

The Location of Minoan Bull-Sports: A Consideration of the Problem*

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The bull-games of the Minoans were extraordinary feats demanding great skill and courage. One of the most distinctive and perhaps the most debated aspects of these games is the bull-jump.¹ There is, however, no settled opinion about where these exhibitions were performed. On the one hand, some experts argue for a site outside the confines of Minoan palaces.² Others suggest that the events took place within the palace grounds, specifically in the Central Courts.

The objections to the Central Courts as the site of the bull-jumping sports of the Minoans are, for the most part, and quite logically, based on practical considerations. One can easily imagine the difficulty and danger involved in controlling an excited bull inside a palace. Getting the bull onto the Court, through ornately and expensively decorated rooms as well as passing through narrow corridors, would understandably pose many problems. Moreover, once the bull arrived, the task of keeping it in the Central Court area, without racing off through open colonnades, down adjacent staircases, and into other areas of the palace, thereby endangering spectators, would cause formidable problems.³ There also is the question of how suitable the Central Courts would have been due to their flagstone surfaces, which may have posed problems for both bull and vaulter.⁴ Some palaces, such as Mallia, had altars in specified areas of the

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1. In addition to bull-jumping, bull-grappling and bull-hunting were popular Minoan sports. For information on other types of bull-sports and different methods of performing the bull-jump see, Sir Arthur Evans, "On a Minoan Bronze Group of a Galloping Bull and Acrobatic Figure from Crete," *Journal of Hellenic Studies* 41 (1921): 247-259; John G. Younger, "Bronze Age Representations of Aegean Bull-Leaping," *American Journal of Archaeology* 80 (1976): 127-137; J. Pinsent, "Bull-Leaping," in *Minoan Society Proceedings to the Cambridge Colloquium*, 1981 (Bristol, 1983): 263; and A. Sakellariou, *Etudes Crétoises* (Paris, 1985) 87; and Wolfgang Decker, "Die Mykenische Herkunft Des Griechischen Totenagons," *STADION* 8/9 (1982/3), 8-13.

2. The first palaces at Knossos, Mallia, and Phaestos date from c 1900-1800 B.C. The palaces were restored and altered in the Middle Minoan III period (1625-1250 B. C.). For further information on Minoan palaces see, Gerald Cadogan, *Palaces of Minoan Crete* (London and New York, 1976); Spyridon Marinatos, *Crete and Mycenae* (New York, 1960); and J. W. Graham, *The Palaces of Crete* (Princeton, 1962).

3. N. Platen, "Peri to Problema ton Choron ton Minoikon Tauromachion," *Kernos*, Timetike Prosfhora Ston Kathegete, Georgia Mpakalake, (Thessolonike, 1972): 135.

4. *Ibid.*; Pendlebury, however, believed the Central Court at Knossos was covered with limestone. For more information see, J.D.S. Pendlebury, *The Archaeology of Crete* (London, 1939): 186.

Court.⁵ It is easy to understand how an obstacle of this sort would possibly interfere with the event.⁶ One can, therefore, understand why some scholars support the notion of a bull-ring or bull-jumping areas located outside the confines of various palaces.

While the arguments appear to be sound for an “arena” external to palace property, Graham, a noted scholar of Minoan antiquities, stated that archaeologists had failed to unearth remains of a special area outside the palace walls used for bull-jumping activities.⁷ But between the year’s 1957-1962 members of the French School of Archaeology, led by Henri van Effenterre, uncovered an

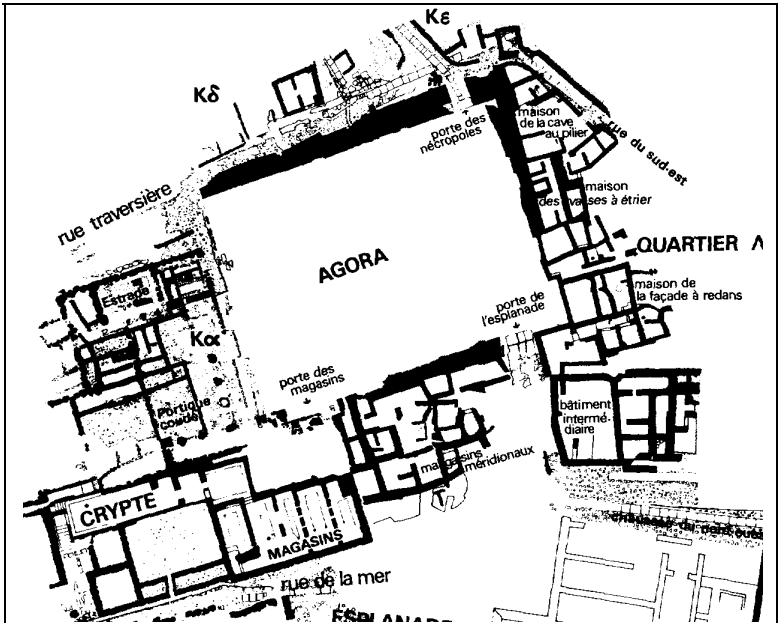


Fig. 1 Plan of complex excavated northwest of the Palace at Mallia. North at top. (From Henri et Micheline van Effenterre, *Fouilles Excécutées A Mallia* (1960-1966). *Études Crétoises XVII* (Paris, 1969): Plan 1 (courtesy of the Ecole Française D'Athènes.)

5. F. Chapouthier and P. Demargne, *Mallia.. Quatrième Report* (1929-1935 and 1946-1960). *Études Crétoise XII* (Paris, 1962): 22.

6. Pelon agrees that the altar in the Central Court at Mallia would have been a drawback to the bull-jumping contests had it been used consistently over a long period of time. He suggests, however, that the altar was of very fragile construction and utilized for a brief period and then discarded, thereby eliminating it as a potential problem for the bull-jumping feats. But he does disagree with Graham who believed the altar may have served as a jumping off point, or platform for the acrobats. Pelon maintains that it was not sturdy enough for that purpose. For further discussion on this point see, O. Pelon, “Le Palais de Malia et Les Jeux de Taureaux.” *Rayonnement Grec* (Brussels, 1982): 56. However, Ward agrees with Graham that the altar may have been used as a jumping-off point for vaulters or perhaps a place of temporary refuge from a bull. She disagrees with Pelon regarding its supposed fragile construction and maintains that the surviving masonry base of the altar suggests a sturdy and solid stone construction not likely to have been damaged by a bull. For more information see, A. Ward, “The Cretan Bull Sports,” *Antiquity* 42 (1968): 118.

7. J. W. Graham, “The Central Court as The Minoan Bull-Ring,” *American Journal of Archaeology* 61 (1957): 255.

extensive archaeological site northwest of the palace at Mallia (fig. 1).⁸ In the center of the site lies a large unroofed court that has an earthen embankment nearly six feet high and two feet thick enclosing all four sides of the area. This discovery encouraged the Greek scholar, Platon, to suggest that the site was the location for various ritual and athletic performances, including the bull-jumping exhibitions.⁹ Platon argues that the size and shape of the “arena” makes the site very suitable for the acrobatic feats of the Mallian vaulters and that the clay surface of the area would have been a better surface than the flagstone surfaces of the Central Courts. Platon further asserts that the earthen wall surrounding the area served a dual purpose: It provided the spectators with a protective barrier from the bull and served as seats for them.¹⁰ The site would also eliminate the problem of a bull running wild and causing damage to the interior rooms of the palace.

While Platon’s interpretation of Effenterre’s recent discovery raises legitimate questions about the location of Minoan bull-sports, earlier scholars also argued that these activities were performed outside the palace walls. Evans and Pendlebury believed, that as a rule, there was a special building for spectators to witness the leaping acrobats perform these dangerous maneuvers. Specifically, Evans thought that an oval, fenced enclosure (ring) within a rectangular shaped walled area existed outside of the palace walls. Evans, however, seems to vacillate as to the exact location. For example, he thought it possible that the bull-jump may have taken place in the open countryside.¹¹

There appears to be some support for Evans’ “countryside” theory. Pendlebury believed that the only site of suitable size for these contests, at least at Knossos, was the meadow area below the east wing of the palace.¹² Both Evans and Pendlebury suggest that these outside structures were constructed of temporary wooden palisades.¹³

Many representations of bull-jumping activities are associated with an architectural background and it is upon this link that proponents of the Central Court theory base their arguments. The question of location, according to Ward and

8. Henri van Effenterre, “Aréne ou Agora?” *Antichita Cretesi* Vol. 1 (University of Catania, 1977): 74-78.

9. N. Platon, “Peri to Problema,” 134, 148. Effenterre, however, seems to dismiss the bull-ring theory and argues that the site was used as a meeting place or an agora by the Minoans at Mallia to discuss political matters. For more information see, Effenterre, “Arene,” 78.

10. Platon, “Peri to Problema,” 136. Also see, J. W. Graham, “A New Arena at Mallia,” *Antichita Cretesi* Vol. 1 (University of Catania, 1977): 65-73 who argues that the site outside the palace grounds was grossly inadequate for seating the large throngs of spectators that witnessed these events. Graham further states that because of the topography of the area, a good view of the bull-leaping activities was nearly impossible. If Graham is correct, it seems unlikely that the site in question would have been suitable for housing the “main” bull-jumping exhibitions.

11. Arthur Evans, *Palace of Minos at Knossos*. Vol. III (reprint, New York, 1964): 224-225. It is interesting that Evans believed that on certain occasions bull-jumping may have taken place in the Central Court.

12. Pendlebury, *Archaeology*, 187. Pendlebury, however, does not rule out the possibility of the bull-jump taking place in the Central Court. He felt that if a large ring area was not used, but rather, a narrow passage, then the Central Court of Knossos, with specifically erected palisades, was a possible location. Although Pendlebury does not mention the dimensions of such a passage, it is obvious that he felt that a bull had to charge directly, without an opportunity to wander right or left.

13. Evans, *Palace of Minos*, 224, and Pendlebury, *Archaeology*, 187. One can easily understand how wooden palisades would have not survived through the centuries; but, one would at least expect to find some evidence of the foundation, which would have out of necessity been quite large.

Graham, must be connected to adequate seating capacity for spectators. A. Ward contends that the only important public spectacle we know of from Cretan art is the bull-jump. She further stated that these representations appear so frequently that it is appropriate, when presented with such spectator scenes as the "Grandstand Fresco," to interpret these scenes as representing the audience at the bull-leaping contests. The fresco also provides abundant evidence for architectural background, which coincides with that of the east side of the Central Court of Knossos. Furthermore, the fresco fragments depict what appears to be a solid and sturdy permanent structure of carved and decorated masonry, apparently of more than one story, and certainly adequate to accommodate large numbers of spectators.¹⁴ Also, a scene on one of the panels of the Boxers Rhyton cup shows what is unmistakably an athlete leaping over a bull. In the background is a column indicating that the scene on the vessel took place in an interior place and not in the open.¹⁵

Perhaps the most convincing arguments favoring the Central Court theory as the location for the bull-jumping contests are provided by Graham who feels that there is conclusive evidence that the bull-jumping activities of the Minoans could have only taken place in the Central Courts of the palaces.¹⁶ In addition to architectural scenes portrayed in Cretan art, there are Minoan gems that lend support for the Central Court theory. While many of the gems show very little, there is one unequivocal representation from Priene which has been described by some scholars as a vaulter leaping from above onto the head of a bull. Graham suggests that the scene represents a bull-leaper using a platform presumably to gain advantage in performing the jump (fig. 2).¹⁷ The gem also shows a square block decorated with diamond shapes. The only parallel to this found on Crete is at the palace at Phaestos. On the north side of the Central Court there is a block that possesses the same diamond shaped designs as the gem stone (fig. 3). Although none of this evidence is by any means conclusive, taken together, it suggests some link with bull-jumping and the Central Court. Moreover, in the northwest corner of the Central Court at Phaestos there is a carefully built set of blocks, which may have served as a platform for leaping onto a bull (fig. 4).¹⁸

A forthcoming study supports Graham's contention that some sort of artificial device may have been used to assist Minoan vaulters. In the Northwest sector of the Central Court at Mallia there is a large stone ball with a cup (*boule à cupule*) approximately 28 cm. high (fig. 5).¹⁹ I suggest that the stone was used by Mallian bull-leapers much in the same manner that modern-day gymnasts

14. Ward. "The Cretan Bull Ring." 118; Evans. *Palace of Minos*. 46, Plate 16.

15. See panel two of the steatite funnel-shaped rhyton vase in the Archaeological Museum, Heraklion. Crete.

16. Graham, *The Palaces*, 73-88, and "The Central Court," 255.

17. Graham. "The Central Court." 260. Evans, on the other hand, believes that the gem represents a bull drinking from a water trough. For additional information see, Evans, *Palace of Minos*. 377. Graham, however, believes that it is unlikely that a bull would have been so placid to drink from a tank while an acrobat bounced on its back. The idea of a platform seems more realistic.

18. Ibid. See Plate 79, fig. 14 for a restoration of the northwest portion of the Central Court at Phaestos and the use of the stone blocks as a Jumping platform during the bull-games.

19. O. Pelon, *Le Palais De Mallia. Études Crétoises*, XXV, Vol. 1 (Paris, 1980): 32, 130.



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6

Fig. 2 Cretan seal and modern impression, Middle Minoan period. Impressions from an agate flattened cylinder depicting a bull-leaper using a platform or bull drinking from a cistern, c. 1600 B.C. (No. 202) Ashmolean Museum, Oxford, England. (photo by author)

Fig. 3 A block on the north side of the palace at Phaestos, with a diamond shaped pattern. (photo by author)

Fig. 4 Set of blocks located in the northwest corner of the Central Court at Phaestos, which may have served as a platform for leaping onto a bull. (photo by author)

Fig. 5 *Boule à Cupule*, Northwest sector of Central Court at Mallia. (photo by author)

Fig. 6 *Boule à Cupule* as jumping stone. (photo by author)

use a springboard in vaulting over the long-horse. The groove near the top of the stone may have served as the place the vaulter's foot was put just prior to executing the jump (fig. 6). While there is surely no "spring" in the stone, an experiment using a simulation of the stone clearly showed that a vaulter's vertical lift would have been increased by using the artificial device (fig. 7).²⁰

The added advantage of pushing off an object to gain force or momentum to execute the daring maneuvers of leaping over a charging bull must surely have appealed to these vaulters.²¹

Graham's investigations of the architectural remains at Mallia perhaps solves a dilemma that has bothered opponents of the Central Court thesis. How could a bull be kept in the Court area, when there were open sections which would have allowed access into other parts of the palace? On the east side of the court is a long portico of alternating square pillars and round columns. On the surface of the stone sills between each pillar and column are sunk three small holes

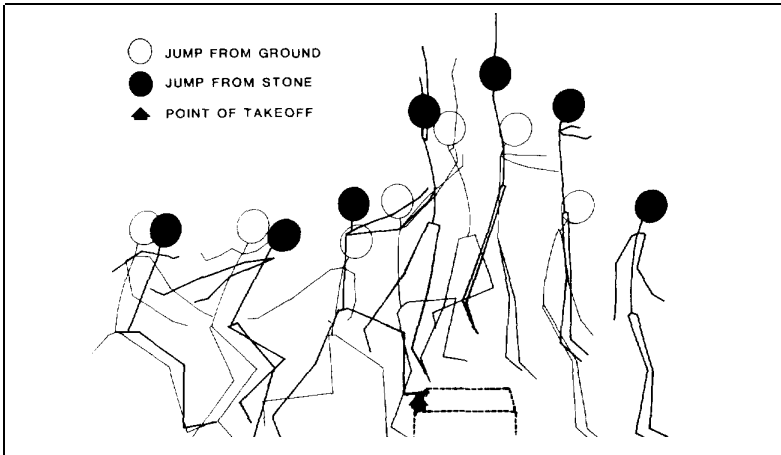


Fig. 7 Biomechanical analysis of jumping experiment contrasting the difference in vertical lift when jumping from a flat surface and an object 28 cm. high. Prepared by Dr. Richard C. Nelson, Biomechanics Lab, Penn State University.

20. Using a Nikon F2 camera with a 35-105 zoom lens at an "F" stop of 3.5, shot at 5 frames per second, a subject was photographed performing a vertical jump off a flat surface and off an object simulating the stone ball with a cup. In each instance the subject used a two-step approach prior to jumping. A spotter's block (equipment used to assist gymnasts during practice sessions), approximately 28 cm. high, was used in place of the stone. The block was secured tightly to the floor so that it remained in a stationary position when force was applied by the subject onto the block prior to jumping. The subject in the experiment was 166 cm. tall, which was the approximate height of the average male during the Middle Bronze age period. For more information see, James G. Thompson, "The Bull-Jumping Exhibitions at Mallia," *Archaeological News* (in press).

21. *Ibid.* It seems that a bull-leaper had three possible options: increasing the height of the jump to a maximum by pushing off the stone in a primarily vertical direction, increasing the length of the jump by projecting the body in a more horizontal direction, or some combination of these two techniques. Therefore, it may have been possible to vault over a bull without touching the horns of the animal. In addition, Effenterre although not citing any evidence, suggests that the *boule à cupule* may have been used by bull-leapers and perhaps dancers. For more information see, Henri van Effenterre, *Le Palais de Mallia et La cite Menoenne* *Incunabula Graeca* 76 Vols. 1-2 (Rome, 1980): 59, 352, and 450 (n. #100).

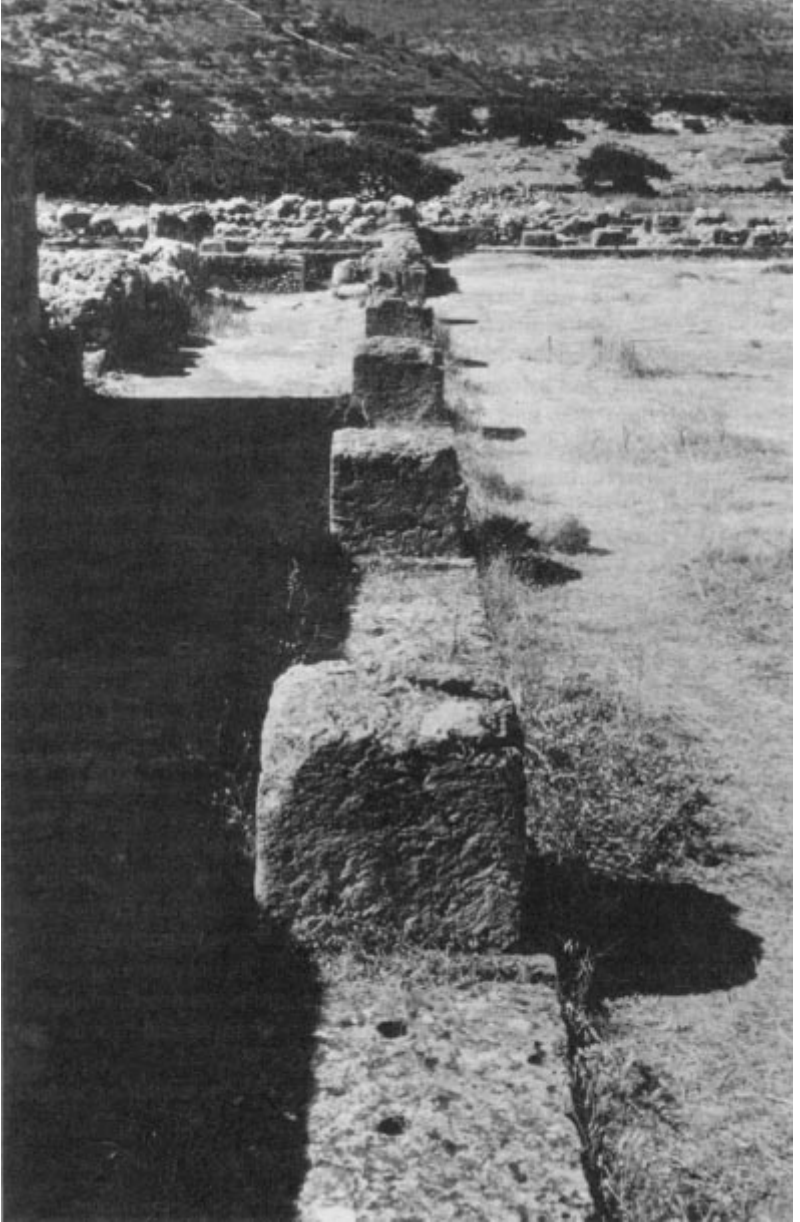


Fig. 8 Post-holes at Mallia. (photo by author)

approximately 8 cm. in diameter (fig. 8).²² Graham has convincingly argued that these post-holes were used to set up a hurdle or palisade to close off the open area during the bull-jumping contests. This arrangement would not only have contained the bull, but provided for the safety of spectators. Graham further noted that, while the Court at Knossos does not contain any such evidence, a fence of this description is shown in the "Grandstand Fresco" from Knossos.²³

The question of adequate seating capacity and safety of spectators seems to be a critical issue in this dilemma. The Central Courts apparently had the capability of dealing with these problems. In addition to Graham's temporary restraining wall theory, a feature of Minoan palaces was the second story section that overlooked the Central Courts. The second floor contained important public rooms, and balconies where prominent persons presumably sat to observe festivities that took place in the Central Court. Overlooking the Northwest sector of the Court at Mallia was the *loggia*, or royal box. This notion is not much different from the ancient Greek practice of providing special seats for honored guests in panhellenic stadia. The *loggia* seems to have been strategically located in front of the stone ball. The angle and vantage point was a perfect location to witness the vaulting exploits of the Mallian bull-leapers.²⁴

Further support for the Central Court theory has recently been presented by Pelon. After an analysis of the bull-jump, Pelon agrees that the Court area, with the surrounding second story structure for viewing the contests, was a very convenient place to hold these sports. In addition, he believed that it would be impossible to explain the reason for the strong enclosure encircling the Central Court unless it was used expressly for this purpose.²⁵ Moreover, Pelon argues that the three rooms numbered xlb, lc, and ld off of the Central Court at Mallia were bull pens that housed the animals as they waited their turn in the Central Court exhibitions. Furthermore, since these rooms opened directly to the outside of the palace, the bulls could have entered these waiting areas without entering the interior of the palace.²⁶

The only argument favoring a special site outside the palace, whether an arena as Platon and Evans suggest, or an open countryside spot which Pendlebury argues for, is Effenterre's discovery at Mallia. Although Effenterre believed the site to be the locus for political events, Platon's thesis that it was an arena for bull-jumping exhibitions overlooks two important considerations. Graham's and Ward's contention that the bull-ring location must be tied to spectator accommodations and that spectators must have been able to view the action free from obstruction, would seem to negate Platon's arguments. After all, it seems quite clear that the major public spectacles during Minoan times were centered

22. Graham, "The Central Court," 258.

23. Ibid.

24. Thompson, "The Bull-Jumping" (in press).

25. Pelon, "Le Palais de Malia et Les Jeux de Taureaux," 57.

26. Ibid., 56. For more information regarding the proposed rooms used as bull pens see, O. Pelon, *Le Palais De Malia Études Crétoises* XXV, Vol. 2 (Paris, 1980): Plan 28.

about bull-leaping exhibitions. Thus adequate seating capacity and an unobstructed view were absolute necessities.

The claims that controlling an excited bull in a confined area would have been impossible seem to have been refuted by the post-holes discovered at Mallia. These holes may have been used to insert temporary walls or hurdles into the openings which would have kept the bull confined to the Central Court. Furthermore, the flagstone or limestone surface of the Central Courts would have posed no problem, since a layer of sand could have easily covered the surface.

Graham, Ward, and Pelon present sound arguments linked to architectural evidence, which point to the Central Court as the location of these bull-jumping activities. The theories of the stepped platform at Phaestos and the *boule à cupule* at Mallia used as devices to assist vaulters in carrying out their daring maneuvers are all associated with the Central Court.²⁷ Moreover, the second story balconies that typically surrounded the Central Courts, not only accommodated large numbers of spectators, but provided a safe vantage point to view the contests.

Until fresh archaeological discoveries and reports extend our knowledge, we cannot identify with certainty any other location than the Central Court as the site of the bull-ring nor can we with certainty identify the Court as the site.

27. The Minoan Palace at Kato Zakro may provide additional support for the platform or stone ball theories. According to the plans of the palace, there is a square construction located in the Northwest sector of the Central Court. Although citing no evidence to date which suggests that the object was used by bull-jumpers, Graham in a letter to the author dated September 9, 1985, hinted that the object in question may have served that purpose. Moreover, an interesting coincidence, which may lend further support for some type of artificial device assisting bull-jumpers, is that at the palaces of Phaestos, Mallia, and Kato Zakro a stone device is situated in the Northwest portion of the Central Court. For more information see. *Archaeological Reports of the Hellenic Society and the British School* (London, 1964-65): 29.