive contact with the outside world, particularly the Cyclades and islands in the north Aegean. These islands served as bridges and as means of communication that eventually encouraged the dramatic expansion of the Minoan palatial culture in the first half of the second millennium B.C.

Cycladic and Minoan boats had traveled the sea routes of the Aegean since at least 3000 B.C. Evidence for trade contacts in the Early Minoan I period (ca. 3000–2600 B.C.) can be found in the Cycladic vessels excavated at Poros, Herakleion, the large Minoan harbor of Knossos. Along with these vessels were recovered extensive remains of metal technology, ranging from melting crucibles and bellows to small ingots of raw copper and clay molds for the manufacture of daggers. Similar metallurgical remains have been found on the Cyclades, and that discovery alone attests to the development of a relationship with Crete for the acquisition of raw materials and the exchange of information and technology. Moreover, the presence of many bronze and silver daggers in Early Minoan tombs (see cat. nos. 73, 74) proves the significance of their acquisition and their use as means of displaying and distinguishing social status and prestige.

Besides metallurgical remains, the Early Minoan phase of the Knossian harbor at Poros reveals industrial-scale waste from the processing of obsidian, a hard volcanic glass that looks like stone and was imported from the island of

Fig. 4. Wall painting depicting a fleet and the "Departure Town." Akrotiri, Thera (17th–16th centuries B.C.). Thera Archaeological Museum.

Fig. 2. Wall painting depicting a riparian landscape. Akrotiri, Thera (17th–16th centuries B.C.). Thera Archaeological Museum.

Melos for the manufacture of knife and razor blades. Obsidian blades have been found in abundance in burial and domestic contexts (see cat. no. 54), which reveals their wide use in households, in industry, and for such purposes as shaving. The supply of obsidian was a strong motivation for Crete to develop and intensify trade relations with the Cyclades.

In Early Minoan I and II (ca. 3000–2300 B.C.), Cretan contacts through the Aegean can be traced in burials at the cemeteries of Haghia Photia, Siteia; of Gournes and Kyparissi, Herakleion; and of the Mesara Plain, where a variety of Cycladic pottery types have been found, including cylindrical and globular pyxides, bottles, kernoi or multiple pyxides, and frying pans bearing incised decoration that have exact parallels in the Cyclades. The ideological parameter of these contacts is evident in the numerous marble anthropomorphic figurines of the Cycladic type that have been found in the vaulted tombs of Mesara and Archanes. This indicates either the presence on Crete of a population of Cycladic origin or the adoption of Cycladic burial customs and beliefs.

Fig. 3. River landscape at Preveli, Rethymnon (photo by Chr. Stephanakis).

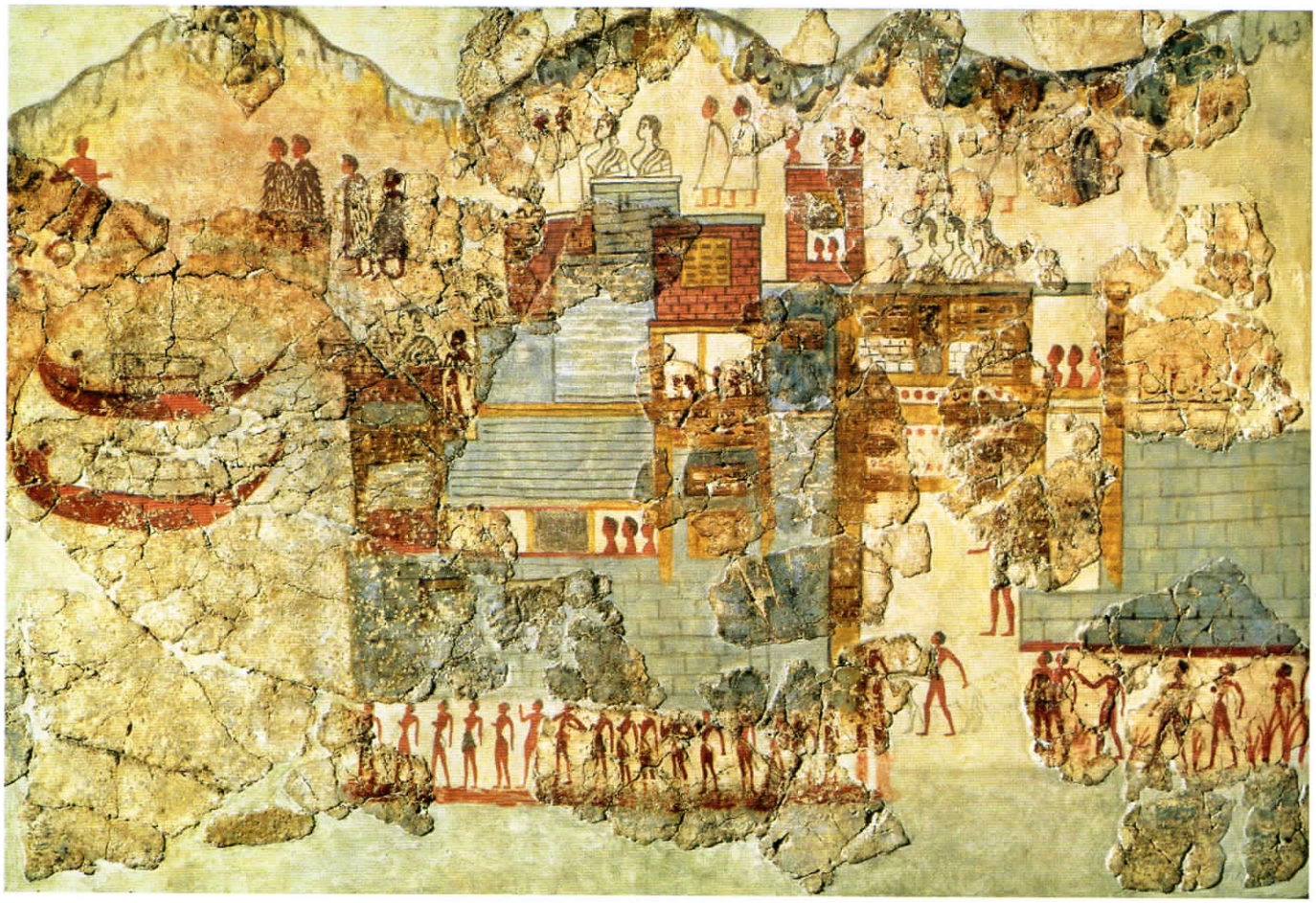

Fig. 5. Wall painting depicting the "Arrival Town." Akrotiri, Thera (17th–16th centuries B.C.). Thera Archaeological Museum.

In the third millennium B.C., the Minoans also developed relationships with the north Aegean islands, perhaps through the Cyclades. North Aegean influence is recognized in several types of vases, such as tall-stemmed chalices of the so-called Pyrgos ware, a barrel-shaped pot, an askoid jug, and a tall cup with horned projections on the rim (see cat. nos. 2–5). Gold pieces of jewelry with thin, sophisticated chains with conical or leaflike ends that attach to diadems (see cat. no. 131a–b) also resemble those found in the north Aegean and Troy.

Overseas trade increased during the second millennium B.C., when improved methods of ship building eventually led to the construction of large boats that permitted long-distance voyages. Middle Minoan representations on seals depict these larger boats (see chap. 12, fig. 1) and reflect the new levels of trade and exchange. Small settlements, trading posts, commercial "harbor masters," and urban complexes of Minoan character were scattered throughout the Aegean and along the Asia Minor coast to facilitate trade and to control the sea routes. The largest and most important Minoan settlement in the Aegean was undoubtedly the coastal city of Akrotiri, Thera, so far as architectural scale, urban planning and construction, and artistic expression are concerned. The multistoried houses of this settlement have ashlar walls on the exterior, projecting stone cornices, supporting wooden timberwork, complicated pier-and-door and pier-and-window partitions, staircases, and in one instance a lustral basin, all of which are features of Minoan urban architecture.

Strong Minoan influence can also be found in the fresco decorations in these houses, whose quality, quantity, and iconographic richness are outstanding (figs. 1, 2, 4, 5). The men and women depicted in religious activities—such as the ritual gathering of crocuses, processions, and making offerings to deities—are dressed in Minoan fashion. The characteristic Minoan affinity for nature, well known from frescoes and seals found in Crete, is generously expressed in numerous representations of plants and animals. Realistic scenes and those of a more artistic, poetic dimension include images of flying birds, including swallows and aquatic species; dragonflies in the reeds; palm trees; blue monkeys on rocks (see chap. 14, fig. 7); Cretan wild goats; mountainous and rocky landscapes; rivers (figs. 2, 3), sea routes, gulfs, and bays with Minoan or Aegean towns on their shores (figs. 4, 5). Other frescoes depict scenes of official religious or civil ceremonies with direct iconographic

parallels in Minoan Crete, such as images of a seated female deity flanked by a monkey and a griffin, an enclosure with horns of consecration, and a "sacred tree" within, possibly an olive tree; and young boxers (see chap. 10, fig. 8). The dominating Minoan presence at Akrotiri is confirmed by the many clay sealings of Minoan signet rings and the inscriptions in the Minoan Linear A script that have been uncovered (see chap. 8, fig. 9). These imply direct contacts and exchange with the central palatial administration, as do the lead weights (used in the Minoan measuring system) and the use of loom weights, simple tripod cooking pots, and cooking trays, which have exact parallels in Crete (see cat. nos. 89, 110a–e).

Many more Aegean islands—the number of which continues to increase as archaeological research progresses—provide evidence for a strong Minoan presence. Important settlements include that at Trianda on the island of Rhodes, where houses are equipped with pier-and-door partitions and frescoes, and that of Kythera, where along with the settlement there have been excavated tombs of Minoan type, high-quality Neopalatial pottery (ca. 1700–1450 B.C.), and a peak sanctuary with many Minoan bronze figurines. Traces of Minoan habitation are also found on the islands of Kos and Karpathos. At the settlement at Phylakopi on Melos were found pottery and a fragmentary fresco illustrating flying fish (fig. 6) and a seated female familiar in Minoan iconography. In the settlement at Kea, Minoan-style miniature frescoes depicting urban complexes and typically Minoan female clay figures were found in a temple building.

Even in the north Aegean there survives clear evidence for Minoan presence, such as the contents of workshops at Lemnos that processed copper and procured semiprecious stones, like those at the harbor town at Poros in Crete, along with typical Minoan pottery. In Samothrace clay impressions of Minoan-type seals and Linear A inscriptions testify to the existence of trade and administrative transactions with Crete.

The Asia Minor coast is also a case in point. Over the last few years, an extensive and apparently important settlement has been excavated at Miletos, which was occupied both in the Protopalatial (ca. 1900–1700 B.C.) and in the Neopalatial (ca. 1700–1450 B.C.) periods. Fine and coarse pottery, ritual vessels, frescoes, and evidence for the use of Linear A script have been found. Minoan settlements or trading posts were also established at Iasos and the bay of Izmir.

Mycenaean Greece must have been in direct contact with the Minoan ruling authorities of each region, as indicated by the luxury artifacts found in the area. Precious objects of Minoan origin, imported or locally produced by itinerant craftsmen or by craftsmen deliberately sent for this purpose from Crete, according to the well-known practice of eastern courts, have been found among luxurious grave gifts in the Mycenaean tombs at Mycenae and Vapheio (see chap. 10, fig. 9). Meanwhile, imitations and replications of Cretan vessels and iconographic types on rings and seals (see chap. 10, fig. 6) seem to have been fashionable in the first Mycenaean centuries (ca. 1600–1400 B.C.), as a result of the continuous and ideological impact that Crete maintained even after the Mycenaean conquest.

Fig. 6. "Flying Fish Fresco" (detail). Phylakopi, Melos (17th–16th centuries B.C.). National Archaeological Museum, Athens.

Although there seems to have been a dominant Minoan presence throughout the Aegean during the first half of the second millennium B.C., there is little evidence to indicate any significant reciprocal influence on Crete from other parts of the Aegean. Only a few imports have been found, such as Cycladic nippled jugs and a small number of commercial amphorae from the Cyclades and the Dodecanese. A rich set of large Cycladic jugs and amphorae (including the characteristic Melian jugs with bird decoration), which was discovered at the so-called Temple Repositories of the Knossian palace, deserve special notice. This set contains the tangible remains of the offering of a significant quantity of wine, on behalf of a peripheral ruler who may have resided in Melos, to the central palace sanctuary at Knossos. It underlines in a most successful way the religious nature of a relationship that was based on dependence and control and that was, in this instance, sealed with a significant offering to the palatial religious authorities, the real and ideological center of Minoan power.

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CHAPTER 14

RESOURCES FOR LIFE: FROM FOOD TO AROMATICS

Maria Andreadaki-Vlazaki

The island of Crete is rich in biodiversity and has some of the most interesting flora in the world, with more than 193 endemic plants. This wealth is the result of both Crete's geographical position, which gives it sunshine and a mild, temperate climate, and its geomorphology of hills alternating with valleys, plains, and gorges. Such a hospitable natural environment has provided its inhabitants with the resources for a natural diet that is now known worldwide for its health benefits.

At the beginning of the Neolithic period (ca. 7000 B.C.), when Crete had already attracted its first human settlers, noteworthy changes took place throughout Greece. The introduction of cereals laid the foundations for European agriculture, and the hunter-gatherers with the new agricultural techniques became the first farmers in Europe. They established permanent dwellings and reduced their concerns about the availability of food on the daily basis. Wild barley, oats, and rye already existed, but it was then that wheat first appeared in Greece.

Three kinds of wheat (*Emmer, Triticum aestivum,* and *Einkorn*), barley, pulses, and seeds of both wild and cultivated vines were identified in the Neolithic settlement at Knossos. Indeed, it seems that the inhabitants of Knossos were the first growers in the Aegean to use a new kind of wheat that was easier to thresh. In addition to the cereals mentioned above, the inhabitants of Neolithic Crete also consumed vegetables, greens, pulses (lentils, broad beans, peas, grass peas, and vetch), olives, grapes, figs, pears, quince, and various types of nuts (fig. 1). Colin Renfrew's "Mediterranean triad" (wheat, vines, and olive trees) and Anaya Sarpaki's "quartet" (the triad plus pulses) were therefore present very early in Cretan history.

The first farmers and livestock breeders who arrived in Crete brought domesticated animals with them. The breeding of sheep and goats also became widespread in the Neolithic period and dominated animal husbandry thereafter, although the animal diet was supplemented with cattle (originating from the long-horned *Bos primigenius*), pigs, Cretan wild goats (*Capra hircus cretensis*), deer, hares, badgers, dogs, and certain kinds of birds. Food was consumed raw, roasted, or boiled, but the development of pottery favored the use of boiling in cooking. It has not yet been established precisely when the production and consumption began of secondary animal products, such as milk and cheese, or of honey, which became especially common later on.

This diet, together with the cultivation of the olive tree and the grapevine, continued into the Cretan Bronze Age, also known as the Minoan period, which began about 3000 B.C. Archaeological evidence from the Prepalatial settlement at Phournou Koryphi, Myrtos, in East Crete (Early Minoan II, ca. 2600–2300 B.C.) demonstrates that the inhabitants were involved in the mixed cultivation of cereals, pulses, vines, and olive trees, as well as in animal husbandry. The plough had gradually supplemented the pickaxe. The importance to the Minoans of the olive tree, which produced that most precious of commodities, olive oil, is demonstrated by numerous depictions and by its association with religious belief and worship (fig. 1; see cat. no. 157). The introduction into the Cretan diet of olive oil, wine, and honey—all of which belong to a different class of foodstuffs than cereals, pulses, and meat—marked the beginnings of Cretan gastronomy. No longer was food merely a necessity for survival; now it had become a matter of the pleasure induced by variety in diet and the satisfaction of superior gastronomic tastes.

About 2000 B.C., contacts increased between the Minoans and Egypt, Syria, and Mesopotamia. As the Cretan economy developed through commerce, prosperity came to the island. Economic development, together with regional self-sufficiency and even abundance, led to the emergence of local administrative centers where goods were redistributed and subsequently made available to the populace. With the older neighboring civilizations as a model, a new economic and political system emerged, and the first palaces were built, about 1900 B.C. (Middle Minoan IB). The agricultural products exported from the Cretan palaces to Egypt naturally included olive oil, wine, herbs, spices, and aromatic oils. Sheep and goats were still the most common livestock, although pigs and cattle were also abundant. We also know that snails and seafood—fish and shellfish—supplemented the Minoan diet (see cat. no. 91). In fact, the presence of fish in the island's interior (Monastiraki, Amari) is further proof that the Cretans of the Protopalatial period (ca. 1900–1700 B.C.) knew how to preserve foodstuffs. The cultivation and domestication of other species had little effect on the consumption of fish, shellfish, and wild greens over the centuries.

The Neopalatial period (ca. 1700–1450 B.C.) saw a real explosion in the palatial production of olive oil and wine, with the construction of special installations (presses) and the emergence of the stirrup jar, a peculiar type of vase used for the transportation and exchange of liquids (see cat. no. 33). The economy remained centralized during the Achaean domination in Crete (after about 1450 B.C.) and was based on agriculture, animal husbandry, metallurgy, perfumery, leather dressing, and weaving. Pulses remained an important staple food throughout the Late Bronze Age, together with

Fig. 1. Olive tree fresco fragments. Palace at Knossos (ca. 1600–1450 B.C.). Herakleion Archaeological Museum.

wheat, olives, and grapes. The growing diversity of fine-tasting and aromatic varietals contributed to the increased value of wine.

The light and balanced structure of the Cretan diet, which relied primarily on wild plants, olive oil, pulses, wine, fruit, cereals, bulbs, herbs, honey, meat, dairy, and fish, remained virtually unchanged for about five thousand years, until the Middle Ages and the modern era, when exotic foodstuffs were imported from abroad. To this day, the Cretan environment and culture have encouraged all three forms of procuring nourishment: the collection of wild species, the domestication of species through cultivation and breeding, and the addition of species through importation.

Olive oil and aromatic herbs made Cretan food richer, tastier, healthier, and more enjoyable. At the same time, both were vital in another area that was essential for survival—the manufacture of aromatic products and healing remedies. The use of aromatic and pharmaceutical oils for cleansing and beautifying the body and for treating various ailments, which originated in Mesopotamia and Egypt during the third millennium B.C., was widespread in the eastern Mediterranean during the Bronze Age (fig. 2). Documents in

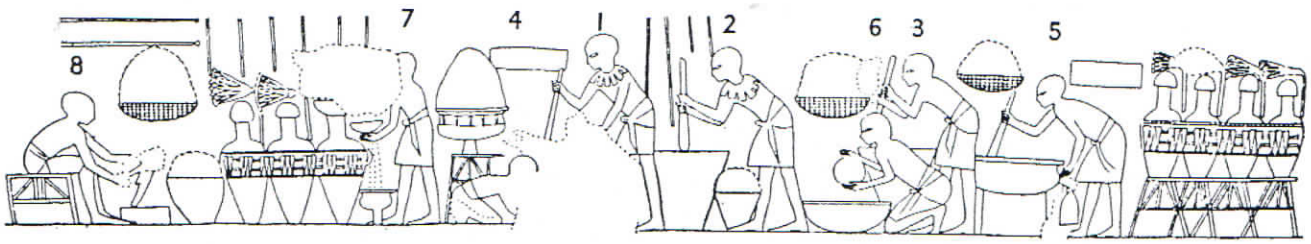

FIGURE 190—*An ointment-compounder's workshop. Three assistants (1, 2, 3) crush dried herbs or olives with pestle and mortar. The man crouching (4) is possibly grinding further ingredients on a quern. The mixture is added to the bowl of molten fat and stirred (5). On cooling, it is shaped into balls (6). The seven jars, decorated with flowers, probably contain spiced wine, a useful solvent because of its alcohol-content. An assistant (7) is siphoning wine out of one of them and filtering it into a bowl. The man on the extreme left (8), shaping a piece of wood with an adze, is perhaps the overseer. A bowl heaped with the unguents that have been made rests on a table above the crouching figure. From a tomb at Thebes, Egypt.* c 1500 B.C.

Fig. 2. Perfume workshop in ancient Egypt (Singer-Holmyard-Hall 1954, fig. 190). By Permission of Oxford University Press.

cuneiform script include aromatic oil among the three indispensable commodities of human existence, together with food and dress. According to Eastern literary sources, not even the gods could resist perfumes. With its prolonged sunshine and mild climate, Crete was famous for its wealth of aromatic plants, the most important of which were thyme, "mountain tea" or "malotira" (*Sideritis syriaca* of the *Lamiaceae* family), sage, dittany, bay, myrtle, marjoram, oregano, mint or "fliskouni" (*Mentha pulegium*), broom, and rockrose (*Cistus creticus L.*, also known as "ladania" or "agissaros"; its dry exudation is called ladanum) (figs. 3, 7; see chap. 6, fig. 4 and cat. no. 158). These plants make Crete a truly fragrant island, full of colors and perfumes. Moreover, many Cretan herbs contain carbamates, a powerful bactericidal substance.

Very early on, the Minoans realized the potential of these plants in daily life and spent much of their time collecting them. However, because the preparation of herbs was a long and costly process, the manufacture of aromatic oils was a luxury industry and was probably not established until after the development of social stratification (see cat. nos. 94–96). The Minoan palaces controlled the *aleiphazooi* (perfume makers), and many perfumeries probably belonged to the palaces. Traces of such an establishment were identified, for example, during the excavations of the palace of Kato Zakros which was destroyed in approximately 1450 B.C. The export trade in these products was a very valuable source of income from the outset, and we believe that a large part of the wealth that contributed to the construction of the first palaces on Crete came from the trade in such luxury goods as aromatic oils. According to Paul Faure, the Europe of perfumes is the daughter of Crete: "Europe begins in Crete. Or rather, it is in Crete that, towards the end of the 3rd millennium B.C., a kind of savoir-faire and savoir-vivre appears which, little by little, reaches the countries of the north Mediterranean basin and expands as far as the North Sea and even the Baltic during the Pax Romana."

The production and use of aromatic oils and ointments, which were so widespread in Crete, subsequently reached the Mycenaean centers as a palatial monopoly. The Mycenaeans learned the art of perfume making from the Minoans: "Olive oil, the most noble of all oils, appears to have been almost a monopoly, first of the Minoan and then of the Mycenaean civilization" (Spyridon Marinatos).

To sum up, the olive tree, with its various and precious properties, has always been the most important source of diet, therapy, cleanliness, lighting, and heating for the inhabitants of the Mediterranean basin, to such an extent that we may speak of a "civilization of the olive," with all of the material and symbolic significance that this term implies.

Archaeological Evidence

Information about the foodstuffs and the dietary habits of the Minoans is drawn either directly from preserved traces of foods or indirectly from objects that relate to their production, processing, and consumption, such as representations in art (including wall paintings, larnakes, and painted vases) and, above all, written sources (Cretan Hieroglyphic, Linear A and B tablets, and Egyptian papyri), which provide invaluable historical evidence.

The animal remains collected during excavation are inorganic (bones and horns). The vegetal remains are usually restricted to seeds, grains, and fruit, which had been either in storage and carbonized by a chance fire (fig. 4) or had been placed near a hearth or preserved through other special circumstances. By contrast, edible plants such as vegetables and flowers, which are rich in carbohydrates and decay immediately, have not been preserved, nor, of course, have liquid goods.

Fig. 3.
Cistus creticus,
Crocus cartwrightianus
and *Iris cretica*.

Fig. 4. Store room in House I, destroyed by fire. Greek Swedish Excavation, Kastelli Hill, Khania (ca. 1450 B.C.).

Remarkably, olives were found practically untouched by time, their flesh fully preserved, inside a well at the Kato Zakros palace (ca. 1450 B.C.). A cooking pot of approximately the same date, excavated at the Kastelli hill, Khania, contained charred grass peas (*Lathyrus sativus/cicera L.*), broad beans (*Vicia faba*), and lentils (*Lens esculentus L.*) (see cat. no. 92). The earliest evidence for the drying of figs (*Ficus carica*) in Minoan Crete comes from the excavation of a farmstead of the Late Minoan IIIB period (ca. 1300–1200 B.C.) near Sternes, Akrotiri (see cat. no. 93). At both Kastelli and Sternes, the buildings were destroyed by fire, which carbonized and thus preserved the grains and fruit.

Archaeological finds of this kind are first mentioned in 1878, during excavations at Knossos, where stored beans and peas were discovered. The workmen recognized the beans as *koukia misiriotika*, a type of broad bean imported at the time from Egypt. Early excavation reports also mention "grains of wheat or some other cereal" found in the Kamares cave, near Phaistos. As early as 1935, Marinatos presented the first results of analyses on vegetal remains that he had collected from Minoan excavations, and Professor Fritz Netolitzky at Czernovitz has subsequently studied: wheat (*Triticum compactum var. antiquorum Heer*), barley (*Hordeum vulgare subsp. hexastichumvulgare subsp. hexastichum*), broad beans (*Vicia faba var. minor Beck*), lentils (*Lens culinaris Med.*), peas (*Pisum sativum L.*), vetch (*Vicia ervilia sive Ervum ervilia L.*), figs (*Ficus carica*), and olives (*Olea europaea*). An impressive recent discovery comes from the palatial complex at Archanes, where in 2000 the excavators Yiannis and Efi Sakellarakis discovered a large number of pithoi and vases, the contents of which were probably related to aromatic oils and were preserved by the excessive temperatures produced when the building burned down.

Today, our knowledge of Minoan diet is greatly enriched through the development of archaeobotany, zooarchaeology, and physical anthropology, even including ancient DNA studies, and also through the contribution of chemistry in the study of the remains of substances contained inside pottery vessels and the proteins identified in ancient human bones. Thus, aspects of the human diet unknown until recently have begun to unfold.

Archaeobotany studies bioarchaeological evidence—that is, both macroscopic (seeds and charcoal) and microscopic (pollen, phytoliths, i.e., silica plant cells) remains. Soil flotation has been especially useful in this study. The systematic collection of soil samples during the excavation of the Middle Minoan I Tzambakas House (ca. 2000–1900 B.C.) at Khamalevri, Rethymnon, allowed Anayia Sarpaki to identify a large number of crushed olive pips, which suggests that there was production of olive oil in the years directly before the establishment of the first palaces in Crete and that olive pips were used as fuel, probably for both heating and cooking. This also serves as solid evidence that the olive tree was intensively cultivated by that time.

Substances that have penetrated the fabric of pottery vessels can be identified through various methods of chemical analysis of organic remains (air and liquid chromatography, infrared spectrography, X-ray fluorescence, hydrochemical analysis). Thus, a new parameter needs to be added to the study of ancient pottery, which was hitherto limited to the examination of the shape, decoration, and dating of vases. Modern chemical analysis can now identify the contents of a

vase, allowing us to draw more accurate conclusions regarding its use. For example, a series of Middle Minoan IA vases (ca. 2000 B.C.) from the Bolanis site at Khamalevri, which dates to the years directly before the establishment of the first palaces, was analyzed as part of the European research program entitled "Flavours of the Minoans and the Mycenaeans." The results were very interesting. Five specimens contained traces of olive oil, iris oil, honey, and resin (see cat. no. 94), suggesting that the hitherto unidentified workshop at Bolanis was probably dedicated to the manufacture of aromatic oils (such as iris oil). Iris oil was an important component of aromatic and pharmaceutical preparations (mentioned by Theophrastus, Pliny, and Dioskourides) and is one of the most expensive substances used in the modern perfume industry. Further information on the manufacture of aromatic oils and ointments was collected by T. Brogan and A. Koh through the study and analysis of the so-called Vat Room in the Neopalatial Building C7 at Mochlos, Siteia (ca. 1600–1450 B.C.). Inside various simple and industrial clay vessels, apart from ample amounts of olive oil, were detected linalool, camphor, manoyl oxide, docosane, and ferulic acid, which suggests the use of plants such as coriander, artemisia, *Cistus creticus*, linden, and ferula. The study of the archaeological evidence revealed an industrial installation for the manufacture of aromatic oils and ointments in the east wing of Building C7 and thus added the Neopalatial settlement of Mochlos to the list of Minoan production and, possibly, exportation sites of these precious goods.

A pithos from the Early Minoan II settlement at Phournou Koryphi near Myrtos, Ierapetra (ca. 2600–2300 B.C.), contained crushed grape stems, skins, and pips, which constitute the earliest Aegean evidence for the pressing of grapes and, therefore, wine production. Chemical analysis of the pithoi from this excavation showed that the wine probably contained resin as a preservative and flavor, a widespread practice in the ancient world. Wine containing pine resin was reportedly identified in the Middle Minoan II (ca. 1800–1700) settlement at Monastiraki, Amari. There is also suspicion that pieces of oak were added to this wine or even that the wine was stored in charred oak barrels. Wine containing resin was also noted inside a large Late Minoan IIIB (ca. 1300–1200) stirrup jar from Kydonia, whereas a sixteenth-century tripod cooking pot contained wine mixed with resin and herbs. In a pithos store at Monastiraki, several jars contained the carbonized remains of grape bunches and pips, which may suggest, according to the excavators, the production through fermentation and subsequent distillation of *tsikoudia*. Wine containing terebinthine (*Pistacia atlantica*), a preservative with additional pharmaceutical and antiseptic properties, was identified inside the Middle Minoan II installation at Apodoulou, where there was also evidence for the consumption

Fig. 5. Excavation at Daskaloyannis Street, Khania. Part of the Neopalatial Complex (ca. 1600–1450 B.C.).

of beer made from barley. Beer may have been produced at Myrtos as early as Early Minoan II (ca. 2600–2300 B.C.). Arthur Evans was the first to suggest that the Minoans drank beer, as was the custom in neighboring Egypt.

The study of zooarchaeological remains from Neopalatial Kydonia (ca. 1600–1450) by D. Mylona showed that various animals (sheep, goats, cattle, wild goats, deer, a dog, and a bird), but mostly piglets, were sacrificed inside an urban, or palatial, sanctuary (fig. 5). Handleless conical cups, possibly containing a mixture of wine, barley, and mead, were also used for pouring libations in the same space (cf. cat. no. 221). The wealth of discoveries from a variety of periods and sites, both in Crete and on the Greek mainland, that combine all of three elements—animal bones, rhyta, and liquid residues—reinforces the possibility that similar potions were used in Minoan and Mycenaean religious rituals. This combination of elements was identified in such sacred and ritual

spaces as the sanctuary at Kydonia and the cemetery at Armenoi. If indeed the vases that produced these samples were used at the same time and for all of these items, we may have evidence for a mixed ritual drink, which recalls the Homeric *kykeon*, a mixture of wine, grated cheese, barley flour, and honey (*Iliad*, Λ 740). This drink was common until the third century B.C. Let us not forget that wine mixed with barley flour was used during the rituals of the Eleusinian mysteries. These two elements (*oinos* and *alphita*), which correspond to Dionysus and Demeter, the two great chthonic deities, reappear in Christian religion in the sacred chalice of the Eucharist.

The rich Minoan iconography suggests that animals and shellfish had both a dietary and a symbolic value. The participation of animals in religious practices, primarily through their sacrifice, is particularly obvious. Numerous animal figurines, mostly of clay, were offered at the Protopalatial peak sanctuaries and are linked to the development of agricultural and animal husbandry (see cat. nos. 185–188). A clay sealing of approximately 1450 B.C. from Kastelli hill at Khania depicts men milking sheep just as the modern inhabitants of the Cretan mountains do today (see chap. 7, fig. 2).

Information about the Minoan diet can also be inferred from food preparation installations (permanent and portable hearths and presses), the required tools (mortars, grinding stones, and obsidian blades), and vessels of stone, clay, and metal from various excavations. Wine and olive press installations (presses and vats) were identified in several sites, such as Vathypetro, Knossos, Phaistos, Kommos, and Zakros (see cat. nos. 87, 88). A variety of vessels, mostly of clay, were used in the preparation of food (tripod cooking pots; the most common type of cooking pot in Minoan Crete, and trays, plates, jugs, basins, mixing bowls, strainers, and mortars [see cat. nos. 89, 90]), its collection and transport (amphorae, stirrup jars, pots, jars, jugs, and juglets), decanting (buckets, rhyta, jugs, and juglets), storage jars (pithoi) (see cat. nos. 22, 23, 34–36), and consumption (cups, stemmed cups, plates, and bowls) The wealth and variety of these vessels suggest a rich diversification in the practical applications and dietary habits of the Minoan era. A great variety of the above mentioned vessels and tools are included in volume one of this exhibition catalogue.

Written Sources

The contents and ideograms of the Linear B archives (believed to be the first transcription of the Greek language) (see cat. no. 107a–b) the corresponding Linear A tablets (see cat. nos. 101a–b, 102a–b), as well as the Cretan system of hieroglyphs, provide evidence for the existence of the following foodstuffs in the Minoan diet: olive oil (*e-ra-wo*), olives (*e-ra-wa*), grapes, wine, figs (*su-za*), wheat (*si-to*), barley,

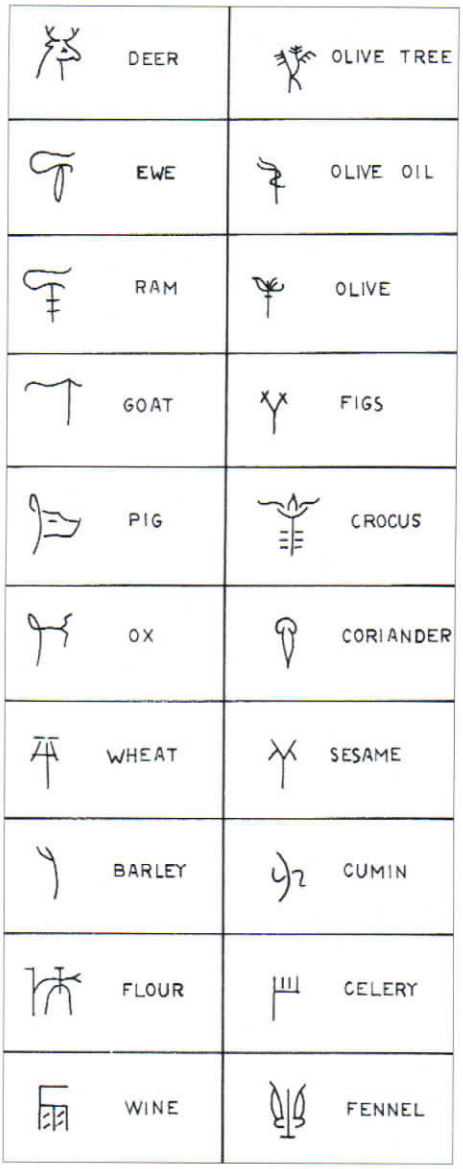

Fig. 6. Ideograms of the Linear A and B archives for animals and foodstuffs.

honey (*me-ri*), vinegar or must (*de-re-u-ko*: γλεύκος), flour (*a-re-ro*), and cheese (*tu-ro*). Some of these goods are expressed only by their ideograms (fig. 6). The ideogram for the olive tree is recognizable, as is that for the olive (depicted as the flower of the olive tree). The ideogram for olive oil, however, is different. The ideogram for wine is particularly characteristic, as it represents the way in which the vine was cultivated, recalling the Egyptian hieroglyph for wine and showing schematically a trellised vine. Many Knossian tablets mention herds of sheep, amounting to over a hundred thousand animals, scattered throughout Crete and bred primarily for their wool. The tablets also mention other species, such as goats, cattle, and pigs.

The tablets mention the collection, disposition, and orderly storage of animals, products, and textiles, thus providing valuable insights into how the Creto-Mycenaean administration functioned. They deal, however, mostly with

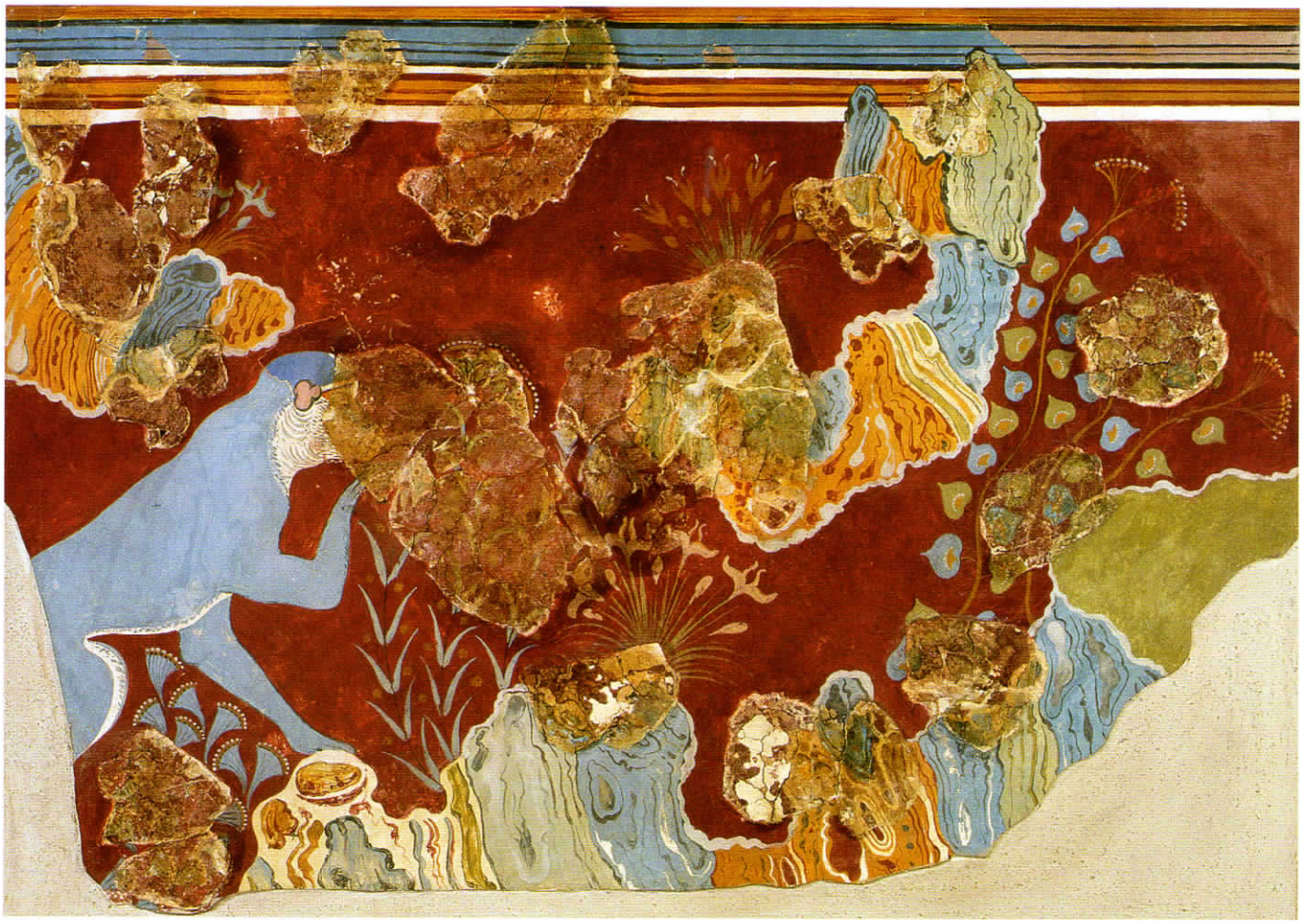

Fig. 7. Reconstructed wall painting depicting a blue monkey in a rocky landscape collecting flowers or stealing eggs. Knossos, House of the Frescoes (ca. 1525/1500 B.C.). Herakleion Archaeological Museum.

expensive foodstuffs and with life within the sanctuaries and palaces, where the plump, well-dressed individuals pictured in wall paintings lived, rather than with the daily life of simple folk. For example, the numerous Linear B tablets of the *Fh*, *Fp*, and *Fs* series from the Knossos palace record quantities of goods entering the palace storerooms intended for sanctuaries, deities, and priests, or offered in exchange for the work of craftsmen or workmen. This biased picture usually applies to the finds from impressive palaces and public buildings, whereas it is the modest settlement and the simple house that provides information about the diet of most of the population during any given period in antiquity.

The recent study of a group of sealings from Thebes provides evidence for celebrations and symposia in the Mycenaean world, with sacrifices to the gods, forerunners of the sacrifices of Classical Greek antiquity. The seals mention the importation and, therefore, consumption of goats, sheep, cattle, and pigs. The tablets of the *Un* series from Pylos also refer to donations of large numbers of animals, mostly pigs, and of wine, aromatic oil, and honey to the gods during a festival. Related study of the Knossian tablets leads to the conclusion that similar festive cycles existed in the Minoan world and took place in the palatial and rural sanctuaries. These celebrations provided the opportunity for communication and the expression of ideas and sentiments but also allowed the palaces to demonstrate their prestige through the consumption of luxury foodstuffs in precious vessels. The daily diet of the economically weaker classes was undoubtedly more limited and based primarily on cereals and pulses, with some vegetables and fruit and very little meat.

The aromatic and pharmaceutical substances mentioned in the tablets were usually intended to flavor oil and to give it healing, antiseptic, and antioxidant properties. It seems, in fact, that the olive oil mentioned very often came from wild olive trees (*Olea europea oleaster*) and was usually associated with aromatic substances. The ideogram for the olive tree is often combined with syllabograms with abbreviated notations to indicate particular aromatic oils. On the tablets, oils are also associated with the chlareis (*ka-ra-re-we*, χλαρεύς, *chlareus*), or stirrup jars, suggesting that these were used to store and transport oil and to a lesser extent wine. The stirrup jar's unusual shape, with its narrow spout for the safe decanting of its liquid contents, further supports this hypothesis (see cat. nos. 33, 41, 97, 108).

The study of tablets from Knossos (14th century B.C.) and Pylos (end of 13th century) demonstrates that the ingredients and fabrication process of Creto-Mycenaean perfumes are very similar to those mentioned in the works of Theophrastes (*De Odoribus*), Dioskourides (*De Materia Medica* 1, 52–76), and Pliny (*Naturalis Historia* XIII, 4–19). A tablet from Pylos (*Un* 267) reports that the aleiphazoos, or perfume maker, Thyestes is given aromatic ingredients (*thyea*), which include coriander, sedge, wine, honey, and *wi-ri-za*, or iris root. Of course, the list of plants known to us today is minimal, since very few written records, usually on clay tablets, survive. Some plants may have been cultivated in gardens for a small industry that manufactured perfumes, medicine, and ointments, usually from resins. The tablets mention the *ko-ri-ja-do-no* (coriander), *ku-mi-no* (cumin), *ka-da-mi-ja* (cardamon), *mi-ta* (mint), *ma-ra-tu-wo* (fennel), *se-ri-no* (celery), *ku-pa-ro* (sedge), *ka-na-ko* (safflower), *pa-ko-we* (adj. sphakoen; sage), *ko-ro-ki-no* (adj. *krokinon*; crocus/saffron), *wo-do-we* (adj. *rhodoen*; rose), *ki-ta-no* (tentatively rockrose or samphire), *wi-ri-za* (tentatively iris root) (figs. 3, 7; see chap. 6, fig. 4), *ko-no or ko-i-no* (tentatively terebinth), *po-ni-ki-jo*, (tentatively *Alkanna tinctoria*, or dyer's alkanet) and *sa-sa-ma* (tentatively sesame). Some are mentioned only at Knossos (crocus and dyer's alkanet) (fig. 7), others only at Mycenae (safflower, mint, and cumin). Some (coriander, fennel, and cumin) had multiple uses; their leaves served as an aromatic herb and their seeds as spices. The names on the tablets refer to different uses and parts of the plants: aromatic oils or other liquids, seeds, powders, or ointments.

The existence, as early as about 2000 B.C. of a developed perfume and pharmaceutical industry in Crete is not paradoxical. An Egyptian papyrus from Leiden (admonitions by *Ipuwer* 3), which dates to Dynasty 19 or 20 (13th–12th century B.C.) but is probably a copy from the end of the Old Kingdom (2200 B.C.), laments the interruption of contacts between Egypt and the land of the Keftiu (Crete), whence some exotic produce, possibly aromatic goods, was imported. The Ebers papyrus (1550 B.C.), also from Egypt, describes a cure for constipation and mentions an unknown plant, "which resembles the broad beans from the land of the Keftiu." Crete and Egypt undoubtedly exchanged recipes for remedies, but more information exists on the transmission of Minoan knowledge and practices to Egypt. Egypt probably exported readymade pharmaceuticals. Opium, one of the most important and powerful ancient medicines, was known in Minoan Crete at least from Late Minoan III (ca. 1400–1100 B.C.). A powerful narcotic substance, untreated opium also had excellent pain-relieving and soothing properties. A terracotta figurine from Gazi, Herakleion, depicts a female deity crowned with poppy-heads (fig. 8).

Two ancient Greek myths relate to Minoan medicine and herbs. The first myth refers to Glaukos, son of King Minos, who drowned in a jar of honey but was revived with a magical herb, like the Mesopotamian hero Gilgamesh. Mentioned by Apollodorus, the second myth concerns Prokris, the daughter of Erechtheus, who used a medicinal herb to protect herself from the advances of King Minos.

Fig. 8.
A female deity crowned with poppy heads. Clay idol from Gazi, Herakleion (ca. 1200 B.C.). Herakleion Archaeological Museum.

Aromatic oils and ointments were used as precious offerings to the gods but also to the deceased. They were placed in small vases as grave gifts or burned as incense in special incense burners. The association of perfumes with the gods and the dead continued in the Homeric poems, which, to a great extent, refer to the Mycenaean world.

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CHAPTER 15

MORBIDITY AND MEDICAL PRACTICE IN MINOAN CRETE

Photini J. P. McGeorge

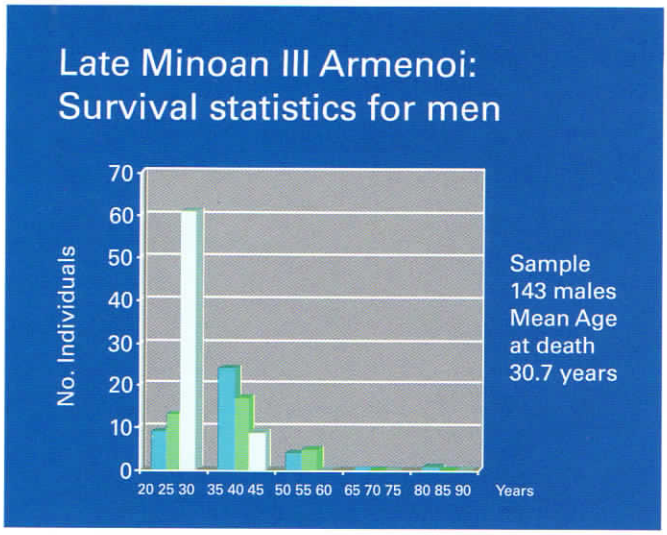
Attempts to breathe life back into Minoan civilization—its art and architecture—are futile without a consideration of the actual physical remains of the people who created it. Studies of Minoan skeletons, until recently not always retained for study, animate the canvas. They enable one to examine evidence for morbidity, which, *sensu stricto*, is a measure of the frequency of insults from diseases, or *a* disease, over a specific period of time. Morbidity is influenced by such factors as the standard of living: housing, nutrition, hygiene, and medical treatment.

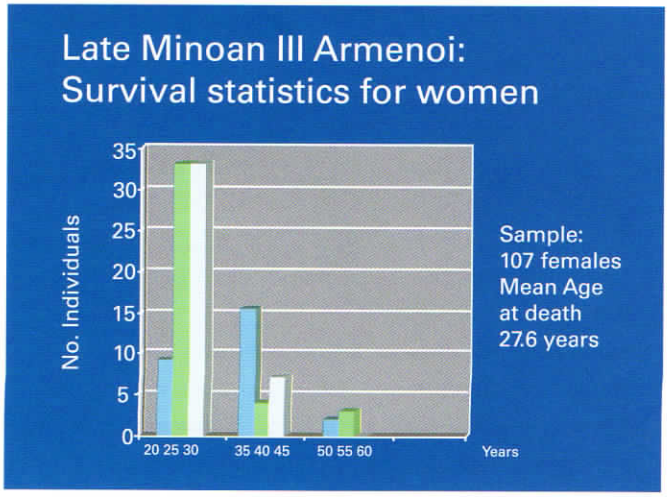
The first palace at Knossos was built on the detritus of five thousand years of earlier settlement. It was an age of unparalleled prosperity, when trade flourished and resources were seemingly limitless. Certain achievements of Minoan society during this period are startlingly modern. The plumbing, cisterns, drainage, sanitation, bathing, paving stones, and spectator sports, to name a few, all elicit from us an assured response of admiration, because the lack of some of these amenities may be reminiscent of our recent past and sometimes even of the present. Yet despite some superficial resemblances, the people of Minoan times were living under conditions quite different from those of modern society.

Longevity

One very important difference in contemporary society is the array of medicines—especially antibiotics—diagnostic technology, and modern surgical techniques that have changed the parameters of life expectancy in Western society in the twentieth century, so that many people now live into their seventies, eighties, and even nineties. Available evidence for the Minoan period shows that even though the Minoans practiced therapeutic medicine and surgery, most men and women did not survive beyond their thirties. In other words, the life span of most Minoan inhabitants of Crete was not even half that of a modern Cretan. There were, of course, exceptions—some people who lived into their forties and fifties and occasional examples of people who lived into their eighties—but the majority of those who reached adulthood died in their twenties and thirties.

Below are histograms of a large sample of male and female skeletons excavated at the Late Minoan cemetery of Armenoi (ca. 1400–1200 B.C.), near Rethymnon, illustrating the survival statistics for adults.

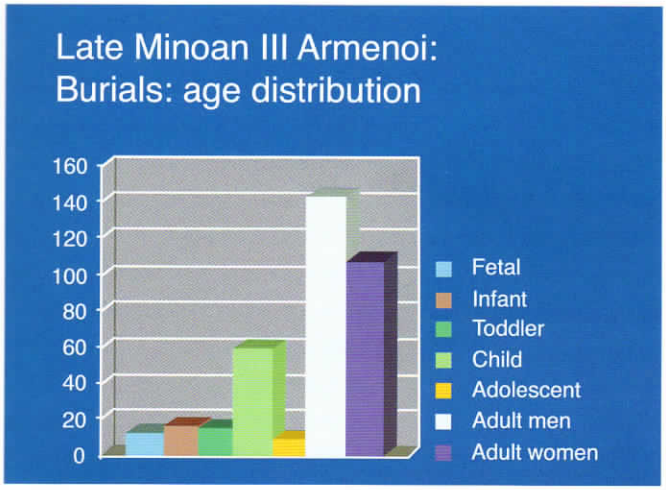


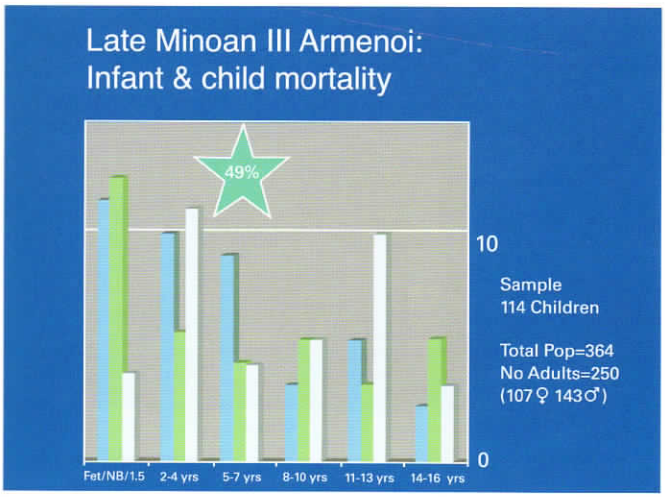


Women died earlier than men in Minoan times, another striking contrast with modern Europe, where women usually outlive their male counterparts by three to seven years. Most Minoan men died at about thirty or thirty-one, whereas the mean age at death of adult women was about twenty-seven. Many women died during the stage of life that coincides with peak reproductive activity, indicating that the causes of early mortality in the female population must have been partly related to the dangers and complications of pregnancy and childbirth. Teenage pregnancy was clearly a fact of life in Minoan times. The young, in addition to having immature pelvises, have a higher incidence of anemia and toxemia, which contribute to higher obstetric morbidity. High maternal mortality may have been a result of the combination of high fertility, or frequent pregnancy, which appears to have been the case, and the high risk of dying with each pregnancy.

Despite the short life span, the population increased steadily through the two millennia that encompass the Bronze Age. What was a sparsely populated island at the beginning of the Bronze Age, with small communities whose diverse burial customs probably reflect different religious beliefs and assorted geographical origins, gradually melded into a more unified cultural entity. One scholar estimates that the Early Bronze Age population grew from 75,000 to almost 250,000 inhabitants at the height of Minoan civilization. Others extrapolate a population of 217,000 for palatial Crete based on the amount of easily cultivable land.

The histograms below show the proportion of children to adults in the same cemetery and indicate that about half the children died in early infancy or in childhood before the age of five.





The causes are obvious, although they are not usually verifiable, since the duration of a disease would have been quite brief and in most cases would not leave traces on bone, normally the only evidence available. Leading causes of death in children under five would have been pneumonia, diarrheal diseases caused by tainted food or water or by bacteria from thumb-sucking, malaria spread by mosquitoes, measles and other childhood ailments, and tuberculosis. These diseases remain the major killers of children under the age of five in the less developed nations of the world today.

Occasionally, an unborn fetus has been discovered within a mother's pelvis, whereas other fetuses, possibly stillborn or premature, and full-term infants who died shortly after birth, because they did not thrive or succumbed to some illness or birth injury, were probably not always buried in cemeteries. There are a few examples of infants buried under the floors of houses, which appears to be an age-old widespread custom not confined to Crete. Older children, of three or four, were sometimes buried with their toys and sometimes with their feeders, like the one from Khania illustrated in figure 1.

The timing of weaning is culturally defined and can be critical to the survival of a population's offspring. The age at which mothers stopped nursing children in the Minoan period is, of course, an unknown parameter, but it could be detected through bone chemistry analyses, since nursing infants have 2 to 4 percent higher nitrogen stable isotope values than newborn infants or adults. Weaning is a dangerous period for infants and young children, because they lose the protection of passive immunity from their mother's milk, whereas foods such as grain gruel are difficult to digest and may not meet all their nutritional requirements. At the same time, the children are exposed to new infectious agents in these foods.

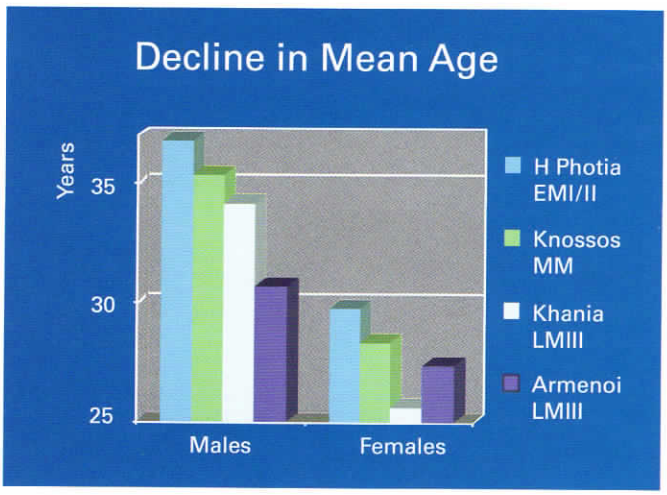
Fig. 1. Thelastron/feeder buried with a three-year old child in Tomb 12 at Palama Street, Khania (ca. 1350–1300 B.C.). Khania Archaeological Museum.

Biosocial Adaptation

Despite these dire statistics, the undeniable growth of the Minoan population is a measure of the success with which humans adapted to their island, which was richly endowed with numerous animal and plant species; there are still more than a hundred indigenous plants. However, sea-level changes, tectonic movements, climate changes (the present climate is roughly equivalent to a move of 500 kilometers south), and human agency are believed to have brought about a significant transformation of the physical environment enjoyed by the Minoan population. Animals such as red and roe deer, enchantingly portrayed by Minoan artists, once populated a more tree-filled landscape, but the deer species that formed a part of the Minoan diet had disappeared by the Byzantine period. Certain trees that are well-known sources of fodder, such as hornbeam, hazel, elm, and poplar, began to decline in the Final Neolithic, and lime had disappeared entirely by the end of the Early Bronze Age, while others such as the deciduous oak became much rarer. Tree cover was gradually diminished by clearance for cultivation or fodder, by burning for pasturage or fuel, and by the use of wood as raw material for constructing buildings, ships, tools, or artifacts and was replaced by the now typical vegetation of maquis, phrygana, and steppe terrain.

The Minoans exploited a range of herd animals, including cattle (see cat. no. 225 for an exuberant portrait of a bovid), pigs, sheep, and goats, introduced to the island by Neolithic settlers. These species were especially valuable, not only as food sources for meat, fat, milk, and such dairy products as yogurt, cheese, and butter, but also for their teeth, bones, sinews, pelts, wool, and leather. A thriving trade in leather goods developed. In Syria, for example, texts reveal that sandals were exported from Crete to Mari in the eighteenth century B.C., while Linear B tablets record various leather-working occupations, such as male and female stitchers of reins, halters, and headbands. The Knossos tablets show how the wool textile industry was of major importance, with more than thirty different occupations involved in all stages of manufacture supervised by a palace-based administration (see chap. 8, fig. 10a–b). Society gradually became more complex and increasingly layered.

Fish and fowl, including pheasant and partridge (see cat. no. 158), were also eaten. While some ceramic residue analyses have suggested that fish was not an important part of the diet, and the "fragility factor" of fish remains contributes to this impression, it is highly unlikely that marine resources were not exploited. Communities that lived next to the sea would certainly have relied on fish as a staple in their diet. Fishing requires only three to seven hours per week for a person to subsist. The work is a far less onerous and less precarious than animal husbandry or agriculture, and the food is richer in flavor and nutrition. The Late Minoan vase painters of the Marine Style depict many kinds of fish and reveal the Minoans' familiarity and continuing fascination with the sea and sea creatures (see cat. nos. 31–34, 237). A great variety of fish remains has been recovered in recent excavations at Palaikastro and Mochlos by water-sieving the deposits. The fish are mainly inshore species, such as red bream, blue spotted bream, red mullet, bogue, picarel, grouper, merou, and so on, which are fished in coastal waters and were evidently as popular then as they are today. Another very recent study of fish remains from Building Π at Malia identified a similar range of fish species that live in coastal waters up to 100 meters deep. Moreover, eels, usually found in fresh water and available in the rainy season, were also identified, as well as eight varieties of bivalves and gastropods that live in rocky pools and marshes near the seashore. Shellfish can be cooked in steam within two or three minutes. It is highly unlikely, then, that the Minoans did not exploit rich aquatic resources that were easily accessible and provided flavorsome, nutritious food that could be simply and rapidly prepared. Net-mending instruments and pictorial representations of net fishing also suggest that the sea was an important source of food, especially for communities located near the shore. Harpoons and fishhooks found in Early Minoan graves at Haghia Photia and elsewhere were used for fishing too. A barbed trident (see cat. no. 66), ostensibly a fishing tool, was recently discovered in a Late Minoan IB building at Mochlos (ca. 1525/1500–1450 B.C.).



There is archaeobotanical evidence for the cultivation or exploitation of many plants: olives probably native to Crete were cultivated in the Late Neolithic, as were grapes, figs, pears, almonds, pistachios, various greens (*chorta*) for salad, cereals (mainly wheat), and legumes, such as beans and lentils. Herbs and aromatic plants were used to produce perfumed oils, which the Minoans developed into a profitable overseas trade lasting throughout the Bronze Age. Sites where perfumed-oil containers have been found are sprinkled over

the map of the eastern Mediterranean. The earliest attestation of this trade, from an Egyptian text, dates to the Early Minoan. The Egyptians imported these oils for embalming as well as for medicinal and hygiene purposes.

Paradoxically, with the increased density of population over time, it appears that the mean age at death of males and females actually *decreased* rather than increased, graphically illustrated by the histogram above. The mean age of males fell from about thirty-seven in the Early Minoan to thirty-one years in the Late Minoan, while that of females fell from about thirty to twenty-seven years or less. In towns and villages, larger and denser concentrations of populations, in conjunction with poor hygiene conditions, would have been ideal hosts for epidemic diseases such as cholera and other communicable illnesses. Highly contagious diseases, such as tuberculosis (before antibiotics, mortality from tuberculosis was 50 percent), and chronic diseases, such as brucellosis, which must have taken a heavy toll on the population, were transmitted to humans by farm animals, either through airborne transmission, contact with infected animals, or the ingesting of tainted milk or dairy products.

Diminished Lifespan, Dietary Factors, and Dental Disease

Diet and nutritional factors play a vital and determinative role in susceptibility to dental disease and to diseases in general and these, in turn, ultimately influence life span. In the Minoan Bronze Age, the decreased life span of people observed through time is paralleled by an increase in dental disease. Women, whose age at death is consistently lower than that of men, also experienced a higher incidence of dental disease than men. At Early Minoan Haghia Photia, where the highest mean age at death has been observed, the population also had a relatively low incidence of dental disease and must have had access to a much more varied and nutritious diet of fresh food, probably including fish, from consistently available sources than did later populations. It is probable that numerically larger groups with more complex social organization became increasingly dependent on storable foods, such as beans and lentils. A characteristic of these foodstuffs is that they have a high carbohydrate content, which is one of the main factors implicated in dental disease.

This hypothesis of deterioration in quality of diet is also based on evidence for dental disease. Although there is only a small sample from Early Minoan Haghia Photia (106 teeth/sockets examined), caries appears to have nearly as high a frequency there (8.3 percent compared to 9 percent) as at Middle Minoan Knossos (1,352 teeth/sockets examined), but antemortem tooth loss is far lower (1.9 percent compared to 13.7 percent). In the Late Minoan at Armenoi (4,074 teeth/sockets examined) both caries (17.7 percent) and antemortem tooth loss (28.6 percent) are roughly twice as high as at Knossos. In the Late Minoan at Khania (282 teeth/sockets examined) caries incidence is 36.9 percent and antemortem tooth loss 13.1 percent.

The mean age of men and women at Haghia Photia compared with Knossos shows a decrease of 1.5 years, which, in proportion to the life span of those times, is significantly lower. This downward trend appears with even greater clarity in the samples from Armenoi and Khania. At Armenoi the mean age at death was the lowest for men, 30.7 years. These figures must have been influenced by the health problems posed to people living and working in close contact with animals and participating in the infection chain, which would have led to greater exposure to diseases shunted in both directions. At Khania the average ages of men and women declined by 1.25 and 2.28 years, respectively. The mean age for women, 25.6 years, was the lowest of all. This sample is dated to the time following the establishment of a Mycenaean military presence on the island; recent excavations of warrior graves in the Khania cemeteries indicate that by Late Minoan III Khania was a town that presumably had a garrison attached to it, while other evidence indicates it was a commercial center with extensive overseas contacts, a place where people of multiple "ethnicities"—different religions, cultures, languages, scripts and cuisines—mingled.

Overall, the decrease in life span must have been influenced not only by dietary factors and problems of access to adequate sources of fresh nutritious foods but also by the density of the urban population. A densely populated setting would provide a larger number of hosts—and therefore greater potential for the spread of epidemic diseases—and, of course, a greater vulnerability to deprivations caused by famine in times of crop failure or by social disorganization following natural disasters, such as earthquakes or the volcanic eruption of Thera. Finally, another influencing factor may have been vulnerability to new pathogens introduced from overseas.

Evidence of Disease and Medical Practice

According to the Persians, there were three kinds of healers in Greece before the first millennium B.C.: those who cured with plants, those who used magic words, and those who used the knife. Indeed, there is evidence to confirm that the Minoans used all three methods. The export of medicinal oils to Egypt is documented in the Ebers Papyrus and corroborated by ceramic finds of Minoan perfumed-oil jars throughout the eastern Mediterranean. There is also evidence in the London Medical Papyrus dated to about 1400 B.C. that the Egyptians, the most ancient civilized people in the Mediterranean, who were celebrated for their medical knowledge, used miracle-invoking religious incantations in

Fig. 2. Votives from the Traostalos and Petsofas peak sanctuaries.

the Minoan language to cure disease. (This is hardly surprising, since there are areas today where Christians and Muslims prefer religious incantations to conventional Western medicine.) Finally, we now have indisputable skeletal evidence that the Minoans practiced very advanced surgical techniques, as we shall see below.

The Greek word *i-ja-te* (doctor) is recorded on a Linear B tablet from Pylos, indicating that the profession existed in the thirteenth century B.C. From Crete there is evidence that allows us to infer the association of priests and priestesses (*i-je-re-ja*) with the curing of disease. Anathematic votives that portray limbs and parts of the human body obviously suffering from pathological conditions have been found at Middle Minoan sanctuaries on the loftiest mountain peaks (fig. 2). These are undoubtedly the prototypes of similar votives found in the Asclepeia in the Classical period and of the *tamata* of the Greek Orthodox Church today, which are supplications, or donations, in gratitude for cures. We may hypothesize that peak sanctuaries functioned in a similar way. It is possible that priests and priestesses exercised the function of healers by virtue of the divine authority invested in them. We must, however, turn to the skeletal evidence to verify the existence both of specific diseases and of surgeons who used the knife.

Not all diseases leave their imprint on skeletal remains, but studies of skeletal material from a large number of burials, though unevenly spread over time and space and representing only a fractional sample of the populations they are supposed to represent, do give at least some indication of the diseases people suffered from and how these were dealt with. The study of many thousands of bones from recent Greek-American excavations at the Early/Middle Minoan cave ossuary at Haghios Charalambos Lasithi is now under way and is providing a wealth of new data to complement earlier studies of material excavated in the 1970s and 1980s, when skeletons found in excavations had only just begun to be retained. In the Late Minoan cemetery at Armenoi, Rethymnon, the burials of 364 men, women, and children were studied; 6,325 bones were examined clinically; and 1,074 were examined radiologically for pathology. At Palama Street, Khania, there are about thirty burials. Any human remains from sites excavated before these almost invariably consist of a selection of the best-preserved crania.

Fig. 3. Healed fractures of tibia and fibula from Armenoi, Tomb 89.

Fractures and dislocations were fairly common, observed in 5.2 percent of the population at Armenoi (fig. 3). Among men the fractures involved predominantly legs, whereas among women fractures involved mostly arm bones. These were probably the result of accidents and occupational hazards and perhaps warfare or, in the case of women, beatings. Some of these fractures must have been reduced and immobilized, since they could not have healed otherwise. One imagines that treatments may have originated empirically, possibly by adopting the techniques used by shepherds in tending animals with broken limbs.

Post-traumatic arthritis affecting hip, knee, and particularly ankle joints appears to have been a common complaint in the Armenoi population. A few cases involved shoulder or elbow joints and vertebrae. In all probability, people's occupations caused recurrent injury to these particular joints. Injury to the ankle joints was far more frequent among men than women (a fact that is paralleled by the fracture data), perhaps as a result of walking or running over stony ground. Arthritis is a chronic disease, usually correlated with age, which affects one in five people in contemporary populations. In particular occupations, excessive use or weight-bearing on particular joints increases the likelihood of injury; for example, farmers are ten times more likely to suffer from osteoarthritis of the sacroiliac joint after ten years' work than people with sedentary occupations (figs. 4, 5).

In contrast, all but one of thirteen cases of osteoporosis affected women aged between twenty-three and fifty years. Most cases of osteoporosis were probably not menopausal, as they are today, but due to secondary causes. There was one man, aged about forty, with osteoporosis of vertebrae and a metatarsal, attributed to disuse atrophy. An inverse relationship between the calorific requirements of women as mothers and their calorific intake, or the kind of nourishment generally allotted to women, is in most cases the probable explanation for the dramatic contrast in the incidence of osteoporosis among the female population as compared to the male.

There are two cases of avitaminosis in children aged eight and six. The first perhaps resulted from a dietary lack of vitamin C, which was not as readily available then as it is today. Maternal milk is a source of vitamin C (5–7 mg per 100 ml) but would not have been an adequate source for children of poorly nourished mothers, even if the child was still nursing at that age. Poor calcium absorption caused by chronic sprue, which is characterized by malabsorption and intolerance to gluten, is a likely diagnosis in the case of the younger child, given the noticeable enamel hypoplasia or defects in the enamel of the child's permanent molars.

Evidence for infectious diseases of viral etiology includes one possible case of poliomyelitis and twenty cases of osteomyelitis caused by bacterial infections. There are two possible cases of brucellosis that had caused ankylosis of vertebrae through the fusion of the spinous processes and posterior half of the vertebral body. There are three strains of *Brucella*, but *Brucellosis melitensis* is the most common form in Greece.

Brucellosis is also known as undulant fever because it recurs in cycles or as "Cretan Fever" because of its frequency there. It is an occupational disease of people who are engaged in animal husbandry. It may be transmitted through the milk of cows, sheep, or goats and their products, such as yogurt or cheese; it is also carried by swine. The microorganisms attack tissues of the reticuloendothelial system, such as

Fig. 4. Clay hand from the Petsofas peak sanctuary next to a modern text book illustration of osteoarthritis.

Fig. 5. Knee and toe bones from Early/Middle Minoan Haghios Charalambos with arthritic changes.

Fig. 6. Fused lumbar vertebrae: possible case of brucellosis from Early/Middle Minoan Haghios Charalambos.

Fig. 7. Thoracic vertebra: possible case of tuberculosis, severe rarefaction of the vertebral body from Early/Middle Minoan Haghios Charalambos.

bone marrow, lymph nodes, liver, spleen, and kidneys. In the chronic form, symptoms of fever, weakness, aches, and pains may persist for months or years.

Contact with animals was probably responsible for tuberculosis, another serious infectious disease at Armenoi. *The remarkable number of fifteen cases of possible tuberculosis* suggests that it was the chief scourge of the population. Eleven of these cases affected people who were buried in four tombs—that is, members of the same family—emphasizing the highly contagious nature of this disease. It is a disease that has a long duration, with surges and remissions. It is highly debilitating and, in the absence of an effective treatment, is fatal in the long term. (Before the development of an effective therapy, vertebral tuberculosis developed during first decade of life in 50 to 70 percent of tuberculous children and usually appeared nine months to two years after the primary infection. In older individuals, although the disease was contracted early in life, immune response could subdue the bacillus Kochi and healing would occur.) This disease was known to physicians in the Classical era as *phthisis*, the wasting disease. Today, five different strains of tubercle bacilli have been described: two are pathogenic for man (fig. 7). The human strain causes lung tuberculosis, while the bovine variety causes tuberculosis of the bones. But TB may spread through the blood stream to bones from a primary lung infection in the advanced stages of its development. Consequently, it is not possible to know with certainty which mycobacterium caused the disease merely from examining bone changes.

At Armenoi there were a large number of individuals (>10 percent), both male (17) and female (9), with anatomical variations of the lumbar and sacrum—that is, both partial and complete sacralization of the fifth lumbar (uniting of the fifth lumbar to the sacrum), or lumbarization (separation) of the first sacral vertebra. It is probable that these variations would have been asymptomatic; they occur in 17 percent of the contemporary Greek population and are usually detected accidentally in radiographs. But it is possible in cases of neoarthrosis (lumbarization), that lumbago/sciatica was experienced when movements required hyperextension or lifting of heavy objects. Sacral spina bifida, which also could have been asymptomatic, may have been accompanied by a dermal cyst with a tuft of hairs and hairy pores, which could have exposed them to meningococcal or other viral infections.

There were several cases of possible congenital dislocation of the hip (CDH). Four cases were femurs with a short anatomical neck, a flat mushroom-shaped head, and exostoses on the surgical neck, one in conjunction with exostoses around the acetabulum, which was disproportionately large and suggestive of forward displacement of the hip. A fifth case, with exostoses within the acetabulum, was also suggestive of the possibility of CDH. In Greece today, congenital dislocation of the hip occupies a primary position among congenital deformities and affects the left femur three times more often than the right and females six to eight times more often than males; in Crete CDH has an endemic character; its occurrence at Armenoi may be indicative of an endogamous community.

There is a case of an adult male with a leftward displacement of the nasal diaphragm, perhaps due to a fall or knock, and enormously enlarged frontal sinuses.

There are two cases of hydrocephaly in children aged two and a half and three years. In both cases the X rays show a remarkable disproportion between the size of the facial and cerebral cranium and profound impressions of the cerebral cortex and arteries on the inner table, caused by intracranial pressure. In the first case a blockage of the aqueduct of the fourth ventricle due to a tumor is hypothesized; in the other case, a possible tumor (not necessarily malignant) may have resulted in hormone disturbances, defects of vision, and headaches.

There are two probable cases of Paget's disease from Early/Middle Minoan contexts. One is an example of a tibia with thickening and distortion of the compact cortical bone below the middle of the diaphysis. Disturbance of the direction of the bone trabeculae in relation to the force lines of the bone and zones of increased and decreased radiographic shadow are noted. This may be an osteogenic sarcoma or, more likely, Paget's disease, which usually affects individuals over forty and males more frequently than females in a ratio

Fig. 8. A femur from Haghios Charalambos with Paget's disease.

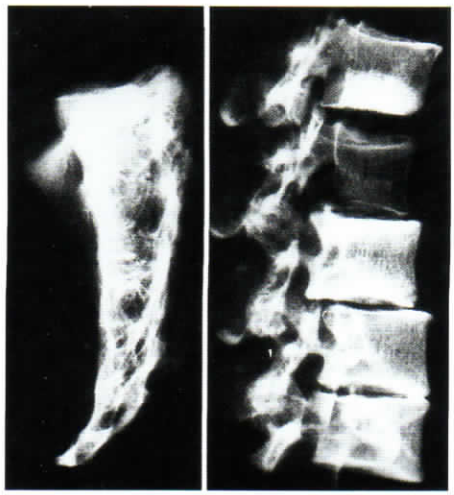


Fig. 9. Sacrum and lumbar vertebrae from Armenoi, Tomb 103 Δ.

of 4:3. Some studies have linked Paget's disease to cohabitation with domestic pets; it is quite probable that people sometimes sheltered with their herd animals, perhaps for practical purposes such as warmth.

From the recent excavations at Haghios Charalambos Cave, a femur with the distal end of the shaft significantly enlarged has a similar radiographic appearance (fig. 8). The internal structure of the bone has been altered: the cortex has been replaced by spongy bone that has expanded and destroyed the medullary cavity. There is coarsening of trabecular bone in the outer layers, while the outer surface of the bone is a mere skin of "compact" bone. In Paget's disease, bones of the axial skeleton are most often affected (for example, the sacrum in 57 percent of cases), whereas the femur is affected in 46 percent and the tibia in 11 percent of cases.

At Armenoi a forty-five-year-old man had a right ulna with a bulky distal diaphysis (bone shaft) enclosed in a thin layer of periosteum (outer fibrous layer of bone), which could be Paget's disease with a pathological fracture and secondary callus or an osteoblastic type of neoplasia (cancerous tumor)—for example, osteoblastic sarcoma. The compact bone cortex of his large tibia appears thicker in places and could be a metastasis of the ulna sarcoma. Metastases from the ulna to the vital organs would have caused his death.

There is one spectacular case of probable metastatic cancer to bone (fig. 9). The radiographic image of the sacrum of a middle-aged male burial has diffuse sclerosis, which could be the result of a metastasis to the bone of a malignant neoplasia or Paget's disease, which, as already mentioned, most often affects the axial skeleton. The lumbar vertebrae, particularly the last three but also half of the first lumbar, also appear dense. This suggests the hypothesis of metastatic(?) neoplasia. Practically any tumor, with the exception of the primary tumors of the central nervous system, may occasionally metastasize to bone, but this phenomenon is highly characteristic of cancers of the breast and prostate—from one half to two-thirds of these carcinomas metastasize to bones. The lumbar and sacral vertebrae together with the pelvic bones are usually the ones affected in carcinoma of the prostate. While it is true that most metastatic carcinomas cause bone destruction, pain, and pathological fracture, any cancer that destroys a considerable amount of bone may initiate osteoblastic reparative (bone growing/repairing) activity. This is particularly true of prostate cancer, which is often of the osteoblastic or scelerosing type. The osteoblastic response of a metastatic prostate tumor radiographically presents areas of opacification that are homogeneous but fuzzy in outline, as in the present case. This man probably had a painful end caused by prostate cancer.

Finally, at Armenoi, where there are several "warrior-type" burials, there are three cases of head injuries involving depressed fractures on the left parietal. The first case is that of a thirteen-year-old child with depressed fractures on the left parietal and frontal and a traumatic perforation of the roof of the left orbit, which may have been the portal of entry for bacteria causing the child's death. In the second case, a twenty-three-year-old woman has a shallow depression 10.6 millimeters in diameter on the left parietal. In the third case, a thirty-five-year-old man has a depression 16.2 millimeters in diameter on the left parietal; incidentally, he was buried in the same tomb as a warrior who had been literally hacked to pieces. In all three cases, blows to the left side of the head could have been inflicted at close range by a right-handed attacker; alternatively, they may have been caused by missiles, such as sling-stones.

There are about fifteen cases of head injury among the Early Minoan III–Middle Minoan IIB (ca. 2300–1700 B.C.) burials at Haghios Charalambos. The casualties were mostly men; a few women and one child are represented. Those with multiple injuries, such as the case illustrated in figure 10 cannot have been accidents but must have been acts of aggression. Lesions were caused by various weapons—one by a bladed weapon probably in hand-to-hand combat, another by a blunt weapon with a wooden handle—but most were small circular depressions, similar to those seen at Armenoi,

Fig. 10. Adult male skull with three traumas to the left side of his head.

Fig. 11. A frontal trephination with smooth beveled edge, next to a trauma.

which may have been caused by stones from a slingshot. Launched from a distance, they could impact a skull at a velocity of more than one hundred miles per hour. The symptoms resulting from such head injuries might range from simple headaches or blurred vision to paralysis of the limbs or the entire side of the body opposite whichever brain hemisphere sustained the pressure of a subdural hematoma caused by the injury, which it would have been imperative to relieve.

In fact, three of the crania from Haghios Charalambos bore evidence of skull trephination in conjunction with a head injury (fig. 11) and prove that surgeons in the nineteenth century B.C. were already practicing the protocols described in written sources dating to the third century B.C., although attributed to Hippocrates who lived and worked in the fifth and fourth centuries B.C.

From the Haghios Charalambos discoveries, it is clear that surgeons already knew when to avoid invasive surgery, as in the case of injuries to the temporal bone, since it could cause spasms. In one case, a very large area of the braincase had been removed yet, miraculously, the patient had survived (fig. 12). Without a doubt, the Minoans' knowledge of anatomy was far more profound than they have been given credit for until now. Surgeons knew that the brain floated in liquid and that it was important not to damage the meninges. Trephination was probably more commonplace than we imagine, as the physician or surgeon had none of the diagnostic techniques that we have today and thus was obliged to investigate directly, as delay could be fatal.

Conclusion

Morbidity in the Minoan population—how often people fell ill and from what causes—is unknowable in a contemporary statistical sense. On the one hand, we have only small and uneven samples of the population widely separated in time, and, on the other, only a small percentage of diseases in the population are due to illnesses that leave traces on bone. In other words, it is impossible to identify the large number of diseases that leave no traces on bone and may have afflicted the Minoans, causing illness or death on a huge scale. To give a historical illustration of the point, it is estimated that in the seventeenth century A.D., 11 percent of the world's population died of smallpox, an epidemic disease that leaves no diagnostic trace on bone. Actually, smallpox is believed to have existed in Egypt in the twelfth century B.C. and could have been one of many pathogens introduced to Crete from overseas. Thus it is not possible to obtain a true "disease profile" for the Minoan population.

Traces of pathology in bone may be nonspecific, or characteristic of more than one disease. For example, there is frequent evidence of porotic hyperostosis observed macroscopically on the cranial vault and in the roof of the orbits, characteristic of chronic and relatively serious anemias, such as thalassaemias or deficiency anemias. At Armenoi, such changes occurred in 83 percent of crania and 6.25 percent of orbits. Cranial vault lesions affected males (88 percent) more frequently than females (77 percent), but orbital lesions appeared twice as frequently in females (8.7 percent) as in males (4 percent). It must be borne in mind that similar changes to the bones of the skull occur with all anemias. In children such lesions may occur when the iron content of the diet is inadequate. A high frequency of iron deficiency anemia at this phase of bodily and physical growth is hardly surprising in Minoan times, since it is a serious problem today.

Can one make an assessment of morbidity using stress indicators? Radiographic screening of one hundred tibias (sixty-one men and thirty-nine women) for Harris Lines, or lines of arrested growth, which indicate nutritional deficiencies or febrile infectious diseases, revealed them in 88.5 percent of male and 82 percent of females. A repetition of insults was observed in 57 percent of individuals, whereas regular distances every two millimeters occurred in 40.8 percent of individuals. These lines of arrested growth, the majority of which are near the epiphyseal plates, must be interpreted as signs of interrupted development between the ages of fourteen and eighteen. At this period the tibia grows about five millimeters per year. It is concluded that the majority of the population suffered from some febrile disease, which arose periodically at intervals of one to four months. Diseases that are periodic

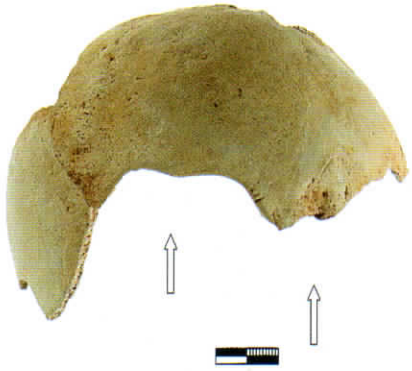


Fig. 12. This patient survived the removal of a large area of the skull.

repetitive fevers, recurring at similar intervals, are malaria, salmonellosis, and, more rarely, brucellosis and relapsing fever.

Differences between the Minoan period and contemporary times in social gender, nutrition, hygiene, medicine, medical knowledge, and technology are vast. Accidents, minor by modern standards, would have cost lives in the past. In the world before penicillin, one could be perfectly healthy and sustain a slight wound and one's life was at risk; one might die of an infection within days. Hippocrates (*Epidemics*, III.4) records that when wounds were neglected in many cases what followed were infection, fever, and death. Herodotus (III.37) passes down the story of the death of Cambyses from a self-inflicted wound to his thigh caused by the tip of his sword, which accidentally became unsheathed as he mounted his horse. He died from an infection three weeks later.

This makes one marvel all the more at the evidence for cranial surgery performed by the Minoans, in addition to the ample evidence for the practice of fracture reduction and tooth extraction. The recently discovered trephinations at Haghios Charalambos, which date to the nineteenth century B.C., are unequivocal proof that the Minoans had advanced in the field of clinical medicine just as they had in other areas of technology, culture, and social life. One could claim that by the early second millennium B.C. the Minoans had established at least some of the foundations of Hippocratic medicine, which continued to be practiced and embellished for another fifteen hundred years until the Byzantines passed it to the Sassanian Persians and Arabs. After cross-fertilization with the medicine of Egypt, Sumeria, Assyria, and Babylon, it was transmitted back again to medieval Europe by Avicenna (Ibn Sina) and taught in the newly established universities.

Piecing together fragments of information, we are beginning to understand a little better the daily life of the people who created Minoan civilization. Despite the accumulation of a century's worth of evidence, it is still difficult to truly visualize Minoan society, for in the absence of literature and historical documents, their tensions, jealousies, scandals, dramas, court intrigues, and conspiracies will remain beyond our reach forever.

Fig. 13. "The Gossiping Ladies." Part of the "Grandstand Fresco" (ca. 1600–1500 B.C.). Herakleion Archaeological Museum (see chap. 9, fig. 9).

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CHAPTER 16A
COMMUNITY AND THE INDIVIDUAL IN DEATH: THE PREPALATIAL AND PROTOPALATIAL PERIODS

Metaxia Tsipopoulou

The excavation of single tombs and especially of communal graves is very instructive for the study of their societies, particularly those without written records. Prehistoric Crete is no exception to this rule. The tombs—both symbolic and actual dwellings of the dead—have an entirely different character from houses, the dwellings of the living. Analysis highlights these differences. The principal difference is that domestic finds can, in ideal circumstances, be considered chance assemblages of artifacts that were in use during a catastrophe or at the time the site was abandoned. With tombs, however, the grave gifts were deposited in a ritual manner, having been selected from a wide array of artifacts used by all social groups of the time to express something to the deceased and to the rest of the society *about* the deceased.

In general, for the funeral ceremony, the family of the dead person would choose the specific tomb type, the method of preparing the corpse, and the accompanying grave gifts, according to social, economic, religious, geographical, and political parameters. Consequently, differences in tomb architecture, rituals, burial practices, and the type and quantity of grave goods may be used as indicators of social distinctions, so long as the researcher is aware that many rituals do not leave visible material remains and thus cannot be identified in the archaeological record.

Despite more than one hundred years of intensive archaeological activity, the large number of different known tomb types, and the huge number of grave offerings brought to light in Crete, there is no unanimous agreement regarding the interpretation of funerary practices and their apparent regional and temporal distinctions.

The island's oldest known burials were excavated in the lowest Aceramic Neolithic level at Knossos and comprise seven intramural infant burials. This practice is well known from several Mediterranean Neolithic societies, and it continued into the Bronze Age in other areas outside Knossos. The fact that contemporary adult tombs at Knossos are missing suggests that adults were buried in special extramural locations. Moreover, during the remainder of the Neolithic period and later, children were buried with adults, usually in natural caves.

The Cretans continued to live in small family groups and to bury their dead in natural caves or rock shelters, each of which was probably used by a single family, until approximately 3000 B.C. or a little earlier (the Final Neolithic period). Well-known burial caves are Ellenospilios and Koumarospilio in the prefecture of Khania; Skaphidia and a rock shelter at Kastello Tzermiado, in the Lasithi Plain; and the rock shelters at Haghios Nikolaos near Palaikastro in eastern Crete. In all cases, the burial practice was inhumation. Of particular interest is the fact that there is no evidence of cave burials in the Mesara area.

Major social, economic, and political changes are evident in Crete, most likely because of the arrival of new population groups at the beginning of the third millennium B.C. Although the use of burial caves continued, a new burial type appeared then for the first time—funerary structures that seem to have served more than a single family, perhaps an extended family, a wider social group, or a clan. This social change characterizes the entire Prepalatial period in Crete and has probably also played an important role in the developments that led to the greatest event in Minoan history—the foundation of the palaces.

This period's funerary structures are of two types, which were distinguished primarily by geography. Circular—or tholos—tombs are found principally throughout central and southern Crete, whereas House Tombs appear primarily in eastern Crete. This geographical division is not strict, as tholos tombs have also been excavated in eastern Crete, at Myrsini in particular, constructed in the Early Minoan II period (ca. 2600–2300 B.C.), and there were probably others in the Protopalatial period at Haghia Photia, Siteia, and on the eastern end of the island. Furthermore, a Middle Minoan II (ca. 1800–1700 B.C.) tholos was excavated at Gypsades, Knossos. We cannot rule out the possibility that these tombs represent the movement of population groups from south-central Crete to the north and the east.

The existence of cultural unity throughout the island, despite the difference in funerary architecture, is suggested by the common nature of the grave gifts and probably that of the funerary rituals as well; these do not seem to differ substantially between tholos and house tombs. Also, it is clear that artifacts, particularly precious ones, traveled from one part of the island to another and ended up as grave gifts. Along with the two tomb types and the continued use of natural caves, a new type of small rock-cut and built tholos tomb, which seems to belong to a greater Aegean tradition, appeared in the Early Minoan period. The most important examples of these are found at Haghia Photia, Siteia; Gournes, Herakleion; and Nea Roumata, Kydonia (fig. 1).

The large tholos tombs, typical of the south-central part of the island (fig. 2), were freestanding aboveground structures and are the most impressive monuments of Prepalatial Crete. The origin of the circular plan has not been traced beyond a doubt, although a variety of hypotheses are occasionally put

Fig. 1. Small tholos tomb. Near Roumata, Kydonia (ca. 3000–2600 B.C.).

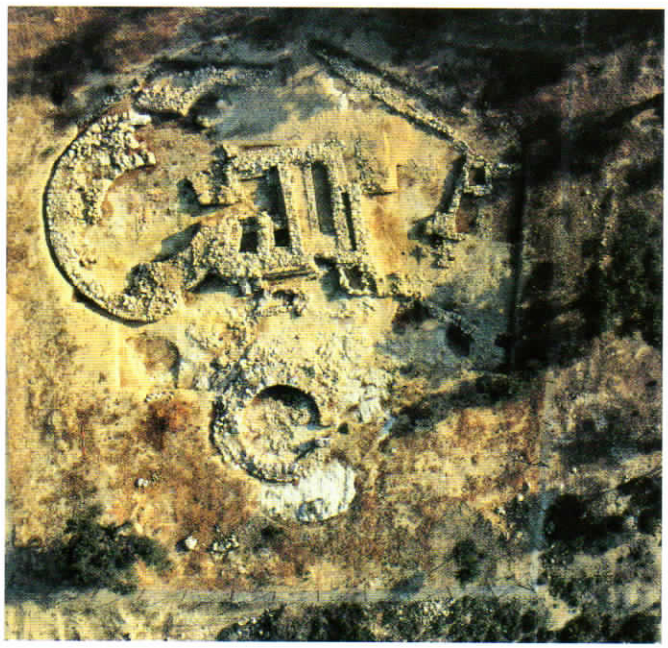

Fig. 2. Aerial view of large Prepalatial tholos tombs. Odighitria, Mesara (Myers–Myers–Cadogan 1992, p. 215, fig. 30.4). Courtesy G. Cadogan (also for J.W. and E.E. Myers).

forward. These tombs certainly cannot be linked to any Cretan architectural tradition, either of their own period or earlier. The variety in size is important, with diameters ranging from 2.5 meters at Apesokari to more than 13 meters at Platanos A. Half of the tholoi have internal diameters of between 4 and 6 meters, whereas eight of the fourteen latest tombs dated from Early Minoan III to Middle Minoan IA (ca. 2300–1900 B.C.) have diameters smaller than 5 meters. Wall thickness varies from 1 to 2.5 meters, in proportion with the diameter. The walls have two faces built of rough stones of unequal size, and the interior is filled with smaller rubble and clay. The entrances are always from the east, probably because of a specific religious belief, and in most cases they consist of a *trilithon*—two door jambs and a lintel—whose height varies from 0.5 meter for the earlier examples to 2 meters for the more recent ones. The space above the lintel is usually triangular or arched, and the entrance is usually preceded by a *stomion*, or small antechamber. The floor of the circular chamber was either at ground level or slightly lower. None of the roofs has survived, so it is uncertain whether the tholos tombs were simple circular enclosures or roofed, and, if the latter, what type of roofs they might have had, flat or domed. The great thickness of the walls and a slight inclination in the extant walls of certain tombs suggest a domed roof, at least for some of them. Several scholars have proposed that the larger tholos tombs, such as the one at Platanos, may have had a domed mud-brick roof.

One of the earliest tombs to be excavated, in 1904, was the large Tholos Tomb A at Haghia Triada, soon to be followed by the excavation of a second smaller tomb a few meters away. Fifteen tholos tombs were investigated in the early twentieth century at Koumasa, Porti, Haghia Irini, Salami, Koutsokyra, Christos, Drakones, and Kalathiana; three at Platanos and Marathokefalon; and two at Siva. Two small tholoi were excavated at Vorou, toward the borders of south-central Crete, and another at Krasi, Pediada, in 1930. Another tholos was discovered at Apesokari in 1941. Two additional tombs were excavated at Rizika and Gorgolaini, at the borders of northern Crete, two more at Rotasi and Viannos, one at Myrsini, Siteia, and a Middle Minoan tholos tomb at Gypsades, Knossos, all in the 1950s. The late 1950s saw the discovery of the tholos tombs at Lebena and Megali Vrysi, whereas more tombs were found a little later near Phaistos. Recent excavations uncovered tombs at Haghia Kyriaki and in the Haghiofarango region in the Asterousia Mountains. More than ninety tholos tombs in all have been identified, and approximately sixty have been excavated. Most tholos tombs were built in the Final Neolithic/beginning of the Early Minoan I or the Middle Minoan I period. The larger, earlier group is confined to Mesara, whereas the later group consists of smaller tholoi.

Tholoi were communal tombs used over several centuries, some of them for almost a millennium. A series of rectangular structures, some with complex plans, were added around the circular chambers (fig. 2) in order to accommodate various requirements related to religious rituals or, in some cases, to house primary inhumations or the bones of earlier burials, if the circular chamber was full. Rituals were performed inside these structures, perhaps relating to ancestor worship or simply to honor the deceased. Undoubtedly, the rituals that took place in the side structures or the paved external spaces contributed to the bonding of the social group that used each tomb. The large number of drinking cups found in these spaces, particularly of the conical type, suggests that the rituals involved drinking. The burial complex at Apesokari contained two characteristic altars. Two very

interesting terracotta models from the Kamilari tomb show human figures presenting offerings to the deceased within a rectangular structure in the first case, and the second shows four human figures dancing inside a circular enclosure (see chap. 16b, figs. 11, 10).

During the Prepalatial period, the settlements of south-central Crete were usually associated with one to three circular tombs each. Although early–twentieth-century excavators did not pay much attention to the skeletal remains, it is certain that these tombs contained many hundreds of bodies. These were usually buried in the fetal position and, more rarely, in an extended position, as the few surviving intact burials show; the bodies lay directly on the floor. It has been suggested that burials involved two stages, first the inhumation and then the final arrangement of the bones and grave gifts. During the second stage, the bones and grave gifts were usually set aside and often broken into smaller pieces to make room for new burials. Only the skulls were generally treated with particular care.

Very few of the tholos tombs excavated thus far were unplundered. However, despite the plundering and continuous disturbance of the material during the tombs' long use, the great number and variety of the grave gifts recovered contribute substantially to our understanding of Early Bronze Age material culture (fig. 3). In fact, some of the grave gifts were probably made exclusively for funerary use.

The second type of funerary building, the house tombs, once known as "ossuaries," is typical of eastern Crete (fig. 4). House tombs were built from the Early Minoan II period (ca. 2600–2300 B.C.) onward, while cave burials continued in use. The house tombs are usually rectangular structures; early excavators regarded them as imitations of ancestors' dwellings, a hypothesis that no longer stands. Two main types and several local variations exist: one comprises a number of rectangular or square rooms and the other a series of long parallel corridors. It is uncertain whether they had proper roofs, in imitation of real houses, or were covered with earth. Not all examples have entrances. Their dimensions range from 20 to 80 square meters or more, and they appear to have had several architectural phases, as new rooms were added to suit the changing needs of the social group that used them. House tombs of various types and shapes have been excavated at Archanes, Gournes, Malia, Gournia, Mochlos, Chamezi, Petras, Haghios Georgios, Zakros, and Palaikastro, Siteia.

The large quantities of bone recovered inside house tombs led early excavators to identify them as ossuaries—that is, structures intended for secondary burials. It has been suggested that primary burials took place elsewhere and that, after the body's disintegration, the bones were transferred to these funerary buildings. Grave gifts were offered either during the primary burial and consequently transferred along with the bones, or they were offered during the secondary burial. Recent research, however, has shown that these funerary buildings housed primary burials (several examples have been excavated), which were subsequently swept aside to make room for new burials. The buildings' use over many generations accounts for the great quantities of bone. There is also evidence on the earlier bones of intervention of various types—breaking, ritual positioning of the skulls in specific areas of the tombs, and cleansing fires (fumigation)—inside both the house tombs and the tholos tombs.

The house tombs excavated at Mochlos in 1908 obviously belonged to élites, since they contained precious grave gifts of gold and silver and a large number of elaborate stone vases (fig. 5; see cat. nos. 43–48, 131–133). The tombs were built on a rocky plateau on the small island, which, in Minoan times, was connected to the shore. Every room in the Mochlos tombs contained bones and pottery (see cat. no. 206). The tombs' relationship to domestic architecture is evident; they were constructed of large blocks and have well-designed doors with door jambs. By contrast, some of the tombs at Palaikastro and Zakros had no doors. These latter, hasty constructions should probably be regarded as burial enclosures.

The excavation of a cemetery of house tombs began recently at Petras, Siteia. The cemetery comprises an as yet unknown number of buildings with several rooms and architectural phases (fig. 4). The primary burials date from the Early Minoan III to Middle Minoan IIA periods (ca. 2300–1750 B.C.), but there is evidence that the cemetery functioned as early as Early Minoan I and II (ca. 3000–2300 B.C.). A small cave with secondary burials and a wealth of grave gifts dating from the Early Minoan I to Middle Minoan IIA periods was excavated nearby.

Fig. 3. Clay, bird-shape vase (ca. 2600–1900 B.C.). Koumasa tombs. Herakleion Archaeological Museum.

Fig. 4. House tomb. Petras, Kephala. Prepalatial cemetery.

Fig. 5. Stone lid for a small pyxis with a carved dog used as the handle. Mochlos cemetery (ca. 2300–1900 B.C.). Herakleion Archaeological Museum.

Fig. 6. Two necklaces with beads made of gold, ivory, and jade. Phourni, Archanes cemetery (ca. 2300–1800 B.C.). Herakleion Archaeological Museum.

The most common grave gifts in both the tholos and the house tombs are clay vases, such as cups, bowls, jugs, teapots, and pyxides, often with elaborate and daring shapes and decoration. Some were offerings to the deceased; others were used by the living during funerary rites. Important grave gifts included weapons, mostly daggers (see cat. nos. 73, 74); all kinds of gold, silver, stone, and bronze jewelry (fig. 6; see cat. nos. 134, 135); bronze, stone, and bone tools; and cosmetic implements, such as tweezers. Of particular importance, because they offer a glimpse into that period's social stratification, are the seals, usually made of stone or bone, with one or more sealing surfaces decorated with geometric motifs or representations of animals (see cat. nos. 111, 112). Cycladic-type figurines, usually made locally but also imported, have also been found inside Prepalatial Cretan tombs (see cat. no. 170).

Apart from these two basic grave types, there are other single occurrences of other types of built tombs. The cemetery at Haghia Photia, one of the largest early Cretan (EM I–II) cemeteries, with more than 252 small rock-cut and built small tombs with open *stomia*, or antechambers, excavated in 1970, is particularly important in this regard. The Haghia Photia tombs recall Cycladic parallels and contained, among other grave gifts, imported Cycladic vases along with local imitations, bronze weapons, and exceptionally long obsidian blades (see cat. nos. 5–7, 54). When first excavated, the Haghia

Fig. 7 Gold pendant illustrating a pair of bees or wasps. Its manufacture incorporates difficult metalworking techniques, including gold granulation. Chrysolakkos, Malia (ca. 1800–1700 B.C.). Herakleion Archaeological Museum.

Photia cemetery was considered unique, but recent research at Gournes near Herakleion, and at Petras, Siteia, has shown that Cycladic imports and local imitations were much more widespread in northern Crete.

A funerary cave dating to the end of the Prepalatial period and the beginning of the Protopalatial was investigated at Kavousi, Evraiki, in eastern Crete. The cave contained pithos and sarcophagus burials, vases, and two seal stones, products of the palatial workshop at Malia. An important funerary building with two rooms, a second story, an ossuary in its southeast corner, and an external paved area was excavated at Pyrgos, Myrtos. Sixty-six burials, laid directly on the ground, were identified. The tomb was used over a long period, from Early Minoan III to Late Minoan I (ca. 2300–1450 B.C.). An extensive cemetery, with a total of 250 pithos and sarcophagus burials, was investigated on the beach at Pachyammos. Similar funerary vases were also used at the nearby Sphoungaras cemetery, near Gournia. Inhumations and one sarcophagus burial, dating from Early Minoan I to Middle Minoan II, were identified in rock shelters at Haghia Photia, Hierapetra. On the island of Pseira, a total of nineteen tombs—cavities of the rock and rock shelters, as well as small cist graves—have been investigated. Two of the latter, measuring approximately 2 meters square, could be considered house tombs. The cemetery was used continuously from the Final Neolithic to Middle Minoan II (ca. 3600–1700 B.C.). Curiously enough, although close to Mochlos and Gournia, Pseira does not follow the common burial practice of the house tombs. A most important cave with secondary burials, opulent grave gifts (see cat. nos. 170, 191), and a wealth of skeletal remains, all dating from Early Minoan II to Middle Minoan I (ca. 2600–1800 B.C.), was excavated at Haghios Charalambos in Lasithi.

At Malia, where burials in rocky cavities abound, two house tombs were excavated. The smaller one, at Haghia Varvara, measures approximately 13 square meters and comprised at least seventeen cells of irregular shape and various sizes. Extremely important for its architecture, the second tomb, the so-called Chrysolakkos, or "gold pit," which was plundered prior to its excavation, yielded a unique gold bee or wasp pendant (fig. 7). Measuring 40 by 30 meters, Chrysolakkos is surrounded by paving and had a colonnade along its east side. Although the interior was severely disturbed during plundering, at least forty rooms are still preserved. This imposing building was in continuous use during the Protopalatial period by an important clan. In general, however,

during that period, a time of intense building activity when the first palaces were founded, most regions show a reduction in the number of monumental tombs.

At the beginning of the Middle Minoan period, single burials in the fetal position in clay sarcophagi and pithoi appear for the first time both in tholos and house tombs. This reflects an important social development and suggests that some individuals had amassed power, which led to an increase in social inequality, the concentration of wealth in the hands of a few, and, consequently, the creation of local élites. The use of many of the Prepalatial tombs and burial complexes continued during the first phase of the Protopalatial period and, in many cases, such as at Gournia and Palaikastro, some of the earlier buildings were expanded to meet new demands. In eastern Crete, at Pseira, Kavousi, Zakros, Pachyammos, and Sphoungaras, the deceased continued to be buried in rock cavities and rock shelters. It seems, however, that as Minoan society became increasingly complex, as urbanization developed, and as centralized powers, which controlled the sources of wealth—commerce and craft—emerged, the tombs ceased to be places of particular importance for the community, and rituals took place thereafter in the palaces and the peak sanctuaries.

In this framework, the cemetery of Archanes is particularly important and constitutes an exception to the general rule, both because of the remarkable continuity, and the complexity of burial practices. The cemetery (fig. 8; see chap. 2, fig. 9) was established in Early Minoan II with the construction of two tholoi, and remained in use until the end of the Bronze Age. In Early Minoan III and Middle Minoan IA, Tholoi C and E were surrounded by several house tombs, and, toward the end of the Prepalatial period, Tholos B and another funerary building with a complex plan were added. A large funerary complex replaced an earlier communal grave with rectangular chambers, similar to those at Mochlos, which had been used over a long period of time. Toward the end of the Protopalatial period, its roof had to be raised in order to accommodate the last bodies. The tholos tomb with the circular chamber, which remained in use for about five hundred years, housed several sarcophagus burials. The circular chamber had a bench along its perimeter and was incorporated into the building complex, which included a pillared room. A staircase led to the first floor, which also accommodated burials. At one point, the circular chamber's floor was raised and its original entrance replaced by a narrower entrance on the east side.

During the Protopalatial period, after the weakening of the social cohesion and the organization into clans, the appearance of local factions, the migration of populations, and a general socio-political rearrangement, the cult places came under palatial control, and the most important rituals

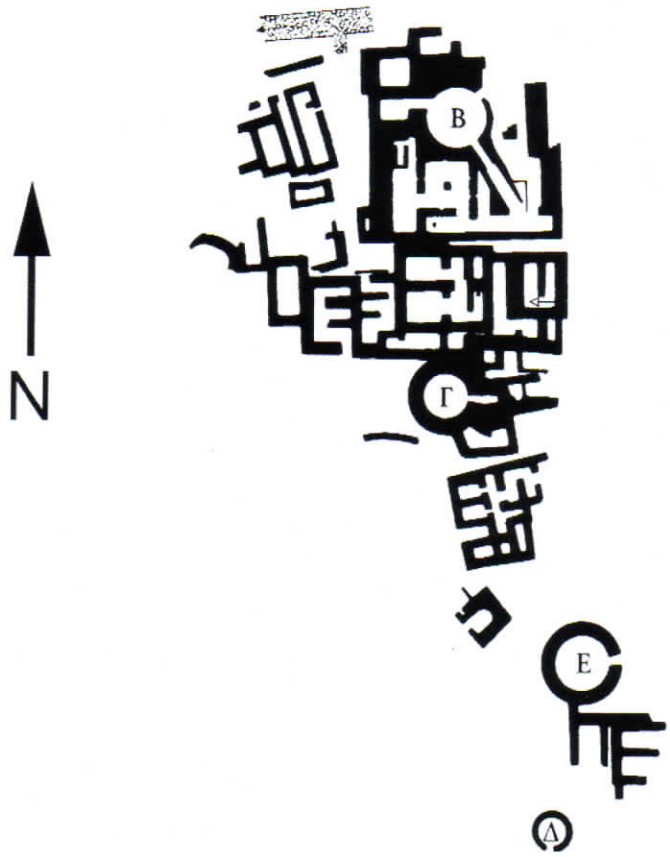

Fig. 8. Phourni, Archanes Cemetery. Part of the general plan (Sakellarakis–Sapourna–Sakellaraki 1997, p. 152, plan 35).

were practiced in the central courts. Thus, the earlier religious practices of the Prepalatial agricultural communities were integrated for the first time into an official religion controlled by the palaces.

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CHAPTER 16 B
COMMUNITY AND THE INDIVIDUAL IN DEATH: BURIAL PRACTICES IN THE NEOPALATIAL AND POSTPALATIAL PERIODS

Nota Dimopoulou-Rethemiotaki

By the end of the Protopalatial period, Minoan Crete was entering a new era of extraordinary cultural development. Indeed, the subsequent Neopalatial period coincided with the peak of the Minoan cultural phenomenon, often referred to as the period of the great acme.

The new palaces that were built after the destruction of the first palaces at the end of the Protopalatial period, in about 1700 B.C., were more monumental than their predecessors, and the most imposing of all was the palace at Knossos, seat of the legendary King Minos. The political and administrative palatial system was integrated into a complex organizational structure, as were the official religion and rituals of worship. The network of domestic settlements became denser; urban centers with impressive buildings expanded; rural villa-like compounds began to fill the countryside for the control of agricultural production and stock-breeding, and the palaces and harbor towns supported specialized workshop activity on an industrial scale, which resulted in splendid works of art. Seafaring and overseas trade grew, and the Minoans imported precious and exotic materials, metals, semiprecious stones, and ivory as they exported luxury goods, miniature works of art, metal goods, textiles, wood, olive oil, and herbs. The economic and cultural influence of Minoan Crete spread throughout the Aegean and the eastern Mediterranean, and a series of trade centers and port settlements was founded. The palaces operated according to a bureaucratic structure that employed metric and sealing systems, as well as record keeping in the Linear A script for the transport of goods and the processing of transactions.

At its peak in the late sixteenth century B.C., the thriving palatial system was disrupted by a natural disaster, the volcanic eruption of Thera, the closest Cycladic island to the north, where an important Minoanized town was destroyed too. Although the recovery in Crete was immediate with no serious destabilization, the island's sociopolitical system during the last fifty years of the Neopalatial period began to show signs that it had already passed its prime. The five-century affluence of Minoan culture came to an end about 1450 B.C., when the palaces, the main settlements and rural villas were destroyed by what seems to have been a combination of environmental causes and internal reasons. The palace at Knossos remained in use for another hundred years or more, but a number of changes there indicate the presence of Mycenaean cultural elements, perhaps even of a Mycenaean dynasty. The Mycenaeans, or Achaeans from the mainland, brought to Crete their own language, Greek, which is known to us from the Linear B script they used to keep records. The Mycenaean intrusion and influence gradually spread throughout the island, from Knossos to Kydonia in western Crete, another important settlement. After the final destruction of the Mycenaean palatial centers and during the Postpalatial period, life continued in smaller communities with no central administration until 1100 B.C., the end of the Bronze Age.

The historical events and the evolution of political and economic structures that occurred during the centuries-long period from the Neopalatial to the Postpalatial years were accompanied by significant social changes. In the Neopalatial period, the palatial administration and bureaucracy, the great wealth, a flourishing industrial production, external trade, and growing urbanization encouraged the rise of groups that were highly ranked in the social hierarchy, such as officials in several sectors, landowners, merchants, and specialized craftsmen and artists. At the same time, social competition between these groups or between individuals within groups and their attempt to demonstrate high status tended to weaken the sense of community in favor of individuality. The projection of the elites and the tendency to distinguish the individual are also evident in the burial practices and rituals that surrounded death.

During the Prepalatial period, when ties between small communities were strong, members of the upper class were buried with precious grave goods but in the same tombs as poorer members of the community. Bones were gathered together in common ossuaries, and ritual ceremonies were practiced by relatives in the same space outside communal tombs. In the late Prepalatial and Protopalatial periods, there was an attempt to express individuality by placing the dead in a pithos or a clay sarcophagus, but this still took place within the communal tomb.

The social circumstances of the Neopalatial period, as described above, further encouraged the trend away from a communal spirit to the display of individual identity. Because of population growth and the development of large settlements, one might expect such burial practices to be easily identified at organized cemeteries and in a significant sample of burials. However, after decades of excavation work, very few Neopalatial graves had been found, and almost all of them looted. This experience raised archaeological questions as to whether this unexpected scarcity was accidental rather than significant. The gap in research, however, has now been partly filled by the discovery and ongoing excavation of the rich Neopalatial cemetery at Poros, Herakleion, where the main harbor of Knossos was situated.

The impressive tombs at Poros comprise underground rock-cut caves of 70 to 90 square meters in size and 2 meters in height. Despite their seemingly irregular layout, the caves were carefully dug out of the local, soft white rock according to a more or less coherent architectural plan, which included standard morphological features, such as large adjacent chambers, an antechamber, and secondary spaces formed by built walls and pillars that were cut out of the rock and left free-standing or were engaged to cave walls for purposes of supporting the roof. Bones and offerings from older burials were gathered in built or pit deposits. *Dromoi*, or downward-stepped corridors cut into the rock, led to the entrances of the tombs, which were walled up after each burial. The tombs of the Poros cemetery were used from the beginning to the end of the Neopalatial period (MM III–LM IB, ca. 1700–1450 B.C.); at least one tomb was founded in the Protopalatial period (MM IIB, ca. 1800–1700 B.C.) and was kept in use during the Neopalatial. For more that 250 years, and mainly from the sixteenth to the mid-fifteenth century B.C., these tombs received hundreds of burials from the urban community that resided in this harbor town.

Because of the length of time the tombs at Poros were used, there is evidence of the burial practices for both periods. On one hand, the old custom of communal burial was maintained and the architectural morphology of the tombs reflects earlier forms, such as those of the Mavrospelio cemetery at Knossos. On the other hand, however, new burial practices, which would become widespread in the period that followed, are also found. These include the careful planning and construction of an extended underground funerary space with a rock-cut sloping *dromos* leading to its entrance, the absence of pithoi and sarcophagi, and the care taken to distinguish particular burials inside the tomb.

The wealthy citizens of the harbor town of Knossos were buried on biers, in wooden coffins, or even on actual beds, recalling the worldwide diachronic perception of death as eternal sleep. Alongside wooden coffins and beds, there is evidence of various other practices that indicate a deliberate effort to single out particular individuals and to hint at their social status when they were alive. The higher social and economic class is distinguished by the richness of the grave goods, which range from all kinds of jewelry, including gold signet rings with religious representations on their bezels (see chap. 9, fig. 5), to seals made of semiprecious stones and even sumptuous pottery produced by specialized ceramic workshops (fig. 1). Other grave gifts reflect the high office of the deceased or a relevant attribute, such as a marble axe bearing religious or ceremonial symbolism (see cat. no. 199).

Another well-defined social group of the upper class is traced through the so-called warrior burials, which include weapons and weaponry. Although these are found mainly in

Fig. 1. Ewer with marine-style painted and relief decoration (ca. 1450 B.C.). Poros cemetery, Herakleion. Herakleion Archaeological Museum.

graves of the following period, burials with bronze weapons and boar's-tusk helmets of the type described by Homer (see cat. nos. 80–83) appear already at Neopalatial Poros. In some cases, a burial was given an unusual placement within the large and crowded communal tomb in an attempt to distinguish it from the rest. Such an arrangement was found in one of the cemetery tombs at Poros in which a mud-brick platform was apparently covered with curved wooden beams, on top of which a rich burial was placed, like a separate, individual grave within the communal tomb.

During the Neopalatial period, some remarkable tomb structures were also in use, such as the tholos tomb at Kamilari near Phaistos and the Tholos B complex at Archanes (see chap. 16a, fig. 8). Both tomb sites, which were in use for centuries, were found looted. The now-occasional finds, such as the significant clay models of Kamilari (figs. 10, 11), reflect their Neopalatial use, but very little evidence of rich burials of that period has survived; one exception is a beautiful gold signet ring depicting a goddess and a griffin from the "Room with the Pillar" of the Tholos B at Archanes (see chap. 9, fig. 10). The tholos tomb on the Kephala hill at Knossos, a sturdy construction with a circular dome measuring 5.5 meters in diameter, four cists in the chamber's floor, and a

long *dromos* with two niches in its sides, was already in use during the Neopalatial period and was reused thereafter until the end of the Postpalatial period. It seems to be the earliest Cretan tholos, comparable to the Mycenaean examples on the Peloponnese. By the end of the period and soon after the destruction in 1450 B.C., several impressive funerary monuments in the broader Knossos region seem to herald a new era and to take a step forward to individualization and self-projection. Compared to the tombs at Poros, they are evidence of a more pronounced level of social differentiation, whether of a group, a family, or an individual.

The impressive graves in the area of Knossos, constructed in the late Neopalatial or Final Palatial period around or soon after 1450 B.C., although they were all found looted, apparently included rich burials of the members of the highest social hierarchy, which was directly linked with the Knossian palatial authorities. These funerary monuments bear new features, which had not been found in earlier communal tombs. They are large graves of monumental construction, built underground in dug trenches; they are circular or rectangular in plan, with a vaulted or corbelled roof and a long *dromos* leading from the surface to the entrance of the burial chamber. In contrast to the old communal tombs, these were destined for a limited number of burials, belonging to members of a particular group or family, or even a single member of the elite class.

The Temple Tomb (fig. 2), an architecturally unique and imposing monument very close to the palace at Knossos, is the only funerary complex that, because of its size, plan, and lavish construction, could have belonged to members of the Knossian palatial hierarchy and thus be described as "royal." It has two stories, a paved yard, a row of columns, staircases both indoors and out, an antechamber, and a two-pillar crypt, which served as an ossuary. The underground, rock-cut, square burial chamber has a central one-piece gypsum pillar, and its floor is covered with gypsum slabs. The walls and ceiling were initially painted blue, perhaps to signify the sky, a practice occasionally found from the Neopalatial period onward in chamber tombs. Only a few ordinary pots from Neopalatial burials in the tomb survived looting, but remains of later burials dating to the fourteenth century B.C. were found in a rectangular cist in the floor of the chamber. Somewhat later pots were uncovered in such places as the pillar crypt, which indicates that funerary ceremonies continued to be held in memory of distinguished ancestors.

According to Arthur Evans, the aboveground level of the complex, where fragmentary limestone horns of consecration, a typical Minoan religious symbol, were found, must have served as a temple for funerary worship, a use that Evans also attributed to the pillar crypt on account of its incised double axe symbols on the walls. As Evans reported,

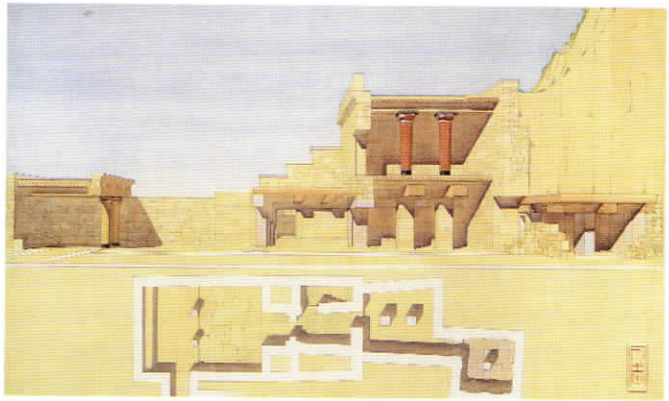

Fig. 2. The Temple-Tomb at Knossos (colored representation by Piet de Jong).

the Temple Tomb corresponds to Diodorus's description of Minos's tomb in Sicily, where according to legend he campaigned while chasing after Daedalus: a subterranean tomb and a temple above ground. Interestingly, the beautiful gold ring referred to as the "Ring of Minos" (ca. 1450–1400 B.C.), a masterpiece of Minoan jewelry-making that bears a significant religious representation of goddess epiphany and goddess-worshiping rituals (see chap. 9, fig. 4), is said to have been found in 1926–28 in the same place as the Temple Tomb and was, in fact, what led to the discovery of the tomb.

The imposing Royal Tomb at Isopata, Knossos (see chap. 18, fig. 1) was built with a rectangular burial chamber measuring 8 by 6.5 meters, a rectangular cist in the floor, an antechamber with two rectangular niches, and inclining walls, which created a corbel-shape roof. These features suggest influence from Mycenae and the Levant, perhaps through Ugarit. The size of the tomb; its exceptional construction of large stone blocks; and its location on a hill overlooking the surrounding mountains, the harbor of Knossos, the sea to the north and the great palace toward the south all justify Evans's hypothesis that this must have been a royal tomb, the burial place of a Knossian prince. The earliest finds that survived looting have been dated to the period after 1450 B.C. and are indicative of the luxurious nature of the looted burials. Prominent among the finds are a rare series of imported Egyptian stone vases (see cat. no. 52), a porphyry lamp, a gold pin, a fragmentary silver cup, a necklace with semiprecious stone beads, and lavish jars typical of the Palace-style repertoire (cf. cat. no. 83). In its final phase of use, the tomb must have served as an ossuary. The monument was completely destroyed during World War II.

In the period following the general destruction of the Minoan palatial centers in about 1450 B.C., when there is increased evidence for Mycenaean presence at Knossos, a strong wind of change blew away traditional burial customs and introduced innovative elements that may relate to Mycenaean or Egyptian and Levantine influence. At Poros, the harbor

Fig. 3. Jug with painted and relief decoration (ca. 1400–1375 B.C.). Katsambas cemetery, Herakleion. Herakleion Archaeological Museum.

town of Knossos, the ancestral communal cemetery discussed above, with large, rock-cut cave tombs, which remained in continuous use for more than 250 years, was abruptly abandoned at the end of the Neopalatial period (LM IB, ca. 1450 B.C.). Not far away, at Katsambas, a new cemetery was established immediately afterward, but the graves were of a different type: chamber tombs dug deeply into the ground with long *dromoi* leading to rectangular burial chambers that were smaller in size than those at Poros. In those chambers a limited number of bodies were placed in wooden coffins or on biers, set directly on the floor or on benches curved along the walls. The custom of burial in wooden coffins or on biers is not essentially different from those at Poros, and here too the grave goods fall into similar categories, namely jewels and small artifacts, abundant and sophisticated pottery (fig. 3), and precious works in ivory, with an absence of bronze vessels and a limited number of weapons. The dead of Katsambas must have belonged to a wealthy urban class equivalent to that of the earlier Poros residents. Nevertheless, the difference in funerary architecture is evident and extends throughout the entire Knossos region, where cemeteries with similar graves of the new type occur. The historical and political events and social reshuffle at a crucial time in the second half of the fifteenth century B.C. seem to have brought about these sudden changes to the traditionally static field of burial customs.

At Knossos, where older cemeteries such as Mavrospelio were almost entirely abandoned in this period and only later reused, new graveyards expanded on the hills surrounding the palace, at Isopata near the Royal Tomb, at Haghios Ioannis, at Sanatorio-Venizeleio, and later at Zapher Papoura, Gypsades, and Sellopoulo with graves of the new type, that is, single-space, mainly rock-cut chamber tombs with long *dromoi*, and square or roughly circular chambers. The shaft graves and pit caves appear in the same cemeteries at the beginning of the following period in early fourteenth century B.C. The first chamber tombs have larger chambers than those of the period that immediately followed. In some cases, the chambers have pits on the ground, benches or platforms curved into the rock for the deposition of biers, and pillars at the center of the chamber or adjoining the innermost wall opposite the entrance. The *dromoi* are long and the entrances are blocked with rubble walls. Most chamber tombs received only one or two burials and only a few contained from three to seven. The tendency toward individualization is demonstrated by the benches and platforms, the use of wooden biers and coffins, and eventually the presence of clay sarcophagi. This becomes even clearer in the beginning of the fourteenth century B.C., when several pit graves were dug for single burials.

Among the graves of these cemeteries, many of which were found looted and others without significant finds, there were a few dozen "warrior graves," which form a category of special interest. At a time when Knossos is assumed to have been under Mycenaean control, the "warrior burials" raise questions as to whether the noble members of the Knossian "military aristocracy" were of Minoan or Mycenaean origin. The traditional burial customs were undoubtedly still practiced in the new cemeteries, but it is equally clear that the type of graves that appeared at the end of fifteenth century and the beginning of the fourteenth marked a change in funerary architecture and introduced new burial customs. Individuals in warrior burials, or burials with weapons and bronzes, were given a range of splendid weapons and in some cases even a full range of arms comprising swords (cf. cat. no. 75), daggers, spear heads, and arrows, as well as knives and razors. Three burials received boar's-tusk helmets, which are only partly preserved today. Some graves were found to contain several bronze vessels; five of them had silver vessels and one cup made of gold. Precious jewelry (see cat. nos. 136–138) and bronze mirrors are attested at both male and female interments, whereas seals made of semiprecious stones with hunting scenes or man-animal combats (see cat. no. 120) seem to have been a feature mainly of male burials. The fine, decorated pottery found in these graves, especially the earlier ones, was now dominated by popular shapes of Mycenaean Greece, such as

the three-handled pithoid amphora (cf. cat. no. 36), the alabastron, and the footed goblet (see chap. 18, fig. 2a). The high-quality weaponry and the bronze and silver vessels of the warrior graves are attributed to a specialized workshop at Knossos, which was already active during the Neopalatial period. This may well have been the source of the prestigious weapons of the shaft graves at Mycenae. In the second half of the fifteenth century and the first half of the fourteenth, the workshop was still in operation, possibly under the control of the Mycenaean palatial authorities at Knossos.

The intense military spirit that Knossos displayed in this period, which was observed by Evans, need not signify simply the military identity of the deceased. Instead, the individual nature of the burials, the wealth and variety of the grave goods, and the fact that some weapons, especially the luxurious gold-coated "parade" swords (fig. 4), were not meant to be used in battle but were primarily symbols of power and prestige suggest furthermore that the warrior burials reflect a well-defined social stratification and were reserved for persons of high standing in the social pyramid. The strong Mycenaean character of these burials, in terms of both the form of the graves and the categories of the finds, should not be overlooked, but we must remember that burials with weapons, boar's-tusk helmets, and remains of rich grave assemblages were also found at the earlier Poros tombs. So any hypothesis that views differences in these burials as directly related to Mycenaean ethnicity should also consider the role and the fate of the former Minoan elite within the sociopolitical developments about 1450 B.C.

In addition to those mentioned above, several other graves of the Knossian cemeteries are worth noting. The chamber tomb at Haghios Ioannis, the earliest warrior's grave dated after 1450 B.C. so far excavated at Knossos, contained a substantial number of weapons, including one sword, two daggers, six spear heads, one razor, arrowheads, and a gold cup (fig. 5). The so-called Tomb of the Double-Axes at Isopata, which has a distinctive architectural plan with a long *dromos*, a rectangular chamber divided in two by an engaged pillar across the entrance, benches along the walls, and a burial pit in the shape of a double axe, contained three bronze double axes, seals, and high-quality pottery. Another monumental tomb at Isopata produced an exquisite gold ring bearing a religious representation of divine epiphany and dancing female worshipers in a field of lilies (fig. 6).

In western Crete, the Minoan settlement that is identified with Kydonia of the Linear B tablets and lies today beneath the city of Khania was destroyed by fire, as were most Minoan centers, about 1450 B.C. Immediately afterward, the Mycenaean presence became very apparent at Kydonia, which was transformed into an important Mycenaean center

Fig. 4. Gold-coated sword handle (ca. 1450–1375 B.C.). Sanatorio cemetery, Knossos. Herakleion Archaeological Museum.

intensively engaged in trade. The Mycenaean necropolis of Kydonia, which spread along the eastern and southeasterm part of the settlement, comprised both grouped and isolated graves, approximately two hundred of which have been excavated so far. These are mostly chamber tombs with burials on the floor, as well as pit caves and pit graves. Very recently a group of warrior graves came to light with rich grave goods typical of such burials: various weapons (see cat. no. 75), seals, jewelry, and beautiful imported Mycenaean and locally produced pottery.

The Tholos A at Archanes in the wider Knossos region, an impressive and well-preserved monument with a long *dromos*, has a circular main chamber and a side chamber, the same plan as used in two Mycenaean tombs on the mainland. In the side chamber, a particularly rich, unlooted burial was excavated with fine ivory artifacts, an important collection of bronze vessels, and a series of precious jewelry, including some marvelous gold rings (see chap. 9, fig. 6). The deceased, apparently a female of princely origin, perhaps even related to the Knossian palatial hierarchy itself, was also offered the unique sacrifice of a horse and the only existing

example of a sacrifice of a bull, a ritual otherwise known from the iconography. The tomb is dated to the first half of the fourteenth century B.C. (LM IIIA1).

At the same cemetery of Phourni in Archanes, a Mycenaean rectangular built enclosure dating also to the fourteenth century borders seven shaft graves, where broken sarcophagi were found, along with a series of bronze vessels, ivory fragments, and pieces of jewelry. In this case, the enclosure of shaft graves marked with stone stelae, a typical Mycenaean feature, is combined with the use of sarcophagi, a Minoan practice.

In the area of Knossos, where the warrior burials with weapons and bronzes decreased after the middle of the fourteenth century B.C., burials continued with relatively modest offerings at the cemeteries of Zapher Papoura, Gypsades, and Sellopoulo but seemed to disappear from the first cemeteries established after 1450, such as those at Isopata, Haghios Ioannis, and Sanatorio-Venizeleio. This scarcity was not universal, however. At Phourni the small Tholos Tomb D, which was built in the second half of the fourteenth century B.C. (LM IIIA2), sheltered a rich female burial with a gold diadem and necklaces, a bronze mirror placed opposite the deceased's face, and a clay jewel box with another precious necklace (fig. 7).

The fourteenth-century necropolis of the Phaistos area comprises a group of rich burials in chamber tombs at Kalyvia, which are thought to have belonged to noblemen (*Tombe dei nobili*) because they contained precious jewelry and weapons; poorer tombs at Liliana were assigned to plebeians (*Tombe dei plebei*). During this period, the tholos tomb at Haghia Triada was also in use, and the grand tholos at Kamilari was put to use again.

In the Final Palatial period, several impressive funerary monuments were built in western Crete. The tomb at Phylaki dated from the fourteenth to the thirteenth century B.C. has a square chamber 3.5 meters long on each side, a corbelled roof, and a *dromos* 11 meters long leading to its entrance. Among the finds that survived looting are gold rosettes; seals and sealing rings; and ivory plaques with relief decoration of helmet-bearing warriors, sphinxes, and wild goats (see cat. nos. 82, 84). The monumental tomb at Stylos, Apokoronas, also dated to the same period, has a partly paved road 21 meters long with stone-covered sides, as well as a circular chamber constructed of stone blocks measuring 4.30 meters in diameter and 4.80 meters in height. Only fragments of high-quality pottery have survived a complete looting of the tomb. The tholos tomb at Maleme, of the same date as the previous tombs, has a square chamber that measures 4.5 meters along each side, possibly a pyramidal roof, and a road 25 meters long with stone-covered sides. Two seal stones and some vessel fragments are the only grave gifts that were saved.

Fig. 5. Gold cup from a "warrior's grave" (ca. 1450–1400 B.C.). Haghios Ioannis cemetery, Knossos. Herakleion Archaeological Museum.

Fig. 6. Gold ring with epiphany and ecstatic female dance. Isopata, Knossos (ca. 1500–1400 B.C.). Herakleion Archaeological Museum.

Fig. 7. Gold necklace with rock-crystal pendant (ca. 1375–1300 B.C.). Tholos D, Phourni cemetery, Archanes. Herakleion Archaeological Museum.

Fig. 8. The sarcophagus of Haghia Triada (ca. 1400–1300 B.C.). Long side: libations and ritual offerings to the dead. Herakleion Archaeological Museum.

Two tholos tombs of the Final Palatial period have also been excavated, one at Apodoulou and the other, more recently, at Margarites, Mylopotamos, where the bezel of a gold signet ring with a cult scene and some beautiful seal stones were found. A third, carefully constructed tholos with a rectangular chamber and paved floor was found at Damania in central Crete, dating to the thirteenth century B.C. In eastern Crete were found two large tholos tombs, the Tomb A at Praisos, which is thought to be Mycenaean in date and has a spacious antechamber and a chamber 4.3 meters in diameter, and the Tomb at Achladia, Siteia, which is equivalent in size and construction. A third tholos tomb at Magoulas-Kaminaki dating in the fourteenth century B.C. was investigated recently. Despite its having been looted in later times, it preserved important finds: necklace beads made of gold and faience, a golden earring with granulation, an ivory female figure, and seal stones. Smaller tholos tombs with circular or square ground plans and corbelled roofs dating to the Postpalatial period, from the thirteenth century onward, especially in the final Mycenaean phase, have been excavated at various sites, including Adromyloi, Mouliana, Olous, Vrokastro, Karphi, and Kavousi, among others. These tombs usually contained several burials, as well as cremations in pithoi and grave goods, such as bronze and iron weapons, pottery, and simple jewelry. To this category belong also the tombs at Photoula, Praisos, and Mouliana, Siteia, which were rectangular with corbelled walls and contained interments provided with gold rings bearing granulation in gold (see cat. no. 145), a gold mask, the ivory handle of a scepter, a gold decorated sheet, a spear head, and other fine objects that make up the last known rich burials of the late Mycenaean years, when precious grave goods were becoming rare.

The type of small circular or rectangular tholos tomb with corbelled walls is also attested in central Crete in some cemeteries, such as those at Erganos and Panaghia, and also in eastern Crete, where the type was retained from the Postpalatial period until the Subminoan and Protogeometric eras.

The most common type of grave in the Final and Postpalatial periods is the underground rock-cut chamber tomb with a circular, rectangular, or petal-shape chamber and a long sloping *dromos* leading to its entrance. There exist many cemeteries that date to the Final Palatial and Postpalatial periods, from the middle of the fourteenth century B.C. to the twelfth. Apart from those examples at Knossos, Phaistos, and Kydonia already discussed, we should mention the extensive and well-organized cemetery of Armenoi at

Rethymnon (see chap. 18, fig. 6), where hundreds of tombs contain burials in richly decorated sarcophagi (see cat. nos. 225, 226) and significant grave goods (see cat. nos. 76, 79, 80, 125, 126, 128–130, 154) including imported objects and Mycenaean pottery. Also in this category are the cemetery at Haghios Silas in the wider Knossos region with some of the latest warrior burials; the cemeteries at Gazi, Episkopi, Stamnioi, Gournes-Pediada, Athanatoi, Giofirakia, Vathia, Vasilika Anogeia, and Kalohoraphitis in central Crete; Episkopi of Hierapetra, Mochlos, Gournia, Palaikastro and Milatos in eastern Crete; and Maroulas in western Crete. All of these graves received burials that were small in number and were usually placed in clay sarcophagi; some even contain a single burial in one sarcophagus, a modest end to the tendency toward individualization. Many of these tombs have cists on the floor for the placement of burials or for the removal of older relics. The clay sarcophagi are rectangular chests (see cat. nos. 225, 226) with a saddle-shape or flat cover; in eastern Crete, these often take the shape of a bathtub (see cat. no. 227). Most are undecorated or have only a simple decoration of horizontal bands and wavy lines, whereas others bear representations with cosmological symbolism (see chap. 17, figs. 1–3). The figures of terrestrial animals, such as wild goats, bulls, and birds, or of marine creatures, such as fish and octopuses, and of plants, such as papyri, palm trees, and flowers, appear to echo the worldwide perception of the netherworld as an evergreen garden. Sacred symbols, such as the double axe and the horns of consecration, must reflect religious beliefs and funerary ceremonies. Rare representations, such as those of a boat and a chariot on sarcophagi from Gazi and Kavrochori respectively, may imply the marine or terrestrial journey of the deceased toward the Elysian Fields. The depiction of a throne on the sarcophagus from Klima, Mesara, may relate to the enthronement of the god and the final verdict of the soul in the netherworld. The procession of women or men and the ritual hunting and bull-leaping scenes on the sarcophagi from Knossos, Armenoi, Episkopi of Hierapetra, and Kalohoraphitis most likely reproduce parts of the rituals that accompanied the burials of distinguished individuals.

In addition to representations that recall posthumous beliefs or burial rituals, there exists clear evidence for cult practice in honor of dead ancestors or the eminent dead. The most important monument in this category is the unique Haghia Triada sarcophagus (figs. 8, 9), which is made of limestone covered with a layer of plaster, on the surface of which have been painted frescoes in vivid colors depicting ritual scenes. The sarcophagus was found in a rectangular built chamber of the necropolis at Haghia Triada, Mesara, and is dated to the fourteenth century B.C. The composite paintings on the four sides of the sarcophagus provide a concise image of the funerary offerings, the burial ceremonies, the cult of the dead, and the afterlife beliefs of the Minoans. The adoration scenes of the dead are narrated on the two long sides of the sarcophagus. On one side (fig. 8) a male figure dressed in leather gown, perhaps the deceased himself or, according to another view, a chthonic god, is depicted emerging from the ground in front of the façade of a building, possibly the rectangular grave itself. Three men wearing leather skirts offer him calves, or rather models of bulls, as well as the model of a boat, indicating symbolically the sacrifice of the sacred animal and the overseas journey of the dead by boat. At the left, priestesses offer libations between two poles fitted with ritual double axes, on which sit birds that signal the epiphany of the deity; at the center a musician-priest in long robe accompanies the ritual with a seven-string

Fig. 9. The sarcophagus of Haghia Triada. Short side: chariot.

Fig. 10. Clay model of male dance on circular dancing floor with consecration horns (ca. 1600–1450 B.C.). Kamilari, Phaistos. Herakleion Archaeological Museum.

Fig. 11. Clay model depicting offerings to seated figurines, perhaps the dead ancestors (ca. 1600–1450 B.C.). Kamilari, Phaistos. Herakleion Archaeological Museum.

lyre. The other side depicts the ceremonial ritual of a bull sacrifice in the presence of a priestess and a musician, who plays the double flute. The bull is shown tied onto an altar, under which two more smaller animals await sacrifice. At the right, a priestess is shown making an offering in front of an altar and a pole with an axe and a bird on top, while at the back is an enclosure with a tree and horns of consecration on top. The narrow sides of the sarcophagus carry representations of transcendent nature with female figures in chariots pulled by griffins and wild goats (fig. 9), which may indicate the transition of the dead to the netherworld.

Other significant evidence for burial rituals and funeral cults is derived from the three clay models of the tholos tomb at Kamilari, Mesara, which are dated to the Neopalatial period. The first (fig. 10) represents a group of male dancers on a circular dance floor with horns of consecration, whose presence implies that this is a sacred place and that the dance is of a religious nature, perhaps in honor of the dead. The second model shows a circular shrine and what may be a funeral meal taking place inside, where two figures sit around a table and a third one watches from the entrance. The third model (fig. 11) depicts four figures seated inside a room with two columns in front and receiving offerings on altars from smaller figures who stand before them. The image may depict a ritual of offerings in honor of dead ancestors.

Aspects of death, in any case subjected to the strong symbolism of burial contexts, constitute a basic field for the understanding of past societies. Similarly, the Minoan graves and cemeteries, burial customs and practices, funerary rituals, and the iconography of death, as well as, of course, the abundance of grave goods—a real treasury of Minoan art—reflect expressions of the life and ideology of the Minoan world as it developed and evolved over the course of two millennia.

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CHAPTER 17

MINOAN BELIEFS OF THE AFTERLIFE

Nanno Marinatos

Minoan beliefs of the afterlife are difficult to fathom because Minoan myths have not survived. Attempts to reconstruct them have been based on the presumption that Minoan religion represents the first stage of Greek religion. This hypothesis entails a linear development over time from Minoan to Greek religion, and does not seriously consider the synchronic process of diffusion from the Near East and Egypt to the Aegean. Yet, it stands to reason that religious beliefs are shaped as a direct consequence of contacts between neighbors, and such contacts are attested archaeologically in the second millennium B.C.

The diffusion model is a useful methodological tool. Surely there existed some afterlife beliefs in the second millennium B.C. that were common to the Near East and Egypt, and it is likely that the Minoans shared in this *koine*. For this reason a basic knowledge of Near Eastern and Egyptian eschatology is a useful guide to the Minoan material. (This approach does not exclude the possibility that some ideas survived in Greek myths.)

Clay painted coffins, or larnakes, are the primary archaeological source for Minoan ideas about the beyond (see cat. nos. 225, 226). They stem from the period around the fall of Knossos and later. Before 1400 B.C. there is hardly any visual material relating to the afterlife. Strangely enough, neither Sir Arthur Evans nor Martin P. Nilsson, the most serious students of Minoan religion, considered this material as the primary source for Minoan metaphysics. The excavation and publication of many larnakes by Greek excavators in recent years has contributed to a better understanding of the iconography of the netherworld.

The scenes depicted on the larnakes are not biographical in the sense that they show the occupation of the deceased during his life on earth—such iconography would be very unusual, if not unique, in the second millennium B.C. (indeed in the entire ancient world). Also, it is unlikely that the coffins portray rituals of sacrifice, as some scholars have argued. The most likely possibility, which is supported by analogy with Egyptian funerary art, is that the scenes on the coffins represent landscapes of the afterlife.

Death in ancient Egypt entailed a difficult journey for the soul through the various regions of the beyond, and the final destination was a kind of "paradise"—*iaru*—often translated as the field of reeds. It is important to realize that throughout the Near East and Egypt, the netherworld was not a single place. Rather, it was a universe with complex topography symmetrical to that of the earthly realm. It included mountains, rivers, and lakes and was populated by various animals and birds, real or imaginary, such as griffins. In Egypt the dead were sometimes aided by instructions and spells that could take either a textual or a visual form, as vignettes on funerary papyri. The idea was that the vignettes could help the dead navigate through "the undiscovered country."

The scenes on Minoan coffins consist of such visual topographical maps. They are designed to provide a home for the dead and to guide them to the netherworld. Sometimes ships are depicted as vehicles of transportation; other times, chariots transport the dead (fig. 2).

Rivers, rendered as sets of wavy lines, delimit the lands of the beyond. Significantly, they are found primarily on the borders or legs of the coffins (figs. 1, 2; see cat. no. 226). The function of the river is made clear in the Near Eastern *Epic of Gilgamesh*, which states that the netherworld is separated from the inhabited world by "the waters of death" (*Gilgamesh*, tablet 10, line 2).

A river as a feature of cosmic topography is presupposed in the *Odyssey* (δ.561), where the Elysian Fields are described as lying next to the River Ocean: "The immortals will send you to the Elysian plain at the world's end . . . where there is never any rain but day after day the West wind's tuneful breezes come in from the Ocean to refresh its folk." In Hesiod the "islands of the blessed" are located next to the distant River Ocean (*Works and Days*, 171).

Another common feature of eastern Mediterranean belief is the tree of life that nourishes the dead. In the Hebrew Bible the tree of life is said to grow in the midst of the Garden of Eden (Genesis 2:9). In Egyptian funerary iconography, the tree of life is always a palm laden with dates. Its function is also to feed the dead.

We find such a tree on a Minoan larnax from Vassilika Anogia (fig.1). It is in the center of the scene surrounded by birds that fly about its crest while fish swim near its roots. The tree on this Minoan larnax is a palm and it is not only a tree of life but also a cosmic tree uniting heaven and earth. It is rooted in the depths of the sea and its branches reach the sky.

Minoan mythology apparently included one more idea: the netherworld was located at the depths of the sea. This undersea universe is as rich and complex as the terrestrial one, replete with plants and fish and mollusks. Of the latter, the most frequent symbol is the octopus, a creature that lives

Fig. 1. Clay larnax (ca. 1375-1300 B.C.). Vasilika Anogia. Herakleion Archaeological Museum.

Fig. 2. Clay larnax (ca. 1300 B.C.). Kavrochori (Rethemiotakis 1979, fig. 3).

in caverns and symbolizes the unfathomable dark depths (see cat. nos. 226, 227).

A coffin from Kavrochori, excavated by G. Rethemiotakis, illustrates the netherworld in the depths of the ocean (fig. 2). At the left, a bird alights on a palm; below and to the right is a mollusk and above it a chariot, the vehicle that transported the dead to the beyond. The scene is bordered by a river delimiting the frontier of the realm of the netherworld. The same iconography is repeated on the lid.

Thus the larnakes provide a pictorial map of the netherworld. The landscapes—diverse and almost always bordered by water—include the palm as the tree of life. Part of the netherworld was imagined as being at the bottom of the sea. All these ideas are compatible with those of Egyptian netherworld beliefs, the distinctive Minoan mythological idiom being the depths of the ocean. The journey of the dead to the netherworld, to the bottom of the sea, is depicted on the short side of a larnax from Milatos (fig. 3).

Fig. 3. Clay larnax (ca. 1300-1200 B.C.). Milatos (Evans 1901, fig. 5).

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CHAPTER 18

THE EPILOGUE OF A PALATIAL WORLD: MINOAN CIVILIZATION AFTER THE GREAT PALACES (14TH–11TH CENTURY B.C.)

Athanasia Kanta

Cretan culture reached its peak during the period of the second palaces, or the Neopalatial Period, as it is often called. Severe destructions of palaces and settlements befell the island about 1450 B.C., at the end of the archaeological phase known as Late Minoan IB. These destructions have been attributed by various scholars to either earthquakes or enemy action, or perhaps both, as there are differing interpretations of the archaeological data. It is a fact, however, that in the aftermath of the great destructions, while the Cretan palaces lay in ruins, Knossos was the only palace still functioning, though under a different administration and associated language. In spite of the fact that Crete suffered severe damage at the time, it recovered relatively quickly. Mycenaeans from the Greek mainland are now prominent in the archaeological record, and it seems that they had taken over the island.

The great political change that took place after 1450 B.C. is evident in the language of the administration at Knossos. Linear B script, which is now used instead of Linear A for documents noting transactions and which has been deciphered by Michael Ventris and John Chadwick, records a Greek dialect older than the language used by Homer (see cat. no. 107). Apart from Knossos, Linear B archives have been found in various Mycenaean palaces on the Greek mainland, including Pylos and Thebes, among others. The study of these archives has offered important insights into the administration, society, and religion of the period. Toponyms mentioned in Knossian clay tablets are widely distributed all over the island and indicate that settlements in west Crete, such as Khania, as well as in the east, depended on the palace at Knossos (see cat. no. 107). Indeed, the administrative system shows clear similarities to that of the Greek mainland. A few Linear B tablets have also been found at Khania.

The affluent palatial society of Knossos is revealed in certain wall paintings in the palace that can definitely be dated to this period on the basis of the vases depicted in them (cf. "the loving cup" in the "Camp-stool Fresco": see chap. 9, fig. 8). A change in burial habits is also evident in

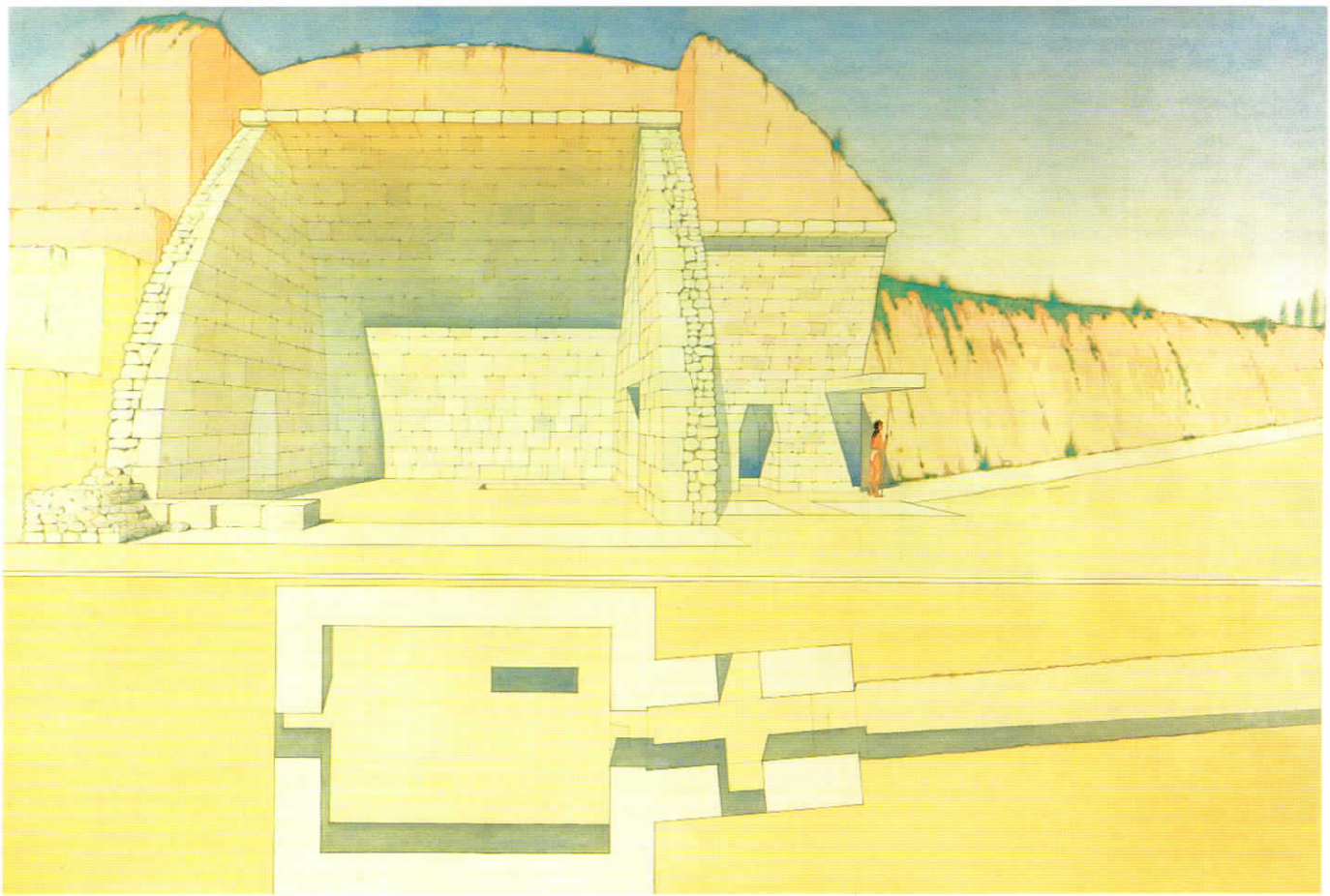

Fig. 1. Royal Tomb at Isopata, Knossos (ca. 1450–1400 B.C.) (watercolor by Piet de Jong).

Fig. 2a. Late Minoan II "Ephyraean" goblet. Knossos (ca. 1450–1400 B.C.). Herakleion Archaeological Museum.

Fig. 2b. Late Minoan IIIA2 kylix (ca. 1375–1300 B.C.). Knossos (Popham 1969, p. 301, fig. 4). Reproduced with Permission of the British School at Athens.

Fig. 2c. Late Minoan IIIB kylix (ca. 1300–1200 B.C.) Knossos. (Popham 1970, p. 196, fig. 1:2). Reproduced with Permission of the British School at Athens.

the rich tombs found in the area of Knossos. One tomb that gives a measure of the wealthiest of such graves is the Royal Tomb at Isopata, excavated by Sir Arthur Evans (fig. 1).

A series of warrior graves is characterized by high-quality weapons and bronze utensils. Rich underground tholos tombs, princely burials, also show that a palatial society continued to exist in Crete.

Pottery sequences established in relation to architectural phases and correlations with the east have provided a relative chronology that enables scholars to classify the archaeological material. Thus, the Neopalatial destructions took place at the end of Late Minoan IB. The palace at Knossos and its Mycenaean administration were active in the phases called Late Minoan II (ca. 1450–1400 B.C.) and Late Minoan IIIA1 (ca. 1400–1375 B.C.) in absolute chronology. Knossos at that time was still an important power in the eastern Mediterranean and had relations with the Mycenaean mainland, the islands of the Aegean, Asia Minor, Syria, Palestine, and Cyprus. The three main Minoan harbors—at Poros, part of modern Herakleion; Kommos in the south; and Kastelli, Khania, in the west—were active and frequented by boats from overseas. This much is obvious from the foreign products, including pottery, which have been discovered there (see cat. nos. 37, 38).

The high artistic quality of the best Neopalatial pottery produced in palatial workshops reached unparalleled peaks at this time, but after Late Minoan IB, new styles came into vogue. The pottery of this period is characterized by the good quality of its manufacture; fine and medium ware was slipped, polished, and decorated in styles that changed over time. The typical shapes of Late Minoan II are the Ephyraean goblet (fig. 2a), a mainland shape appearing in Crete at this time, and the palace-style jar, a shape of Minoan origin decorated with older motifs in a novel arrangement (see cat. nos. 36, 83). By Late Minoan IIIA1, the decoration became gradually schematized and was largely organized in tiers. One tier would bear the principal decorative zone framed by painted bands. Typical shapes include the cup, the alabastron, and the stirrup jar. The motifs are either floral or abstract forms (see cat. no. 222).

The next major disruption in the history of Crete was the final destruction and abandonment of the palace at Knossos. There is divergence of opinions among scholars as to when this major event occurred. Opinions vary from a date of about 1380 to 1370 B.C., that is, at the beginning of the phase called Late Minoan IIIA2, to a date toward the end of the next phase, Late Minoan IIIB, before 1200 B.C. This difference of opinion is caused by the fact that the palace at Knossos was excavated at a very early date by large numbers of workers, and stratigraphy was not always observed. Also, the significance of the relevant discoveries was not immediately obvious at the time. The present author follows the traditional opinion that the palace at Knossos was destroyed at the beginning of Late Minoan IIIA2, mainly because exceptionally rich burials or wall paintings do not seem to exist after that date, although many later tombs reflect a high standard of material possessions.

While Knossos itself may have ceased to function as a palace, the wider area was not abandoned. One result of the destruction of Knossos appears to have been the strengthening of local elements, and by that time several changes are discernible in the administration of the island. It seems that Crete was then governed by several principalities, whose number and importance are not absolutely clear, unlike the situation on the Greek mainland. Such a principality existed at Khania, the seat of Minoan Kydonia, which had its own harbor, and at Haghia Triada in Mesara, where a monumental

Fig. 3. Haghia Triada. Plan of the area excavated up to 1914 (*Ancient Crete* 1985, p. 111).

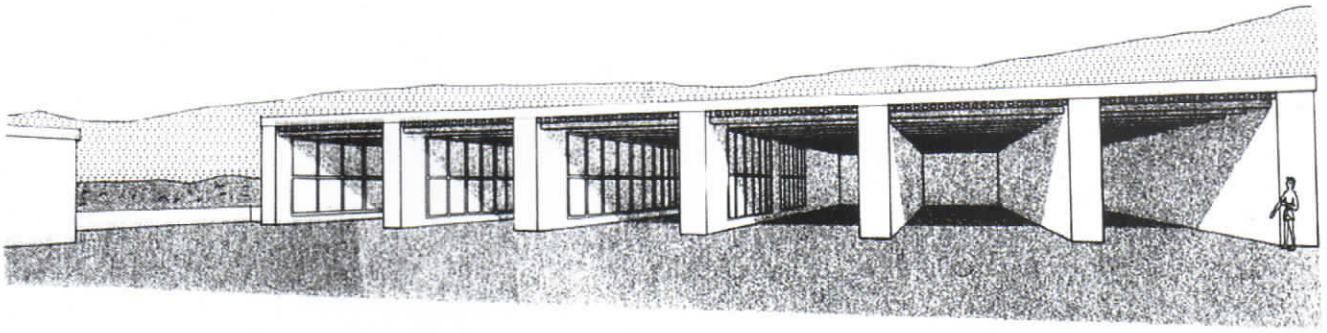

Fig. 4. Kommos. Shipyards (14th–13th century B.C.). (Shaw–Shaw 2006, p. 962, pl. 1.12). Permission by Princeton University Press.

Mycenaean *megaron* was built (fig. 3). This *megaron* has enormous foundations, far larger than the ruins of the Neopalatial Royal Villa, and it was fronted by a portico. The harbor at Kommos belonged to this principality (fig. 4). Other possible centers of such principalities were Gournia in the gulf of Mirabello (see chap. 3, fig. 15) and Palaikastro far to the east.

Thus life continued on Crete after the last palace at Knossos ceased to exist. Parts of many settlements have been excavated all over the island, providing information about the standard of living, the economy, and the customs of the population. The sheer number of locations with finds dating to Late Minoan IIIA2 (ca. 1375–1300) and Late Minoan IIIB (ca. 1300–1200 B.C.) indicates the island's full recovery after the Neopalatial destructions. The leading role in the Mediterranean export trade was by now taken over by mainland Mycenaeans, but Crete continued to have external relations with the Greek mainland, Cyprus, the east, and the west. This is obvious from the trade in large Cretan storage stirrup jars (see cat. no. 108), among other things, which have been discovered in mainland Greek and Cypriot centers. A good indication of this trade has been provided by the shipwrecks of Ulu Burun and Cape Gelidonia off the coast of Turkey and Cape Iria in the Peloponnese, as well as by the appearance of Cypriot pottery (see cat. no. 38), Canaanite jars (see chap. 12, fig. 7), and Italian pottery in Cretan harbors.

The especially rich finds recovered from the Ulu Burun boat, sunk about 1300 B.C., give a very good indication of late Bronze Age overseas trade and explain the provenance of similar Cretan finds. Copper and tin ingots in ox-hide and pillow shapes were the necessary raw materials for the manufacture of bronze. Glass ingots were also traded as raw material for the production of beads and vases. It is likely that wine was carried, as pistaccia resin was detected in Canaanite amphoras. There were also beads of various materials, elephant tusks and hippopotamus teeth used in the manufacture of prestige items, and tortoise carapaces to make musical instruments such as lyres. The Cape Gelidonya wreck, from a later date within the thirteenth century, presents a similar picture.

Mycenaeans and Cypriots, perhaps together with Cretans, traveled not only to the east but also to the west, as the presence of eastern metallurgical traits and of ox-hide ingots indicates. Organic products, although undetectable in the archaeological record, also traveled, together with technology and ideas. Pottery traveled, but it was mainly a byproduct of other trade. Minoans were part of this process, but their presence is not always detectable. The evidence from the site of Broglio di Trebisacce in southern Italy, however, indicates specific Cretan involvement from the area of Rethymnon, together with Mycenaean settlers. This trade continued toward the end of the Bronze Age, when Italian-type knives reached Crete. Italian-type pottery also appears at Khania and Kommos. Syro-Palestinian and Cypriot-type stone anchors, which have been found in both the east and west Mediterranean, including Crete, indicate that a part of this trade was carried out by Cypriot ships. Where Crete is concerned, such anchors have been discovered at Kommos and off the coast of Khania.

Fig. 5. Late Minoan IIIA2 clay alabastron. Kalyvia, Phaistos (ca. 1375–1350 B.C.). Herakleion Archaeological Museum.

Fig. 6. Armenoi, Rethymnon. Late Minoan IIIA–B cemetery (14th–13th century B.C.).

After the fall of the palace, life in the area of the town of Knossos continued from Late Minoan IIIA2 onward. Indeed, the production of excellent pottery shows that important pottery workshops continued their work in the area. Several other pottery workshops are also evident all over the island (fig. 5); prominent among them is the Khania workshop with its characteristic yellowish clay and orange-brown paint (see cat. nos. 41, 97, 192, 223). The motifs used derive from both Minoan tradition and Mycenaean prototypes. Indeed, western Crete, from Rethymnon westward, is an area that shows the greatest Mycenaean influence on the island. Typical shapes include the cup, the stirrup jar, the kylix, and the miniature jug (fig. 2b; see also cat. nos. 155, 202, 214, 223, 224). During the next phase, Late Minoan IIIB, there is a further stylization of pottery motifs as they appeared in characteristic shapes of the phase, such as the deep bowl, the stirrup jar, the kylix, and others (fig. 2c; see cat. nos. 40, 41, 97, 192).

It is clear that Minoan civilization survived, but it was now injected with new Mycenaean cultural elements that led the island in new directions. The greatest difference is the predominance of tomb types that were common on the mainland: the tholos tomb mentioned above and the chamber tomb. Tholos tombs are usually built in a prepared pit and have a vaulted roof; in Crete they are either circular or rectangular. Chamber tombs are hewn out of the bedrock and have a roughly circular or rectangular shape (fig. 6).

The spread of tholos and chamber tombs comparable to those on the Greek mainland is a strong indication of Mycenaean influence. Nevertheless, Crete always had a very strong local cultural character, which is demonstrated by the appearance of new types of clay sarcophagi—the footed chest type with a lid (see cat. nos. 225, 226), whose shape probably stemmed from Egyptian wooden chests, and the bathtub type, which is of Cretan origin (see cat. no. 227). Some of these bathtub-shape clay coffins started their careers as house bathtubs, and for this reason they are sometimes decorated inside with wavy lines and fish, so that when they were filled with water, they gave the impression that one was swimming in the sea.

These clay coffins are often decorated with linear and pictorial motifs, some of which are obviously related to beliefs about religion, the underworld, and the fate of the soul. At a time when no more frescoes were painted with pictorial scenes, the sarcophagi provided large decorative surfaces. Indeed, some of the techniques and styles used on the sarcophagi refer to wall paintings. The most explicit evidence for religious beliefs related to death and to life after death is provided by a stone sarcophagus that has been plastered and painted over with subjects that reflect an amalgam of Cretan and mainland beliefs (see chap. 16b, figs. 8, 9). The coffin was found in a built tomb at Haghia Triada and dates from about 1375. The decoration is arranged in two friezes that probably relate to each other in content and are differentiated by background colors. Most of the representational elements present in the decorative scheme of the sarcophagus are Minoan, except for the chariots, which are Mycenaean.

Fig. 7. Kastrokephala (12th century B.C.). General view from northwest.

There are other clay sarcophagi with representational scenes related to the realm of beliefs focused on death and the afterlife (see chap. 17, figs. 2, 3). Prominent among these are the sarcophagus from Episkopi in Hierapetra and a sarcophagus with a hunting scene from Armenoi. These date from Late Minoan IIIB and are later than the Haghia Triada sarcophagus. There are other types of tombs in the period after the great palaces, such as burials in rock shelters and in pithoi. At times, these sarcophagi were placed in trenches as, for example, at Olous in eastern Crete.

In the period after 1300 B.C., the political situation in Crete began to deteriorate. Some sites were destroyed and abandoned, and there were interruptions in the use of some cemeteries, which heralds significant changes in the fortunes of the island. These occurrences do not seem to be contemporary but happened within the time span of the period and intensified in the next phase, Late Minoan IIIC (from ca. 1200 onward). One of the sites that were abandoned early on was the small agrarian settlement at Chondros Viannou, which was excavated by Nikolaos Platon. The *megaron* at Haghia Triada was abandoned, as was the *agora*, a unique marketplace that existed at the site (fig. 3). The harbor town and shipyards of Kommos (fig. 4) also seem to have been virtually abandoned after Late Minoan IIIB. Sites in eastern Crete, such as Mochlos and Gournia, suffered the same fate. In Late Minoan IIIC, imports from the mainland became greatly reduced, but even if the actual objects were not traveling in the same numbers as before, people were moving, and with them traveled ideas and cultural traits. Pottery and religious ideology are two important fields in which it is possible to observe the influence of Cretan traits on mainland practices and vice versa.

During Late Minoan IIIC, the populations gradually moved to high and inaccessible places that offered natural protection, sometimes enhanced by fortification walls, the so-called refuge settlements (fig. 7). Comparable phenomena are observed on the Mycenaean mainland and on the Aegean islands. It appears that after the destruction of the Mycenaean palaces, groups of refugees moved to more secure places or even overseas. So we see groups of Mycenaeans moving to Crete, the islands of the Aegean, Cyprus, or the coast of Syro-Palestine. Some Cretans moved to Rhodes, and others became part of the groups that moved to various other areas. The biblical reference to the Philistines coming from Crete may be based on this mixture of Aegean groups passing through Crete and moving to the east. The sites chosen by some refugees for the construction of citadels and naturally protected settlements were located near the sea, where rivers flowed out into the sea and created marshland. Such citadels outside Crete include Teichos Dymaion in Achaia on the Greek mainland, Koukounaries at Paros, and Maa Palaiokastro in Cyprus. In Crete the refuge town of Karphi, excavated by John Pendlebury and his team before World War II, overlooked the Lasithi plateau and the north coast, which, however, was some distance from the sea. This settlement is the more completely investigated and published on

Fig. 8. Clay tankard with "close style" decoration (ca. 1200–1150 B.C.). Karphi. Herakleion Archaeological Museum.

the island to date, and it has provided the basis of research on the chronology and history of the period.

The presence of imported objects shows that even at this time of trouble there was access to material wealth and trade, although there has been speculation that the elite of Karphi inhabiting Mycenaean-type *megara* were robber barons. There are other such sites all over the island, such as Kavousi-Plai tou Kastrou and Vrokastro in the east, both excavated by the American School of Classical Studies; Palaikastro-Kastri further east, excavated by the British School of Archaeology; Kastrokephala near Heraklion excavated by the author (fig. 7); Orne in the district of Rethymnon, discovered by Nikolaos Stampolidis and the author. The life span of these settlements varies according to local conditions. Some were abandoned quickly; others continued into Greek times. However, not all settlements located in accessible areas near good agricultural lands were abandoned. The settlement of Tylissos, for example, continued to exist into Greek times.

The movements of people discussed above, so far as Crete is concerned, are also evident in the pottery of the period. In Late Minoan IIIC, new Mycenaean features appear in pottery. A variation of the deep bowl decorated with simple patterns used on the mainland became very common in Crete. Motifs were often fringed, and at times a *horror vacui* led to the surface of the decorative zones being filled. This "close style" appears often on kraters, kalathoi, pyxides, and stirrup jars (fig. 8; see cat. nos. 42, 228), and also on Mycenaean pottery as a result of Cretan influence. It is possible that some of these motifs were borrowed from weaving patterns.

Cretan culture after the fall of the last palace at Knossos presents evidence of uniform religious practices. A series of public shrines dedicated to the cult of the great Minoan goddess contain large clay figures of women wearing bell skirts and raising their arms in a blessing gesture. Various religious symbols, such as horns of consecration, birds, snakes, and, in one case, poppy-seed pods, adorn their heads, and details of the dress and jewelry are indicated by paint (see cat. nos. 168, 169, and chap. 14, fig. 8). Such shrines have been discovered all over Crete, including Knossos, Gazi near Herakleion, Kannia near Gortys, Pangalochori near Rethymnon, Karphi near the Lasithi plateau, Gournia near Pachyammos, and Vasiliki near Hierapetra. In the shrines are benches, offering tables, and various types of cult equipment, such as the so-called snake tubes, ritual vases, and figurines of adorants, as well as the goddess figures. A good illustration of the migration of religious features is provided by a twelfth-century Minoan goddess found at Tiryns; she is pictured with arms raised in the *psi* fashion and wearing the long, straight Mycenaean dress. The goddess also reached Cyprus by the eleventh century, thanks to the influx of Mycenaean and Cretan refugees. Another good example of trade in ideas and objects is the smiting god, often identified with Reshef, common in Syria, Palestine, and Anatolia from the Middle Bronze Age onward. Such figures appear in the Aegean, on the Greek mainland, and in Cyprus, Italy, Sardinia, and Crete, where they have been found in the Patsos (see chap. 1, fig. 5) and Psychro sacred caves and date from the twelfth or eleventh century.

Music was prominent in Bronze Age cults and ceremonies, as depicted on the Haghia Triada sarcophagus (see chap. 16b, fig. 8). Lyres and lyre players are also represented on Minoan pictorial vases. There were probably bards in the Mycenaean Aegean who sang mythological or religious poems and perhaps even songs of legendary kings and warriors, prototypes of "Homeric" poetry. A typical vase is the pictorial pyxis depicting the Orpheus theme discovered at Kalami near Souda Bay (see cat. no. 192).

Religious cults also continued in caves and open-air sanctuaries. Some Peak Sanctuaries continue to be used in the twelfth and eleventh centuries, exemplified by the peak sanctuary at Mount Jouktas (see chap. 9, fig. 1). Dating to the Late Minoan IIIC and Subminoan phases (ca. 1200–970 B.C.) is an open-air sanctuary at the Piazzale dei Sacelli, the Court of the Shrines at Haghia Triada, where large clay bull figures, both hollow and solid, were offered, along with horns of consecration, various animal and human figures, and imaginary creatures, such as "bull men" with animal bodies, human heads, and sometimes human forelegs. An important aspect of this sanctuary is its continuity from prehistoric to early Greek times. A continuity of cult spanning the Minoan and Greek eras also existed at the mountain sanctuary of Kato Symi, Viannos, which was organized near a spring.

In order to determine the political and social situation in Crete from Late Minoan IIIB onward, we depend to some extent on the evidence of tombs. Cremation appeared in Crete as early as Late Minoan IIIA2 at the cemetery of Olous, which was excavated by Henri and Michelline van Effenterre. The practice seems to have come from the east, and it became progressively more common as time went on. A new and characteristic feature of Late Minoan IIIC, which continued to appear into early Greek times, is the existence of whole cemeteries of small tholos tombs, whereas previously these tombs had been important princely burial monuments. Such a cemetery has been excavated at Karphi. A comparable Iron Age cemetery has been discovered at Kourtes. Small tombs with saddle-vaulted roofs also continued to be built in Crete at this time and were probably transmitted to Cyprus in the twelfth or eleventh century, together with a number of other Cretan features. Chamber tombs continued, along with pithos burials, which were often enclosed in a small structure imitating a tholos tomb, as, for example, at the cemetery of Krya in the Siteia district (fig. 9), excavated by Costis Davaras. Tombs containing weapons, which are referred to as warrior graves, are rare but existed in Crete even after the fall of Knossos. This, together with other archaeological features, may suggest the survival of the political and social structure of small Mycenaean states, with the Mycenaean elite being absorbed to a great extent into the local population, which also adopted certain elements of Mycenaean culture. When newcomers arrived from the mainland at the beginning of Late Minoan IIIC, therefore, they found themselves in a familiar Mycenaeanizing environment. Perhaps they brought with them a new type of sword, the so called Naue II-type sword, which has been found in tombs of the period. Such a Naue II-type sword was discovered by the present author at the destruction layer of the citadel of Kastrokephala. The best-known Late Minoan IIIC–Subminoan examples of warrior graves include the tholos tombs from Mouliana, excavated by Stephanos Xanthoudides, and Photoula Praisos, excavated by Nikolaos Platon.

Between Late Minoan IIIC and the Protogeometric, from about 1100/1050 to 970 B.C., is the concluding phase of Minoan culture called Subminoan. By this time, the number of warrior graves had increased, as indicated by the North Cemetery of Knossos, which was excavated by the British School, and Pantanassa in the district of Rethymnon, excavated by Eva Tegou, where iron was now present among the weapons. Warrior graves with a heroic flavor also appear in Cyprus in the eleventh century, such as Kaloriziki tomb 40 and tombs at the cemetery of Palaipaphos Skales. These funerary customs were brought to the island by Aegean settlers. It has been suggested that the heirlooms and Cypriot features present in Subminoan Knossian warrior graves are

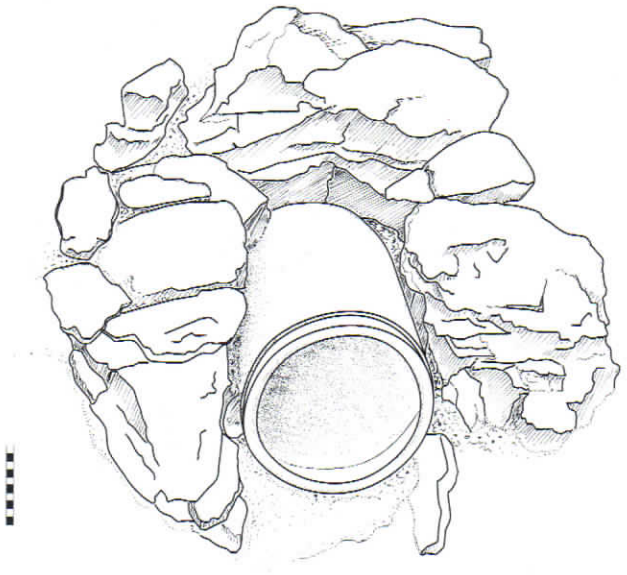

Fig. 9. Postpalatial and Early Iron Age cemetery of Krya. Pseudotholos tomb (ca. 1200–1100 B.C.).

the result of the *nostoi*, the return home of warriors after foreign exploits. Be that as it may, the fact remains that Mycenaean warriors were buried in the old style in the twelfth and eleventh centuries in the eastern Mediterranean at a time when cremation was becoming increasingly popular. Even in cases where the rite changed from inhumation to cremation, the burial gifts remained the same. The heroic ideal present in these elite graves led to the later Iron Age heroic burials, which can be considered a direct continuation of Bronze Age practices. Our present knowledge of the period after 1050 B.C. until about 970 B.C., when the Cretan Protogeometric period began, according to parallels with the better-documented Attic Protogeometric, is not extensive. It seems that, although the old way of life lingered on, innovations in metal technology involving the extensive use of iron were gradually becoming common. By the concluding years of Minoan culture, evidence from the site of Tylissos, excavated by the present author, suggests that the living standard of the period was higher than was thought. The same is true for the area of Knossos, as the Subminoan tombs excavated there indicate. In Crete there seems to have been a direct continuity of culture from Minoan to Greek times, despite the troubles that hit the island toward the end of the Bronze Age. The Minoan spirit lived on and was manifested in many aspects of the culture of the island in Greek times.

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CHAPTER 19
HISTORY OF THE EXCAVATIONS

Andonis Vasilakis

Fig. 2. Sir Arthur Evans.

Greek Excavators

In 2008 one and a half centuries will have passed since the discovery of the Minoan civilization. It was in the year 1878, when Crete was part of the Ottoman Empire, that a merchant from Herakleion named Minos Kalokairinos revealed the western part of the palace at Knossos. Unfortunately, this bold Cretan dated his discovery incorrectly, since he interpreted the palace ruins as a Greek *andreion* (a public building for city officials). Chance reserved the full excavation of the palace of Minos at Knossos (fig. 1) for the British archaeologist Arthur Evans (fig. 2).

Before 1900 the primary Greek archaeological activities were those of the Educational Society of Herakleion, under the inspired leadership of Joseph Hazzidakis (fig. 3) and Stephanos Xanthoudides (fig. 4). The society functioned for twenty years as an archaeological service of the Ottoman regime, and it rescued such important monuments as the Great Gortyn Inscription, the Idaean cave, and the cave of Eileithyia. The society also established the first Cretan

Fig. 1. View of the palace at Knossos from the northeast.

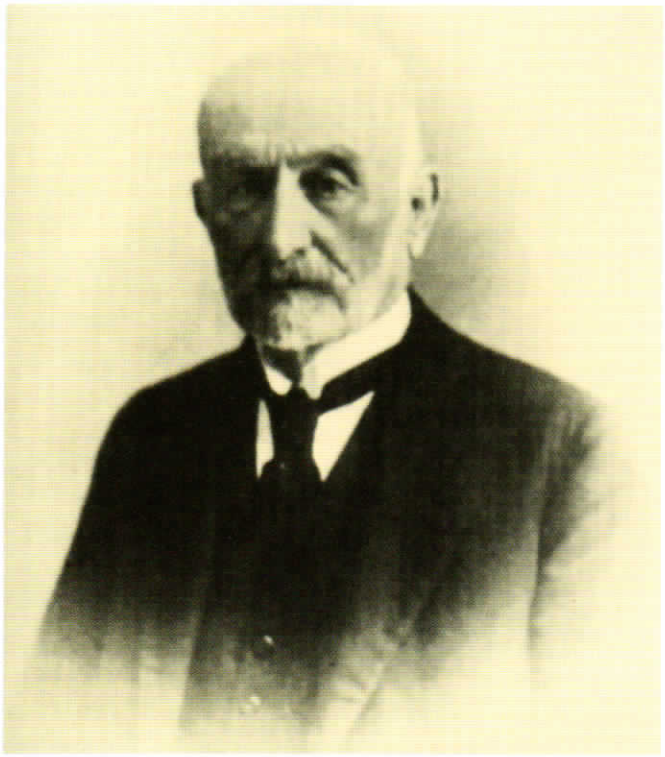

Fig. 3. Joseph Hazzidakis.

Fig. 4. Stephanos Xanthoudides.

Museum in Herakleion with donated and acquired antiquities. Hazzidakis, the first ephor (supervisor) of antiquities and director of the Herakleion Archaeological Museum, encouraged the investigations of the Italian archaeologist Federico Halbherr (fig. 5) and helped Evans acquire the land on which the palace at Knossos was located. In 1909 Hazzidakis excavated in the Arkalochori cave and in 1914 in Minoan tombs at Gournes and Gazi; he worked from 1919 to 1921 at Tylissos, where he discovered Neopalatial villas. In 1915 he discovered the third Minoan palace at Malia (fig. 6) and began an excavation that was continued by the French.

His successor, Xanthoudides, excavated the Minoan house at Chamezi, Siteia, in 1903, the Postpalatial cemeteries at Mouliana and Siteia, and the Prepalatial tholos tombs of the Mesara plain (Koumasa, Platanos, Porti, and so on, brilliantly published in 1924). He also excavated the *megaron* of Nirou in Kokkini Chani, Pediada, from 1910 to 1918, as well as the Prepalatial tomb at Pyrgos in 1918.

Spyridon Marinatos conducted numerous excavations from 1924 onward: the Protopalatial house at Kouse in the Mesara Plain; the Minoan harbor at Haghioi Theodoroi near the Nirou megaron; the Villa of the Lilies (see chap. 3, fig. 14) and the sanctuary of Zeus Thenatas in the area of Karteros; the Minoan *megaron* at Sklavokampos, the Prepalatial tomb at Krasi, Pediada, and the tholos tomb at Vorou in the Mesara plain; Postpalatial tombs at Karteros and Episkopi, Pediada; Minoan houses in Apodoulou; and the

Fig. 5. Federico Halbherr.

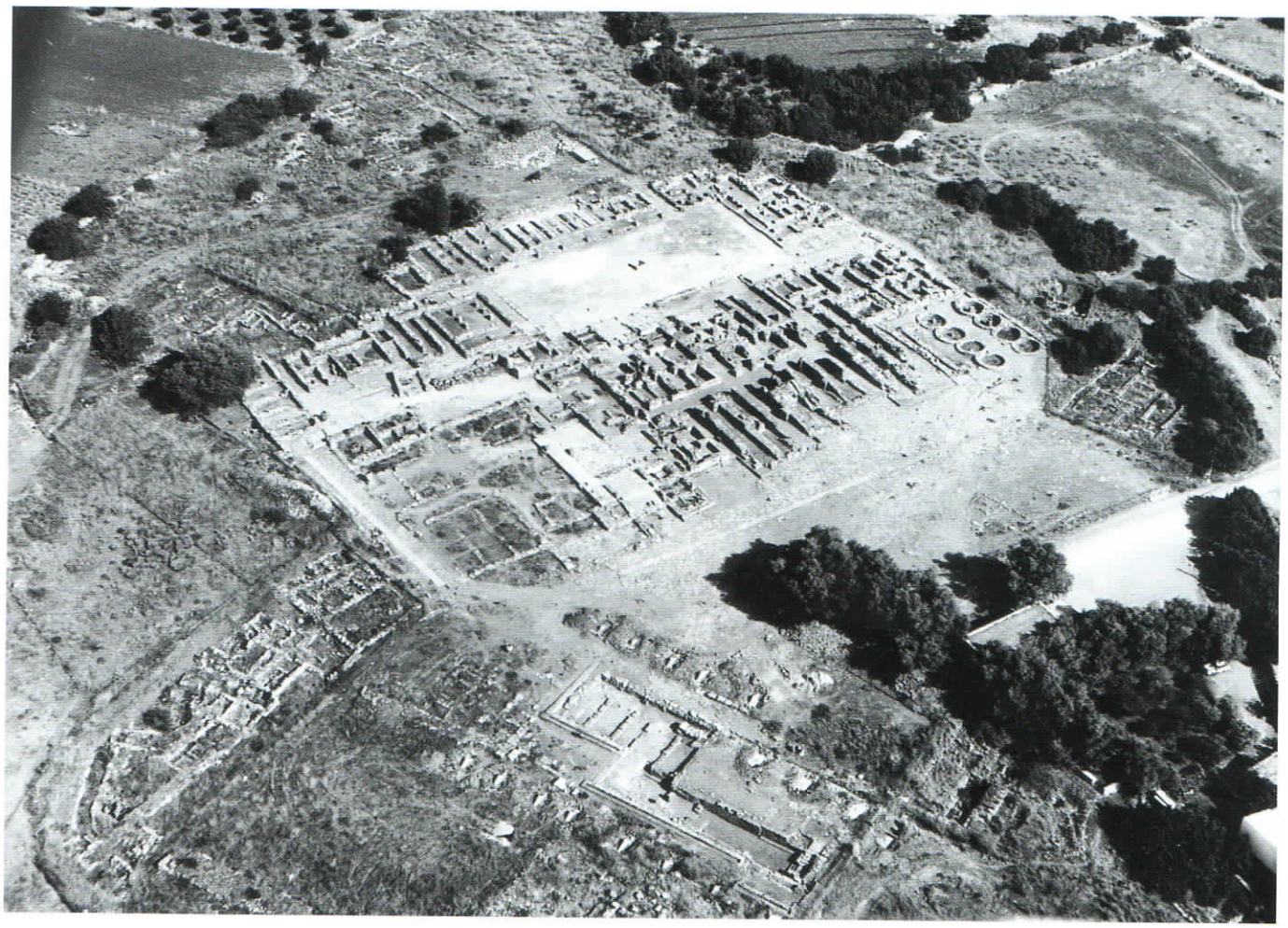

Fig. 6. General view of the palace at Malia (© EFA/G. Réveillac).

cave at Ellenes in the Amari region. He also completed excavations in the caves of Eileithyia and Arkalochori. After the war, he excavated the Neopalatial *megaron* of Vathypetro near Archanes; Lykastos; and the cave of Karnari on Mount Jouktas.

Beginning in 1931, Nikolaos Platon (fig. 7), ephor and museum director after Marinatos, excavated Neopalatial and Postpalatial tombs at Poros and Katsambas, part of a Minoan settlement at Prassa, and a Postpalatial tholos tomb at Achladia (Siteia). After the war, he excavated tombs at Episkopi and Stamioi in the Pediada; the Postpalatial settlement at Chondros, Viannos; the Prepalatial tomb at Galana Charakia at Viannos; and the sacred cave of Eileithyia Inatos at Tsoutsouras in the Monophatsi region. In 1961 he discovered and excavated the fourth Minoan palace in Kato Zakros and excavated Minoan villas at Siteia, Zou, and Achladia, and tombs at Siteia, Myrsini, Piskokephalo, and Praisos.

Christos Petrou excavated the Middle Minoan deposit with bell-shaped figurines at Poros and Minoan tombs at Phoinikia, Herakleion. During the Nazi occupation (1941–45), German archaeologists excavated the Prepalatial tholos tomb at Apesokari in the Mesara region, as well as the Minoan

Fig. 7. Nikolaos Platon.

settlement at Monastiraki in the Amari and caves in the Khania peninsula.

From 1952 onward, Stylianos Alexiou excavated the Neolithic settlement and the Postpalatial cemetery at the harbor of Knossos (Katsambas), the Prepalatial cemeteries at Lebena (Lentas) in the region of Kainourgio, the Prepalatial tomb at Kyparissi in the region of Temenos, and Minoan tombs in Pachyammos.

Antonis Zois, from 1972 onward, began the excavation of the Minoan settlement at Vryses-Kydonia as well as the second excavation of the Minoan settlement at Vasiliki, initially excavated by Richard Seager (see below), in the region of Hierapetra.

Costis Davaras (1960 onward) excavated the Minoan peak sanctuary at Traostalos; the Postpalatial tholos tombs at Apodoulou in the Amari region and Stylos and Maleme in Khania; the Prepalatial tombs in Apesokari, Odigitria (see chap. 161, fig. 2), and Kaloi Limenes; the Postpalatial tombs at Galia (Kainourgio region); and the Neopalatial villa at Makrygialos.

Yannis Sakellarakis and Efi Sapouna-Sakellaraki excavated part of the palatial building in Archanes and the prehistoric cemetery of Phourni, Archanes (see chap. 2, fig, 8), from 1964 onward. Furthermore, Sakellarakis excavated the Prepalatial tomb in Haghios Kyrillos in the Mesara (1968) and began new excavations at the Idaean cave (1982). In 1986 he also discovered and continues to excavate the Minoan site at Zominthos.

Yannis Tzedakis (1963 onward) investigated the caves of Platyvola, Khania, and Gerani, Rethymnon. He began excavating the palatial settlement at Kastelli, Khania, and excavated the country house at Nerokourou, Khania, in collaboration with Italian excavators. He undertook the very large excavation of the Postpalatial cemetery of rock-cut tombs at Armenoi, Rethymnon.

Angeliki Lembesi excavated a Neopalatial tomb at Poros (1968) and the sanctuary at Symi, Viannos, from 1973.

Alexandra Karetsou excavated the Minoan sanctuary on Mount Jouktas in the region of Archanes beginning in 1974.

Dozens of younger archaeologists working for the archaeological service and for universities and research centers throughout the country are worthily continuing the tradition of the great pioneering Greek archaeologists, although the limited space available for this essay does not allow me to name them.

American Excavators

American interest in excavating on Crete was first expressed in 1881, when the American consul on Crete, William Stillman, requested, through the United States State Department, a permit from the Ottoman government to excavate at Knossos and Gortyn. The request was rejected because of political instability on Crete, but Stillman nevertheless visited Crete and Knossos, where he made valuable sketches (published in the *American Journal of Archaeology* [*AJA*] for 1881) of the area excavated by Minos Kalokairinos.

Fig. 8. Harriet Boyd.

After action was taken by the director of the American School of Classical Studies, Augustus Merriam, in 1893 the Archaeological Institute of America appointed Federico Halbherr as director of investigations on Crete. It was then that the Minoan cave of Kamares, among other sites, was investigated. The excavations were published in the *AJA* for the years 1896 to 1901.

On May 14, 1900, the circle of great archaeologists on Crete was enlarged with the addition of the eminent Harriet Boyd (fig. 8) at Kavousi, where she worked at the sites of Kastro, Skouriasmenos, Vronda, and Azorias. In the years that followed (1901, 1903, and 1904), Boyd worked with Edith Hall and Richard Seager on the excavation at Gournia (see chap. 3, fig. 15). In 1905 Boyd withdrew from her excavations on Crete, having married C. H. Hawes. Nevertheless, she maintained an interest in the study and in the 1908 publication of the excavations with her colleagues. This publication was the first final excavation report in Cretan

archaeology. With her husband, Harriet Boyd coauthored the small and beautifully concise book *Crete, the Forerunner of Greece* (1909).

Edith Hall and Richard Seager continued the excavations on Crete. In 1910 Hall excavated at Sphoungaras to the north of Gournia, at Vrokastro, and at Priniatikos Pyrgos (1912). Seager excavated at Mochlos (1908), Vasiliki (see chap. 2, fig. 8), and Pseira (1906–7) and built a large house in the village of Pachyammos. All excavating activities of the pioneers Harriet Boyd Hawes, Edith Hall, and Richard Seager took place within a period of fifteen years. About sixty years later, in 1976, American archaeologists returned to Crete for excavations and field research, with Joseph and Maria Shaw at Kommos.

From 1985 onward, a great deal of American research was carried out in collaboration with Greek archaeologists at Pseira, Mochlos (see chap. 2, fig. 4), Gournia, and in the western Mesara.

A milestone in American archaeological activity on Crete was the foundation of the Institute for Aegean Prehistory Study Center for East Crete in 1997, in Pachyammos.

British Excavators

In 1894 Sir Arthur Evans (fig. 2) published the Prepalatial chance find from Haghios Onouphrios, near Phaistos. His monumental excavations at Knossos began in 1900 and continued intermittently for thirty-two years. He concentrated on excavating the Minoan palace, but he was also interested in the cemeteries and in the town where D.G. Hogarth and E. J. Forsdyke also worked. Evans's last excavation at Knossos was that of the Temple Tomb. His excavations were published in six volumes from 1920 to 1935. The tombs and inscribed tablets were published separately.

Hogarth excavated the Dictaean cave at Psychro and uncovered parts of the Minoan town at Zakros.

In 1902 R.C. Bosanquet excavated at Praisos near Siteia, and from 1902 to 1906, he also excavated at Palaikastro alongside R. M. Dawkins, J. L. Myres, and M. N. Tod.

In 1913, Dawkins, with M. L. W. Laistner, excavated the Kamares cave on the south slope of Mount Psiloreitis and at Plati on the Lasithi plateau.

Until World War II, other archaeologists at Knossos worked with and after Evans, including Duncan Mackenzie, who was the key colleague of Evans throughout the excavation of the palace (1926); J. D. S. Pendlebury (1929); and R. W. Hutchinson (1934).

The last pre-World War II British researcher on Crete was Pendlebury, who excavated in the Lasithi mountain plain (Kastelos, Papoura, and Karphi, 1929–39). Pendlebury has been considered the greatest explorer of Crete, and his knowledge of the island was unsurpassed.

After the war, Hutchinson excavated the Minoan tomb at Kephala, Knossos.

From 1950 onward, British archaeological activity on Crete was dominated by M. Sinclair Hood, who, along with others, carried out surface surveys in the areas of Hierapetra, Viannos, Rethymno, Amari, Haghios Vasileios, and western Crete. Hood directed extensive stratigraphical investigations inside and outside the palace of Knossos and prepared the archaeological topographical map of the Knossos area (1981).

New excavations took place at old sites, such as Palaikastro, and at new sites, such as Myrtos, Hierapetra. These were carried out by Hood himself, as well as by John Evans (Neolithic Knossos), George Huxley, Mervyn Popham, Hugh Sackett, Peter Warren, and Gerald Gadogan.

After 1970, even more surface surveys were conducted by the British School: in Haghios Vasileios, Praisos, Ziros, and Haghiofarango. Notable new excavations about 1970 include the excavation of the Unexplored Mansion at Knossos by Mervyn Popham and the excavations at Phournou-Koryphi, at Myrtos by Peter Warren and at Pyrgos–Myrtos by Gerald Cadogan (see chap. 2, fig. 5). At Palaikastro the excavations begun by Mervyn Popham, Hugh Sackett, and Peter Warren are now being continued by Hugh Sackett.

French Excavators

French archaeologists entered the circle of major excavators of Minoan Crete in 1921, after all the earlier excavations had been begun, but they had initially expressed an interest in surveying and excavating on Crete as early as 1856–57. Crete held eighth place on the list of priorities for the French Academy, whose research program envisaged three areas of study: topographical, historical, and cultural (religion, burial customs, art, and writing). The first French archaeologists to explore Crete were Georges Perrot and Leon Thenon, but they did not deal specifically with sites of the Minoan era.

The first French archaeologist to study and publish Minoan finds from the excavations of Minos Kalokairinos in Knossos (1880) was the epigraphist Bernard Hassoulier. Kalokairinos was in favor of the French taking responsibility for the excavation of Knossos, and in 1891 André Joubin came to Knossos and made a topographical map of the area. With the assistance of the French vice consul, Amabile Ittar, he negotiated with the owners of the Kephala hill, the site of the palace. However, that attempt came to a halt because of the political instability on Crete and as a result the Kephala of Knossos was acquired by Evans.

After the liberation of Crete, French interest in Minoan Crete continued, and Pierre Demargne excavated at the Dictaean cave. Since 1921 the great French excavation in Crete has been at Malia (fig. 6), where they were first invited by Joseph Hazzidakis to work with him. In contrast to other

Minoan sites, Malia is an excavation undertaken by many different groups of French archaeologists. The palace was excavated from 1922 to 1992 by L. Renaudin, J. Charbonneaux, R. Jolly, P. Demargne, F. Chapoutier, O. Pelon, Cl. Baurin, and P. Darcque. The town blocks of Malia were excavated from 1921 to 1992 by L. Renaudin, P. Demargne, M. Oulie, H. de Saussure, Ch. Picard, J. Charbonneaux, H. Gallet de Santerre, J. Deshayes, A. Desenne, G. De Rider, M. Schmidt, R. Treuil, A. Farnoux, and J. Driessen. The cemetery at Chrysolakkos (see chap. 16a, fig. 7) was excavated by P. Demargne in 1930–33 and the cemeteries were excavated from 1925 to 1976 by M. Oulie, H. de Saussure, P. Demargne, J.-P. Olivier, T. McGeorge, and F. Vandenabeele. The peak sanctuary on Prophitis Ilias was excavated by Ch. Picard, J. Charbonneaux, P. Demargne, A. Desenne, and J.-C. Poursat. These excavations have been published in the series Études Crétoises.

Archaeological research activity was also conducted in Cretan caves by Paul Faure. Field surveys were undertaken by Rene Treuil in west Crete and by T. Wroncka in east Crete.

Italian Excavators

The first involvement of Italian archaeologists in the study of Minoan Crete dates back to 1885, when Federico Halbherr (fig. 5) unsuccessfully suggested to Comparetti that they try to excavate at Knossos. In 1886 Halbherr and Joseph Hazzidakis excavated the Dictaean cave at Psychro, Lasithi, and in the same year, Halberr excavated the cave of Hermes Kranaios at Patsos in the Amari valley. In 1893 and 1894, Antonio Taramelli excavated the Miamou cave and, with the assistance of Lucio Mariani, the Kamares cave.

After 1900 the Italian mission focused its interest on the Mesara plain (see chap. 1, fig. 3) in the south-central part of Crete. Their first large Minoan excavation was at Phaistos (see chap. 3, fig. 1) from 1900 to 1909, first under Halbherr and then under Luigi Pernier, who completed it and published the first volume of the excavation in 1935.

The excavation at Haghia Triada by Federico Halbherr with the collaboration of Paribeni followed in 1902–14. In 1901–2 the Minoan cemeteries at Liliana and Kalyvia were excavated by Taramelli, Gerola, and Savignioni. From 1930 onward, Luisa Banti took part in the Italian expedition and copublished the second volume of the excavations at Phaistos with Pernier in 1950, as well as publishing the old excavation at Haghia Triada in 1977.

Doro Levi was the dominant figure of the Italian mission in Crete after 1950. He directed the new excavation period at Phaistos, where he mainly investigated the pre-Neopalatial layers. He also excavated the tholos tomb at Kamilari, published the excavations at Kamilari and Chalara, and produced a weighty publication about Phaistos and Minoan civilization.

Levi's colleagues N. Bonacasa and Vincenzo La Rosa excavated the Minoan settlements at Paterikies and Seli. Vincenzo La Rosa has been directing the research of the Italian expedition at Phaistos and Haghia Triada since 1978.

The Italian mission at Prinias under Giovanni Rizza, in addition to the acropolis at Patela, excavated early Minoan layers at Siderospelia and a Neopalatial house at the site of Flega.

Another Italian mission, under Anna Sacconi and Luigi Rocchetti with the collaboration of Yannis Tzedakis, excavated a Neopalatial country house at Nerokourou in the Khania region.

In this essay we have tried to record in very broad strokes the adventurous history of Minoan archaeology and the people who have served it in the past and continue to serve it to this day. This adventure began over a century and a half ago, and Minoan civilization continues to be one of the most intriguing fields of study for archaeologists around the world.

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ABBREVIATIONS

AA — *Archäologischer Anzeiger*

AAA — *Αρχαιολογικά Ανάλεκτα εξ Αθηνών*

AΔ — *Αρχαιολογικόν Δελτίον*

AE — *Αρχαιολογική Εφημερίς*

AIA — *Archaeological Institute of America*

AJA — *American Journal of Archaeology*

AM — *Mitteilungen des Deutschen Archäologischen Instituts: Athenische Abteilung*

Ancient Crete — *Ancient Crete. A Hundred Years of Italian Archaeology (1884–1984).* Rome, 1985.

AR — *Journal of Hellenic Studies, Archaeological Reports*

ASAtene — *Annuario della Scuola Archeologica di Atene e delle Missioni Italiane in Oriente*

BAR–IS — *British Archaeological Reports–International Series*

BCH — *Bulletin de Correspondance Hellénique*

BCILL — *Bibliothèque des Cahiers de l'Institut de Linguistique de Louvain*

BICS — *Bulletin of the Institute of Classical Studies*

BMJ — *British Medical Journal*

BSA — *Annual of the British School at Athens*

CAJ — *Cambridge Archaeological Journal*

Cent Cinquantenaire — *Cent Cinquantenaire. BCH* 120. Numéro spécial. Athens, 1996.

CMS — *Corpus der Minoischen und Mykenischen Siegel*

Cyprus–Crete — *Acts of the International Archaeological Symposium "The Relations between Cyprus and Crete, ca. 2000–500 B.C.," Nicosia, 16th April–22nd April 1978.* The Department of Antiquities. Nicosia, 1979.

Ειλαπίνη — *Ειλαπίνη: τόμος τιμητικός για τον καθηγητή Νικόλαο Πλάτωνα.* Herakleion, 1987.

GORILA — Godart, L., and J. P. Olivier. *Recueil des inscriptions en Linéaire A.* Études Crétoises 21, Vols. 1–5. Paris, 1976–85.

Im Labyrinth des Minos — *Im Labyrinth des Minos: Kreta, die erste europäische Hochkultur. Ausstellung des Badischen Landesmuseums, 27.1 bis 29.4.2001, Karlsruhe, Schloss.* Exh. cat. Munich, 2000.

JHS — *Journal of Hellenic Studies*

JRGZM — *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz.*

Κέρνος — *Κέρνος: τιμητική προσφορά στον καθηγητή Γεώργιο Μπακαλάκη.* Thessalonika, 1972.

MonAnt — *Monumenti antichi, Accademia nazionale dei Lincei*

OJA — *Oxford Journal of Archaeology*

Ommagio a Creta — *Ommagio a Creta, 1884–1984.* Exh. cat. Municipality of Herakleion and Italian Archaeological School at Athens. Herakleion, 1984.

Op. Ath. — *Opuscula Atheniensia*

ΠΑΕ — *Πρακτικά της εν Αθήναις Αρχαιολογικής Εταιρείας*

PM — Evans, Sir A. J. *The Palace of Minos: A Comparative Account of the Successive Stages of the Early Cretan Civilization as Illustrated by the Discoveries at Knossos.* Vol. 1–4. London, 1921–36 (2nd ed.: New York, 1964).

SIMA — *Studies In Mediterranean Archaeology*

SMEA — *Studi Micenei ed Egeo-Anatolici*

TUAS — *Temple University Aegean Symposium*