Report for the 2011 Eastern Boeotia Archaeological Project: Excavation

Work of the Eastern Boeotia Archaeological Project (EBAP) shifted focus in 2011, from intensive survey to excavation. Our project continues as a synergasia of the Canadian Institute in Greece and the 9th Ephorate of Prehistoric and Classical Antiquities, Thebes. Project directors are: Dr. V. Aravantinos and Dr. I. Fappas (Thebes Museum), Professors B. Burke (University of Victoria) and B. Burns (Wellesley College) and Dr. S. Lupack (University College London). With the survey completed and results nearing publication, we directed our attention toward the archaeological site at Arma village, identified as ancient Eleon. This site has a chronological profile based on surface ceramics that was unlike any other site in our survey zones around Tanagra, Arma, and Eleona villages, indicating a strong prehistoric occupation (Minyan and Mycenaean ceramics) along with Classical and Medieval remains. It preserves several features of archaeological significance including a massive, curved polygonal wall of the Classical period that runs for nearly 80 m. and the lower courses of a Medieval tower. Bronze Age ceramics and built features suggest that Eleon probably functioned as a secondary node within a network of sites in this part of Boeotia during several periods of history.

We arranged purchase of the north east part of what we call the Eleon acropolis on behalf of the Greek state. This one hectare area was negotiated for sale from the local landowners, the Akrivakis family, shown below in the shaded area.

Fig. 1 Aerial photo Eleon acropolis in Arma village (modified from Google Earth)
Part of this area was included in a geophysical survey in 2009 by Dr. Gregoris Tsokas of Aristotle University in Thessaloniki. His results are summarized here:

Resistance mapping was applied in an area of 7200 m² on the acropolis of ancient Eleon. Alignments of high resistances were encountered which form closed geometrical shapes in many cases. They were interpreted as reflecting buried ancient ruins of foundation walls. A NE-SW urban plan was revealed.

Also, resistivity tomographies were conducted perpendicular to the visible ruins of the ancient city wall at a place where this was not visible on the ground surface. The city wall was imaged down to 3 m depth. Further, the ceiling of the Limestone basement was also imaged.

The geophysical images must be seen as a dynamic element and their interpretation may be altered or complemented with new aspects after the excavations. In other words, the final conclusions should be inferred after the excavation will be completed.

Fig. 2 Geophysical survey (G. Tsokas 2009)

A grid oriented to the cardinal points was established for the site using the bench mark established in 2007 for the drawing of the large polygonal wall, and used during the geophysical survey. Four quadrants were established (labeled NW, NE,
SW, and SE) along an east-west X-axis (labeled with capital Roman letters) and a north-south Y-axis (numbered). Each grid square was 10 by 10 m:

Fig. 3. Site grid (blue) with 2009 geophysical results (red).

Based on the geophysical survey, it is clear that the site preserves significant architectural remains below the current surface, with a depth of deposit likely to be more than two meters. It remained unclear, however, how settlement phases might coordinate with the multiple periods represented by surface ceramics. The aims of our initial excavations were to assess the extent to which structures and deposits are intact, generally, and to determine whether a sequence of chronological phases is preserved. Beginning in June 2011 we opened three trenches to explore the state of preservation across a small sample of our one hectare (working within 200 square-meters).

**Trench NW B2d 2011**

This area was supervised by Bryan Burns who reports that this 5 by 5 m grid square was selected in order to test the state of site preservation along the highest area of the acropolis at Eleon. As in all the trenches, Locus 1 cleared the surface material from the entire 5x5m unit. We then chose the southern half (2.5 x 5m) of this square for further excavation. Here Loci 2-3 removed soil from this entire area to a depth of approximately 30cm below the surface, revealing the top of preserved built features in the west and a large tumble of small stones in the east.
Excavation from here is divided into units determined by architectural features, especially the N-S wall (Locus 18), observable deposits of soil (especially the shallow pits), and then an artificial sample (begun by Locus 15).

Loci 4 and 8 were areas of loose soil caused by animal disturbance. Locus 5 removed the tumbled stones across the south east of the trench. Below was revealed a scatter of tiles possibly of medieval date, but it should not be ruled out that they are prehistoric, LH IIIC. Eventually this material was removed as Locus 13.

Locus 6 removed soil across the area east of wall 18, during the course of which we found a series of pits = Loci 7, 10, 12, 14, each with loose dark soil and heavily burnt pottery. The ceramics were essentially one mendable vase per pit:
- Locus 7: LH III C Middle hydria with bands and tassel decoration (Fig. 4)
- Locus 10: fragments of banded jar (continuing into N baulk) (Fig. 6?)
- Locus 12: LH IIIB to LH III C Early kalathos base
- Locus 14: LH IIIIC jug with vertical handle and painted band at shoulder and belly

The western portion of the trench that was excavated was defined by two well-built stone walls forming the corner of a building. Locus 9 explored the area north of Wall 17 and the area west of a massive stone supporting the corner to its south, and a series of stones that may be part of a continuation of Wall 18 to the north. Within this corner a number of flat stones, which may be architectural, remain. The south west corner of the trench excavated within the corner formed by walls Loci 17 and 18 (Loci 11, 16, 19, 21, 23, 25, 29, 34, 35). Locus 16 revealed a small portion of a clay surface, extending into the western baulk. Located ca. 60 cm below the surface, this may be a floor corresponding to the lowest course of stones of wall Locus 17.

Locus 21 removed material to a depth lower than the bottom of walls 17 and 18. The pottery of Locus 23 thus provides a likely terminus post quem for the construction of both walls, likely to be LH IIIA2-III B1. Found directly beneath wall 17, extending into the baulk, was a goblet rim that is identified as LH IIA.
Further down, Locus 34 came down on an irregular lime surface, with a circular hole, perhaps for a post. Locus 35 was the removal of soil from this hole, which preserved no datable pottery. Sample trench immediately east of N-S wall Locus 18 produced Loci 15, 20, 22, 24, 26, 27, 28, 30, 32, 33, and 36. Locus 15 initiated a sample trench running down the east face of wall 18. Loci 20 and 22, are all levels that could be associated with the period of the wall’s use. Locus 20 recovered pottery fragments datable to LH IIIB and a number of small finds including three spindle whorls and a bone point, possibly a spindle or pin.
This locus also includes a fragment of a semi-circular roof tile (cover tile) with cut grooved edges, similar to examples known at Thebes and Gla. Another example was found in SWB3b. Locus 22 includes pottery dating LH IIIA2 and IIIB1, plus Gray Minyan and Brown Burnished presumably of the early Mycenaean period.

The pottery of Locus 24 includes joining fragments of an undecorated deep bowl, the profile of which suggests an LH IIIB date, but also a rosette bowl rim indicating LH IIIB2-IIIC. It is also possible this could be an LH IIIB1 dipper.

Fig. 9

Locus 26 was composed of an ash deposit that continues west into the baulk under Wall 18, marking a clear division with lower levels. Unfortunately the burnt pottery from this locus cannot be precisely dated. Locus 28 revealed a series of stones (Locus 37) that form the remains of a wall directly below Locus 18 Wall.

Loci 28, 30, 32, 33 & 36 all have more Minyan and Burnished pottery and cooking ware than painted wares, suggesting that they could represent levels of the earlier Mycenaean period. Locus 36 ended excavation in this sample trench, at a final level ca. 1.6 m below surface. The southern end of this artificial sample was disrupted by a large animal-made pit, Locus 31.

Below is the final state plan in 2011 for NWB2d and a photograph:
Trench SW B3b 2011

Work supervised by Brendan Burke on unit SW B3b began on June 2, 2011 with a small team which included two-three student excavators. The area was a 5 by 5 m
grid square, although during the first week of excavation work concentrated on the northern 2.5 m half. Topsoil clearing went relatively quickly and yielded a substantial amount of mixed pottery, which was expected based on the survey results, primarily collected in 2007. The overall impression of the sherds was that they were mostly of Late Bronze Age date with some Medieval/early Modern material. Locus 1 was topsoil and Locus 2 was the fill of the root line.

Almost immediately we observed that the area has a large number of small to medium size rocks. In the early stages it was difficult to tell if certain rocks were reflecting some ancient feature, such as a wall construction, but we came to the conclusion that most of the rock scatter was random, after more digging, and if anything, the rocks reflected debris which might have once been part of early modern architectural features. The areas of Loci 3, 4, and 5 related to the upper levels above the walls Loci 21, 22, 29, and 32. From locus 4 we found a well preserved bronze pin and a nearly complete Mycenaean hydria was found in Locus 5. Also, some very elaborately decorated Mycenaean sherds were recovered from Locus 5 including a figural fragment showing a charging bull (or horse). These types of ceramics are comparable to ones found at Lefkandi dating to the LH III C period (Evely 2006: plates 18-20).
Along the western side of the trench we uncovered a small sloping lens of dark brown/ashy soil, Locus 6, which may reflect a trash pit or the debris from some fire installation. It was not the clearly defined ashy gray powdery soil that was uncovered to the north (in NW B3d) containing thoroughly fired crushed whole pots. Locus 7 nearby also had evidence for a fire installation in the form of orange-red brick material. A small round platform of stones lay beneath. It is possible that material burnt on this casual hearth was then deposited in Locus 6.

Locus 8 lay in between the two irregular stretches of rocks that we believe are poorly preserved walls, Loci 22 and 29. It wasn’t until Locus 20 that this area was dug to its full extent, that is, to the same level as the surrounding area. The Loci 9 and 12 should perhaps have been dug with a bit more attention to the soil differentiation. It is visible in the west section that there is a foundation trench dug for wall Locus 21. The fill is a darker greyer brown, while the fill further to the north, in Locus 9 was a lighter, powdery soil. Locus 16 continues in this area looking for a floor to associate with wall Locus 21. With the appearance of white flecked material we changed loci, anticipating that this might be a floor surface, but it was
not fully traceable, and so Locus 17 continues clearing the fill in this area. There was not much success here in determining clear stratigraphy with wall 21. An unusual find from locus 17 are two fragments of what seems to be a Mycenaean figural (animal?) vessel, perhaps an askos, with attached legs.

Locus 10 is dug along the eastern balk in the northern corner of the trench. A miniature Mycenaean figurine head was found. The rock fall, from 29 and 32, create the appearance of a small chamber, like a bath tub, but this is only a product of its excavation. Locus 11 is a rather substantial pile of rubble that continues further into the east baulk, nearly right in the middle of our trench.

On 11 June, with the help of additional workers, we began clearing the southern 2.5 m of the trench, beginning with the topsoil and root fill for Locus 13. This would be comparable to Loci 1 and 2. Again we find a substantial amount of stones throughout the area, especially in the SE section. We open Loci 14 and 15 on the east and west sides respectively, as test trenches. Along the east side of the trench there is a substantial amount of rock tumble, including a pit of rocks visible in the east section.

Locus 14 contained one of the most spectacular finds of the season, a piece of Mycenaean figural pottery showing what appears to be walking horse with hooves.
and a fragment of his tail preserved (left). In addition, a fragment of an interior-decorated bowl shows a finely executed spiral pattern and a row of fish below.\(^1\)

Locus 18 begins adjacent to 14, and involves the removal of rather substantial rock tumble in no discernable pattern. Several large fragments of pithoi are found, including some diagnostic pieces with decorated rims and shoulders – some impressed with fingers, dots or punctuates.\(^2\)

The larger pieces of coarse body sherds are collected but kept on site. They are weighed and measured separately but included in the locus accounts of the pottery from this area. Substantial pieces of horn and antler are found in this area.

\(^1\) For comparable fish, though not as well executed as our example, see *Tiryns VII*, Taf. 37, 2.

\(^2\) See pithos with dot impressed shoulder: *Gla* plate 57, fig. 116, Area N4
Locus 19 is a particularly interesting area which is marked by significant small finds, including a large antler, bone pin, a spindle whorl, and numerous horns. There are also pieces of decorated pottery, again of LH IIIC date.

Fig. 24

Locus 23 concentrates on the fill below the rock tumble in the south east corner of the trench. It is primarily characterized as a trash deposit, with quite a bit of bone and ceramic debris that ranges chronologically from LH IIIA - IIIC middle. A bone pin, one of several from this trench, a Mycenaean figurine fragment, and obsidian flakes are found here. Locus 24 is comparable to 23 but on the western half of the trench, in a level with bone debris, an animal figurine fragment, ground stone, obsidian, and some metal finds. Other sherds provide useful chronological markers:

Fig. 26

As in the NW trench, we find a semicircular grooved Mycenaean cover roof tile. These examples are highly significant because they have such close parallels with examples of roof tiles found recently in Thebes, and because they indicate substantial Mycenaean buildings, presumably more elaborate than standard houses.
The pottery of Locus 24 is perhaps limited to LH IIIB-IIIC early. We open Locus 25 adjacent to 23, since it appears to be a packed surface with some white flecks and evidence of burning. It contains a circular scatter of broken pottery including a deep bowl rim dating to LH IIIC middle. This seems to be a sherd hearth, with comparable examples found at the Citadel House at Mycenae (French 2011, p 33, who also cites examples at Tiryns and Lefkandi, Popham and Sackett 1968, 11; Evely 2006, fig. 1.7). This is a new type of hearth technology, found exclusively in the post-palatial period, located in courtyards and open areas rather than within buildings.

Locus 26 is the most substantial wall we have in Unit SW B3b. It runs primarily South (west) to north (east) for approximately 3 m. It measures about 65 cm in width and is composed of relatively small stones.

We do not recognize a differentiated exterior row of rocks versus a smaller rubble interior core: the fill is consistent and similar to the exterior. The wall is very solid and is preserved at least 50 cm in height. It surely continues, both into the mini-baulk at the north, and into the unexcavated baulk along the south into what will be SWB3d (2012).

Locus 24 is dug on the very top of the wall, and along the western side as we try to define clearly the wall’s face. Once this locus finishes, we begin Locus 27 which becomes one of our largest and longest excavated loci, and is made up of trash fill
along the western face of wall 26. Locus 27 pottery includes numerous sherds datable to LH IIIB as well as joining fragments of several vessels: a Group A deep bowl with triglyph decoration = LH IIIB1 or later; a Group B deep bowl with linear banded exterior/monochrome interior = LH IIIB2 - IIIC early; most of a shallow basin with banded exterior, LH IIIB2 - IIIC early; a Rosette-deep bowl with monochrome interior, LH IIIB2 Late (French and Stockhammer 2009, 214; not LH IIIC Early, pace Mountjoy 1986, 151 fig. 190). Locus 24 continues just to the east of wall 26 in the form of an arbitrarily dug test trench. We would like to find a solid surface to associate with the wall 26.

Fig. 30
Locus 27 is made up of lenses of trash fill including several fragments of Mycenaean monochrome deep bowls and a carinated cup of the LH IIIC early-middle period.

Fig. 31

Fig. 32
Other finds from Locus 27 include a Mycenaean psi figurine (shown below with another figurine fragment from locus 9), a fragment of a lead vessel, more antler and horns, and a bronze arrowhead.

One distinct lens in 27 is very dark gray, an ashy layer which we call Locus 28. It turns out to be a short lived lens, visible in section which dips in the west baulk. It may be that this marks a significant destruction level at the site, one contemporary with other large-scale destructions at Mycenaean sites around the Mediterranean, marking the change from the LH IIIB period to the LH IIIC. Also found are fragments of a very fine painted Mycenaean bowl and a banded bowl (or basin) of the LH IIIB/C period:
Locus 29 is assigned to the scatter of fairly large rocks that seem to be displaced from some wall in the north east corner of the trench. These blocks are preserved although they are most likely not in their original context. They are maintained since they are useful for entering the trench at the NE corner.

Locus 30 is dug below the last lot of Locus 24. A metallic piece of lead was found, perhaps from a vessel, along with a murex snail shell. In addition we have a large amount of antler and horn, and a worked boar's tusk with a drill hole in the side, for attaching to a helmet.

Locus 31 continues the excavation west of wall 26, below Locus 27. An unworked boar's tusk is found and a stone weight just south of wall 21.

On the final day of digging we come down upon fairly flat rocks which I would suggest marks the rubble fill for the floor associated with wall 26.
Fig. 41
Locus 32 is assigned to the stretch of wall in the very north east corner of the trench, adjacent to 29, but much better preserved. Locus 33 is attached to a stretch of what seems to be a wall in the south east corner of the trench but only visible in section. Stratigraphically it seems that we have excavated fill dating to the Late Helladic III phases, primarily LH IIIB2 at the earliest. This level may be noted in the stone packed floor of Locus 31, below 27. The trash fill of Locus 27 is perhaps best identified as LH IIIC early, as is the construction of the wall. Above this, in the fill that continues over wall 26, we have LH IIIC Middle.

Below is the state plan 2011 for SWB3b:
Trench SE A4c

Bryan Burns also opened the 5 by 5 m grid square in the south east quadrant with two aims in mind: to determine the state of preservation of the polygonal wall’s interior face and to assess the feasibility of large-scale excavation in the zone adjacent to the wall. A longer term goal is to date the construction of the wall more precisely within the archaic or classical periods. The tomographic section of the wall indicates that its interior structure corresponds to the height of the outer face and is preserved to a depth of nearly 2 m.

Locus 1 cleared the surface material from the entire unit, exposing the top of the wall and a triangular area to the west. Cleaning away the surface level fully revealed the upper course of the wall’s interior face, confirming the width of the wall at 3.5 m. Rubble fill between the faces of cut stone is made of large boulders. G. Tsokas’ geophysical survey of the site (October 2009) included tomographic transects across the polygonal wall, indicating that the wall’s foundations lay on the natural bedrock.

Because of the large number of stones in this area we limited further excavation to a smaller triangle in the south west (measuring 3 m north to south along the western baulk). Here Loci 2, 3, and 4 removed soil to a depth of approximately 1 m below the surface. Each of these loci consisted primarily of rough, tumbled stones, presumably from the rubble core of the polygonal wall. Clearly, much of the wall has been dismantled to provide material for later constructions, and as the cut stones of each face were removed, its rubble core has spilled forth.

Although we limited our efforts to a stretch of 3.7 m of the wall’s interior face, the excavation did successfully reveal details about the nature of the polygonal wall’s construction and state of preservation. The interior face of the wall was partially exposed at the second course, where cut stones fit more tightly against one another.

Further excavation this season was thus limited by the size of the tumbled stones. In order to fully study the construction and use of the wall, we will need to employ mechanical devices to safely lift and remove the tumbled blocks. Below is the state plan of SEA4c:
Work along the massive polygonal wall allows us to make a brief comparative analysis. The "Lesbian style" was described by Scranton as "so curiously intricate, so highly sophisticated, that no other time or place has equalled [sic] it in elaboration of technical perfection."³ The masonry style is named for its many examples of the island of Lesbos, following Aristotle description of the builders' technique of bending a lead strip to measure the curvature of one stone, creating a model for how to cut its adjacent block [\textit{EN1137b30}]: \textit{For what is itself indefinite can only be measured by an indefinite standard, like the leaden rule}³ \textit{used by Lesbian builders; just as that rule is not rigid but can be bent to the shape of the stone, so a special ordinance is made to fit the circumstances of the case.}

The Eleon wall includes stones with the characteristic "Lesbian" feature of curved joints, but also many that resemble ashlar blocks.

³ Scranton 1941: 25-27, fig. 3.
The surface of the exterior face is well-tooled, and the size of individual blocks large, with most stone measuring more than 1 square-meter. The overall effect is perhaps similar to the well dressed form of cyclopean masonry seen at Mycenaean citadel sites (e.g. the bastion at Mycenae).

While we cannot know if this is an intentional invocation of the site’s own Mycenaean heritage (which it surely had based on our excavations), the complexity of the wall’s construction suggests the builders did intend to make a dramatic aesthetic statement. Spencer describes the use of the masonry style on Lesbos as "an unnecessarily complicated method of wall construction undertaken by a skilled workforce." The fact that the Eleon wall is actually constructed along a curving line further underscores its complex design and fully embodies Spencer’s characterization of Lesbian masonry as "an expensive, prestige style designed to impress."  

Well dated examples of the curvilinear blocks of Lesbian style masonry are almost exclusively limited to the archaic period. Polygonal masonry, using multilateral blocks with straight sides, was used broadly throughout the fifth century and especially the fourth century in Boeotia. Notable parallels include the early-5th c. BC terrace incorporated into the Stoa of the Athenians at Delphi and the stone socle for the Peisistratid fortifications at Eleusis. The later example employs a leveling course, as does our wall at Eleon.

4 Spencer 1995a: 33
5 Frederiksen 2011: 66-68; for specific examples on Lesbos, see Spencer 1995b: 61-64.
6 Cooper 2000: 171 emphasizes the significance of this fact contra the scholarly tendency to emphasize polygonal masonry as characteristic of the archaic or early classical periods.
Bibliography:


Furumark, A. The Mycenaean Pottery: Analysis and Classification Stockholm.

Iakovidis, S. Περατή. Το νεκροταφείον [Βιβλιοθήκης της εν Αθήναις αρχαιολογικής Εταιρείας 67] 1969–70


Scranton, R. *Greek Walls* (Cambridge, MA) 1941.


Thomatos, M. *The Final Revival of the Aegean Bronze Age: A case study of the Argolid, Corinthia, Attica, Euboea, the Cyclades and the Dodecanese during the LH IIIC Middle.* BAR 1498, 2006.

