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Roman and Early Byzantine evidence from the area of Palamas

A preliminary report of the ongoing Greek-Swedish archaeological work in the region of Karditsa, Thessaly

Abstract

This paper presents preliminary results of the *Palamas Archaeological Project* relating to the Late Roman and Early Byzantine periods in the study area in western Thessaly, Greece. These periods are comparatively understudied in Thessaly, and the aim of this work is to highlight the extent of the material and the potential of investigating the archaeology of Late Antiquity in the region. The work was centred on excavations and survey at the site at Vlochos, alongside architectural survey at the neighbouring site on Kourtikiano hill. The paper also presents studies into Late Roman and Early Byzantine material found during cleaning at Vlochos. Additionally, an unpublished inscription spoliated in a church in nearby Palamas is presented. The results show a dynamic and detailed range of Late Antique activity in the area, adding significantly to our understanding of the post-Classical habitations on the western Thessalian plain.*

Keywords: survey, excavation, geophysics, earth resistance, Thessaly, Roman, Late Roman, Early Byzantine, Slavic ware, Justinian, fortifications, inscription, Commodus, bridge

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Introduction

The *Palamas Archaeological Project* (PAP) is an ongoing (2020–) Greek-Swedish collaboration focused on the archaeology of the municipal unit of Palamas in the region of Karditsa, western Thessaly.¹ The project builds on the previous *Vlochos Archaeological Project* (VLAP, 2016–2018), which aimed to map the archaeological remains at the site of Vlochos using non-invasive methods.² The work at Vlochos revealed that the site contains the remains of four successive fortified settlements of antiquity (*Table 1*), including a Classical-Hellenistic city, a town of the Roman period, and an Early Byzantine fort. The aim of the current project is to expand the area of study, and examine the wider diachronic landscape surrounding the settlements at Vlochos.³

In the autumn of 2021, archaeological fieldwork was carried out at several sites within the area of study (*Fig. 1*). The municipal unit contains remains of virtually all periods of Greek history, but this preliminary report primarily focuses on the results relating to the Late Roman and Early Byzantine periods at the sites, as the findings of 2021 mainly belong to these. The post-Hellenistic periods are currently poorly understood in a western Thessalian context, both from an archaeological and a historical perspective. The remains of other

¹ The overall programme is directed by Maria Vaïopoulou and Robin Rönnlund. In 2021, excavation was directed by Johan Klange and Fotini Tsiouka with participating archaeologists (in alphabetical order) Sotiria Dandou, Veronica Forsblom-Ljungdahl, Stelios Ieremias, Katerina Keramida, Derek Pitman, Robin Rönnlund, and Elisabet Schager. Preliminary pottery analysis was conducted by Ian Randall, Robin Rönnlund, and Fotini Tsiouka. Geophysical survey was directed by Derek Pitman, with participating archaeologists (in alphabetical order) Stelios Ieremias, Rich Potter, Ian Randall, Robin Rönnlund, Lawrence Shaw, and Lewis Webb. Architectural survey was conducted by Robin Rönnlund and Ian Randall. Recording of epigraphy was conducted by Rich Potter and Lewis Webb.

² The results of VLAP have been published in Vaïopoulou *et al.* 2020.

³ Vaïopoulou *et al.* 2021, 55–56.

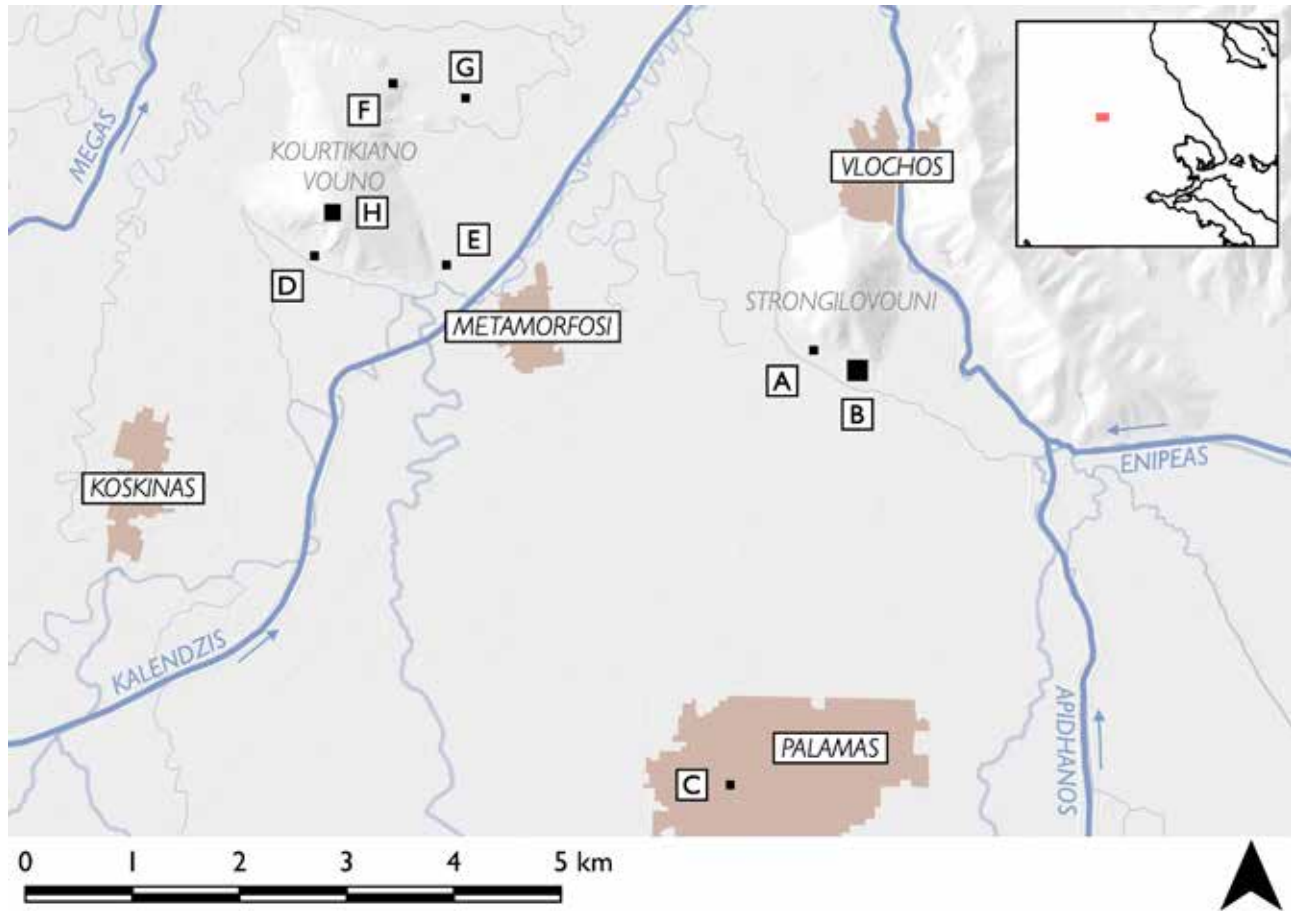


Fig. 1. Location of the sites mentioned in the article. Present-day river courses in darker blue, pre-Industrial rivers and streams in paler blue. A: Location of excavation trench (Trench 1) of 2021 in Patoma area. B: Roman urban settlement in Patoma area. C: Church of *Ayios Charalambos*, Palamas. D: *Aspropetra* area at Kourtikiano hill. E: Archaic-Classical settlement at Metamorfoosi excavated by Ephorate of Antiquities of Karditsa. F: Remains at *Kazarma*, Kourtikiano hill. G: *Paliokklisi*. H: Fortifications on Kourtikiano hill. Map by R. Römlund.

Table 1. Main phases of construction and occupation at the site of *Vlochos*. See Väiöπουλου *et al.* 2020.

Phase 1	Late Archaic (?) fortification on hilltop with contemporaneous terraced roads.
Phase 2A	Late Classical (mid-4th century BC) walled city in the Patoma area with <i>akropolis</i> on hilltop.
Phase 2B	Phase of expansion of walled <i>akropolis</i> area on hilltop in the Hellenistic period (3rd century BC?). City possibly abandoned <i>c.</i> 200 BC or a little later.
Phase 3	Late Roman (late 3rd century–4th century AD) walled town in eastern part of area of Patoma.
Phase 4	Early Byzantine (mid-6th century AD) fort on southern hill-slope.
(Phase 5)	8th century AD rehabilitation of Early Byzantine structures.

chronological periods will be presented in greater detail in later publications.

Originally planned for 2020 but postponed due to the global pandemic, work in 2021 was focused on the general areas of the archaeological sites at *Vlochos* and nearby *Metamorfoosi* in the northern half of the municipality of *Palamas*. Methods employed involved non-invasive approaches including architectural survey, oral history enquiries, and geophysical prospection, as well as—for the first time within the ongoing Greek-Swedish collaboration—excavation. This report outlines our current interpretation of the results from the 2021 season, which will be published in their final form in a future edited volume on the archaeology of the area of *Palamas*.

Excavation in the area of Patoma, *Vlochos*

As part of the 2021 campaign, targeted excavation was conducted at a location in the Patoma area (at A in *Fig 1*; *Fig. 2*), *c.* 110 m south of the abandoned *Gekas* (Γκέκας)



Fig. 2. Aerial view of the archaeological site at Strongilovouni, as seen from the south-east. The Patoma area is the green space delimited by the hill-slope and the artificial irrigation canal to the left. Photograph by L. Shaw.

quarry.⁴ The trench (from now on referred to as Trench 1) was 4.6×4.6 m, and was excavated to a maximum depth of 0.75 m. The positioning of Trench 1 was prompted by the promising results of the geophysical prospection of 2016–2018 and 2020, which showed indications of a well-built structure at the location, set on a slightly offset angle to the urban grid of the Classical-Hellenistic city, thus indicating the existence of more substantial stratigraphy (Fig. 3).

The excavation was conducted using an adapted single context methodology by which archaeological strata were divided into contexts representing the physical remains of single events such as a single building phase of a wall, a destruction layer, a cut for a pit, etc. Each context was recorded separately but in relation to each other according to their stratigraphical relationships. Groups of contexts were further created in order to define archaeological features such as a phase of use of a building, or a destruction event.⁵ Finally, these groups were linked to the general chronological periodization scheme of the site.⁶

⁴ Vaïopoulou *et al.* 2020, 12; 2021, 59–62.

⁵ The work was conducted in accordance with the principles outlined in the *MôLAS* 1994 manual.

⁶ Vaïopoulou *et al.* 2020, 22.

The excavation achieved a high level of stratigraphical resolution, but due to the limited timeframe of the excavation, Trench 1 was not excavated to the lowest archaeological strata, which continue below the limitation of the trench. Future continued excavations are planned at the location to resolve this.

STRATIGRAPHICAL SEQUENCE AND ARCHAEOLOGICAL REMAINS IN TRENCH 1

The stratigraphical sequence within Trench 1 can be divided into four chronological phases of use ranging from the 6th century AD to the Early Modern period. Apart from archaeological remains from these phases, the topsoil further showed the impact of the nearby quarrying activities of the mid-20th century, with erosion debris mixed with finds from the main phases of use within the Patoma area (Phases 2A/B to 4). As a consequence of the trench not being excavated to the bottom of the archaeological strata, there is only stratigraphical evidence for the end of use for two of the above-mentioned phases (Table 2).

Starting from the top of the archaeological strata in Trench 1, the first level of archaeological significance represents the Late Medieval and Early Modern land use of the site

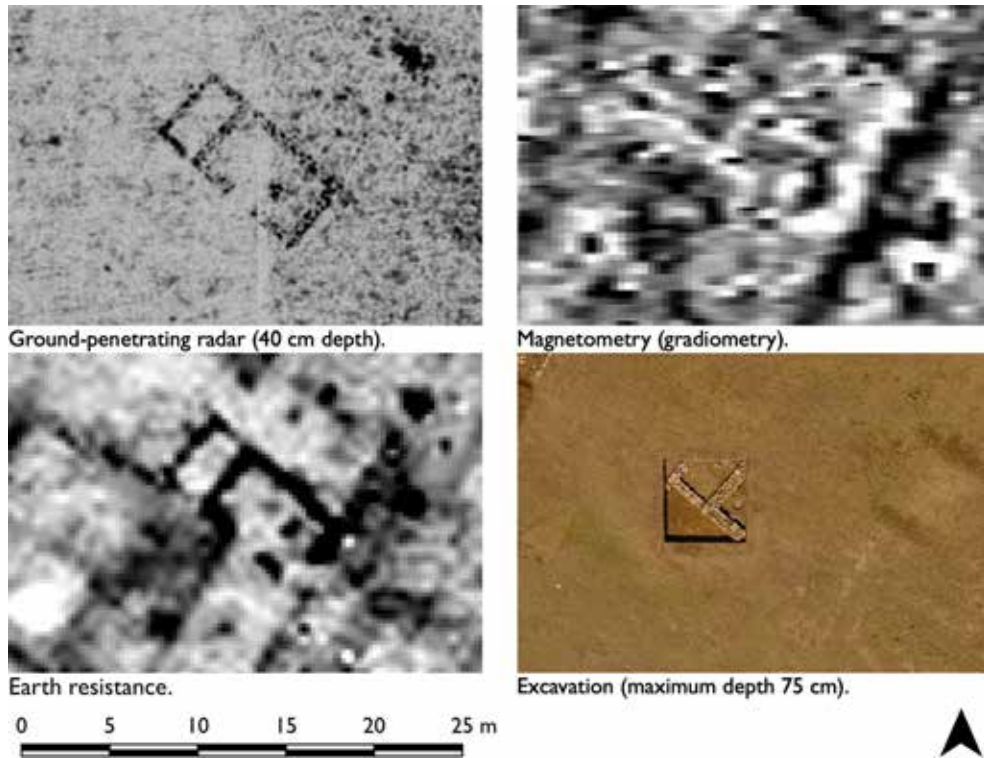


Fig. 3. Comparison between ground-penetrating radar (GPR), magnetometry (White = negative nT, Black = positive nT), earth resistance (range = +10 to -6 Ω), and situation at end of excavation. All views have the same spatial extension. Plots and aerial photograph by R. Potter, D. Pitman, L. Shaw & R. Rönnlund.

(Group 2 in *Table 2*). The finds indicate human activity within the Patoma area in the late Byzantine and the subsequent Ottoman period. The evidence for activity is somewhat scant, making the Patoma area likely a location used for agriculture or grazing rather than habitation. It cannot be ruled out, however, that there were farmsteads within the area during the period in question, but these have yet to be identified.

The archaeological remains of one, possibly two, buildings were found in Trench 1, the first of which has been named **Building 1**, whilst the second has yet to be named, as it presently cannot be definitively confirmed. In its final phase of use, **Building 1** consisted of two rectangular rooms, conventionally referred to as the Western room and the Eastern room. The rooms are clearly defined in the geophysical data, which also proved to be highly accurate regarding the dimensions and position of the preserved architecture (*Fig. 3*). This in turn allowed for an estimation of the complete size of the building, which appears to have been 10 m long and 4.8 m wide during its final phase of use, with a *c.* 1.6 m-wide doorway positioned at the centre of the southern wall of the Eastern room.

Accumulated backfill deposits connected to the abandonment of **Building 1** were noted below the topsoil deposits (Group 3 in *Table 2*). The backfill contained material from the Classical-Hellenistic period up until the 8th century AD, with coarse “Slavic” ware dominating the diagnostic finds of the

latter.⁷ The lack of roof tiles in the backfill soil indicates that the building—at least in its final phase of use—was thatched or roofed with another degradable material.

The construction of the Western room (A in *Fig. 4*), as well as a reconfiguration of the Eastern room, has been grouped together and consists of walls, foundations, as well as floor levels (Group 5 in *Table 2*). The outer walls of the Western room are between 0.45 and 0.55 m wide, consisting of two courses of 0.1 to 0.6 m-large un-worked stones set in two to three rows with straight outer faces. These enclose in the north-west and south-west a room with the interior dimensions 2.0 × 3.8 m (as discernible in the ground-penetrating radar results). The walls are positioned directly on top of the underlying soil, making foundations that were unlikely to have been constructed to carry a heavy superstructure. The presence of a 0.1 m-wide gap between the wall separating the Western and the Eastern rooms (B in *Fig. 4*) indicates that the wall of the Western room possibly was constructed using supporting wooden beams. After the construction of the walls of the Western room, a central hearth foundation was constructed (C in *Fig. 4*), consisting of small stones, 0.07 to 0.21 m in size, set out before being covered by a floor-like clay surface.

Seemingly at the same time, the Eastern room (D in *Fig. 4*) was reconfigured by a raising of the floor through the addition

⁷ Vida & Völling 2000; Vroom 2005.

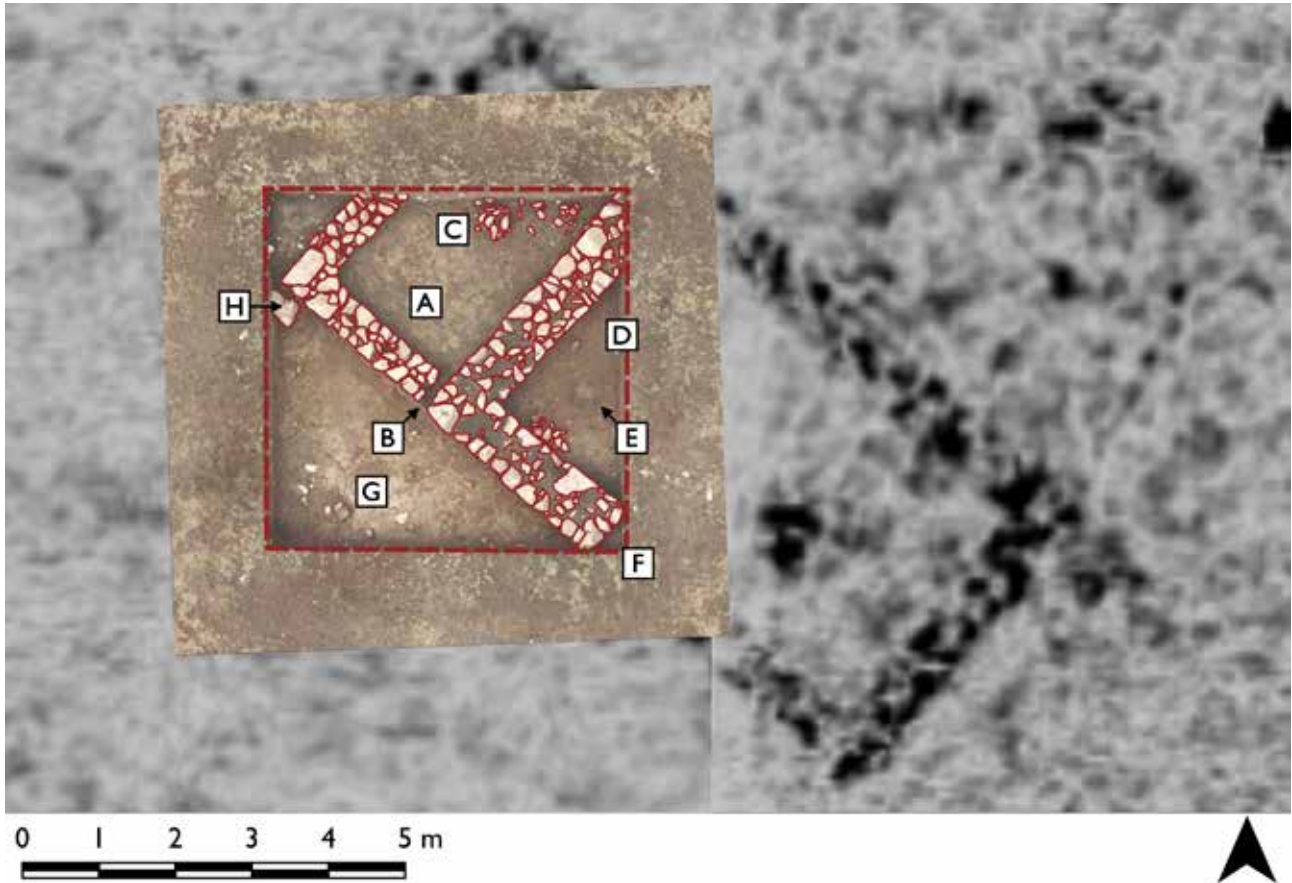


Fig. 4. Orthographic photomosaic of Trench 1 (trench extent marked with dashed red line, drawn architecture in unbroken red lines), superimposed on ground-penetrating radar plot. A: Western room. B: Gap in south-western wall of Western room. C: Hearth in Western room. D: Eastern room. E: Storage pit (?) in Eastern room. F: Door opening in south-western wall of Eastern room. G: Destruction layer outside building. H: Single stone, possibly belonging to older structure. Plots, drawing, and photomosaic by R. Potter and R. Rönnlund.

Table 2. Context groups and contexts in stratigraphical order including the chronological span of finds.

Group No.	Description of group	Site phase	Context nos. belonging to group	Chronological span of finds from contexts in group
1	Topsoil affected by modern activities	Modern land-use	1001	Classical-Hellenistic, Late Roman, Modern
2	Topsoil reflecting Medieval and Early Modern land use	-	1002	Classical-Hellenistic, Late Roman, Late Byzantine, Early Modern
3	Disuse and backfill of Building 1	Phase 5	1003–1006, 1009–1010, 1014	Classical-Hellenistic, Roman, Late Roman, Early Byzantine
4	Last use of Building 1	Phase 5	1007, 1016	Classical-Hellenistic, Early Byzantine (8th century AD)
5	Construction of the Western room of Building 1 including floor levels and hardened outside surfaces	Phase 5	1008, 1011–1013, 1017–1020, 1022, 1026, 1030	Classical-Hellenistic, Roman, Late Roman
6	Ground level or levelling deposit on top of which the Western room in Building 1 was constructed	Phase 4	1015, 1021	Classical-Hellenistic, Roman, Late Roman, Early Byzantine
7	Construction of the Eastern room in Building 1	Phase 4 (?)	1023–1024	Early Byzantine (?)
8	Destruction level (possibly older than the construction of Building 1)	Phase 3	1025, 1027–1028	Classical-Hellenistic, Roman, Early Byzantine (6th century AD)
9	Indication of underlying building	Phase 3 (likely constructed during Phase 2A/B)	1029	-



Fig. 5. In situ 8th-century AD “Slavic” ware cooking vessels in hearth (at C in Fig. 4). Photograph by R. Rönnlund.

of a levelling deposit, followed by the construction of a floor surface into which a circular storage pit was cut (E in Fig. 4). The construction level of the Western room of the building contained only a few fragmented sherds of pottery, but the underlying ground surfaces (Group 6 in Table 2) indicate a *terminus post quem* of the Early Byzantine period, and that the construction likely took place between the 6th and the 8th centuries AD.

The contexts of this last period of use of **Building 1** could be traced (Group 4 in Table 2) as located underneath the backfill deposits but on the floor surfaces of the building. These contexts are represented by the burnt backfill of the storage pit, and sherds of two cooking vessels placed on top of a charred layer representing the last use of the hearth in the centre of the Western room. One of the cooking vessels (Fig. 5), in 8th-century AD “Slavic” ware,⁸ suggests with its *in situ* location that the abandonment of the building might have been a sudden event.

At present, the more precise date of construction of the walls of the Eastern room (Group 7 in Table 2) cannot be established, but the construction of the walls and stratigraphy indicates a Late Roman or Early Byzantine construction. The walls of the Eastern room are between 0.67 and 0.77 m wide, consisting of at least four courses of stones of 0.15 to 0.5 m in size. These are set in two rows with their straightest sides facing outwards, with smaller rubble fill set in between, creating a room with the interior dimensions of 6.0 × 3.2 m (as perceived from the ground-penetrating radar results). Due to the relatively great width of the preserved walls, it is likely that they are set inside a foundation trench, but this level was not

reached during excavation. The dimensions of the foundations further suggest that they were built to carry the weight of substantial mudbrick walls of a building with possibly more than one storey. At the south-eastern corner of Trench 1, the edge of the doorway belonging to the original construction phase of the Eastern room was discovered (at F in Fig. 4).

On a stratigraphically lower level than the wall of the Western room, a destruction level with finds mainly from the first half of the 6th century AD was discovered (G in Fig. 4; Fig. 6; Group 8 in Table 2). The destruction level is possibly cut by the foundation of the Eastern room, but this can as of present not be proven conclusively. Only the top-most of the destruction layers was excavated, containing large fragments of undisturbed but broken pottery (including 6th-century AD red-slip ware from central Greece),⁹ storage vessels such as *pitthoi*, and large pieces of horizontally deposited roof tiles indicating a possible collapsed roof.

Whereas the deepest level of the foundations of the Western room walls were found on top of the destruction layers, the deepest level of the foundations of the Eastern room were not reached during the 2021 excavations. The stratigraphical position of the foundations of the Eastern room are thus not definitively established, and further excavation at the location is consequently needed.

On a lower level than **Building 1**, a large single stone was found protruding through the lowest excavated layers of the trench (H in Fig. 4; Group 9 in Table 2). The stone was set on its side with a flat long edge towards the south-south-west, which possibly makes it part of an exterior wall of another building (unnamed). This putative wall appears to be on the same general alignment as the Phase 2A/B urban grid seen in the earth resistance plot (Fig. 3), which would make it likely to have been originally constructed in the Classical-Hellenistic period.

INTERPRETATION OF REMAINS OF BUILDINGS IN TRENCH I

The excavation of Trench 1 has revealed evidence of three discrete phases of building activity of which the latest constitutes a reconfiguration of an existing building (**Building 1**). The stratigraphical evidence, however, only indicates the end of use for the building phases.

The scant remains of a possible building at the lowest-reached stratigraphical level could relate to the building activity of the Classical-Hellenistic period (Phase 2A/B) or possibly the Roman period (Phase 3). The existence of such a building is only inferred through the location of a large stone in a position that matches with the Classical-Hellenistic street-grid as discernible in the magnetic and earth resistance plot.

⁸ Vroom 2005, 48–49; Vionis 2018.

⁹ Vroom 2005, 40–41.

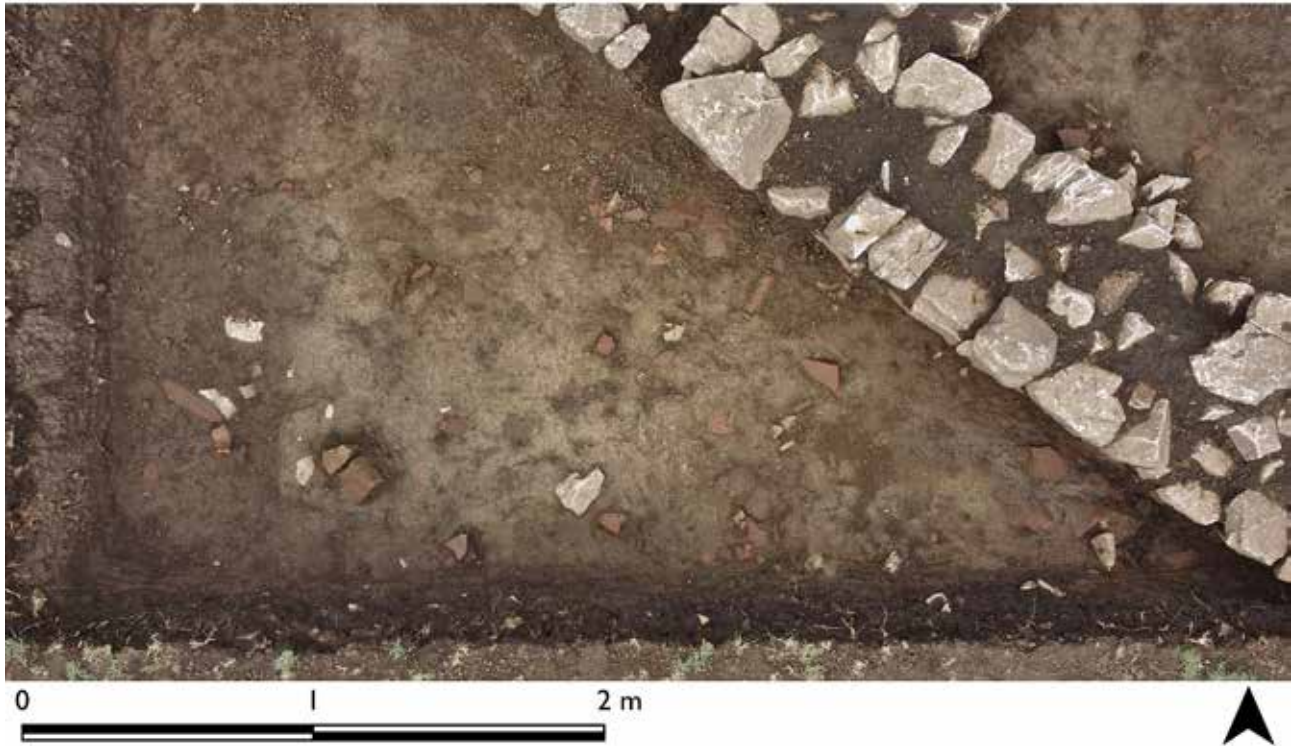


Fig. 6. Detail of destruction layer (marked as G in Fig. 4, Group 8 in Table 1) with embedded vessels and tile. Photograph by R. Rönnlund.

Judging from the building technique and stratigraphic depth, a single-room building (**Building 1**) with a wide entrance was later constructed at the location, following a different alignment to the Classical-Hellenistic street-grid of Phase 2A/B. This rather stout building, which possibly had more than one storey, was likely built in the 6th century AD, and would consequently relate to the Justinianic refortification of the site (Phase 4).¹⁰

Through the addition of the Western room at even a later point in time, **Building 1** was altered from its original shape. The large foundations of the walls of the Eastern room were possibly only used to support a thatched single-storey building with mudbrick walls set in a wooden frame. The internal structures and finds indicate that **Building 1** constituted either an auxiliary building or a house during its last period of use. However, further excavations are needed in order to understand whether **Building 1** was freestanding or part of a larger complex of buildings. The identified date of the final use of the building indicates settlement activity in the Patoma area after the abandonment of the Justinianic fortifications (Phase 4), which implies that a new chronological phase—Phase 5—should be added to the site at Vlochos, corresponding to the 8th century AD.

¹⁰ Vaïopoulou *et al.* 2020, 47–52.

SUMMARY OF POTTERY FOUND IN TRENCH 1

The ceramic material from Trench 1 evinced a wide range of material, dating from the Classical-Hellenistic to Late Medieval periods. With the exception of those assemblages in the contexts belonging to the destruction layer and last use of **Building 1** (Group 4 and 8), respectively, the pottery included diagnostic black-glazed ware of the Classical-Hellenistic period, alongside an assortment of plain ware jugs and pots, amphorae, and cooking pots of the Classical-Hellenistic through to Early Byzantine periods in all contexts. The material was generally extremely fragmentary, reflecting the likely action of erosion and wash from the hillside and the overall disturbed nature of the Patoma area. Plain-ware and amphorae forms tended towards the Roman-Early Byzantine period. Only a few pieces of 12th- and 13th-century AD glazed ware were in evidence. There was a general lack of diagnostic fine ware forms from the Roman-Early Byzantine period, including a noted absence of African Red Slip, usually ubiquitous for a site occupied during the Early Byzantine period. Contexts of Group 4 and 8, however, showed a much greater coherence than the rest. The sherds in the destruction layer (Group 8) were far less fragmentary and included large diagnostic pieces of a Central Greek red slip-ware plate (also known as Askra ware, probably produced at one of the local centres, possibly Thessalian Thebes at modern Nea Anchialos), notable for

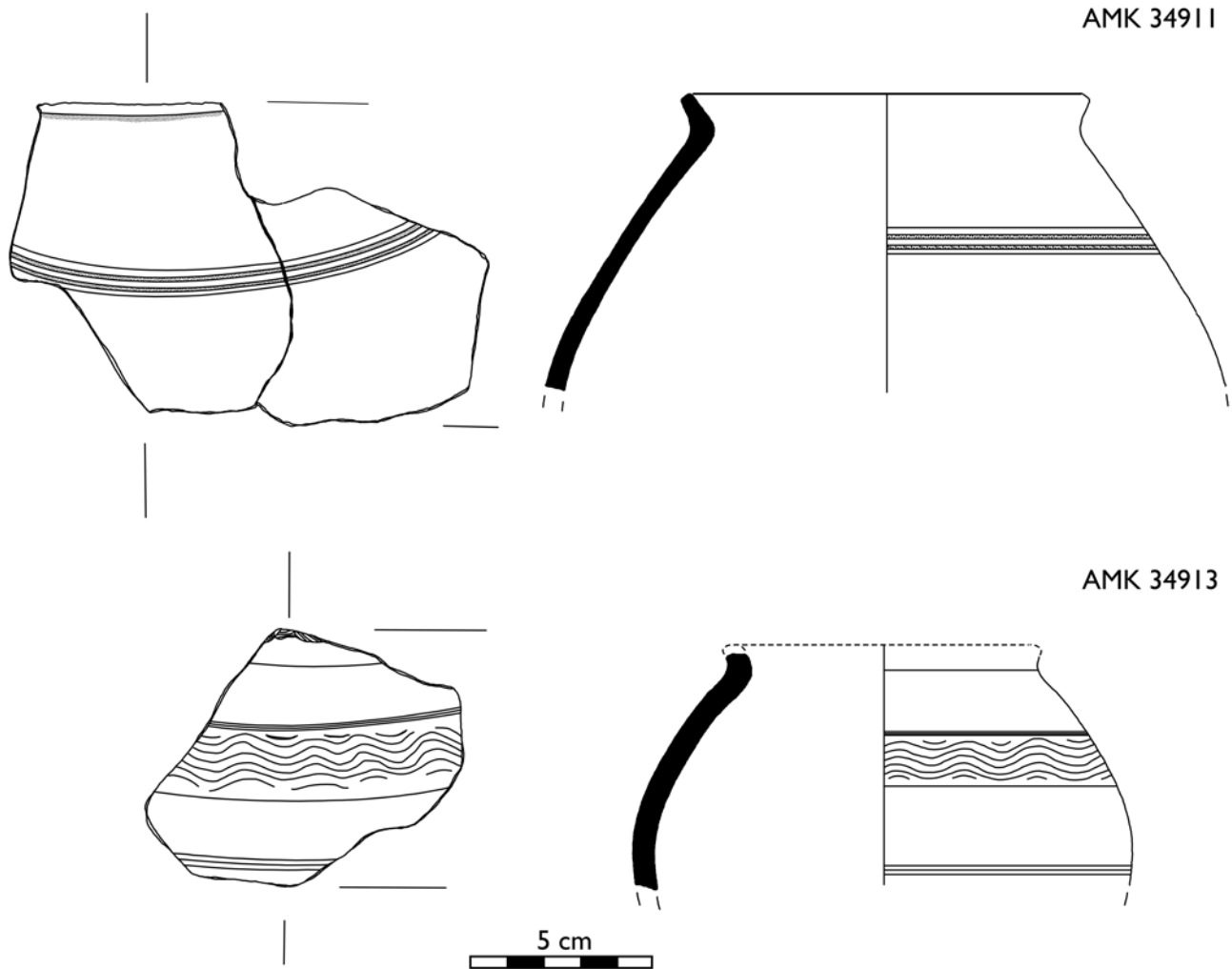


Fig. 7. 8th-century AD “Slavic” ware vessels, found in hearth at C in Fig. 4. Drawings by L. Tasiopoulou and R. Rönnlund.

the dipped slip treatment not extending to the bottom of the piece.¹¹ The context also included a complete Late Roman Amphora 1 handle, which, alongside the Askra ware, suggested a 6th-century AD date for the assemblage. The contexts with the last use of the building (Group 4) included large fragments of cooking pots found *in situ* in a hearth (Fig. 7),¹² identified as “Slavic” ware based on their blackened exterior, flaring rim, poor fabric and wavy and straight incised decoration on the shoulder. The slow-wheel manufacture, rather than hand-made, suggests a tentative date of the 8th, rather than the 6th or 7th centuries AD.¹³

¹¹ Petridis 1997, 693; 2007, 5; 2009; Vroom 2005, 41.

¹² For parallels, see Vida & Völling 2000; Zachariadis 2014, 713, fig. 15.

¹³ The existence of “Slavic” ware—contrary to its name—in archaeological contexts cannot be directly linked with local Slavic communities. However, the northern Western Thessalian plain is the area with the

Earth resistance survey in the area of Patoma, Vlochos

Following the successful pilot of earth resistance survey in the western half of the Patoma area in 2020,¹⁴ a wider programme was initiated in the autumn of 2021. The survey was targeted on the area covered by the snow marks (at B in Fig. 1, see below). The pilot work highlighted the potential of earth resistance in identifying remains both shallow and deep, as confirmed by the 2021 excavation, which exposed resistivity anomalies be-

highest concentration of Slavic toponyms in Greece, indicating a Slavic presence in the area at some point, see Koder 2020, 86–87. “Slavic” ware pottery is found all over the Greek mainland, and has previously been identified in Thessaly at Demetrias, close to modern Volos, see Vida & Völling 2000, 14–15.

¹⁴ Vaïopoulou *et al.* 2021, 59–60.



Fig. 8. Results of earth resistance survey (within red lines, black indicates high resistance and white lower resistance) in 2021, superimposed on magnetometry plot (2016–2018) and orthographic aerial photomosaic. Earth resistance plots shown at varying ranges. Areas A, B, and C are +3 to -3 Ω . Area D is +10 to -10 Ω . Plot by D. Pitman.

tween the depths of *c.* 0.20 and 0.75 m. The depth of archaeological features also correlated with the intensity of the main rectangular anomaly identified in 2020. The aim of the 2021 geophysical work was consequently to differentiate between the potentially shallow, Late Roman material highlighted in the crop- and snow-marks, and the deeper, Classical-Hellenistic remains. In total an area of 1.4 hectares was surveyed at a resolution of 50 cm (transects at 50 cm intervals with points recorded every 50 cm). Two instruments were used, a Geoscan RM15 and an RM85, which were both set to a probe width of 50 cm, giving 1,600 data points per 20 × 20 m grid. The data were processed in the TerraSurveyor software using a standard approach that involved “edge-matching” the grids before applying a high-pass filter to remove geological background noise.¹⁵ The data were then interpolated to smooth the plots, and clipped to between 1 and 2 standard deviations. The ex-

tent of clipping was dependent on the range of variation in any given plot and was done to a level that revealed the maximum range of structured variation.

Earth resistance is a technique that is very susceptible to changes in soil conditions, most notably to soil moisture, with too little moisture rendering the technique unusable, and too much moisture causing interference and a reduction in the range of recorded data.¹⁶ The 2020 pilot survey was carried out on the dry end of this spectrum, and yielded positive results despite the difficulty in maintaining a current in the near-dry soil. The timing of the 2021 season meant that conditions were less predictable, with significant rainfall just before the start of the field season. There is a notable “drying effect” in the data (*Fig. 8*), with work in areas A–C being carried out while the ground was fairly saturated. The level of resistance variation in these areas was so narrow that the data needed to

¹⁵ Gaffney & Gater 2003, 104.

¹⁶ Gaffney & Gater 2003, 27.



Fig. 9. AMK 34837. Antoninianus of Aurelian, surface find, area of Patoma. Photograph by Ephorate of Antiquities of Karditsa.

be significantly cropped in order to see any structural variation. This was much noisier data than was hoped for, and may be obscuring subtle remains that would be visible in drier conditions. That said, there are still clear structural remains visible in these areas. Work in area D (in Fig. 8) was carried out as the ground became drier and there is significantly more contrast in the data, leading to clearer imaging of structural remains.

The most visible structure in area A (in Fig. 8) is the defensive wall with associated tower foundations. The area outside the wall was very low in resistance, suggesting a deeper depth of soil, potentially a ditch or deeper area immediately outside the stone foundation. Inside the wall are a series of structures not visible in the magnetometry or ground-penetrating radar. This appears to be a line of buildings built up against the wall around the southernmost visible tower.

Area B (in Fig. 8) was targeted in an area in the crop-marks that contained large-scale structural remains. Unfortunately, the soil moisture meant that this image lacked the necessary range of response to see the likely shallow structures visible in the crop-marks. The data does show some variation that largely mirrors the data identified in the magnetometry. Similarly, area C (in Fig. 8) was targeted on an area of interest, yet the range was too little to see any clear structural remains.

Area D (in Fig. 8) contained more structured variation in the earth resistance data. The data show the complexity of the **Kierion gate**, a monumental courtyard gate in the southern fortifications in much more detail than the magnetometry, highlighting the internal divisions within the gate.¹⁷ The latter suggests that the gate was reused in the later phases of the site, as it was not clearly truncated by a later defensive wall. The line of the defensive wall in the south of the plot (the eastern side of the gate) may possibly have been changed in later periods as

¹⁷ Vaiiopolou *et al.* 2020, 43–44. The outlines of the buried remains are very similar to the excavated early 3rd century BC south-east gate at New Halos in Thessaly, indicating a possible contemporaneous date of construction, see Reinders *et al.* 2014, 61–96.

its shows what may be two intersecting wall-lines leading to the gate. The earth resistance data also show that the Late Roman (Phase 3) wall also truncates the earlier, Classical-Hellenistic avenue-like street of Phase 2A/B. It was not conclusive in the magnetometry plot whether this was the case, but it does seem that the wall continues over the line of the earlier street surface.

The 2021 earth resistance survey further shows the potential of the 2020 pilot. However, it is clear that the method requires a very narrow moisture range to yield the best possible results at Vlochos. It is likely that if the areas were resurveyed in drier conditions, they would contain a significantly wider range of recorded variation and, as such, reveal more structures. That said, the data has added to our overall understanding of one of the more complex areas of the site. More work, in optimal conditions, will likely contribute significantly more to our understanding of the archaeology of the Patoma area.

Additionally, as observed during the course of the work, the ground surface within the Phase 3 fortification contains much pottery of the Late Roman period, and the suggested 3rd-century AD construction date of the Phase 3 habitation at Vlochos is supported by the chance surface find of a coin of Aurelian from the area just west of the fortification (Fig. 9).¹⁸

RGB AND NEAR-INFRARED AERIAL PHOTOGRAPHY OF THE AREA OF PATOMA, VLOCHOS

As has been previously reported,¹⁹ but not discussed in more detail, snowy weather in Thessaly in January 2019 made visible the outlines of parts of the Roman settlement in the eastern part of the Patoma area (at B in Fig. 1) as patches in the melting snow. Such snow-marks have to our knowledge never before been recorded in Greece, and are rare even in colder parts of the world.

The rectified orthomosaic of the collected aerial photographs taken at this point in time (Fig. 10) shows several interesting features previously unknown or only partially discernible in the magnetometry plot.²⁰ As can be seen in the interpretation, some features can be traced in great detail—such as the large double-courtyard building (at A in Fig. 10), or the smaller structures south of a street (at B in Fig. 10)—whereas others are

¹⁸ AMK 34837. Found at co-ordinates (GGRS87) 335210/4374217. The coin, an antoninianus of which *c.* 60% is preserved, belongs to the type minted in Serdica (modern Sofia in Bulgaria) in AD 274–275. Obverse: bust of Aurelian facing right, legend IMPAURELIANV[SAVG]. Reverse: At left, woman standing facing right (presenting wreath to Aurelian?) with star at centre, legend RESTIT[VTORBIS]. Mintmark KAB. Cohen 1861, 147, type 177; Sear 2005, 427, type 11592.

¹⁹ Vaiiopolou *et al.* 2020, 19–20.

²⁰ Vaiiopolou *et al.* 2020, 25, fig. 18.



Fig. 10. Rectified aerial photomosaic of January 2019 snow-marks (upper image), and superimposed interpretation (lower image). Curving white lines are tractor and car tracks in snow. A: Large double-courtyard building. B: Area with smaller buildings south of street. C: Area north of *Kierion gate* with unclear structures. D: Small open square. E: Possible tower gate in Phase 3 fortified enceinte. F: Probable tangential gate. G: Structure on different alignment to surrounding structures. H: Palaeo-stream in fields south of the archaeological site. Plots by L. Shaw & R. Rönmlund.

more nebulous in shape—such as the area north of the courtyard gate (at C in *Fig. 10*). Generally, the settlement appears to have been arranged into a dense, somewhat irregular street-grid, with *insulae* or housing blocks separated by narrow streets. A small open space (at D in *Fig. 10*) probably constitutes a square, with streets opening towards the east and south-west.

Two features, which are too noisy within the magnetometry results to interpret, could possibly be interpreted in the snow-marks as gates in the Phase 3 enceinte, one smaller at the north-eastern corner (at E in *Fig. 10*) and a larger, tangential gate at the chapel of Ayios Modhestos (Άγιος Μόδεστος, at F in *Fig. 10*). At present, however, they do not appear clearly enough for any definite identification.

An interesting feature appears just north of the Classical-Hellenistic avenue-like street (at G in *Fig. 10*), the outline of which is located on a different angle to the rest of the surrounding settlement. Whether this structure belongs to the Phase 3 Roman town or to the Justinianic Phase 4 resettlement is at present impossible to say.

Immediately south of the 1960's artificial irrigation canal, the clear outline of a palaeo-stream can be traced (at H in *Fig. 10*). This is also discernible in the 1940's aerial photographs of the area, and constitutes a waterway connecting the Enipeas (Ενιπέας) and Apidhanos (Απιδανός) rivers to the east with the Kalendzis (Καλέντζης) river, c. 4 km to the north-west.

The snow-marks are most likely the result of near-surface masonry and stonework differentially thawing the snow as the ground surface was warmed by the sun. Stone and masonry have different thermal properties to the surrounding soil, by absorbing and releasing more heat in localized areas. The consequent melting of the snow produced the unique (and temporary) snow-mark phenomenon, indicating the presence of archaeological remains close to or at the ground surface.

During 2021, a high-resolution aerial survey was undertaken using a DJI Mavic 2 Pro Small Unmanned Aerial System (SUAS, referred to subsequently here as a drone) fitted with a Sentera Near infra-Red (NiR) sensor. The simultaneous capture of both traditional RGB (or true-colour) and NiR imagery facilitates the creation of Normalized Difference Vegetation Indexes (NDVI), which can be used as a proxy for the presence of buried archaeology.²¹ NDVI is a standardized method used to measure vegetation health, and is more usually applied to monitor arable crops and forest regions over large areas and at coarser spatial resolutions. However, due to the increasing availability of drones to capture data at finer spatial resolutions, the usefulness of its application in archaeological prospection is becoming more apparent. The basic premise of NDVI is that it shows vegetation health based on nutrient

and moisture conditions in the soil. Its use in archaeological prospection is based upon the principle that buried archaeology will affect the underlying soil conditions and thus will affect plant growth and health.

The drone was flown at an altitude of 60 m above the Patoma area, covering approximately 18 hectares of ground, broadly corresponding to the same area as the magnetometry survey of 2016–2018. A total of 396 true-colour (RGB) and 673 NiR overlapping photographs were captured during a flight time of 21 minutes. The individual images were processed separately in the Agisoft Metashape software to create one true-colour and one NiR orthophotograph, each with a pixel spatial resolution of 0.05 m. These images were combined in ArcGIS to produce one multiband orthophotograph, which was then processed for NDVI in the ERDAS Imagine software. The resulting image was reimported back into ArcGIS for comparison with the magnetometry and other field survey data (*Fig. 11*).

In the eastern half of the Patoma area, the results of the NDVI analysis are broadly similar to those seen in the snow-marks discussed above, allowing for a much more detailed understanding of the Roman settlement. *Insulae* and the sides of narrow streets can be clearly identified along with the wall on the northern and eastern sides of the town. As noted above from the snow imagery, the overall plan of the town appears to be slightly irregular, which was not as apparent in the magnetometry data. Elsewhere, in the western half of the Patoma area, fewer archaeological features can be identified in the NDVI data, although the results from the magnetometry survey continue to show the street alignments and town walls.

The contrast in the identification of archaeological remains across the whole of the Patoma area is most likely due to the depth of buried archaeology. In the western half of the area (not depicted), the archaeology is probably buried more deeply, therefore the surface vegetation is less affected by subsurface changes in soil moisture and nutrient availability. However, in the eastern half, the archaeology was either at ground surface level, or no deeper than 20 cm. Therefore, there was less soil from which the overlying vegetation could draw moisture and nutrients, with a corresponding loss of health in the vegetation index.

The interpretation of the snow-marks and NDVI data corresponds closely to the geophysical results of the 2016–2018 and 2020–2021 seasons. Although the NDVI data does not add much detail to that seen in the snow-mark imagery, the technique has been proven to indicate the presence of buried, near-surface archaeological remains. As the snow-marks and NDVI results most likely represent buried architecture, they provide a unique opportunity for cross-method comparison and allow for the identification of future excavation targets. Furthermore, as discussed above, the excavation data allow for the geophysical and drone surveys to be calibrated and

²¹ Bennett *et al.* 2013, 220–236; Moriarty *et al.* 2019, 33–46; Hill *et al.* 2020, 1–21.

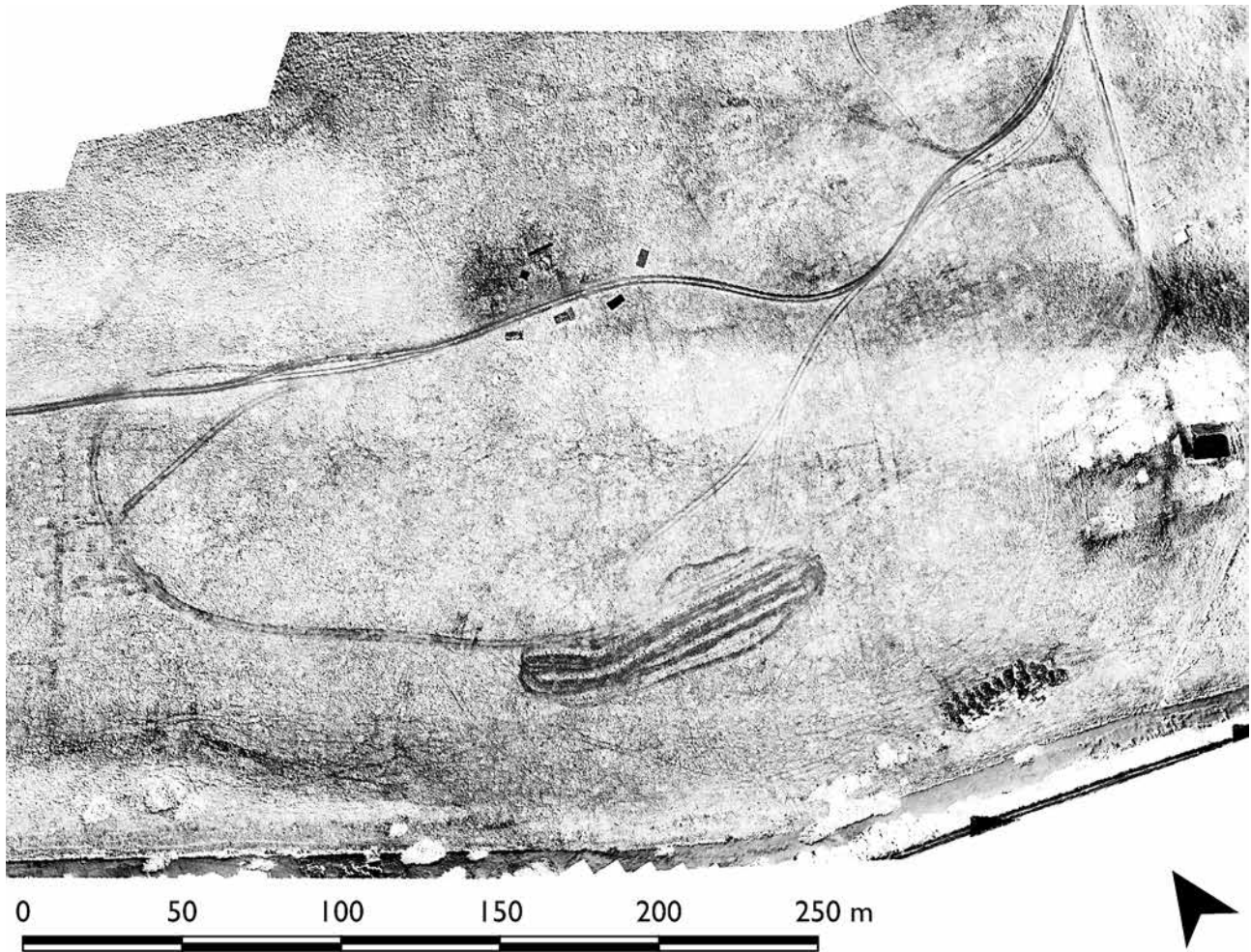


Fig. 11. NDVI image of eastern side of Patoma. Light colours indicate healthy vegetation, dark colours indicate unhealthy vegetation. Plot by H. Manley.

interpreted in more detail. Assessing the depth of the buried archaeology in the western half of the Patoma area will allow the NDVI data to be further understood and improve the method as a tool for archaeological prospection.

Possible bridge structures at Patoma, Vlochos

At the time of the geophysical prospection in the eastern half of the Patoma area, it became evident that the small irrigation canal that borders on the ancient city site in the south was relatively empty of water. Previous surveys of its banks had not revealed any archaeological remains apart from the large stones from the fortifications that had been displaced and pulled aside as the canal was excavated in the 1950s–1960s. The lower water level allowed a closer scrutiny of the banks to

be conducted, which revealed the remains of at least two stone constructions, the foundations of which stood out of the soils on both sides of the canal. A small stream ran at the location prior to the construction of the canal, as can be discerned in 1940's aerial photographs, and the soil- and crop-marks of several palaeo-streams can be seen in present-day aerial photographs.

The most well-preserved of the constructions consists of four stone-packings with large, cut stones placed on top. These are found two on either side of the canal, giving the impression of being foundations for a superstructure with a width of *c.* 8.5 m. The reconstructed alignment of the four foundations shows that they are probably the abutments of a bridge constructed for a road leading out of the **Kierion gate** in a south-western direction (Fig. 12).²² The width of the possible bridge corresponds to the

²² Vaïopoulou *et al.* 2020, 43–44.



Fig. 12. Orthographic aerial photomosaic with superimposed magnetometry plot, at D in Fig. 8. Late Roman fortifications and reconstructed alignment of possible bridge structure in red. Plot by R. Rönnlund and D. Pitman.

width of the central avenue-like street that traversed the Classical-Hellenistic city, which together with the location outside the major gate in the contemporaneous fortifications suggests that the bridge might belong to the Phase 2A/2B at Vlochos. However, as the courtyard gate appears to have been reused in the Roman Phase 3, it is at least possible that the bridge might have been reused or even reconstructed at this time.

The second stone construction is of a more modest size, and is located *c.* 420 m downstream or north-west of the above-mentioned first structure.²³ No larger stones are found at the location, and only a single stone-packing on each side of the canal can be seen at present. There are no obvious openings in the adjacent fortification wall, which is *c.* 40 m north-east of the location, and it is consequently less certain that the stone-packing belongs to a bridge.

Ancient bridges are relatively rare in the archaeological literature for the Greek mainland. Among the more well-known can be mentioned the fully excavated Classical-period bridge over the Kephissos river at modern Egaleo, Athens.²⁴ In western Thessaly, a Late Antique bridge has been found at the village of Yelanthi just north-east of the supposed site of ancient Gomphoi.²⁵

²³ Co-ordinates (GGRS87): 334987/4374244.

²⁴ Tsigoti-Drakotou 2001–2004, 265.

²⁵ Hatziangelakis 1994, 330–331.

Possible burial(s) in the area of Patoma, Vlochos

During the geophysical work in 2016–2018, a row of shallow pits was noted in the area of Patoma (A in Fig. 13).²⁶ These were pointed out to us by locals as where tombs had been found at some point, which suggestion was supported by the fragmentary pieces of a stone sarcophagus found in and immediately around one of the pits (B in Fig. 13). Whether all of the six discernible pits represent burials (or merely the repeated attempts by looters to locate further tombs) cannot be asserted at present.

Carved upon one of the slabs is the inscription “1940”, which indicates that the looting took place long before the site was protected by official declaration. This is also indicated by the current shape of the pits, having eroded to mere depressions in the ground.

As can be seen in the magnetic plot of the area (Fig. 13), the possible burial(s) (at A in Fig. 13) are located within the Classical-Hellenistic intramural urban landscape of Phase 2A/B. The pit with the sarcophagus fragments (at B in Fig. 13) is in the middle of the large avenue-like street that traversed the ancient city. The burial(s) thus belong to a later phase of habitation, and quite probably to the Phase 3 Roman town 160 m to the south-east. Late Ro-

²⁶ Vaïopoulou *et al.* 2020, 62–63.

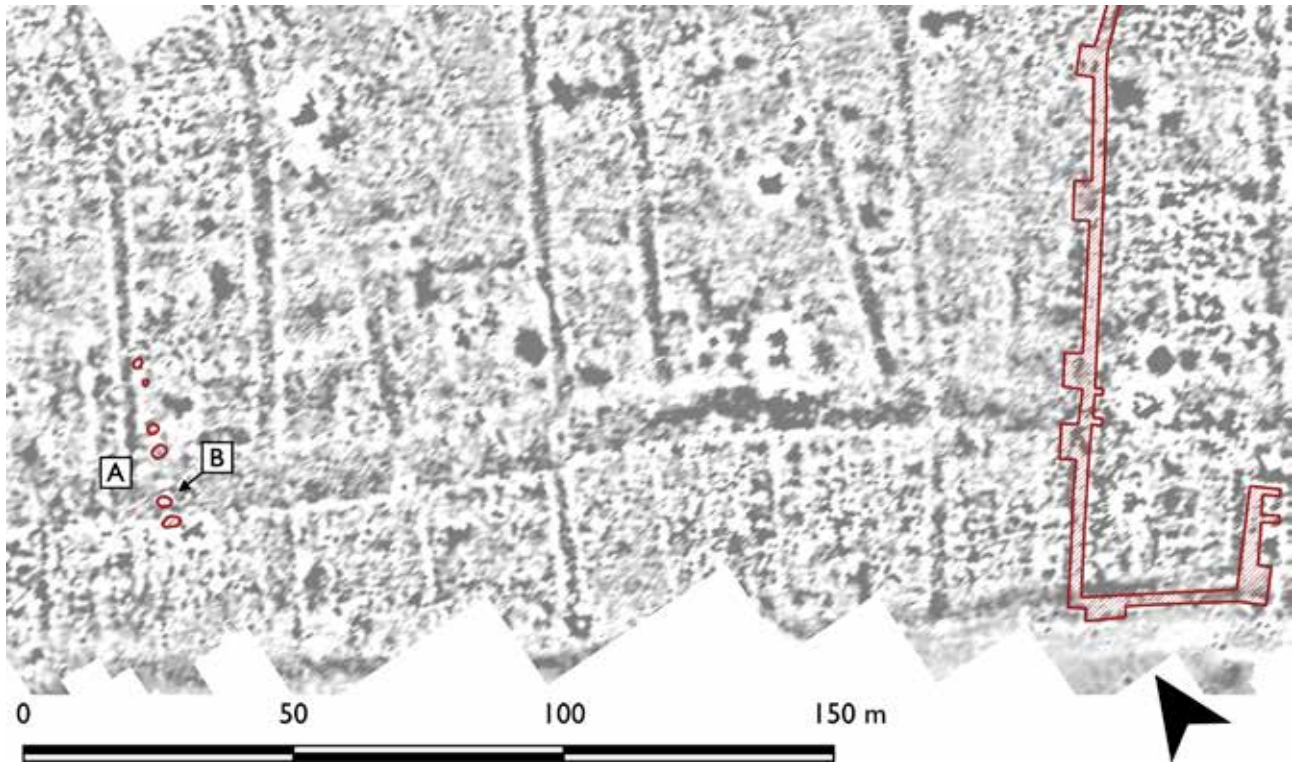


Fig. 13. Locations of possible burials superimposed on the magnetometry plot (most of which showing features of the Phase 2A/B Classical-Hellenistic settlement), area just north of D in Fig. 8. A: Robber trenches. B: Robber trench with sarcophagus fragments. The course of the Phase 3 Roman fortifications marked in red to the right. Plot by D. Pitman and R. Rönnlund.

man and Early Byzantine burials dug down into Classical-Hellenistic contexts are not rare in Thessaly, with examples noted at Farsala (ancient Pharsalos),²⁷ Paliogardhiki Petroporou (ancient Pelinna?),²⁸ and Episkopi Mouzakiou (ancient Gomphoi?).²⁹

Roman and Early Byzantine material from the Gekas quarry spoil-heaps

As outlined in a previous report,³⁰ the spoil-heaps left by the 20th-century quarrying activities in the area of Gekas at the southern slope of Strongilouvouni hill (just north of A in Fig. 1) contained much material of nearly all periods of antiquity. Many of the finds retrieved through 2020 sieving opera-

tions are of the Late Roman or Early Byzantine period, indicating that the area of the quarry was inhabited during these periods. The abundant pottery (mainly coarse-ware vessels) is currently under study, but some of the more diagnostic non-pottery finds are presented here.

AE 128 (Fig. 14). Fragment of Laconian-type roof tile with stamp on upper side. 15.5 × 11.6 cm. Height of stamp: 2.9 cm, surviving length of stamp: 8.4 cm. Inscription: $\text{C}\omega\text{c}\iota\kappa\text{p}-|\acute{\alpha}\tau\omicron\upsilon$. The second line of the inscription is inverted. Date: Late Roman.

Two additional fragments of roof tiles (**AMK 18648**; **AE 36**) bearing the same stamp allows for a complete restoration of the inscription (Fig. 15).

AE 2 (Fig. 16). Fragment of Laconian-type roof tile with stamp on underside. 10.4 × 15.6 cm. Height of stamp: 3.4 cm, surviving length of stamp: 4.5 cm. Inscription: $[\text{C}\omega\text{c}\iota]\kappa\text{p}\acute{\alpha}\tau-|\omicron\upsilon$. The second line of the inscription is atop the final three letters of the first line. Date: Late Roman.

A second fragment of a roof tile with the same stamp (which, however, is too worn to give the first four letters) gives the full size of the stamp. As the stamp presented above (**AE 128**) bears a similar inscription, the full inscription can be restored as sug-

²⁷ Gallis 1973/1974, 567; Karapanou 1996, 377–379; Katakouta 2006, 635–636.

²⁸ Hatziangelakis *et al.* 2011, 571.

²⁹ Hatziangelakis 1987, 264–265; 1994, 329; 1995, 380; 1997, 473; 1998, 448.

³⁰ Vaïopoulou *et al.* 2021, 59–62.



Fig. 14. Late Roman stamped roof tile (AE 128). Scale in cm. Photograph by S. Ieremias.



Fig. 16. Late Roman stamped roof tile (AE 2). Scale in cm. Photograph by S. Ieremias.



Fig. 15. Traced drawing, joining fragments of roof tiles bearing same stamp. Scale in cm. Drawing by R. Rönmlund.

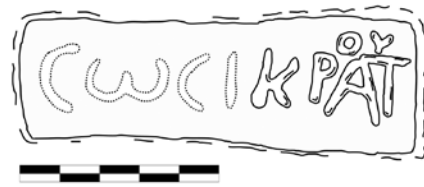


Fig. 17. Traced drawing, joining fragments of roof tiles bearing same stamp with restoration of lost letters. Scale in cm. Drawing by R. Rönmlund.



Fig. 18. African imitation lamp (AMK 18697). Scale in cm. Photograph by S. Ieremias.

gested (Fig. 17). Names in the genitive on roof-tile stamps have generally been interpreted as referring to the manufacturer of the tiles.³¹ The name Sosikrates is not uncommon on the Greek mainland, with five examples from Thessaly, but none of the

Roman period. It has not been possible to locate any parallels to these stamps,³² which based on the letter-shapes should probably be dated to the 3rd–4th centuries AD.

AMK 18697 (Fig. 18). Fragment of decorated lamp, terracotta. Maximum preserved length 8.5 cm. Possible cross-shaped decoration with concentric circles and shield-shaped detail. Belongs to the so-called African imitation group, possibly produced in Demetrias or Thessalian Thebes (modern Nea Anchialos). Date: 6th–7th centuries AD.³³

Just as with the red-slip ware found during the excavation (see above), the existence of ceramic material probably produced at the regional centres close to modern Volos indicate that the site was well connected within the trade-routes of the Early Byzantine period.

³¹ Intzesiloglou 2000.

³² There is a stamped roof tile of the Hellenistic period from the temple of Ennodia at Thessalian Melitaia bearing the inscription ΣΩΣΙ[-] (pers. comm. Lambros Stavrogiannis). Whether this should also be reconstructed as Σωσι[χράτου] is impossible to say, and the different chronological dates suggests that they are not in any way related.

³³ Petridis 2007, 52.

A late 2nd-century AD Latin inscription in the church of Ayios Charalambos, Palamas

The church of Ayios Charalambos (Άγιος Χαράλαμπος) is located in the neighbourhood (*machalas*) of Chandakli (Χαντακλή) in western Palamas (at C in *Fig. 1*). The church was constructed in 1838 according to a masonry decoration on the eastern façade.³⁴ Whereas most of the church is constructed in the local grey limestone, the corner stones and some of the decorative architectural elements are not. One of the stones used in the south-eastern corner, at a height of approximately 5 m above ground, appears to be of marble with pink striations or possibly pink granite, and contains on its front face a well-preserved inscription in Latin. The inscribed stone is known to the local inhabitants, who for long have interpreted it as a *milliarium* or milestone, but it appears never to have featured in any scholarly publication.³⁵

During the collection of data for a structure from motion (SFM) reconstruction, 190 photographs were taken using a Canon EOS R5 with a 28–70 mm *f*/2 lens set to 28 mm. An aperture of *f*/11 was used to ensure that there would be no depth-of-field issues. Due to the position of the stone, and the necessity to use a ladder and a monopod to collect the photographs, an ISO of 400 and a shutter speed of 1/400 was used to ensure that the photographs would be entirely in focus. Additionally, a scale card was used to ensure greater accuracy of measurements on the model.

The photographs were processed in the Agisoft Metashape software using the same methods that have successfully been used for rock-art analysis in the past as described elsewhere.³⁶ The resultant model was then exported as an .OBJ file and processed in the Autodesk Maya software to create a Virtual Reflectance Transformation Imaging file (vRTI) which allowed for a relit 2.5D representation of the surface as required (a digital frottage, right in *Fig. 19*). A digital elevation model (DEM) was also created in Agisoft Metashape and processed in ArcGIS Pro.³⁷

³⁴ Sdrolia 2007, 117 has 1837 as the date of construction.

³⁵ Not in the *CIL*, *L'Année épigraphique*, Decourt 1995, Decourt & Mottas 1997, or the Epigraphik-Datenbank Clauss/Slaby. A Greek (Thessalian dialect) 4th–3rd century BC inscription (not in *SEG* or Decourt 1995) with a dedication to Poseidon (Λούργχος Ποσει-|δοῦνι ὀνέθεικε), spoliated in the wall of the adjacent building of the Folklore Museum of Palamas (Λαογραφικό μουσείο Παλαμά), has been noted previously, see Intzesiloglou 1999, 116–117. We aim to further study this Greek inscription more closely in coming seasons.

³⁶ Horn & Potter 2019.

³⁷ Horn *et al.* 2019.

DESCRIPTION

Spoliated rectangular *stela* of what appears to be marble with pink striations or possibly pink granite. In its present location, the *stela* has been rotated 90 degrees clockwise from its original direction. Only the inscribed front face and underside of the *stela* are visible to a viewer (front face: *Fig. 19*). The topside is cut irregularly and has rounded corners. The upper half of the front face is smooth and contains a five-line Latin inscription. Part of the final letter of the first line has been removed or damaged. Below the fifth line are claw chisel marks. At 32.5 cm below the highest point of the topside and directly below the fifth line of the inscription is a round hole with diameter of 4.85 cm, possibly from secondary usage. The lower half of the front face is unworked.

DIMENSIONS

Height *c.* 70.3 cm (maximum); width *c.* 32.9 cm (maximum); height and width variable due to damage; depth not measurable at this time; letter height 2.33 (O)–4.75 cm (D).

MAJUSCULE

IMP COMMQ
DI-AVG PII FE
L POSITI PER
4 AVRELIVM I
ASONEM PROC

TRANSCRIPTION

(scil. Ex auctoritate) Imp(eratoris) Commo|di Aug(usti) Pii Fe|l(icis) positi per | Aurelium I|asonem proc(uratorem).

TRANSLATION

By authority of Emperor Commodus Augustus Pius Felix, set up by Aurelius Iason Procurator.

COMMENTARY

Lines 1–3: *Ex auctoritate* may be implied before *Imp(eratoris) Commodi*. Date will be *c.* AD 184/5–192, based on Commodus' title *Felix*, assumed *c.* AD 184/5.³⁸

Lines 4–5: The procurator Aurelius Iason is otherwise unattested. Possible *libertinus* given *nomen* and office.³⁹

³⁸ For the assumption of this title in *c.* AD 184/5, see, e.g., *RIC* III Commodus 91e, 97, 98Ad, 100; *AÉpigr* 1982, 932; *CIL* VIII 12027; *IRT* 28; *SHA Comm.* 8.1. Cf. Hekster 2002, 93.

³⁹ On imperial freedmen procurators, see Weaver 1965.



Fig. 19. Photogrammetric (SFM) models of Latin inscription in the church of Ayios Charalambos, Palamas. Orthophotograph (left), digital frottage (right). Photographs by R. Potter.

The inscription is probably a *terminus*, a boundary marker. There are comparable 2nd-century AD *termini* with *positi* and procurators from Mauretania Caesariensis and Numidia.⁴⁰ The *terminus* from Mauretania Caesariensis, a *terminus* from Macedonia from AD 120, and a *terminus* from Moesia Infe-

rior from c. AD 198 to 202 contain the *positi per* construction.⁴¹ Similar *termini* from the 2nd century AD contain *ex auctoritate* followed by either the reigning emperor's name or a procurator's name in the genitive.⁴² If the inscription is a

⁴⁰ *CIL* VIII 8369 (Numidia, AD 128), 21663 (Mauretania Caesariensis, AD 137). Cf. *CIL* III 12237 (Asia).

⁴¹ *AÉpigr* 1901, 52 (Moesia Inferior); *AÉpigr* 1924, 57 (Macedonia).

⁴² E.g., *CIL* III 749 (Moesia Inferior), 14406d (Macedonia), 14422,1 (Moesia Inferior); *CIL* VIII 8369 (Numidia), 21663 (Mauretania



Fig. 20. Kourtikiano vouno looking towards the west, as seen from Strongilouvouni. Photograph by R. Rönnlund.

terminus, it may indicate the presence of imperial property in the surrounding area.⁴³ Further investigation of the material of the *stele* and its contents will shed light on this remarkable inscription.

The sites on and around Kourtikiano hill, Metamorfofi

Some 3 km west of the hill Strongilouvouni and 500 m north-west of the village of Metamorfofi (Μεταμόρφωση, formerly Kourtiki/Kortiki, Κουρτίκι/Κορτίκι) is the hill Kourtikiano vouno (Κουρτικιανό βουνό).⁴⁴ This isolated limestone feature (Fig. 20) stretches 2.5 km on a general south-east to north-east alignment, with an average width of 1.1 km. The highest point of the hill (333 masl) is above a steep cliff in the south, from the point of which the ground slopes gently towards the north. Apart from a municipal water cistern, there are no

modern structures on the hill, which is a declared archaeological site as well as a protected natural reserve (καταφύγιο αγρίων ζώων).⁴⁵

Rescue excavations were conducted at the southern foot of the hill in 1966 at the Aspropetra (Ασπρόπετρα) area, which revealed a Byzantine building, tentatively identified with a church (at D in Fig. 1).⁴⁶ The architectural members of the building were allegedly removed to Metamorfofi in the years following, some of which can be found in the village churchyard.⁴⁷ Rescue excavations by the Ephorate of Antiquities of Karditsa in 2017–2019 at the south-eastern foot of the hill (at E in Fig. 1) revealed a large settlement of the Archaic to Classical period.⁴⁸

Local inhabitants in Metamorfofi showed the team several sites of interest in the areas on and immediately surrounding the hill, some of which are of interest for this article. In the flat area known as Kazarma (Καζάρμα), at the northernmost spur of the hill (at F in Fig. 1), are the foundations of a rectangular building constructed in small stones joined with mortar (Fig. 21).⁴⁹ The toponym means “barracks” in

Caesariensis); *ILBulg* 184 (Moesia Inferior); *AEpigr* 1965, 1, 2 (Thracia); *AEpigr* 1968, 469 (Macedonia); *AEpigr* 1984, 919 (Mesopotamia); *AEpigr* 1985, 729, 730, 733 (Moesia Inferior); *AEpigr* 2004, 1306 (Moesia Inferior).

⁴³ The closest candidate for a Roman period villa found in the vicinity of Palamas is at modern Sikies, some 10 km east of the present location of the inscription, where a late 2nd-century AD bath has been excavated: Hatziangelakis 2007, 31; 2012, 164.

⁴⁴ The official name of the hill, as marked on most maps, is Titanio (Τιτάνιο), a name derived from a local reading of Homer (*Il.* 735).

⁴⁵ Declaration YA 1154/4-3-1964, ΦΕΚ 91/Β/19-3-1964.

⁴⁶ Theocharis 1966, 255. The location is erroneously put as at Strongilouvouni hill. Co-ordinates (GGRS87) of the excavated structure: 330637/4375035.

⁴⁷ Information kindly provided to us by our local informants Messrs Konstantinos Panagos and Konstantinos Dandos of Metamorfofi.

⁴⁸ Tsiouka *et al.* forthcoming.

⁴⁹ Co-ordinates (GGRS87): 331237/4376767.



Fig. 21. The rectangular structure at Kazarma, looking towards the east. Strongilovouni at Vlochos at centre in background. Photograph by R. Rönnlund.

modern Greek, and is according to the locals a place where Ottoman soldiers were once stationed. This identification of the remains cannot be confirmed at present, but the building technique is clearly of Late Antiquity, the Middle Ages or the Early Modern period.

About 400 m north-east from the Middle Byzantine-Early Modern church of Metamorfofi tou Sotiros (Μεταμόρφωση του Σωτήρος) is Paliokklisi (Παλιοκκλησίσι), a location marked by a small shrine (*ikonisma*) at the side of the cultivated field (at G in Fig. 1).⁵⁰ The ploughed fields here contain Roman or Early Byzantine pottery and tile, indicating buried remains of habitation. The great alluvial accumulation at the site, however, has probably made that the remains are buried at a considerable depth, with the pottery and tile brought to the surface by deep ploughing. The villagers maintain that this is the original location of the church of Metamorfofi tou Sotiros.

The fortifications on the top of Kourtikiano hill (at H in Fig. 1) had been noted in 1882 by the travelling German epig-

raphist Habbo G. Lolling, who sketched the outlines of the walls and towers in his notebook (Fig. 22).⁵¹ None of the illustrations in this notebook have—to our knowledge—been published previously, but the sketch shows that the situation at Lolling's visit very much corresponds to that of the present day. Jean-Claude Decourt published two short descriptions of the remains on the hilltop together with some photographs, identifying the main phases of construction at the location.⁵² Decourt was reluctant to identify the remains at the hill as belonging to any *polis*, but interpreted the site as that of a fortress or *phourion*, probably serving as a temporary refuge for the inhabitants of the surrounding area.⁵³

⁵⁰ Co-ordinates (GGRS87): 331902/4376580. Showed to us by Mrs Evangelia Rita of Metamorfofi.

⁵¹ Lolling 1882, 56.

⁵² Decourt 1986, 373; 1990, 159–160.

⁵³ Decourt 1986, 374.

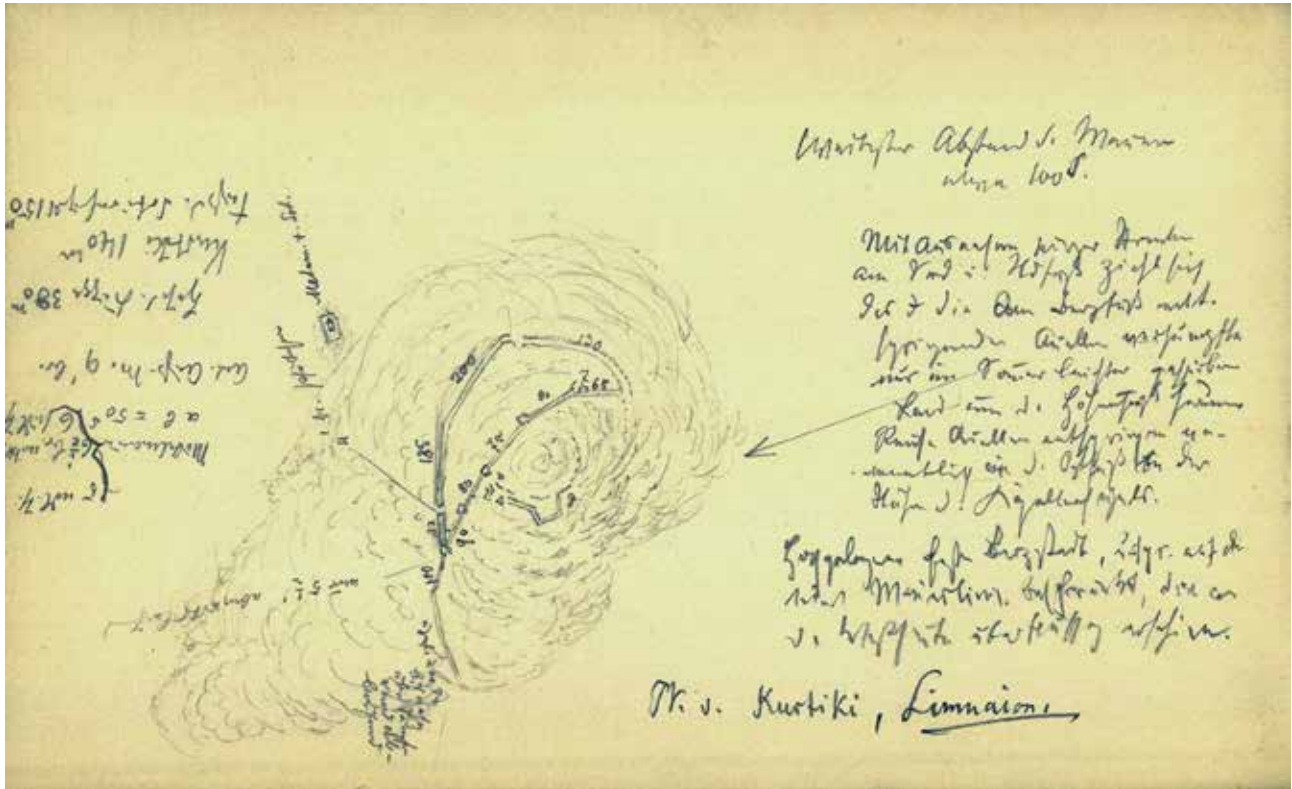


Fig. 22. Habbo G. Lolling's (1882, 56) sketch of the fortifications atop Kourtikiano hill. Note north arrow at centre right. Unpublished notebook kept in the archive of the German Archaeological Institute, Athens. D-DAI-ATH-Archiv NL-Lolling-R-2-C-6. CC BY-NC-ND 3.0. Available online: <https://arachne.dainst.org/entity/6143566>.

Lolling and scholars after him identified the location with Limnaion,⁵⁴ a place mentioned only in Livy (36.13–14), which Decourt puts at Strongilouvouni.⁵⁵ The remains at Kourtikiano hill, however, cannot with certainty be identified with any ancient toponym.

The architectural survey conducted in the autumn of 2021 confirmed Decourt's identification of several phases of fortifications on the hilltop (Fig. 23), as well as Lolling's general outline of the remains.⁵⁶ The earliest phase of fortification is a wall in slightly worked polygonal and pseudo-trapezoidal masonry (in black in Fig. 23; Fig. 24), which appears originally to have encompassed the whole hilltop. Currently, the preserved wall is in total c. 395 m long, but must have originally been close to 640 m, encompassing a 2.4-hectare area. This enceinte is mainly preserved in the north, north-east and east, with the south-western section nearly completely gone, probably due

to later building activities and the quite steep terrain at the location. There are no towers in the wall trace. A small gate at the easternmost point in the wall and a small postern in the north-west allowed access to the area. At the inside of the wall are two features which appear to be small sets of steps, built into the face of the wall. The masonry, the general outline of the wall-trace, and the lack of towers suggest an early Classical date for the fortifications, which should possibly be identified with a small hillfort. Some fragments of black glaze pottery were found on the ground surface within the enceinte, probably relating to this phase of fortification.

On the highest point of the hill are the remains of a circular fortification (in red in Fig. 23), which has been severely stripped of stones for the construction of later fortifications (see below). This enclosure must originally have been rather small, probably not more than 0.7 hectare in size, with a circumference of c. 100 m. Four equally spaced towers are preserved in the enceinte, indicating an original number of six. The towers are semi-circular (5.8 m diameter, protruding 3.7 m) and placed on top of rectangular platforms (7.8 m wide, protruding 5.5 m). At least one of them (**Tower 2**) had an internal semi-circular chamber accessed through a narrow doorway (0.8 m wide, 1.5 m long) in the inner wall. The ma-

⁵⁴ Limnaion (*Λιμναῖον, only known in the Latin form Limnaeum) remains the official identification of the site. Koder & Hild 1976, 193; Intzesiloglou 1999, 108.

⁵⁵ Decourt 1986, 374; 1990, 160–162; 1995, 1–8.

⁵⁶ The architectural survey was conducted using a Leica GS07 RTK-GNSS receiver, with an average accuracy of 0.02 m.

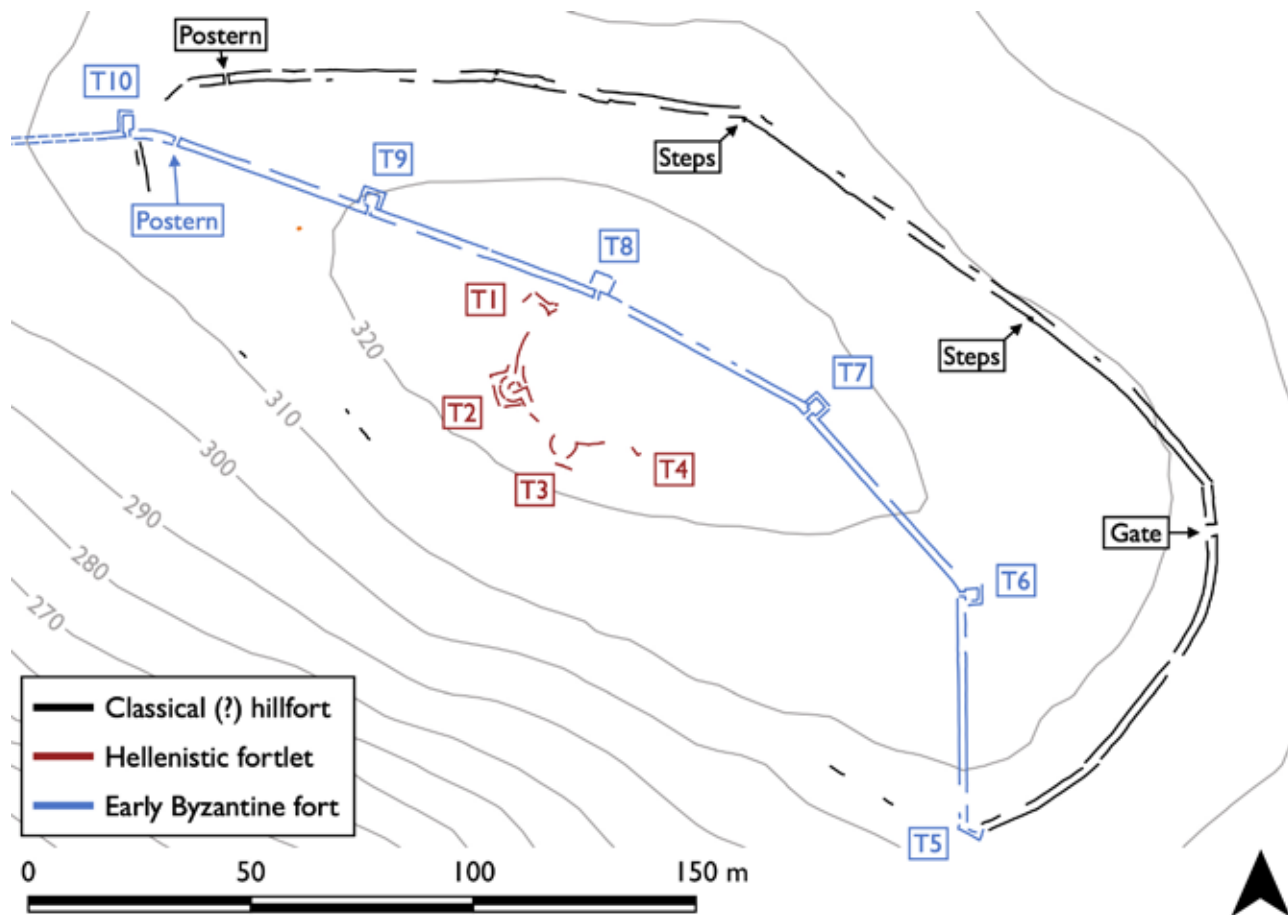


Fig. 23. Plan of the fortifications on Kourtikiano hill. 'T' indicates tower. Plan by R. Rönnlund.

sonry of the structure, where preserved, appears to be mainly trapezoidal, with large well-worked blocks of local limestone. This apparent *hexapyrgion* appears from its general layout and masonry to be Hellenistic in date, and probably constitutes a monumental fortlet, placed on one of the most visually imposing locations on the western Thessalian plain.⁵⁷

The most well-preserved remains belong to the final phase of fortifications on the hilltop, which consists of an arch-shaped stretch of fortifications within the fortified area of the Classical period hillfort (blue in Fig. 23). A 280 m-long section of this was recorded in 2021, but during fieldwork it became clear that the wall continues further downhill towards west in the north-western corner of the hilltop area. In the

steep slope below are the remains of a cross-wall running parallel with the terrain, containing at least two towers. Due to time limitations, this lower part of the fortified enceinte was not recorded.

The hilltop fortification consists of six rectangular towers, with intermediate curtain walls of *c.* 50 m length. The walls are constructed either in small stones joined with mortar (Fig. 25) or in reused larger stones taken from the Hellenistic *hexapyrgion*. The latter is especially the case with **Tower 7** and its surrounding curtain walls, which are nearly completely built from the large, cut stones found in the circular fortlet of the Hellenistic period. The curtain walls are preserved to a maximum height of *c.* 1.7 m, and are uniformly *c.* 1.7 m wide. The towers all have rectangular internal chambers accessible from within the enceinte. The most well-preserved of the towers, **Tower 6**, has a 2.8 × 2.8 m inner chamber, with a 1.1 m-wide entranceway through the fortification wall behind it. The outer walls of the tower are 1.0 m wide, and—as is the case of the other towers—appears to have been constructed after the finishing of the abutting

⁵⁷ There are no known parallels to this *hexapyrgion* from Thessaly, and round towers are only known from a few places within the region, including at Domokos in Achaia Phthiotis (Ioannidou 1973, 282–283), Goritsa in Magnesia (Bakhuizen 1992, 105–113) and at Sarandraporo in Perrhaibia (Tziafalias 1997, 501–502). These are not overly similar in their construction to the fortification on Kourtikiano hill.



Fig. 24. Outer face masonry in Classical (?) hillfort wall (looking towards south). Photograph by I. Randall.

fortification wall, as the outer masonry of the latter continues unbroken behind the tower.

The only discernible entrance to this enceinte at the hilltop is through a narrow postern in the curtain wall just east of **Tower 9**. This is 1.1 m wide, and is now nearly filled in with the collapsed masonry of its sides.

The masonry and general layout of this phase of fortification at the hilltop is highly suggestive of the Early Byzantine period.⁵⁸ The great resemblance to the Phase 4 fortifications at nearby Vlochos suggests that the fortifications should be dated to the 6th century AD,⁵⁹ and to the aforementioned Justinianic refortification programme in Thessaly. The ground surface on the hilltop contains much tile and pottery dating to Late Antiquity, indicating a settlement at the location. The foundations of a small three-aisled church on the highest point of the hill were also noted during work (appearing as a small rectangle on Lolling's sketch-plan), and will be measured and documented in coming seasons.

Finally, at the foot of the steep south-western slopes of the hill, at the Aspropetra area, are many fragmentary remains of building foundations and much surface pottery and tile. It appears probable that the Early Byzantine settlement extended

to this area,⁶⁰ but the extremely steep slope has led to the accumulation of substantial amounts of colluvium at the location, possibly covering much of the remains.

Conclusions

The recent results of PAP further nuance the history of the area of Palamas, and allow us to explore the development in the post-Hellenistic era, which still remains an obscure period in western Thessaly. Further surface finds and the preliminary results from the excavation in the Patoma area at Vlochos support the relative chronology as suggested in the final publication of VLAP, and adds a probable Phase 5 of the 8th century AD to the sequence of construction phases at the site. The geophysical prospection continues to add detail to the buried remains on the site at Vlochos, with further work planned for the coming years.

The excavation offered significant insight into the site as a whole. Not only did it provide detail on specific structures, but also allowed us, for the first time, to confirm and calibrate the results of our geophysical and aerial surveys. The trench demonstrated that each of our approaches gives us different and complementary information about the nature of buried remains. One of the most notable elements of **Building 1** was that it appeared clearly in the ground-penetrating radar and earth resistance data, but less clearly in the magnetometry.

⁵⁸ Similar masonry has been noted at several nearby locations—including at Vlochos—such as at Farsala (Katakouta *et al.* 2016, 45–47), Grizano (Koder & Hild 1976, 279–280; Gialouri 2015, 51–52), and Kloketos (Kirsten 1938; Koder & Hild 1976, 238; Athanasiou & Theogianni 2021, 26–28).

⁵⁹ Vaïopoulou *et al.* 2020, 45.

⁶⁰ *Contra* Decourt 1990, 160.



Fig. 25. Early Byzantine curtain wall on Kourtikiano hill (between **Tower 4** and **Tower 5**), as seen from outside (looking towards west). Photograph by I. Randall.

This is in contrast to the deeper demolition remains and structures presumably found below the building which were more clearly visible in the magnetometry while appearing fainter in the earth resistance and being much more difficult to identify in the radar results. This suggests that the structures visible through radar are much shallower than those visible in the magnetometry, with earth resistance capable of identifying both shallow and deep features. It further suggests that the anomalies visible through radar in the east of the Patoma area relate to the Late Roman and Early Byzantine phases at the site. The analysis of snow-marks and NDVI imagery shows that the former of these constituted a small, yet densely built city or “town” of a character not previously identified in Thessaly. The Early Byzantine settlement is still mainly discernible through its fortifications, and we aim to examine its nature more closely in future studies.

The inscription found in the church of Ayios Charalambos in Palamas offers a rare insight into Roman imperial administration in western Thessaly. Latin inscriptions are not common in the region, but the abundance of agricultural land must have been of great interest for the imperial economy. Interestingly, at least judging from currently available evidence, the inscription belongs to a period when the site at Vlochos was not inhabited, highlighting the apparent changes in settlement patterns in western Thessaly over the course of antiquity.

The multi-period fortified site on Kourtikiano hill at Metamorfofi gives the impression of being far more impor-

tant than had previously been assumed, extending to the area immediately below the hill. We plan to extend our survey to cover the slopes and the area of Aspropetra, thus getting a more complete view of this complex site.

The extent of the archaeology in the Palamas region is clearly vast, not only in geographic scope and density, but also in chronological depth. The small cross-section of Late Roman and Early Byzantine activity discussed here highlights the value of targeting a micro-region and looking beyond tractional period or thematic-based epistemologies to a more diachronic/holistic approach. The story of the peoples of western Thessaly is one of long-term relationships with a landscape that affords extensive resources, yet the ways in which people inhabit and exploit the land varies significantly throughout history. The wider supra-regional political landscape also shows significant influence on the region and the modes of settlement. In investigating the detailed archaeological remains, and how they change and develop through time, it becomes possible to explore these wider themes through tangible, evidentiary research. The *Palamas Archaeological Project* aims to continue this line of work. In the coming season, continued geophysical investigations will be carried out at Vlochos and at prehistoric tells (*magoules*) in the vicinity, with further excavations in the Patoma area, and continued non-invasive surveys at historical-period sites in the municipality, such as at the villages of Metamorfofi and Markos. As the project continues, the archaeological map of the area of Palamas continues to develop and fascinate.

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