HESPERIA 85 (2016)
*Pages 627–655*

# THE LORD OF THE GOLD RINGS

## The Griffin Warrior of Pylos

### ABSTRACT

**In May 2015, a University of Cincinnati team unexpectedly discovered a large stone-built tomb of Late Helladic IIA date near Tholos Tomb IV on the first day of renewed excavations at the Palace of Nestor, Pylos. Hundreds of artifacts of gold, silver, bronze, ivory, and semiprecious stones were found with the body of a single male, 30–35 years old, dubbed the "Griffin Warrior." Many of the grave goods were manufactured in the Minoan world. Among the gold artifacts were four signet rings decorated with Minoan ritual scenes. Here we discuss the excavation of the grave, describe the rings, and consider the significance of the rings' iconography for the Mycenaeans who buried them.**

This article briefly relates the discovery of the so-called grave of the Griffin Warrior at Pylos, the structure of the grave, and stratigraphical observations made in the course of excavation, so as to provide the context for a more detailed discussion of the four gold rings found in the grave.[1] This undisturbed Late Helladic (LH) II burial affords an excellent opportunity to examine aspects of Early Mycenaean funerary ritual, including the engendering of grave goods—topics that are more difficult or impossible to address in the case of the much more common Mycenaean chamber and tholos tombs built for the interment of multiple individuals over long periods of time.

The discovery of so many gold rings in incontrovertible association with a single individual was unexpected and is unprecedented for the Greek mainland.[2] The iconography of the rings is extraordinary and of

1. We thank Mary Ottaway for suggesting the name "Griffin Warrior" shortly after we found in the grave a carved ivory plaque depicting a griffin walking through a rocky landscape. It and other ivories will be published elsewhere. Our plan is to present groups of objects from the grave as rapidly as conservation and study allow. See also www.griffinwarrior.org. We are grateful to Robert and Dina McCabe, James and Mary Ottaway, Phokion Potamianos and his family, and Lawrence Stack, as well as the Institute of Aegean Prehistory and the Louise Taft Semple Fund of the University of Cincinnati, for their support of our excavation, conservation, and study. We owe Thomas M. Brogan a debt of gratitude for all that he has done in support of the excavation, and we acknowledge the encouragement of James C. Wright, Director of the American School of Classical Studies at Athens (ASCSA), and of Malcolm Wiener, as well as the constant assistance we received from Ioanna Damanaki of the ASCSA. Finally we thank the anonymous reviewers of *Hesperia* for their comments on an earlier draft of this article.

2. On Crete, five rings were apparently associated with a single larnax burial of LM IIIA date in Tholos A at Archanes; see Sakellarakis and Sakellarakis 1991, pp. 72–85.

© The American School of Classical Studies at Athens

great importance for the study of Minoan and Mycenaean ideology in the early phases of the Late Bronze Age.

Our goal is to offer readers ample description and illustration of the rings, just a little more than a year after their discovery, along with our first thoughts about their significance and the meaning of the scenes depicted on them. Other publications will follow as we continue to study the rings in collaboration with archaeological scientists.

## THE FIRST CAMPAIGN OF NEW EXCAVATIONS AT PYLOS

The University of Cincinnati archaeological excavations at the Palace of Nestor resumed under the aegis of the American School of Classical Studies at Athens on May 18, 2015, for the first time since 1969.[3] The 2015 season was the first of five campaigns focused on the so-called Lower Town associated with the palace, and on the earlier history—particularly the Middle Helladic (MH) period and the initial phases of the Late Helladic period—of the settlement on the Ano Englianos ridge. Some 35 archaeologists and students, representing a dozen different nationalities, were present in 2015.[4]

In the six weeks officially allotted to the project by the Ministry of Culture, Education, and Religious Affairs of Greece, from mid-May until the end of June, trenches were opened on the acropolis and in a large olive grove between the Northeast Gateway and Tholos Tomb IV (Fig. 1). Our most extraordinary discovery was made near the dromos of Tholos Tomb IV, in the north-central part of the field, where, on the very first day of excavation, the corner of a small structure was defined (in trench N-C02; Fig. 2). Within a few days it was clear that the corner belonged to a rectangular, stone-built chamber, ca. 1.10 × 2.30 m, oriented northwest-southeast. A week later, the discovery of bronze vessels and weapons made it patently obvious that we had located a grave and that it was undisturbed.[5]

3. The project was jointly directed by Jack L. Davis and Sharon R. Stocker. We are grateful to Maria Vlazaki and Elena Kountouri of the Ministry of Culture in Athens. We express special thanks to Evangelia Militsi-Kehayia, Demosthenes Cosmopoulos, Stamatis Fritzilas, Evangelia Malapani, Demetra Pikoula, and Maria Zaharopoulou in Kalamata; and to the guards of the Museum of Chora and the Palace of Nestor, particularly head guard Yiota Kaloyeropoulou. We also appreciate our close collaboration with Tania Valamoti of the University of Thessaloniki; Vasiliki Kantarelou, Andreas Karydas, and Vassilis Kilikoglou of the Demokritos Institute in Athens; Takis Karkanas and Ioanna Moutafi of the Wiener Laboratory of the ASCSA; and John Camp, Craig Mauzy, and Maria Tziotziou of the Athenian Agora Excavations.Finally, it would not have been possible to ready this publication without the support of Denitsa Nenova, Chronis Papanikolopoulos, Tina Ross, Jennifer and Arthur Stephens, and John Wallrodt, who prepared illustrations and photographs for us, often on short order.

4. We are, of course, deeply appreciative of the help of our entire staff in 2015; they are mentioned by name at http://www.griffinwarrior.org/griffinwarrior-team.html.

5. Because of the special significance of the grave, excavation continued until late October, supervised by Alison Fields until late July and subsequently by Stocker. Alice Crowe, Flint Dibble, Emily Egan, Dionysia Giannakopoulou, Jonida Martini, Deborah Nadal, Denitsa Nenova, Hüseyin Öztürk, Ann Santen, and Efthymia Tsiolaki assisted with the excavation from time to time. Alexandros Zokos was ever present as conservator, and we also thank Nefeli Theocharous and Maria Tziotziou for their help in that regard.

The grave of the Griffin Warrior and a large built tomb found beneath room 97 in the Palace of Nestor (*PN* I, pp. 312–314), which was called a shaft grave by Blegen and Rawson, differ considerably from the shaft graves at Mycenae, particularly in depth and in the absence, in the case of our new grave, of any ledge in the walls, across which beams or slabs would have extended to cover the burial chamber; see Bennet and Galanakis 2005, p. 145.

A large tomb of the Shaft Grave period, similar in construction, containing the remains of at least 25 burials, has recently been excavated at Ayios Vasilios in Laconia (Moutafi and Voutsaki 2016). Cf. the construction of the two "shaft graves" under the floor of the tholos at Nichoria; McDonald and Wilkie 1992, pp. 244–246, 249–252.

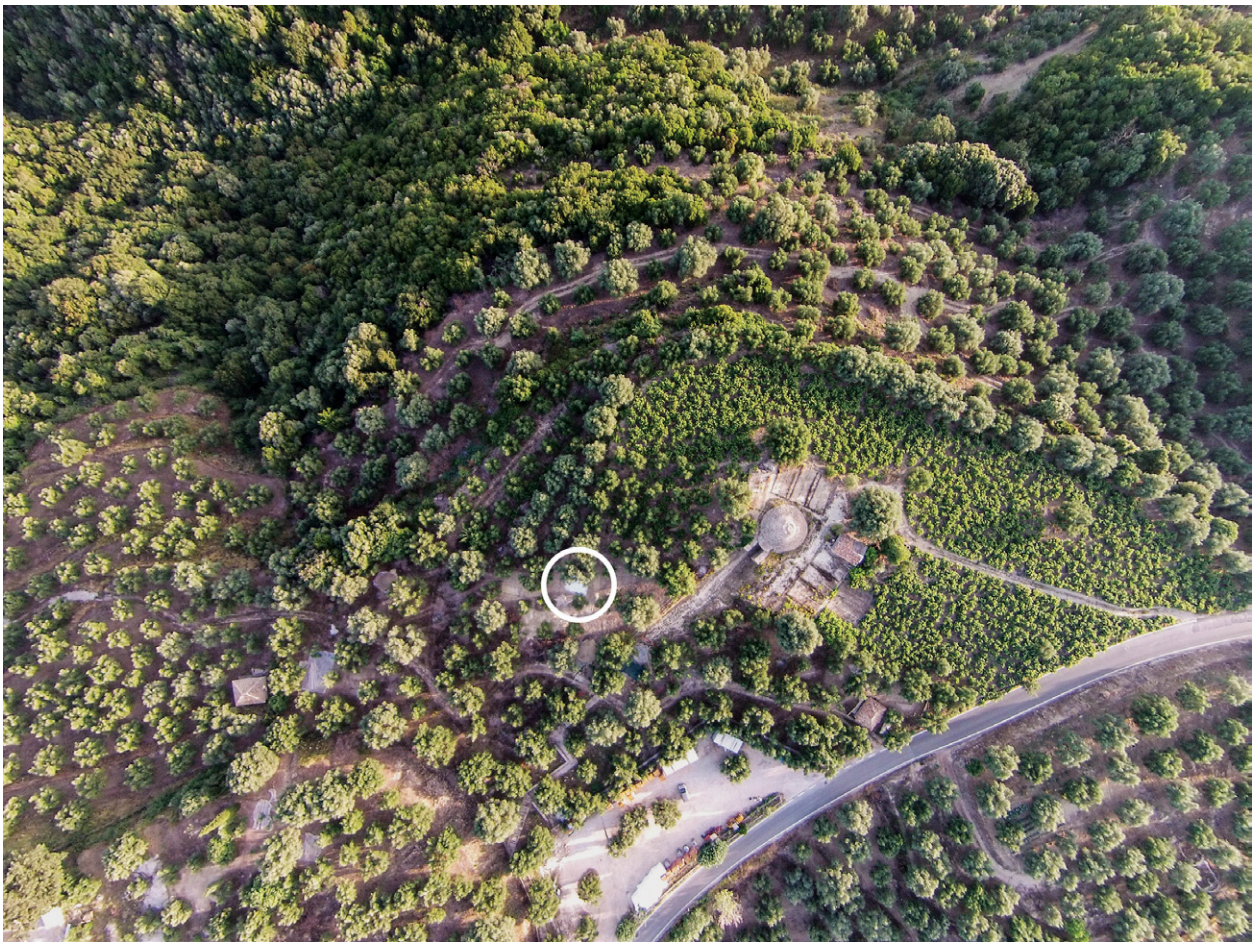


**Figure 1. Drone aerial view of the olive grove, showing Tholos Tomb IV and the grave of the Griffin Warrior, indicated by the circle.** Photo D. Nenova

**Figure 2. Panoramic view showing trench N-C02, the grave of the Griffin Warrior (on the right), looking southwest from near Tholos Tomb IV toward the Palace of Nestor.** Photo Palace of Nestor Excavations

## THE GRAVE AND ITS CONTENTS

Although study of the grave of the Griffin Warrior and its finds is far from complete, it is already possible to describe the general features of the grave and the burial that it contained.

Excavation in 2015 revealed that the lowest course of the walls of the burial chamber consisted in part of well-dressed limestone slabs (up to 60 cm high), which had probably been repurposed from structures on the acropolis (Fig. 3).[6] Above this foundation course, eight courses of dry-stone rubble masonry are preserved.

The Griffin Warrior, who was ca. 30–35 years old at the time of death, had been interred on his back in an extended position within a wooden coffin. His skeleton was robust and, although the state of preservation of his leg bones does not permit an exact estimate of his stature, in situ measurements suggest he was approximately 1.65–1.70 m tall. Although his skull was crushed beneath heavy metal vessels, it has, however, been possible to reconstruct his appearance.[7]

A second season of excavation in 2016 has clarified many matters concerning depositional and postdepositional processes.[8] The sequence of events, as we now understand it, was as follows: After a rectangular shaft had been cut 1.6 m into the hard, compacted clay bedrock, courses of stone were set against the faces of the cutting (Fig. 4). As the walls rose higher, the space between their outer faces and the bedrock was incrementally filled with earth that contained some sherds of pottery. When the walls were complete, a thin layer of earth that contained LH I–IIA potsherds and ash was spread inside the grave on top of the bedrock. After that, the coffin with the body of the warrior was set on the floor of the grave and additional earth containing potsherds was deposited as fill around its sides, up to its top. Then, after some grave goods were set around the body inside the coffin, it was closed with wooden planks, and additional grave goods were placed on top of the planks and on the earthen fill around the coffin. The grave itself was not filled with earth beyond the level of the coffin at that time. Finally, cover slabs were laid on top of the shaft to seal the grave.

One of the slabs, which had covered the southeastern end of the grave, broke into two pieces some years after the burial, when the coffin was still intact but subsequent to the decomposition of the body, and fell into the grave.[9] The smaller fragment came to rest in the southern corner of the grave. The larger fragment tore through the northeastern side of the coffin itself before penetrating the thin level of earth that lay on the bedrock. Its base came to rest against the northeastern wall, with its top leaning to the

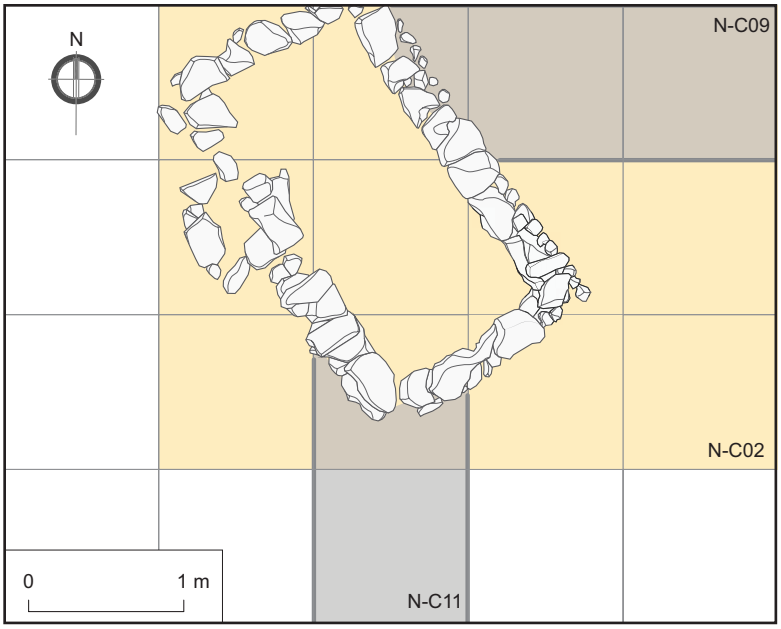
6. Concerning Early Mycenaean use of ashlar masonry on the acropolis of Pylos, see Nelson 2001, pp. 179–200, figs. 78–80.

7. Lynne Schepartz of the University of Witwatersrand has primary responsibility for the study of the warrior's skeletal remains and has collaborated with Tobias Houlton of the University of Witwatersrand in producing a facial reconstruction. They will publish the results of their research in full elsewhere.

8. Two new trenches were opened in 2016 outside the grave in order to explore the external faces of its northeast, southeast, and southwest walls. In addition, earth that had been packed between the wooden coffin and the interior faces of the walls of the grave was removed in part. Excavation was conducted inside the grave by Stocker and Calla McNamee, outside by McNamee with assistance from Dionysia Gianakopoulou, Laura Magno, and Valia Tsikritea. We are grateful to McNamee for her close collaboration in composing this part of our discussion.

9. The position of the cranial elements suggests that the soft tissue had already decayed, so that the bones were easily displaced and separated when the slab fell into the grave.

**Figure 3.** *(right)* **Plan of the grave showing the initial 2015 trench, N-C02, in yellow, and the 2016 trenches in gray;** *(below)* **composite photogrammetric images of the inside walls of the grave of the Griffin Warrior.** Drawing and photos D. Nenova



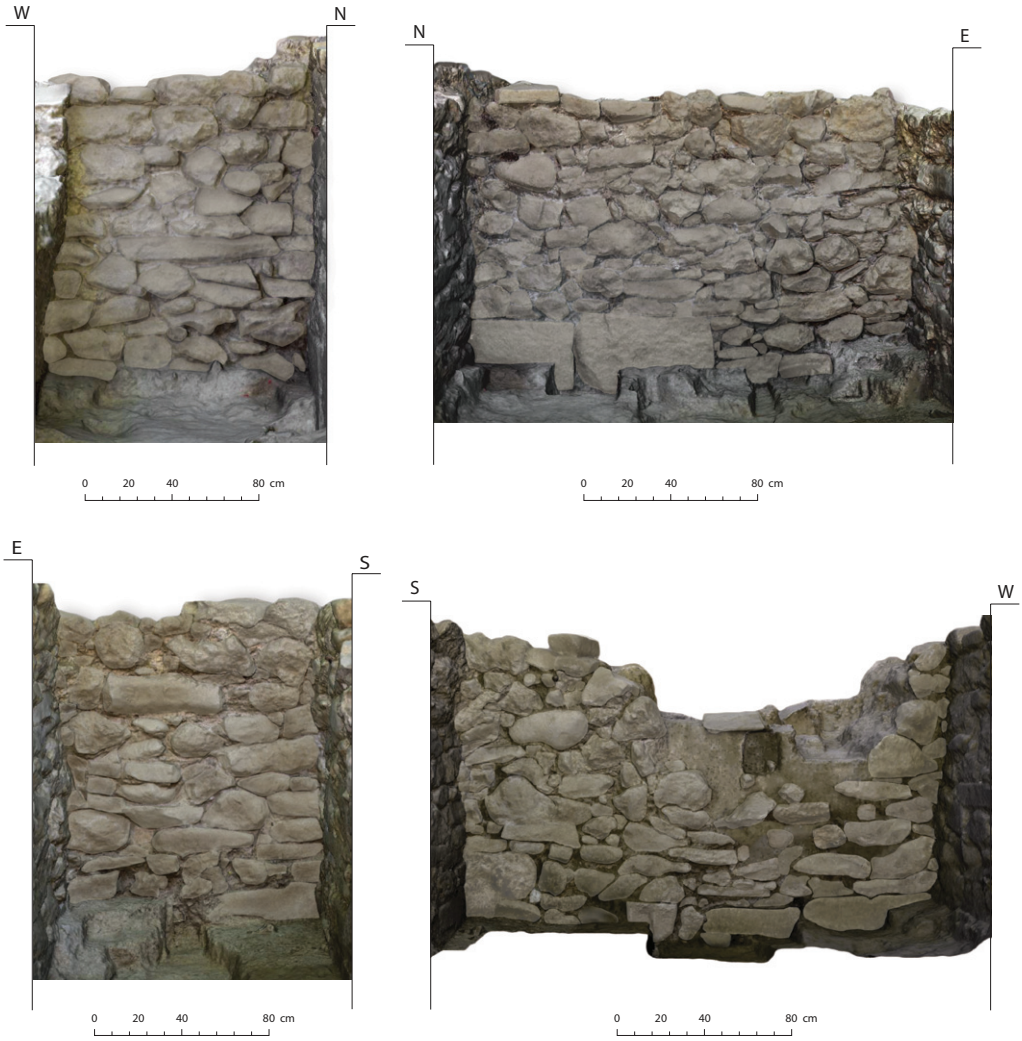



**Figure 4. Outer face of the southern corner of the grave.** Photo Palace of Nestor Excavations

southwest (Figs. 5, 6).[10] After the cover slab fell, the shaft of the grave was gradually filled through natural depositional processes with earth similar in color and texture to the bedrock; this earth was devoid of charcoal, contained very few potsherds, and was yellowish brown in color (Fig. 5). As the coffin decayed, it collapsed under the weight of the fallen cover slab, the artifacts on top of it, and the accumulated fill. Grave goods that had rested on top of it then fell onto the skeleton, damaging in particular the skull and the upper spinal column (see Fig. 7).

Precisely how many individual objects were buried along with the warrior is at present unclear. We have issued well over 2,000 numbers to finds, although in many instances we have certainly catalogued separately parts of the same broken object. All the artifacts in the grave were densely compacted within a deposit only ca. 60 cm deep, the finds entangled not only with each other, but also with the bones of the skeleton (Fig. 7).

In addition to hundreds of amber, amethyst, agate, carnelian, glass, and gold beads, grave goods included a gold necklace; over 50 sealstones; carved ivories, including several combs, a pyxis lid, and the carved plaque with a griffin; gold, silver, and bronze vessels; bronze tools; bronze weapons; and a unique bronze finial for a staff, in the form of a bull's head. Cloth fibers and fragments of wood were occasionally preserved where they adhered to bronze or silver; in one instance the cloth was likely the remains of a burial shroud.[11]

10. We found no trace of the other cover slabs; presumably they had been carried away in Mycenaean times for use as building material elsewhere.

11. Cloth fragments are being studied by Christina Margariti of the Ministry of Culture of Greece.

**Figure 5 *(above)*. Top of larger fragment of the cover slab when first uncovered.** Photo Palace of Nestor Excavations

**Figure 6 *(below)*. Fallen stone with uppermost layer of artifacts.** Photo Palace of Nestor Excavations

**Figure 7. Lowest layer of artifacts intermixed with the skeleton.**
Photo Palace of Nestor Excavations

Some grave goods buried with the Griffin Warrior find close parallels in other burials in western Messenia: for instance, a cushion seal with gold caps is similar to one from Myrsinochori: Routsi,[12] and an agate seal depicting a griffin resembles one from the Nichoria tholos.[13] A bronze battle-knife with a terminal ring, like those from Shaft Grave IV at Mycenae, is identical to that from the Grave Circle at Englianos, and a bronze double axe is comparable to two reported to have been found at Metaxada: Kalopsana that are now in the Chora Museum.[14]

Among other weapons from the grave, the pommel of a sword found to the left of the warrior is decorated in the rare gold embroidery technique, which finds parallels only in the Argolid at Mycenae and Dendra.[15] A suit of bronze armor and a boar's tusk helmet, both now in many pieces, were also included in the grave.[16]

The grave's bronze vessels find many parallels on the Early Mycenaean mainland and in Neopalatial Crete; among the finds were a large broad-rimmed cup, a large basin, and a spouted lekane. Among the many cups

12. Concerning gold caps, see Krzyszkowska 2005, pp. 240–241.

13. *CMS* I, no. 271 (Routsi); *CMS* V, no. 437 (Nichoria).

14. Karo 1933, pp. 97, 103–104, nos. 443, 445, 447 (Mycenae; called a "Schlachtmesser"); *PN* III, p. 161, fig. 229:5 (Pylos); Hope Simpson and Dickinson 1979, p. 135, D 21 (Metaxada).

15. Konstantinidi-Syridi et al. 2014; esp. similar is Åström 1977, p. 18, no. 31, pl. VII:2.

16. The only complete bronze cuirass has been found in chamber tomb 12 at Dendra (Åström 1977), although exiguous fragments of a suit of body armor remained on the floor of the tholos at Nichoria (McDonald and Wilkie 1992, pp. 253, 311–312).

of precious metals is one that in its technique and form resembles vessels found in the Argolid at Dendra and Mycenae, and in Laconia at Vapheio.[17]

No clay vessels were deposited with the burial as funerary offerings. The inclusion of only bronze, silver, and gold vessels is an extreme example of the tendency in the Early Mycenaean period for the wealthiest graves to favor metal over ceramic containers.

## DATING THE GRAVE OF THE GRIFFIN WARRIOR

The Griffin Warrior lay undisturbed by human agency from the time of his burial until 2015. Near its western corner, the southwestern wall of the grave was damaged to a depth of ca. 60 cm beneath the surface (see Fig. 3). Although several sherds of LH IIIA/B date were found in the fill of the grave down to that level, no sherds later than LH IIA were associated with the meter of deposit that lay above and around the burial and its accompanying grave goods. This evidence concurs with that gathered in 2016 from our excavation of the building trenches into which the side walls of the grave were set—among the various sherds recovered, again there were none definitely later than LH IIA.[18] We conclude, therefore, that LH IIA is the likely date of the burial, and that LH IIA is a terminus ante quem for the finds that accompanied the Griffin Warrior to the hereafter.

Was the grave of the Griffin Warrior used when the nearby Tholos Tomb IV was in use? The blocking wall of its *stomion* had been at least partly dismantled and rebuilt several times.[19] The latest sherds recovered when Taylour disassembled the blocking wall can be dated to LH IIIA, suggesting that the tomb was last opened and closed at that time.[20] If this is so, then we may conclude that Tholos Tomb IV was still being entered and the blocking wall was still being rebuilt after the burial of the Griffin Warrior—without, of course, providing an explanation for the fact that the Griffin Warrior was not buried in it.

What is much less certain is the extent to which Tholos Tomb IV was being employed for burial at the precise time when the Griffin Warrior was interred—and here we are hindered by the nearly complete absence

17. Davis 1977, nos. 46, 50, 97, 107, 112, 121, 129, figs. 124, 130, 194, 206, 207, 221, 233, 241, 242.

Several ivories are also similar to finds already known from the western Peloponnese, especially the mirror with three rosettes on its handle (see Poursat 1977, pp. 138–139, pl. xli:411/8343, from Myrsinochori: Routsi) and horned combs (*peigne à corne*; see Poursat 1977, p. 138, pl. xli:410/8357, also from Routsi; p. 142, pl. xliii:415/5678, from Kakovatos).

18. There are approximately 100 mostly small sherds from contexts inside and outside the grave. We are grateful to Salvatore Vitale for dating the ceramic finds. He will publish a full report elsewhere.

19. The tomb was excavated by Lord William Taylour, a member of Blegen's team. Photographs from the time of excavation in 1953 (*PN* III, figs. 176–179) allow at least three, and perhaps as many as five, phases of construction to be recognized. We thank Rodney Fitzsimons for observations based on enlargements of Taylour's photographs. See also *PN* III, pp. 98–100, where Taylour himself postulated three phases for the blocking wall. The wall was totally removed in 1953 and ca. 35 sherds were retained from the packing among its stones. We thank Salvatore Vitale and Kim Shelton for separately confirming our own assessment of the dates of the latest sherds.

20. Taylour (*PN* III, p. 96) found a gap between the top of the blocking wall and the bottom of the single lintel block that remained in situ and logically inferred that it was through this gap that ancient looters had found their way into the tomb.

of pottery among the tholos's grave goods. Three substantially complete vases found in the dromos are of Late Middle Bronze Age date, and their presence suggests that Tholos Tomb IV was built and already in use at that time.[21] The character of the nonceramic grave goods as a whole resembles that of the assemblage excavated by Dörpfeld in Tholos A at Kakovatos, which is dated to LH IIA.[22] There are striking similarities between the nonceramic grave goods found in Kakovatos A and Pylos Tholos Tomb IV, particularly the gold foil cut-out owls (which are virtually identical and probably from the same mold), the hollow-based chert arrowheads, and quantities of amber, including large beads and spacer-plates.[23] We are inclined to see the absence of these types from the grave of the Griffin Warrior as being chronologically significant: we think that the assemblage from the grave of the Griffin Warrior is in its totality later in date than the majority of the finds from Tholos Tomb IV and Kakovatos A, but still within the LH IIA period.

## THE GRIFFIN WARRIOR IN CONTEXT

New discoveries at Pylos and the reexamination of old finds permit us to appreciate the social and economic context of the grave of the Griffin Warrior to an extent not possible only a few years ago. Dickinson wrote in 1996 that only at Nichoria did he see examples of Minoanizing ceramics prior to the MH III/LH I transition and that, until that point, he had found no evidence for a "special relationship" between Crete and Messenia.[24] Rutter also concluded that it "was not until the Early Mycenaean era that the Southwestern Peloponnese became as thoroughly Minoanized as had the coastal regions of the Eastern Peloponnese during Middle Helladic times."[25] While recent research supports these conclusions, it has also clarified the nature of the Middle Helladic background.

Study of stratigraphical sequences excavated by Blegen's team beneath the floors of the palace and in the fields near the acropolis has demonstrated not only that there is an unbroken sequence of deposits throughout the Middle Helladic period, but also that Minoan and Minoanizing wares were reaching the settlement earlier than Dickinson had thought.[26] Some of this material was published by Blegen and his colleagues, but in poor black and white photographs, which were difficult to evaluate. This is also the case with the Minoan imports from Tholos Tomb IV, which now seem to be solidly Middle Minoan III in date, not transitional to the Late Helladic period, thus raising the possibility that the tomb was built earlier than had been thought.[27]

21. Davis and Stocker 2015.

22. See Pelon 1976, pp. 219–221, no. 28; Mountjoy (1999, p. 369) dates the latest finds in the tomb to LH II and suggests that it was built in late LH I.

23. We are grateful to Birgitta Eder for discussing the finds from Kakovatos with us and to Christine de Vree for sharing her unpublished study of the gold foil owl cut-outs.

24. Dickinson 1996, pp. 69–70. Dickinson then also noted that the southern Peloponnese does not figure in the Minos legends, as do the Greek islands, which were in regular contact with Crete in the Middle Bronze Age. Pylos is, however, connected with Crete in the *Homeric Hymn to Apollo* (lines 395–474), where Knossians headed for Pylos eventually become priests at Delphi.

25. Rutter 2005.

26. Davis and Stocker 2010; Stocker and Davis 2014, pp. 242–243.

27. Davis and Stocker 2015.

By LH I–II the settlement reached a size half that of the 13th century, a bit over 7 ha.[28] By then strong influence from Crete was very evident in some aspects of its material culture, such as the use of cut-stone limestone blocks and orthostates for building, which had probably begun by the end of the Middle Helladic period and was certainly common in the LH I–II period.[29] The existence of these styles of construction at Pylos is in itself interesting. But, perhaps of greater importance, is the fact that, as Rutter has observed, "not only are the masonry styles in use from LH I through LH IIIA at Pylos thoroughly Minoan in character, but they succeed each other in the same relative chronological sequence as on Crete."[30]

The discovery of the grave of the Griffin Warrior has brought new data about Minoan/Mycenaean iconography and Mycenaean burial customs to the table. The gold rings presented here are, of course, only a small part of that picture, but, in themselves, these four exquisitely fashioned artifacts confirm the existence at the start of the Late Bronze Age of a relationship between Pylos and Minoan Crete that was more intense than previously suspected. As study of the finds advances, we believe that the grave of the Griffin Warrior will continue to make significant contributions to our understanding of this formative stage in the development of Mycenaean civilization.

## THE GOLD SIGNET RINGS

Four gold signet rings were found in the course of excavation, near each other in the area of the rib cage on the Griffin Warrior's right side (Fig. 8). The majority of the sealstones recovered during the excavation was found in the same area. Here we present the rings in the order in which they were found.[31]

**1** Bull and bull-leaper Fig. 9

SN24-18. Bezel L. 2.88, W. 2.11; band W. 0.58, max. Diam. outside 2.61, max. Diam. inside 1.95, min. Diam. inside 1.75; band and bezel H. 2.76. Wt. 15.1 g.

The upper surface of the bezel is slightly convex, the lower surface deeply hollowed. The band is plain, trapezoidal in section.

A powerful bull is represented in a flying gallop above a raised band with running spirals. The anatomy of the bull is detailed. Testicles and penis sheath are

28. Bennet and Shelmerdine 2001.

29. See Nelson 2001. Excavations of soundings in preparation for the construction of a new shelter over the palace have further documented Early Mycenaean use of ashlar masonry and plaster floors. Part of a wall and a plaster floor beneath court 88 had already been exposed by Blegen and his colleagues (see Nelson 2001, p. 124, fig. 19); these and other contemporary remains were further investigated. Early Mycenaean remains were discovered in most soundings. By LH II, cut-stone blocks were already being reused, not only in the wall beneath court 88, but also in the foundation course for the grave of the Griffin Warrior. In addition, cut-stone blocks were reused in rebuilt parts of the blocking wall of Tholos Tomb IV, certainly in the Early Mycenaean period, and probably in LH II. We thank our colleagues, Demosthenes Cosmopoulos, Anna Karapanayiotou, and Evangelia Malapani for allowing us to mention finds from the excavations for the new shelter.

30. Rutter 2005, p. 26. See Davis 2012 for discussion of other particularly Cretan features in Early Mycenaean Pylos, including a "horns of consecration" and a Minoan mason's mark.

31. Dimensions are in cms. Three-dimensional models of the rings can be downloaded at the following DOIs: ring **1**: 10.7945/C25C7C; ring **2**: 10.7945/C2DW2T; ring **3**: 10.7945/C29599; ring **4**: 10.7945/C21P43. We thank John Wallrodt of the University of Cincinnati for producing them.

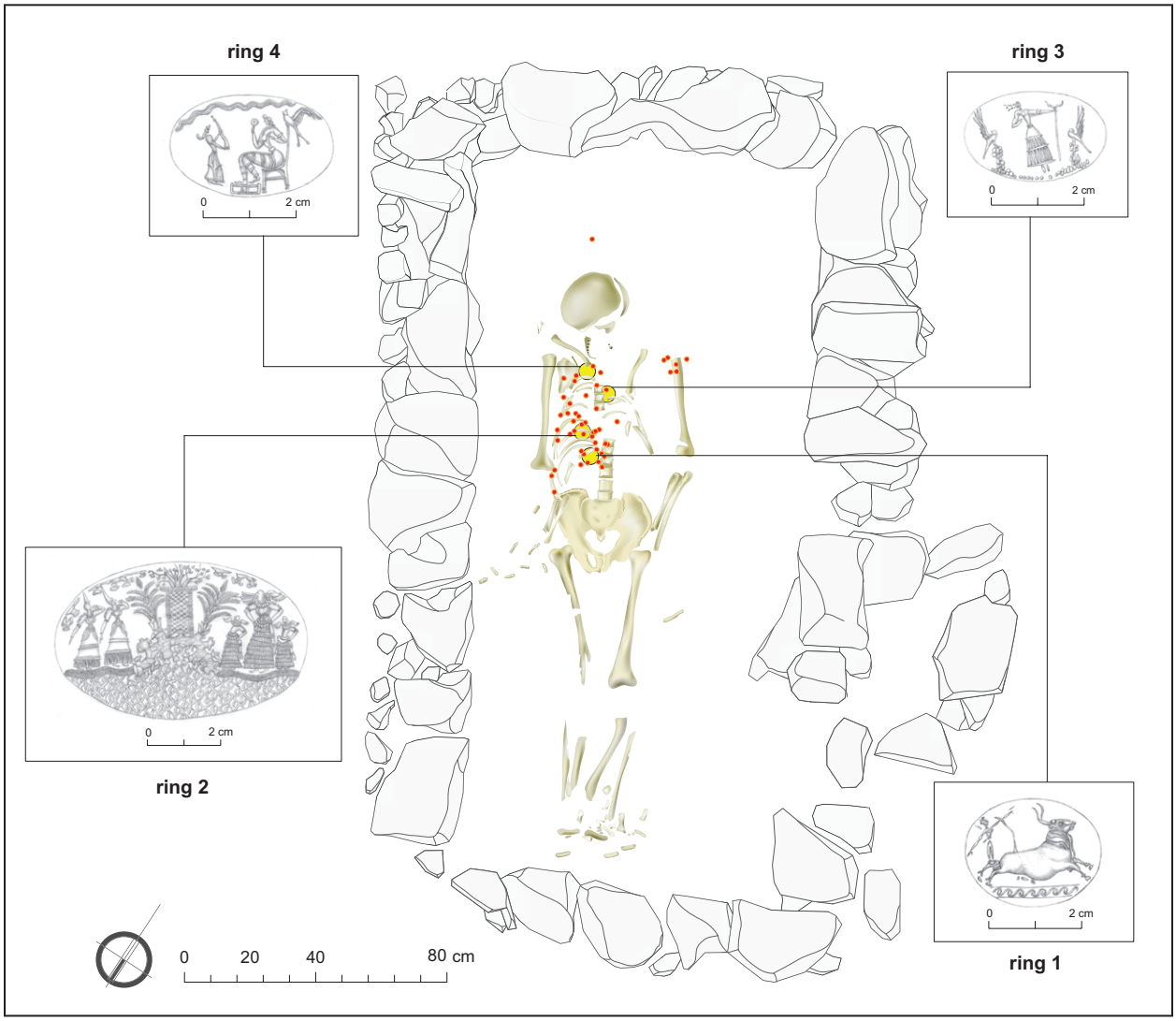



**Figure 8. Plan of the grave of the Griffin Warrior showing the positions of the gold rings and the sealstones (in red).** Drawings of rings T. Ross, of grave D. Nenova

depicted on its underbelly. The tail springs up from high on its rump, crossing in front of the leaper's left arm. The hooves of the rear legs and that of the front left leg are slightly detached. The bull's two horns are not well defined where they join the skull, and its nose is detached from the head. Behind the bull, the narrow-waisted male bull-leaper is dismounting, still in the air, not yet having landed on the ground; his arms are outstretched and he faces the bull. The figure wears a cylindrical belt with a tie to the left. A row of dots behind his head represents a strand of flowing hair. The leaper's feet are not depicted. A hump on the bull's neck is very prominent, and folds of skin on the withers are emphasized.

The iconography of the ring is very similar to that of gold rings and impressions from gold rings found on the mainland and on Crete. See Krzyszkowska 2005, pp. 141–142, 189–191. Similar examples are found at Asine (*CMS* I, no. 200), a gold ring dated to LH II–IIIA with a more stylized bull; at Sklavokambos (*CMS* II, 6, no. 259), Gournia (*CMS* II, 6, no. 161), and Kato Zakros (*CMS* II, 6, no. 39), impressions from the same ring dated to LM I; and another impression at Ayia Triada (*CMS* II, 6, no. 43), dated to LM I. See also *CMS* VS, 1A, no. 171 (Chania) for a bull composition similar to ring **1**. For more general discussion concerning depictions of bull-leaping on seals and signet rings, see Younger 1995.

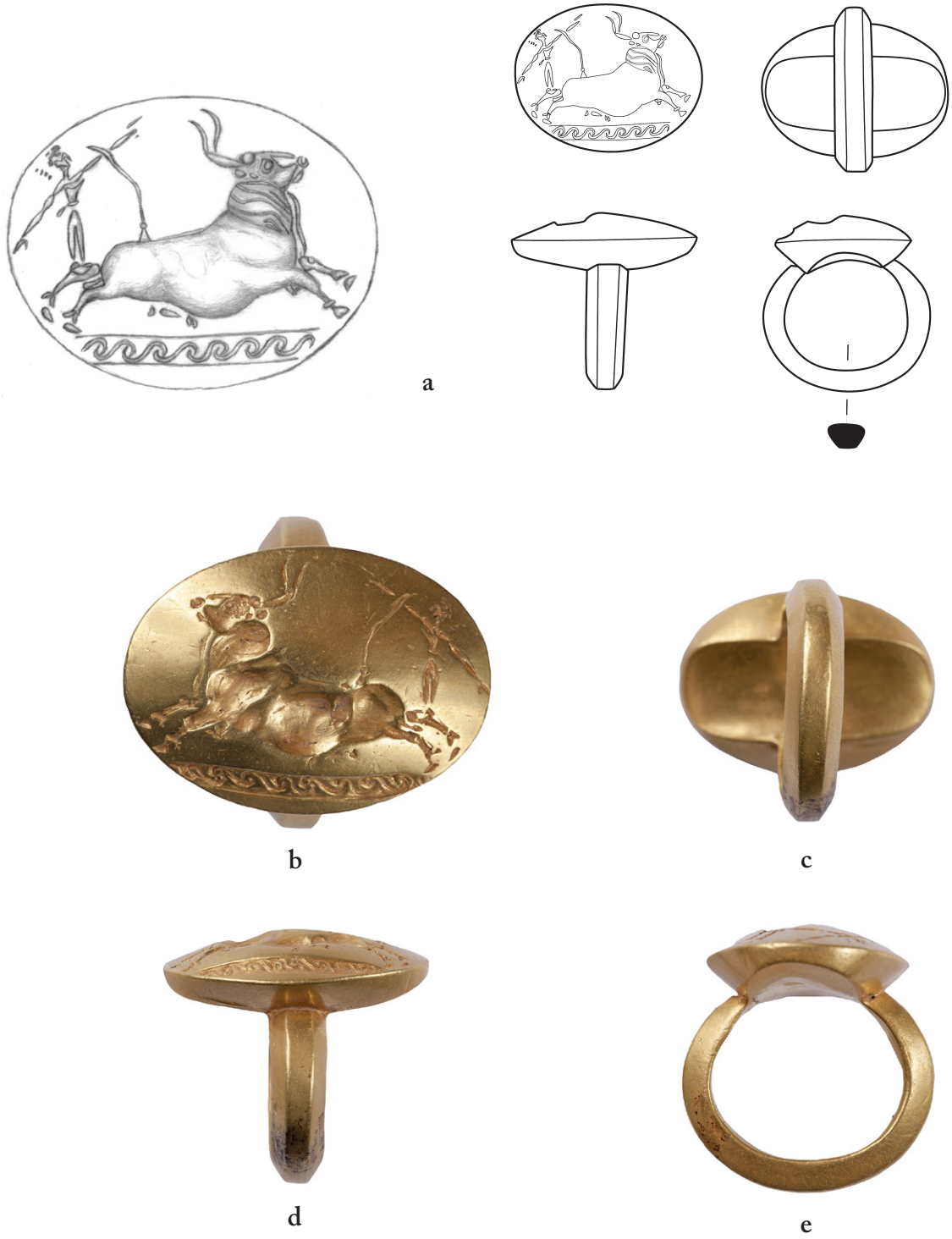



**Figure 9. Ring 1: (a) drawings of impression (scale 2:1) and ring (scale 1:1); (b) top of bezel; (c) bottom of bezel; (d) side of bezel and band; (e) side of bezel and band.** Scale (b) 2:1; (c–e) 3:2. Drawings T. Ross; photos C. Papanikolopoulos

**2** Female figures flanking a shrine Fig. 10

SN24-30. Bezel L. 4.47, W. 2.77; band W. 1.08; max. Diam. outside 2.40, max. Diam. inside 1.81, min. Diam. inside 1.48; band and bezel H. 2.32. Wt. 37.2 g.

The upper surface of the bezel is slightly convex, the lower surface deeply hollowed. The band is a flat strap, bordered on each side by gold granulation; in its center is a unique raised band with bivalve cockleshells bordered on each side by very small beads of gold granulation echoing the marinescape of the bezel.

Five elaborately dressed female figures flank a shrine. The shrine is located on the shore of an inlet that separates three women on the right from two on the left. All five women stand on an undulating band that separates land from sea and is decorated with small impressed circles arranged in horizontal bands (apparently meant to represent a sandy beach); four are to the right of the inlet, five to the left. The edge of the inlet is marked by trifid elements, representing coastal rocks.[32] The bands of small circles continue "behind" the first trifid motif to the right of the inlet.

The sea is filled with scallop net pattern.[33] Bifid elements frame the bezel above the female figures and shrine, as if to suggest that here too was a shore. Are we to imagine a scene set on an island?[34]

The shrine is defined by two side walls represented as stacked oblong rectangles (presumably meant to be stone slabs), on top of which rests a broad lintel decorated with a single band of circles (perhaps representing the ends of wooden beams, as is customary in wall painting). The space between the walls is filled with a diaper net pattern with small circles at the corners of the diamonds, and a plant with ivylike leaves, but a branching, woody trunk, seems to spring from the roof of the shrine with two date palms flanking it.[35] All five women face the shrine and the tree.

The three women on the right are dressed in flounced skirts and short-sleeved bodices. They wear scarves around their necks that appear as peculiar winglike excrescences, with wreaths also around their necks, and double belts around their waists.[36] The large, central figure is depicted in a frontal pose, her breasts prominent, both hands on her hips, and with small subrounded indentations above each arm.

**Figure 10** *(opposite)*. **Ring 2: (a) drawings of impression (scale 2:1) and ring (scale 1:1); (b) top of bezel; (c) bottom of bezel; (d) side of bezel and band; (e) side of bezel and band.** Scale (b) 2:1, (c–e) 3:2. Drawings T. Ross; photos C. Papanikolopoulos

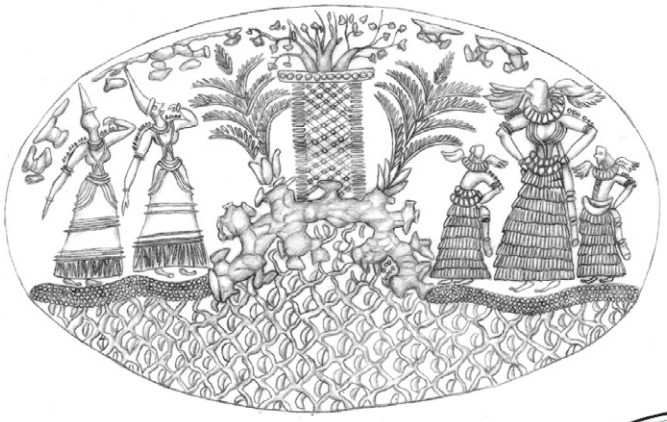
32. See Morgan 1988, pp. 34–38, for discussion of the iconography of water in Aegean art. Morgan notes the rarity of scenes that illustrate the relationship between sea and land.

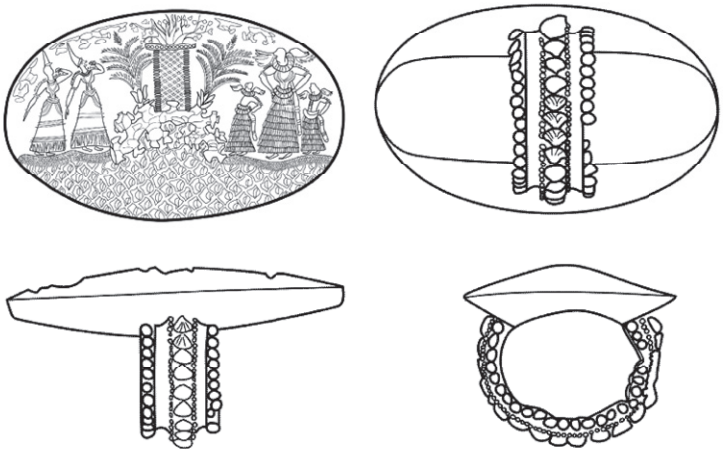
33. For the net pattern, compare *PM* IV, fig. 925 (*CMS* II, 8, no. 264, from Knossos). For the inlet, sea, and trifid elements, compare the so-called Ring of Minos (Dimopoulou and Rethemiotakis 2004) and the Master Impression from Chania (Hallager 1985). The net pattern is similar both to Furumark shapes 62 (tricurved arch) and 70 (scale pattern); such a filling ornament is characteristic of LM IB/IIA vase painting, except that the short, pendant, curving lines are there vertical rather than horizontal.

34. See Marinatos 1989, pp. 141–142, on the arrival from the sea of what she believes is *the* Minoan goddess.

35. For the net pattern, cf. the reverse of *CMS* I, no. 293, from Tholos IV at Pylos. The plant is entirely dissimilar to trees associated with shrines in other Minoan cult scenes, whether they are imagined to be growing inside an enclosure or are small trees set on the roofs of buildings in the context of particular rituals; the latter interpretation is preferred by Marinatos 1989, pp. 138–140. Arne Strid (pers. comm.) has remarked on the floral representations on the ring: "[The plants] on the sides are clearly palms of the genus *Phoenix* (date palms). . . . The illustration is unmistakable, showing not only the leaves but also the large scales (indurated leaf bases) on the stem. . . . The plant on top of the [shrine] is more problematic. It is clearly a woody species and the leaves are rather like ivy (*Hedera helix*) but . . . the thick stems are uncharacteristic. . . . My guess is that the artist was at least inspired by ivy and took the liberty of placing leaf-bearing twigs directly on the thick stem bases." To the palms, compare those springing from either side of the throne in the Palace of Minos; see Galanakis 2013b, pp. 24–25.

36. Philadelpheus, who first published *CMS* I, no. 159 (Mycenae), on which the large female figure has similar excrescences, wrote: "παρίστανται ανεμιζόμενα τα άκρη μιας ταινίας (φιόγκου)." The ends of the scarf at first glance might be mistaken for wings. On the scarves, see also *PM* IV, pl. xxxi:d, from the Campstool Fresco; *PM* II, fig. 194:c, a sealstone from Mycenae, (= *CMS* I, no. 159); and the sealing *CMS* II, 3, no. 218 ("Mochos"). More generally, see Stefani 2013, pp. 111–113.





a

b

c

d

e

Her skirt has nine flounces. Two closely spaced bands mark the edge of each of her sleeves, and she wears a bracelet on each wrist. Her head and facial features lack any definition, as is also the case for the other four figures.

All three women have long streamers hanging nearly to the ground behind them. Each streamer has a knob at the end with two sets of two disks above it. These are not obviously extensions of the belts that the women wear, since in two instances the belts have patterns, whereas the streamers do not, and the streamer worn by the large figure originates above her waist. Nor do they seem to be ponytails or braids. Are they sashes? Are they garlands?[37] These streamers are found elsewhere in representations of this same triad of women, but never in such detail.[38]

The two smaller figures in the group of three appear to be represented in profile, with only one arm held on the hip and small subrounded indentations above it. There is no indication of breasts, most likely an indication of their youth. The bodice of the figure on the right side has a vertical row of ovoid impressions to the left. The skirt of the figure on the left has seven flounces, that on the right, six. Neither figure wears a bracelet.

The two women to the left of the inlet wear tall conical hats, skirts decorated with horizontal and vertical lines, aprons, and sleeveless jackets; they hold their left hands to their heads, with their right arms extended behind them.[39]

If the large figure on the right is the Minoan goddess, as we imagine, then she has joined her worshippers in their ritual.[40] It seems most likely that she and the two girls to the right of the inlet are dancing. Representations of wreaths or garlands being worn are not common and point to the possibility that these figures are dancing.[41] Warren comments, their "symbolic values lie in the garlands being sacred emblems of one or more female divinities. . . . Garlands with their symbolic flowers would have been worn at ritual dances and ceremonies."[42] The position of hands on the hips is characteristic of the statues from Ayia Irini, which Caskey interprets as dancers, and is a gesture that generally, although not universally, has been thought to indicate dancing.[43]

From the stances of the three women, are we meant also to imagine that they are moving in a circle?[44] The fact that the scarves are outspread imparts a sense of motion to the composition, as if the women are perhaps twirling, while it also visually distinguishes the scarves from the garlands.[45]

37. On garlands, see Warren 1985. Representations of garlands being worn are not common; see Caskey 1986, pp. 36–37, for discussion and references, including *CMS* I, no. 219, from Vapheio.

38. In her commentary on *CMS* I, no. 159, Sakellariou speaks of a "breiten gewölbten Gürtel, an den hinten Bänder hängen." See also Long 1974, pp. 38–39.

39. On aprons, see Jones 1998, pp. 142–154; Stefani 2013, pp. 115–116. Jones 2015 (pp. 283–285) knows only the two examples of the apron from the Temple Repositories of Knossos and suggests a special ritual significance for it: i.e., that it was worn by a Minoan high priestess. But this hypothesis no longer can be supported, in light of ring **2**, which shows two women wearing aprons.

40. Marinatos 1989 (p. 137) argues that it is a tree in association with a shrine that marks a place of sacrifice and of the epiphany of the goddess. Men appear in such scenes only when they are shaking a tree, while women, as in our scene, always look toward the tree.

41. See Caskey 1986, pp. 36–37 for a discussion of dancing figures with references; she includes *CMS* I, no. 219, from Vapheio.

42. Warren 1985, p. 206.

43. Caskey (1986, p. 36) sees the figures as dancing, but Liveri (2008, pp. 5–10) does not. Krattenmaker (1989, p. 124) compares the wreaths on the Kea figures to *CMS* II, 3, no. 218 ("Mochos").

44. The stance is similar on *CMS* I, no. 159 (Mycenae) and *CMS* II, 3, no. 218 ("Mochos"), where the smaller figures also have only one arm depicted. Younger (2016) imagines that the two smaller figures are Hyperborean maidens, their hands bound behind their backs, an interpretation with which we are not in agreement.

45. It is true though that the scarf of the seated male in the Campstool Fresco, which is depicted in a similar way, cannot be indicative of motion; see *PM* IV, pp. 379–396.

Both groups of women represented on this ring are individually well known in Minoan art, although they are not assembled elsewhere in a single composition. The three women to the right of the inlet are remarkably similar to the triad on a sealing from Ayia Triada, an impression from a metal signet ring, almost as if this group was clipped *pars pro toto* from the larger composition of ring **2**.[46] Levi, who first published the Ayia Triada sealing, thought that the dots around the heads of the women were braids, but it seems likely that they are wreaths.[47] The larger figure has "wings" and all three have streamers. The women also regard a shrine, with a palm next to it and a tree above. Hands on hips, they wear flounced skirts and, at least the central figure, a short-sleeved jacket.[48]

The two female figures to the left of the inlet are also familiar. Among three-dimensional representations, the faience figures from the Temple Repositories of Knossos are unique in wearing tall conical hats.[49] Women on a seal from Gournia also wear high conical hats and hold their hand to their head in the so-called adoration gesture. In our case, given their association in this composition with dancers, we suggest that the two women are meant to be understood as singing and the gesture may be prompting us to imagine the sounds being emitted from their mouths.[50]

As a whole, this composition is a remarkable tableau of Minoan cult imagery. Figures present elsewhere in Minoan art are here united in a single scene in which a shrine and a tree are the focus of ritual action.[51]

**3** Female figure with a staff flanked by two birds Fig. 11

SN24-702. Bezel L. 2.06, W. 1.31; band W. 0.46, max. Diam. outside 2.06, max. Diam. inside 1.61, min. Diam. inside 1.36; ring and bezel H. 1.99. Wt. 5.6 g.

The upper surface of the bezel is slightly convex; the lower surface, deeply concave. The band is plain, trapezoidal in section.

The female figure holds out a staff in her left arm and is flanked by two antithetical birds. She wears a long skirt, divided into two zones. A belt has been wrapped around the waist twice.[52]

The chest of the figure is rendered in a three-quarter view; the right arm is in profile, bent at the elbow. The left arm is extended to grasp the staff. At the top of the staff is a bifurcated object, seemingly horns.[53] The head of the female figure is summarily rendered, with impressions behind to represent flowing tresses. Schematically rendered feet project from beneath her skirt.[54] To both the left and right of the figure, birds are just coming to rest on rocks, which extend along the bottom of the bezel. Both birds have unrealistically long tails, and their wings are lifted and close together behind them.

46. See Stefani 2013, p. 159, no. 255; *CMS* II, 6, no. 1 (Ayia Triada).

47. See Levi 1925–1926, p. 140, no. 141.

48. The sky is represented by multiple wavy bands, as on ring **4**, below.

49. See also *CMS* XII, no. 168 and *CMS* II, 6, no. 13. On conical hats, including tall conical hats, see more generally Stefani 2013, pp. 116–117.

50. See Stefani 2013, pp. 189–190, no. 267 and *CMS* II, 3, no. 236. The term "adoration gesture" seems inappropriate for the two women on this ring. It is also rejected by Wedde (1999, pp. 914–919, gesture G5); his example no. 11 from Ayia Triada is very similar to ring **2**, in that the women also wear tall headgear. The gesture is also used by figures on a gold ring from Tholos Tomb IV at Pylos (*CMS* I, no. 292).

51. See Marinatos 1984, 1989.

52. Overall, the dress is very similar to that of a female figure depicted on a lentoid agate seal from the grave of the Griffin Warrior (SN24-326), which will be published elsewhere.

53. We have found no exact parallel for the bifurcation, but see *CMS* V, no. 173 (Ancient Agora, Athens).

54. The figure's extended feet may indicate that she is just alighting on the ground. Her hair too could indicate that she had been flying.

**Figure 11. Ring 3: (a) drawings of impression (scale 3:1) and ring (scale 1:1); (b) top of bezel; (c) bottom of bezel; (d) side of bezel and band; (e) side of bezel and band.** Scale (b) 3:1; (c–e) 2:1. Drawings T. Ross; photos C. Papanikolopoulos

We think that the female figure is a goddess, meant to be interpreted as descending from on high. From the rendering of her feet, it seems clear that she is not standing. The birds appear to sit on rocky peaks flanking a mountainous hollow where the goddess will alight.[55] From the position of their wings, it is clear that the birds also have not yet come to rest fully on the rocks.

**4** Seated female figure, approached by a smaller woman Fig. 12

SN24-736. Bezel L. 2.41, W. 1.54; band W. 0.52; max. Diam. outside 2.15, max. Diam. inside 1.62, min. Diam. inside 1.40; band and bezel H. 2.08. Wt. 7.3 g.

The upper surface of the bezel of the ring is slightly convex, the lower surface deeply hollowed. The band is plain, trapezoidal in section.

The large seated female figure, whom we presume to be a goddess, wears a short-sleeved jacket, with a raised band indicating the hem, long trousers with raised bands, and a cylindrical, double belt.[56] She is enthroned and holds a disk-shaped, stemmed object in her right hand, which we interpret as a mirror.

The goddess's elongated feet rest on a footstool, the right in front of the left. The footstool is decorated with motives reminiscent of half rosettes. Her throne is high-backed and drawn from a perspective that permits all four legs and both side-stretchers to be seen; the legs rise to form an arch with spandrels beneath the seat. On the back's top rail sits a bird, whose split, swallowlike tail is exaggerated, as are its extended wings; the inclusion of rackets on the ends of the tail seems to be fanciful.[57]

The smaller figure wears a short-sleeved jacket and a long skirt, an extra line emphasizing the lower hem; her feet are also sketchily rendered. The heads of both the goddess and the worshipper are cartoonish, and the hair of the goddess is pulled back in a bun. Two wavy lines above the scene appear to represent the heavens.

The curving object that the smaller figure carries narrows substantially from bottom to top, and has two rings around it, near its upper end. The base of the object rests on her right hand while her left hand grasps it midway. In our opinion, the object she presents to the goddess is most likely a bull's horn, although this object is unique in such a presentation scene.[58]

The iconography of this ring has many general parallels, but specific details are unique.[59] A bird sits behind the enthroned goddess on the famous Tiryns gold

55. See *CMS* II, 8, no. 257 (unknown provenance), where a similarly posed goddess with a staff is flanked by antithetical birds. Antithetical birds on a gold ring from Poros (Heraklion) flank the goddess in a seated position (Dimopoulou and Rethemiotakis 2004, p. 20, fig. 14). The pose of the goddess on ring **3** is also reminiscent of Evans's "Mother of the Mountains": *PM* IV, p. 608, fig. 597:a, e. There the goddess stands on a mountain flanked by lions, an architectural complex behind her, and is saluted by a man (a palace and a king according to Marinatos 2000, p. 120).

56. Most representations of trousers in Minoan art come from seals. All are plain, without the horizontal bands of ring **4**. See Stephani 2013, pp. 103–104, who suggests that this article of clothing may have been a kind of panteloon or bloomers, normally worn under a skirt. But horizontal bands are here somewhat difficult to reconcile with the idea that an undergarment is represented, while the fact that the trousers are ankle-length is unusual.

57. We are grateful to Robert Lamberton for his thoughts about the birds depicted on this ring and on ring **3**. On the rackets see Harte (2000, p. 693), who argues that swallows with racket-tails are never likely to have existed and suggests that their representation was a stylistic peculiarity of Theran artists. We now see that rackets on swallow tails must have been part of the stock and trade of Aegean art at the start of the Late Bronze Age.

58. Although a horn is unique in presentation scenes, it is not unknown in sacred Cretan contexts; see Younger 1995, pp. 537–538. The House of the Sacrificed Oxen at Knossos is a notable example; *PM* II, pp. 301–303, fig. 175. See also Marinatos 1993, p. 143. We thank Ruth Palmer for discussing horns with us.

59. E.g., the composition is similar to that of a seated, enthroned goddess on a gold ring from Mycenae; cf. Papadimitriou 2015, p. 115 (Mycenae Museum II 2971).

**Figure 12. Ring 4: (a) drawings of impression (scale 3:1) and ring (scale 1:1); (b) top of bezel; (c) bottom of bezel; (d) side of bezel and band; (e) side of bezel and band.** Scale (b) 3:1; (c–e) 2:1. Drawings T. Ross; photos C. Papanikolopoulos

ring, but the form of the throne and the footstool are considerably different.[60] Our goddess's throne in some aspects resembles the gypsum throne at Knossos, for example, in its spandrels, side stretchers, and tall back.

60. *CMS* I, no. 179, from the Tiryns Treasure. On Aegean furniture, see Krzyszkowska 1996; Sakellarakis 1996.

## GOLD RINGS AT PYLOS

In *The Palace of Nestor at Pylos,* Lang commented on Piet de Jong's restoration of two seated ladies, one holding a gold ring: "In the restored drawing (Pl. M) this piece is associated with 2 H 2; the ring is not a serious suggestion but is restored to give point to the gesture."[61] Perhaps Lang was thinking of the gold ring discovered in the ashlar cist in Tholos Tomb IV by Taylour. It was, in fact, the only gold signet ring discovered by Blegen's team. But de Jong and Lang were entirely correct in assuming that gold rings were still in use at the time of the destruction of the palace. Twenty percent of the sealings found there were stamped by metal rings, with the majority of the types belonging iconographically to the 15th century.[62] There is, however, no proof they were used in Early Mycenaean times for sealing purposes at Pylos or, for that matter, elsewhere on the Greek mainland.[63]

Gold signet rings are rare in the Aegean world. There is as yet no evidence that any such ring was made at Pylos, and little direct evidence for manufacture on the mainland as a whole.[64] In 2000, Vasilikou recorded only 53 examples found on the mainland.[65] The excavation of the Tomb of the Griffin Warrior has itself added four more rings to the Messenian corpus, which now numbers just eight: three from Ellinika, near Kalamata, and now five from Pylos.[66] The discovery of so many in one grave raises the possibility that the rings (and the hardstone seals) that were used by the LH IIIB administration at Pylos had been retrieved from Early Mycenaean graves such as that of the Griffin Warrior.[67]

Were the rings found in the Tomb of the Griffin Warrior made in Crete or elsewhere in an area under Minoan influence? We are inclined to agree with Pini that:

> for the very beginning of the LBA we have no foolproof criteria for distinguishing between these groups. We cannot gauge degrees of Minoan-ness in any objective fashion. Nor, sadly, is it likely the situation will change in the future. Certainly the beliefs of authorities in the field—one way or another—and the repetition of such beliefs by others to support their own does not constitute progress.[68]

It should be clear from the preceding discussion, however, that the iconography of the four rings from the Tomb of the Griffin Warrior adheres closely to Minoan prototypes. Details of their construction also point to a Minoan origin, especially the technological aspects of their production.[69] It is for this reason that considerable resources have been invested by us in the study of the physical and chemical properties of the rings.

61. *PN* II, p. 62.
62. Pini 1997, pp. 82–91.
63. Pini 1997; Younger 2010.
64. Konstantinidi-Syvridi and Kontaki 2011.
65. Vasilikou (2000) does not consider impressions made by gold rings.
66. Pylos has also produced a gold cushion seal and one unengraved gold ring with a heart-shaped bezel (*PN* III, fig. 191,a, b; Routsi has yielded one gold amygdaloid seal (*CMS* I, no. 283).
67. The looted built grave under room 97 of the Northeast Building might be a perfect candidate; see *PN* I, pp. 24, 312–314.
68. Pini 2009, p. 608.
69. On the production of gold rings, see Xenaki-Sakellariou 1989; but see also the articles of Papasavvas (2008); Müller 2003a, 2003b, 2005; and Konstantinidi-Syvridi and Kontaki 2011, which summarizes the scanty evidence for molds for rings on the mainland.

None of the rings were solid gold.[70] All are constructed of multiple sheets of gold, soldered together over a core of a different material. The upper and lower surfaces of the bezels are constructed of separate sheets, as are the inner and outer surfaces of the bands. Joins where pieces of gold of different composition were soldered together cannot be seen with the naked eye, but are visible under the microscope, and compositional differences between the various components of the rings were detected by XRF analysis.[71]

The four rings conform to the general characteristics of Younger's type IV.[72] Notable is the virtually identical trapezoidal section of the bands of three of the four.[73] Although the style of the rings varies, the quality of engraving of all four is much better than that of the ring from Tholos Tomb IV, and ring **2** is a true masterpiece. Its band also differs considerably from the others, in its flat section and its unique design of shells edged with granulation.[74]

Minoan rings of the New Palace period have small bands—so small that Pini has concluded that they could only have been worn by women or children on their little finger.[75] Müller further notes the tendency for rings found on the mainland to have larger bands than those in Crete. The four rings from the grave of the Griffin Warrior are also small, but their diameters fall outside the range Müller gives for Cretan rings of LM I date (based on a sample of 20 rings).[76]

We have not commented extensively on the style of the rings, although it should be obvious that rings **3** and **4** are very similar in size, theme, and details of shape, such as the sections of the bands. Certain features of ring **2** remind us of the Ring of Minos, e.g., the shrine at the base of an inlet and the depiction of the sea with a net pattern. Both the Ring of Nestor and the Ring of Minos have bands strikingly similar to ours, although with disks in the first instance rather than shells, and large granulated beads in the second.[77]

70. Each ring was weighed and then immersed in water so that the volume of water displaced could be measured. The observed weight in all instances is about half of the expected weight, had the rings been made of solid gold. We have not yet been able to determine the composition of the core, since the rings are intact.

71. Andreas Karydas and Vasiliki Kantarelou of the "Demokritos" Institute in Athens will publish the results of extensive semiportable XRF analyses elsewhere. Various parts of the rings have been examined (e.g., the surfaces of the bezels and bands; joins between structural elements; engravings; and a dark film over the gold surface that was present in some instances). The composition of three of the rings (rings **1**, **3**, and **4**) is very similar (79%–81% gold). The purity of the gold of ring **2** is much higher than the others: e.g., 92% for the top of the bezel. Where it was possible to examine soldered joins, the method employed appears to have been a technique known as solid-state diffusion bonding; Demortier 1989.

72. Younger 1984.

73. See Müller 2005, pl. xxxvii:d, for the trapezoidal profile.

74. The use of true gold granulation on ring **2** is a feature of Minoan craftsmanship. See Dimopoulou and Rethemiotakis 2004, p. 28, concerning the characteristics of Minoan work. Ring **2** is nearest to Müller's type j (2005, pl. xxxvii:j) with five rows. Ring **2** certainly supports Müller's observation (2005, p. 175) that "very extravagant hoops correspond to the size of the bezels and the wide variety of their decoration."

75. Pini 2010, p. 66; after Müller 2005. Müller gives LM I diameters between 1.18 and 1.45.

76. Müller 2005, p. 173. Müller anticipates objections that signet rings may not have been intended to be worn, by noting wear and breakage patterns, as well as the oval shape of the band, intentionally corresponding to the oval shape of the human finger. He suggests that they were worn on the middle finger, between the first and second knuckle. See counter arguments by Younger (2010), who suggests that bands may through time have become vestigial, as for practical reasons signet rings ceased to be worn on the hand. We note that the band of ring **2** shows considerable traces of wear, particularly on the surfaces of several shells.

77. For the Ring of Minos, see Dimopoulou and Rhethemiotakis 2004. For the Ring of Nestor, see Evans 1925, p. 47, fig. 42. Ring **2** would seem to support the authenticity of both rings even in small details: compare its woody ivy with that growing from the tree on the Ring of Nestor, a feature that is key to Marinatos and Jackson's (2011) rejection of the authenticity of that ring.

## THE NEW RINGS AND THE MYCENAEAN BELIEF SYSTEM

As yet we know little about how mainlanders in possession of Minoan rings would have understood or reimagined the Minoan iconographical scenes represented on them. Vermeule once wrote skeptically in her characteristically brilliant prose:

> Most prehistoric art is not really understandable. There is no convincing way to relate designs on gold to burial rites or to religion or community symbols of belief. This is always true in a preliterate world. . . . Yet rational understanding is not necessary when confronted with so much that is beautiful beyond reason.[78]

Even in the case of the fabulously rich burial in the cist in the Vapheio Tholos, although Kilian-Dirlmeier has been able to detect structure in the placement of grave goods within the tomb, her conclusions are constrained by the fact that the sex of the burial is entirely conjectural: no skeleton was found.[79]

More generally, Laffineur has tried to discover if there existed any correlation between the overall wealth of burials and the iconography depicted on seals and signet rings interred with them.[80] He concluded that any generalization is difficult "on the individual level, when investigating the individual contexts, and this was especially the case with early Mycenaean find contexts."[81] In addition, Dickinson and his colleagues have cautioned, in reference to the Shaft Graves at Mycenae, "that the position in which grave-goods were found during excavation need have little to do with where they were placed during the original burial rite," since they found evidence that goods from earlier burials were rearranged at the time of later burials.[82]

We believe, however, that, in certain circumstances, a detailed contextual analysis of burial goods can enable us to make headway toward the recovery of prehistoric beliefs.[83] But systematic excavation and full documentation of the finds, including the human remains, are essential. And tombs containing only one individual burial are most valuable since associations between a body and objects cannot be disputed. The grave of the Griffin Warrior is ideal for this purpose. Our concern here is not the meaning that would have been ascribed to our rings by those who made them, but by those who buried them at Pylos. In forthcoming publications we will explore in greater detail associations of various grave goods and iconographical representations, with each other and in relation to the body of the Griffin Warrior, but we can already say with certainty that there is a structural logic to the arrangement of objects in the grave.

Weapons, for example, were found only to the left of the body, while all four rings were associated with the majority of the sealstones to its right (Fig. 13). The close association of the rings with sealstones, as opposed to beads, suggests the existence of an emic classification system already in Early Mycenaean times that understood the functions of both classes of object to be similar. Although neither sealstones nor signet rings were then being employed on the mainland for sphragistic purposes, those who buried the Griffin Warrior apparently knew that they had been produced to serve similar ends. That observation does not in itself speak against the once

78. Vermeule 1975, p. 51.

79. Tsountas 1889; Kilian-Dirlmeier 1987; Galanakis 2013a.

80. Laffineur 2000.

81. Laffineur 2000, p. 165; cf. Laffineur 1990.

82. Dickinson et al. 2012, p. 172.

83. See Hatzaki 2009, for a similar approach to the study of "structured deposition," from settlement contexts at Knossos.

**Figure 13. Weapons by the left side of the Griffin Warrior.** Photo Palace of Nestor Excavations

common belief that the wealth of the Shaft Grave period was looted from Crete and elsewhere, and then was buried with Mycenaean warriors only as testimony to their prowess in battle. But the fact that all four rings are concerned with Minoan ritual suggests to us that they were systematically collected, as do interreferential elements in their iconography.[84]

We suggest that in the grave of the Griffin Warrior interrelationships among artifacts and representational elements demonstrate that mainlanders at Pylos, at the start of the Late Bronze Age, already attached symbolic meaning to the rings. We also believe that other objects buried with the Griffin Warrior were chosen so as to interact with the iconography of the rings. First we mention the mirror found above the Griffin Warrior's legs, which is complemented by the mirror held by the goddess depicted on ring **4** (Fig. 14).[85]

Mirrors in male graves are found much less frequently than in female burials (a 1:5 ratio); in the latter case Paschalidis has recently suggested they accompanied women of exceptional beauty.[86] But in the case of males, mirrors have been found with warrior burials almost exclusively.[87] That fact, together with the image of the goddess with a mirror on ring **4**, suggests to us that for those who decided on the placement and arrangement of the grave goods, the mirror had ritual significance—while the

84. For Mycenae, Dickinson (1977, p. 56) long ago argued convincingly against the idea that the Shaft Graves held loot from Crete, as had Hooker (1967, esp. pp. 271–276). Dickinson imagines a special relationship between Mycenae and a Cretan palace (but finds "little evidence that Cretan influence extended further than an appreciation for Cretan arts and skills.")

85. The only other Early Mycenaean representation of a goddess with a mirror is on *CMS* XI, no. 30, a gold ring in Berlin without provenance. See Furtwängler 1900, pp. 35–36.

86. Paschalidis 2012.

87. Paschalidis 2012.

**Figure 14. SN10-007. Bronze mirror by the legs of the Griffin Warrior.**
Photo Palace of Nestor Excavations

presence in the grave of multiple combs may point to ritual hair-combing before battle.[88]

Our second example concerns representations of horns. In the epiphany of the goddess represented on our ring **3**, she is accompanied by two birds and holds a horned staff. We think that it can hardly be a coincidence that the Griffin Warrior was buried with a bronze bull's head finial for a staff, capped by prominent horns (SN24-151), which was likely a symbol of his authority and social prominence (Fig. 15).[89] Horns appear again in the presentation of a bull's horn to the goddess on ring **4**, while

88. For example, Furtwängler (1900, p. 36), suggested that the Mycenaeans might have believed that an apparition of the soul was visible in the mirror.

89. Although the muzzle of the creature is narrow, the horns are straight and entirely lack the tines and crown characteristic of a deer's horns, which are present on Early Mycenaean representations at Pylos and Volimidia; see Kountouri 2003; Papazoglou-Manioudaki 2011. We believe that a bull's head was intended; compare the muzzle of the bull in a wall painting from Tell El-Daba'a (Bietak, Marinatos, and Palyvou 2007, pp. 93–95, no. A13:F4). In any case, deer and bulls are associated in ritual contexts, not only on the rhyton published by Kountouri, but also in the ritual feasting deposits of animal bones from the Palace of Nestor; Stocker and Davis 2004, pp. 182–183, n. 14. SN24-151 will be fully published elsewhere.

**Figure 15. SN24-151. Bronze bull's head from staff.** Scale 3:4. Photo J. Stephens

the bull-leaping scene on ring **1** suggests one possible source of the horn in Minoan ritual.[90]

These and other associations that we will explore in future publications promise to open new doors to our understanding of the Mycenaean belief system at the moment of its creation, at a time when large numbers of Minoan works of art were first imported to the Greek mainland. There they were recontextualized in graves like that of the Griffin Warrior, as foundations for the Mycenaean civilization were laid.

90. We suggest this despite Shapland's skepticism (2013) about bull-leaping as a religious performance and his attempt to uncouple bull-leaping from bull sacrifice. Although there may be lacking any direct pictorial evidence linking sacrifice with this sport ("there is no evidence that sacrifice followed bull-leaping, as Younger . . . concedes") there is reason to think that bull sacrifice was an important aspect of Minoan ritual. On bulls' skulls and horns in funerary and other ritual contexts, see Younger 1995, pp. 537–538.

## REFERENCES


Åström, P. 1977. *The Cuirass Tomb and Other Finds at Dendra* 1: *The Chamber Tombs* (*SIMA* 4), Göteborg.

Bennet, J., and Y. Galanakis. 2005. "Parallels and Contrasts: Early Mycenaean Mortuary Traditions in Messenia and Laconia," in *Autochthon: Papers Presented to O. T. P. K. Dickinson on the Occasion of His Retirement,* ed. A. Dakouri-Hild and S. Sherratt, Oxford, pp. 144–155.

Bennet, J., and C. W. Shelmerdine. 2001. "Not the Palace of Nestor: The Development of the 'Lower Town' and Other Non-Palatial Settlements in LBA Messenia," in *Urbanism in the Aegean Bronze Age* (Sheffield Studies in Aegean Archaeology 4), ed. K. Branigan, London, pp. 135–140.

Bietak, M., N. Marinatos, and C. Palyvou. 2007. *Taureador Scenes in Tell El-Daba'a and Knossos* (Denkschriften der Gesamtakademie 43), Vienna.

Caskey, M. E. 1986. *Keos* II: *The Temple at Ayia Irini* I: *The Statues,* Mainz.

Davis, E. 1977. *The Vapheio Cups and Aegean Gold and Silver Ware,* New York.

Davis, J. L. 2012. "Το ανάκτορο του Νέστορος," in *Αρχαιολογία: Πελοπόννησος,* ed. A. Vlachopoulos, Athens, pp. 464–471.

Davis, J. L., and S. R. Stocker. 2010. "Early Helladic and Middle Helladic Pylos: The Petropoulos Trenches and Pre-Mycenaean Remains on the Englianos Ridge," in *ΜΕΣΟΕΛΛΑΔΙΚΑ: La Grèce continentale au Bronze Moyen. Actes du colloque international organisé par l'École française d'Athènes, en collaboration avec l'American School of Classical Studies at Athens et le Netherlands Institute in Athens, Athènes, 8–12 mars 2006* (*BCH* Suppl. 52), ed. A. Philippa-Touchais, G. Touchais, S. Voutsaki, and J. Wright, pp. 101–106.

———. 2015. "Crete, Messenia, and the Date of Tholos Tomb IV at Pylos," in *The Great Islands: Studies of Crete and Cyprus Presented to Gerald Cadogan,* ed. E. Hatzaki, S. Andreou, and C. Macdonald, Athens, pp. 175–178.

Demortier, G. 1989. "The Soldering of Gold in Antiquity," in *Materials Issues in Art and Archaeology* (Materials Research Society Symposium Proceedings 123), ed. E. V. Sayre, P. B. Vandiver, J. Druzik, and C. Stevenson, Pittsburgh, pp. 193–198.

Dickinson, O. T. P. K. 1977. *The Origins of Mycenaean Civilisation* (*SIMA* 49), Göteborg.

———. 1996. "Minoans in Mainland Greece, Mycenaeans in Crete?," *Cretan Studies* 5, pp. 63–71.

Dickinson, O. T. P. K., L. Papazoglou-Manioudaki, A. Nafplioti, and A. J. N. W. Prag. 2012. "Mycenae Revisited, Part 4: Assessing the New Data," *BSA* 107, pp. 161–188.

Dimopoulou, N., and Y. Rethemiotakis. 2004. *The Ring of Minos and Gold Minoan Rings: The Epiphany Cycle,* Athens.

Evans, A. 1925. "'The Ring of Nestor': A Glimpse into the Minoan After-World and a Sepulchral Treasure of Gold Signet-Rings and Bead-Seals from Thisbe, Boeotia," *JHS* 45, pp. 1–75.

Furtwängler, A. 1900. *Die antiken Gemmen: Geschichte der Steinschneidekunst im klassischen Altertum* 3, Leipzig.

Galanakis, I. 2013a. "Vapheio in Laconia," *The Encyclopedia of Ancient History,* 1st ed., Malden, Mass., pp. 6947–6948.

———. 2013b. *The Aegean World: A Guide to the Cycladic, Minoan, and Mycenaean Antiquities in the Ashmolean Museum,* Athens.

Hallager, E. 1985. *The Master Impression: A Clay Sealing from the Greek-Swedish Excavations at Kastelli, Khania* (*SIMA* 69), Göteborg.

Harte, K. J. 2000. "Birds of the Thera Wall Paintings," in *The Wall Paintings of Thera. Proceedings of the First International Symposium, Petros M. Nomikos Conference Centre, Thera, Hellas,* ed. S. Sherratt, Athens, pp. 681–698.

Hatzaki, E. 2009. "Structured Deposition as Ritual Action at Knossos," in *Archaeologies of Cult: Essays on Ritual and Cult in Crete in Honor of Geraldine C. Gesell* (*Hesperia* Suppl. 42), ed. A. L. D'Agata and A. Van de Moortel, Princeton, pp. 19–30.

Hooker, J. T. 1967. "The Mycenae Siege Rhyton and the Question of Egyptian Influence," *AJA* 71, pp. 269–281.

Hope Simpson, R., and O. T. P. K. Dickinson. 1979. *A Gazetteer of Aegean Civilisation in the Bronze Age* 1: *The Mainland and Islands* (*SIMA* 52), Göteborg.

Jones, B. R. 1998. "Minoan Women's Clothes: An Investigation of Their Construction from the Depictions in Aegean Art" (diss. New York Univ.)

———. 2015. *Ariadne's Threads: The Construction and Significance of Clothes in the Aegean Bronze Age,* Leuven.

Karo, G. 1933. *Die Schachtgräber von Mykenai,* Munich.

Kilian-Dirlmeier, I. 1987. "Das Kuppelgrab von Vaphio: Die Beigabenaustattung in der Steinkiste. Untersuchungen zur Sozialstruktur in Späthelladischer Zeit," *JRGZM* 34, pp. 197–212.

Konstantinidi-Syvridi, E., and M. Kontaki. 2011. "Casting Finger Rings in Mycenaean Times," *BSA* 104, pp. 311–319.

Konstantinidi-Syvridi, E., N. Papadimitriou, A. Philippa-Touchais, and A. Goumas. 2014. "Goldworking Techniques in Mycenaean Greece (17th/16th–12th century B.C.): Some New Observations," in *Metalle der Macht: Frühes Gold und Silber. 6. Mitteldeutscher Archäologentag vom 17. bis 19. Oktober 2013 in Halle (Saale),* ed. H. Meller, R. Risch and E. Pernicka, Halle, pp. 335–348.

Kountouri, E. 2003. "Ρυτό με προτομές ελαφιών και ταύρου από τα Βολιμίδια Μεσσηνίας," in *Αργοναύτης Τιμητικός τόμος για τον καθηγητή Χρίστο Ντούμα από τους μαθητές του στο Πανεπιστήμιο Αθηνών (1980–2000),* ed. A. Vlachopoulos

and K. Birtacha, Athens, pp. 665–687.

Krattenmaker, K. 1989. "Architecture in Glyptic Cult Scenes," *CMS* Suppl. 5, pp. 117–133.

Krzyszkowska, O. H. 1996. "Furniture in the Aegean Bronze Age," in *The Furniture of Western Asia, Ancient and Traditional. Papers of the Conference Held at the Institute of Archaeology, University College London, June 28 to 30, 1993,* ed. G. Hermann, Mainz, pp. 87–103.

———. 2005. *Aegean Seals: An Introduction* (*BICS* Suppl. 85), London.

Laffineur, R. 1990. "The Iconography of Mycenaean Seals and the Status of Their Owners," *Aegaeum* 6, Liège, pp. 117–160.

———. 2000. "The Iconography of Mycenaean Seals as Social Indicator: Further Reflections," *CMS* Suppl. 6, pp. 165–180.

Levi, D. 1925–1926. "Le cretule di Haghia Triada e di Triada," *Annuario* 8–9, pp. 71–201.

Liveri, A. 2008. "Representations and Interpretations of Dance in the Aegean Bronze Age: Ritual Dances in Cycladic and Minoan Religions," *MdI* 123, pp. 1–38.

Long, C. 1974. *The Ayia Triadha Sarcophagus: A Study of Late Minoan and Mycenaean Funerary Practices and Beliefs* (*SIMA* 41), Göteborg.

Marinatos, N. 1984. The Date Palm in Minoan Iconography and Religion, *OpAth* 15, pp. 115–122.

———. 1989. "The Tree as a Focus of Ritual Action in Minoan Glytic Art," *CMS* Suppl. 3, pp. 127–143.

———. 1993. *Minoan Religion: Ritual, Image, and Symbol,* Columbia, S.C.

———. 2000. *The Goddess and the Warrior,* London.

Marinatos, N., and B. Jackson. 2011. "The Pseudo-Minoan Nestor Ring and Its Egyptian Iconography," *Journal of Ancient Egyptian Interconnections* 3, pp. 17–27.

McDonald, W., and N. C. Wilkie, eds. 1992. *Excavations at Nichoria in Southwest Greece* 2: *The Bronze Age Occupation,* Minneapolis.

Morgan, L. 1988. *The Miniature Wall-Paintings of Thera: A Study in Aegean Culture and Iconography,* Cambridge.

Mountjoy, P. A. 1999. *Regional Mycenaean Decorated Pottery* 1, Rahden.

Moutafi, I., and S. Voutsaki. 2016. "Commingled Burials and Shifting Notions of the Self at the Onset of the Mycenaean Era (1700–1500 B.C.E.): The Case of the Ayios Vasilios North Cemetery, Laconia," *JAS,* http://dx.doi.org/10.1016/j.jasrep.2016.05.037.

Müller, W. 2003a. "Precision Measurements of Minoan and Mycenaean Gold Rings with Ultrasound," in *Metron: Measuring the Aegean Bronze Age. Proceedings of the 9th International Aegean Conference, Yale University, 18–21 April 2002* (*Aegaeum* 24), ed. K. P. Foster and R. Laffineur, Liège, pp. 475–481.

———. 2003b. "Minoan Works of Art—Seen with Penetrating Eyes: X-ray Testing of Gold, Pottery, and Faience," in *Metron: Measuring the Aegean Bronze Age. Proceedings of the 9th International Aegean Conference, Yale University, 18–21 April 2002* (*Aegaeum* 24), ed. K. P. Foster and R. Laffineur, Liège, pp. 147–154.

———. 2005. "Gold Rings on Minoan Fingers," in *Κρης Τεχνίτης: L'artisan Crétois: Recueil d'articles en l'honneur de Jean-Claude Poursat, publié à l'occasion des 40 ans de la découverte du Quartier Mu* (*Aegaeum* 26), ed. I. Bradfer-Burdet, B. Detournay and R. Laffineur, Liège pp. 171–176.

Nelson, M. C. 2001. "The Architecture of Epano Englianos, Greece" (diss. Univ. of Toronto).

Papadimitriou, A. 2015. *Mycenae,* Athens.

Papasavvas, G. 2008. "A Closer Look at the Technology of Some Minoan Gold Rings," in *Aegean Metallurgy in the Bronze Age. Proceedings of an International Symposium Held at the University of Crete, Rethymnon, Greece, on November 19–21, 2004,* ed. I. Tzachili, Athens, pp. 169–181.

Papazoglou-Manioudaki, L. 2011. "A Stag's Head Rhyton from Pylos: The Minoan Connection," in *11th International Cretological Congress,* Rethymnon.

Paschalidis, C. 2012. "Reflections of Eternal Beauty. The Unpublished Context of a Wealthy Female Burial from Koukaki, Athens and the Occurrence of Mirrors in Mycenaean Tombs," in *Kosmos: Jewellery, Adornment and Textiles in the Aegean Bronze Age. Proceedings of the 13th International Aegean Conference, University of Copenhagen, Danish National Research Foundation's Centre for Textile Research, 21–26 April 2010* (*Aegaeum* 33), ed. M.-L. Nosch and R. Laffineur, Leuven, pp. 547–558.

Pelon, O. 1976. *Tholoi, tumuli, et cercles funéraires,* Paris.

Pini, I. 1997. *Die Tonplomben aus dem Nestorpalast von Pylos,* Mainz.

———. 2009. "On Early Late Bronze Age Signet Rings and Seals of Gold from the Greek Mainland," in *Δώρον: Τιμητικός τόμος για τον καθηγητή Σπύρο Ιακωβίδη* (Academia of Athens, Research Centre for Antiquity 6), ed. D. Danielidou, Athens, pp. 599–610.

———. 2010. *Aegean and Cypro-Aegean Non-Spragistic Decorated Gold Finger Rings of the Aegean Bronze Age* (*Aegaeum* 31), Liège.

*PM* I = A. J. Evans, *The Palace of Minos at Knossos* II, *London 1921.*

*PM* IV = A. J. Evans, *The Palace of Minos at Knossos* IV, *London 1935.*

*PN* = *The Palace of Nestor at Pylos in Western Messenia,* ed. C. W. Blegen and M. Rawson, Princeton

I = C. W. Blegen and M. Rawson, *The Buildings and Their Contents,* 1966.

II = M. L. Lang, *The Frescoes,* 1969.

III = C. W. Blegen, M. Rawson, and M. L. Lang, *Acropolis and Lower Town: Tholoi, Grave Circle, and Chamber Tombs; Discoveries Outside the Citadel,* 1973.

Poursat, J.-C. 1977. *Catalogue des ivoires mycéniens du Musée national d'Athènes* (*BÉFAR* 230bis), Athens.

Rutter, J. B. 2005. "Southern Triangles Revisited: Lakonia, Messenia, and Crete in the 14th–12th Centuries B.C.," in *Ariadne's Threads: Connections between Crete and the Greek Mainland in Late Minoan III (LM IIIA2 to LM IIIC). Proceedings of the International Workshop Held at Athens, Scuola archeologica italiana,*

*5–6 April 2003* (Tripodes 3), ed. A. L. D'Agata and J. Moody, Athens, pp. 17–64.

Sakellarakis, Y. 1996. "Mycenaean Footstools," in *The Furniture of Western Asia: Ancient and Traditional,* ed. G. Herrmann, Mainz, pp. 105–110.

Sakellarakis, Y., and E. Sakellarakis. 1991. *Αρχάνες,* Athens.

Shapland, A. 2013. "Jumping to Conclusions: Bull-Leaping in Minoan Crete," *Society and Animals* 21, pp. 194–207.

Stefani, E. 2013. *Η γυναικεία ενδυμασία στην ανακτορική Κρήτη: Πρόταση ανάγνωσης ενός κώδικα επικοινωνίας* (Αρχαιολογικό Ινστιτούτο Μακεδονικών και Θρακικών Σπουδών Δημοσιεύματα 14), Thessaloniki.

Stocker, S. R., and J. L. Davis. 2004. "Animal Sacrifice, Archives, and Feasting at the Palace of Nestor," *Hesperia* 73, pp. 179–195.

———. 2014. "'Re-Excavating' the Palace of Nestor: The Hora Apotheke Reorganization Project," in *Ke-ra-me-ja: Studies Presented to Cynthia Shelmerdine,* ed. D. Nakassis, J. Guilizio, and S. A. James, Philadelphia, pp. 239–247.

Tsountas, C. 1889. "Ἔρευναι ἐν τῇ Λακωνικῇ καὶ ὁ τάφος τοῦ Βαφειοῦ," *ArchEph* 1889, pp. 130–172.

Vasilikou, D. 2000. *Mycenaean Signet Rings of Precious Metals With Cult Scenes,* Athens.

Vermeule, E. 1975. *The Art of the Shaft Graves of Mycenae,* Norman, Okla.

Warren, P. 1985. "The Fresco of the Garlands from Knossos," in *L'iconographie minoenne* (*BCH* Suppl. 11), ed. P. Darcque and J.-C. Poursat, Paris, pp. 187–208.

Wedde, W. 1999. "Talking Hands: A Study of Mycenaean and Minoan Ritual Gesture—Some Preliminary Notes," in *Meletemata: Studies in Aegean Archaeology Presented to Malcolm H. Wiener as He Enters His 65th Year,* ed. P. P. Betancourt, V. Karageorghis, R. Laffineur, and W.-D. Niemeier. Liège, vol. 3, pp. 911–920.

Xenaki-Sakellariou, A. 1989. "Techniques et evolution de la bague-cachet dans l'art crétomycenien," *CMS* Suppl. 3, pp. 323–338.

Younger, J. G. 1984. "Seven Types of Ring Construction in the Greek Late Bronze Age," in *Aux origines de l'Hellénisme. La Crète et la Grèce: Hommage à Henri van Effenterre présenté par le Centre G. Glotz* (Publications de la Sorbonne: Histoire Ancienne et Mediévale 15), Paris, pp. 84–90.

———. 1995. "Bronze Age Representations of Aegean Bull-Games, III," in *Politeia: Society and State in the Aegean Bronze Age. Proceedings of the 5th International Aegean Conference, University of Heidelberg, Archäologisches Institut, 10–13 April 1994* (*Aegaeum* 12), ed. R. Laffineur and W.-D. Niemeier, Liège, pp. 507–545.

———. 2010. "Mycenaean Seals and Sealings," in *The Oxford Handbook of the Bronze Age Aegean (ca. 3000–1000 B.C.),* ed. E. H. Cline, Oxford, pp. 329–339.

———. 2016. "Identifying Minoan Myth," in *Metaphysis: Ritual, Myth and Symbolism in the Aegean Bronze Age. Proceedings of the 15th International Aegean Conference, Vienna, Institute for Oriental and European Archaeology, Aegean and Anatolia Department, Austrian Academy of Sciences and Institute of Classical Archaeology, University of Vienna, 22–25 April 2014* (*Aegaeum* 37), ed. E. Alram-Stern, F. Blakolmer, S. Deger-Jalkotzy, and J. Weilhartner, Liège, pp. 433–438.

*Jack L. Davis*

University of Cincinnati
department of classics
blegen 305
p. o. box 210226
cincinnati, ohio 45221-0226

davijk@umail.uc.edu

*Sharon R. Stocker*

University of Cincinnati
department of classics
blegen 305
p. o. box 210226
cincinnati, ohio 45221-0226

stockesr@umail.uc.edu

Copyright of Hesperia is the property of American School of Classical Studies at Athens and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.