SVENSKA INSTITUTEN I ATHEN OCH ROM
INSTITUTUM ATHENIENSE ATQUE INSTITUTUM ROMANUM REGNI SUECIAE

Opuscula

Annual of the Swedish Institutes at Athens and Rome

11
2018

STOCKHOLM

EDITOR:
Dr Julia Habetzeder
Department of Archaeology and Classical Studies
Stockholm University
SE-106 91 Stockholm
editor@ecsi.se

SECRETARY'S ADDRESS:
Department of Archaeology and Classical Studies
Stockholm University
SE-106 91 Stockholm
secretary@ecsi.se

DISTRIBUTOR:
eddy.se ab
Box 1310
SE-621 24 Visby

For general information, see www.ecsi.se
For subscriptions, prices and delivery, see http://ecsi.bokorder.se
Published with the aid of a grant from The Swedish Research Council
The English text was revised by Rebecca Montague, Hindon, Salisbury, UK

Opuscula is a peer reviewed journal. Contributions to *Opuscula* should be sent to the Secretary of the Editorial Committee before 1 November every year. Contributors are requested to include an abstract summarizing the main points and principal conclusions of their article. For style of references to be adopted, see www.ecsi.se. Books for review should be sent to the Secretary of the Editorial Committee.

ISSN 2000-0898
ISBN 978-91-977799-0-6

Printed by Göteborgstryckeriet, Mölndal, Sweden 2018
Cover illustrations from Lindblom *et al.* in this volume, p. 82.

REBECCA WORSHAM, MICHAEL LINDBLOM & CLAIRE ZIKIDI

Preliminary report of the Malthi Archaeological Project, 2015–2016

Abstract

This article offers preliminary results and tentative interpretations of new work at the previously excavated settlement of Malthi in Messenia, south-west Pelopponese. The work included an intensive survey of the site architecture, as well as test excavations of spaces within and outside of the fortification wall. We propose updated observations on the chronology and phasing of the site based on pottery dates from the new excavation and comment on the preserved architecture as it compares to other settlements of the period. The settlement appears to have been first inhabited in the second half of the Middle Helladic period. Little, if any, architecture from this phase can be securely identified today. At the beginning of the Late Helladic period a fortification was erected, and the entire layout of the site was transformed. The construction likely took place as a single project, as argued by the original excavator, and so indicates a significant investment of labor and capital. Such an undertaking speaks not only to local access to wealth at this time, but also compares well with changes in other Early Mycenaean communities. For yet unknown reasons, the settlement was abandoned no later than in Late Helladic IIIA1.*

Keywords: Malthi, Messenia, Bronze Age, Middle Helladic, Late Helladic, Mycenaean, fortification

https://doi.org/10.30549/opathrom-11-02

Introduction

The fortified settlement of Malthi in northern Messenia (latitude 37°16'0.93"N; longitude 21°52'56.81"E) in the south-western region of the Pelopponese is a crucial source of information for social organization in Middle to Late Helladic Greece. Malthi provides a rare example of a fully excavated settlement of this period, rivaled only by Kolonna on Aegina in terms of its high level of preservation within the settlement wall. The excavated remains (*c.* 1.12 ha) within the fortification wall include a series of houses, storage facilities, workshop spaces, and possible public architecture, while in the valley below are two *tholos* tombs and an unexcavated settlement of the Late Helladic (LH) III period (*Fig. 1*).[1] In spite of these promising features, the site has yet to be studied systematically. Since the appearance of Natan Valmin's publication of the excavation in 1938, only a handful of attempts have been made to return to the settlement in any significant way.[2] Moreover, concerns with Valmin's chronology and phasing, in addition to clear errors in the published plan, have largely precluded the in-depth use of the site in period studies, and particularly in developing over-arching narratives for the transition from the Middle Helladic (MH) into the Early Mycenaean period.[3]

* We are indebted to the Ephorate of Antiquities of Messenia, and particularly to its director E. Militsi-Kechaia and the departmental head S. Fritzila, for their instrumental support. We are also grateful for the generous funding and support provided by the Institute for Aegean Prehistory, Enboms donationsfond, the Spatial Archaeometry Research Collaborations (SPARC) at the Center for Advanced Spatial Technologies and Archaeo-Imaging Laboratory, and the Swedish Institute at Athens. Thanks are also due to Rachel Opitz of SPARC and our hardworking team, including photogrammetry specialists Daniel Löwenborg and Karl-Johan Lindholm, faunal specialist Stella Macheridis, total station supervisor Donna Nagle, photographer Jacquelyn Clements, trench supervisors Monica Nilsson and Anne Duray, and excavators Amar Duna, Madelene Holm, Adam Lindqvist, and Wera Olsson. Finally, we could not have accomplished this work without the help of the chief guard of the area, Alexandros Kalogeropoulos, and the demos of modern Dorio. This article has benefited greatly from the comments of two anonymous reviewers, for which we are very appreciative.

[1] The 1926–1935 excavations were published in Valmin 1938. For the largely unexcavated LH III settlement on the nearby valley floor, see Valmin (1953) and more recently Hope Simpson's Malthi: Gouves (2014, 37–38).

[2] E.g. Van Leuven 1984; Lauter 1996, 82–86; Blitzer 1998, 165–238; Darcque 2005, 341–355, nos. 101–106; Chasiakou 2012; Hope Simpson 2014, 37–40, 66–69.

[3] Indeed, Corien Wiersma's recent and comprehensive survey of MH domestic architecture dismisses Malthi as useful evidence: "Unfortunately, the EH, MH and LH remains of this settlement were excavated and dated quite incorrectly and are therefore of little use in further study of this period in Messenia" (2014, 165). Skepticism over Valmin's

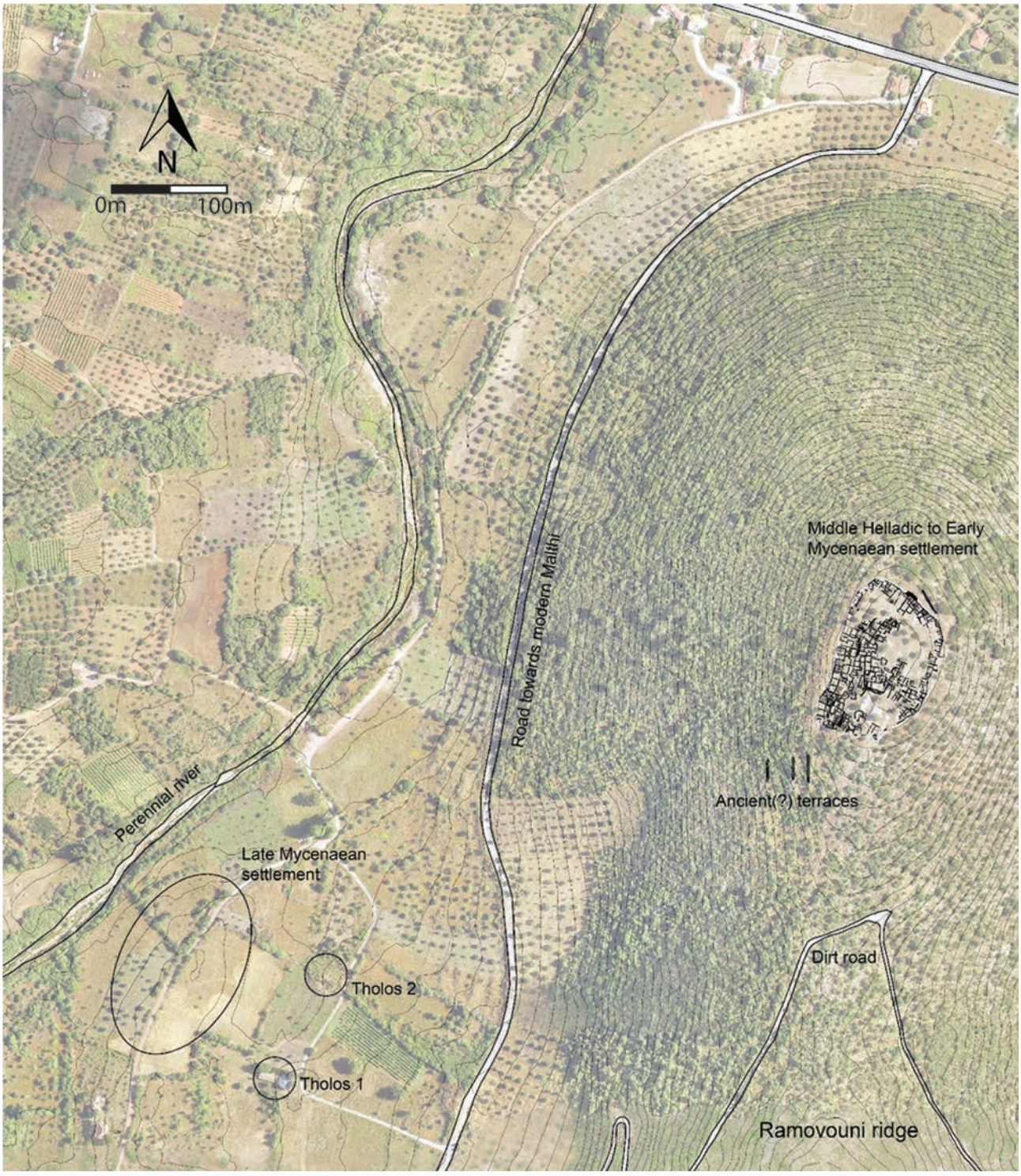

Fig. 1. Orthophoto of the Ramovouni Ridge with the fortified Middle Helladic to Early Mycenaean hilltop settlement, the two tholoi *and the Late Mycenaean settlement indicated. Illustration: The Malthi Archaeological Project.*

Because this transition is highly important for understanding the subsequent formation of the Mycenaean palace states, it is vital to study the abundant architectural and ceramic evidence offered by the settlement at Malthi.

Summary of the work in 2015–2016

The work described below was carried out under the auspices of the Swedish Institute at Athens and co-directed by Michael Lindblom and Rebecca Worsham. Goals evolved throughout the project, but the primary aim has been to assess the problems that surround the chronology of the settlement and the construction of the fortification wall. Fieldwork began in 2015 and concluded in the summer of 2017. The material from the final season is still under study and is therefore not included in this report. It should be noted that the degree to which the site has deteriorated since Valmin's excavation is difficult to determine, which has complicated the interpretation of the remains. Similarly, it is unclear how much overburden and cultural material Valmin removed in the initial excavation. With these caveats in mind, we present here the preliminary results of the first two seasons, with additional conclusions on the 2017 season forthcoming.

The first season of renewed work at Malthi, carried out in June and July of 2015, was intended to begin the study of the topography and preserved surface architecture of the settlement. Comparison of the visible features with the published stone-by-stone architectural plan had revealed significant discrepancies, and the project therefore had the following aims: (1) to document changes to the site since the 1930s excavations; (2) to verify the already-published plans and elevation data using modern measuring equipment and GIS; (3) to study indications of phasing and the preserved stretches of the prehistoric fortification wall; and (4) to map the modern surrounding wall, constructed by Valmin to "secure the excavated parts against undesirable visits of cattle and children."[4] Toward these ends, we first numbered all recognizable wall stretches inside the settlement—up to 469—and measured each of these at *c*. 0.3 m intervals with a Leica Viva GS14 GPS. We then photographed and catalogued the construction and internal relationships for a representative sample of the walls. Both notes and images are now being brought together in a database. Additionally, the entire interior of the settlement and portions of the exterior of the fortification were imaged with a terrestrial laser scanner (Leica ScanStation C10), under the direction of Dr Rachel Opitz on behalf of Spatial Archaeometry Research Collaborations (SPARC). Data were collected at a sufficient level of detail to document all standing architecture in three dimensions. Study of this material is ongoing.

During the second season, carried out in June and July of 2016, work focused on continuing the documentation of the site and the surrounding environment through photogrammetry and trial excavations. An aerial drone was used to photograph the site, the remainder of the Ramovouni Ridge, and the surrounding valley, including the areas of the *tholoi* and the later Mycenaean settlement. This work produced a detailed orthophoto of Malthi and its environs, which helps to contextualize the site and can be overlaid onto the data collected by the terrestrial laser scanner. Additionally, we opened three trial trenches with the following goals: (1) to establish a more accurate, updated pottery sequence for the settlement and (2) to obtain materials for radiocarbon dating in order to establish an absolute chronology for the site.

Excavation was carried out according to the natural stratigraphy either within known architectural boundaries (rooms established during the previous excavation), or in small test trenches (*c*. 3 m x 1.5 m) along the exterior of the fortification wall. We selected trenches with preference for areas with relatively good surface preservation and soil retention. The trenches were numbered arbitrarily up to ten, but only Trenches 5, 6, and 7 were excavated in this season. Within each trench, we identified discrete stratigraphical units (for example, grave fill, etc.) and assigned them context numbers. Specific excavated units have been annotated below with trench number followed by the context number—for example, 5.1 would be the topsoil in Trench 5. Students carried out the work of excavation, hand-sieving the soil and sampling it for flotation.[5] All finds—chiefly ceramic, but including also stone tools and bone—were collected and are now stored in the Archaeological Museum of Messenia in Kalamata. Each context was photographed at the beginning and end of excavation, and noteworthy contexts were photographed suffi-

publication of the site appears to have been popularized in the work of McDonald and Hope Simpson (1969, 141), who take issue with several parts of Valmin's argument, observing that his "evidence for habitation in N[eolithic] and even EH needs review ... His repeated assertion that he found 'Adriatic ware' stratified with sherds from all levels N through LH must be wrong and this in turn brings under a cloud his whole reconstruction of the history of the site in prehistoric times." Later, material from the comparably-dated site of Nichoria in southern Messenia (McDonald *et al.* 1975, 111) was used to tentatively re-date the settlement at Malthi to the second half of the MH period.

[4] Valmin 1938, 4.

[5] We selected these methods because of the high disturbance to the soil from the earlier excavation, erosion, and animal activity at the site. The majority of excavated contexts were located close to the surface, which eventually led us to reduce intensity of sampling for flotation. We nevertheless continued to collect 100% of the soil from contexts such as graves. The flotation itself was done offsite in the nearby village of Dorio.

Fig. 2. Orthophoto with Trenches 5–7 at the north of the settlement indicated. Illustration: The Malthi Archaeological Project.

ciently to create structure-from-motion models. Measurements were taken for each context using a total station.

A study of the abundant (albeit very fragmentary) cultural material is currently underway. A preliminary evaluation of 3,689 fragments of bone and shell, including chiefly sheep/goat, pig, and cattle, has been completed, along with an assessment of the human burials. In November of 2016 we also began a restudy of all pottery retained from the 1926–1935 excavations by Valmin, comprising roughly 1,000 fragments and around 50 more or less complete vessels or profiles.[6]

The settlement wall

Much of the renewed work at Malthi has focused on the study of the fortification wall around the settlement. Because of Valmin's argument that the organization of the site hinges on the erection of the wall—meaning that the fortification dictated a total redesign of the settlement—the date of the construction is crucial to the understanding of the site. Valmin himself had suggested that the fortification should be dated to a relatively early phase of the Middle Helladic period.[7] More recently, Lauter has dated the wall and the settlement itself to the Shaft Grave Period—a date which has been generally accepted.[8] Today, the fortification wall is obscured by a protective wall that Valmin built directly on top of it, running the full circumference of the settlement. It has proved difficult to distinguish between tumble from this modern protective wall, which is collapsed in several areas, and the fortification wall itself. Nevertheless, we have been able to clarify both the likely date and the nature of the construction of the fortification wall. The rest of this section lays out our findings regarding the fortification wall, and concludes with a brief discussion of likely gates.

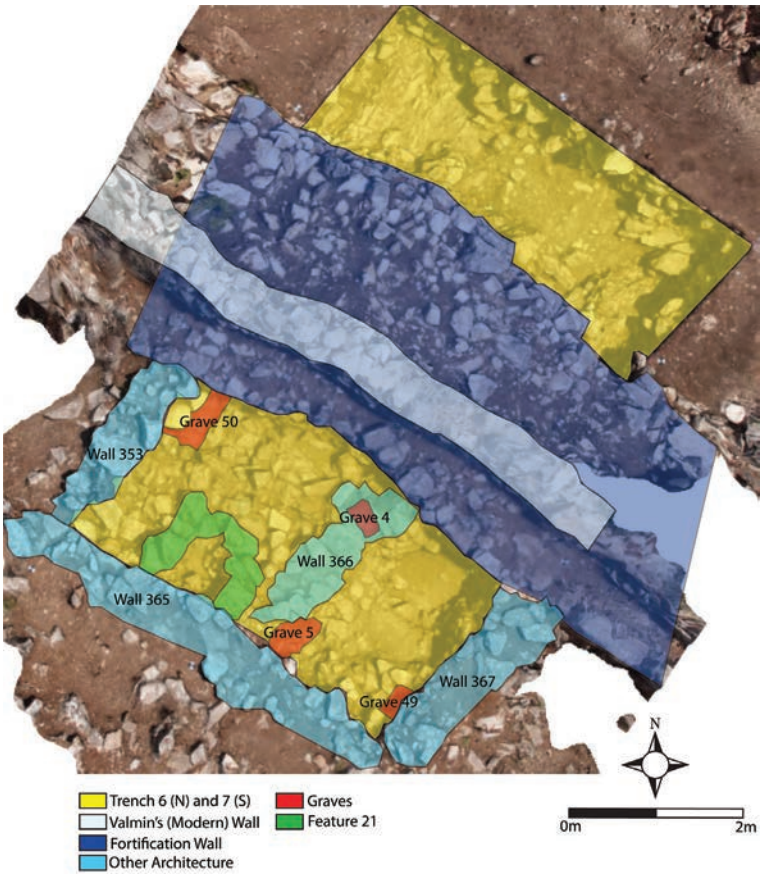

Fig. 3. Trench 6 (at the north) and 7 (at the south). Illustration: The Malthi Archaeological Project.

DATE OF THE WALL

Two trenches were opened in order to explore the line, construction, and date of the fortification wall (*Fig. 2*). The first of these, our Trench 5, was located in the north-east corner of the settlement on the exterior of the wall erected by Valmin, and was intended to locate the top and exterior face of the ancient fortification wall in this area. Trench 6 was also opened at the north, approximately adjacent to and east of Valmin's north gate, along the only section of the fortification wall where the exterior face is visible today (*Fig. 3*). The latter trench is particularly relevant for the date of the wall. Here, we were able to excavate the larger part of the area down to bedrock, roughly 0.9 m below the modern surface (*Fig. 4a* and *4b*). It became apparent that the fortification is founded on the bedrock itself—indeed, earlier settlement debris seems to have been excavated away by the builders in order to reach this level. The bedrock in this area is quite uneven and runs roughly north-south in jagged outcrops. To account for frequent changes in level, the dips between outcrops had been filled with large boulders, creating a uniform construction surface. Immediately on the bedrock and boulder fill, we recovered a

[6] For this portion of the project, we are indebted to the efforts of archaeological illustrators Tina Ross and Alicia Walsh. The number of pottery sherds retrieved in the 1926–1935 excavations is unknown. Rough numbers are unevenly recorded by Valmin (1938) for many of his arbitrary excavation layers, but they are suspiciously low. Nor is it clear what percentage was actually saved and analyzed in preparation of the final publication, or if any material was subsequently discarded. Roughly 1,000 sherds, including those illustrated in Valmin's publication (1938), are what remain today in the museum in Kalamata.

[7] Valmin 1938, 22–23.

[8] Lauter 1996, 83.

Fig. 4a. Views of the exterior of the fortification wall in Trench 6, before and after excavation. The bedrock is particularly visible in the bottom photo, while Valmin's wall on top of the fortification wall is visible in the top photo. Top photo taken from the north-east by Jaquelyn Clements, bottom photo taken from the north-west by Rebecca Worsham.

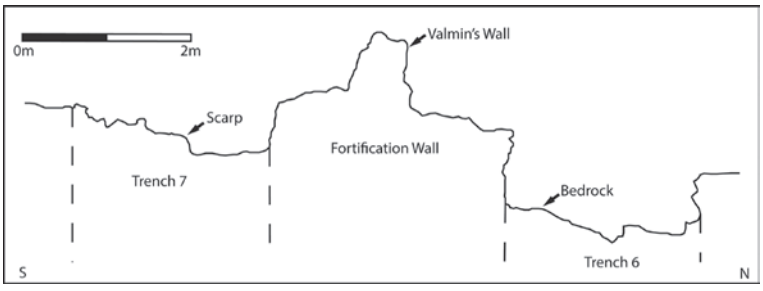

Fig. 4b. North-south section of Trenches 6 and 7, excavated in the 2016 season. Illustration: The Malthi Archaeological Project.

fairly large deposit of flat-lying ceramics (*Fig. 5*). Though these were chronologically mixed, the latest recurring pieces are datable to LH I (e.g. 16.190 from context 6.15). Based on the bones in this deposit, which showed a relatively high concentration of both gnawing and burning, this material may represent refuse, and further study will clarify its contents and taphonomy.[9] It is tempting to compare it with eating and drinking debris identified in close proximity to wall construction at Aspis-Argos in the north-east Peloponnese.[10] The size of the Malthi deposit—though it amounts to nearly a quarter of the pottery for the entire trench—and the fragmentary and mixed quality of the vessels, however, likely speak against a similar interpretation here.

CONSTRUCTION OF THE WALL

As noted above, excavation in Trench 6 revealed a preference for building directly on the bedrock for the northern part of the fortification wall. Valmin observes this preference elsewhere along the circumference of the wall, where the bedrock can be found very close to the modern surface.[11] In the north, however, the bedrock slopes sharply downhill, and soil had to be dug away to reach this level. In addition to providing a firmer footing for the wall, the removal of the soil down to the bedrock likely served to raise the ground level inside the

[9] The bones are currently under study by Claire Zikidi. The preliminary study referred to here was carried out by Stella Macheridis and considered 1,412 bones and shells. Of these, 581 (41%) were recovered from Trench 6 out of which 133 could be identified by species. Species included sheep/goat (51% of total identifiable remains in Trench 6), pig (29%), cattle (14%), dog (2%), deer (red and roe, 1%), hare (1%), hedgehog (1%), and tortoise (1%). These totals are largely reflective of the site as a whole, but there are notable concentrations of burning and gnawing; roughly 22% of burned bones and 33% of gnawed bones from the 2016 season were derived from the lower levels of Trench 6. No cut marks were noted in the preliminary examination of the bones.

[10] For the Aspis (both reconstruction and associated feasting deposits), see Philippa-Touchais & Touchais 2011; Philippa-Touchais 2010, 795-796; 2007, esp. 111–112; 2003.

[11] Valmin (1938, 17) observes this preference particularly for the west side of the fortification, where he also suggests that the bedrock may have been "cut more vertical" to artificially increase the height of the wall. Concern with increasing the height of the wall is also visible at the north, though no efforts to trim back the bedrock were found here.

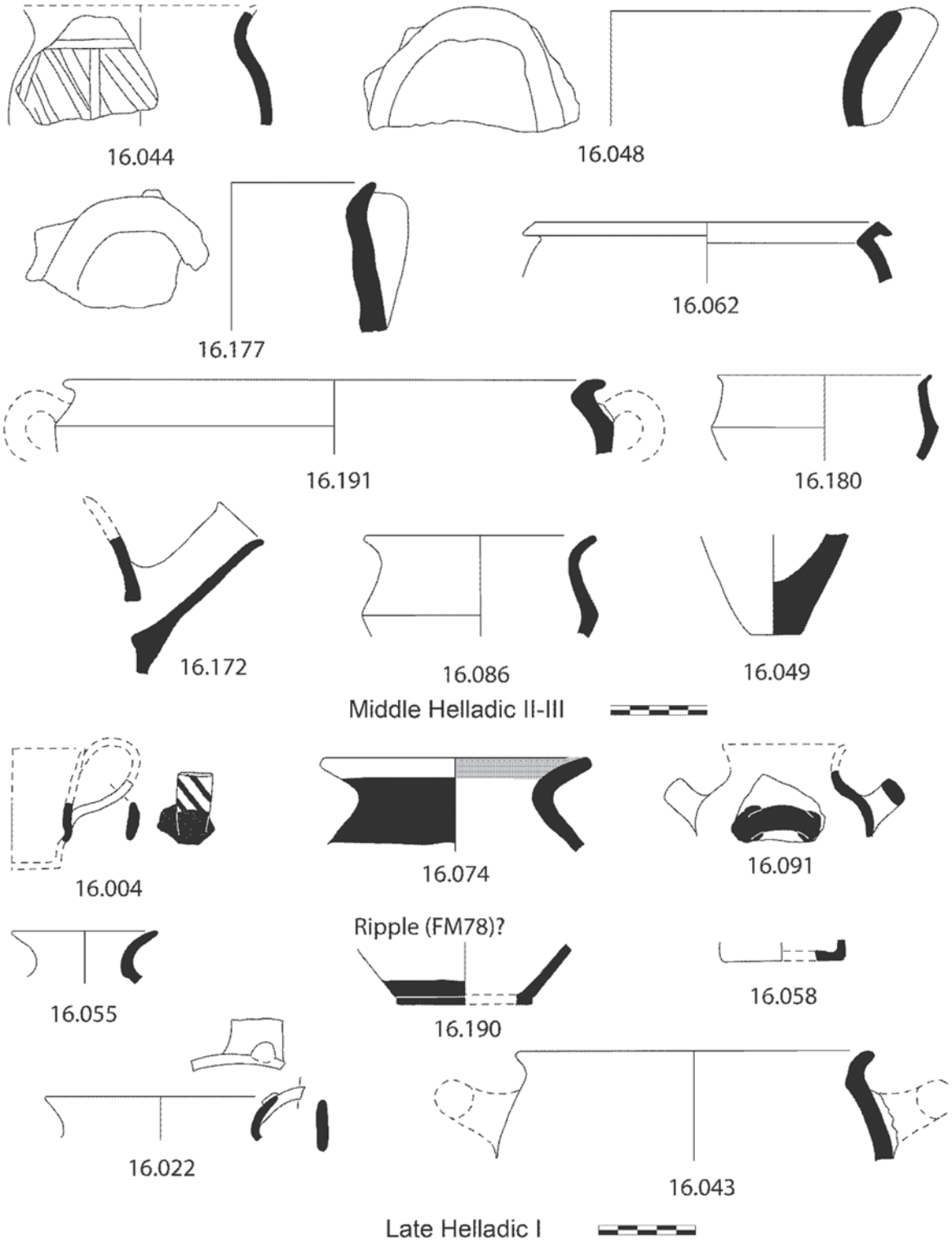

Fig. 5. Selection of pottery from largely mixed Middle Helladic II–Late Helladic I deposits in Trench 5 and 6. Dark Burnished (16.180, 16.086, 16.191); Pale surfaced yellow to yellowish-red medium to fine grained (16.172, 16.058, 16.022, 16.055); Reddish-brown coarse to medium fine grained (16.044, 16.048, 16.177, 16.049); Mycenaean Decorated (16.004, 16.091, 16.190). Illustration: The Malthi Archaeological Project.

Fig. 6 (above). Possible offset-like join visible in the interior of the fortification wall at the south side of the settlement. Taken from the north-west. Photo by Jacquelyn Clements.

Fig. 7 (left). Partial join of a wall (Wall 343) to the interior of the fortification wall in Valmin's Room D18, taken from the south. Note that the fortification wall appears to step back after this join (at the bottom of the photo), possibly suggesting piecemeal construction. Photo by Jacquelyn Clements.

fortification wall, while simultaneously lowering the level of the walking surface outside the gate (to artificially make the wall higher). There is some evidence that the soil excavated to reach the bedrock may have also been used within the packing of the wall itself. Following the abandonment of the settlement, the packing of the fortification must have begun to erode downslope onto the exterior ground level, explaining the mixed chronology of the upper levels of the trench.[12] Here, ceramics ranged in date from MH II (*Fig. 5*, e.g. 16.044, 16.048, 16.191) through LH I (*Fig. 5*, e.g. 16.004, 16.058,

[12] It is clear that this erosion process is still underway today (see the top of the wall in *Fig. 4a*).

16.022). This stratum of eroded wall-packing dates the earliest use of the settlement to MH II.[13]

In spite of the extremely uneven nature of the bedrock here, there is no evidence that it was trimmed to provide a more level surface for the footing of the fortification. Rather, pains seem to have been taken to build around particularly high outcroppings, with occasional gaps or recesses left in the wall to accommodate these areas. This may explain at least one visible offset in a well-preserved stretch of the southern section of the wall (*Fig. 6*). It is possible that efforts to accommodate the rugged building surface resulted in a sort of piecemeal building strategy, similar to what has been suggested for the later Cyclopean fortifications.[14] Such an approach could clarify why some of the magazine walls, particularly on the west and north, appear to bond with the interior of the fortification wall, and some do not, while still allowing for one large-scale construction project for the settlement as a whole. A good example of this building technique can be found at the north of the settlement, in the area of Valmin's Room D18 (*Fig. 7*).

As it is preserved today, the fortification is at maximum around 1.2 m high, and over 3 m wide for much of the northern stretch.[15] In order to expose another section of the exterior face of the wall and provide a point of comparison with that of Trench 6, we opened Trench 5 to the east (*Fig. 8a*). As expected, the top of the fortification wall was evident, but this portion of the site slopes steeply downhill to the north-east. As a result of the slope, the fortification wall as it is preserved here seems to be leaning sharply outward, and it proved difficult to establish the line of the exterior face (*Fig. 8b*). Nevertheless, the width of the wall at this point appears to be roughly comparable to the width recorded for the complete portion of the fortification, at about 3.2–3.7 m across.[16] Though no other section of the settlement wall was excavated at this time, its rough line is likely indicated by a strip of raised ground level that runs around much of the west side of the

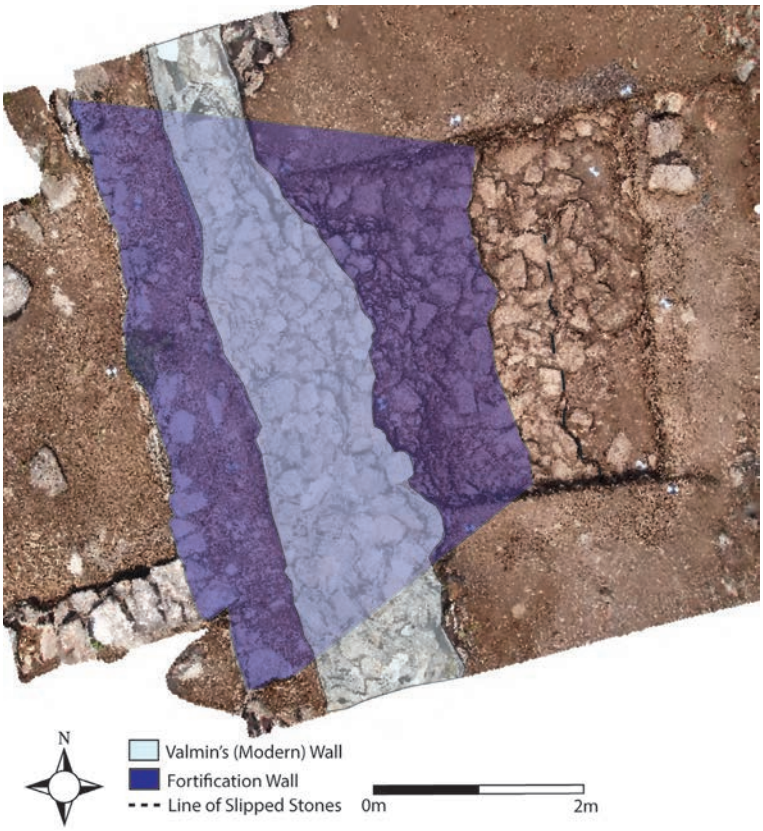

Fig. 8a. Trench 5 from above, opened to the north-east of and exterior to the fortification wall. Illustration: The Malthi Archaeological Project.

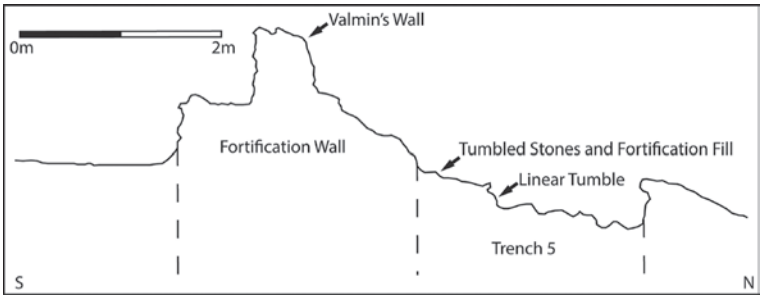

Fig. 8b. North-south section of Trench 5, excavated in the 2016 season. The exterior (northern) side of the fortification wall is uncertain, and the wall has largely tumbled downslope. Illustration: The Malthi Archaeological Project.

[13] The relatively few and small sherds recorded in the 2016 excavations that can be safely attributed to individual chronological phases is ameliorated by the re-analysis of pottery from the old excavations. The ceramic sequence at MH I–III Nichoria (Howell 1992) remains the principal source of comparison, while pottery from MH I Kastroulia (Rambach 2007) and EH III–MH I Deriziotis Aloni (Stocker 2003) show several features which are altogether lacking at Malthi.

[14] Wright 2005.

[15] Valmin (1938, 16) records the following dimensions for the wall: "The thickness of the wall varies considerably, from 3.55 m. max. to 1.60 m. min. At some points the height is preserved for about one metre, while the greater part of it was destroyed and removed ... "

[16] The upper end of this estimate is likely too high, and a result of the tipping of the wall. It exceeds Valmin's maximum measurement by a significant margin, around 15 cm.

Fig. 9. Double-row of stones visible in the interior of the fortification wall. Taken from the west. Photo by Jacquelyn Clements.

settlement. If this is so, the fortification wall does not seem to dip much below 2 m in width, and appears to run fairly consistently at about 3 m in width. Only in areas where the workers were building directly upon outcroppings of bedrock does it become significantly narrower, in order to follow the bedrock.

Although the exterior face of the fortification wall proved impossible to fix as a result of its sharp downhill angle, the linear nature of the slipped stones in Trench 5 suggests that it was built in courses with multiple roughly-faced lines of stone built against each other, as appears to be the case in the area of Trench 6. These courses of stones, visible at the exterior and interior faces of the fortification, may have been intended to buttress or strengthen it against the weight of the fill on the interior of the settlement (*Fig. 9*). Indeed, it seems very probable that the fortification functioned as a retaining/terrace wall for a raised surface level within the town. Such a use perhaps goes some way toward explaining the extent to which the fortification has slid downhill in this more steeply sloping north-eastern area.

It is worth noting that in Trench 5, as in Trench 6 above, the upper levels of the fill likely represent material eroded from the interior packing of the fortification, once again containing MH II–LH I sherds. This fill, then, seems broadly consistent at least across the northern area of the site, and likely indicates a uniform packing of settlement debris gathered for the construction of the fortification. This idea may be confirmed by the worn and fragmentary nature of the ceramics recovered from these layers, which seem far removed from any use context, and in fact are similar to what might be expected from an exposed pit or dump. The Mycenaean decorated LH I piriform jar 16.091 (*Fig. 5*) represents the latest positively identified pieces from this fill.

GATES

Valmin proposed no fewer than five formalized entrances into the town, including perhaps three major gates.[17] We were able to confirm a likely candidate for only one of these, which is located in the north-west area of the settlement, and probably functioned as a secondary entrance (*Fig. 10*). Here, a break in the bedrock—whether natural or manmade—was exploited to frame the entrance into the settlement itself. At the same time, natural bedrock terraces immediately inside the gate dictate the direction of movement into the settlement. Noteworthy is the abrupt turn, preventing paths of motion directly to the settlement center. This natural route appears to have been partially built-up, with at least one large boulder still *in situ*. Similarly, immediately within and outside the gate, slabs of an apparent paved path or walkway are preserved, indicating a formalized approach and entrance into the settlement. Valmin also records these likely pavers on his plan.[18]

No other gates could be verified, and it is possible that Valmin overbuilt them in the north and east with his protective wall. The gate at the east is particularly difficult to locate. Two large blocks in this area may, in conjunction with bedrock, have served to frame an entrance into the settlement, similar to the use of large boulders and bedrock at the north-west gate (*Fig. 11*; Feature 27). This is, however, significantly to the south of where Valmin recognized his eastern gate. Though this area is heavily eroded, it is also possible that some of these proposed entrances were either very informal or did not exist, at least as Valmin envisioned them. His proposed gate at the south-west does, however, seem likely, and it corresponds well with possible terracing to direct traffic up the hill and toward the settlement in this area. This possible controlled motion toward and through the town is discussed further below. His gate at the north, just west of our Trenches 6 and 7, probably

[17] Valmin 1938, 17.
[18] Valmin 1938, Plan III.

Fig. 10. Gate at the north-western side of the settlement, now closed off by Valmin's protective wall. Taken from the west. Photo by Jacquelyn Clements.

Fig. 11. Feature 27 (the two stones of which are indicated) may be related to a gate or entrance route from the east, though these large boulders are significantly to the south of Valmin's proposed gate. Taken from the west. Photo by Jacquelyn Clements.

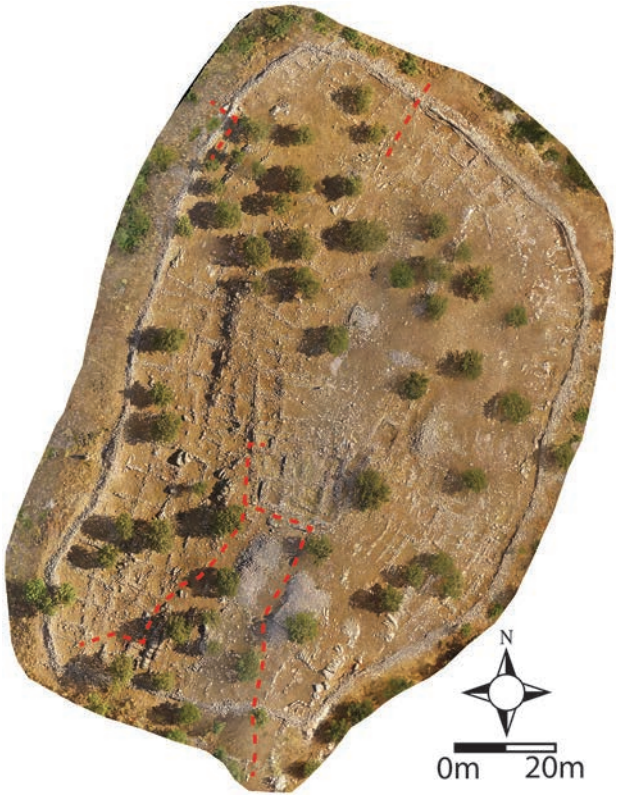

Fig. 12. Possible routes into and through the settlement at Malthi. Based on information from Valmin 1938 and Lauter 1996. Illustration: The Malthi Archaeological Project.

also functions to restrict the flow of traffic into the settlement, with a pair of walls framing the route into the settlement (see *Fig. 12*).

The settlement interior

The exploration of the settlement interior has been conducted in a rather piecemeal fashion, and only a single trench was excavated in this area during the 2016 season, discussed below.[19] The excavated rooms are described first, followed by a treatment of the burials found within them. Finally, some additional considerations of the overall architectural organization of the settlement are given, though these are necessarily somewhat speculative at this stage.

INTERIOR "MAGAZINE" ROOMS

One trench, Trench 7, was opened in the interior of the settlement (*Fig. 3*). Located roughly opposite Trench 6 along the exposed interior face of the fortification wall, this trench is equivalent to Valmin's Rooms D43 and D45. Both rooms were identified by Valmin as "magazines" abutting the fortification wall, used principally for storage purposes.[20] The goal in opening this trench was to explore the stratigraphy inside the settlement, and the relationship between the interior rooms—especially the so-called magazines—and the settlement wall. Although Valmin had excavated these rooms previously, the discovery of two *in situ* child burials demonstrates that much of the soil, at least in the corners of the rooms, is untouched. These burials are discussed below.

The highest level of this trench consisted of fill accumulated since Valmin's excavation and was naturally mixed in nature. Valmin had divided the area represented by Trench 7 into two smaller rooms based on a shallow oblique wall, our Wall 366, running through the center of the room. Valmin interpreted this wall, and the wall that it intersects at the south (Wall 365) as an earlier level. He assigned them to the Early Helladic period based on an apparent interruption by the settlement wall. Both walls are fragmentary, with only one course preserved for each, though Wall 366 seems to be footed on an earlier wall. Even this earlier wall, however, is unlikely to predate the fortification wall, and may have been constructed concurrently in order to stabilize fill at a transition in the depth of the bedrock. Similarly, Wall 366 integrates a burial, Grave 4, that contains a simple ivory pommel that is unlikely to date to before the middle of the Middle Helladic period.[21] Walls 365 and 366, then, are at the earliest contemporaneous with the construction of the fortification, and Wall 366 may belong to a later use of this building.[22] Such a date may be supported by the ceramics from this trench, which included a few pieces that are later (LH IIB/IIIA1) than those in the trenches outside the wall. These findings call into question Valmin's identification of several walls predating the fortification.

Within the same area, our Feature 21, a roughly rectilinear built stone feature abutting Wall 365 (excavated as part of

[19] Two additional trenches were excavated on the interior of the settlement in the summer of 2017. Results from this work are forthcoming.

[20] See Valmin (1938, 161) for the categorization of these rooms as magazines, and for the argument that these have a storage function (144). Two *pithoi* were found in an adjacent room (D47), leading in part to his interpretation.

[21] Valmin 1938, pl. XXV.48. See Burns (1999, 120–123, 253–275; 2010, 98–100) for an account of MH and Early Mycenaean use of ivory and similar pommels in the Argolid, where they appear in LH I in the Shaft Graves at Mycenae.

[22] The date of Wall 366 is unclear, but the wall on which it was footed is likely to be associated with the construction of the fortification. It is therefore possible that Wall 366 is related to an effort to raise the level of the room following the initial use of this building.

Context 7.6), was revealed to be a very substantial structure of unclear function. Valmin describes this structure as a possible grave, though he notes that there were no human remains recovered from it. The stones of which the feature is composed are quite large and seem excessive for a bin. It may have been intended as a buttress or support for the house, or served as a bench or work space. No finds that might identify its function were recovered, though incidentally this context produced one of two worked antlers from this trench, the other of which was recovered from an adjacent context.

Perhaps the most notable feature of Trench 7, other than the burials, was a thickly-packed stone layer, consisting of stones ranging in size from cobbles to large boulders. This stone layer was found across the full extent of the trench, just under Valmin's lowest level. The surface onto which the stones fell was not identified in this season, but the two burials were within this packing, and it may therefore represent a destruction and/or an infilling in an effort to raise the level of the room. Possibly in support of our interpretation of this layer as a destruction/abandonment phase is the character of the soil around the stones, which seemed to be composed of disintegrated mudbrick. Likewise, fragments of carbonized material and a concentration of burned pottery and bone were found within and below these stones, possibly representing the collapse and burning of the ceiling prior to the failure of the surrounding walls.[23] Secondary burning of the ceramics was marked in the field, though the soil itself was not burned. Samples of the soil were taken but have not yet been analyzed. More study is needed particularly in this area, which has the potential to clarify phases of use and abandonment for the settlement.[24]

The presence of burials in these rooms may speak to the domestic character of the "magazines" in the north, though burials also occur in satellite storage areas, for instance, at Lerna.[25]

BURIALS

Valmin discusses 48 burials within the walls of the settlement, generally found within interior spaces. Our excavation inside the settlement (Trench 7) in 2016 revealed two new child burials, apparently *in situ*. Valmin records two burials, his Graves 4 and 5, within the same rooms; he does not, however, observe any evidence of funerary activity in the corners occupied by the newly discovered burials. If the grave numbers are continued where Valmin left off, these would be Graves 49 (Context 7.4) and 50 (Contexts 7.8 and 7.9) respectively. Preliminary analysis of both skeletons has been conducted and will be recorded in the osteological report.[26]

Grave 49 was located roughly in the south-east corner of Valmin's Room D43.[27] The body was truncated and heavily disturbed, with only the skull left *in situ*—presumably the skull was at the extreme south with the body to the north. Around the skull were a number of cobbles, likely to be associated either with tumble or with a stone layer immediately below this level. No grave goods were found with the burial. Because there do not appear to be cist walls or funerary architecture of any clear form, it is possible that Valmin, perhaps not recognizing the grave, may have disturbed the burial in his excavation. The skull was quite shallow compared to his final levels, and this may explain the absence of a body. Alternatively, the body may have been disturbed in an episode of reuse of the space. Further fragmentary human remains discovered in this general area may confirm this latter interpretation, and suggest the placement of multiple individuals in this space over time. In general, Valmin also reports poor preservation of burials in this area—it is possible that the fragile bones of the body simply disintegrated. A preservation rate of 50% or less has been proposed for these individuals.

The second burial, Grave 50, was also fragmentary, this time purely a result of poor preservation. The grave was located in the north-west corner of Valmin's Room D45, with the skull at the north-west (in the corner), and the body laid parallel to the west wall of the room, Wall 353, probably in a contracted position on its left side. The grave is a pit burial, laid on and within a stone packing or destruction layer. Next to the skull was discovered a spindle whorl, which may have been intended as a grave good (*Fig. 13*).

The likely tumble immediately above and around both burials, as well as their fairly shallow position relative to any floor that may have been associated with these rooms, may sug-

[23] Roughly 17% of the burned bone from the 2016 season was recovered from this unit (7.11).

[24] Whether this destruction represents the end of habitation in this area is unclear. Valmin (1938, 161) seems to have removed around 0.8 m of soil from this area prior to our own excavation. Minimally, he exposed the tops of the walls, down to the bottom of the first course or so, though he believed he had reached the bases of the walls (Valmin 1938, 41). Much of this is likely to have been tumbled stone and eroded fill washed from the upper part of the settlement and collected against the fortification wall, but it is possible that he removed signs of subsequent use of this structure, including any surfaces.

[25] Valmin (1938, 54) proposes a mixed domestic and storage character for the magazines, with a function more strongly oriented toward workshop/storage on the west side of the settlement, where he also excavated several simple burials. For the association between burials and storage areas, see Lerna Rooms 44 and 45 (Wiersma 2013, Cat. G64; Zerner 1978, 42–45; Caskey 1957, 149–151).

[26] Zikidi (forthcoming), see n. 9.

[27] Additional work carried out in this area in the 2017 season, as well as the more recent study carried out by Zikidi, has revealed that this burial includes remains from additional subadults, all less than 5 years of age. Enough skeletal material was recovered to suggest that these are primary interments.

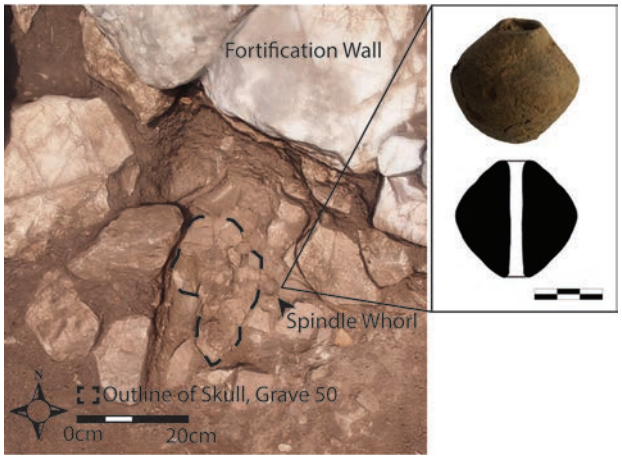

Fig. 13. Skull of Grave 50 with spindle whorl adjacent. Taken from the southeast. Photo by Rebecca Worsham.

gest that the house became a funerary space after it had been abandoned.[28] This would certainly be in keeping with similar phenomena at Ayios Stephanos and other contemporary sites.[29] It is worth noting that these two burials, and particularly Grave 50, have certain similarities to Valmin's Grave 5, which contained the remains of an adult female. Each of these burials was in a simple pit grave oriented north-south and adjacent to an earlier wall. Grave 5, like Grave 50, also included a spindle whorl as a grave gift, and both bodies were laid in a contracted position on the left side. Such affinities may be indicative of a family group using the house as a burial space. Less similar is the east-west oriented built cist Grave 4. It may nevertheless be associated with this group, and contained the remains of a child in an extended position, as well as the relatively rich grave offering of an ivory pommel.[30] The placement of this grave within the relatively late Wall 366 demonstrates a somewhat later date for this burial, which may account for this variation. It is worth noting that of the 50 graves now found within the settlement, only seven had grave goods of any variety, and three of these are located in this space.[31] This coincidence seems to confirm the use of this house by a single burying group, likely with kinship ties. Again, this likely speaks to the domestic character of the space.

SETTLEMENT ORGANIZATION

Broadly speaking, the pattern of settlement organization at Malthi is one that appears at several contemporary settlements, including Aspis-Argos, Megali Magoula Galatas, and Kiapha Thiti, among others.[32] Plans at these sites include structuring terrace walls or "spine walls," resulting generally in concentric rings of architecture within the settlement. These rings of architecture are of course well-suited to the natural topography of hilltop settlements, and the terrace walls used to create them fulfill a practical retaining function. But such plans are also deliberately integrative and diacritical, with an emphasis on inclusion or exclusion. Likewise, these layouts serve simultaneously to set apart a "center" and to direct motion toward these central spaces, typically located at the highest points of the settlement. In several cases, monumental structures, apparently with some public function, were erected in these areas. Examples include not only the central terrace and hearth-building at Malthi (Valmin's Room A1), but also very likely the central terrace structures at the Aspis and perhaps also the Large Building Complex (Grossteinbau) at Kolonna.[33] This effect has been observed for much later historical-era settlements, where the use of concentric levels shaped by spine walls results in highly-structured plans incorporating public and private buildings, here as a part of the *polis*-creating phenomenon.[34]

Considering the level of attention devoted to creating centrally-organized cohesive spaces at Malthi, it is perhaps

[28] As noted above, how much overburden Valmin removed in his excavation is unclear. The shallow nature of the burials is proposed based on their position relative to the depth of the walls—both burials are located at a level just below the preserved wall tops, and the walls themselves do not extend much deeper into the earth than the bottom of the burials.

[29] Taylour and Janko (2008, 141) observe that portions of the settlement at Ayios Stephanos, here particularly the highest parts of the hill in Areas Alpha and Delta, were abandoned for funerary use from LH I onward; see also Taylour 1972, 236. Maran (1995, esp. 69–71) notes that this phenomenon was widespread in the Shaft Grave Era, noting specifically use of former habitation areas at Pefkakia, Kirrha, and Asine as cemeteries at this time. See also Dietz 1991, 293; Kilian 1987, 124; 1989, 40; Cavanagh & Mee 1998, 24 (with additional bibliography). More recently, Voutsaki *et al.* (2013, 140) have emphasized for Lerna not a singular abandonment, but an oscillation between the use of a space for domestic and funerary purposes, suggesting that this "alternation between houses and graves in the same location expresses a concern with descent and with the transmission of property across generations." See also Milka 2010. A similar pattern may be indicated by the distribution of burials within settlement space at Eleusis (Cosmopoulos 2014, 186–190), though the association of abandoned houses with burial is limited. Though this same interest cannot yet be confirmed at Malthi, the use of the domestic space for burial, possibly even after the abandonment of the settlement, seems to attest to similar efforts to preserve "place" along kinship lines.

[30] Valmin 1938, pl. XXV.48. On the pommel, see note 21 above.

[31] Four additional graves were discovered in the 2017 season. One of those, an adult male, was also in Trench 7 and likely associated with this group. Additional work on the burials is forthcoming.

[32] For Aspis-Argos, see Touchais 1998; Philippa-Touchais 2010; Wiersma 2013, 114–121. See also Philippa-Touchais & Touchais 2011 for additional bibliography. For Megali Magoula Galatas, see Konsolaki-Yiannopoulou 2003; 2009, 504–511; 2010; Wiersma 2013, 141–142. For Kiapha Thiti see Lauter 1996; Maran 1992; Hagel 1992; Wiersma 2013, 89. See also Wright 2006a, 9–11, for a similar discussion.

[33] For Kolonna, see Gauss *et al.* 2011.

[34] Haggis *et al.* 2004, 349–352; 2007, 263–265; Fitzsimons 2014, esp. 237–244.

surprising that it is still not clear how the inhabitants of this settlement circulated among its various buildings. The heavily-built nature and apparently largely single-period use of the village as it appears from the preserved architecture makes this issue particularly pressing—in other words, how was motion through the site accounted for in the layout, and were the paths of movement fixed and controlled? Both Valmin and Lauter have previously proposed routes progressing from gates at the south toward the central terrace and likely administrative complex at the highest point of the town (*Fig. 12*).[35] More recently, this arrangement has also been accepted by Vonhoff.[36] This proposed route in the south is perhaps further corroborated by a likely tomb group and possible religious structure to the east of the proposed entrance—an arrangement not dissimilar to the later monumentalized Grave Circle A at Mycenae, as has been noted by Valmin and others.[37] Lauter has suggested that this south-eastern area of the settlement was deliberately kept open (his possible "Platz"), perhaps drawing attention to this tomb group, and allowing a more or less direct path to the central complex.[38] A more formalized—if circuitous—route can be identified from the south-western corner of the settlement, where Valmin located his south-western gate. This path is relatively structured and seems to involve multiple turns in order to follow a bedrock shelf toward the south-western corner of the central terrace. Here, the routes toward the central terrace may converge, more or less following the path that Lauter has suggested. The actual access point into the central administrative complex is yet unclear and may have been shifted at some stage in the building's history. It is possible that the central terrace was home to a northern and southern structure, separated by an access route and later joined by a new terrace wall. Alternatively, Wright has proposed that the southern portion of the terrace forms a likely courtyard, perhaps then providing a direct route of entry from the ramp to the structure at the north.[39]

Notable is the role of bedrock in shaping and directing motion into and through the settlement. The bedrock shelf at the north-western gate has been mentioned above, and bedrock appears to be used to similar effect at the south-western area of the settlement. Likewise, at the south-east in the area of the tomb group, but outside the bounds of the settlement wall, bedrock outcroppings may direct movement toward the proposed gate. Farther downslope and to the west, we discovered a series of substantial terrace walls, which are probably ancient and follow the natural lines of bedrock. These appear to form a path up the hillside from the valley below, incidentally—though the path cannot be traced for its full extent—on the side of the hill facing the *tholos* tombs below. If these terraces do represent an access route, it terminates at the south-western gate and forms a line of connection between the central administrative complex and the valley floor below.

The phasing and reconstruction of these routes is currently tentative, but it is clear that in the final form of the settlement, there is an interest in dictating and framing motion. This interest is particularly visible at the south, where entrances appear to integrate possible landmarks and elaborated architecture. This sort of control of approach has been firmly associated with later Mycenaean citadel sites. It is not as pronounced or marked at Malthi; for instance, there are no changes in masonry style or material, and though there may be some effort at built transitional spaces, none are so formalized as the *propyla* and gate systems of the later citadels. Nevertheless, at least some routes at Malthi are architecturally marked and regulated, and, as in the case of the later citadels, they are likely to act, as Wright and Maran have argued, as a sort of "processional route."[40] Indeed, at Malthi as at the later citadels, to quote Wright directly, "the entire spatial organization ... is one of a progressive movement through concentric rings of space to a central point, the monumental hearth at the center of the '*megaron*'."[41] The production of a GIS database for the settlement, which is well underway, should help to clarify some of these issues of movement and access.

The settlement surroundings

Only the settlement area inside the fortification was investigated by Valmin in 1926–1935. Stretches of walls, however, likely forming ancient terraces, also occur outside the fortification. These areas were outside the aims of this project, but it is likely that some of the terraces form an access route between the valley and the settlement, as noted above. Four of these possible terrace walls have been documented as probable ancient architecture—three in the south-west, and one in the north–north-east, though the north-eastern wall may also represent an undocumented linear stone heap from Valmin's excavations. In order to establish a rough date range for these walls, they were sampled for testing using optically stimulated luminescence (OSL). The results may allow us to establish whether (and how far) the settlement extended beyond the fortification wall, and whether the terracing project can be related to the development and formalization of the settlement

[35] Valmin 1938, 18–19; Lauter 1996, 85.
[36] Vonhoff 2015, 489–490.
[37] Valmin 1938, 187; Vonhoff 2015, 490–491.
[38] See esp. Lauter 1996, 84, Textabb. 3.
[39] Wright 1980, 60.
[40] Wright 2006b, 60; Maran 2006, esp. 78–85. See also Wright 1994, 59–60.
[41] Wright 2006b, 61.

seen in the construction of the fortification wall. Certainly the proposed ancient terrace walls line up well with the fortification and with the general orientation of the settlement, and their construction is broadly consistent with other terracing efforts at the site (*Figs. 14a* and *14b*). This correspondence does suggest that the construction of the town and the fortification wall may have been part of an even larger project, resulting in changes to the landscape of the ridge more broadly.

Presentation and representation of the settlement

Work at the site has produced a large amount of spatial data, including 3D data from the terrestrial laser scanner and the aerial drone. Additionally, structure from motion photography of the trenches at various stages of excavation have allowed us to create 3D models of important contexts, and to generate top-down plans. These efforts have been concerned not just with the documentation of the site and its architecture, but also with the presentation of the settlement to the public. The processing of this data has been carried out chiefly by the Uppsala company Disir Productions AB, which specializes in the analysis and presentation of landscape and archaeology data. With a view toward creating a visualization of the site, a 3D reconstruction of the entire settlement, which will incorporate landscape models derived from the drone photography, is currently being produced. This work has the benefit of allowing engagement with sight-lines and proposed access routes in three dimensions, but it also offers the first interpretation of the site as it would have looked to its inhabitants. These sorts of visually compelling and informative models are fundamental in re-establishing the town as a key site in the formation of Mycenaean polities, not only among scholars of the period, but also for more popular audiences.

Preliminary conclusions

Because the architecture of the settlement has been fully exposed within the bounds of the fortification wall, Malthi is uniquely suited for an architectural study of an Early Mycenaean town. Not only is this one of the most completely preserved settlements of the Shaft Grave Era, but it also offers an important contribution to the study of sites peripheral to the later palace centers. Particularly because the settlement does seem to be constructed as a single, planned project, it is crucial to interrogate how and why it arose, as well as the circumstances of its subsequent abandonment. It is important to note that Malthi is not alone in the Soulima Valley. Indeed, in their consideration of the area, Hope Simpson and Dickinson

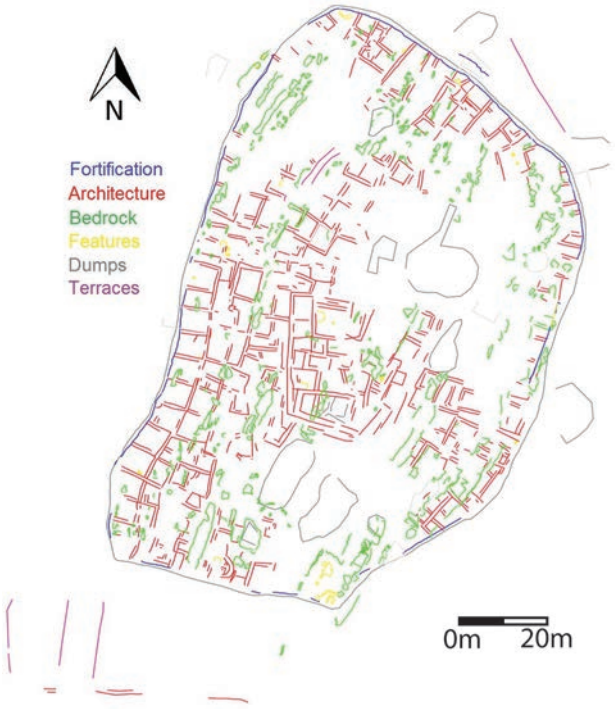

Fig. 14a. Schematic plan of the settlement, with terrace walls indicated in magenta. North is at the top. Produced by Donna Nagle.

observe that the valley was relatively populous during the MH period, and they note no fewer than seven possible MH sites in the near vicinity of Malthi.[42] Around 16 can be found along the valley and surrounding foothills, including most conspicuously the similar settlement and eventual cemetery of Peristeria and at least one other fortified hilltop settlement (Konchilion). The total for the entire region falls to four sites for the Early Mycenaean period. If these contemporary sites were similarly arranged fortified sites, as has sometimes been suggested for Peristeria and Konchilion, it may give evidence for dynamic peer-polity interaction within the area of the Soulima Valley, suggesting localized urbanization/aggregation at multiple centers prior to the presumed domination of the area by Pylos.[43] Such an assertion is beyond the scope of this paper, but it is clear that the study of Malthi and its regional context has much to offer models of state formation on the periphery of the major palace site at Epano Englianos. At any rate,

[42] Hope Simpson & Dickinson 1979, 126; specific numbers are collected from Map D. Peristeria is given the catalogue number D200, and Konchilion is D203. More recently, Hope Simpson (2014, 28, 37–38) gives 16 Mycenaean sites in addition to Malthi for the Soulima Valley proper, emphasizing the importance of the area for the control of Messenia.

[43] For Peristeria see Vermeule 1964, 117–118; Lolos 1987, 42–59; Daux 1965, 739–743; Wiersma 2013, 171–172. For Konchilion (Kastro) see McDonald & Hope Simpson 1969, 138, Ill. 6, 141–142; Hope Simpson & Dickinson 1979, Cat. D203.

Fig. 14b. Terrace wall at the south-west of and exterior to the settlement. Taken from the west. Photo by Jacquelyn Clements.

the highly-organized settlement at Malthi, which very much emphasizes both belonging and exclusion through its fortification and terrace walls, may reflect a desire on the part of the inhabitants to create a community and define themselves in relation to others.

It is possible, then, to begin to outline the following narrative for Malthi: settlement in the area appears to begin as early as MH II. The nature of this settlement is difficult to assess—Valmin's identification of architecture belonging to the phase prior to the fortification wall has proved problematic to confirm. At a point in LH I, the inhabitants dug away a large amount of soil in order to found a large-scale, labor-intensive fortification wall on bedrock. The stones from this wall were likely hewn from the bedrock itself, and were laid in progressive courses to support the weight of the settlement interior. At the same time, the interior of the settlement was rapidly reformulated to account for this wall. Later in the Mycenaean period, at least the northern portion of the settlement was abandoned or destroyed, and may subsequently have been used for burial. If our preliminary observations of the old finds are correct, the settlement was largely abandoned no later than LH IIIA1, only to be sporadically visited in the Early Iron Age and in Byzantine times.[44]

This picture of rapid organization followed by abandonment is broadly consistent with patterns represented at other settlements at the transition from the Middle to Late Helladic period, such as Ayios Stephanos and Aspis-Argos. Malthi, however, offers the opportunity to examine these processes as they took place at the scale of an entire settlement, at least as it is preserved within the fortification walls. It is worth speculating on why in LH I the decision was made to undertake the

[44] The restudy of the pottery saved from the 1927–1935 campaigns have so far revealed only one(!) sherd from the Early Iron Age. In addition, Valmin (1938, 414f.) reports a handful of iron objects and 140 Byzantine coins which cannot be located in the museum. The reason for abandonment is unclear and may have something to do with the rise of power at Epano Englianos. Hope Simpson (2014, 66–67) has recently identified the later settlement on the valley floor as a likely regional center in the Further Province of the Pylian Kingdom: "Although the settlement was only partly excavated, and the finds were not impressive, the two LH IIIB *tholos* tombs attest the importance of the site, which also lies at the hub of communications in the Soulima valley. It seems marked as probably the center of the district of *e-ra-te-re-we*. The district may have at one time included all of the Soulima valley area ... "

massive building project that resulted in the construction of the fortification wall. The situation at Malthi may parallel that which Voutsaki has proposed for the Argolid, namely that established economic and social patterns were disrupted by mounting external pressures from intensifying contact with profitable Mediterranean networks.[45] This shift is accompanied by a general conversion of the early MH "kin-based society to one permeated by rigid status distinctions within which entire communities and social groups attempted to negotiate their position."[46] Very basically, then, in the MH III/LH I period, there is a breakdown of a largely kinship-negotiated social order—as represented by organic, house-centered settlements—as power structures became increasingly centralized and reliant on achieved status, asymmetric relationships, and concomitant displays of wealth. Such a change may be represented in the fabric of the settlement itself at Malthi, in a move away from individualized houses and toward a centralized, planned settlement—from kinship group to community.[47]

Whether or not the construction of the fortification may be connected with an effort to create a defined community, the subsequent abandonment of the settlement in the mature Mycenaean period may indicate that these efforts, though costly and elaborate, were not totally effective. The continuous attention given to the fortifications at places like Mycenae, however, speaks to the power of these symbols, and to Malthi's role in understanding them.[48] We might suppose that the visibility of the collapsing fortification and ruined town may have prolonged the memory of the place among the inhabitants of the valley, or at least captured their imagination, as seems to have been the case with the local school teacher that led Valmin to the settlement so many years later.[49]

[45] Voutsaki 1998, esp. 47–48.
[46] Voutsaki 2010, 104, and esp. Table 5.6.
[47] The role of fortification walls in creating and defining community and social identity is also well known. Being monumental structures, as suggested by Bernard Knapp (2009, based on Trigger 1990) fortification walls and the act of and investment in their construction play a major role in "becoming". The act of building creates and continues to demarcate a social group. Similarly, as a constructed monument, the wall forms a "material marker of ideology, memory, and identity" (Knapp 2009, 56).
[48] French 2009.
[49] Valmin 1938, 2.

REBECCA WORSHAM
Department of Classical Languages and Literatures
Smith College
10 Elm Street
Northampton, MA 01063
USA
rworsham@smith.edu

MICHAEL LINDBLOM
Department of Archaeology and Ancient History
Uppsala University
Box 626
751 26 Uppsala
Sweden
michael.lindblom@antiken.uu.se

CLAIRE ZIKIDI
MSc in Palaeopathology
Fteris 12
Kryoneri, Attica, 14568
Greece
clairezikidi@gmail.com

Bibliography

Blitzer, H. 1998. Bronze Age chipped stone industries of Messenia, the southwest Peloponnese, Greece: The evidence from the sites of Nichoria, Malthi, and Pylos and their environs, Ph.D. thesis, Indiana University.

Burns, B. 1999. Import consumption in the Bronze Age Argolid (Greece): Effects of Mediterranean trade on Mycenaean society, Ph.D. thesis, University of Michigan.

Burns, B. 2010. *Mycenaean Greece, Mediterranean commerce, and the formation of identity*, Cambridge.

Caskey, J. 1957. 'Excavations at Lerna, 1956', *Hesperia* 26:2, 142–162. https://doi.org/10.2307/147347

Cavanagh, W. & C. Mee 1998. *A private place: Death in prehistoric Greece* (SIMA, 125), Jonsered.

Chasiakou, A. 2012. 'Μάλθη', in *Αρχαιολογία Πελοπόννησος*, ed. A. Vlachopoulos, Athens, 458–459.

Cosmopoulos, M. 2014. *The Sanctuary of Demeter at Eleusis: The Bronze Age*, Vol. 1, Athens.

Darcque, P. 2005. *L'habitat Mycénien: Formes et fonctions de l'espace bâti en Grèce continentale à la fin du IIe millénaire avant J.-C.*, Athens.

Daux, G. 1965. 'Chronique des fouilles et découvertes archéologiques en Grèce en 1964', *BCH* 89:2, 683–1007. https://doi.org/10.3406/bch.1965.4971

Dietz, S. 1991. *The Argolid at the transition to the Mycenaean Age*, Copenhagen.

Fitzsimons, R. 2014. 'Urbanization and the emergence of the Greek *polis*: The case of Azoria, Crete', in *Making ancient cities: Space and place in early urban societies*, eds. A. Creekmore & K. Fisher, Cambridge, 220–256. https://doi.org/10.1017/cbo9781107110274.008

French, E. 2009. 'Town planning in Palatial Mycenae', in *Inside the city in the Greek World: Studies of urbanism from the Bronze Age to the Hellenistic Period*, eds. S.S. Owen & L.J. Preston, Oxford, 55–61.

Gauss, W., M. Lindblom & R. Smetana 2011. 'The Middle Helladic Large Building Complex at Kolonna. A preliminary view', in *Our cups are full: Pottery and society in the Aegean Bronze Age,* eds. W. Gauss, M. Lindblom, R.A.K. Smith & J. Wright, Oxford, 76–87.

Hagel, D. 1992. 'The fortifications of the Late Bronze Age on Kiapha Thiti, Attika', in *Fortificationes antiquae*, eds. S. Van de Maele & J.M. Fossey, Amsterdam, 45–51.

Haggis, D., M. Mook, C. Scarry, L. Snyder & W. West 2004. 'Excavations at Azoria, 2002', *Hesperia* 73:3, 339–400. https://doi.org/10.2972/hesp.2004.73.3.339

Haggis, D., M. Mook, R. Fitzsimons, C. Scarry & L. Snyder 2007. 'Excavations at Azoria, 2003–2004, part 1: The Archaic civic complex', *Hesperia* 76:2, 243–321. https://doi.org/10.2972/hesp.76.2.243

Hope Simpson, R. 2014. *Mycenaean Messenia and the kingdom of Pylos*, Philadelphia.

Hope Simpson, R. & O.T.P.K. Dickinson 1979. *Gazetteer of Aegean civilisation in the Bronze Age* (SIMA, 52), Göteborg.

Howell, R.J. 1992. 'The Middle Helladic settlement: Pottery', in *Excavations at Nichoria in southwest Greece* II: *The Bronze Age occupation*, eds. W.A. McDonald & N.C. Wilkie, Minneapolis, 43–204.

Kilian, K. 1987. 'Ältere mykenische Residenzen', in *Kolloquium zur ägäischen Vorgeschichte* (Schriften des deutschen Archäologen-Verbandes, 9), ed. W. Schiering, Mannheim, 120–124.

Kilian, K. 1989. 'Μυκηναϊκά ανάκτορα της Αργολίδας. Αρχιτεκτονική εξέλιξη από την οικία του αρχηγού στο ανάκτορο του wanax', in *Πρακτικά του Β΄ τοπικού συνεδρίου Αργολικών σπουδών, Άργος 30 Μαίου–1 Ιουνίου 1986*, eds. T.A. Gritsopoulos & K.L. Kotsōnēs, Athens, 33–40.

Knapp, B. 2009. 'Monumental architecture, identity and memory', in *Proceedings of the symposium Bronze Age Architectural Traditions in the East Mediterranean: Diffusion and Diversity, Munich, 7–8 May, 2008*, ed. A. Kyriatsoulis, Weilheim, 47–59.

Konsolaki-Yiannopoulou, E. 2003. 'Η μαγούλα στον Γαλατά της Τροιζηνίας.Ένα νέο ΜΕ-ΥΕ κέντρο στον Σαρωνικό', in *Αργοσαρωνικός: πρακτικά 1ου διεθνούς συνεδρίου ιστορίας και αρχαιολογίας του Αργοσαρωνικού. Πόρος, 26–29 Ιουνίου 1998. Τομος Α': η προϊστορική περίοδος*, ed. E. Konsolaki-Yiannopoulou, Athens, 159–228.

Konsolaki-Yiannopoulou, E. 2009. 'Νέα προϊστορικά ευρήματα από την Τροιζηνία', in *From Mesogeia to Argosaronikos. B' Ephorate of Prehistoric and Classical Antiquities: Research of a decade 1994–2003*, eds. V. Vassilopoulou & S. Katsarou-Tzeveleki, Markopoulo Mesogeias, 497–518.

Konsolaki-Yiannopoulou, E. 2010. 'The Middle Helladic establishment at Megali Magoula, Galatas (Troezenia)', in *Mesohelladika: La Grèce continentale au Bronze Moyen* (BCH Suppl., 52), eds. A. Philippa-Touchais, G. Touchais, S. Voutsaki & J. Wright, Athens, 67–76.

Lauter, H. 1996. *Kiapha Thiti: Ergebnisse der Ausgrabungen II.1. Die bronzezeitliche Architektur*, Marburg.

Lolos, 1987. The Late Helladic I pottery of the southwestern Peloponnesos and its local characteristics, Ph.D. thesis, University of London.

Maran, J. 1992. *Kiapha Thiti: Ergebnisse der Ausgrabungen II.2: 2. Jahrtausend v. Chr.: Keramik und Kleinfunde*, Marburg.

Maran, J. 1995. 'Structural changes in the pattern of settlement during the Shaft Grave Period on the Greek Mainland', in *Politeia: Society and state in the Aegean Bronze Age* (Aegaeum, 12), eds. R. Laffineur & W.D. Niemeier, Brussels, 67–72.

Maran, J. 2006. 'Mycenaean citadels as performative space', in *Constructing power: Architecture, ideology and social practice*, eds. J. Maran, C. Juwig, H. Schwengel & U. Thaler, Berlin, 75–88.

McDonald, W.A. & R. Hope Simpson 1969. 'Further explorations in southwestern Peloponnese: 1964–1968', *AJA* 73:2, 123–178. https://doi.org/10.2307/502778

McDonald, W.A., C.T. Shay, N. Wilkie, R. Hope Simpson, W.D.E. Coulson, W.P. Donovan, H. Blitzer, J. Rosser, S. Aschenbrenner, R.J. Howell, O.T.P.K. Dickinson, H. Hughes-Brock, W.D. Wade, D.L. Wolberg, F.V. Grady, R.E. Sloan, J. Shay, G. Rapp & S.R.B. Cooke 1975. 'Excavations at Nichoria in Messenia: 1972–1973', *Hesperia* 44:1, 69–141. https://doi.org/10.2307/147426

Milka, E. 2010. 'Burials upon the ruins of abandoned houses in the Middle Helladic Argolid', in *Mesohelladika: La Grèce continentale au Bronze Moyen* (BCH Suppl., 52), eds. A. Philippa-Touchais, G. Touchais, S. Voutsaki & J. Wright, Athens, 433–443.

Philippa-Touchais, A. 2003. 'Aperçu des céramiques mésohelladiques à décor peint de l'Aspis d'Argos. II. La céramique à peinture lustrée', *BCH* 127:1, 1–47. https://doi.org/10.3406/bch.2003.7121

Philippa-Touchais, A. 2007. 'Aeginetan matt-painted pottery at Middle Helladic Aspis, Argos', in *Middle Helladic pottery and synchronisms: Proceedings of the international workshop held at Salzburg, October 31st to November 2nd 2004*, eds. F. Felten, W. *Gauss &* R. Smetana, Vienna, 97–113.

Philippa-Touchais, A. 2010. 'Settlement planning and social organisation in Middle Helladic Greece', in *Mesohelladika: La Grèce continentale au Bronze Moyen* (BCH Suppl., 52), eds. A. Philippa-Touchais, G. Touchais, S. Voutsaki & J. Wright, Athens, 781–801.

Philippa-Touchais, A. & G. Touchais 2011. 'Fragments of the pottery equipment of an early Middle Helladic household from Aspis, Argos', in *Our cups are full: Pottery and society in the Aegean Bronze Age*, eds. W. Gauss, M. Lindblom, R.A.K. Smith & J. Wright, Oxford, 203–216.

Rambach, J. 2007. 'Investigations of two MH I burial mounds at Messenian Kastroulia (near Ellinika, Ancient Thouria)', in *Middle Helladic pottery and synchronisms. Proceedings of the international workshop held at Salzburg October 31st–November 2nd, 2004* (Ägina Kolonna. Forschungen und Ergebnisse, 1), eds. F. Felten, W. Gauss & R. Smetana, Vienna, 137–150.

Stocker, S.R. 2003. 'Pylos Regional Archaeological Project, Part V: Deriziotis Aloni: A small Bronze Age site in Messenia', *Hesperia* 72:4, 341–404. https://doi.org/10.2307/3182011

Taylour, W.D. 1972. 'Excavations at Ayios Stephanos', *BSA* 67, 205–270. https://doi.org/10.1017/s0068245400021663

Taylour, W.D. & R. Janko 2008. *Ayios Stephanos: Excavations at a Bronze Age and Medieval settlement in southern Laconia*, London.

Touchais, G. 1998. 'Argos à l'époque mésohelladique: Un habitat ou des habitats?', in *Argos et l'Argolide: Archéologie et l'urbanisme*, eds. A. Pariente & G. Touchais, Athens, 71–84.

Trigger, B.G. 1990. 'Monumental architecture: A thermodynamic explanation of symbolic behaviour', *WorldArch* 22, 119–131. https://doi.org/10.1080/00438243.1990.9980135

Valmin, N. 1938. *The Swedish Messenia Expedition*, Lund.

Valmin, N. 1953. 'Malthi-epilog: Vorläufiger Bericht über die schwedische Ausgrabung in Messenien 1952', *OpAth* 1, 29–46.

Van Leuven, J.C. 1984. 'The sanctuaries of Malthi', *Scripta Mediterranea* 5, 1–26.

Vermeule, E. 1964. *Greece in the Bronze Age*, Chicago. https://doi.org/10.7208/chicago/9780226853550.001.0001

Vonhoff, C. 2015. 'Von der Kleinresidenz zum überregionalen Zentrum: Fortifikationsbauten und Fürstensitze des ausgehenden Mittel- und frühen Späthelladikums (MH III–SH II) als Archetypen spätmykenischer Burg- und Palastarchitektur', in *Polymatheia: Festschrift für Hartmut Matthäus anlässlich seines 65. Geburtstags*, eds. R. Nawracala & S. Nawracala, Aachen, 487–509.

Voutsaki, S. 1998. 'Mortuary evidence, symbolic meanings and social change: A comparison between Messenia and the Argolid in the Mycenaean period', in *Cemetery and society in the Aegean Bronze Age*, ed. K. Branigan, Sheffield, 41–58.

Voutsaki, S. 2010. 'From the kinship economy to the palatial economy: The Argolid in the second millennium BC', in *Palatial economies of the Aegean Bronze Age*, ed. D. Pullen, Oxford, 86–111.

Voutsaki, S., E. Milka, S. Triantaphyllou & C. Zerner 2013. 'Middle Helladic Lerna: Diet, economy, society', in *Diet, economy and society in the ancient Greek world: Towards a better integration of archaeology and science*, eds. S. Voutsaki & S. Valamoti, Leuven, 133–148.

Wiersma, C. 2014. *Building the Bronze Age: Architectural and social change on the Greek Mainland during Early Helladic III, Middle Helladic and Late Helladic I*, Oxford.

Wright, J. 1980. 'Mycenaean palatial terraces', *AM* 95, 59–86.

Wright, J. 1994. 'The spatial configuration of belief: The archaeology of Mycenaean religion', in *Placing the gods: Sanctuaries and sacred space in Ancient Greece*, eds. S. Alcock & R. Osborne, Oxford, 37–78.

Wright, J. 2005. 'Offsets in Mycenaean architecture', in *Autochthon: Papers presented to O.T.P.K. Dickinson on the occasion of his retirement*, eds. A. Dakouri-Hild & S. Sherratt, Oxford, 191–199.

Wright, J. 2006a. 'The formation of the Mycenaean palace', in *Ancient Greece: From the Mycenaean palaces to the age of Homer*, eds. S. Deger-Jalkotzy & I. Lemos, Edinburgh, 7–52.

Wright, J. 2006b. 'The social production of space and the architectural reproduction of society in the Bronze Age Aegean during the 2nd millennium B.C.E.', in *Constructing power: Architecture, ideology and social practice*, eds. J. Maran, C. Juwig, H. Schwengel & U. Thaler, Berlin, 49–69.

Zerner, C. 1978. The beginning of the Middle Helladic period at Lerna, Ph.D. thesis, University of Cincinnati.