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Michael Kerschner (Ed.)



# INTERPRETING THE POTTERY RECORD FROM GEOMETRIC AND ARCHAIC SANCTUARIES IN THE NORTHWESTERN PELOPONNESE

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PROCEEDINGS OF THE INTERNATIONAL ONLINE SYMPOSIUM,
NOVEMBER 5–6, 2020

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# PREFACE OF THE EDITOR

This volume is the proceedings of the transdisciplinary international symposium »Interpreting the pottery record from Geometric and Archaic sanctuaries in the northern Peloponnese: Cult and votive practices, provenance, and production methods«. Originally planned at the Athens Branch of the Austrian Archaeological Institute, it was held online (due to the Covid-19 regulations in force at that time) on November 5–6, 2020.

25 archaeologists and natural scientists participated in the two-day event, which attracted broad international interest. An audience of altogether 192 people from 15 countries in Europe, North America, Asia and Australia attended the online conference and contributed to the discussions.

The symposium was part of the project »Geometric/Archaic pottery from the Artemis sanctuary, Lousoi« (P 30095–G26) funded by the Austrian Science Fund (FWF).

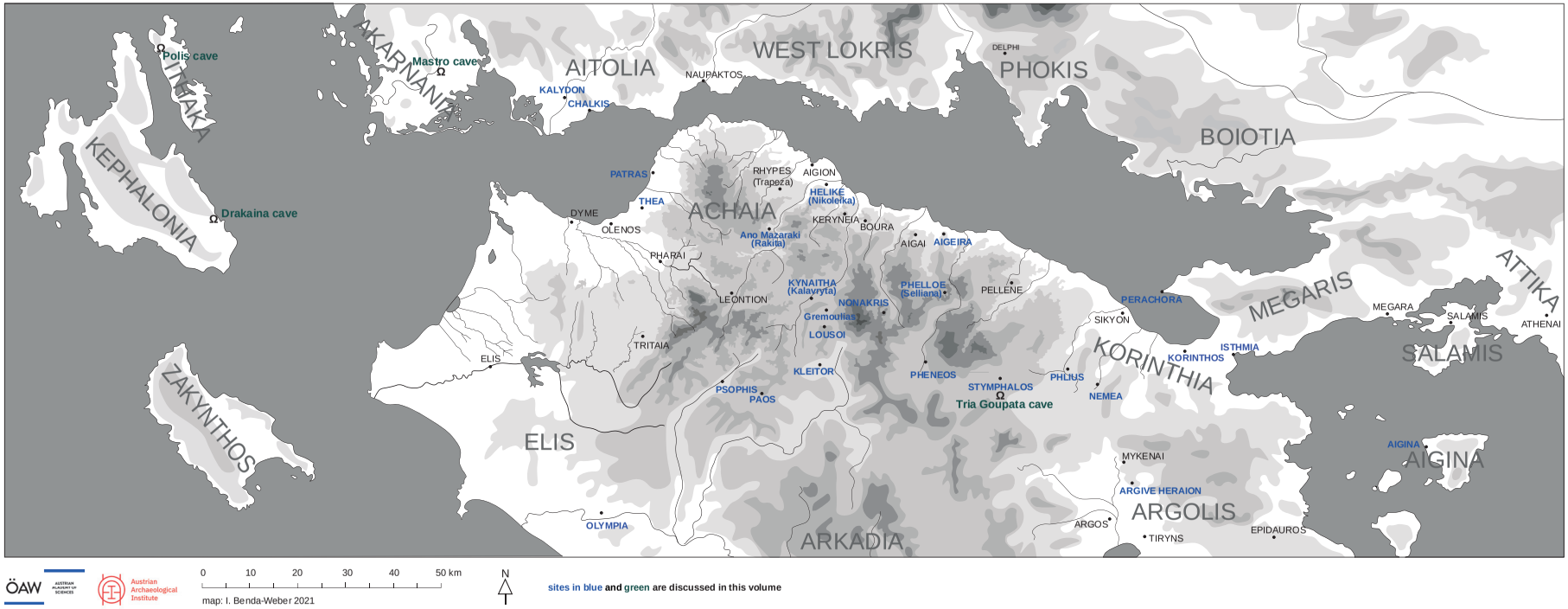
I thank my colleagues Birgitta Eder and Walter Gauß from the Athens Branch of the Austrian Archaeological Institute for acting as co-hosts of the online conference. Helmut Schwaiger, Astrid Pircher and Christian Kurtze organised the technical infrastructure, supported by Karl Burkhart and Micheline Welte. They ensured the smooth running of the digital event, which was still unfamiliar to many of the participants at that time. Nora-Miriam Voß had organised much of the originally planned symposium on-site in Athens. I am grateful to all of them for their commitment.

For the acceptance into the series »Arete«, I would like to thank the series editor Birgitta Eder and the Austrian Academy of Sciences Press. Some of the papers presented, including my own, benefited greatly from the comments of two anonymous reviewers.

The editing was in the proven hands of Barbara Beck-Brandt together with Judith Kreuzer. Niki Gail and Judith Kreuzer did a first editing of figures and maps, Nikky Math assisted with graphic finishing touches, Angela Schwab is responsible for the layout. Sarah Homan-Cormack corrected the English of the contributions of the non-native speakers. I would like to thank our experienced editorial team for the usual high standard of their work.

*Michael Kerschner*
*Vienna, October 2023*

# METHODS AND APPROACHES




I Map of the northern Peloponnese, the Corinthian Gulf and the adjacent Ionian and Saronic islands. Sites in blue are discussed in the volume. Ancient names in capitals, modern names in lower case (© OeAW-OeAI/graphic design: I. Benda-Weber)

Catherine Morgan

# THIRTY YEARS ON: PROGRESS AND PROSPECTS IN THE STUDY OF EARLY IRON AGE AND ARCHAIC POTTERY ASSEMBLAGES FROM GREEK SANCTUARIES

The rich material presented in this volume underscores the rapid pace of progress in the study of Early Iron Age and Archaic pottery from regions around the Corinthian Gulf. Evidence from sanctuaries plays an increasingly important role, with an impressive number of sites dating back at least to the 7th century if not the 8th century (fig. I). New excavations and the reappraisal of old finds at shrines in the north-west of the Gulf and the Ionian islands complement the Achaian, Arkadian, Lakonian, and other sanctuaries discussed by other contributors throughout the book, giving for the first time a rounded picture of the west to balance the long-known evidence from the Corinthia and the northeastern Peloponnese. Additional sanctuary studies in progress or newly completed include those in the cities of Kalydon and Molykreio, and the caves at Mastro near Oiniades, Spathari in the Stratike, Drakaina on Kephallonia, and Boliatso in northern Leukas[1]. Factoring in the settlements which serve as major reference points for local styles – notably Corinth, Delphi, Chalkis, Elean Pylos, and likely also old Sikyon as the subject of ongoing exploration[2] – the picture seems promising from many perspectives. There is great potential to explore a wide range of questions, from the expression of local and subregional identity to the nature of connections between the coast and the interior uplands, maritime links across and along the Gulf, patterns of commodity movement and storage, technological landscapes, and the creation of craft and cult networks.

Yet two apparent obstacles to research in the wider Gulf region should be acknowledged from the outset. The first is a shortage of closed or well stratified assemblages to serve as chronological anchors for the full range of material found in sanctuary assemblages, in addition to the fine wares represented in graves. Ancient Corinth aside, Chalkis has well stratified and thoroughly documented settlement contexts, but there are just two wells at Elean Pylos (one Geometric, the other Archaic), the stratigraphy at Aetos on Ithaca is often poorly defined[3], and despite extensive ceramic evidence from the settlement in the area of the Sanctuary of Apollo at Delphi, closely-defined contexts remain relatively few[4]. Assessment of the quality and utility of individual data sets is to some degree subjective, but chronological controls are undoubtedly fewer than one might wish, making any new evidence potentially significant (a case in point is the altar sequence at Nikoleika, described here by Anastasia Gadolou). For the most part, a sense of local production, stylistic development, and vessel circulation relies on broader stylistic comparisons. Where precise identification proves elusive, we may at least aim to position

1 Kalydon: Barfoed 2019 (I thank Signe Barfoed and Søren Handberg for discussion of their respective projects); Molykreio: Ergon 2019, 41 f. (= AGOnline ID 8565 <https://chronique.efa.gr/?kroute=report&id=8565> [19.04.2023]); Mastro: Nagel 2021, 123–133 (I thank Agathi Karadima for discussion of the Early Iron Age and Archaic pottery); Sparthari: Fuchs 2020; Sieverling 2018, 15. 18. 82 f. *passim*; Drakaina: Karadima, this volume; Karadima 2020; Karadima 2021; Boliatso: Morgan et al. (forthcoming).

2 Delphi: Luce 2008; Chalkis: Houby-Nielsen 2020; Elean Pylos: Coleman 1986, 18–65; Old Sikyon: Frederiksen et al. 2017; <https://www.diathens.gr/en/aktiviteter/enaktivitetersikyon> (consulted February 2021).

3 Symeonoglou 2002; Heurtley – Robertson 1948.

4 Luce 2008, 24–28: the approximate extent of additional material is indicated by Neeft 1981, fig. 15.

material in general terms, benefitting from continuing discussion of new discoveries and site studies which allow the picture to build.

Secondly, while analysis of pottery fabric is integral to most of the research projects presented in this volume, the value placed by different teams and/or research traditions on various forms of macroscopic and microscopic observation differs in often unspoken ways. I refer here to the respective weight given to geology *per se*, to the technological choices behind the creation and perpetuation of fabric recipes and/or forming techniques, and to the style and execution of decoration. Sometimes this is a matter of practicality. As several contributors to this volume point out, the relative uniformity of the geology of much of the eastern and central Gulf makes it hard to discriminate between favoured clay sources: only in the west did the very different, sedimentary formations create distinctive local variation. This distinction has a direct impact on the extent to which provenance or workshop characterisation *must* also rely on manufacturing traits such as the manner of temper preparation, approaches to vessel forming, or the mechanical execution of decoration. Necessity apart, however, these factors can contribute greatly to any study, making this is an opportune moment to reassess how macroscopic observations of technological and design practice may most effectively be integrated within the menu of options for characterisation under individual local circumstances. More broadly, open discussion of such methodological issues is now a priority to ensure the effective integration and exploitation of growing bodies of data from sites across the region. The series of three chapters which describe archaeometric research spanning the Gulf from east to west (by Carlotta Gardner, Evangelia Kiriatzi and Noémi Müller, Ioannis Iliopoulos, and Franziska Lang and Christina Rathossi) is thus an important step forward.

## RESEARCH AGENDAS: PAST ACHIEVEMENTS AND FUTURE PROSPECTS

The reference to »thirty years on« in the title of this chapter alludes to my own work at the Sanctuary of Poseidon at the Isthmus of Corinth from 1984 until the publication of Isthmia 8 in 1999. Our identification of substantial quantities of Late Bronze and Early Iron Age pottery in the legacy record of excavation campaigns conducted through the 1950s–1970s was followed by a systematic attempt to define contexts and secure their interpretation. This culminated in a major excavation season in 1989[5]. Our concern was to move beyond characterisation of activity by default, via retrojection from the point when the construction of the Archaic temple removed all doubt about the nature of the site, and/or projection from assumptions about the Bronze Age, especially given the vague and under-theorised notions of cult continuity then current. When we began work, theoretical literature on the identification of sanctuaries in the material record consisted essentially in two studies of Late Bronze Age shrines: Colin Renfrew's 1985 publication of Phylakopi and Korinna Pilafidis-Williams' 1987 London doctoral thesis on Aigina (subsequently published in 1998), which adapted Renfrew's framework to the circumstances of the open-air shrine at the later Aphaia sanctuary[6]. Dating and characterising Early Iron Age activity at Isthmia, where evidence consisted overwhelmingly of redeposited pottery, brought to the fore matters of depositional history, the affordance of vessel shapes, and the structure of the ceramic assemblage over time.

Isthmia was just one of a growing number of Early Iron Age sites posing similar methodological problems. Our work coincided with that of Birgitta Eder at Olympia[7], and Michael Kerschner at Ephesos, where reconstruction of the stratigraphic sequence in the central area of the Artemision resulted in what was at the time a rare Early Iron Age assemblage to include a high

5 Gebhard – Hemans 1992; Morgan 1999, notably 295–343.
6 Renfrew 1985, 11–26; Pilafidis-Williams 1998, 121–134.
7 Eder 2006.

proportion of cookware alongside well-preserved faunal remains[8]. In short, in the late 1980s and 1990s pottery was accorded greater prominence in project designs and publications as a means of tackling big research questions about early Greek sanctuaries[9]. This is not the place to explore in detail how these initial ideas were subsequently developed and expanded upon. Instead, I emphasize three main areas of legacy.

The first is basic recognition of an ever-increasing number of open-air shrines as part of a spectrum of Early Iron Age cult places. Appreciation of this diversity is central to our understanding not only of the Early Iron Age ritual landscape but also of patterns of change in the longer term – including the rationale for, and transformations brought about by, the subsequent introduction of built space into sacred areas[10]. The structure of pottery assemblages remains a basic tool of site characterisation. A shift of the kind seen in Polis bay on Ithaca, where the Late Bronze Age-Transitional assemblage contained at most 50 % small open vessels (the remainder being coarse and fine storage, serving, and kitchen shapes) as against 80 % in the similarly sized Early Iron Age and 8th century assemblage (plus 20 % fine serving vessels), implies at least a difference in provision and more likely a change in the nature of activity (i.e. the start of ritual gatherings)[11]. Beyond that, current research questions range widely over subjects including the circulation of prestige goods and resources, the origin and social identity of worshippers, and reading the physical and social environment in terms of location, viewsheds, communication, or exploitation of natural resources. Answers rarely rest heavily on pottery, although it is certainly not ignored[12]. At Mt. Lykaion, for example, a large programme of fabric analysis is one of the tools used to reconstruct the origins of worshippers and/or suppliers, complementing discussion of the exploitation of natural resources (e.g. the fuel brought for altar fires), and of intervisibility and communication between sanctuaries and settlements more widely in and around the western Peloponnese and the islands[13]. And at the Amyklaion, recent work has focused not only on provision for consumption but on the relationship between style, iconography, and changing ritual practices over time[14]. For the most part, however, current research agendas do not exploit the potential of pottery as fully as they might.

The second legacy, emphasis on consumption, underscores this last point. Consumption has effectively become the lens through which a large portion of Early Iron Age fine ware is now examined, with interest in coarse and cooking wares a more recent phenomenon (despite important exceptions, such as Jean-Sebastien Gros' work at Xobourgo and Nikoleika discussed below). On the positive side, this represents direct concern with Early Iron Age practice rather than extrapolation from some Classical ideal. It also encompasses studies of specific aspects of individual assemblages. A case in point is commissioning and provisioning, with case studies going back to Uta Kron's identification of vessels bearing the dipinto HΔ as evidence of sanctuary-organised provision for cult meals at the Samian Heraion (an identification which has been challenged but not convincingly refuted)[15]. Less happily, however, the notion of consumption, intrinsic to Early Iron Age cult practice, has been freely transmuted into discussions of feasting,

8 Kerschner 2011; Kerschner 2017, 12–30.

9 Cf. the role of pottery for example in papers on early Greek religion delivered at the Swedish Institute conferences of 1981 and 1986 (Hägg 1983; Hägg et al. 1988) with that of 1994 (Hägg 2002), also noting the dominance of pottery among the 7th-cent. evidence presented in Charalambidou – Morgan 2017.

10 Shrine numbers: Kotsonas 2017; Morgan (forthcoming a).

11 Morgan – Hayward 2021, 77 f.

12 See Moustaka – Niemeier (forthcoming) for a snapshot of current interests.

13 Romano – Voyatzis 2014; Romano – Voyatzis 2021; Kordatzaki et al. 2016; Czujko 2017; Mentzer et al. 2017.

14 Vlachou 2017; Vlachou 2018; Vlachou, this volume.

15 Samian Heraion: vessels with HΔ dipinti linked to feasting by Kron 1984; Kron 1988; rejected by Avramidou 2016; restated (with strong evidential support) by Kerschner – Mommsen 2018, 309–311.

sacrifice, and symposium, concepts which have as result become entangled and now require disaggregation[16].

Third, we now have a vastly expanded body of scholarship on a wide range of theoretical and methodological issues, from quantification to the handling of legacy data, approaches to describing vessel form and function, size and scale, standardization, the conceptualisation of regional styles, and human mobility and technology transfer[17]. Detailed examination of these issues is beyond the scope of this chapter. I merely note the importance of including with them the theoretical and methodological context of science-based aspects of ceramic analysis as part of the wider discussion informing any research design.

Two major criticisms directed at this early work still have force. Both, in their different ways, can be traced back to concern in the 1980s to establish explicit, replicable criteria for identifying ritual activity in the material record. The first is that emphasis on the material aspects of social performance at sanctuaries limits engagement with the materiality of the objects themselves and does not really speak to religion, a point to which we will return[18]. The second is that approaches to pottery have often tended to infer, and rely upon, supposedly general principles of shape, function, and meaning, at the expense of the local perceptions and preferences that help to frame material contexts for a particular community. While it is not always easy to achieve a balance, local nuances of choice and meaning may slip from view when material arguments are deployed in larger historical discussions. Furthermore, it is questionable whether arguments can reliably rest on specific shapes rather than on larger trends in vessel size, affordance, and/or decoration, especially if they are to include more than the usual fraction of closely identifiable sherds or take account of potential biases in legacy data[19].

Reviewing the current state of research, one might question whether pottery studies, for all the energy put into them and the volume of material under study, are set to contribute as fully as they might to larger questions concerning Greek religion and the operation of sanctuaries. Noting that this volume is about pottery at sanctuaries rather than sanctuaries *per se*, what might a ceramic-driven research agenda look like? In addressing this challenge, it is worth adding into consideration the distinctive physical and social environment of the Corinthian Gulf, where most of our sites are concentrated. The Gulf was home to varied and complex political organisations; in many areas (Achaia in particular), interdependent coastal, mountain, and plain environments are sharply juxtaposed; and maritime and terrestrial connectivity operated on multiple scales from long-distance navigation to the mobilities of local life[20]. By local, I mean both the notion of ›home range‹ in the sense of the space, resources, and social contacts necessary for activities such as pottery manufacture and marketing, and a place-specific experience and identity which may involve the internalisation of often far-reaching connections[21].

A further point worth emphasizing is the need to keep an open mind about the physical form of sanctuaries, their potential multiple roles (and/or positions in different networks), and the ways

16 Charalambidou (forthcoming).

17 An indicative selection of recent work includes papers in Charalambidou – Morgan 2017; Kiriatzi – Knappett 2016; Kotsonas 2014; Smith – Bergeron 2011; Verdan et al. 2011.

18 Among extensive literature, see Fogelin 2007; Haysom 2019, 53–56; Haysom 2020; Haysom et al. (forthcoming); Pakkanen 2015 (all with previous bibliography).

19 For example, the supposed scarcity of kraters at Archaic Corinthian sanctuaries is probably an artefact of breakage patterns and excavation practices rather than an indicator of ancient preferences. Close examination of Early Iron Age and Archaic context pottery from Isthmia indicates that reliance on the feature sherds commonly recorded and retained in early excavations leads to shape-specific problems of under-counting. Subsequent study of Early Iron Age kraters in context points both to fashions in wine service and to a longer replacement cycle than that affecting smaller open shapes, raising questions about circumstances of use, handling, and storage that are liable to be site specific. Morgan 1999, 272; K. Arafat, pers. comm.

20 Bonnier 2016; Morgan (forthcoming b).

21 Beck 2020: with reference to sanctuaries, Beck emphasizes (128–130) that polis religion as a concept is faltering, with attention moving to trans-local and sub-local registers.

in which pottery may equip and support activities at them. It is not the case during our period that we read pottery within a fully understood concept of ›shrine‹. Rather, there is a dialogue between material and space. Recent work in the central Ionian archipelago and surrounding coasts immediately to the west of the Gulf underscores this point. An important change in recent years has been recognition of the prominence of caves from Geometric times onwards within a diverse ritual landscape. Pottery and figurines caught up in various ways in cave environments account for a high percentage of the sanctuary evidence known from this area. A research programme of the Ephorate of Palaeoanthropology and Speleology has revealed that by the 6th century at the latest (and in some cases back into the 9th or even earlier), all such island sites sufficiently explored to characterise the activity in and around them (of the 36 known, 22 caves plus three beach-side deposits) reveal evidence of cult[22]. The space afforded by the actual cave was just one aspect of a larger local/ritual environment, used for a range of functions from location of sacrifice to refuse repository.

Enmeshed with matters of affordance and environment are local selections of pottery – the choices and balances in different assemblages between miniature and diminutive vessels, containers for oils, perfumes and other luxuries or semi-luxuries, cups and water carriers, and full assemblages for the storage, preparation, and consumption of food and drink often on a large scale. Interaction between these categories is also interesting. Category boundaries may be permeable: adaptable vessels, like small chytrae which could be used for cooking or as mugs for consumption, would be a practical choice when equipment had to be transported to relatively remote locations. They may consciously allude to each other, considering, for example, the potential for symbolic relationships between full-sized assemblages and selections of miniature shapes (i.e. vessels which, by virtue of their small size or forming, could hold only tiny, symbolic amounts if anything)[23]. Recent scholarship has been rightly critical of the idea that miniatures were poor substitutes dedicated by worshippers of lower social standing, emphasizing instead their symbolic significance in ritual action, communication, and memorialisation, emblematic of their larger counterparts[24]. Where a ceramic assemblage includes both full-sized and miniature vessels, did the selection of miniature shapes relate to any particular element of the full-scale assemblage, and if not, what did it mark? Comparison of miniature vessels with other votives (notably figurines) may also offer insights, for example into their role in particular rituals or in memorialising acts of worship[25]. Using this mesh of observations about the physical form of each site, its environment, and its material culture to read the thick textures of ritual activity and of personal and group engagement must also involve comparison between sites, since we cannot fully understand the choices represented in isolation. This is work in progress, with the ultimate aim of tracking the distinct but overlapping roles of shrines as perceived by various participants within the complex social landscape of the archipelago – from the marking of key locations in the territory of polis or sub-polis communities (terrestrial or maritime passages, landing points, or gathering places) to managing aspects of mobility (the needs of those departing, returning, or passing through).

Returning to the larger picture, many current areas of interest could drive new agendas in ceramic research. All merit chapters in their own right. But for its timeliness and fit with the potential of the Gulf environment, I single out the implications for sanctuaries of our changing understanding of Archaic-Hellenistic Greek economies in a post-primitivist, post-Finlay world, with its appreciation of the complexity and diversity of markets, manufacturing, and trade in all

22 Katsarou – Darlas 2017; Karadima 2020; Karadima 2021; Morgan – Hayward 2021; Morgan et al. (forthcoming); Nagel 2021.

23 Morgan et al. (forthcoming); Karadima 2020, 123–144. Organic contents are preserved in at least one example from the Gulf area, a kotyliskos from the cave shrine at Mastro near Oiniades: Nagel 2021, 125 f.

24 E.g. Pilz 2011; Smith – Bergeron 2011; Foxhall – Barfœd 2015; Barfœd 2015, 55–69 chap. 7.3; Barfœd 2019; Pemberton 2020, esp. 284. 316–319.

25 Kopestonsky 2018.

manner of commodities. Much recent work has focused on epigraphic and literary evidence for matters of finance, taxation, regulation, professions, and the careers of individual agents[26]. This takes us back into the 6th century (and even earlier in some places) but leaves open the matter of connections into the Early Iron Age. Alongside this, however, archaeology now plays a much fuller part, with work on regional economic networks, cross-craft connections, mobility of craftsmen (for large collective projects or around local producer communities), *longue durée* production traditions, and the making and marketing of products with high market (or conversion) value, such as perfumes or cooking vessels of particular provenance[27]. Work on agricultural economies is rapidly catching up, ranging from studies of the connected, managed, and defended productive landscapes of Euboia and the Argolid[28], to consideration of faunal evidence for meat production and consumption across the spectrum of social contexts (sanctuaries included)[29].

Pottery has long been seen as an intractable commodity by economic historians, not least due to the difficulty of getting basic information on a suitably large scale about how much was made where, and how it was used, distributed, and priced[30]. It remains challenging to obtain quantified distributions of closely provenanced pottery of any kind, with fine wares currently lagging behind coarse and cooking wares chiefly due to the impact on the latter of petrographic analysis[31]. But it seems more promising to approach the problem in the first instance not by focusing on pots as traded commodities *per se*, but by understanding the size and shape of local markets. To this end, pots may variously be read as commodities (in different times and contexts seen as domestic, semi-luxury, or luxury items); as trace elements to track trading relationships; as tools to assess the market space occupied by other perishable commodities; and as general indicators of the range and scale of activities at sanctuaries and of how their proper equipment was perceived.

One challenge in looking at sanctuary pottery assemblages is to pull together different aspects of commodity production, movement, and consumption in a holistic way. For the purposes of this chapter, this means regular and systematic integration of vessel fabric/origin, form and affordance, depositional context, residues, and floral and faunal remains, ideally to permit comparison across sites and contexts. So far, important moves in this direction in post prehistoric periods focus on domestic settings (examples in our area include Kyriaki Tsirtsi's ongoing study at Old Sikyon)[32], but such approaches are not yet a regular feature of research designs in the old Greek world[33]. A larger challenge is to recognise that while particular issues of logistics, supply and management surround sanctuaries in general and specific kinds of shrine location in particular, the notion of a distinct ›sacral economy‹ is outdated. Provision, consumption, investment in (and gain from) offerings and labour, resource management and concepts of surplus, are all part of a larger whole[34]. Indeed, while archaeological research into Greek sanctuaries is in many ways more methodologically sophisticated and far-reaching than that into their various Italian and Roman counterparts, the very different traditions of economic analysis in Italy have

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26 Among works with a stronger Classical focus, see: Bresson 2016; Harris et al. 2016. Early work on sanctuary economic also rests heavily on inscriptions, as: Linders – Alroth 1992.

27 Among extensive literature, see papers in: Rebay-Salisbury et al. 2019; Tsingarida – Viviers 2013; Kiriatzi – Knappett 2016; Klebinder-Gauß et al. 2015.

28 Fachard 2012; Blomley 2022.

29 Dibble 2017; MacKinnon 2014.

30 Davies 2013.

31 A notable exception among Early Iron Age fine wares is the distribution of Euboian and Euboianising wares documented via Neutron Activation Analysis: Kerschner – Lemos 2014; cf. Charalambidou et al. 2018 on later periods. Study of specialist cookware production: Gauß et al. with extensive bibliography; more generally Spataro – Villing 2015.

32 <https://www.diathens.gr/files/b/c/733/K._Tsirtsi_Cooking_wares_Storage_Vessels_and_Dietary_habits_in_ClasClass_Sikyon.pdf> (May 2021). See also on plant remains: Douché et al 2021.

33 For Western Greece see Kistler et al. 2015

34 Lo Monaco 2020b.

tended to foster this larger, more holistic view rather earlier than in Greece[35]. Despite their potential, Greek sanctuaries are only now being properly integrated into *longue durée* studies of the ancient economy, to the point of appearing as privileged points of departure for investigation of the Greek economic landscape[36].

## HOLISTIC PERSPECTIVES

How, then, might we pull together different strands of work on pottery to address such an agenda? While the following picture is idealised and no single excavation, old or new, is likely to provide complete information, recognising gaps and unanswered questions is itself an important step. I begin by mapping an idealised assemblage of a single period, category by category before adding diachronic developments into discussion, along with intersecting factors of landscape and depositional history.

The first group of vessels provides for the transport and storage of wine, water, and foodstuffs. It speaks to the question of what was moved, in what quantities, and over what distance, and whether consumables were stored on site or moved for single occasions. Attention often focuses on amphorae, especially when discussing the transport of wine and oil. As evidence from Well 1981-6 at Corinth confirms, Corinthian A transport amphorae (the first form to dominate the Gulf area) emerged in the late 8th to early 7th century within a local tradition of transport and storage jars in related coarse fabrics which dates back at least to the Early Geometric period at Corinth[37]. This new shape was designed to move large quantities primarily by sea: it quickly appeared in the west, with examples found at Otranto and then Syracuse late in the 8th century (and on Leukas, in Boliatso cave, in the 7th cent.)[38]. The subsequent history of the series of forms variously termed Corinthian/Ionian/Adriatic A, A' and B implicates a much larger range of production centres, with B (and its southern Italian cognate Sourisseau 1α) in particular produced from the early 6th century in multiple centres including Corcyra and Sybaris[39]. One important question relevant to all periods, but particularly acute in the earliest phase of shape development focused in the Corinthian Gulf, is the relationship between this specialist transport shape and other containers used for the terrestrial stages of a journey. How were loads assembled and dispersed, and what kinds of jars were easiest to handle when crossing the terrain necessary to reach each of our sanctuaries? Another issue is capacity. While the capacity of Corinthian A amphorae ranges widely from 18–70 litres, most fall into the upper end of the range[40]: 40 litres or more of oil or wine may be a lot if destined for a single occasion[41]. How might this relate to the size of gatherings, the existence or not of storage at the shrine, or the conspicuous generosity of patrons? In most cases, answers to such questions rely on relative judgement about consistency in the scale of provision across different parts of the pottery assemblage, and openness to alternative explanations for discrepancies. In the case of transport amphorae, such explanations might include bulk storage of another

35 Wilson et al. 2023.

36 Lo Monaco 2020a (with a valuable review of previous scholarship in the editor's introduction); Davies 2020.

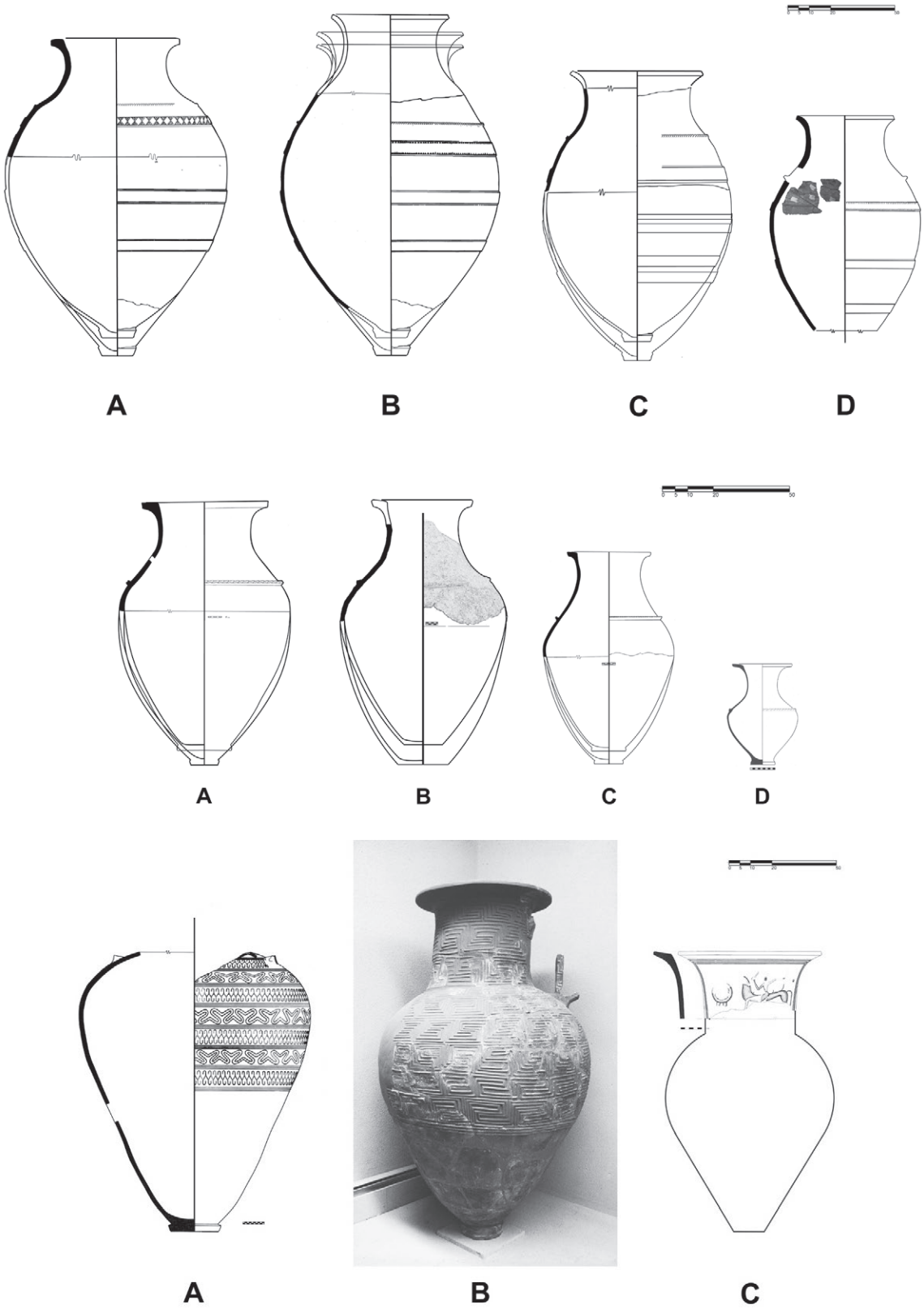
37 Pfaff 1988, 29–31 fig. 22. On Early Iron Age maritime transport, containers, and the development of transport amphorae within different Aegean pottery traditions at much the same time, see e.g. Knapp – Demesticha 2016, 150 f. 160–163 (with chap. 3); Pratt 2015; Pratt 2021, 224–244. 257–286; Kotsonas et al. 2017.

38 D'Andria 1995, 476–478 figs. 13. 14; while outdated in detail, the proceedings of the 34th Magna Grecia congress (notably Pelagatti 1995; Berlingò 1995) provide a general picture.

39 Whitbread 1995, 255–346; Kourkoumelis 2006; Finocchiaro et al. 2018; Sourisseau 2011, 184 f. 201–206; Gassner 2011.

40 Carolyn Koehler's estimates published on <http://projects.chass.utoronto.ca/amphoras/corab92.htm> (16.05.2021): type A (large by contemporary standards) mostly hold 40 litres and up; the range of A' is 18–50 litres, and B mostly ca. 25 litres.

41 McLoughlin 2011, 873 tab. 2, estimates 1.23 litres of wine and 0.154 litres of oil per day for a rural family of six including three adults.




1 Principal types and capacities of pithoi from Zagora. Top: relief-band pithoi: A: > 680 litres; B: 560–580 litres; C: 410–445 litres; D: > 205 litres. Centre: rope-band pithoi: A: 100 litres; B: 100 litres; C: 65 litres; D: 7.67 litres. Bottom: applied-relief pithoi: A: > 550 litres; B: 470 litres; C: 220 litres (© Australian Archaeological Institute at Athens, Zagora Archives: reconstructions by B. McLoughlin based on drawings by J. R. Green)

commodity or of water where the supply close to hand was inadequate[42]. It is also possible that amphorae, especially at small shrines, indicate generous gifts and symbolize access to resources via trade. This explanation has been proposed by Gerasimos Livitsanis in the case of amphorae from Late Archaic-Classical ritual feasting deposits found on the Fitzgerald property in Polis bay, Ithaca[43]. And it is also interesting to compare evidence from wealthy residences. At Makyneia, for example, ample Corinthian A and B transport amphora sherds discovered in rescue excavation of the settlement attest to the importance of maritime trade throughout the Archaic period. Building B, the home of a wealthy individual (perhaps a merchant given the hoard of 15 Aiginetan silver hemiobols abandoned after fire destroyed the building), has a storeroom containing fine late 6th-century tableware for drinking and dining (including Attic and Corinthian imports) and two Corinthian B amphora found *in situ*, evidently stored full. One of these, with a capacity of ca. 25 litres, bore a dipinto likely recording the name of the owner[44].

Capacity for transport relates directly to capacity for storage, considered in terms of secure space and of containers. Discussion of bulk storage vessels has moved beyond simply counting pots to considering what they afford and represent. Beatrice McLoughlin's analysis of the pithoi from domestic contexts at Zagora is a fine illustration of the way in which the properties of vessels themselves can feed into larger discussion (fig. 1)[45]. Based on capacity, morphology, and production technology (firing regime and surface treatment, including the use of sealants), McLoughlin assesses the affordances of the three distinct categories of pithos (relief-band, rope-band, and applied-relief) against the storage life of staples (cereals, pulses, oil, and wine) and their contribution to meeting the calorific requirements of individuals and families. Relief-band pithoi were the most capacious (holding 200–700 l): the thickness and treatment of their walls (low fired but fully oxidised, and with a high polish on the exterior) served to maximise porosity but minimise permeability. Both this insulation and their capacity were best suited to cereal storage; two such vessels would probably supply a household for a year. The smallest form, the rope-band pithos (40–110 l), has a narrow neck and flaring rim well suited to pouring, but a lack of care in firing indicates that insulation or porosity were not matters of immediate concern. McLoughlin thus suggests that they were used for oil or pulses rather than water or wine (unless for immediate consumption, in which case evaporation from the soaked walls would cool the contents). The applied-relief pithos was more suitable for wine or other liquids: it is very hard fired and has a narrow, deep body with a constricted neck optimal for reducing evaporation and oxidation. Its capacity, 200–550 litres, leads McLoughlin to favour wine over oil, as this quantity of oil would represent over six years' supply for an average family, way beyond its shelf life. Applied-relief pithoi were likely made in clay local to Zagora but by a different, perhaps itinerant, group of potters. The distinctive decoration may advertise the vessels' contents; indeed, the often elaborate figurative schemes found on such pithoi in the Cyclades may mark them out as domestic furnishing symbolising prosperity and the conviviality brought by wine[46]. McLoughlin's approach is valuable for several reasons. It gives a sense of scale, of how far vessel contents might stretch and/or last, underlining the fact that even one or two pithoi could represent significant provision at a small shrine. It also opens the question of how, why, and when certain sanctuaries came to operate as quasi households ensuring their own food security, while others evidently did not, leaving provision for individual events in the hands of priests and/or participants. The last point in particular invites consideration of the place of ritual obligations within our understanding of subsistence and surplus[47].

Turning to cookware, at most sanctuaries the question may be less what was cooked than how cooking was organised. It is generally accepted that ritual and other meals at sanctuaries

42 Lawall 2011a, 43–47; Lawall 2011b, 30–32.
43 Livitsanis 2014, 127. 154.
44 Saranti – Filis 2018.
45 McLoughlin 2011.
46 Ebbinghaus 2005, with extensive bibliography.
47 Hastorf – Foxhall 2017.

were dominated by the kind of stews, including meat (not necessarily that of sacrificial animals), grains, herbs, and seasoning, that could be stretched to feed fluctuating numbers of people[48]. An open question highly relevant to the Gulf area, given the number of sanctuaries within easy reach of the sea, is the extent of fish consumption. Fish remains were long overlooked at Greek sanctuaries, chiefly for want of the regular sieving and flotation necessary to retrieve them. However, the situation is rapidly improving in many parts of the Greek world, and there is now well documented post-prehistoric evidence from a wide range of sanctuaries and settlements, including Geometric and Archaic Kommos, Miletos, the Sanctuary of Apollo Daphnephoros at Eretria, Kalaureia, and more locally from the Sanctuary of Demeter and Kore at Corinth[49]. On present evidence, the emergence of shapes specifically designed for cooking with very little liquid dates very soon after our period. At Corinth at least, a specialist cooking vessel for frying or shallow simmering, the lopas, appears early in the 5th century, and is widely associated with the cooking of fish[50].

Quantification remains a priority as we seek to integrate ritual consumption into the wider picture of food economies and the place of sanctuaries within them. The extent of meat in urban diets is now becoming clear thanks to large-scale bone studies such as those by Michael McKinnon on Geometric and Archaic assemblages from the Athenian Agora, and Flint Dibble on a range of variously Late Bronze Age-Classical sites, notably Nichoria, Azoria, and the urban centre of Athens, which includes hard estimates of volume in contexts of our period[51]. At Nichoria, for example, the several hundred kilogrammes of meat represented by the burned remains of at least three cattle and two sheep or goats among feasting debris in a Dark Age II pit would have fed more than the proposed number of local residents (200) even with generous portions (one might debate precise portion size, but the broad picture is clear)[52]. The animal bones from the tomb of the Rich Athenian Lady in the Athenian Agora represent some 70–100 kg of meat: beyond the headline figure, the challenge is to establish what this meant for the funerary feast in terms of portion size and the number of participants[53]. How a given volume of meat was processed and to what social end is an important issue in sanctuary contexts. The potential gains to be made from integrating data from bones with that from cooking pots have been outlined using Late Bronze Age evidence to reconstruct the size and nature of cuts from different species and compare the result with the capacity of the vessels used for cooking and for service. This approach enables assessment of community responses to the demands of cooking and serving, as well as challenges of scale[54]. In the case of sanctuaries, the possibility that some if not all food was prepared off site and brought to the feast may also be considered. This is proposed by Dimitra Mylona in the case of a major feast at Hellenistic Kalaureia, where the space, scale of equipment, and co-ordination required to prepare *in situ* the volume of food indicated by the retrieved remains would otherwise imply a highly complicated operation[55].

The most adventurous post-prehistoric work in this direction concerns the Classical and later periods, when visual sources, especially vase painting, can also be brought into play[56]. But there is every reason to join up Geometric and earlier evidence, especially as in many parts of Greece the 8th and 7th centuries saw a diversification in cookware shapes which clearly foreshadows later Archaic and Classical fashions. This is particularly well documented in the work of Jean-Sebastien

48 Ekroth 2007; Ekroth 2017.

49 Mylona 2008; Mylona 2019; Lefèvre-Novaro 2010. Sanctuary of Demeter and Kore at Corinth: Bookidis et al. 1999, 38 f. 44 f. 51 f. Eretria: Theodoropoulou 2013.

50 McPhee – Pemberton 2012, 82 f., with earlier bibliography.

51 MacKinnon 2014; Dibble 2017.

52 Dibble 2017, 227 f.

53 Papadopoulos – Smithson 2017, 566 f. [D. Ruscillo]. 682 f. [J. Papadopoulos].

54 Isaakidou 2007; on Archaic-Hellenistic meat portioning, see Ekroth 2017, 43–46; Ekroth (forthcoming). Sieverling 2018 investigates foodways in EIA-Archaic Akarnania via integration of ceramics from survey assemblages with floral and faunal data.

55 Mylona (forthcoming).

56 For collected evidence with previous bibliography, see: Tsoukala 2009; Ekroth (forthcoming).

Gros in Euboia, northern Attica, and at related Cycladic sites[57]. Until the end of the 8th century, the repertoire consisted of the chytra, lekane, and griddle or tray, but thereafter new kitchen shapes (mortar, kados, jug and hydria forms) in a greater range of sizes reflect a growing preference for specialist equipment. In comparison with central Greece, the early repertoire of Corinth is less well understood, and there is important primary work to be done all along the Gulf to document shapes and thus to understand the choices made in settlements and sanctuaries in different locations. Ongoing work at Nikoleika is of great importance in this respect. Here too, we should consider the potential impact of on-site storage of vessels as opposed to supply (or loan) for each event, a point to which we will return.

The next category, vessels for service and consumption, is perhaps the most thoroughly investigated part of any sanctuary assemblage of our period (or indeed, later). In addition to their representation in the assemblage, individual vessel shapes have been considered in terms of: i) multifunctionality (for food, drink, and/or offerings); ii) capacity, both in terms of actual affordance and of appearance, i.e. the visible sense of equality or inequality; iii) standardization or diversity of production and/or appearance, with the further question of whether diversity was structured into categories (e.g. by size) in turn requiring examination; and iv) in combination, as evidence for the organisation of service, including the size and/or subdivision of the group(s) involved[58]. Production is often viewed in terms of provenance, and in some cases as an aid in mapping the geographical extent of participation[59]. But a potentially more fruitful line of enquiry concerns procurement. Did diversity in fabric or in other technological traits indicate that worshippers themselves brought vessels to the sanctuary, and if so, was their choice constrained by the market share attained within their home communities by particular makers or importers? Could vessels be acquired at the shrine, making it in some sense a pottery market, if not a production location, and incidentally raising the question of the prehistory, if any, of the kapeloi leases documented at later Classical and Hellenistic shrines[60]? By contrast, did greater uniformity reflect sanctuary-based procurement, with some mechanism for identifying preferred suppliers? Were vessels provided as a form of liturgy or via the patronage of a particular worshipping group, or were they secured on behalf of the collectivity by sanctuary authorities? And how did supply for ritual events work in a non- (or barely) monetised economy – how might pottery have operated as a fungible commodity[61]?

The final component of many assemblages consists in vessels designed to accompany ritual practices (miniatures for example, or distinctive shapes like kernoi), or to contain substances such as perfumes or unguents which formed part of the semi-luxury economy. Kernoi, stands, and multiple vessels were established parts of sanctuary assemblages well before the start of our period (as at Aetos on Ithaca, for example), in many cases with stylistic roots dating back to the end of the Late Bronze Age[62]. Miniature and diminutive vessels are evident by the 8th century but appear widely and in quantity during the later 7th and 6th century. The fact that these vessels often show great variety and attention to detail in forming and decoration underlines the point that they

57 Gros 2007; Gros 2017.

58 For a small, indicative selection of publications illustrating the diversity of questions, see Charalambidou 2017; Kerschner 2011; Kistler – Mohr 2015; Kotsonas 2014; Morgan (forthcoming c); Stissi 2009.

59 E.g. Mt. Lykaion: Voyatzis 2017; Romano – Voyatzis 2021.

60 E.g. IG XII 6 169 (SEG 27, 545), regulation of ca. 245/244 BC from the Samian Heraion. The wider question is addressed by Lo Monaco 2020b.

61 The earliest substantial coin evidence from a sanctuary in the Gulf region, the Archaic temple hoard at Isthmia, is likely to represent accumulated dedications rather than sanctuary funds: Houghtalin 2015. Pemberton 2020, 329 discusses a barter arrangement for household acquisition of miniature vessels.

62 Symeonoglou 2002, 173–208 reviews the rich collection of such vessels from Aetos on Ithaca (which begin in Early Geometric), assembling comparanda for 8th- and 7th-cent. items from several sanctuaries in and around the Gulf area.

cannot be dismissed as poor or cheap substitutes[63]. Nonetheless, miniatures are rarely considered as economically significant products or systematically incorporated into programmes of fabric or residue analysis in the same way as larger shapes.

Perfume containers became popular in the latter part of the 8th or the early 7th century within several local fine ware repertoires around the Corinthian Gulf – Corinthian in particular, but to a lesser extent also Achaian and Ithacesian[64]. The relationship between the circulation of aryballoi and lekythoi (full or empty) and the blending and export of perfumes and unguents has been explored in a number of studies mostly focused on the later Archaic and Classical periods[65]. 8th- and 7th-century vessels (in our region chiefly Corinthian[ising]) have mostly been discussed in terms of large-scale Mediterranean trade networks[66]. Yet their presence at sanctuaries in neighbouring communities around the Corinthian Gulf raises questions about the origins, scope, and organisation of local/regional markets for products to enhance the atmosphere at ritual events and/or advertise the taste of those using and offering them.

## SANCTUARY POTTERY IN THE LONGUE DURÉE

Many of the issues raised so far have most commonly been explored in the Classical and Hellenistic periods when monetisation and a generally fuller textual record give a clearer picture of economic context. Yet entering discussion at this relatively late date runs the risk of overlooking inherited relationships, potentially of long standing. Some potting traditions and fabric recipes were likely sustained within families or craft circles over very long periods of time. And there is also value in connecting work on ceramic assemblages of different periods to examine longue durée trends in supply, consumption, material practice, and more. In practice this means working forward in time to consider how each generation responded to inherited practices and the consequences of decisions taken, rather than retrojecting or creating teleological arguments, although there is sometimes value in using later circumstances in a heuristic fashion. A long-term view can help to ensure that detailed observations are genuinely meaningful and not artefacts of period-specific research histories. It may stimulate examination of neglected aspects of particular periods and offer ideas about how to tackle them. And it can challenge misconceptions (so, for example, the idea that small open ›cups‹ were used for food as much as drink is generally accepted in scholarship on the Early Iron Age but has yet to translate to work on many later periods)[67].

It might be objected that the 500 years or so of the Early Iron Age is itself a very long period, especially as ceramic assemblages in certain sanctuaries demonstrate frequent and complex changes in preferred shapes and decoration. An excellent example is the Amyklaion, where Vicky Vlachou has tracked change and continuity in provision for consumption in successive phases

63 Barfœd 2015, 1. 11–14; Karadima 2020, 139 f. (I thank Agathi Karadima for discussion of this question). Pemberton 2020 illustrates the range of miniatures in the Corinthian repertoire.

64 Corinthian: Coldstream 2008, 93. 101. 106 f. (while the aryballos shape dates back to Early Geometric, it becomes truly popular only in EPC). Achaia: Gadolou 2008, 121 f. (Manesi). Ithaca: Benton 1953, 329–333; Heurtley – Robertson 1948, 90–92 [M. Robertson]. This is not to overlook the popularity of small oil containers in Early Iron Age burials, simply to note that they are most numerous in areas such as Attica and Euboia rather than the Corinthian Gulf: Pratt 2021, 220–222.

65 E.g. Reger 2005; Massar – Verbanck-Piérard 2013. Parko 2002; Stissi 2009; and Neeft 2006, 105 n. 5 all argue (primarily but not exclusively from South Italian data) that Corinthian aryballoi were not exclusively oil/perfume containers but were also deposited empty and perhaps manufactured as votives. Perfumed oils and small containers may have been manufactured in different places and traded separately before filling, so one cannot assume that every sanctuary find arrived on site filled, although the perceived association with perfume was surely significant. But it would be unwise to generalise about such a large and widely dispersed category of evidence: quantified distributions from within the Gulf area would offer a better guide to local perceptions.

66 E.g. Sherratt 2020, with extensive previous bibliography.

67 Literature includes: Morgan 1999, 322 f. (with earlier bibliography); Kerschner 2011, 24; Charalambidou 2017, 259.

from the Late Bronze Age to the 8th century, and considered the workshops involved and the significance of her observations in their local and regional contexts[68]. Yet the Amyklaion is a much longer-lived sanctuary, and it would seem a missed opportunity not to go further in connecting Early Iron Age assemblages more systematically with those of later periods.

Considerable progress in this direction has already been made at the Sanctuary of Poseidon at Isthmia, a site which offers a near ideal combination of a temenos and immediate surrounds small enough to excavate extensively, and a long and complex history characterised by a growing range of cult and social functions of both local and Panhellenic significance[69]. Much of what follows flows simply from asking the same basic questions of material of different periods. In the Early Iron Age, the fact that most material was extensively redeposited meant that discussion focused on independently datable fine wares and on the properties of the vessels themselves. A striking feature is the remarkably consistent appearance and capacity of the two cup shapes which dominated the assemblage from the Late Protogeometric period to the mid-late 8th century, accounting for around two thirds of small open shapes overall[70]. These afforded both the possibility of equal portions and the visual appearance of equality. The degree of decoration of the other small open shapes fluctuated through the Early Iron Age, though the vessel size range grew in the 8th century. The lack of contextual control makes it impossible to tell whether these distinctions in standardization relate to practice, to the substance consumed, or to social group. But the standardization of the most popular forms and their manufacture in two macroscopically distinct clay pastes (both consistent with local resources) raise questions about the organisation of procurement.

This pattern broke down in the second half of the 8th century, when the Geometric period cup was replaced by the kotyle, a shape rapidly produced in a larger size range and with more varied decoration. While this change is comprehensible in the immediate context of more diverse investment in dedications, culminating in the first temple which had the potential to disrupt ritual activity and to facilitate different approaches to supply[71], the question is whether it represented a permanent change in practice. The next step is therefore to see what happened as the Isthmian games (traditionally founded in 582 BC) brought a wider range of interests and economic opportunities, crowds grew, and the storage potential of the new temple was fully exploited[72]. A valuable fixed point for comparison is the clearance of the temenos for relandscaping after the Temple of Poseidon was destroyed by fire around 460–450 BC[73]. Large quantities of pottery in use at that time were probably dumped close to their place of storage, creating the potential to document what was in use in different parts of the temenos during the Late Archaic and Early Classical periods. A good illustration of the potential of this evidence is Martha Risser's study of pottery from the fill of a massive Archaic reservoir, which included the full spectrum of storage, kitchen, and serving vessels (the vast majority of fine wares being plain, monochrome, or semi-glazed table vessels)[74]. Risser reconstructs service sets likely ordered from the same workshop, given their consistency and specific size requirements (kotylae, for example, are consistently smaller than those regularly found in settlements). Since there is no evidence of pottery production at the sanctuary, Corinthian pottery must have been obtained from producers elsewhere in the region. But where did these people work, and were their relationships with the sanctuary longstanding? The more we understand the wider Corinthia outside the city centre, the stronger the impression of local variation in aspects of pottery production ranging from clay paste preparation to minor differences in forming

68 Vlachou 2018, and in this volume.
69 The latest, and fullest, descriptions of relevant contexts are: Gebhard – Hemans 1992; Gebhard – Hemans 1998.
70 Morgan (forthcoming c).
71 Morgan 2017a.
72 Gebhard 1998; Gebhard 2002a.
73 Gebhard 1998, Appendix A (J. Bentz); date as revised by Risser 2015, 95 f.
74 Risser 2015.

and decoration[75]. In addition to the Early Iron Age cup fabrics noted above, another published instance concerns differences in the forming of cooking pots found at the Sanctuary of Demeter and Kore on Acrocorinth and those from the Rachi settlement at the Isthmus in the Hellenistic period[76]. For the most part, however, observations remain impressionistic, and there is much still to do before we can place products more precisely.

At Isthmia, the supply of vessels of many kinds was planned and probably organised on behalf of the sanctuary. But was this a matter of practicality (noting that procurement extended to cooking pots, such as three unusually large Aiginetan stewpots found in the reservoir which were likely intended for public feasting)[77], or does it speak to how people were expected to participate in group rituals? There are hints of functional and/or social differentiation in different parts of the sanctuary. In the reservoir fill, for example, a set of lotus kotylai related to the BK Workshop of the third quarter of the 6th century stands out for their greater capacity, leading Risser to suggest that they were intended for shared consumption or for privileged participants[78]. More selective dining in other parts of the temenos featured the same range of vessel shapes, with the addition in the Theatre Cave dining rooms of the lopas probably for the cooking of fish[79]. The case of Isthmia underscores the value of passing the same questions back and forth between widely separated periods as well as between different contexts of the same period.

A final element in this discussion is site environment, both in the sense of physical geography (i.e. factors, such as remoteness, slope, or access to water, which must be negotiated in determining how a shrine should be equipped) and experience, combining nature with a wide range of social cues and sensory stimuli obtained *inter alia* via substances (as oils, perfumes, or unguents), images, or the handling of objects distinguished by their form, meaning, or biography[80]. Since this touches on points raised by many contributors to this volume, I return briefly to just one site mentioned above, Boliatso cave on Leukas, a relatively remote location with the nearest water at the foot of a steep hill (hence an unusually high proportion of closed table vessels for storage and pouring). Cult activity, documented from the late 8th century BC to the 1st century AD, featured feasting (with some 40 % of the assemblage consisting in kitchen and cookwares, some burnt, containing residues currently under analysis) and the dedication of figurines, miniature vessels, and offering containers (as pyxides, and perfume and oil containers) (fig. 1). Rituals likely happened outside: the confined space of the cave interior contained ceramics probably deposited after each event, but not ash, bone, or other burnt material, and no altar or any other structure[81].

Boliatso cave is a shrine without artificial infrastructure. The scene had to be created and supplies brought for each event, and so by contrast with a sanctuary in a settlement, the need for portability may have had a real impact on what was brought and what left behind. The potential attraction of adaptable shapes has already been noted. Furthermore, it is not the case that equipment brought to a shrine was somehow sacralised and impossible to remove. The hiring and borrowing of valuable domestic equipment for rural feasts is attested notably by Classical and Hellenistic comic poets (Menander's »Dyskolos« being a rich source)[82], and there is no reason to assume that this was recent practice. Large cooking pots and equipment like braziers were costly, so if the sanctuary did not invest in them, they may have been brought in and abandoned only if

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75 In the absence of pre-Classical kiln sites other than those linked with the urban centre, this observation is based on personal study of material from Corinth, Isthmia, Kenchreai, and Perachora with thanks also for conversations with numerous colleagues working in the Corinthia.

76 Anderson-Stojanović 2004, 629 f.

77 Risser 2015, 89 f. fig. 5.9.

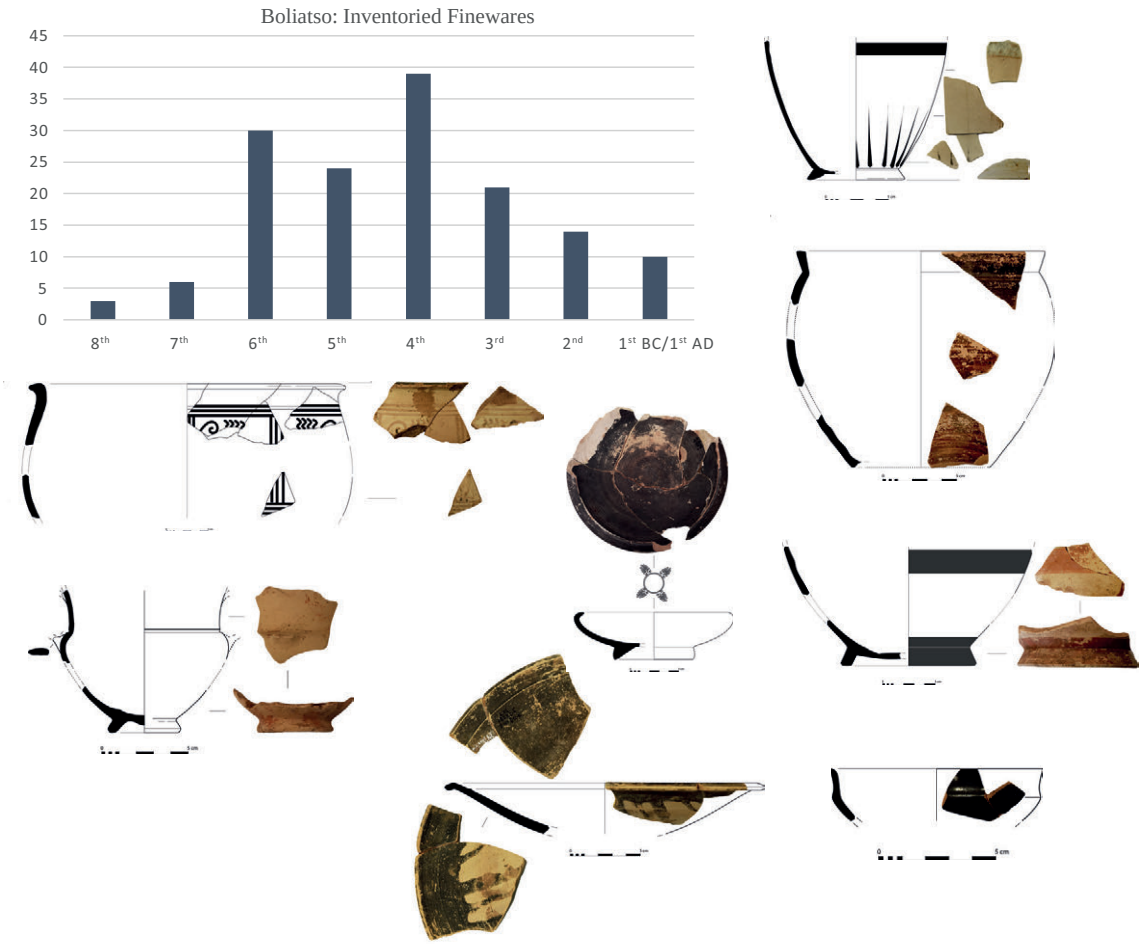
78 Risser 2015, 91.

79 Risser 2015, 86–88; Gebhard 2002b. I thank Karim Arafat and Martha Risser for information about their work on the Archaic and Classical pottery respectively.

80 Häussler – Chiai 2020, with previous bibliography.

81 Morgan et al. (forthcoming).

82 »Dyskolos«: Wilkins 2000, 412–414.




2 Boliatso cave, Leukas. The composition and chronological distribution of the Archaic-Hellenistic ceramic assemblage with typical tableware forms (© C. Morgan)

they happened to break[83]. At Boliatso, the lack of fire containers would otherwise be puzzling, as open wood fires would surely have been risky in such an environment (quite apart from requiring time and labour). The clean-up was evidently systematic, with no trace of ash and only a few chips of calcined bone mixed with the pottery: it preserved the purity of the shrine, protecting it from fire and pests, yet left a memorial of the ritual and a set of offerings. Working out what ›final‹ deposition means in each case, how such deposits were created and/or constructed and what may therefore be present or absent, is a vital task, especially when quantified comparisons of ceramic assemblages are at stake[84]. In instances such as the feasting deposits revealed in a rescue excavation on the Fitzgerald property in Polis bay on Ithaca, commemorative deposits seem to have been carefully structured to represent both the event and the values behind it[85] – potentially a different set of filters and/or results from those which we are now exploring at Boliatso. This is certainly not an argument against quantification, merely recognition of the factors affecting comparison.

Turning to aspects of the experienced, sensory environment at Boliatso, the use of perfumes and unguents is suggested by aryballoi and other small containers, and the figurine repertoire with

83 Scheffer 2014.
84 Pakkanen 2015; Bocher 2015.
85 Livitsanis 2014, 128–130.

its emphasis on ring dance groups points especially to music, dance, and the interests of women[86] (fig. 2). But there is also a rich collection of diminutive and miniature vessels which may date back into the 6th century. As we have seen, miniatures are common at shrines across the northwest, and it is easy to understand them in general terms as props in a thought-world of memory, prayer, and commemoration. Yet the selection of specific shapes at each site also merits consideration. At Boliatso, as Agathi Karadima's study reveals[87], the choice of miniatures may allude to the appearance of a dinner service had real world practicalities not intervened – perhaps representing idealised memories and/or reaction to the scope of activities at the site. What we miss at sanctuaries like Boliatso, however, are vessels, such as the decanters or light-holders/stands from the town-centre Sanctuary at Aetos on Ithaca, that play with form and function, and require particular handling perhaps as a (quasi-) ritual act[88]. It is worth reassessing the distribution of such material to ascertain whether it might reflect factors such as the social role of particular ritual gatherings, the nature of the company, or the time spent at the shrine on each occasion with the opportunity to explore, enjoy, and exploit artefacts and images.

Discussion so far represents a plea for the close reading of individual context and site assemblages necessary to build a regional picture without prejudging what should be happening at any individual sanctuary. In the area of the Corinthian Gulf this is a hope for the future. We do not yet have the full range of information required from any single sanctuary, nor (crucially) data from a sufficient range of contexts within settlements to set alongside graves and sanctuaries and thus document how each community deployed pottery across its social environment. But this will surely come, and when it does, a further dimension can be added in the rich history of scholarship on the Corinthian Gulf as a microregion[89]. When fully connected with the sanctuary record this will surely offer a distinctive perspective on the physical and socially experienced environment of Gulf communities.

## RELIGION AND MATERIAL CULTURE

A final topic on which I can touch only briefly is the problematic relationship between religion and material culture. Problematic, that is, not only because of discussion surrounding the capacity of material culture to speak to more than forms of action, but also because of continuing debate about the very nature of ancient religion (exploring ideas of faith, action, and emotion) as well as the physical space of communication with the divine[90]. Yet even existing evidence may take us further and in different directions than often supposed.

It is perhaps inevitable that social readings of Geometric vase painting, and especially narrative, have come to rely largely on the extensive and varied repertoire of Attica and to a lesser extent the Argolid[91]. But it would be misleading to pass over supposedly isolated objects, even though they vary in medium, visual syntax, and link with text and/or object. The geography and connectivity of the Gulf provides a different, trans-border frame within which they may be associated[92]. Important work on specific ritual depictions has certainly extended to sanctuaries considered in this volume. Consider, for example, Vicky Vlachou's study documenting the relationship between drinking equipment and depictions of male dancers and athletes, male initiation rituals, and female choruses at the Amyklaion[93]. There is definite potential to re-integrate art into our en-

86 Barbara Ghiza, pers. comm. For a review of dance groups (with extensive bibliography): Karadima 2020, 145–190.
87 Morgan et al. (forthcoming).
88 Symeonoglou 2002, 197–202; Morgan 2017b.
89 Most recently, Bonnier 2014; Bonnier 2016; Freitag 2001.
90 See n. 18 above, also e.g. Kindt 2012, esp. 190–194; Kindt 2015; Pilz 2017; Parker 2011.
91 Most recently, Langdon 2008, who acknowledges the need to rely on Attic material while including smaller repertoires (notably from Argos, Laconia, Crete, Euboia, and Boiotia) where possible.
92 Examples include Coleman 1986, 20–22 cat. B1; Gadolou 2015; Gadolou 2019; Morgan 2006; Morgan 2017b.
93 Vlachou 2017.

quiries in more challenging ways given that, via a combination of painting, figures and figurines (and possibility also textiles), and the theatrical qualities of miniature objects and their potential contents, Gulf sanctuaries appear richly populated with images real and imagined. The vase-centric notion of a long, pictureless hiatus spanning much of the Early Iron Age is no more convincing than the assumption that the emergence of figurative vase painting was linked to a sudden appearance of a storytelling art[94]. Images were present in various forms for centuries, perhaps used in performance (and occasionally depicting it), handled, and no doubt talked about. Figure scenes capture the message and intent of the artist and patron in a different, more closely framed way than single images, but portable objects add another dimension, opening the possibility of reinventing display, repurposing space, and creating biography independent of the presence of any architectural setting[95]. The 8th and 7th centuries were a time of fluidity and experiment, echoing the experience of oral story tellers. As Anthony Snodgrass has observed, the trend towards later, 7th-century dates for our »Iliad« and »Odyssey« (and in turn for cyclic epic) means that far from being influenced by ›Homer‹, those creating visual images in whatever medium were engaged in experiment and exploration in a similar way[96].

Given the high connectivity between communities around the Gulf and the wide spread of figured material (even if in small quantities), it is appropriate to consider not only the local contexts in which makers worked (affecting their materials and approaches to forming, the content, composition, and execution of decoration, and the identification of hands), but also the communicative value of images and objects in speaking more widely to interlocutors across the Gulf region. Anastasia Gadoulou's work on architectural models has pioneered this approach in the Gulf[97]. Yet the larger questions of how trans-local spaces could be rendered visible through the circulation of artefacts, and of the interests implicated in this, have so far been more thoroughly considered in the western Mediterranean, within theoretical perspectives around globalisation[98]. This approach is readily scalable to a microregion as the Corinthian Gulf.

The chapters in this volume, and the reflections offered above, demonstrate yet again how challenging and promising an environment the Corinthian Gulf really is, with the potential to change how we think about pottery and its various contributions to sanctuaries and to religious thought and practice. The geographical frame is key: it offers the potential to connect diverse physical, social, and material environments, implicating pottery at all stages from the handling of vessels to cross-connection between sanctuaries. The reflections offered here have been brief, with selective referencing which merely illustrates the importance of work now in progress. In short, the conversation is just beginning.

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94 Hiatus: Benson 1970, 10; cf. Coldstream 2006.
95 Morgan (forthcoming a).
96 Snodgrass 2017.
97 Gadolou 2019.
98 Kistler et al 2015.

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# ACHAIA

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# TRACING THE IDENTITY OF AN APSIDAL BUILDING IN ANCIENT PHELLOE*

ABSTRACT

Ancient Phelloe (modern Seliana), located in the Krios valley, 12 km southeast of ancient Aigeira was a thriving town with rich finds and architectural remains dating from the Geometric to the Hellenistic times. An apsidal building uncovered in a Geometric cemetery is interpreted as a residence, probably of the ruler of the region. Close to it, a very rich double burial with precious grave goods, including eastern Mediterranean imports, was discovered. This paper attempts to trace the identity of the apsidal building. If it was originally the ruler's residence, then it is an example of a building outside the fortified settlement and was situated unusually in the cemetery. Should this edifice be rather regarded as a structure associated with tomb cult or veneration of ancestors pointing to hero cult, it could be called a heroon (hero shrine).

Ancient Phelloe was situated in the mountainous borders of three prefectures: Corinth, Achaia and Arkadia, on the southeastern slope of the Krios River valley, rising between 720–750 m, at the contemporary village of Seliana, Aigialeia Municipality, Achaia Prefecture[1].

According to Pausanias, a straight and steep road of 40 stadia (approximately a two-hour walk) led through the mountains from the Sanctuary of Zeus at Aigeira to Phelloe, described as πόλισμα οὐκ ἐπιφανὲς (= »an obscure town«), with sanctuaries of Dionysos and Artemis, worshipping deities utterly harmonized with the natural environment[2]. The name Phelloe derives from the word *phellos* (= cork)[3], attributed to the town due to the rare cork oaks that grew in the area.

Considerable density of visible remains is detected in the village of Seliana, between the sites of Agios Konstantinos and Agios Vassileios, where foundations, sections of columns and stone plinths are distinguishable[4]. Antiquities found in the area have been handed over to the Ephorate several times from the 1970s onwards. In one particular case, four intact ceramic vessels were delivered, including a tripod, a pyxis with lid, a round pyxis with lid and an oinochoe with trefoil mouth, of the Thapsos type, possibly originating from a burial assembly, today on permanent display at the Museum of Aigion[5].

However, in 2009[6], in a plot found in the centre of the designated archaeological site owned by D. Stasinou and Ch. Alexiou, and at a short distance, ca. 50 m north from the small church of

* I wish to thank Michael Kerschner for his invitation to this symposium. I thank my dear colleague and friend, Walter Gauß, for his valuable assistance. I thank my colleague, Alexandra Kotsaki, for the English translation and revision of my text.

1 According to several researchers, see Frazer 1898, 179; Papandreou 1906, 158–160; Papachatzis 1980, 167; Rizakis 1995, 221 f., with earlier citations.

2 Paus. 7, 26, 10–11; cf. Papachatzis 1980, 167. Stavropoulos 1954, 200.

3 Papandreou 1920, 101 f.

4 For safety purposes, in 1996 the area became a designated archaeological site by the Greek Ministry of Culture.

5 Kolonas 1999, 10. 17.

6 Katsarou 2009, 446 f. pl. 36; Katsarou 2010, 912; Katsarou 2011, 419; Katsarou 2019a, 223–240; Katsarou 2019c.



1 Ancient Phelloe (Seliana, Aigialeia Municipality), aerial photograph of the excavation. View from the west (Hellenic Ministry of Culture/EFAACHA, photo P. Konstantinopoulos)

Agios Vassileios (fig. 1), the first extended archaeological rescue research took place, producing rich finds, mainly of the Geometric era and exclusively from burials[7].

The initial author's observation of the research focused on the fact that the contexts were disturbed and stirred up, evidence of continuous actions of desecration in antique and contemporary times. Sherds and vessel parts collected from the surface contexts of the cemetery denote the burial usage of the space since the Geometric period and during the 6th and 5th centuries BC, with some dating even to the 4th century BC, without however further actual evidence of use within the above-mentioned periods. Among others, there were also collected scattered finds verifying the import of Corinthian pottery along with Attic, denoting the import of products from Attica for funerary use. Characteristic pieces are parts of a black-figure skyphos/kylix (inv. ΑΠ3043[8]) attributed to the workshop of the Haimon Painter[9] and parts of an Attic black-figure column[10] krater (inv. ΑΠ2977) depicting warriors' departure[11] (inv. ΑΠ2976). An exquisite find is the fragment of a base from an Archaic perirrhanterion on a high stand (inv. ΑΠ2920) bearing a fighting scene with warriors wearing helmets, holding shields, and spears, with quadrigas as well as a part of a charioteer on his chariot[12].

Along the eastern long side of the plot and parallel to it, part of a wall with a north-south orientation was excavated. Along its western side, a riprap extended for about 3 m forming a

7 The excavation undertaken by the author was defined by the rules and restrictions set within the context of rescue excavation of a private plot. Photos of the excavation and its finds were taken by Petros Konstantinopoulos. On previous studies see Alzinger 1986, 319 f.; Vordos 1996, 252; Kolia 2002, 553.

8 ΑΠ indicates the registration number in the catalogue of the museum of Aigion.

9 Kaltsas 1998, 194 pl. 203 E192.

10 Kaltsas 1998, 198 pl. 207 E198.

11 Vitos – Panagou 2009, 315 pl. 10; Beschi 2007, 129 pl. 8; Panti 2014, 90.

12 On similar stands of perirrhanteria see Pemberton 1989, pl. 60 nos. 661a. 663. On similar representations see Chase 1907, 33; Picard 1970, 815 fig. 8; Weinberg 1954, 118–121 pls. 26 f. h; 27 a; Iozzo1987, 409–411 pls. 82. 121. 124.

curve (fig. 1). West of it, a part of a wall of the Hellenistic period is preserved *in situ*. In front of this wall, a section of an ancient gravel pathway with north-south orientation is preserved, and another part of it in the middle of the plot. These are presumably remains of an ancient road running alongside the wall. It is possible that it was part of a highway which led from Kynaitha, a town in northern Arkadia and the Arkadian town of Nonakris to Phelloe, where it turned north and finally reached the coastline at Aigeira[13]. The riprap along the western side of the wall is possibly interpreted as a protection against floods of the rivers flowing through the settlements. Comparable structures involving irregularly thrown stones have also been detected by A. Mazarakis Ainian in Oropos and Eretria[14]. The danger of flooding is demonstrated by an alluvial layer which fully covered the northern part of the plot. According to the same author, many dried-up streams were converted to highways[15], a fact apparently applying to the case of the above-mentioned gravel road, as well.

In the riprap area, the surviving foundation of an apsidal building was discovered (fig. 1). The structure is orientated northeast-southwest with dimensions of 5.85 × 2.85 m. A part of it continued underneath the riprap. South of the apsidal building, another building was spotted, of round shape, incomplete at its western side, measuring 5 × 2.70 m in dimensions. The latter relates to a type of building often found in Greece, especially during the Late Geometric period. Their function has been identified as storage facilities (barns), workshops, or even sanctuaries[16] and, according to A. Mazarakis Ainian[17], round buildings were also intended for storing supplies or votive offerings.

Generally, building structures of apsidal and oval floor plans are commonly found in Early Iron Age Greece[18]. The fact that the apsidal shape was very popular during the Protogeometric and Geometric periods is undeniable. It is also present in the Late Geometric period and often related to sanctuaries and public buildings rather than private residences. The application of the apsidal shape in Late Geometric sacred buildings could constitute a reminder and reflection of the Dark Ages, when houses and sanctuaries were built in that manner. It would only be natural for a polis to return to its architectural tradition every time it was either necessary or desirable to place an emphasis on its past, its roots[19]. Also, as mentioned by A. Mazarakis Ainian, it is not a coincidence that apsidal buildings of Late Geometric and later periods were often dedicated to Apollo or were located close to sanctuaries of Apollo (for instance, Temple B at Corinth situated less than 50 m south-east of the Temple of Apollo), whose cult was of fundamental importance during the Early Iron Age. Fewer structures of this shape are also connected to sanctuaries of Apollo's sister, Artemis, or to others associated with mystery cults[20].

At Phelloe, according to Pausanias there was a sanctuary dedicated to Artemis. The apsidal building is located at a distance of 50 m from the church of Ag. Vassileios, on the courtyard of which scattered marble members are found – possibly denoting the existence of a temple of Artemis?

The most challenging element for this interpretation is the location of the apsidal building in a cemetery. If it initially was a ruler's residence, then it presents an example of a building outside the settlement, and its position within the cemetery raises a lot of questions[21]. As far as the particular building is concerned, further analysis based on all of its components will be presented below.

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13 This highway was first spotted by my colleague G. Alexopoulou, who I warmly thank for the information, in the context of field survey carried out in northern Arkadia for the purpose of her thesis. See Alexopoulou 2009, 507 f.

14 Mazarakis Ainian 2006, 956 fig. 4.

15 Mazarakis Ainian 2006, 956.

16 Mazarakis Ainian 1996, 27–49.

17 Mazarakis Ainian 1997, 124.

18 On the topic, see Kalligas 1992, 298–305; Mazarakis Ainian 1996, 27–49.

19 Mazarakis Ainian 1997, 112 f.

20 Mazarakis Ainian 1997, 113.

21 Kourou 2009, 121.




2 Ancient Phelloe. The burial assemblage of pithos XIV (Hellenic Ministry of Culture/EFAACHA, photo P. Konstantinopoulos)

In the excavated part of the Seliana cemetery, a combination of burial types is detected that has now been noticed for the first time in eastern Achaia. The richness of the grave goods in almost all burials allows us to interpret the sociological factors that led to the existence of these particular burials[22]. The majority of them are located around or underneath round-shaped stone piles that probably functioned as grave markers[23]. The grave goods were found in different types of graves[24]. Most of the ceramic vessels belong to the Thapsos class[25], which is widespread in Achaia, especially across the northeastern coastline[26], but it is also occasionally found in the hinterland[27].

22 In most cases, the Seliana burials contained not only pottery but also bronze vessels, iron weapons as well as jewelry.

23 Andronikos 1961/1962, 176–206.

24 Conservation work on the vessels was undertaken by the temporary conservator K. Kiriakopoulou. The metal objects were conserved by the EFAACHA conservator O. Giannakopoulou.

25 On the Thapsos class: Neeft 1981, 8–11.

26 Gadolou 2008, 319 f.; Gadolou 2011a, 203.

27 As in the case of the Sanctuary of Artemis in Ano Mazaraki: Gadolou 2002, 165–205. On Chalandritsa: Gadolou 2008, 192–196. 312–322. On Trapeza of Aigion: Gadolou 2007, 7. 11–32 figs. 6. 14. On the location Erimo Chorio: Kolia – Nestoridou 2003, 101–112. On the apsidal temple in Nikoleika in Aigialeia: Kolia – Gadolou 2011, 147–165 and the contribution of E.-I. Kolia in this volume.



3 Ancient Phelloe. Grave group XXV *in situ* and after conservation (Hellenic Ministry of Culture/EFAACHA, photo P. Konstantinopoulos)

The burial ensemble from pithos XIV (fig. 2) included ceramic and metal grave goods. The ceramic vessels were associated with rituals and libations following the burial[28].

The burial ensemble XXV (fig. 3) is regarded as a separate entity, consisting of 15 intact vessels, among which is a new type of pyxis of the Thapsos class, a pyxis possessing a tall conical lid[29]. Judging by its decoration scheme, it belongs to the tripartite group of the Thapsos class[30].

28 Kurtz – Boardman 1971, 204 f.

29 For the shape, but taller and with a similar lid, see Benton 1953, 301 pl. 50, 839–841, and Robertson 1948, 28 fig. 16 pl. 6 no 77.

30 Neeft 1981, 17 fig. 2 d; Appendix III tab. IV, but the shape is not included in the typology.




4 Ancient Phelloe. Pottery from the curved side part of a construction where vessels were fully embedded in a solid single hard limestone layer, after detachment and conservation, with the pomegranate vessel (Hellenic Ministry of Culture/EFAACHA, photo P. Konstantinopoulos)

The next assemblage came from the curved side part of a construction where the vessels were fully embodied in a solid single hard limestone layer[31]. Many vessels have been restored so far (fig. 4), one of which has the shape of a pomegranate (inv. ΑΠ 3208)[32]. This shape is so far unique within the Thapsos class[33]. The pomegranate is known as the ›fruit of the dead‹ in ancient mythology: it is directly associated with Demeter and Persephone, the goddess of the underworld. Due to its red blood-like juice and its numerous seeds, the pomegranate symbolizes life after death[34]. People recognized its suitability as a grave good for those who had descended to the underworld, mainly due to their belief in the afterlife. Pomegranates were also used as offerings during the burial ritual[35].

In addition, as noted by M. Tiverios[36], there is evidence pointing to an ancient Greek notion according to which the dedicators of a pomegranate actually intended to ›bind‹ the deceased with themselves so as to ensure they would come back to ›visit‹, in a manner resembling the popular myth of Persephone. The Queen of the Underworld is said to have been tricked by Hades into tasting the seeds of a pomegranate, an act that bound her forever to the underworld obliging her to spend a third of each year there. Of analogous meaning are the scenes on pottery depicting the

31 For a similar context: Weinberg 1943, 15.

32 It presents similarities with type III of the typology of the clay pomegranate models, referred to as a much rarer type; see Kourou 1987, figs. 1. 8. 102. The finds were restored by the EFAACHA conservator V. Kyrkos.

33 On the ornate type of the Thapsos class: Neeft 1981, 38; Appendix III, 81, but this shape is not included in the typology.

34 Immerwahr 1989, 405–409.

35 On the symbolism of the pomegranate, also see Zosi 2002/2003, 80 f.

36 Tiverios 2009, 465. 474 f.




5 Ancient Phelloe. The assemblage of grave goods of ancient Phelloe's workshop (Hellenic Ministry of Culture/ EFAACHA, photo P. Konstantinopoulos)

departure of a warrior or a horseman with one of the figures standing by, also holding a pomegranate.

North of this construction, a trefoil oinochoe (inv. ΑΠ3257)[37] and part of a krater (inv. ΑΠ3209)[38] were excavated in another solid layer at a considerable depth.

At this point, it is crucial to note that four different types of pyxides were unearthed, which, along with the two pyxides from the Polidergianika burial ensemble, are among six different types of pyxides found in one single area.

The assemblage of grave goods, most of them perfectly preserved (figs. 5 a–c; 3 b; 4 a. c; 7 a), present as a whole originality and diversity in terms of size, shape and decoration, but also

37 A trefoil oinochoe (inv. AMA 527) from Polidergianika shows the same type of decoration: Gadolou 2008, 144 pl. 125; 196, with reference to Neeft 1981, Appendix III, 82, and Gadolou 2011b, 83 fig. 102.

38 Cf. Weinberg 1943, 15 pl. 12 no 73.




6 Ancient Phelloe. Grave goods of Tomb XIX; a: Iron knife, after conservation; b: bronze phialae and *sphekoteras* (Hellenic Ministry of Culture/EFAACHA, photo P. Konstantinopoulos)

coherence and homogeneity. These are further amplified by the above-mentioned characteristics. Therefore, we have reason to assume that they are products of a self-contained local workshop, defined by unique concepts of aesthetics and functionality that determine its production and clearly differentiate it from other workshops. This fact shows the notable degree of prosperity and artistic activity of the town.

The last group of grave goods comes from the richest of all burials, the cist tomb XIX. It was detected in the immediate surroundings of the apsidal building, perpendicular to its west side, with an eastern orientation, containing the most numerous and important ceramic and especially metal objects. It is one of the rare double graves, that is, graves containing two burials described by I. Kilian-Dirlmeier as »auch im Tod vereint« (together in death)[39]. Such graves require a particular interpretation.

The ceramic grave goods were placed alongside the deceased (figs. 5 b; 6). Regarding the metal finds, these include, among others, an iron knife and a bronze phiale[40] containing a bronze hair ring (*sphekoteras*) (fig. 6). On the eastern narrow side of the tomb that remained unbuilt, it was possible to identify three intact trefoil oinochoai *in situ*. The one in the middle bears a plastic wavy serpent over the spine of a twisted handle with its head settling onto the vessel's lip (fig. 7). Examples of plastic serpents on vessels are not very common and are of great interest due to their meaning. Based on popular beliefs regarding the afterlife, the ascending serpent that overlooks the mouth of a vessel symbolizes the deceased who, according to Küster, »from time to time ascends from the grave, his underground residence, in order to enjoy the food offered to him«[41]. Terracotta plastic serpents have decorated the lip, handles and shoulder of vessels since prehistoric times, symbolizing the guardians of the underworld and therefore defining them as appropriate for

39 Kilian-Dirlmeier 2012, 609–614.
40 Cf. Stampolidis 2004, 275 no. 344.
41 Küster 1913, 40; cf. Andreiomenou 2015, 197 no. 540.




7 Ancient Phelloe. Tomb XIX. Three intact trefoil oinochoai found on the eastern narrow side of the tomb. One found in the middle, with plastic wavy serpent over spine of twisted handle and serpent head resting on vessel's lip (Hellenic Ministry of Culture/EFAACHA, photo P. Konstantinopoulos)

funerary use. Serpents suggest chthonic offerings[42], and are a symbol associated with the forces of the underworld and the chthonic deities.

In accordance with certain theories, the serpent was perceived as the incarnation of the deceased's soul attempting to drink in his/her place. As the serpent dwells in holes and recesses in the ground, often observed near graves, it is no surprise that it is associated with the dead. N. Kontoleon argued that a serpent drinking instead of the deceased, within the contents of a burial, functions as a confirmation that the deceased now belongs amongst the dead[43]. The depiction of a serpent next to the grave also served as a guard, a role bestowed on serpents in mythology, as for instance the role of guarding the golden apples of the Hesperides, in springs and fountains. Another symbolic connection of serpents with death is their association with the earth, to which all mortals are condemned to return[44].

42 Iakovidis 1970, 232 f.; Kardara 1977, 32–34 pls. 39–42.
43 Kontoleon 1965, 372 f.; cf. Salapata 2006, 550 no. 38.
44 Salapata 2006, 551.

In addition to the vases, iron spits (obeloi) were found arranged alongside the dead[45]. Such utensils were crafted for roasting meat offered in feasting. They were symbols of the upper class and wealth of their owner, while their use in the form of currency and weight for trade is attested since the 8th century BC, a period when the use of metal was established as currency, as suggested by M. Oikonomidou[46]. The rectangular cross section of the obeloi allowed their handling over a pair of spit-rests. They first appear in Cyprus in the 11th century BC, while in Greece they are found from the 10th to 6th centuries BC in burials and sanctuaries, and from then on only in sanctuaries. The presence of obeloi in burials, especially of warriors belonging to the aristocracy, is associated with funeral feasts, as well as the social status of the deceased. Examples have been found in graves in Argos, Eleutherna[47], Lefkandi, and on Cyprus, while the cemetery of Sindos provides a considerable number of spit and spit-rest models[48]. Obeloi are often referred to as ›utensil-money‹ due to their double nature and it is therefore reasonable to question their meaning as grave offerings in this particular burial. Considering their wide use and great popularity as cooking tools, it is no surprise they evolved into an exchange medium, acquiring a monetary value. In the context of this burial, the spits have both functional and numismatic aspects[49].

A unique artefact is an intact bronze fluted tripod (inv. AM987)[50]. It was found placed on the lower extremities of the buried (fig. 8). On the side of the tripod lay a fragmented shallow bronze phiale with omega handle (inv. AM992). This type of phiale has a long tradition in the Near East and the eastern Mediterranean, and was produced in many places. Imported Near Eastern phialai are well documented in sanctuaries especially on Crete (Idaean Cave, Eleutherna)[51]. Comparable fluted bronze tripods have been found in graves at Knossos and Sellada on Thera[52]. They belong to a type of stands observed throughout the eastern Mediterranean and on Cyprus, their presumed place of origin[53]. This type dates to the Early Iron Age (11th–8th cent. BC).

It is a rare case, according to G. Papasavvas[54], to encounter a tripod in direct correlation with another item, since most of these examples come from sanctuaries and disturbed contexts or graves with multi-burials. On Cyprus, however, some tripods found together with bronze phialai constitute the most suitable example of use for this type of stand, as those from Selliana show. In any case, the high appreciation of these artefacts in the Mediterranean is apparently linked to the possibilities they provided in ritual or secular festive occasions, as well as funerary rites. In fact, their striking and elaborate appearance, deliberate sophistication in typology and elaborate craftsmanship made them masterpieces of impressive impact and effect in the Mediterranean world of the Early Iron Age. The above-mentioned metal objects are unique in Achaia so far. Their use as grave goods, combined or individually, clearly denotes the high status of the deceased discovered in this grave. This is especially true for the tripod stand.

This argument is further supported by the location of the grave next to the apsidal building, comparable to examples of Late Geometric burials alongside apsidal buildings which are interpreted as a »ruler's dwelling«[55]. The ruler was later buried close to his residence or within it[56]. As previously stated, the case of a double burial is an exceptional situation. Tombs in which men

45 On examples of obeloi see Oikonomidou 1969, 436–445 and Karagiorgis 1970.
46 Oikonomodou 1969, 438.
47 Stampolidis 2004, 284 nos. 366. 367.
48 Tsatsopoulou-Kaloudi et al. 2015, 869–871.
49 Oikonomidou 1969, 440 f.
50 Katsarou 2019b, 56.
51 Stampolidis 1998, 113 f. nos. 295–297; Stampolidis 2004, 276 f. nos. 347. 348.
52 Zafiropoulos 1974, 194–200 pls. 135–140.
53 Stampolidis 1998, 50. 104 no. 57; 231 f. nos. 274. 275.
54 Papasavvas 2014, 312 f. 315.
55 Mazarakis Ainian 1999, 15 f. with figs. 3. 4.
56 Kourou 2009, 121.




8 Ancient Phelloe. Tomb XIX with omega handle, partially preserved, as found, *in situ*, on the west side of the tomb, after conservation and intact bronze fluted tripod (Hellenic Ministry of Culture/EFAACHA, photo P. Konstantinopoulos)

and women were buried simultaneously are not unknown in Early Iron Age Greece. They occur especially in wealthy burials of the Sub-Mycenean/Sub-Minoan period[57].

A double burial was discovered in the southern pit of the large apsidal building in the cemetery of Toumba in Lefkandi. According to the anthropological analysis and the archaeological data, it contained the remains of two adults, a male and a female. The excavators' assumption that this was indeed a couple's burial, in which the female ›followed‹ her husband in death, was gener-

[57] As referred to by Mazarakis Ainian 1997, 56 no. 132.



9 Ancient Phelloe. Tomb XIX: two oinochoai *in situ* (Hellenic Ministry of Culture/EFAACHA, photo P. Konstantinopoulos)

ally accepted[58]. The fact that the female was simultaneously buried along with the male, with a knife next to her skull, leads to the conclusion of human sacrifice, very similar to *suttee*, Sanskrit *sati*, meaning »good woman« or »chaste wife«, the Hindu practice of a widow's sacrifice on her husband's funeral pyre. I. Kilian-Dirlmeier stated that, on the basis of comparative study of historical, archaeological and ethnological data, the possibility of a woman following her husband into death was only one of many reasons for the existence of double burials[59]. This phenomenon does not necessarily reflect an androcentric society perceiving the wife as her husband's property. There were obviously other personal and/or social responsibilities besides marriage that perhaps prohibited her survival after her husband's death. However, in this case, if one considers the fact that the double burial includes a knife found in the area of the hands, then it is closely comparable to the Toumba burials, suggesting the scenario of the wife's sacrifice during her husband's funeral as highly probable, as J. Coulton noted, leaving the possibility of *suttee* open[60]. Moreover, the manner in which two out of three oinochoai (fig. 9) were arranged, suggests simultaneous burials, since the oinochoe with the snake was positioned facing the second one with the mastoid lugs. More specifically, their mouths were facing each other in a symbolic posture denoting their union even in death, their unbreakable bond, sharing everlasting offerings in the form of communicating vessels.

Reference to chthonic symbols is at this point crucial. Heroes are often related to chthonic rituals and therefore it is assumed that symbols of chthonic nature are present in hero cults. Many researchers agree that the serpent is often connected to heroes in some form or shape, as in the case of Kekrops who is depicted as half man-half serpent[61]. Other symbols include the pomegran-

58 Popham et al. 1993, 17–21; Lemos 2002, 167.
59 Kilian-Dirlmeier 2012, 609–614.
60 J. Coulton in: Popham et al. 1993, 21; cf. Mazarakis Ainian 1997, 56 no. 135.
61 Kearns 1989, 16. 111.

ates and the horses, but the serpent appears to be the image most commonly used as chthonic[62], because it denotes a strong correlation with the underworld and consequently a heroic tone[63]. The serpent, being a creature that evokes fear, awe and charm-magic, acquires a broad range of meanings: in ancient Greece, as in many other cultures, it was directly associated with the earth, obviously because it slithers on it, lives in it and makes sudden appearances from holes. Herodotus calls it »the child of the earth«[64]. The ancient literary tradition emphasizes the particular relation between serpents and heroes: Plutarch points to an old popular belief according to which the serpent possesses a demonic character pertinent to heroes when he says: »the ancients associated the serpent more than any other animal with heroes«[65].

Thus, the serpent evolved into a hero's attendant, the extension or the characteristic feature of him and, in some cases, represented, replaced and symbolized the hero himself. The exact reason behind this association is still ambiguous to us. One could claim that the serpent, initially an underworld creature, is linked to heroes because the latter were actually dead and directly related to their real or alleged tombs, or even more likely, on the grounds of it being an earthy creature and tied to specific locations, it better expressed the restricted local and indigenous autochthonous nature of most heroes, especially founders and eponymous heroes[66].

The serpent is also found on representations of Corinthian and Laconian reliefs, where it functions as a means of amplifying the heroic nature of the warrior, assigning to him superhuman qualities, and thus possesses a symbolic value[67].

The cult of ancestors or so-called hero cult, according to N. Kourou, was a common phenomenon of the Dark Ages and primarily the Geometric period. Veneration was practiced in many ways, the most common being graveside offerings including meals and libations to the dead, either in pits or around the tombs of the ancestors[68]. At this point, it is important to refer to the definition of the term »hero« and the scope of the concept of hero cult.

Homer used the word »hero« to describe several characters in his »Iliad«. The generally accepted opinion among scholars is that the classical definition of a hero refers to somebody who was »more than a man, but less than a God«[69]. G. Nagy suggests that there were two types of heroes: those deriving from epic poetry and the chthonic creatures related to particular locations[70].

With regard to hero cult, the term is itself vague and ambiguous. J. Larson argues that the term is used in reference to cult rituals and the hero's worshipers, who gathered in honour of their protector, proceeding to graveside offerings that, in this context, assumed a chthonic character[71]. As stated by A. Mazarakis Ainian, there is another aspect of the hero cult in the Early Iron Age in Greece, one that was connected to those »recently heroized«, i.e. titled heroes[72]. At Eretria hero worshiping was established in relation to the rich cemetery discovered at the Western Gate of the city, and at Eleusis, the so-called Sacred House was presumably associated with an ancestral or hero cult[73].

It has been suggested that the rise of hero cult in Late Geometric times was partly prompted by the dissemination of the Homeric epics[74]. In general, the act of honouring heroes and ancestors

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62 Kearns 1989, 111 claims: »it is the most chthonic of all animals«.
63 Hibler 1992, 121.
64 Hdt. 1, 78, 3.
65 Plut., Cleomenes, 39: οἱ παλαιοὶ μάλιστα τῶν ζῴων τὸν δράκοντα τοῖς ἥρωσι συνῳκείωσαν. Cf. Salapata 1997, 250 no. 44.
66 Salapata 1997, 252.
67 Salapata 1997, 250 no. 39.
68 Kourou 2009, 121.
69 Whitley 1995, 51.
70 Nagy 1999, 114–117.
71 Larson 1995, 8.
72 Mazarakis Ainian 1999, 9.
73 Bérard 1970, 45; Travlos 1983, 333–336.
74 Farnell 1921, 340; chap. 11; Coldstream 1976, 17; Fagerström 1993, 56.

should be interpreted as the desire of specific families, social groups, or even whole societies, to preserve and accentuate their past; covering changing needs (social, political, religious) and justifying in this way their own privileged position in times of great changes throughout the Greek world[75]. K. Fagerström noted that hero cults are considered to be the evident ritual establishment of the status of the ruling class celebrating its assumed and praised genealogic origins[76]. F. de Polignac mentioned that the hero cult has its origins in the formation of the polis[77]. In an attempt to legalize and protect their new borders, the cities established cults of deities and heroes outside their limits and along their borderline.

C. Antonaccio, in a series of her works, stresses the difference between hero cult in prehistoric graves and other forms of hero cult. However, each case should be studied as isolated and generalizations should be thus avoided. Some types of hero cult could be viewed as an expression of the ruling class to familiarize itself with the heroic past in order to maintain its power[78]. The discussion, however, on the exact nature of hero cult is still open and some researchers even proceed to the formation of subcategories[79]. A. Mazarakis Ainian argued that, in archaeological terms, hero cults can be divided into three broad categories: tomb cults at prehistoric tombs, cults of eponymous heroes from epics/myths and cults in honour of the recently deceased. Other scholars suggested that hero cult and ancestors' cult differ from one another. C. Antonaccio has suggested particular distinctions between cults, dividing them into hero cults and tomb cults, arguing that they co-existed in antiquity[80]. A main difference is that the hero cult requires the formal worship of a hero, whereas tomb cult is the veneration of Mycenaean or other period tombs with various offerings. F. de Polignac supported the opinion that Homeric hero cults were not necessarily centered on tombs and took place far from the actual location of the burial grounds[81]. E. Kearns argued that no single theory will fit all hero cults[82].

The so-called heroon at Lefkandi on Euboea, dating to the second half of the 10th century BC, is a very impressive, large apsidal building in the cemetery of Toumba, considered to have been the residence of a local ruler[83]. However, its final use was different, since a very luxurious double burial, of a man and a woman, together with four horses, was found inside it. This Homeric type of burial, with the ashes of the deceased warrior placed in a Cypriot bronze krater, could be attributed to the ruler of the settlement, who was buried along with his spouse or possibly concubine, his horses and precious grave goods, many of which had been imported from eastern Mediterranean lands. Immediately after the burial, the building was demolished and covered by a tumulus, apparently functioning as a heroon and the area from then on was used as a graveyard, presumably by the descendants of the couple. The destiny of the dead, the warrior and his consort, was inextricably linked to the building in which they dwelt. Social and religious restraints prohibited the anaktoron from being used by any of their descendants. The building should rather be buried beneath a mound of earth, which would have functioned as a remembrance monument for the generations to come[84].

On the other hand, according to A. Mazarakis Ainian, if the ›heroon hypothesis‹ is one day confirmed, the inevitable conclusion will be that the building was meant to be a memorial, though somewhat exaggerated, of a contemporary ruler's house. It is possible that it was a same-scale copy of the original house, probably located in the Xeropolis settlement. If so, it would be a »fu-

75 Mazarakis Ainian 1999, 9 f.
76 Fagerström 1993, 56; cf. Mazarakis Ainian 1997, 357 no. 812.
77 De Polignac 1984, 127–151.
78 Mazarakis Ainian 1997, 351.
79 Mazarakis Ainian 1999, 10.
80 Antonaccio 1999, 115.
81 De Polignac 1995, 138.
82 Kearns 1989, 131 f.
83 J. Coulton in: Popham et al. 1993, 49. 100; cf. Kourou 2009, 122.
84 Mazarakis Ainian 1997, 54–57.

nerary palace«, as J. Coulton termed it, erected as »a funerary building imitating his house«, to be used following his death[85]. Besides, the building is situated inside an area which has revealed no other antiquities but tombs up to the present day. Therefore the building must have served funerary purposes as well[86].

Another interesting aspect is the observation by the excavators M. Popham and L. H. Sackett that a large tripod (diam. ca. 1 m) was installed by the entrance of the building (traces of its stands were visible in the rock)[87]. Even though the vessel could have been placed there following the funeral ritual, it was presumably a symbol of power and status of the deceased rather than a cultic vessel for the performance of rituals in their honour judging by its position[88]. At any rate, a number of scholars believe that the building post-dates the burials and hence argue that this structure was in the first place planned to function as a ›heroon‹[89]. The representatives of this theory consider the building as a ›burial palace‹, as the model of the non-detected residence of the couple[90].

In Asine, child and adult graves were discovered near the apsidal building C (10th cent. BC), and one of them contained two skeletons[91]. There is also evidence of burial rituals, probably libations, in connection with these tombs. One of the finds was a coarse jug with the characteristic hole at the bottom, ensuring that the poured liquid offerings reached the dead. The associated pottery dates from Proto to Late Geometric. In the Geometric necropolis at the foot of the hill Barbouna, another apsidal building was excavated[92]. It measures 5.85 × 2.90 m and was possibly associated with funeral practices taking place in the area.

We have discussed two main categories of cult buildings: one relates to the cult of either a semi-god, an anonymous hero, or a distinguished historical figure regarded as a hero, and the other to the veneration of an ancestor or relative after death but not as a hero. In these cases, veneration concerned a restricted number of worshipers or the closest relatives[93]. According to A. Mazarakis Ainian, the location of the cult buildings is of crucial importance, like a prominent position of a building at the borders of a settlement, in some cases next to the fortification wall or in places visible from far away[94]. Another significant location is within the necropolis or in immediate proximity to one or more graves. In this case, the buildings were related to the cult of the dead. The exact nature of such worship cannot be precisely defined, as, e.g. whether it concerned deceased relatives, ancestors, heroes or some chthonian divinity[95]. Besides, as noted by the above-mentioned author, every settlement constitutes a unique and separate case that should be separately studied and in accordance with the available data[96].

The apsidal building of Phelloe is situated at a key position that meets all the necessary criteria of cult buildings, because it was situated next to a fortification wall at the borders of the settlement which was perhaps situated north-northeast from the excavated area. This place was possibly visible from afar at its time. It is located inside the necropolis and in close vicinity to graves, with the highway from Kynaitha to Aigeira running alongside.

In the absence of written sources, one might therefore follow A. Mazarakis Ainian who stated that it is inevitable to adopt subjective views on matters of religion and politics and how the

85 J. Coulton in: Popham et al. 1993, 49.
86 Mazarakis Ainian 1997, 54. 57 no. 138.
87 Popham et al. 1980, 214.
88 Mazarakis Ainian 1999, 27.
89 Popham et al. 1982, 171–174.
90 Mazarakis Ainian 1997, 353; Mazarakis Ainian 1999, 27.
91 Wells 1976, 24 f.
92 Mazarakis Ainian 1997, 69–71; Mazarakis Ainian 1999, 16 figs. 3. 18.
93 Mazarakis Ainian 1997, 276.
94 Mazarakis Ainian 1997, 281 f.
95 Mazarakis Ainian 1997, 282 no. 88.
96 Mazarakis Ainian 1997, 276.

Greeks actually perceived such issues and acted accordingly[97]. If we put together the existing puzzle pieces of the archaeological evidence, the following picture emerges: there was a settlement of significant size, protected by a strong fortification wall, which probably surrounded parts of the height. This wall protected the end of the road which was the major thoroughfare connecting Phelloe with other towns.

On the western borders of the settlement, next to the fortification wall, an apsidal building was erected. Unfortunately, it could not be fully excavated. In its immediate proximity a cist grave containing a rich double burial was discovered. A bronze tripod stands out among the grave goods, found together with a hemispherical phiale and obeloi. Its positioning in the grave might have followed the funeral rite. However, it presumably constituted a powerful symbol of status rather than a ritual utensil.

In the Homeric epics, tripods appear among the most precious gifts offered or received by a hero[98]. Therefore, this tripod was either a votive offering and therefore the building should be identified as a sanctuary. Alternatively, it could be regarded as a prize, and thus the building was a heroon, a reduced-scale copy of the couple's non-detected dwelling somewhere in the settlement.

It appears that the building was demolished probably following the burial ritual. This can be inferred from its poor state of preservation and from the fact that its eastern side was overbuilt by a riprap. It is notable that the building had been emptied entirely. Thereafter the location was used as a burial place, possibly of the couple's descendants. The evidence is comparable to the so-called heroon in the Toumba cemetery at Lefkandi.

In conclusion, we will investigate which elements of the archaeological evidence differentiate hero cults from tomb cults and can help identify a hero shrine.

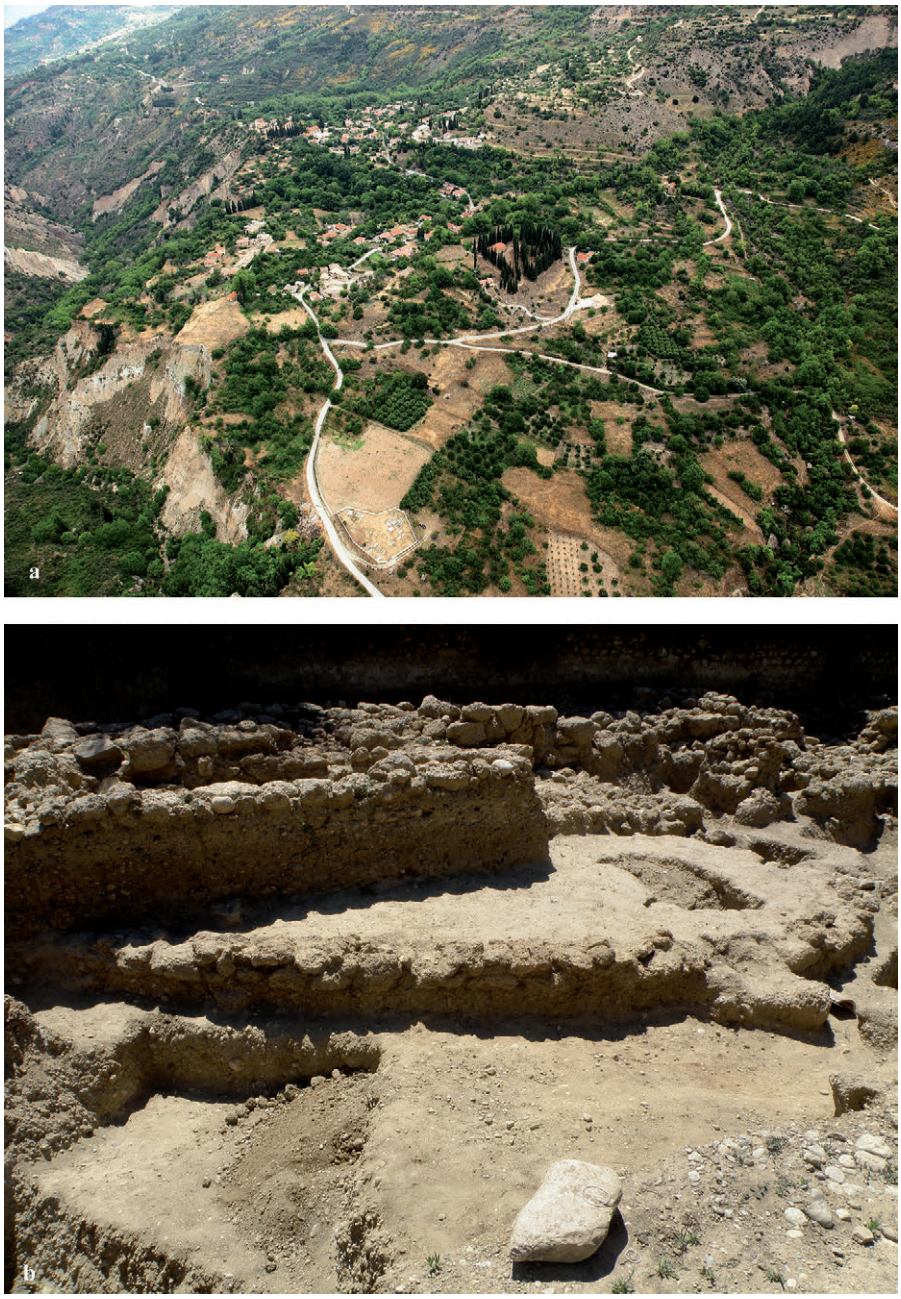
F. de Polignac noted that hero cults are identifiable due to the wealth of votives and offerings[99]. L. Shear suggested that tripods could be a strong indication of hero cult[100]. Such a tripod was found in the burial at the apsidal building. In addition, there is the oinochoe with the twined snake, a symbol frequently associated with heroes. According to E. Küster, a depiction of a snake may designate a hero tomb[101].

I. Morris mentioned that the earliest known hero cults are those of the recently dead[102]. In the 8th century BC they were venerated in cemeteries, as at Asine. Some became strong symbols of the polis, with their graves located either next to the city gate or at a common meeting place. I. Morris added that the Greeks addressed only those persons who had died in recent times and who received worship as heroes or associated them with heroes[103]. These were usually the founders of cities, outstanding warriors or great athletes.

V. Lambrinoudakis pointed out that the association of the tomb of a hero with fortifications, a symbol of power, can be found already in the Homeric epics[104]. R. Hägg drew attention to the Early Iron Age circular constructions close to the walls of Troy VI[105]. In this context, one could add the slightly different case of the triangular heroon close to the West Gate of Eretria. There the graves, were »surely the preserve of a powerful … *genos*«, suggested N. Coldstream, and the dead were »posthumously worshiped as the guardians of their city«[106].

In the case of Phelloe, the identity of the owner of the apsidal building remains unknown for lack of written sources. The absence of inscriptions, however, does not necessarily mean

97 Mazarakis Ainian 1997, 286.
98 Mazarakis Ainian 1997, 274; Mazarakis Ainian 1999, 27.
99 De Polignac 1995, 141.
100 Shear 1970, 170.
101 Küster 1913, 74; cf. Salapata 1997, 252 no. 54.
102 Morris 1988, 752–754.
103 Morris 1988, 752.
104 Lambrinoudakis 1988, 245.
105 Hägg 1983, 193.
106 Coldstream 1976, 15.




10 Ancient Phelloe; a: The territory of ancient Phelloe, aerial view from southeast; b: Ancient Phelloe's apsidal building, the heroon of ›the Hero of Phelloe‹ (Hellenic Ministry of Culture/EFAACHA photo P. Konstantinopoulos)

that the worshiped person was anonymous or that he was considered as a generic figure. This is also the case with the numerous later cults at Mycenaean tombs, which have generally been associated with heroes. One could argue that there would simply be no need to mention the specific name of the hero, since, at the place where his worship was performed, the identity of such a local hero was commonly known. Heroes were closely related with their territory. Their names remained often unmentioned, as they were rather preferably identified by a local desig-

nation, as for instance »the hero of that city or that area«[107]. A. Furtwängler remarked that, in several cases, instead of the individual name of an ancestor a more general name was used, like archegetes (i.e. chief-leader), since among the narrow circle of his worshipers, his name was well known[108].

As R. Hägg stated, it is an ongoing debate as to whether or not we should look for the origins of the Greek hero cult in the veneration of ancestors – and thus in the funerary ritual – and if such a clear distinction ever really existed in the minds of the ancient Greeks[109]. It is generally acknowledged that the Greek hero cult had more than one root, considering its many variations. Therefore, we should trace the evolution line of the emergence of heroic cults on the basis of the archaeological data, since the heroes and ancestors of a family or society often overlap each other[110].

Taken together, the individual archaeological data from tomb XIX at Phelloe suggest the veneration of a hero at the site (figs. 7 b. c; 8 b; 10): the tripod showing the outstanding importance of the interred; the twined snake on the handle of the oinochoe as symbol of hero worship; the location of the grave at a prominent place in front of the fortification of the town and in close proximity to the apsidal building, »surely the preserve of a powerful … *genos*«[111], closely attached to his area. After his death, he was probably worshiped as ›the guardian of the city‹, possibly with a purely local designation as ›hero of the area‹ – and why not – as ›the Hero of Phelloe‹.

The archaeological evidence[112] provides a fertile basis for discussion and further research, contributing to the knowledge of history, concepts, social customs and traditions of the Geometric period, and more specifically to the local history, illuminating the distant past of the important ancient komé Phelloe.

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[107] Salapata 1997, 256 f.
[108] Furtwängler 1883–1887, 21 f.; cf. Salapata 1997, 256 f. no. 86.
[109] Hägg 1999, 37.
[110] Salapata 1997, 250 no. 39.
[111] Coldstream 1976, 15.
[112] The majority of finds presented in this text will be included in a special section themed »Ancient Phelloe« in the new expansion of the Museum of Aigion in its atrium, a project soon to be completed (Seliana, Aigialeia Municipality).

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Walter Gauss – Florian Ruppenstein

# THE GEOMETRIC AND ARCHAIC SANCTUARY AT THE ACROPOLIS OF AIGEIRA

## A SUMMARY OF CURRENT RESEARCH

ABSTRACT

Like many other settlement sites, Aigeira was abandoned in the course of the 11th century BC. A renewed use of the site can only be recorded at the end of the 8th century BC with the foundation of a sanctuary on the acropolis. During W. Alzinger's many years of activity in Aigeira, the acropolis was completely excavated between 1975 and 1983 and fundamental insights into its interpretation were gained. The resumed research in the area of the acropolis since 2011 also yielded important new findings, which are summarized in the context of this paper.

This paper aims to summarize the most important new evidence on the Geometric and Archaic Sanctuary on the acropolis of Aigeira retrieved since 2011[1]. In the first part of this presentation, an overview of past and present research on the acropolis of Aigeira is given. The second part focuses on some specific aspects of the pottery analysis[2].

The acropolis of Aigeira was the centre of the prehistoric settlement and was used as a sanctuary presumably from Late Geometric times onwards[3]. Dealing with the historical sanctuary is, however, challenging as the Late and Post-Antique building activity levelled large parts of the historical acropolis[4]. Therefore only a few contexts and a limited number of finds survived *in situ*, whereas significant numbers of historical finds originate from dump layers at the foot of the acropolis[5].

The Late Mycenaean settlement at Aigeira must have been an important post-palatial centre (Late Helladic [hereafter LH] IIIC in ceramic terms) as indicated by the massive fortification of the acropolis and by the extended lower settlement[6] (figs. 1–3). The excavations of the 1970s under the direction of Wilhelm Alzinger yielded significant information on the use of the acropolis in historical times. However, the results of this research have only been presented in preliminary reports and without a comprehensive contextual analysis, but nevertheless often with far-reaching conclusions[7].

Resumed work over the last years tried to fill this gap, and in the following some new results will be highlighted. In particular, we rely on the analysis of the architectural remains and build-

1 Reports on the 2011–2016 excavations and research at Aigeira see <https://www.oeaw.ac.at/en/oeai/publishing/annual-reports/> (18.09.2023); also Gauß et al. 2012; Gauß et al. 2013; Gauß et al. 2015; Gauß 2015.

2 Regarding the historical pottery from the acropolis of Aigeira see e.g. Schwarz 2001; Gauß (forthcoming b); Ruppenstein (forthcoming).

3 Regarding prehistoric (Neolithic to Mycenaean) Aigeira see e.g. Alram-Stern 2001; Alram-Stern 2003a; Alram-Stern 2003b; Alram-Stern – Deger-Jalkotzy 2006; Alram-Stern 2010; Gauß 2018; Alram-Stern 2020.

4 Gauß 2022; Gauß (forthcoming b). On Late Roman and Byzantine finds Tzavella (forthcoming).

5 Gauß (forthcoming b).

6 See e.g. Alzinger et al. 1985; Alram-Stern – Deger-Jalkotzy 2006; Gauß 2015; Gauß 2019; Alram-Stern 2020; Gauß (forthcoming a).

7 See e.g. Alzinger et al. 1985, 426–430; Alzinger 1988, 22 f.



1 Aerial photo of the acropolis (© OeAW-OeAI/photo C. Kurtze)



2 Aerial photo of the acropolis (© OeAW-OeAI/photo C. Kurtze)



3 Aerial photo of the acropolis (© OeAW-OeAI/photo C. Kurtze)

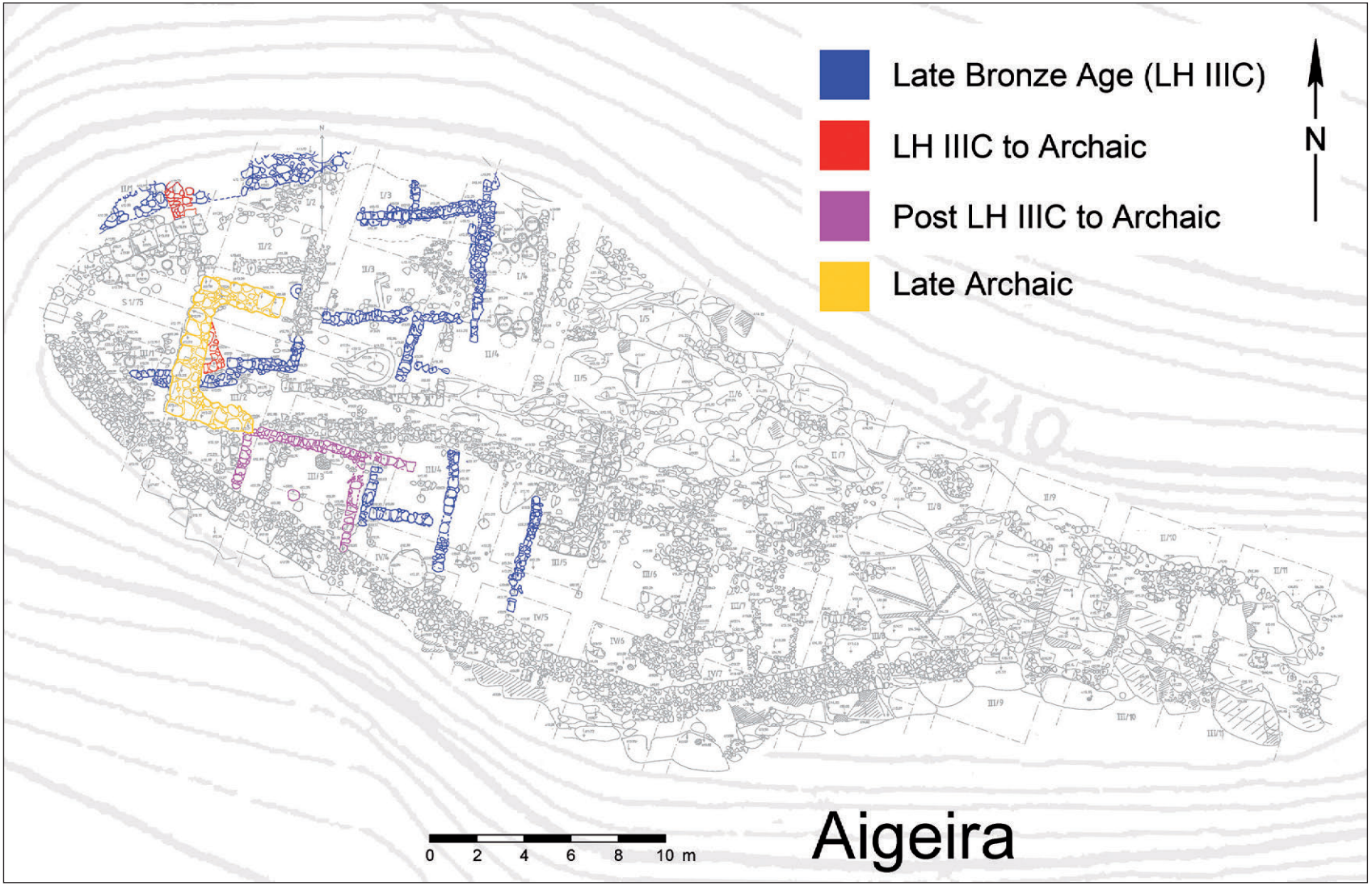
ing elements, on the investigations of the metal finds, the terracotta figurines, the faunal remains and on the study of the Late and Post-Antique use of the acropolis. The results of these studies, together with others not mentioned here, will be published in the Aigeira 4 volume currently in its finals stages of preparation[8].

Our understanding of the phase following the LH IIIC Middle/Late phase on the Acropolis is limited. Only a very few architectural remains (fig. 4, red and magenta) can be dated between the final stages of the Mycenaean settlement (fig. 4, blue) and the remains of a presumably Late Archaic building (fig. 4, yellow). In any case, it needs to be stressed that the architectural remains coloured in red do not, thus far, allow a clear interpretation. The remains coloured in magenta were interpreted by the excavator as belonging to an early cult building, labelled Building A, that will be discussed in the following.

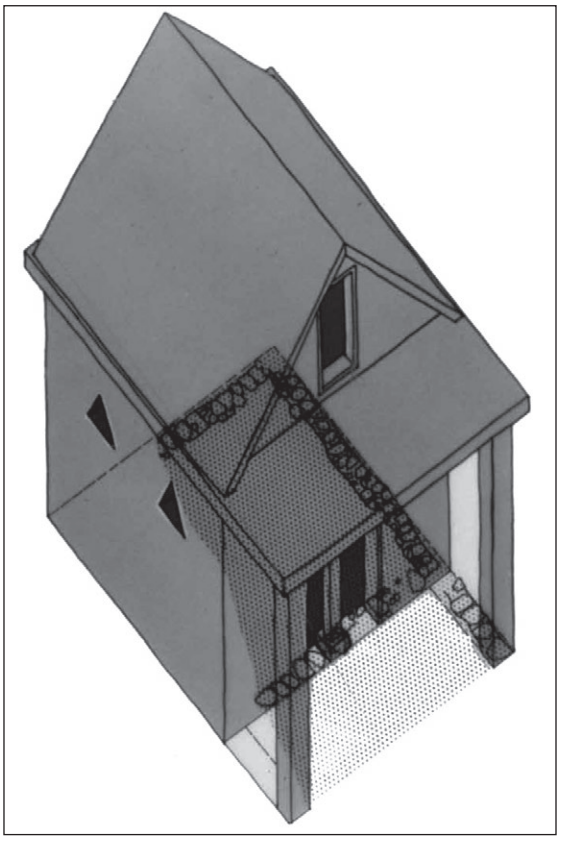
Building A was tentatively reconstructed and dated to the early 8th century (fig. 5)[9]. However, the assumptions drawn by the excavator are problematic, as no pottery has been found associated with the floor horizon of the building, and the pottery reported from its foundation trenches is most likely LH IIIC Late. Thus, for the time being it can only be stated that the construction of Building A took place after the end of the Mycenaean settlement phase II, and that the building was abandoned at the latest with the construction of Building B. Furthermore, our recent

8 Gauß (forthcoming a); see particularly the contributions by Gauß (forthcoming b); Klebinder-Gauß (forthcoming); Forstenpointner – Weißengruber (forthcoming); Scahill (forthcoming); Smetana (forthcoming).

9 For a summary on the history of research and the various interpretations see Gauß (forthcoming b); see also W. Alzinger statement referred to by A. Mazarakis-Ainian (Mazarakis-Ainian 1997, 165 n. 1180) and Alzinger 1988, 23.




4 Plan of the Late Bronze Age (LH IIIC) to Archaic/Classical remains on the acropolis (© OeAW-OeAI/plan W. Gauß and H. Birk)



5 Reconstruction of building A by W. Alzinger (© OeAW-OeAI)

analysis of finds that are associated with this building and the early sanctuary respectively demand new interpretations[10]: the bronze tripod referred to by the excavator as an important piece of evidence for the existence of an early sanctuary of the 10th or 9th century must be omitted, as the fragments were not found on the acropolis, but in the lower settlement. Furthermore, the archaeological context is not Late Geometric but a Late Mycenaean IIIC metal hoard. Its fragments are not part of a tripod, as assumed by Alzinger, but comprise at least two copper ingots[11]. Furthermore, the association of three large-sized kraters of the Late Geometric or Early Archaic period with Building A is also not certain, as they were not found within this building, but in the nearby cistern together with quantities of finds of the 7th to 4th centuries BC[12].

Building B was originally reconstructed as an elongated 20 m long and 6 m wide temple of the 7th century (figs. 3. 6, blue and magenta)[13]. However, detailed research by Georg Ladstätter made clear that the two structures (the v and the eastern part of the reconstructed building) do not align and are therefore not part of one but of two independent buildings, now labelled Building B and Building C[14].

It can with probability be assumed that the masses of architectural terracottas found in the nearby cistern, as well as the orthostates reused in the Late Antique fortification wall originally belonged to one of these two buildings. If so, one was covered with a high-quality Corinthian roof of the early 5th century[15] (fig. 7). Furthermore, several Doric capitals of the 6th century that were found without proper context in the area around the acropolis make clear that by then monumental Doric architecture existed at Aigeira, even though so far they cannot be attributed with certainty to an existing foundation[16] (fig. 8).

Bronze and terracotta artefacts, probably the most significant votive categories of early Greek sanctuaries, are only represented in remarkably small numbers[17]. It is likely that this is due to the levelling of the acropolis in later phases. In general, the bronze finds at Aigeira cannot be exclu-

10 Gauß (forthcoming b).

11 The bronze hoard will be discussed in a separate study by one of the authors (WG), supplemented with scientific analysis on the origin of the metal.

12 Gauß (forthcoming b); see also e.g. G. Schwarz in: Alzinger et al. 1986, 326 f.; Alzinger 1988, 23; Schwarz 2001, 89.

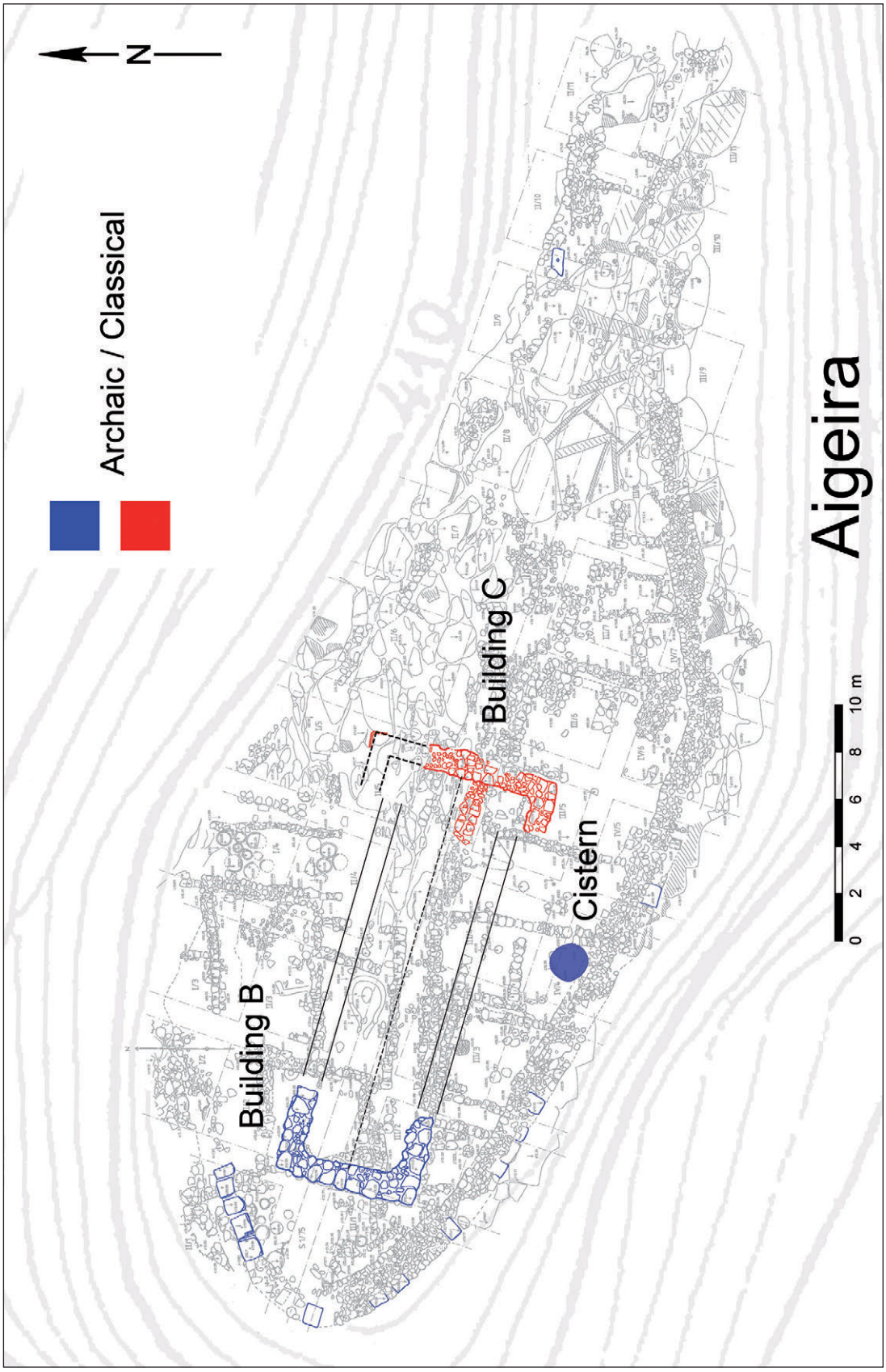
13 For a summary on the history of research and the various interpretations see Gauß (forthcoming a); on the date of Building B see e.g. Alzinger et al. 1985, 446; Alzinger 1985, 15; Alzinger 1988, 22 f.; Gogos 1986/1987, 119 f. 127; Schwarz 2001, 89.

14 Gauß (forthcoming b); Scahill (forthcoming).

15 Heiden (forthcoming).

16 Scahill (forthcoming).

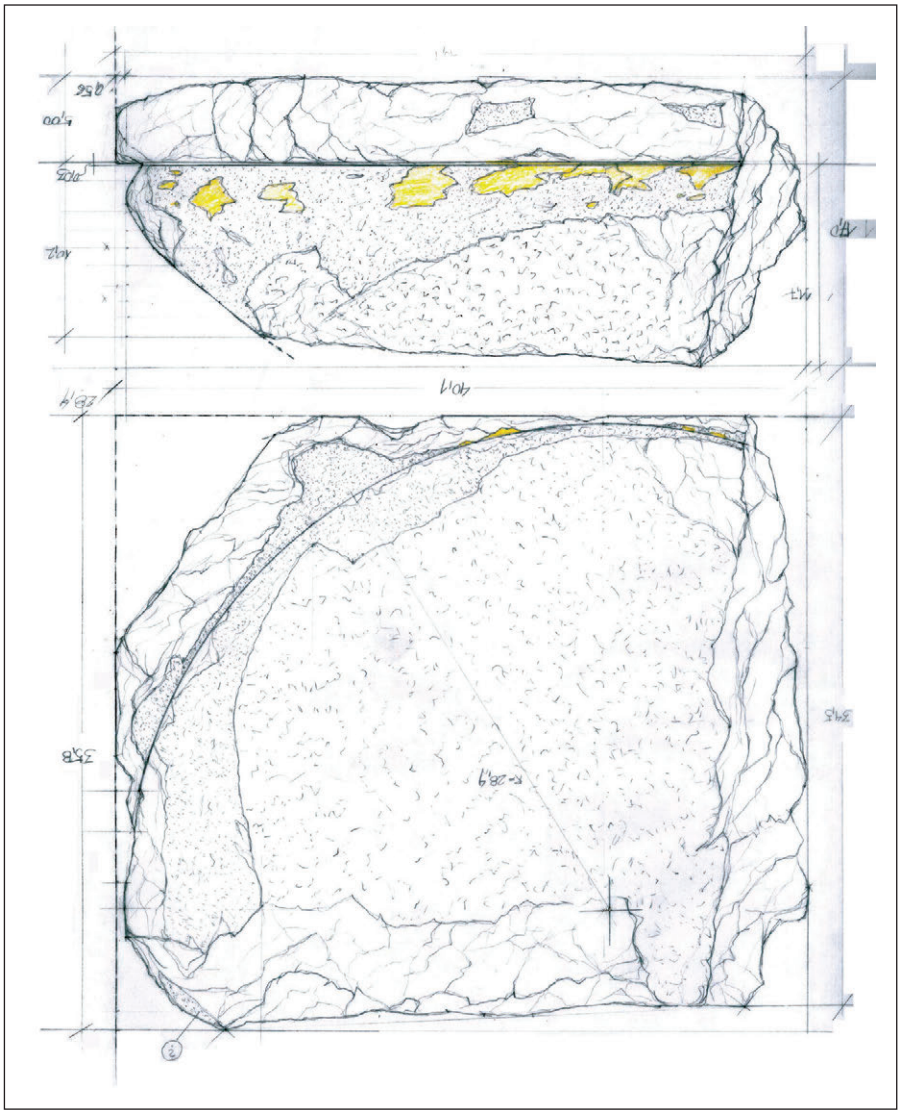
17 Klebinder-Gauß (forthcoming); Smetana (forthcoming).




6 Plan of the Archaic/Classical remains on the acropolis (© OeAW-OeAI/plan W. Gauß and H. Birk)



7 Two antefixes from the acropolis (cistern) (photo I. Geske [after Heiden (forthcoming)])



8 Doric capital found in the vicinity of the acropolis (© OeAW-OeAI/drawing G. Ladstätter [after Scahill (forthcoming)])



9 Bronze finds from the acropolis (cistern) (photo T. Römer [after Klebinder-Gauß (forthcoming)])

sively associated with cultic activities and in particular with a specific cult (fig. 9)[18]. The terracottas are slightly more significant in that they comprise almost exclusively fragments of female figurines and may therefore point to a female cultic sphere (fig. 10), as does the peculiar selection of animal bones[19]. The earliest terracottas date to the late 6th and early 5th centuries[20].

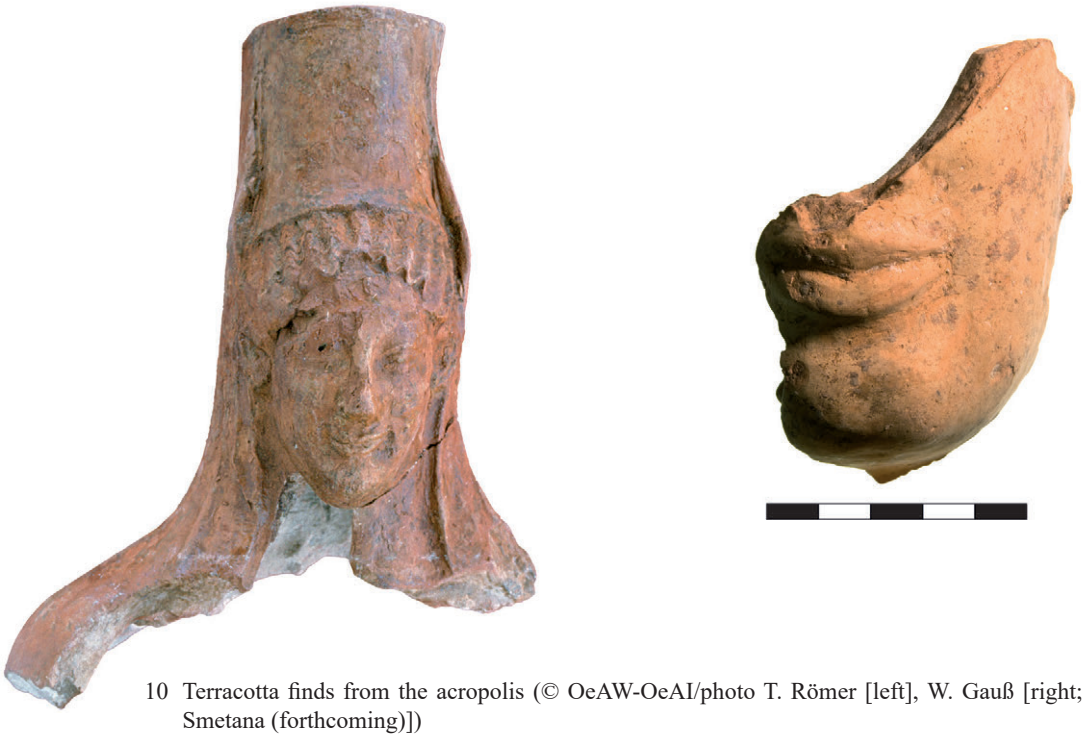
Concluding, the recent evaluation made clear that the original reconstruction of an early sanctuary on the acropolis plateau, as presented by the excavators in the 1970s and 1980s, needs reconsideration. Remains that can be associated with monumental sacral architecture on the acropolis cannot be dated before the 6th or early 5th century. Also, terracotta figurines found at the acropolis that are supposed to reflect cultic activities belong to this time horizon.

However, current study of the pottery finds clearly indicates an even earlier beginning of cultic activities on the acropolis plateau already in the late 8th and in particular in the 7th century. For the time being, it is not possible to relate this pottery with confidence to any of the existing architectural structures at the acropolis. The best candidate seems to be Building A – if its date in this period can be verified; alternatively one may consider an open-air sanctuary.

Certain pottery types are indicative for cultic activity because they are well attested in sanctuaries and only seldom found in ordinary settlements. The pyxis is one of these shapes. Pyxides were commonly used as storage vessels for cosmetics, and they were especially associated with women. This last assumption is supported by rich finds of pyxides in sanctuaries of female deities, as for example in the Sanctuary of Hera at Perachora[21]. The oldest fragment of a pyxis from the area of the acropolis of Aigeira can be dated to the transition from the Middle Protocorinthian to the Late Protocorinthian phase, i.e. around the middle of the 7th century (fig. 11). The thin walls, the smooth surface and the carefully executed decoration illustrate the high quality of the vessel, making it a good example of fine Corinthian workmanship.

Kraters are less indicative of ritual practice than pyxides because they are not only found in sanctuaries but in secular habitation contexts as well. If, however, kraters are found in large numbers they point to communal feasting activities. Therefore, the considerable number of krater fragments from the acropolis of Aigeira can be taken as further indication for the use of the place as a sanctuary. Moreover, the large numbers of kraters may even indicate the worship of a male deity. This assumption is based on a first survey of available evidence[22]. It is particularly note-

18 Klebinder-Gauß (forthcoming).
19 Forstenpointer – Weissengruber (forthcoming).
20 Smetana (forthcoming).
21 Dunbabin 1962, 103–124; Hopper 1962, 167–191 pls. 40–43. 47–56.
22 The phenomenon will be discussed elsewhere in more detail by one of the authors (F. Ruppenstein).



10 Terracotta finds from the acropolis (© OeAW-OeAI/photo T. Römer [left], W. Gauß [right; after Smetana (forthcoming)])

worthy that in the final publication of the findings from the Heraion of Argos, no pottery could be assigned with certainty to kraters[23], whereas this shape is well represented amongst the pottery finds from the Apollo Sanctuary at Delphi[24]. One of the oldest roughly datable kraters from Aigeira is the product of a regional workshop (fig. 12). To our knowledge, there are no published parallels that closely resemble the piece from Aigeira. Because of its narrow neck the krater is not dissimilar to a pithos or an amphora. Therefore, we call the shape tentatively pithoid krater. The decoration of the vessel consists of groups of vertical lines, including one zigzag line, bounded by horizontal circumferential lines. This scheme of decoration can be compared to decorative systems that adorn Corinthian ceramics of the Early Prototocorinthian phase[25]. There are, however, no very close parallels to the Aigeiretan piece among the Corinthian pottery. The decoration of the krater from the acropolis of Aigeira looks like a simplified version of a decorative system that was introduced to the Corinthian pottery repertoire in the Late Geometric phase[26]. The stylistic similarity allows the Aigeiretan krater to be dated into the last quarter of the 8th or the first quarter of the 7th century. This chronological range takes into account that a date contemporary to the Middle Protocorinthian I style cannot be completely ruled out.

Regionally produced pottery from Aigeira is easily recognizable as such because of its peculiarities in terms of decoration, shape and fabric. The place or places of manufacture of this group of pottery is still not located. Sites somewhere in the eastern part of Achaia may be assumed because of the geographical position of Aigeira.

The overwhelming majority of pottery finds from Aigeira consists of Corinthian imports, as already recognized by the late Gerda Schwarz[27]. According to the current evaluation, certainly,

23 Waldstein 1905, 101–184.

24 Perdrizet 1908, 133–137. 139–143. 155 f.

25 Weinberg 1943, 35 no. 103 pl. 15; Stillwell – Benson 1984, 43 no. 160 pl. 9.

26 Cf. Coldstream 1968, pl. 19 h; Stillwell – Benson 1984, 26 no. 55 pl. 4.

27 Schwarz 2001, 90: »Keramikfragmente korinthischer Produktion sind ortsbedingt besonders zahlreich, wobei wieder das Vorherrschen von Krateren auffällt.«




11 Fragment of Protocorinthian pyxis (Q610-415/061-005) (© OeAW-OeAI/ photo W. Gauß)



12 Krater of the late 8th or first quarter of the 7th century (FGA 1973/195-001) (© OeAW-OeAI/photo W. Gauß)

more than two thirds of the ceramic fragments of the Late Geometric and Archaic periods are Corinthian products. This estimation is based so far solely on macroscopic study of the material and regards particularly fine-/table ware[28]. The rarity of plain- and coarse ware pottery is yet another characteristic of the pottery assemblage from the acropolis of Aigeira. The absence of both categories would be peculiar in settlement contexts and may serve as further evidence for the interpretation of the acropolis as a sanctuary.

Regarding the possible production of Corinthian-type fine-/table ware in the area of the Corinthian Gulf we would like to mention that there is still no unequivocal published evidence for that kind of production during the Late Geometric and Archaic periods. An unambiguous identification of different production centres of fine-/table-ware with scientific/analytical means at the northern coast of the Peloponnese is a challenging task due to its similar geology over vast areas[29]. As a consequence, the discrimination of chemical and petrographic groups is especially demanding and deserves further intensive research[30]. What seems most needed are scientific analyses of Late Geometric and Archaic kilns, of contemporary wasters of fine-/table ware but also other clear indications for fine-/table ware production particularly in the whole area of the polis of Corinth. Within the orbit of the city of Corinth there is good evidence for intensive pottery workshop activities since the Archaic period not only at the potter's quarter and at the Anaploga well uncovered by the Corinth excavations of the American School[31], but also at the Gotsi plot, an area inbetween the archaeological museum and the Temple to Apollo, where a kiln and approximately 1,000 Protocorinthian aryballoi in its vicinity were uncovered[32].

At the modern city of Aigion rescue excavations in 1985 uncovered a pottery kiln that was dated by the excavator to the years around 600 BC[33]. However, the character of the pottery produced in the kiln has remained unpublished and the evidence for the date of the kiln is not very clear and

28 Analyses using petrography, XRF and NAA are scheduled for the near future.

29 For the geology of the Corinth region see, e.g. Whitbread 1995, 261–264; for Sikyon see Hayward 2021 and Trainor – Kiriatzi 2021, 188 f.; for the geology of the area between Corinth and Patras see, e.g. Higgins – Higgins 1996, 69; for clay prospection see, e.g. Xanthopoulou et al. 2021.

30 See also the contribution of C. Gardner, E. Kiriatzi and N. Mueller in this volume.

31 Potters' Quarter: Stillwell 1948; Stillwell 1952; Stillwell – Benson 1984; Anaploga well: Amyx – Lawrence 1975.

32 Hasaki 2002, 334 f. cat. 19 also E. Hasaki (ed.), Web. WebAtlas of Ceramic Kilns in Ancient Greece (12.07.2021).

33 Papakosta 1991, 236; Hasaki 2002, 334 cat. 18; also E. Hasaki (ed.), Web. WebAtlas of Ceramic Kilns in Ancient Greece (12.07.2021). For the production of pottery at Aigion in Hellenistic times see e.g. Filis 2016. K. Filis stresses that not only amphorae but also fine-ware pottery was produced in Hellenistic times at Aigion (2016, 152).

seems to rely on one Corinthian sherd dated to the 7th century BC by the excavator[34]. Until further evidence is available, however, we would like to address pottery that is Corinthian in terms of shape, decoration and fabric as a genuine Corinthian product.

When considering the geographical proximity between Aigeira and Corinth, the presence of large amounts of Corinthian imports at Aigeira is not surprising. Moreover, it is known since the great excavations at Delphi that Corinthian pottery was widely used in the area of the Corinthian Gulf during the Late Geometric and Archaic periods[35]. Furthermore, it would be very strange indeed if the Corinthians supplied all the Greek colonies in Italy and Sicily with pottery but not their immediate neighbourhood[36].

The excavations of the 1970s yielded significant new findings on the use of the acropolis in historical times. However, the results of this research have so far only been presented in preliminary reports and without a comprehensive contextual analysis of the finds and features, but nevertheless often with far-reaching conclusions. The systematic processing of the historical finds, which began in 2011, shows that a sanctuary existed on the acropolis of Aigeira by the end of the 8th century BC at the latest. However, its architectural framing and monumentalization can only be proven in the 6th century BC. Due to later building activities, only few remains of the original inventory of the historical sanctuary have been preserved. For this reason, the assignment to a specific cult place holder is currently only to a very limited extent possible. Among other things, the almost exclusive female terracotta figurines point to a female deity, the numerous kraters could indicate furthermore also the worship of a male deity. The identification of the deity (or deities) cannot be answered with certainty. Cult communities of female and male deities are numerous in the literary tradition. Artemis and Apollo for example shared cultic worship at several places in the immediate vicinity of Aigeira, namely at Sikyon, Mantinea, Aigion, and Araxos[37]. It is to be hoped that further research on the historical findings will help to clarify these and other questions.

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34 Papakosta 1985 (1990) 122.
35 Perdrizet 1908, 140–144. 148–155.
36 For the export of Corinthian pottery, see, e.g. Salmon 1984, 103–116; Dehl 1984.
37 Solima 2001, 21. 35. 78. 84 f. 119. 130. 149. 156. 176.

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# THE SANCTUARY OF POSEIDON HELIKONIOS IN ACHAIA

## STRATIGRAPHY, PRESENTATION AND INTERPRETATION*

ABSTRACT

Recent excavations conducted in the region of eastern Aigialeia have brought to light the Sanctuary of Poseidon Helikonios at Nikoleika, in the chora of ancient Helike. An apsidal temple was erected at the end of the 8th century, which presumably was succeeded in the mid-6th century by a Doric temple, as is indicated by the architectural terracottas from its pediment found to the north of the apsidal temple. Beneath the floor of the Geometric temple a mudbrick altar was excavated. The layers related to the altar contained offerings and faunal remains, thus providing evidence for ritual dining. On the basis of the stratigraphy and the recovered pottery, its construction should be dated to the first half of the 8th century. Moreover, the archaeological data attest to the beginning of the cult already in the Protogeometric period.

## INTRODUCTION

The scope of this paper is the presentation of the stratigraphy of the first phase of the excavation that took place from 2004 to 2011 at the Sanctuary of Poseidon Helikonios[1]. The apsidal temple of the Geometric period at Nikoleika, in the region of eastern Achaia (Aigialeia) was first discovered in 2004 by the VI Ephorate of Prehistoric and Classical Antiquities (fig. 1). The site is located along the Old National Road, to the west of the present-day Kerynitis riverbed, within the territory of Helike, the renowned ancient Achaian city, which was destroyed by the earthquake of 373 BC[2]. According to Pausanias, its territory stretched across the area that lies east of the Selinous River[3].

The temple was discovered during work for the construction of a house in a plot in the village of Nikoleika. The research in these first campaigns focused on unearthing the temple. To date, most of the apsidal building within the boundaries of the Komninos plot has been fully excavated, although its western part has not been investigated, since it extends into the neighbouring plot. The temple is apsidal, measuring 7 m in width, while its total length is not known (fig. 2)[4]. Remarkable is the particularly elaborated manner in which the arched outline of the south wall was constructed out of carefully worked stone blocks, as well as the regularity of its curve. In fact, it formed the southernmost part of the stylobate of a semi-circular porch, similar to that of the Temple of Artemis at Ano Mazaraki, where, however, support to the structure was provided by five free-standing stone bases,

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* The stratigraphy of the excavation of the apsidal temple at Nikoleika has been published in detail in Kolia 2011, 106. 201–246. A concise update is given here as a basis for the thorough presentation and examination of the pottery by A. Gadolou. I am most grateful to the director of the Austrian Institute of Archaeology (OeAI) in Athens, B. Eder, and to M. Kerschner of the OeAI for their kind invitation to participate in this very interesting and productive meeting. Also, I would like to extend my warmest thanks to the archaeologist N. Petropoulos for digitally processing the stratigraphy drawings, which significantly improved them.

1 Kolia – Gadolou 2011; Kolia 2011; Kolia 2019, 262–264.

2 For the precise date of the destruction of Helike in the fourth year of the 101. Olympiad see Paus. 7, 25, 4.

3 Paus. 7, 24, 5.

4 For the architecture of the temple, see Kolia 2011, 228–231.



1 Aerial photo of the apsidal temple at Nikoleika (© Hellenic Ministry of Culture)




2 Ground plan of the excavation of the apsidal temple, scale 1 : 50 (© Hellenic Ministry of Culture/N. Petropoulos)

not by a continuous base (stylobate) as is the case at Nikoleika[5]. The addition of the semi-circular porch would have imbued the façade of both temples with a sense of monumentality[6].

In the interior of the Nikoleika Temple, along its longitudinal axis, stood a colonnade of wooden columns on psammitic stone bases, and, furthermore, along the inner side of the temple's long walls, rectangular stone bases, also made of psammite, served as supports of wooden pillars[7].

Taking into consideration the main architectural features of the temple at Helike and its typology, we conclude that it embodies the major features present in the architecture of the end of the 8th century BC, with the exception of the semi-circular porch, which seems to be a characteristic of Achaian temple architecture in the Late Geometric period[8].

Beneath the later apsidal temple, a quadrangular brickwork structure was uncovered in 2006, measuring 0.59 m in height, 1.26/1.30 m in width and 2.33 m in length, which can be identified as an altar[9]. It is constructed of six successive courses of unfired 0.08–0.06 m thick mudbricks, which interchange with an equal number of thinner layers of fine light yellow earth, all together producing an alternating colour effect. The basic criterion for the identification of the structure as an altar is the composition of the layer that was found in contact with it, which is grey in colour with traces of intense burning, and extends all around it[10].

## STRATIGRAPHY

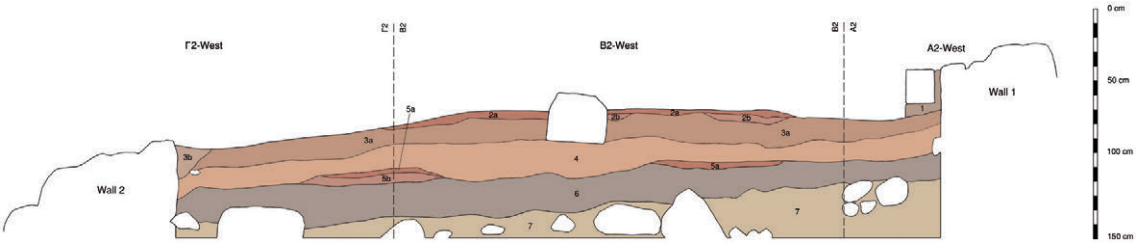
The monument was covered by hard, brown-yellowish argillaceous soil, which yielded a very few Late Geometric and Early Archaic sherds[11]. Of particular value for the dating of the use of the building to the first quarter of the 7th century BC is the pottery found on the floor in the southeast section of the temple (squares A1-A2), which includes a few Early Protocorinthian sherds (inv. AMA 1893–1895)[12]. Consequently, it is probable that the building fell into disuse in the second half of the 7th century, since the fill, which was covering it, did not contain pottery later than the middle of the 7th century BC. The abandonment of the apsidal temple and its replacement with a new temple is also indicated by the architectural members found in the layer with the roof tiles north of the Geometric building[13].

Under this layer lay the temple floor, of reddish beaten earth, at a depth of –3.06 m to –3.24 m (figs. 3; 4, 2a; 5, 1; 6, 1; 7, 1)[14]. Below the floor, over the entire area of the building, two successive yellowish layers were encountered: a) of yellow-brown, rather hard and argillaceous earth containing gravel, and b) a similar one of yellow, paler earth (figs. 4, 3a–4; 5, 2–3a; 6, 2–3; 7, 2–3)[15]. These under-layers for the floor range in thickness from 0.15–0.25 m. The column bases are bedded in the second layer and are covered to about half their height by the first (fig. 4, 3a. 4), while the arc-shaped stylobate is founded in the first layer. The yellowish layers yielded a few sherds, monochrome or with banded decoration and some with decoration of Thapsos type[16]. The dating of the temple construction to the very end of the 8th century BC based on the Late Geometric pottery, and mainly on the few Thapsos-type sherds, is further confirmed by a fragmentary

5 Petropoulos 1997, 166 f. figs. 1. 2; Petropoulos 2002, 150.
6 Kolia 2011, 230.
7 Kolia 2011, 206 f.
8 Kolia 2011, 231; Kolia 2019, 262.
9 For the altar, see Kolia 2011, 231–236.
10 Kolia 2011, 212–215.
11 Kolia 2011, 215.
12 AMA = inventory number of the Archaeological Museum of Aigion. See the contribution of A. Gadolou in this volume.
13 Kolia 2011, 224.
14 The surface of the Old National Highway, which is at a height of +20.28 m as land lies adjacent to the south, was taken as benchmark for measuring depth.
15 Kolia 2011, 216 fig. 45.
16 Kourou-Bozana 1978, 303–317; Neeft 1981, 57.




3 Ground plan of the temple, scale 1 : 50. The remnants of the temple floor are indicated in brown (© Hellenic Ministry of Culture/N. Petropoulos)

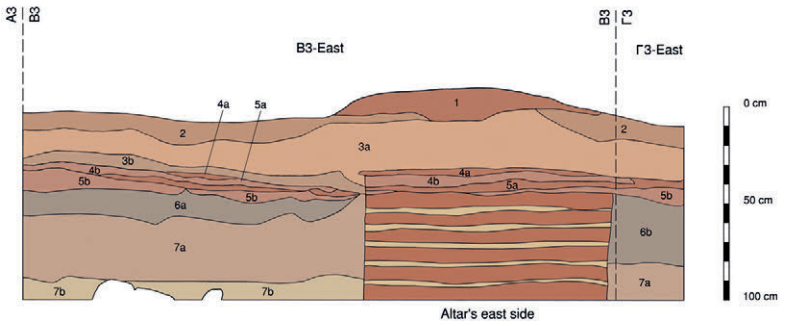



4 Stratigraphy of the west face of squares A2-Γ2, scale 1 : 20; 1: pale brown with gravel; 2a: temple floor; 2b: yellow; 3a: brownish yellow with gravel; 3b: pale brownish yellow; 4: pale yellow with gravel; 5a: clayey layer; 5b: yellow under-layer; 6: grey; 7: yellow sandy with stones (© Hellenic Ministry of Culture/E. Kolia – N. Petropoulos)

late 8th-century conical oinochoe (inv. AMA 2181) recovered from the pale yellow layer, which is either Protocorinthian or an Achaian imitation[17].

Under these, approximately in the centre of the temple, were located two successive thin clayey layers, ranging in thickness from 0.075–0.02 m, at a depth of –3.45/–3.5 m and –3.54/3.63 m respectively, which initially were considered to be floors (figs. 4, 5a; 5, 4a. 5a; 6, 4a. 5a; 7, 4a. 5a)[18]. The upper one is of brownish-yellow beaten earth with traces of red clay and sparse gravel, and the lower of brownish-red clayey earth. Sandwiched between them was pure yellow earth

17 Kolia 2011, 224 fig. 38. See the contribution of A. Gadolou in this volume.
18 Kolia 2011, 216.

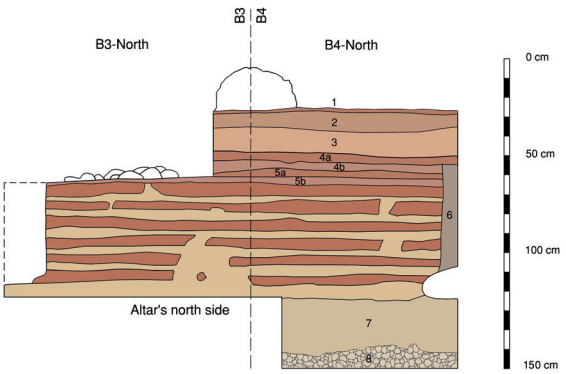



5 Stratigraphy of the east face of squares B3-Γ3 with the east side of the altar, scale 1 : 20; 1: temple floor; 2: brownish yellow with gravel; 3a: pale yellow with gravel; 3b: pale yellow with traces of incineration; 4a: clayey layer; 4b: yellow brown; 5a: clayey layer; 5b: yellow under-layer; 6a: grey with traces of yellow soil and stones; 6b: grey; 7a: yellow sandy; 7b: yellow brown sandy (© Hellenic Ministry of Culture/E. Kolia – N. Petropoulos)

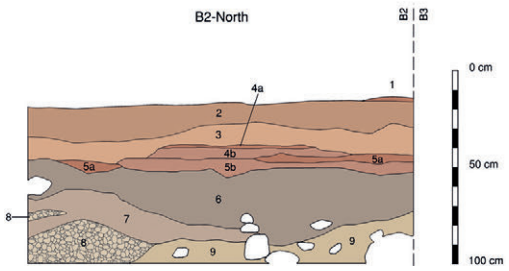
without sherds (figs. 4, 5b; 5, 4b. 5b; 6, 4b. 5b; 7, 4b. 5b). These so-called floors are solid in most of the central part of the temple (squares B3, B4, Γ3 and Γ4) and they do not touch any wall. In addition, they were found in extremely fragmentary condition in the squares surrounding the altar, essentially as large pieces of clay lacking the cohesion and stability of regular floors (figs. 4, 5a; 7, 4a. 5a). In 2008, the west side of the lower layer was located to the west of the altar (fig. 6, 5a). This is straight and coincides with the face of the west flank of the brick-built altar, which the so-called floors cover and essentially seal[19]. Consequently, these layers are not floors of two earlier building phases, as initially assumed, but are rather a kind of covering of the altar (fig. 6, 4a. 5a). This view is further reinforced by the fact that the floor of the apsidal temple is also markedly elevated exactly above the altar, east of the second column base (fig. 5, 1).

In the centre of the temple (squares B3 and B4), the brick-built altar (figs. 5–6) was revealed under the aforementioned clayey layers (the so-called floors)[20]. The stratigraphy around the altar is the following: under the clayey layers, or under the pale yellow layer, lay the grey-greyish/brown layer with traces of incineration[21]. These traces were more intense in the squares north of the altar (squares Γ2 and Γ3: figs. 5, 6b; 7, 6) and less so in square B3 south of the altar (fig. 5, 6a). The grey layer was found in contact with it extending to its east and west, as well as to the north and south, where it is delimited by the temple walls. To the north and east of the altar its thickness ranges from 0.30 m to 0.40 m, while to the south, towards the temple's wall, it decreases to 0.14 m. It contained distinct traces of burning along with broken animal bones (cooked or burnt), many small or medium-sized field stones, lumps of clay and a multitude of objects (fig. 9): broken vases and sherds (mainly drinking vessels and cooking pots), horse figurines, parts of terracotta architectural models and several metal objects (bronze beads, rings, pins and iron daggers). Characteristic finds are the numerous terracotta wheels, either disc-shaped with a pierced axle at the centre or with spokes. The finds are mixed up with the earth fill to an extent that it is not possible to establish any stratigraphic sequence within the deposit, a situation also encountered in other diachronic sanctuaries with strata of accumulated sacrificial remains. Similar is the stratigraphy at Pelopion in Olympia and in the east terraces of the Sanctuary of Poseidon at Isthmia[22]. Nevertheless, it is worth noticing that the grey layer at Nikoleika lacks the black colour and the greasy texture which are characteristic features of analogous layers in sanctuaries where the remnants

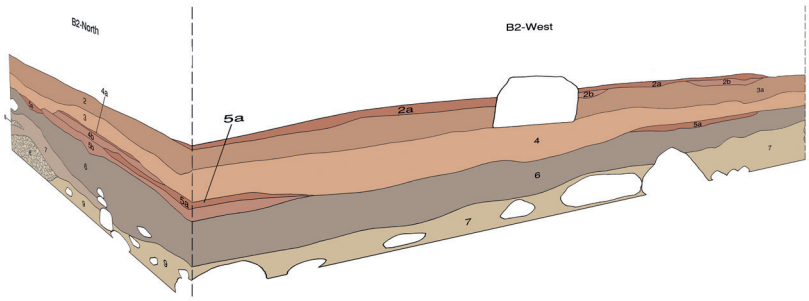
19 Kolia 2011, fig. 21.
20 Kolia 2011, 217.
21 Kolia 2011, 217.
22 Kyrieleis 2006, 35–47; Morgan 1999, 316.




6 Stratigraphy of the north side of the altar in squares B3-B4, scale 1 : 20; 1: temple floor; 2: brownish yellow with gravel; 3: pale yellow with gravel; 4a: clayey layer; 4b: yellow brown; 5a: clayey layer; 5b: yellow under-layer; 6: grey; 7: yellow sandy layer; 8: gravel (© Hellenic Ministry of Culture/E. Kolia – N. Petropoulos)




7 Stratigraphy of the north face of the baulk of squares B2-Γ2, scale 1 : 20; 1: temple floor; 2: brownish-yellow with gravel; 3: pale yellow with gravel; 4a: clayey layer; 4b: yellow brown; 5a: clayey layer; 5b: yellow under-layer; 6: grey; 7: yellow with traces of grey soil; 8: gravel; 9: yellow sandy with stones (© Hellenic Ministry of Culture/E. Kolia – N. Petropoulos)




8 Perspective drawing of the stratigraphy a) of the west face of squares A2-Γ2 and b) of the north face of the baulk of squares B2-Γ2 (© Hellenic Ministry of Culture/E. Kolia – N. Petropoulos)

of the sacrificial fire were deposited around the altar[23]. Its colour variation from grey-black to grey-brown or dark brown can be explained by the fact that it does not consist exclusively of burnt remains but contains, also, quite a lot of soil. In fact, the composition of the burnt layer at Nikoleika is similar to that excavated in the east part of the Sanctuary of Poseidon at Isthmia, where the remains of fires with bones and pottery of the Protogeometric and Geometric period are in secondary deposition at the very least, since after each ritual the remains of the sacrifices and sacred meals were removed from the hearth (ash altar) and not left to accumulate around it. This layer was used as filling on the east terraces of the temple in order to extend the available space for later monumental constructions[24]. We may assume that at Nikoleika, too, the remains of each sacrifice and the associated meals were cleared away from the area around the altar and dumped nearby, whereas in the late 8th century this deposit was used as filling over the entire site of the temple in an effort to preserve the altar and at the same time to raise the ground level for the erection of the apsidal building.

23 Kyrieleis 2006, 35–47; Huber 2003, 114; Papapostolou 2008, 191; Felsch 2007, 9; Shaw – Shaw 2000, 670–673; Rupp 1983, 101 f.; Lebesi 1985, 19.

24 Morgan 1999, 319.



9 The grey layer in square Γ4 (© Hellenic Ministry of Culture)

Below the grey layer, a yellow one of sandy earth with stones and markedly fewer finds was excavated (figs. 4, 7; 5, 7a–7b; 7, 7–9; 8, 7)[25]. A skyphos with early Thapsos decoration (inv. AMA 2306) was found in this layer, a short distance south of the altar and slightly higher than its base, placed between stones at a depth of –4.01 m to –4.07 m[26]. Many sherds from the yellow layer join vessels from the overlying grey one, indicating that the two layers were deposited contemporaneously as a fill for the construction of the apsidal temple. It is worth noting that several large stones along the east flank of squares A2-Γ2 in the centre of the temple were initially considered to be the remnants of a makeshift enclosure of the altar, but the removal of the largest, northernmost one, showed that they had simply fallen into the yellow earth. Beneath this particular stone were found parts of the terracotta house model with figurative decoration (inv. AMA 2018. 2170. 2313) published by A. Gadolou[27]. At a greater depth, the earth is replaced by a dense layer of field stones in which the north wall is bedded (fig. 10). To the south, towards the south wall, the quantity of stones is somewhat reduced. The earth between the stones is yellow, mixed in places with grey-black, and contains extremely few sherds (mostly cooking vessels) plus lumps of burnt clay (perhaps from the burnt upper layers of the altar) and a few animal bones. In the centre of the temple at a greater depth (from –4 to –4.1 m) a layer of river gravel without any finds is encountered. It is worth mentioning that eastwards the archaeological layers peter out as the river gravel (figs. 6, 8; 7, 8) is located at a higher level (depth: –3.63 m).

In the southeast part of the temple (squares A1. A2. B1. Γ1) a dark brown layer with traces of burning and plentiful pottery was excavated at a depth of –3.4 m to –3.8 m, while river gravel was found beneath it[28]. This layer extends below the foundation of the south wall in these squares. It should be pointed out that several sherds recovered from it belong together with pottery from the grey layer: the two layers are thus of similar composition, although the brown one contains fewer traces of burning. Pottery from the dark brown layer includes Middle and Late Geometric sherds, plus a few Early Geometric and several Protogeometric. Noteworthy among the finds is part of the roof of a house model with impressed decoration (inv. AMA 2125) which joins a fragment found in the grey layer in the centre of the temple[29].

In conclusion, it emerges from both the stratigraphy and the recovered pottery that despite their somewhat different texture, these successive layers below the temple floor down to the altar's

25 Kolia 2011, 219 f.
26 Kolia 2011, 219 fig. 30. See the contribution of A. Gadolou in this volume.
27 Gadolou 2011.
28 Kolia 2011, 221.
29 Kolia 2011, 221 fig. 32.



10 The yellow sandy layer with stones in square Γ3 (© Hellenic Ministry of Culture)



11 The earlier floor with incinerations, north of the altar in square Γ3 (© Hellenic Ministry of Culture)



12 Floor of the Protogeometric period in the baulk of squares B1-B0 (© Hellenic Ministry of Culture)

base level were deposited contemporaneously during the construction of the building in order to fill in the altar and raise the ground level[30]. This is further corroborated by the existence of joining or associated sherds from numerous vases and also from house models, which were found dispersed into these different layers. Characteristic is the case of the roof of the terracotta house model (inv. AMA 2018. 2170. 2313), parts of which were found mainly in the grey layer east and northeast of the altar, in squares B3, Γ2, Γ3 and Γ4, as well as in the overlying yellowish-brown layer near the foundation of the first column base. In addition, another fragment was found in the lower yellow layer below the large stone northeast of the base of the altar[31].

The temple construction should be dated on the basis of the latest sherds, i.e. the Late Geometric pottery, even though all layers also contain earlier finds. Indeed, Late Geometric pottery is predominant, but in the grey and the lower yellow layer, Middle Geometric pottery constituted over 30 % of the total of the decorated sherds, while all strata included a small number of Protogeometric and Early Geometric sherds[32]. The grey layer containing finds most probably from rites performed at the altar also yielded animal bones, obviously from sacrifices[33]. On the basis of the pottery from the grey layer, it can be deduced that the altar was in use throughout the second half of the 8th century, until the construction of the temple at the end of this century, but the large percentage of Middle Geometric pottery indicates that it dates back to the first half of the 8th century. Valuable evidence for the date of the altar in the second quarter of the 8th century BC is provided by the skyphos inv. AMA 2306 with early Thapsos-type decoration[34].

Since the finds from the grey stratum come from rituals practiced at the altar, we could assume that the inauguration of the cult took place as early as the Protogeometric period (950–850 BC), judging from the earliest pottery. In fact, on the north flank of the altar an intensely heated clay layer with ashes on it was revealed, which proceeds southward beneath the altar. This leads us to

30 Kolia 2011, 224.

31 Kolia 2011, 224.

32 Kolia 2011, 225. See the contribution of A. Gadolou in this volume.

33 Psathi 2011, 242–245. Animal bones were found mainly in the grey layer, broken into tiny pieces 1–2 cm in size. Some 80 % are carbonized and calcified, while the rest is not burnt. On 26 % intense surface erosion indicates that they remained exposed on the ground for many years after the rituals, while some have butchery marks. The few diagnostic remains are mainly from domesticated animals, predominantly sheep, perhaps goat, to a lesser extent pig and a few bovine, and also two examples of deer have been identified.

34 On the dating of skyphoi with similar decoration, see: Gadolou 2008, 97. 264 nos. 17. 18; Neeft 1981, 38–41 drawing 9. See the contribution of A. Gadolou in this volume.



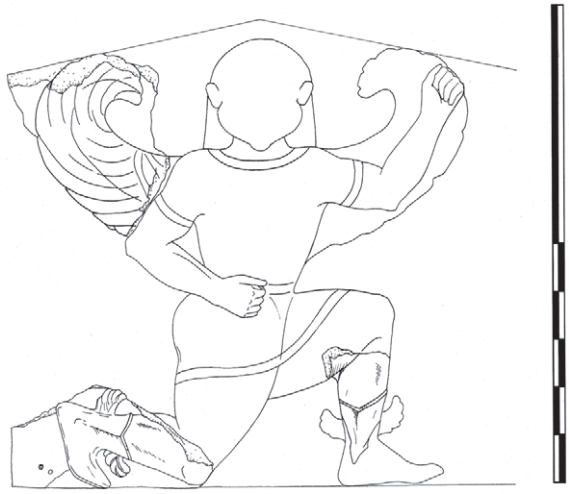
13 The trench north of the apsidal temple: the north edge of the layer of roof tiles and terracotta architectural members (© Hellenic Ministry of Culture)

the thought that, in an earlier period, the mud brickwork construction would have been preceded by a clay hearth, possibly related to the pottery which is earlier in date (fig. 11)[35].

All layers yielded Protogeometric sherds, but these are most frequent in the dark brown layer in the southeast part of the temple. Actually, in the east part of the baulk between squares B0 and B1 a small remnant of a clayey floor associated with pottery of the Protogeometric period came to light at a depth of –3,41 m (fig. 12)[36].

Investigation beyond the Geometric apsidal temple was initially limited to a number of trial trenches dug in an attempt to define the range of antiquities at the site[37]. An east-west trench measuring 12.70 × 5.60 m was opened 20 m to the north of the apsidal temple. In its west part a north-south wall built of small and medium field stones was excavated. It measured 0.37 m high by 0.60 m wide, and ran southward out of the trench, while it was destroyed to the north. Associated pottery finds suggest that this wall belongs to a building of the Geometric period[38]. At a slightly higher level than the Geometric wall and 4 m to its east, a thick layer was excavated in yellowish sandy soil, consisting of a multitude of broken roof tiles and Archaic terracotta architectural members (fig. 13), such as sima fragments with painted decoration, palmette roof tiles, and parts of clay plaques with fragmentary relief figures, including the head of a sphinx[39]. This layer proved to cover an irregular area of almost 20 m². It is obvious that the finds in this stratum did not come from the Geometric temple, the roof of which would have consisted of reeds, straw and clay. These architectural members and

35 Kolia 2011, 215. 225.
36 Kolia 2011, 221.
37 Kolia 2011, 226–228 figs. 41–44; Kolia 2014, 411–414 figs. 3–7.
38 Kolia 2011, 225–227 fig. 41.
39 Kolia 2011, 227 fig. 43; Kolia 2014, 411 figs. 5. 6.



14 Restoration of the figure of Gorgon (© Hellenic Ministry of Culture/N. Petropoulos)

roof tiles rather belong to a not yet located Doric temple[40]. The deposition of the stratum with the tiles, as indicated by the pottery it contained, took place in approximately the same period as the destruction of Helike by the earthquake of 373 BC[41]. It can therefore be inferred that the Archaic temple to which the terracotta architectural parts in the deposit were originally attached, must have been destroyed by the 373 BC earthquake and subsequently the remains of its superstructure were discarded in this findspot, probably a short distance away from its ruins.

Approximately 1,200 fragments of tiles have been recovered from this layer, more than 80 % of which come from the same building. The antefixes of the eaves tiles reflect a simplified version of a decorative composition of Corinthian antefixes dating to 560–540 BC[42]. Among them there were parts of three fragmentary figures along with smaller fragments of others. The clay and paint used in the reliefs is similar in texture and colour to that of the tiles and sima, and for this reason it is assumed that they were manufactured in the same workshop[43]. The reliefs share stylistic and structural similarities, while the element of unity is evident in the composition as a whole[44]. At the same time, the occurrence of holes of equal diameter in the lower part of two plaques indicates that the reliefs were affixed to a wooden background[45], a manner of attachment also used for the clay gorgoneia and other terracotta compositions in relief that decorated the pediments of Archaic temples in Italy[46]. Taking into account that the reliefs from Helike must have belonged to a Doric temple and that the plaques were not equal in height, their attribution to a pediment seems quite plausible[47]. The figures featured in the composition are preserved in a fragmentary condition. We can reconstruct in the centre a Gorgon in the »Knielauf« pose (fig. 14), on either side of the central figure, and there is extra room for another two which are not preserved, while immediately adjacent to them two heraldic sphinxes can be placed[48]. On the basis of the above evidence and the tiled roof parts, the terracotta reliefs can be dated to 560–550 BC[49].

The excavation of the site began again in 2019 as a systematic excavation of the Ministry of Culture; the results of the first two campaigns were very encouraging. Actually, we expect that the continuing research of the site will help us form a more complete picture of the sanctuary, which extended to a sizeable area around the temple. However, the available evidence clearly demonstrates that the Nikoleika Sanctuary was a major shrine of Helike, where all the phases of the initially open-air shrine to a Geometric period temple, and later to an Archaic temple, are preserved.

40 Kolia 2014, 411 f.
41 Kolia 2011, 227 f. fig. 44; Kolia 2014, 412 fig. 7.
42 Kolia 2014, 414–416 fig. 9.
43 Kolia 2014, 428.
44 Kolia 2014, 431.
45 Kolia 2014, 431 figs. 16. 21.
46 For the terracotta gorgoneia see Danner 2000, 24–26, A3 fig. 1 (Gela); 32, A15 (Naxos); 35–39, A21 fig. 17 (Selinous); 43–46, A30 figs. 37. 39. 40 (Vibo Valentia). For other terracotta compositions in relief see Sommella Mura 1977, 83–90 figs. 13–15 (Archaic temple at Sant Omobono); Danner 2002, 135 f. (Medusa plaque from Syracuse).
47 Kolia 2014, 432.
48 Kolia 2014, fig. 27.
49 Kolia 2014, 436–440.

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Anastasia Gadolou

# INTERPRETING THE POTTERY RECORD FROM THE EARLY IRON AGE SANCTUARY OF POSEIDON HELIKONIOS OF ANCIENT HELIKE IN ACHAIA

## CULT AND VOTIVE PRACTICES BEFORE THE CONSTRUCTION OF THE APSIDAL TEMPLE[1]

ABSTRACT

The present paper examines the pottery record that has been derived from the excavation of the mudbrick altar serving as the focus of cult in the Early Iron Age Sanctuary of Poseidon Helikonios of ancient Helike, in Achaia, before the construction of the apsidal temple. The range of pottery and its association with the stratigraphic sequence of the altar will help to identify the biographical characteristics of the vases and their significance for defining the site's ritual activity from the introduction of the cult in the early 8th century BC until the construction of the apsidal temple towards the very end of the same century (around 725–700 BC). Another aspect that this paper hopes to clarify is whether the pottery record, and especially the types of vases, reflect feasting activities. Quite significant and illuminating will be the juxtaposition of the pottery record of the present site to the one from the Sanctuary of Artemis Aontia in Ano Mazaraki, and the Sanctuary of Athena in Trapeza (ancient Rhypes), both also in Achaia. The ritual activity reflected by the pottery record will also provide us with the necessary information to discuss the social characteristics of the people who organized and performed the cult activities in the area of Achaia during the 8th century BC.

## INTRODUCTION

The Sanctuary site of Poseidon Helikonios was uncovered in 2004 during a rescue excavation conducted on the occasion of the construction of a house on a private plot in the village of Nikoleika near Aigion, in Achaia (fig. 1). Since then, a number of publications have appeared referring to a) the presentation of the evolution of the sanctuary site, its topography and the apsidal temple[2], b) the Thapsos class pottery style[3], and also c) certain votive offerings which carry special significance for the interpretation of the cult and the local community's involvement in the formation of the sanctuary site[4].

The apsidal temple was erected around 725–700 BC by the local aristocracy to house cult activities. Until that time, such practices had taken place exclusively at the open-air mudbrick altar, which was constructed approximately in the centre of the later apsidal temple[5].

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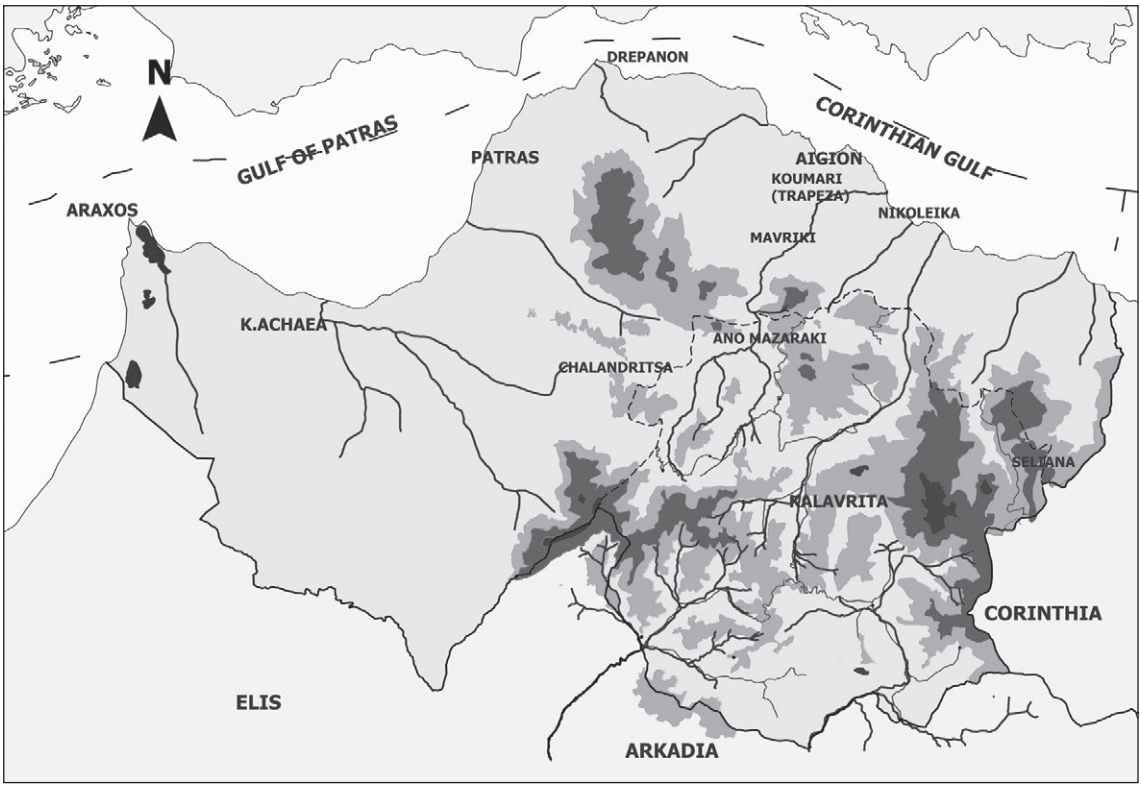
1 I wish to thank the organisers of the conference for the invitation to participate in a symposium presenting a wealth of new data deriving from pottery assemblages from sanctuary sites in northern Peloponnese. Even though the pandemic of Covid-19 converted this scientific meeting, one which is very important for everyone's research, to a virtual conference and kept us apart, I would like to express my gratitude to the director of the Athens Branch of the Austrian Archaeological Institute, B. Eder, and to M. Kerschner of the Austrian Archaeological Institute at the Austrian Academy of Sciences who made this online meeting possible and gave us the opportunity to share our work, and interact with our colleagues around the world.

2 Kolia – Gadolou 2011; Kolia 2011.

3 Gadolou 2011a; Gadolou 2017.

4 Gadolou 2011b; Gadolou 2015; Gadolou 2022; Gadolou (forthcoming).

5 Kolia 2011, 201–246. See the contribution of E. Kolia in this volume.




1 Map of Achaia with the sanctuary sites referred to in the text (© Anastasia Gadolou)

The dating of the temple to the very end of the 8th century BC is based on the decorated Late Geometric pottery found in all layers below the temple floor, and mainly on the Thapsos class pottery style. Important evidence for the date of the altar is provided by a skyphos with early Thapsos class style decoration dated ca. 760/750 BC, offering a valuable date for the use of the altar in the second quarter of the 8th century BC (fig. 2), although the large proportion of Middle Geometric pottery strongly suggests that the altar was built in the first half of the 8th century[6].

Apart from the altar and the apsidal temple previous religious activity at the site is attested by a number of sherds of Early Geometric and Protogeometric date that were found in all excavation layers. However, their frequency in the dark brown layer in the southeast part of the temple, as well as in the baulk of squares B1-B0, indicates that they may have been associated with a destroyed building or some other construction, as the remnant of floor at the east end of the temple indicates[7].

In the light of the above data the present paper will focus on the detailed presentation of the stratified pottery record that has come to light from the archaeological layers under the apsidal temple.

As has already been noted by E. Kolia, under the hard, brown-yellowish argillaceous soil which covered the apsidal temple, lay the temple floor[8] (fig. 3, 1). Below the floor, two successive layers are encountered (fig. 3, 2. 3a. 3b) (phase 3), which have been interpreted as the under-layer for the floor, and in these layers the column bases of the apsidal temple are bedded[9]. Under these layers two successive thin layers (fig. 3, 4a. b and 5a. b) (phase 2) were identified at a depth of

6 Kolia 2011, 224 f. fig. 30.
7 Kolia 2011, 221 fig. 33.
8 For the stratigraphy of the excavation of the altar and the temple, see Kolia 2011, 215–220 figs. 7. 14. 15. 20 and her contribution in this volume.
9 Kolia 2011, figs. 7. 20.

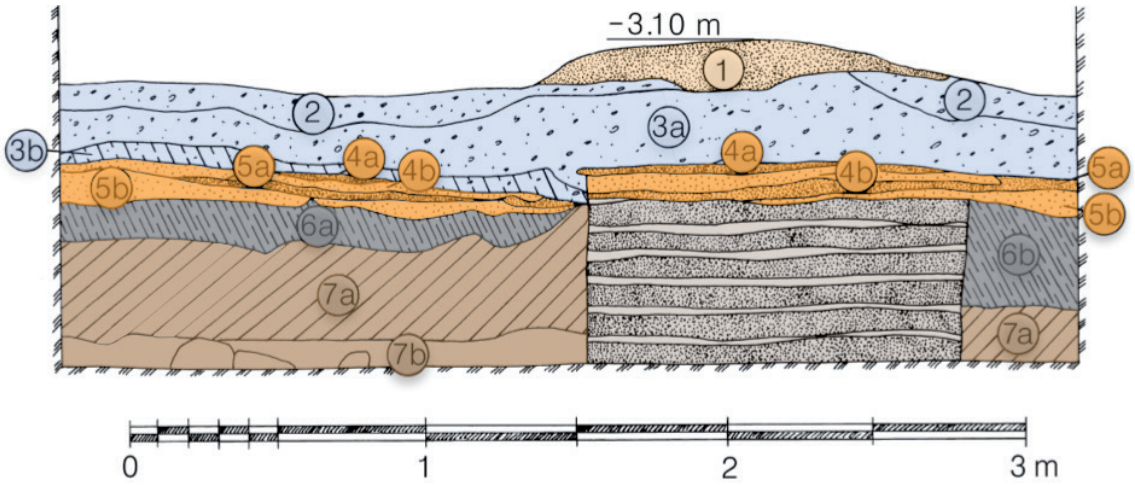



2 Proto-Thapsos class style skyphos (inv. AMA 2306) (© photo Nikos Petropoulos, drawing Anastasia Gadolou)

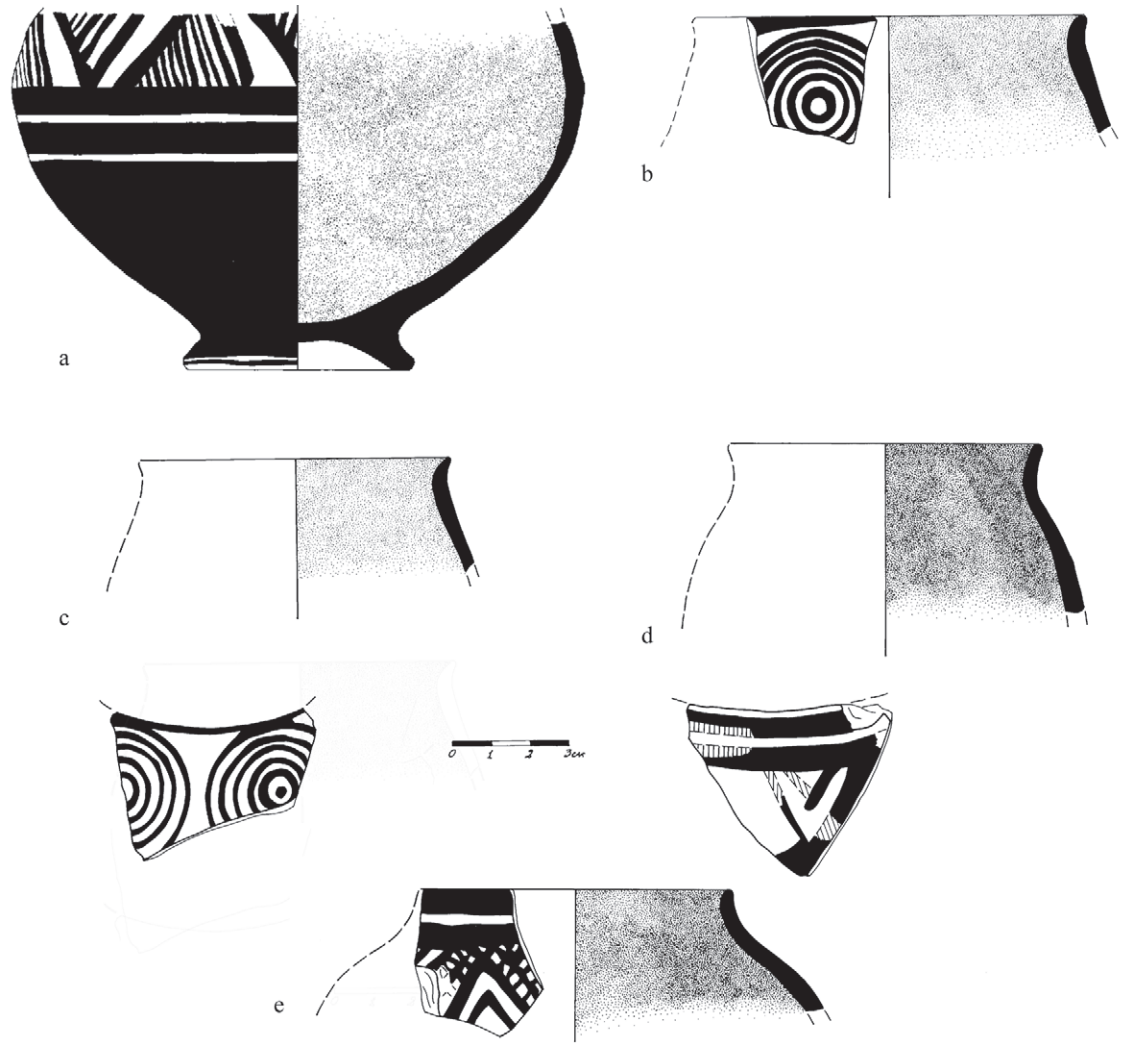
–3.45/–3.5 m and –3.54/–3.63 m respectively, which cover and essentially seal the mudbrick altar. The mudbrick altar was revealed under the above mentioned layers and the floors of the apsidal temple in squares B3 and B4[10].

The stratigraphy around the altar is as follows: under the traces of ›floors‹ that have been identified, a grey-greyish brown layer with traces of incineration was excavated (fig. 3, 6a. b) (phase 1 I). The grey layer was found in contact with the altar and extends to the east and west of it, as well as to the north and south, where it is delimited by the temple walls. This layer included distinct traces of burning, broken animal bones (cooked or burnt), numerous small or medium-sized unworked stones, lumps of clay and many artefacts: broken vases and sherds, horse figurines, parts of terracotta architectural models, almost 80 terracotta wheels – probably forming parts of chariot models – and several metal objects[11]. Under the grey layer (fig. 3, 6a. b), a yellow

10 Kolia 2011, 217. 219 fig. 14.
11 Kolia 2011, 217–221 figs. 22–29.




3 Stratigraphy of the face of the altar in squares B3-Γ3; 1: temple floor; 2: yellowish brown with gravel; 3a: pale yellow with gravel; 3b: pale yellow with races of incineration; 4a: clayey layer; 4b: yellow brown; 5a: clayey layer; 5b: yellow under-layer; 6a: grey with traces of yellow soil and stones; 6b: grey; 7a: yellow sandy; 7b: yellow brown sandy (after Kolia 2011, 15)




4 Pottery of Protogeometric date in squares B0-B1: a: kantharos inv. AMA 2135; b. c: skyphos inv. AMA 2106a–b; d: pyxis inv. AMA 2134

layer of sandy stones (fig. 3, 7a. b) (phase 1 II) and a smaller number of finds were excavated. A skyphos with early Thapsos class style decoration (fig. 2) was found at a short distance south of the altar, placed between stones. Many sherds recovered from the yellow layer belong to vessels found in the overlying grey layer, demonstrating that the two layers were deposited at the same time, as filling for the construction of the apsidal temple. In the lowest part of the yellow layer (fig. 3, 7a. b) were numerous unworked stones, large and small.

A comparison with the well-documented pottery of the Early Historical Era production in Achaia published by the author and a number of archaeologists working in the region[12], together with the intensively studied stratigraphy of the excavation, led us to the chronology of the pottery published in the present paper.

## POTTERY OF PROTOGEOMETRIC DATE

As noted above, all layers below the temple contained pottery sherds of Achaian manufacture that date to the Protogeometric period (figs. 4. 5 tabs. 1. 2). Nevertheless, such fragments are most frequently encountered in the dark brown layer at the southeast part of the temple between squares B0 and B1 which as indicated by the floor remnant of hard, brownish red clay that has been excavated there, is probably associated with a destroyed building[13]. The best surviving vase is the kantharos inv. AMA[14] 2135 (fig. 4 a), which was found in fragments on the aforementioned excavation floor. It is a kantharos of the broad type with an almost globular body and a slightly conical foot. Hatched triangles, with their tops alternating up and down, decorate the handle zone. An exact parallel is the kantharos inv. AMA 435 from a funerary pithos found at Derveni[15], a site some 5 km southeast of Nikoleika. Skyphos inv. AMA 2106a–b (fig. 4 b. c) from the same stratum is decorated with concentric circles, a decorative motif well attested on many sherds from a rescue excavation in Polychroniadi str. in Aigion[16], as well as on pottery sherds from the sanctuary site of Trapeza[17]. Two small fragments of Protogeometric skyphoi inv. AMA 2103, 2133 (fig. 4 d) are the fourth and fifth drinking vases that come from this area. The first bears a zig-zag line on a reserved zone just below the rim and the second is decorated with downward pointed triangles. Finally, a pyxis fragment inv. AMA 2134 (fig. 4 e) decorated with cross-hatched triangles in double outline, inscribed in a horizontal panel[18] further demonstrates the use of this area of the sanctuary during the Protogeometric period, quite before the construction of the altar.

Twenty one more fragments of vases stylistically dated to the Protogeometric period have been found in all excavation layers under the apsidal temple, and at a depth level between –3.15 to –4.00 m. These consist mainly of drinking vessels, namely 6 kantharoi (fig. 5 a–c) and 13 skyphoi (fig. 5 d–j), as well as of one oinochoe (fig. 5 k) and a lekythos.

The Protogeometric pottery comes mainly from phase 1 layers (phase 1 I layers 6a–b and phase 1 II layers 7a–b), connected with the period of the use of the altar. Fewer sherds come from the clayey, dark brown phase 2 layer (4a–b. 5a–b), which actually covered the altar.

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12 A large amount of the pottery production of Achaia (fine ware, impressed ware and Thapsos class style from sanctuaries as well as from cemetery sites dated from the Protogeometric down to the Late Geometric period have been published in the following books: Gadolou 2008; Gadolou 2011a, and articles: Gadolou 2002; Gadolou 2003; Gadolou 2007; Gadolou 2017a; Gadolou 2017b; Gadolou 2017c; Aktypi 2014; Maniaki 2014, 2019; Maniaki – Moutafi 2019; Borgna – Vordos 2016, 453. 455; Katsarou 2019 and her contribution in the present volume.

13 Kolia 2011, fig. 33.

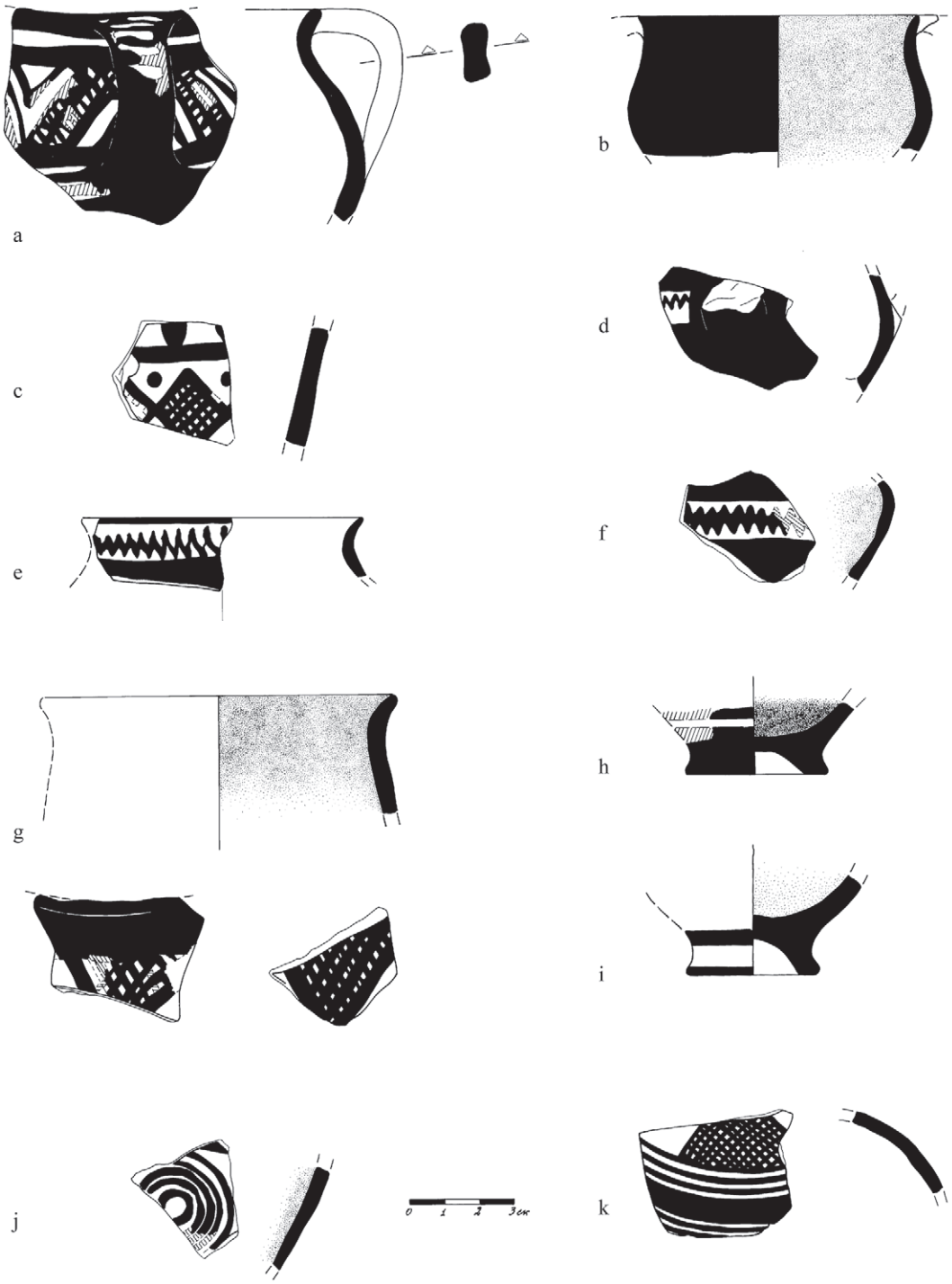
14 AMA = inventory number of the Archaeological Museum of Aigion.

15 Gadolou 2008, 35. 153 pl. 135 a.

16 Gadolou 2008, 108 fig. 72.

17 Borgna – Vordos 2019, fig. 13 1A-2A. For the sanctuary site of Athena on the Trapeza hill see Vordos 1999–2001, 149–159; Vordos 2001, 47–54; Vordos 2002, 217–234; Hellner – Gennatou 2017, 115–133; Petropoulos 2019, 63–71; Hellner 2019, 165–183.

18 A similar vase, inv. AMA 440, was found in the Derveni pithos burial, Gadolou 2008, 154 pl. 136 i.




5 A sample of pottery of Protogeometric date in squares B0-B1: a–c: kantharoi; d–j: skyphoi; k: lekythos-oinochoe

It is therefore clear that the site was already in use from the Protogeometric period. Furthermore, the data presented above demonstrates that, during this early period, the presence and use of drinking vases predominated in the sanctuary (out of the 25 sherds of Protogeometric date, 18 come from skyphoi and kantharoi).

Table 1 Percentage of vase shapes in PG, EG, MG and LG periods

| | PG | EG | MG | LG |
|---|---|---|---|---|
| Total | 25 | 20 | 97 | 158 |
| Open vase shapes: Kantharoi, Skyphoi, etc. | 22 | 18 | 84 | 56 |
| Kylix | | | | 3 |
| Skyphos-Kraters | | 1 | 2 | 17 |
| Kraters | | | | 3 |
| Oinochoai | 1 | 1 | 6 | 32 |
| Lekythos | 1 | | | 1 |
| Prochous | | | 1 | |
| Pyxis | 1 | | 1 | 23 |
| Plates | | | | 11 |
| Stands | | | 3 | |
| Amphoriskos | | | | 2 |
| Handless small vases | | | | 10 |

Table 2 Percentage of number of vases in the different excavation layers

| | PG | EG | MG | LG |
|---|---|---|---|---|
| Total | 25 | 20 | 97 | 158 |
| Phase 3 layers 2 and 3a–b | 3 | 9 | 34 | 78 |
| Phase 2 layers 4a–b and 5a–b | 10 | 7 | 22 | 30 |
| Phase 1 layers 6a–b and 7a–b | 12 | 4 | 41 | 50 |

## POTTERY OF EARLY GEOMETRIC DATE

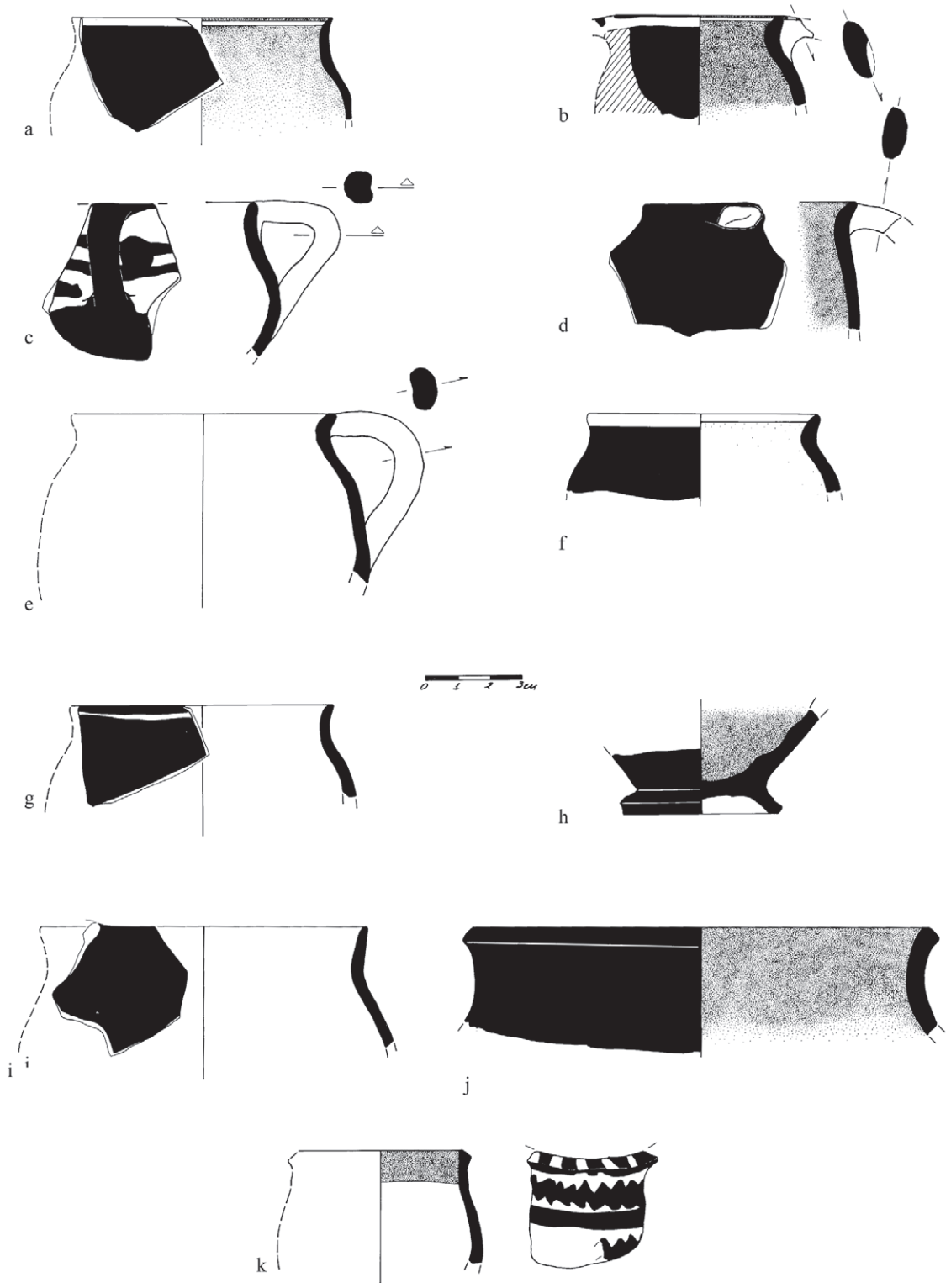
Twenty sherds unearthed from all layers associated with the altar, in depths from –3.15 to –3.83 m, are dated to the Early Geometric period based on stylistic criteria (fig. 6 tabs. 1. 2). The shapes of kantharoi (inv. AMA 2047. 2060. 2040. 2108. 2131, the handle 2160, probably AMA 2624 and also 2625, fig. 6 a–e), skyphoi (inv. AMA 2073. 2136. 2128. 1904. 1906. 1903. 2175. 2007. 2013, fig. 6 f–i), and the skyphos-krater (inv. AMA 2174, fig. 6 j) with an outward rim with a flattened upper surface and with quite thick walls (characteristics which identify the vase as a skyphos-krater rather than a skyphos), and the shape of oinochoe (inv. AMA 2111, fig. 6 k), have all been identified[19].

These vases come from phase 1 of the altar's use, and from the layer of phase 2 which covered the altar. A few of them also come from the layers under the temple floor that belong to phase 3. All Early Geometric vases are black glazed, except for an oinochoe (inv. AMA 2111, fig. 6 k) and a kantharos (inv. AMA 2060, fig. 6 c) bearing linear decoration.

## POTTERY OF MIDDLE GEOMETRIC DATE

Ninety-seven sherds or parts of vases are dated to the Middle Geometric period (figs. 7–9 tabs. 1. 2). All of them come from the stratified layers under the apsidal temple, in depths ranging from –3.23 to –4.06 m. The seventy-seven (77) skyphoi and kantharoi, in a total of ninety-seven vases,

[19] A sherd belonging to an open vase (AMA 2612) has been also dated to the Early Geometric period. However, no specific characteristics have been preserved that reveal its type of vessel.




6 A sample of pottery of Early Geometric date. a–c: kantharoi; d–j: skyphoi and skyphos-krater; k: oinochoe

clearly show the predominance of drinking vessels also during the Middle Geometric period. The skyphos (e.g. inv. AMA 1956, fig. 7 a–k) with an outward turned rim, cylindrical handles, flat base and horizontal black lines on a reserved broad band just below the rim, as well as the black glazed kantharos (e.g. inv. AMA 2145, fig. 7 l. m) with a reserved band on the upper outer and

inner area of the rim and vertical handles decorated by horizontal black lines, are the most characteristic vase shapes of the period. Among the skyphoi are 22 examples of Proto-Thapsos style vases (fig. 8 a–i), with skyphos inv. AMA 2306 (fig. 2) being the most characteristic. Two parts of the rims belonging to open black glazed vases with horizontal black lines on a reserved zone below the rim as the only decorative motif have been identified as skyphos-kraters (inv. AMA 1978. 2012) mainly due to their size which clearly disassociates them from smaller open vases[20].

The repertoire is completed by seven fragments of closed vessel shapes, probably used for pouring purposes. Among them, six are black glazed with reserved zones with horizontal black lines on the lower part of the body. These can be identified as belonging to oinochoai (fig. 9 b. c), due to their similarity to the well-known examples of the Achaian Middle Geometric pottery production[21]. The seventh vessel (inv. AMA 1922, fig. 9 a) has been identified as a prochous, decorated with meander hooks on the reserved zone between the handles. This vase bears similarities with two intact vases of the same kind, kept in the National Archaeological Museum[22].

## POTTERY OF LATE GEOMETRIC DATE

### Achaian Fine Ware Workshop, Impressed Ware Workshop, Thapsos Class Pottery Style

The bulk of pottery deriving from the excavation of the sanctuary dates to the Late Geometric period (figs. 10–17 tabs. 1. 2). 158 vases or fragments of vases belong to this date. Among them 51 are of the Thapsos class style, four of the Impressed ware workshop, while the remaining 103 belong to the Achaian Late Geometric fine painted ware workshop. Architectural models, horse figurines, almost 80 terracotta wheels – probably parts of chariot models – as well as several metal objects, are also dated in the Late Geometric period. These come mainly from the layers 6a–b and 7a–b assigned to the period of the use of the altar[23], but their publication and significance for the sanctuary have been the topic of past papers[24].

Most of the Late Geometric pottery (50 fragments of vases) comes from the phase 1 (grey and sandy yellow layers) associated with the construction and use of the altar (fig. 3, 6). Fewer sherds of this date come from the layers just below the temple floor (fig. 3, 2–5) that covered the altar.

Out of a total of 158 vases the 56 skyphoi and kantharoi (fig. 10) once again demonstrate the predominance of drinking vessels. Skyphos-kraters and kraters are represented by 20 examples, followed by the oinochoai with 32 (figs. 11. 12). Quite interesting for the rituals that took place in the sanctuary is the presence of a shape well known from the Sanctuary of Artemis Aontia in Ano Mazaraki[25]: the biconical or cylindrical small handleless open vessel with a flat base (for example inv. AMA 2147. 2193. 2158. 2165. 2083) bearing linear decoration, probably used for liquid offerings[26].

Eleven plates (inv. AMA 2082. 2110. 2120 the most complete, fig. 14) and 23 fragments of pyxides (fig. 15) are the most significant examples. Of the latter, seven belong to the class of Achaian fine painted ware (inv. AMA 2016. 2027. 2044. 2079. 1928. 2129. 21950 fig. 15 a–f) and three to the Impressed ware (inv. AMA 2310. 2034. 2148 fig. 15 g).

A quite interesting vase shape, identified for the first time in the Achaian pottery production repertoire of the Early Historical Era, is that of the kylix. Kylikes are represented by three examples (inv. AMA 2168. 1954. 2305 fig. 16), all coming from the grey layer of the altar's use.

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20 Seven more fragments have been identified as being derived from open vases and three fragments have been identified as stands (AMA 1915. 1989a–b. 2081), though AMA 1944 probably comes from a pyxis.

21 Gadolou 2008, 99 f. K23. K24 from Aigion; figs. 49. 50.

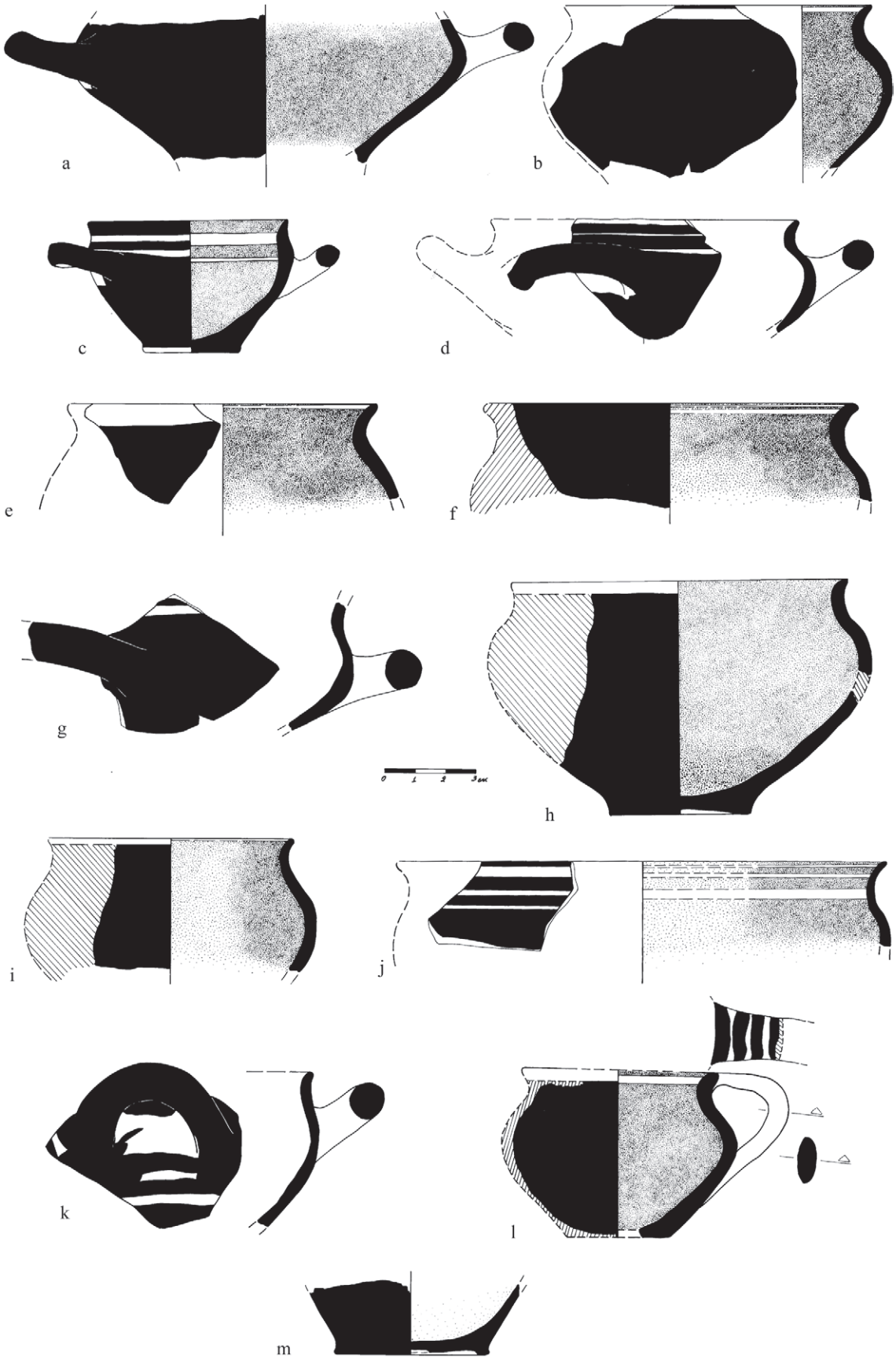
22 Gadolou 2008, 146–149 K157. 158 figs. 129. 130.

23 Kolia 2011, 217–221 figs. 22–29.

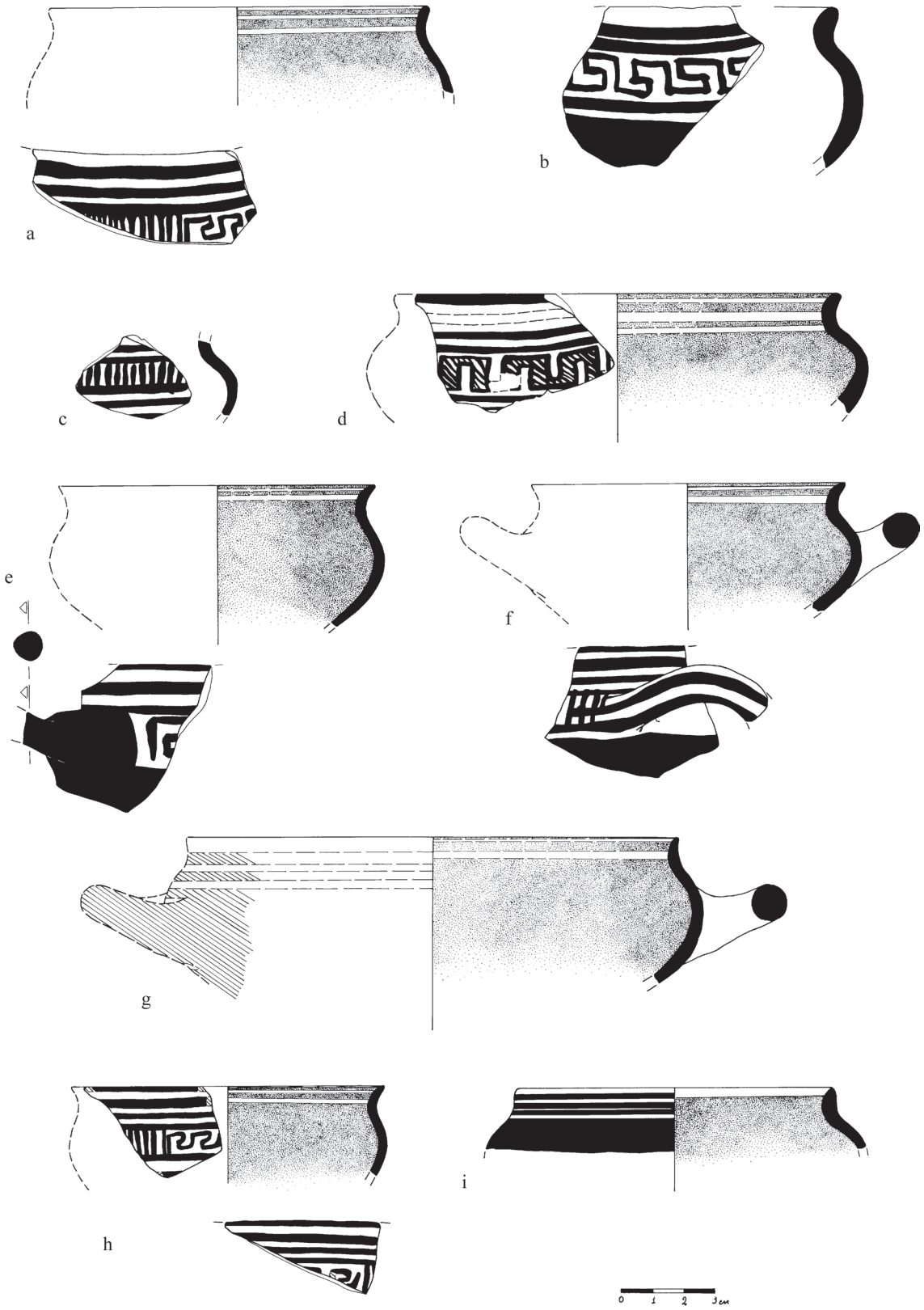
24 Kolia 2011, n. 4–6.

25 Gadolou 2002, 180 no. 57a.

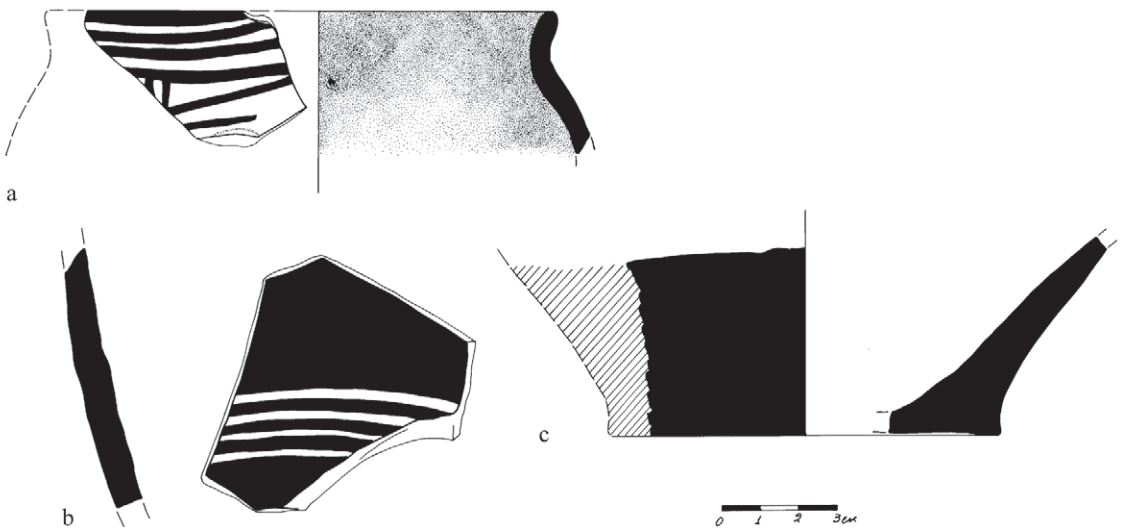
26 For a similar use of small and medium-sized open vessels for libations at the Sanctuary of Apollo Hyakinthos at Amykles, see Vlachou 2018, 102.




7 A sample of pottery of Middle Geometric date; 7a–g. j. k: skyphoi; 7h. i: skyphoi or kantharoi; 7l. m: kantharoi




8 A sample of Proto-Thapsos style kantharoi and skyphoi




9 Middle Geometric oinochoai and prochous

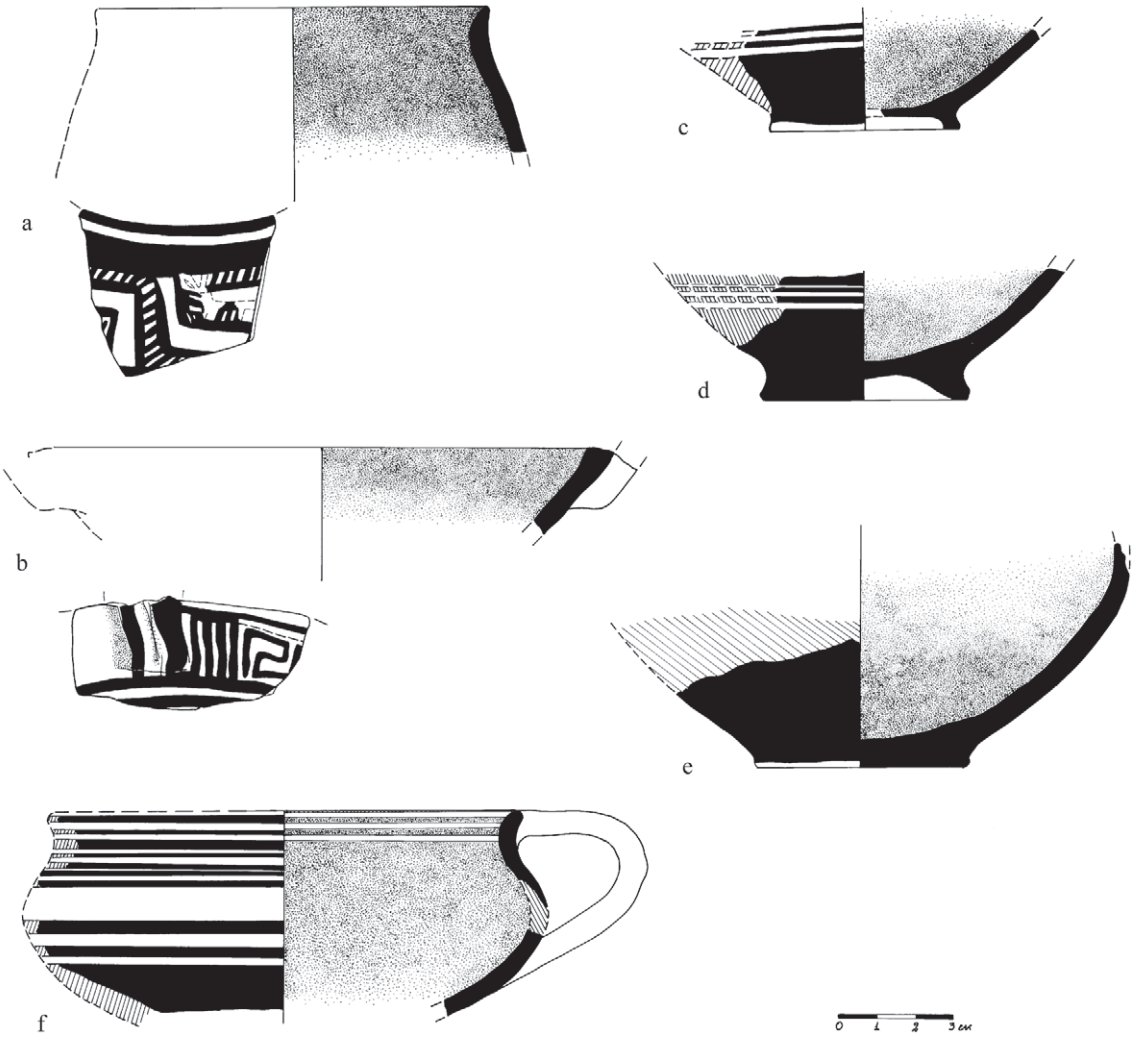
The most prominent example (inv. AMA 2168 fig. 16 b) is decorated with horizontal black lines around the high cylindrical foot and the lower part of the body. On the upper part of the body a faded linear decoration, probably inside a panel can be detected. The reddish yellow colour of the clay (7.YR 7/6) is well-documented in Late Geometric Achaian pottery production. The same is true for the decoration of the lower part of the body, which bears horizontal black lines, a distinctive characteristic of the Early Historical Era Achaian pottery production, attested from the Late Mycenaean period. Both characteristics help to identify this new shape as one of local production. Bearing in mind the significance of the kylix in the wider ceremonial-ritual contexts of Early Historical Era sanctuary sites in Western Greece, this new addition to the Late Geometric Achaian repertoire is quite valuable and reflects the continuous use of this ritual shape from the Mycenaean Era, as B. Eder has clearly shown in her recent study[27].

Not only fine wares have been excavated from this sanctuary site which is important for the history of Early Historical Era Achaia. Coarse ware is also well-documented and an initial report will be presented here by J.-S. Gross (figs. 18. 19)[28].

What J.-S. Gross reported after looking at 47 excavation groups *(omades)* containing 324 fragments and 25 rims, mainly from the 2004 excavation season is the following: »The first observation could be that the coarse ware of Nikoleika presents a great marginality in comparison to all the assemblages from Central Greece, the Cyclades or even the Argolid. A regionalized production is thus clearly identified; considering the quantity and the homogeneity of the material that corresponds to the principal phase of activity of the Late Geometric, and the shapes are identical to those usually used in the Early Iron Age. The cooking pot, amphora, plate and bowl are recognized. The technical characteristics such as assembling methods or firing processes are more usual and can be observed in different places in Early Iron Age Greece. Most interesting is the method of tempering. The temper added during the preparation of the paste is dense and well calibrated. From the observation of the cutting edge of the temper, it is clear that the temper used in the production of coarse ware from Nikoleika is not from a natural deposit but the result of a specific preparation of crushing rocks. Thus, we may conclude that the potters took great care during this stage of manufacture, wanting to make sure that their product would resist thermic and mechanical shocks.«

27 Eder 2019, 40.

28 Due to his many obligations, J.-S. Gross will not continue with the publication of the coarse ware vessels. The study of this very important and usually neglected ware will be continued by G. Papadias.




10 Late Geometric fine ware kantharoi and skyphoi

The presence of coarse ware cooking pots may indicate that these vessels served for the preparation of boiled meat, even though the presence of burnt animal bones points to the consumption of roasted meat[29]. The coarse ware plates and bowls served for consuming the food, as well as the small number of fine ware plates from the site.

## DISCUSSION

Before proceeding to the discussion of the data presented above, it should be noted that both the stratigraphy and the pottery demonstrate that the successive layers from below the temple floor down to the altar floor, despite their different character, were deposited contemporaneously during the construction of the apsidal temple. Their purpose must have been to fill the space around the altar and raise the ground level. This suggestion is corroborated by the fact that joining or associated sherds from numerous vases were found dispersed into the different layers[30]. Additionally,

29 Psathi 2011, 245.
30 Kolia 2011, 224.




11 Late Geometric Thapsos class style oinochai

the absence of imported wares, except for a few Proto-Corinthian pieces[31], probably indicates a local character of the cult, but certainly not that it was secluded[32].

Before the construction of the altar, a Protogeometric phase is well-documented in the south eastern part of the temple[33].

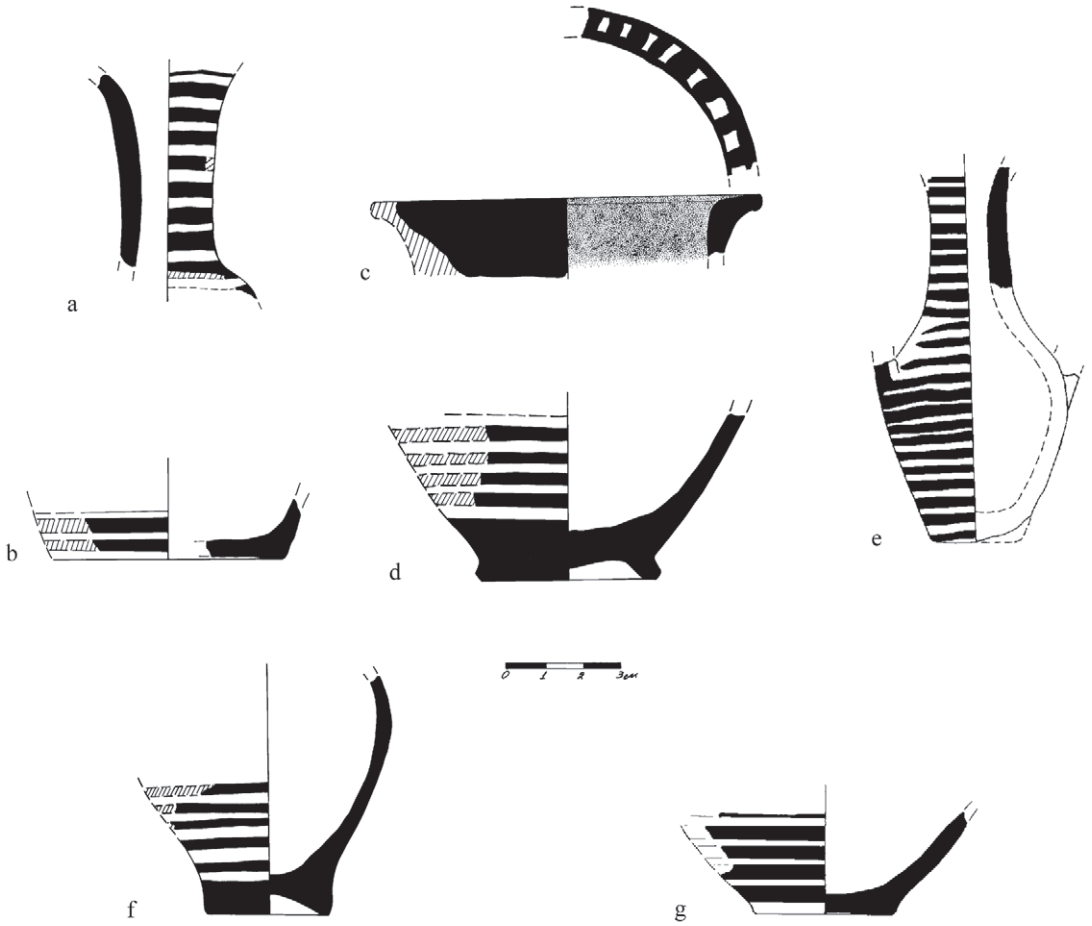
The altar was in use throughout the second half of the 8th century BC, until the construction of the temple at the very end of the century. Nevertheless, the large percentage of Middle Geometric pottery strongly suggests that the altar was erected around 760/750 BC. As has already been noted, important evidence for the date of the altar is provided, as has already been noted, by a Proto-Thapsos skyphos (fig. 2) found in the yellow layer just south of the altar, placed between stones, at a depth of –4.01 to –4.07 m, i.e., slightly higher than the altar floor.

Above the yellow layer (7a–b, phase 1 II), the grey layer (6a–b, phase 1 I) contained finds related to the rites performed at the altar, including animal bones obviously from sacrifices, and

31 Gadolou 2017c, fig. 20, 5.

32 This very characteristic reinforces our argument that the sanctuary site at Nikoleika is an urban sanctuary, probably that of the ancient Achaian city, Helike, see Kolia 2011, 201–204. 227 f. 237 f.; also Gadolou 2011b, 268; Gadolou 2015, 273 f.

33 See above p. 88.




12 Late Geometric fine ware lekythos-oinochoe, oinochoai and amphoriskos

cooking pot sherds among other finds. Quite significant is the study of the faunal assemblage by H. Psathi that documented the animal sacrifices that took place in the sanctuary. These included animal offerings to the god and performance of sacrificial banquets. Both burnt and unburnt bones of sheep, cattle and pig are documented, with the majority being charred and reduced to very small fragments. There is, therefore, strong evidence for the practice of animal sacrifices, sacred meals and burnt offerings at the altar[34].

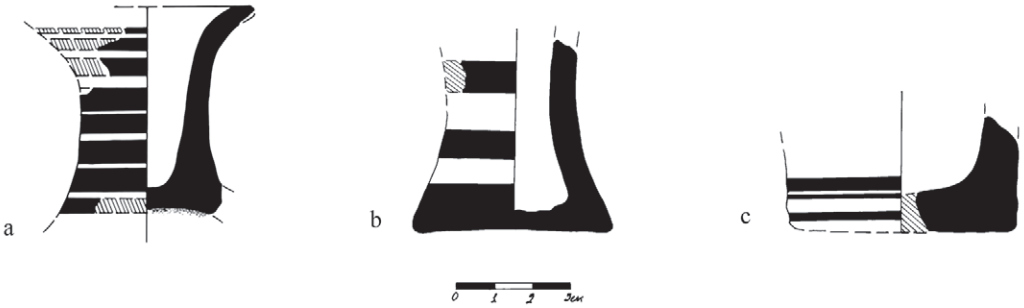
The performance of meals is further attested by the pottery found in the grey layer, a large percentage of which consists of drinking vases (mostly skyphoi and kantharoi) and kitchenware (mostly cooking pots and plates)[35]. A small number of jugs and oinochoai, amphoriskoi and two or three-handled plates were also unearthed. The meat of the sacrificed animals used for the sacred meals, which play an essential part in establishing and entertaining relations within the elite, must have been cooked near the altar.

Vessels associated with drinking and dining constitute a common element in the Sanctuary of Poseidon Helikonios. These manifest the importance of communal consumption of food and drink by the participants in the context of ritual activity.

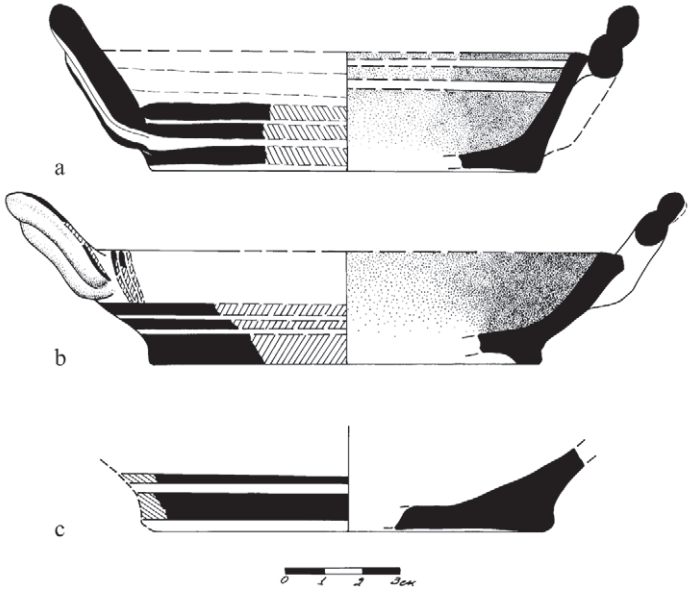
The sanctuary under discussion is not the only one in the area of Aigialeia with such characteristics. As shown in the first publication of the pottery from the Sanctuary of Artemis Aontia in

34 Psathi 2011, 245; for the importance of animal bones for the understanding of sacrificial practices and their interpretation as remains of ritual meals see Ekroth 2016.

35 Kolia 2011, 235; Kolia – Gadolou 2011, 194–197.




13 Late Geometric handleless small vessels




14 Late Geometric plates

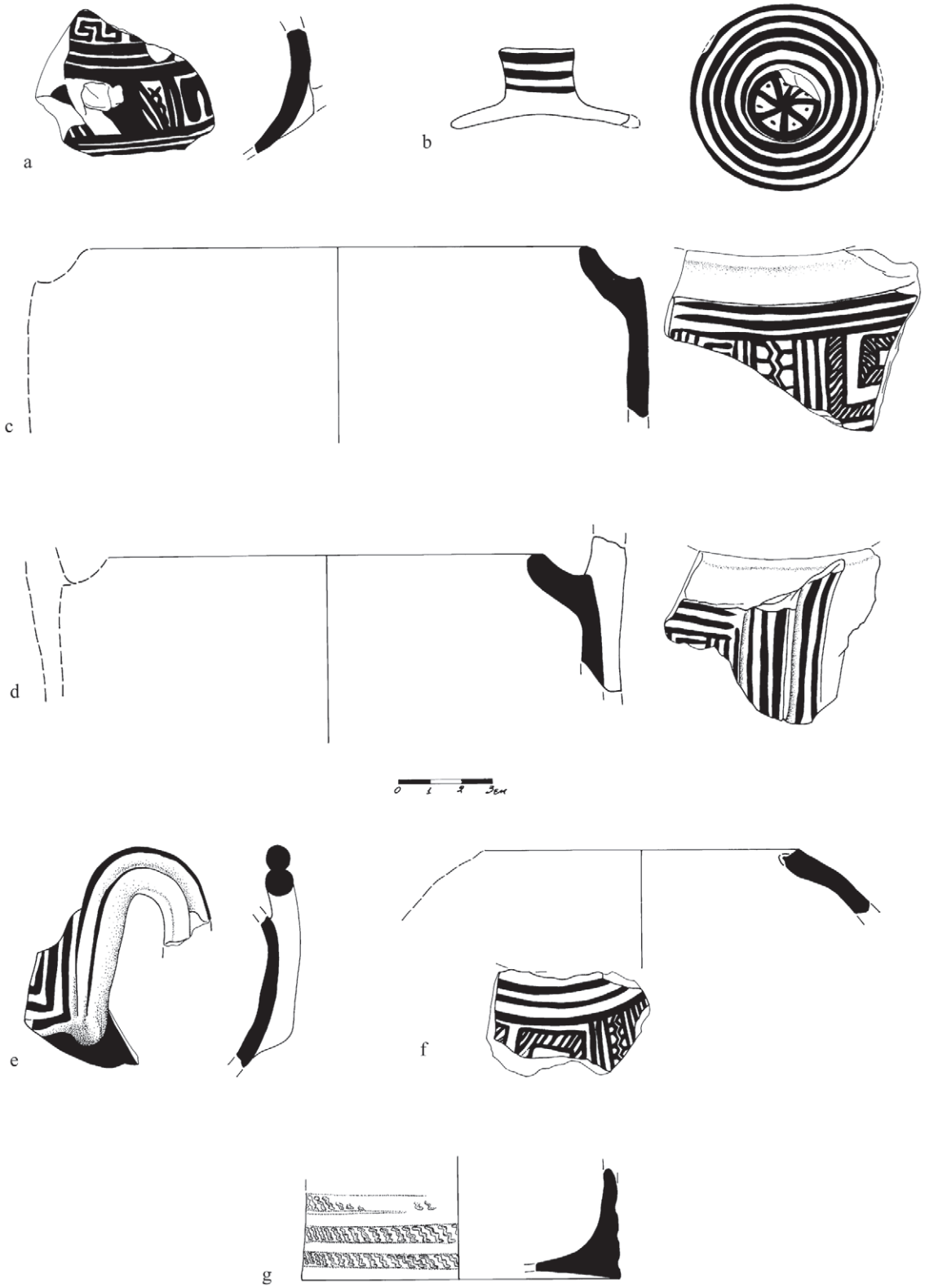
Ano Mazaraki by the present author, the range of vessels (kantharoi, skyphoi, skyphos-kraters and kraters, oinochoai) also reflects the participation of visitors of the sanctuary in the common meals taking place[36]. This is further corroborated by the presence of many burnt animal bones, which formed part of the votive deposit[37].

Finally, on the Trapeza hill near Aigion, a site identified with the ancient Achaian city of Rhypes, a large cult building of the second half of the 8th century BC with well-preserved mudbrick walls and rubble stone foundations was unearthed. This was found under the Doric hekatompedon temple erected towards the end of the 6th century BC, which underwent serious restoration at the end of the 5th century BC[38]. Burnt areas with ashes, charcoal and calcinated an-

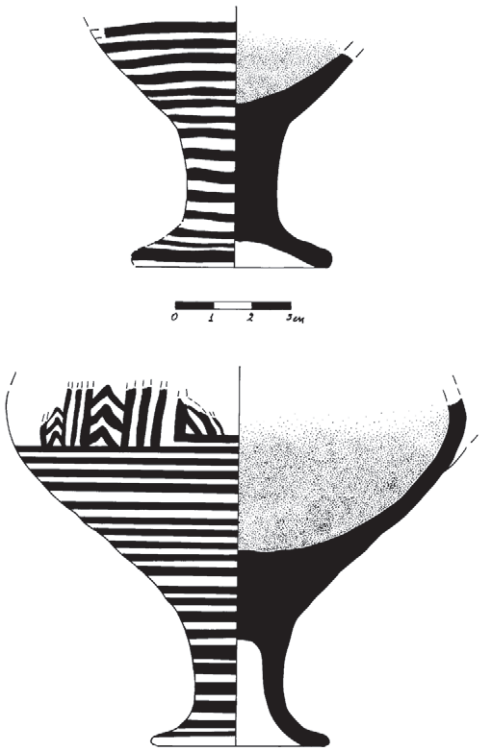
36 Gadolou 2002.

37 Dedications consist of pottery, Corinthian and local, painted, Thapsos class style and impressed ware, bronzes, local produced and imports, and the well-known Late Geometric models of granaries produced in impressed technique (Gadolou 2002, 165–174; Gadolou 2003, fig. 23 pl. 33). A centre of a loose religious union where local interplay was promoted has been suggested by the present writer for the Sanctuary of Artemis Aontia, mainly due to its central geographical position within the Achaian terrain and at the convergence of two main road axes (Gadolou 2008, 328–331).

38 Vordos 1999–2001, 149–159; Vordos 2001, 47–54; Vordos 2002, 217–234; Hellner – Gennatou 2017, 115–133; Petropoulos 2019, 63–71; Hellner 2019, 165–183.




15 Late Geometric pyxides. Fine ware, Impressed and Thapsos class style



16 Late Geometric kylikes

imal bones, drinking pots and iron spits, suggest the organization of common dinners coordinated by members of the local upper class[39]. Further evidence, possibly pointing to sacrifices and offerings of valuable goods, has been detected some ten metres to the east, close to the eastern edge of the plateau. A sequence of discarded materials, including very fragmented burnt animal bones, bronzes and an association of pottery fragments from jugs, kantharoi, cups or skyphoi with wiggly and zig-zag lines or panel patterns in triglyphs of vertical lines, and in particular skyphoi and kraters decorated with concentric circles, span the whole Geometric period from the Late Protogeometric onwards[40].

The pottery and the faunal data presented above demonstrate that at all three Achaian sanctuary sites of the Early Historical Era known so far, Nikoleika, Ano Mazaraki and Trapeza, repeated episodes of offering of burned animal sacrifices, as well as drinking and eating are attested from the Protogeometric to the Late Geometric period.

## CONCLUSIONS

The presentation and discussion of the pottery record that has been derived from certain chronological phases of the sanctuary site of Poseidon Helikonios has shown the homogeneity of the ceramic material. This reflects the local, yet not secluded, character of the cult.

The important role and significance that sanctuaries and sacred places served for the practice of social activities and needs during the Early Iron Age has been recently presented and discussed by B. Eder, as well as by many other scholars[41]. Religious beliefs and related (spatial) practices, linked to the members of the society, who perform the cults, festivals, rituals, etc., undoubtedly reflect certain social structures[42].

In this context the ritual activities taking place within a sanctuary have to be examined from the perspective of recognition of the social production of space[43].

The material evidence from the sanctuary that has been presented in this paper, and in particular the ceramic assemblages, demonstrate the prominent place held by feasting among the ritual activities performed at the site. The quantity of the drinking and dining equipment demon-

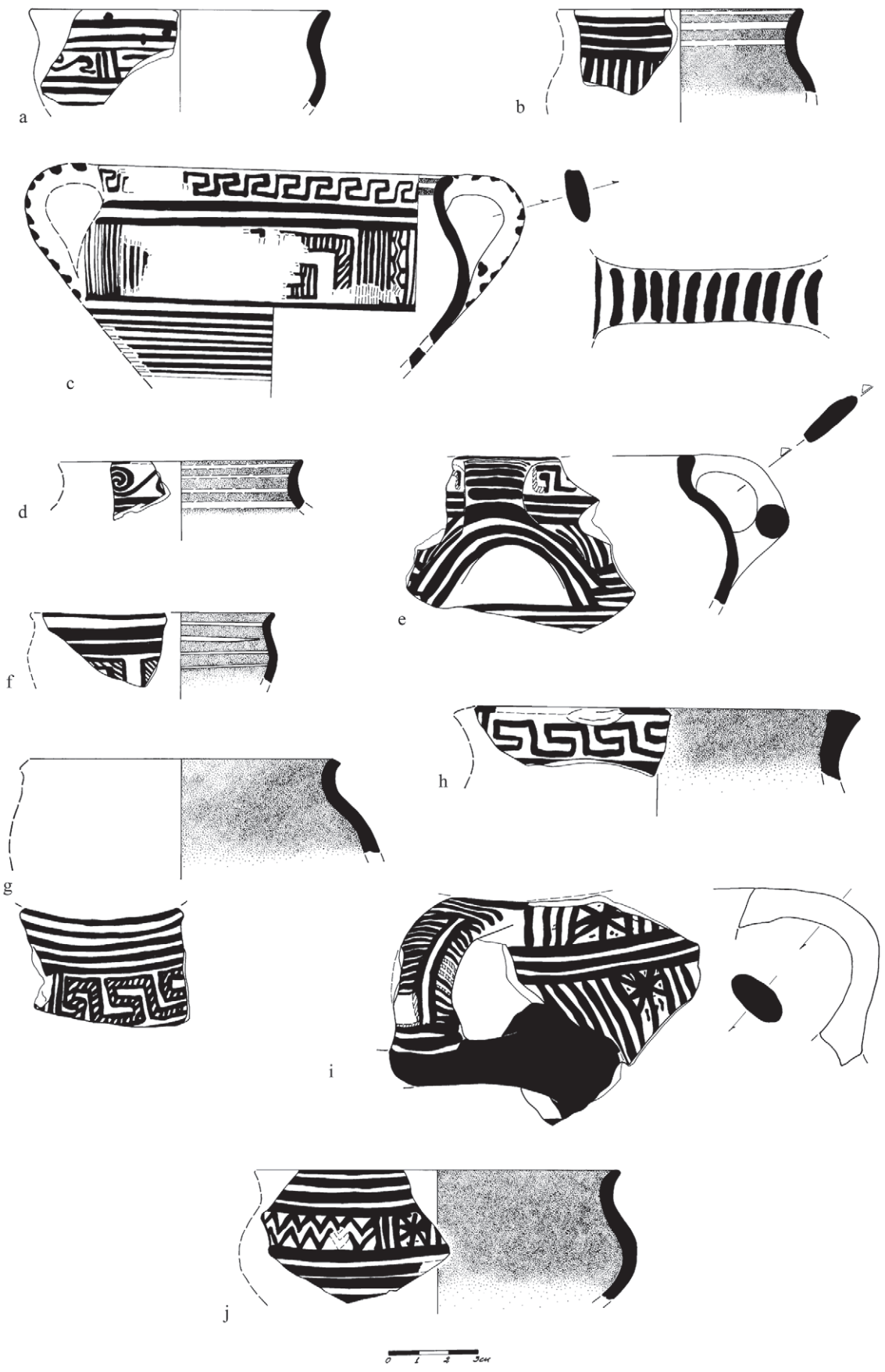
39 Vordos 2019, 143–164, esp. 144–147 figs. 2–10.

40 Borgna – Vordos 2016, 453–455; Borgna – Vordos 2019, 18–20 figs. 12. 13; Vordos 2019, 147 f. figs. 11. 14. 15.

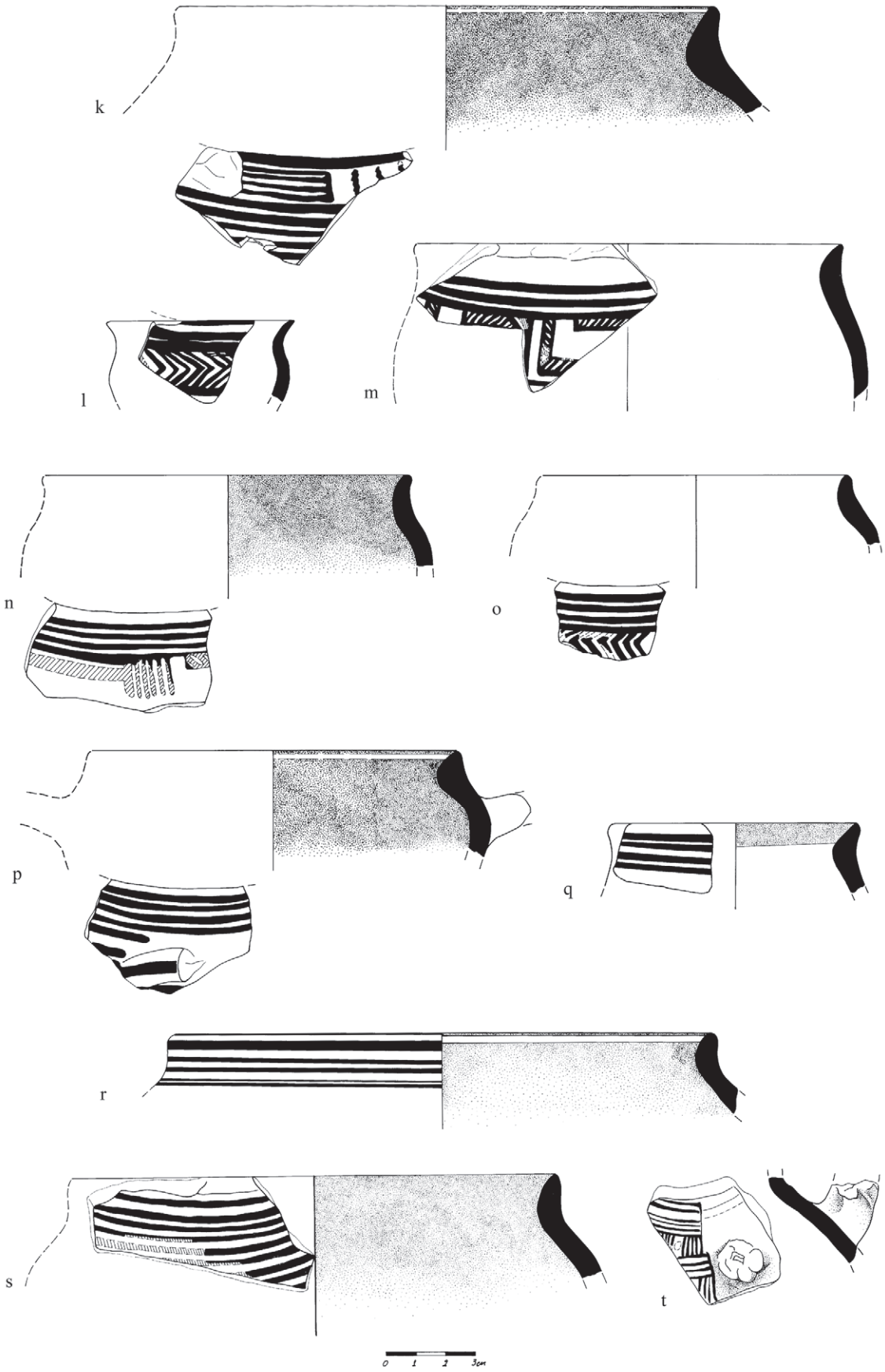
41 Lemos – Tsingarida 2019.

42 Eder 2019, 25. Especially in Achaia and in the sanctuaries in Ano Mazaraki and Nikoleika, a ritual act which reflects the existence of powerful elite families is the habit of dedication of models of houses and their ceremonial burial under the temples of the late 8th cent. BC, see Gadolou (forthcoming).

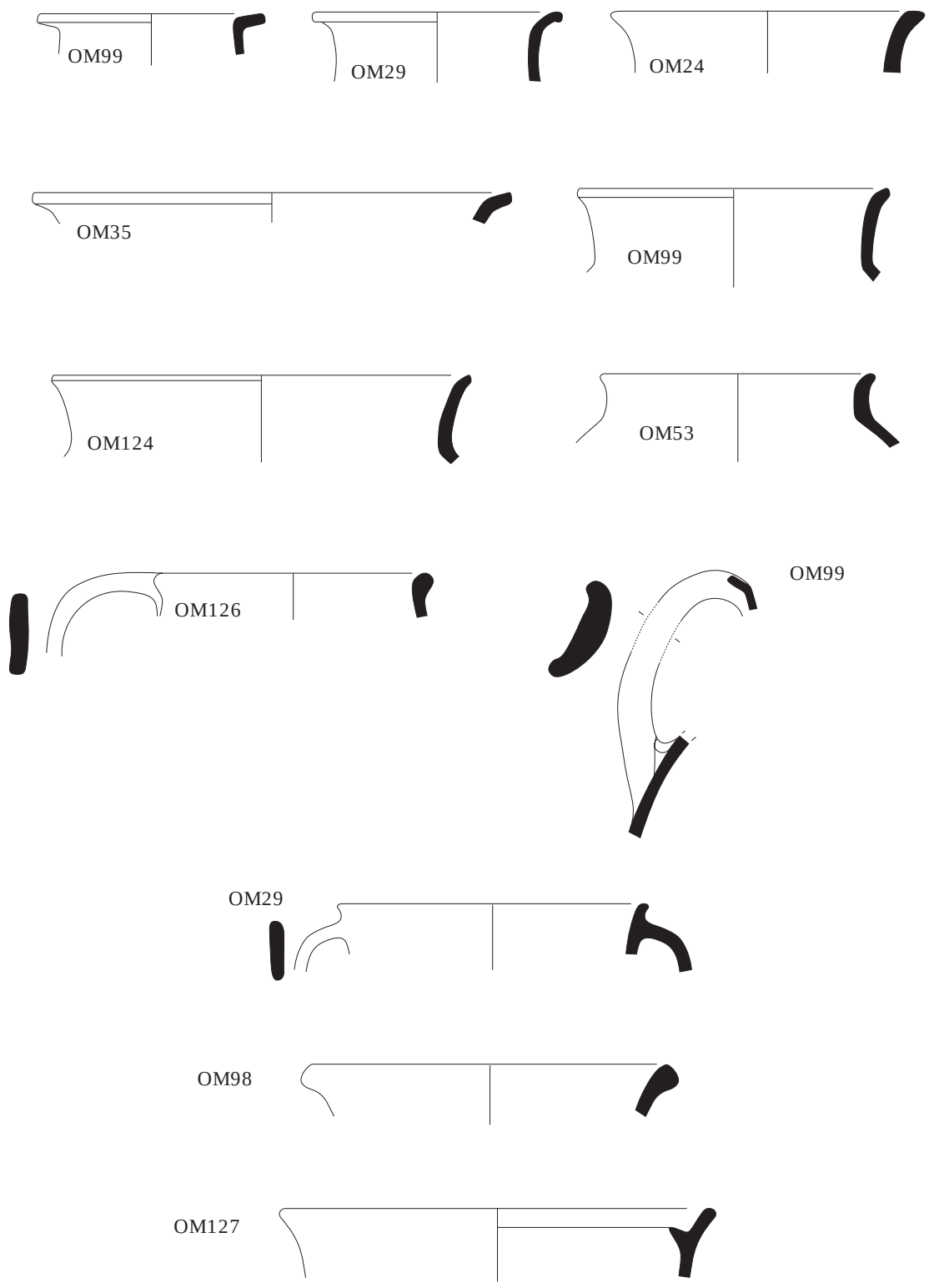
43 For this very topic see Renfrew 1985, 12 where he emphasises the importance of working with material remains, the consequences of actions which can plausibly be interpreted as arising from religious beliefs; Fogelin 2007 analyses how ritual which is a form of human action leaves material traces as well as its discrimination with religion beliefs; Anttonen 2005, 187–189 and Anttonen 2013, 13–32 discusses the socio-cultural and cognitive structures of religious conceptualisation that lay the foundation for sacred-making behaviour in specific social contexts; The nature and definition of archaeological deposits related to cult activity discussed from an anthropological approach is offered by Pakkanen 2015, esp. 30–33. 37.



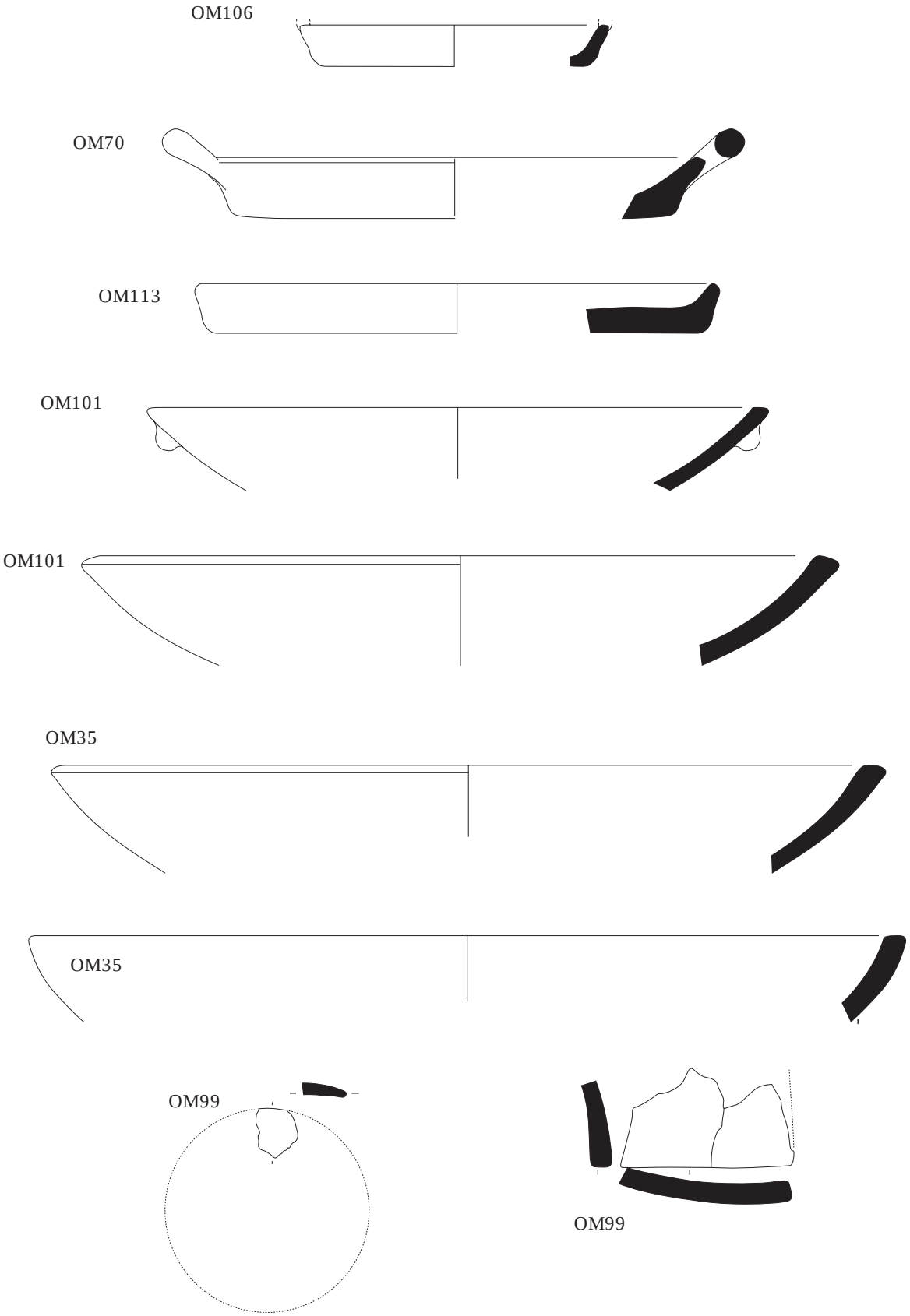

17 a Late Geometric Thapsos class style open vases




17 b Late Geometric Thapsos class style open vases




18 Coarse ware




19 Coarse ware

strates that the consumption of food and drink by the participants was a prominent characteristic throughout the life of this sacred place.

We can therefore conclude that communal events of consumption took place in the Sanctuary of Poseidon Helikonios, reflecting the need of the local community to gather and discuss with the aim of consolidating its social and political identity. In this way, the communal consumption of food and drink served as a means for social interaction and status negotiation[44].

The environment in which a feast is staged, whether physically or culturally defined, necessarily affects the socio-political message of identity, status and power, leading to an evaluation of the symbolic appeal that sanctuaries held as feasting settings.

In Early Iron Age Greece, feasting remained a conspicuous element at sanctuary sites where members of the elite class sought to promote their status through lavish dedications and display of power, such as in the Sanctuaries of Artemis Aontia in Ano Mazaraki and Poseidon Helikonios in Nikoleika. Therefore, the inhabitants of Achaia in the northern Peloponnese were well aware of the social importance that feasting held as an exceptionally impressive venue for social exchange, power relations, display of status, political action, and ideological self-representation.

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[44] van den Eijnde 2018, 1–26; see also Gadolou 2017b, 54–58 for a detailed discussion on this very topic. The ongoing excavation in the sanctuary and the consequently ongoing study of the material, that of coarse ware, archaeobotanical and faunal remains and especially metal objects prevents us from identifying the importance that feasts might have had for social interaction between different communities. The previous is a requirement as the sanctuary is located not too far from the busy Corinthian Gulf. The Drago-type fibula of North Italian origin that has been derived from past excavations hints at the area's relations with the Italian peninsula (see Kolia 2011, fig. 42).

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Stella Nestoridou – Christina Rathossi

# ARCHAEOLOGICAL EVIDENCE AND PRELIMINARY ARCHAEOMETRIC RESULTS FOR A DEMETER SANCTUARY IN THEA, PATRAS (ACHAIA PREFECTURE)

ABSTRACT

In a rescue excavation carried out in the community of Thea, Achaia, part of a Sanctuary of Demeter was brought to light, the only Archaic-Classical sanctuary in western Achaia. The excavation yielded architectural remains and numerous finds, collected in the successive deposits all over the area as well as six pits, which brought to light vessels, thousands of miniatures and burnt organic remains that can be dated mainly from the Late Archaic period until the 3rd century BC. Standing out among the finds is the Achaian type kantharos, which lends itself well to the identification of the Sanctuary with Demeter Poteriophoros, the various types of figurines and the iron restraints. This paper focuses on some aspects of the worship attested in the sanctuary and presents the results of the archaeological and archaeometric analyses, which indicate the local production of the ceramic finds and the long-lasting survival of some specific votive types.

The Sanctuary of Demeter at Thea, Patras was brought to light as a result of a rescue excavation by the ST' Ephorate of Antiquities in the period 2003–2005, under the direction of Dr. Michalis Petropoulos[1]. Petropoulos made a preliminary presentation of the excavation in 2005[2], with another, brief, common paper in 2012[3]. What follows is a presentation of specific aspects of the cult, based on the preliminary study of the sanctuary's finds[4].

Thea is located ca. 11 km southwest of Patras (fig. 1), between the rivers Peiros to the south and Glafkos to the north, at an altitude of 184 m asl. A number of Middle[5] and Late Helladic[6] tombs had been excavated in the region, also known as Tsaplaneika[7], while no indication was found of human occupation in later periods, as late as the Roman period[8]. The sanctuary, situated on the hill slope, was found at a level 4 to 9 m lower than the modern asphalt road that runs through the village. It was excavated only in part, apparently its southwestern area, with the unexcavated part lying further east, beneath the buildings on either side of Dim. Votsi street.

Numerous artefacts were scattered all along the surface of the area, a feature not uncommon in sanctuary deposits of the Archaic and Classical periods. It is worth mentioning that the pottery assemblage recovered before and during the excavation was stored in no less than 80 large crates, originating from 170 m² of excavated area. Miniature vases, especially hydriae, correspond to

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1 My study of the assemblage from Thea was made possible by the generous permission of Dr. Michalis Petropoulos, to whom I express my gratitude. The material will be published soon as a monograph.

2 Petropoulos 2010, 155–178.

3 Petropoulos – Nestoridou (forthcoming).

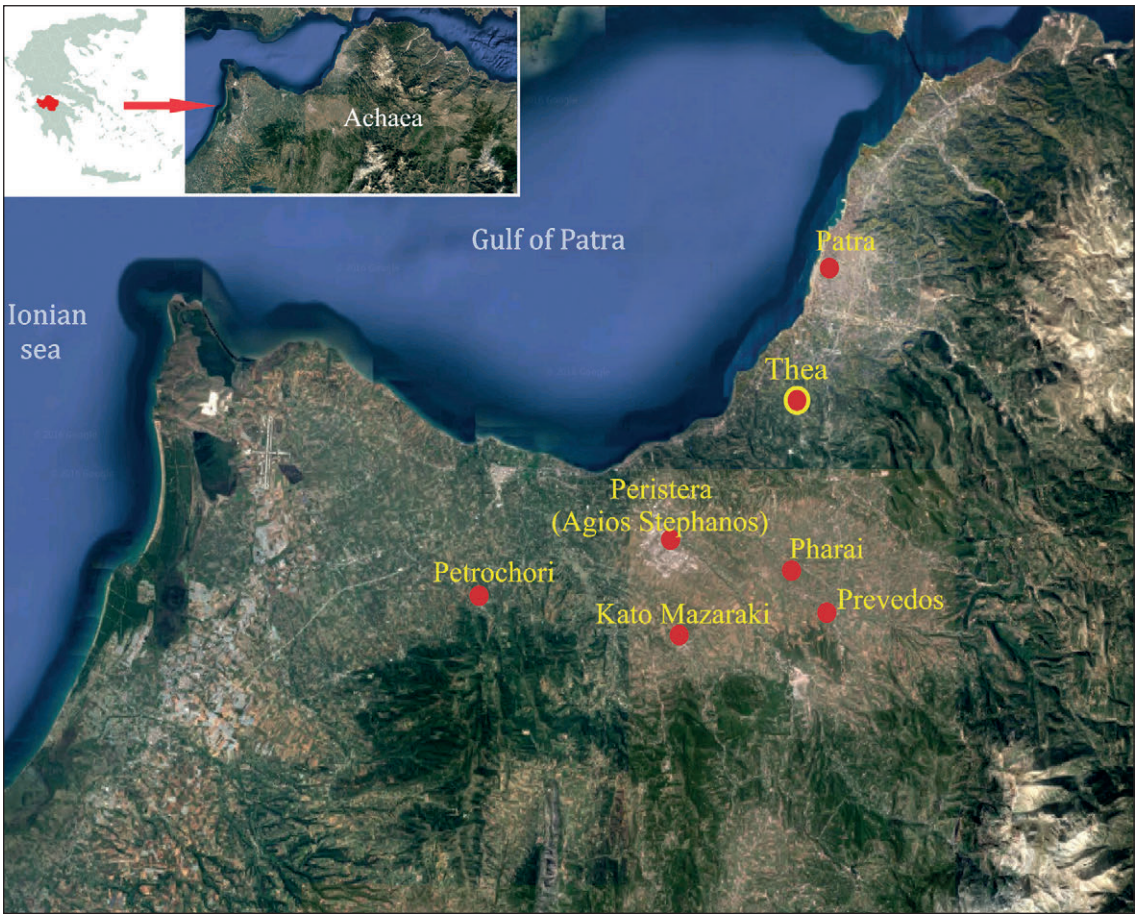
4 I would like to express my sincere thanks to my colleagues M. Gazis, K. Aktypi, K. Filis, S. Barfoed for their invaluable help, especially to M. Filippopoulou for the drawings.

5 The tombs are dated to the Submycenaean period; see Dekoulakou 1973/1974, 382 and are redated to the end of the MH-LH I period; see Papazoglou 1999, 272.

6 Kyparissis 1934, 115; Kyparissis 1935, 70 f.; for the expansion during the LH IIIA see Papadopoulos 1979, 27. 172.

7 Southwest of Patras, on a low hill of Mt. Panachaikon, near Pavlokastro, at an altitude of 190 m; Syriopoulos 1964, 483; Triantafyllou 1980, 396.

8 Petropoulos 1995, 232: survey in the locality called Vranieri, where Roman roof tiles and potsherds were identified.




1 Map of Achaia (detail of western Achaia) with sites mentioned in the text (© Google Earth, processed by S. Nestoridou)

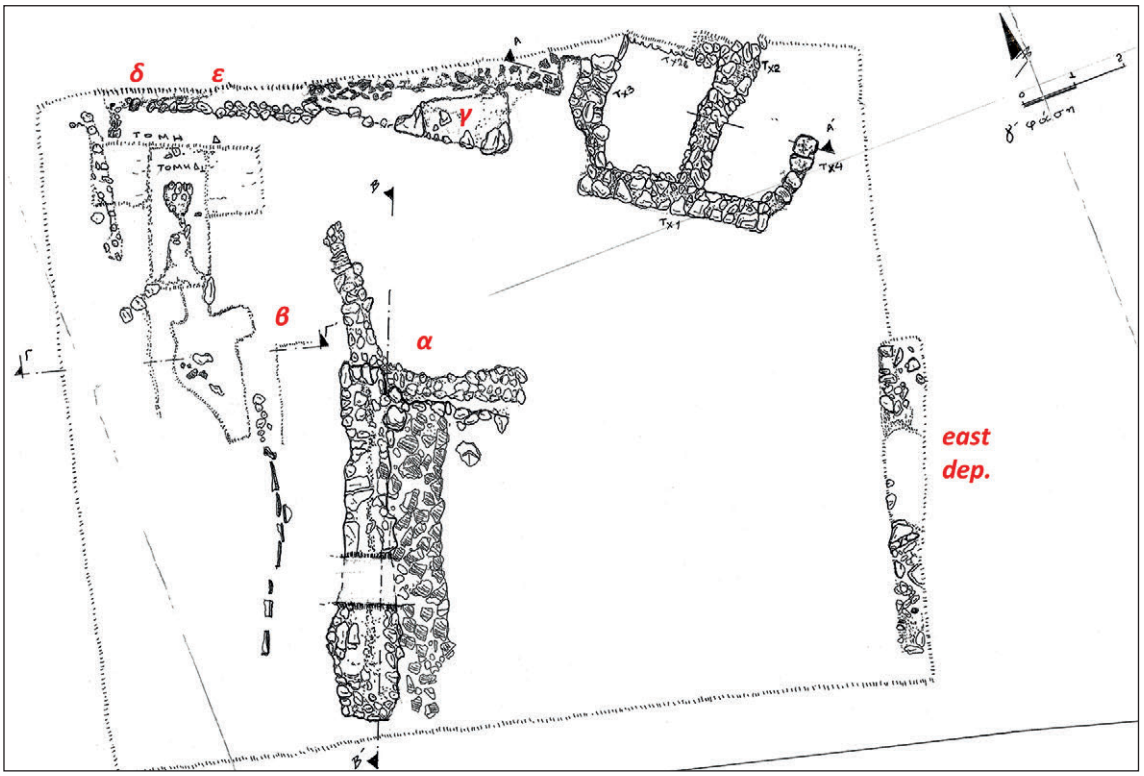
two-thirds of the pottery assemblage. The sanctuary's history covers a time span from the early 7th to the late 3rd century BC, while some scanty finds dating to the mid-2nd century BC belong to later, disturbed strata.

## ARCHITECTURAL REMAINS

In regard to the sanctuary's architecture, we have been fortunate, because in the excavated area a small two-room building was revealed, along with the altar and six deposits (fig. 2). The building to the northeast of the plot was of modest dimensions[9], with walls made of rough stones, only their outer face being crudely worked[10]; its ground plan cannot be fully restored. It was roofed, as attested by the extensive layer of roof tiles that was covering it. No indication regarding its use has been recovered, but we assume that it might have served as an auxiliary building of the sanctuary. Its foundation dates to the late 6th century BC and it remained in use until the last quarter of the 5th century, as shown by the artefacts found in it.

The stone altar to the south of the building (fig. 3), was founded on top of the original ash altar, 0.18 m thick. It was constructed along the north-south axis, with successive layers of riverine and terrestrial slab-stones, mostly flysch, without any mortar. The low, Π-shaped, stone construction faced west, and three successive phases of reinforcements of its walls were documented. The final

9 Preserved dimensions: 3.63 m SE-NW × 2.96 m max. NE-SW.
10 For a building of similar construction in western Achaia see Tsaknaki 2019, 443–464.




2 Excavation drawing plan with the architectural remains and the six deposits (in red) (drawing M. Golfinopoulou)



3 View of the site from south (photo L. Perati)

phase resulted in preserved dimensions of 6.48 × 1.83 m, with a height of 0.96 m. A single row of slabs was placed vertically on its western side, in order to support and protect the altar.

Six shallow but extensive deposit pits were found, five of them (α, β, γ, δ and ε) to the north-northwest of the altar and on to its east. Deposits α, β and γ were vaguely delimited, with

a maximum depth of 0.80 m. Offerings were found wedged both in their unformed bottom and in their side cavities, beneath haphazardly placed medium sized stones (fig. 4). Strata with a minimum thickness of 0.40 m comprised fitting fragments and pottery from various periods. Neighbouring deposit pits δ and ε located on the north slope were covered by a common, 0.80 m thick, upper layer. Pit δ had a cylindrical shape and was the only one that reached a depth of 1.40 m.

The most extensive and most recent deposit was the one found to the east; its upper level extended all along the slope with a strong inclination towards the southwest. Its centre was characterized by a roughly conical cavity, 1.11 m deep that was filled with artefacts dating from the 6th to the second half of the 3rd century BC, along with numerous river stones, both on the bottom as well as mixed among the plethora of discarded artefacts.

## DEPOSIT CONTENT

All the deposits comprised an impressive number of clay, bronze and iron offerings, the most numerous among them being miniature hydriae and clay figurines, especially the type of a plaque in the form of a hydriaphoros figure (ὑδριαφόρος = hydria-bearing).

The examination of the deposit contents has shown that the earliest one was deposit α, with some finds dating to the early 7th century BC, while all of them were continuously used during the 6th and 5th century BC, without any stratigraphic sequence.

Of particular interest are the deeper levels of deposits δ and ε, where a small number of Early Helladic II (mid-3rd mill. BC) sherds were found, an assemblage that has no relation to the sanctuary itself. The sherds belonged mainly to large, coarse, open vessels, decorated with plastic, rope-shaped bands. A preliminary assessment is that this pottery belonged to a domestic context, possibly deposited here before the sanctuary's function[11].

The deposits were packed with artefacts, found in layers of black earth, comprising burned material, bone fragments and stones. The latter were often mixed with broken artefacts and it seems that they had probably been placed in the deposits at a later stage, either used to vaguely limit the deposits or on their floor, since in several cases fitting fragments of vessels were found wedged beneath the stones. Not uncommon within the same layers was the alternation of remains of burned material with the local yellowish sandy soil. No defined strata were documented or any chronological sequence, while fitting sherds were recovered, both in 0.40 m thick strata within the deposits, as well as outside them, from one end of the excavated area to the other.

A possible explanation for the dispersal of the offerings, observed in other sanctuaries of the Geometric and Archaic periods, is that the systematic use of the area required constant care for periodic cleaning up as part of the preparation for each use. In such a case, continuous secondary depositions all along the sanctuary were made in order to level the ground[12].

## THE FINDS

The earliest finds were located beneath the foundation of the built altar, within the ash altar, placing the beginning of the cult at this location in the early 7th century BC. The ash altar was a solid black layer, with traces of burned bones of small animals, charred material, miniature vessels, potsherds and figurines.

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[11] A plausible explanation is that the disturbance caused by the digging up of earth for the shaping of deposit δ brought to light older deposits. This line of argument would also explain the co-existence of EH II pottery alongside sherds of the 2nd half of the 6th cent. BC in the same pottery lots.

[12] This has been confirmed at the Sanctuary of Athena Alea in Tegea (Luce 2011, 63, specifically n. 53–55), at Eretria, to the north of the Sanctuary of Apollo Daphnephoros (Huber 2003, 147) and in the Sanctuary of Orchomenos (Aravantinos et al. 2014, 51); Kopestonsky 2009, 158; Patera 2012, 202.



4 Pit γ: miniature vessels *in situ* (photo L. Perati)

One sherd found between the altar and its western abutment is the only one dating to the Late Geometric period, while all the repairs made in order to strengthen the construction were made in the 6th century BC, possibly during its second half. This chronological suggestion is corroborated by the finding of fragments of perirrhanteria embedded in the last retaining wall, to the north, as well as one more, dating to the second half of the 6th century, found in the row of vertical stones which constituted the altar's western abutment.

More fragments of perirrhanteria were found in the excavation, made of coarse clay and covered with a white slip, most of them of Corinthian provenance[13]. One of them is inscribed, thus confirming the deity worshiped. It has been restored by many fragments, to a height of 0.27 m[14] with the carved inscription ΑΙΣΧΡΕΑΣ ΔΑΜΑΤΡΙ (Aischreas to Demeter). It dates to the 5th or 4th century BC[15]. It is not common practice that offerings bearing the offerer's name are found in sanctuaries, perhaps because an anonymous offer was less ostentatious[16].

The wealth of pottery finds comprises a large variety of shapes, especially small open ones. The kantharos is the prevalent shape. A large quantity of such sherds was found in the deposits, in the altar and in the sanctuary strata. Parallels for the high-footed kantharoi can be found in the Archaic deposits of other Peloponnesian centres, in Elis, Lakonia, southwestern Corinthia (Phlious), as well as in western Achaia, in a recent excavation in Olenos[17]. However, the type of kantharos that was the most common among all drinking vessels, in terms both of frequency and quantity, is the plain, footless one.

13 Made in Corinth since the 7th cent. BC, exported as late as the 4th cent.: see Iozzo 1987; Pemberton 1989, 188–190.

14 Petropoulos 2010, pl. 8; the lip has a diameter of 0.58 m, a height of 0.053 m and is 0.06 m wide. For a complete, earlier example from Babes, Makrysia, which is 0.54 m high, see Moustaka 1991, 344, inv. Π140 pl. 1.

15 Cf. Iozzo 1987, 373 no. 31 pls. 67. 79; 374 no. 35 fig. 2 pl. 67.

16 Huber 2003, 116 n. 52; Pemberton 2020, 331 f., esp. n. 247.

17 For a similar observation see Schauer 1998, 263 n. 15, with bibliography.




5 Kantharos inv. Θ1383. A typical example of the most common type of drinking vessel among the finds (photo S. Nestoridou, drawing: M. Philippopoulou)

The 400 pottery lots that were recovered comprised countless sherds of this type, with only a very few exceptions. This is a type of tall kantharos (fig. 5), ca. 0.10 m high, with a vertical rim, a thin-walled curving body, inclining downwardly towards the low ring base[18]. With its angular band handles, it is a typical Achaian drinking vessel of the early historical times[19], with specimens appearing as early as the Late Geometric/Early Archaic period[20]. This is a later, plain ovoid type, which, however, cannot be safely dated, due to the disturbed strata of the sanctuary. Had that been possible, it would possibly help us test the even lower dating proposed by S. Benton, who dates the type to the 6th century BC[21].

The impressive prevalence of this type, characteristic of the pottery assemblages from the sanctuary, leads to the possible association with the »poterion« (ποτήριον)[22] as described by Athenaios of Naukratis. In his »Deipnosophistae«, Athenaios mentions a sanctuary in Achaia, dedicated to Demeter Poteriophoros, located at Antheia[23]; the poteria are described as wine-drinking vessels. If this interpretation holds truth, then we can identify the region of Thea with Antheia, one of the three prehistoric hamlets that were later united as Patras[24]. Unfortunately, no inscribed artefact was found that might confirm this valuable piece of topographic information.

Other types of drinking vessels were also found, including footless kylikes, skyphoi and sherds of Droop type kylikes. Also found were aryballoi, oinochoae, hydriae, plates, pyxides, lekythoi, oil lamps, ring vases etc., all of them known from other contemporary sanctuaries; the pottery assemblage also included plain, utilitarian vessels, such as cooking vessels, amphorae, shallow bowls, kettles and mortars. Some vessels were attributed to other Peloponnesian workshops, namely from Elis or Lakonia, while oinochoe no. Θ1515, with a conical base and tall neck, dating to the 6th century BC, is similar to the one from Lousoi[25].

18 Coldstream 1998, 323–334.

19 Zafiropoulos 1952, 401–408; Dekoulakou 1982, 219–235; Papadopoulos 2001, 373–460; for the evolution of the shape that follows a different path, compared to the other workshops in Southwestern Greece see Gadolou 2008, 254–259, with extensive bibliography.

20 Gadolou 2008, 146 nos. 153. 154 fig. 128, from Neratzies, Kamares, Late Geometric period; Gauer 1975, 164–167 nos. 4. 6 pl. 33; at Olympia the shape appears from the 2nd half of the 7th cent. onwards, until the mid-6th cent. BC; for the ›archaic type‹ at Sybaritis after the late 8th cent. see Kleibrink et al. 2004, 43–67; a more comprehensive analysis regarding this kantharos type, its ancestry and evolution is offered by Tomay 2002, 331–355, who has charted the distribution of the type in the centres along the Ionian coastline; for typology and relative chronology see also Stea 1991, 405–442 n. 43, mid-7th cent. BC.

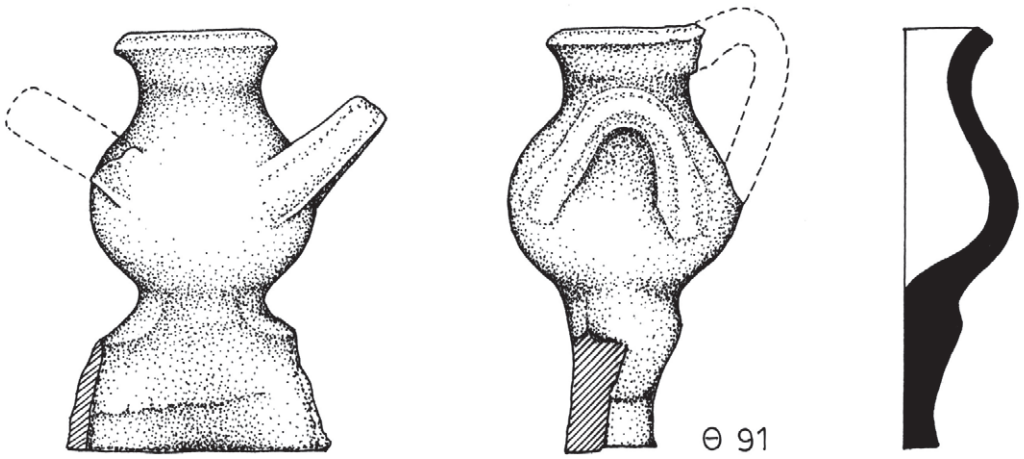
21 Anderson – Benton 1953, 255–361, and solidly painted late kantharoi 292, nos. 767–769.

22 Athen. 11, 461b–d; Liddell – Scott – Jones s. v. ποτήριον.

23 Athen. 11, 460d, where he quotes the information by Autokrates.

24 Petropoulos 2007, 49–62.

25 Schauer 1998, 263 fig. 3. I wish to thank Dr. Schauer, who has so kindly confirmed the relation macroscopically.




6 Fragment of a ring type kernos (drawing M. Philippopoulou)

Oil lamps from the deposits and from the strata around the altar, which have been interpreted in various ways in sanctuaries of Demeter[26], provide us with a safe indication regarding the time span of the sanctuary's use. A number of them date to the second half of the 6th century BC, but the majority of the oil lamps in the sanctuary belong to Broneer's type IV[27], dating from the 5th to the first half of the 4th century BC, possibly due to an increased need for their use. All of them have burn marks, even the miniature ones[28].

Another intriguing group of pottery are kernoi. Fragments of such vessels have been recognized among the great quantity of sherds belonging to the ring type, with a vertical solid band base and incorporating hydriskai on their upper part (fig. 6). Similar vessels are generally dated to the late 6th century BC[29], but the shape remains in use until the Late Classical period[30]. The attached plain hydriskai are identical to the single miniature ones found in the sanctuary, with both types possibly coming from the same local workshops[31]. Based on the estimated diameter of the kernoi we assume that they comprised three attached vessels. The same applies for another type of kernos, handmade with a discoid base, a surface find from the westernmost wall of the altar, also dated to the late 6th century BC.

Worth mentioning is the finding of three crudely made small kotyliskoi, possibly belonging to the same vessel[32], being handmade attachments to an Eleusinian type kernos[33]. Such vessels are

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26 They were used in nocturnal cult practices, carried out by women on the third day of the Thesmophoria, Paus. 7, 27, 9–10. They abound particularly in Thesmophoria and in simple Demeter sanctuaries, as well as in sanctuaries of the Nymphs, of Pan and Hera, being often rare finds in other sanctuaries. For the topic see Baumer 2004, 62. 69. For observations and bibliography concerning the use of oil lamps see Pingiatoglou 2015, 114 f. For a most recent in-depth analysis see Bookidis – Pemberton 2015, 14–22.

27 See Bookidis – Pemberton 2015, 55 for this type, which represents 48 % of the total number of oil lamps in the Sanctuary of Demeter and Kore at Corinth.

28 This was also observed in Corinth by Pemberton 2020, 283.

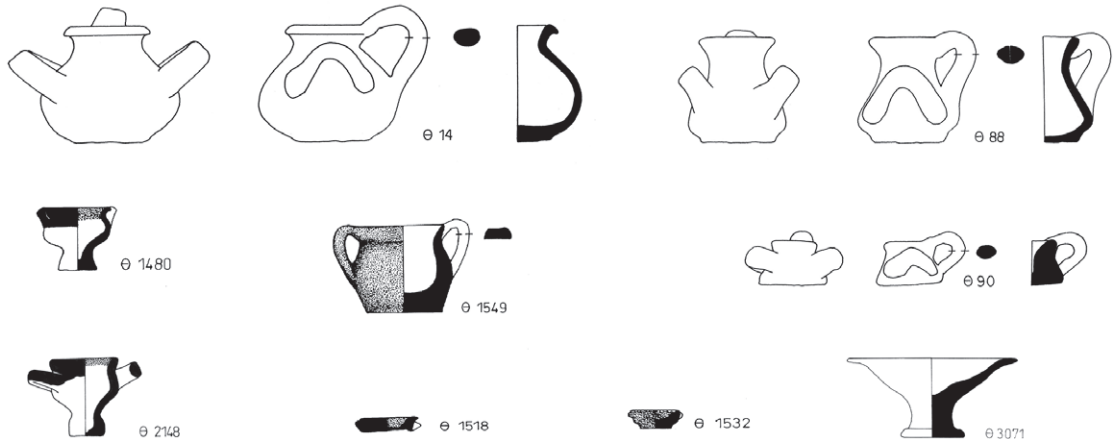
29 Boardman – Hayes 1966, 15 no. 1826 pl. 94; Boardman – Hayes 1973, 5. 66 no. 2289 pl. 34; Kantzia 1994, 352 n. 128 with bibliography and 129 for a kernos from the sanctuary excavated by R. Herzog in 1901; Koukouli-Chrysanthaki 1988, 411 fig. 11.

30 Kernos Π3996 from Chania Archaeological Museum, with 5 hydriskai attached to a ring base from Kastelos, Vryses has been dated to the late 5th/1st half of the 4th cent. BCE <http://chaniamuseum.culture.gr/en/exhibit/281> (17/01/2020).

31 At Kos, a ceramic workshop specializing in amphorae also produced kernoi with hydriskai see Kantzia 1994, no. Π1144. Π1145 pl. 264 γ.

32 For a type C kernos from Eleusis, dated to the mid-4th cent. BC, on the basis of the aforementioned general framework see Bakalakis 1991, 109 fig. 5.

33 Pollitt 1979, 209 no. XXV.1 pl. 67; XXVIII.5 pl. 69. It belongs to the small kotyliskos type, attached in concentric rows; the closest parallels from deposits of the Eleusinion in the Agora, dated to the 4th cent. BC.




7 Miniature vessels. Left to right, top: miniature hydriae Θ14 and Θ88. Middle: high footed krateriskos Θ1480, cup Θ1549, miniature hydria/token Θ90. Bottom: skyphoid krateriskos Θ2148, trays/tokens Θ1518 and Θ1532, thymiaterion Θ3071 (drawings M. Philippopoulou)

known exclusively from Eleusis and the Eleusinion in the Athenian Agora. It is a predominantly processual vessel of multiple offerings, made to hold the panspermiae and remaining in use for a limited period of time from the end of the 5th century until its disappearance towards the late 4th century BC[34]. Round kernoid vessels of the ring type or with a crown-shaped base were not intended for the same ritual functions, at least not according to Athenaios' description[35]. In Attica such kernoi were produced only in specialized workshops and very rarely have such vessels been found outside its boundaries, the best known example being the Sanctuary of Demeter in the city of ancient Kythnos[36]. Possible interpretations for this localized use of the vessels are elusive[37], since their presence outside Attica is so rare.

Fragments of incense burners (thymiateria) were not an uncommon find. They were made of light-coloured clay, with a shallow body standing on a cylindrical stem with a small diameter base (fig. 7, inv. Θ3071). Some have a white slip and vaguely discernible red bands around the stem and their bottom[38].

A miniature stone altar was probably also used as an incense burner. It was made of grey limestone, in the shape of a frustum pyramid[39], ca. 0.40 m high (fig. 8 a). Its four sides are concave, their surface worked with a pointed chisel, and the surface of the lowest part around the base was left raw. It was probably visible from all sides, with its base partly sunken in the ground. Its top

34 Pollitt 1979, 227. The production of those vessels in the 4th cent. BC has been interpreted as a backward development, in which foreign orgiastic cults were in vogue, especially during the Peloponnesian War, see Dodds 1951, 193 f.

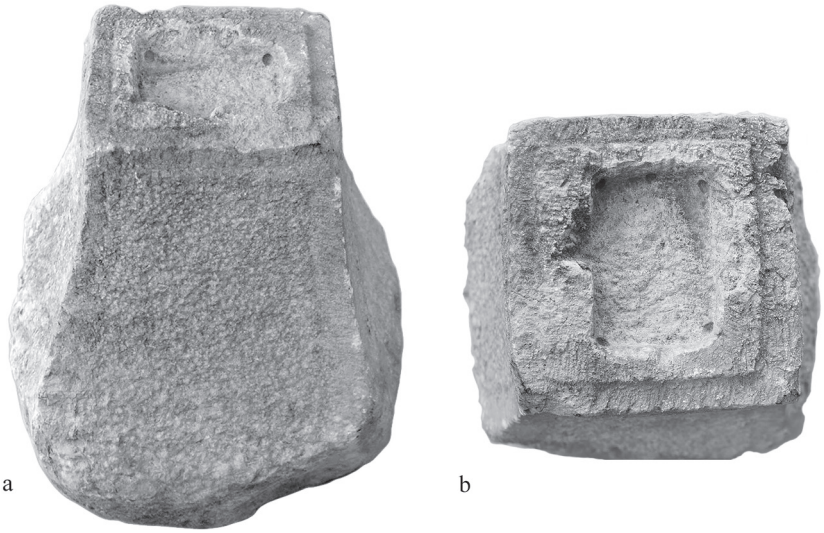
35 Athen. 11, 476e–f; 478c–d.

36 Mitsopoulou 2005, 329; Mitsopoulou 2010, 154.

37 Despite the find's analogy to a specific Attic type, its identification remains doubtful, since differences have also been observed. However, their morphological features indicate the existence of an unknown, possibly local type of kernos. I wish to thank Dr. Christina Mitsopoulou for her valuable observations, in a personal communication after the symposium.

38 Similar incense burners have been found in Marathon (Marinatos 1970, 364 fig. 28, black-glazed, early 5th cent. BC), in the Athenian Agora (Sparkes – Talcott 1970, 182 no. 1359 pl. 44, plain, two-handled, late 5th cent.), and in Corinth (Stillwell – Benson 1984, 355 no. 2239 pl. 78).

39 Petropoulos – Nestoridou (forthcoming), inv. Λ5562. Miniature altars are also known from other regions, found both in sanctuaries and in domestic contexts, dating from the 6th cent. BC to the Roman period: for miniature altars in sanctuaries and houses, see Deonna 1938, 380 n. 3. For depictions of altars in Attic vases from the 6th–4th cent. BC see Aktseli 1996. For miniature altar typology see Rupp 1991, 303–306. For stone or clay miniature altars of domestic or funerary use see Yavis 1949, 172 f. with n. 20–22. For their early use: funerary, cippus of arula type, from the cemetery of Orthi Petra in Crete, dating to the 8th/7th cent. BC, see Stampolidis 2004, 238.



a b

8 The miniature stone altar inv. Λ5562 (a) and detail of its top side (b) (photos S. Nestoridou)

side has an orthogonal shallow cavity (fig. 8 b) with signs of burning, an indication of ritual use for burning incense or fruits or to hold burning charcoal. Five holes, one on each corner and one more in the middle of one of the narrow sides, were used either to attach a votive object, or they were caused by the removal of an applied, possibly metallic plating. Similarly worked sides have been preserved on the orthogonal miniature altar from the Sanctuary of Ennodia at Phthiotis[40], while the closest parallel comes from Olynthus, dating to the 4th century BC[41].

## Miniature Vessels

The excavation yielded a total of 21,000 miniature vessels[42], including 13,193 miniature hydriae, 4,966 krateriskoi and 2,839 miniature vases of other shapes (kanthariskoi, kotylae, small skyphoi, bowls, oil lamps, oinochoai etc.). They range in height between 0.006 m and 0.125 m, depending on the shape they reproduce. Unfortunately, the lack of stratigraphic sequence has not allowed us to draw any clear conclusions regarding their dating. The shape repertoire comprises shallow bowls, hydriskai, krateriskoi, miniature kotylae, skyphoi and kantharoi; none of them has been categorized according to their possible use. The last decade has, luckily, seen an increase of interest for such miniature artefacts. Indeed, E. Pemberton in her recent publication has challenged the notion of their being actually considered as ›miniatures‹[43].

The miniature hydria is the most popular shape[44], representing 63.3 % of all micrographic vessels, followed by the krateriskos with 23.7 %. The remaining micrographic shapes account for considerably lower percentages, kanthariskoi being the most numerous among them. The majority of the miniature vessels were products of local workshops, as was the case in most sanctuaries[45]. A number of representative examples selected from the plethora of identical ones, as well as some individual categories of particular interest, will illustrate the points made.

40 Stavrogiannis 2014, 75 no. Λ 871 fig. 146. The sanctuary dates from the 2nd half of the 5th to the late 4th cent. BC.

41 Re-published by Yavis 1949, 174 f. no. 28 fig. 79.

42 The total count of miniature vessels and krateriskoi was based on the number of bases, as was the case for miniature skyphoi, kantharoi and kotylae. Omphalos phialae were counted on the basis of omphaloi numbers.

43 Pemberton 2020.

44 For the presence of hydriae in sanctuaries and comprehensive bibliography see Huber 2003, 118 n. 72.

45 Morgan 1999, 324; Huber 2003, 58. 119; Coldstream et al. 1973, 22. 35.

The majority of miniature hydriae are plain, some are black-glazed, but only a few of them are decorated[46]. A clear preference for globular bodies[47] has been observed, with other body shapes being identified in smaller vessels (< 0.05 m high), the pear-shaped version being the most common (fig. 7, inv. Θ14). Another group comprises very small wheel-thrown examples, with a hardly twofold formation and the typical three handles of hydriae (fig. 7, inv. Θ90). Such offerings are known as tokens, with little or no capacity at all, perhaps no more than a few cereal grains.

Carbonized grains were indeed recovered in the excavation, examined by Prof. S. Valamoti[48], who has identified a whole fig, some wheat and foodstuffs; barley grains were identified in the burned interior of a 4th century BC hydriske. The practice is attested as early as the Mycenaean period in Arkadia, the Geometric in Phokis, as well as contemporary to Thea in sanctuaries of Demeter at Taras, Apulia and Salerno[49].

Another very small shape (fig. 7, inv. Θ1518. Θ1532) can be attributed to the category of tokens, namely one with ordinary miniature band handles on the rim (not knobs), with a height of no more than 0.01 m, sometimes even less. Such vessels have a low cylindrical body of minimal capacity, with curved or straight sides, all of them solidly painted with a black or brownish-black glaze. No parallels have been traced regarding the shape they imitate. It is possible that it reproduces a kind of low cylindrical bowl, used for food and drink, i.e. for carrying liquid or solid offerings. Despite their very small size, the vessels were wheel-thrown, as evident in the marks on their underside, a feature that makes one wonder about the small hands making them[50].

Krateriskoi are the next most common shape, usually reproducing the shape of a column crater, with fewer examples of bell craters in vessels higher than 0.05 m[51]. Smaller vessels (< 0.02 m) appear in a variety of shapes, almost always copying a column crater; many parallels exist from various Archaic sanctuaries of the late 6th century BC. On the other hand, very few published parallels are to be found of the high-footed version (fig. 7, inv. Θ1480), which could be a local preference[52].

The same shape, high-footed krateriskoi, also appears with handles placed horizontally or very slightly upwardly (fig. 7, inv. Θ2148). It is unclear whether this was intentional or the result of hasty production. Equally uncertain is the prototype for this kind of vessel[53]. We use the term »skyphoid krateriskoi«.

High-footed miniature kantharoi have a more prominent band rim and vertical, usually angular handles. Among the variety of footless types measuring ca. 0.045–0.050 m, a group was identified that shares common features, possibly being the production of a specific local workshop. They resemble the shape of a cup, with an almost cylindrical body, a tall out-turned rim and a flat, solid base, which makes the vessel relatively heavy for its size (fig. 7, inv. Θ1549). All such vessels are

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46 Decorated hydriae are usually ca. 0.10 m high and date to the mid-5th–4th cent. BC. The decoration is mainly conventionalizing and their number is smaller than the plain or unpainted ones as at the Sanctuary of Demeter and Kore in Corinth. For the topic see Pemberton 1989, 10–12; Risser 2001, 119.

47 In the Argive Heraion globular hydriae account for 90 %, see Caskey – Amandry 1952, 198.

48 My warmest thanks to Dr. S. Valamoti, Professor of Prehistoric Archaeology at the Aristotle University of Thessaloniki, specializing in archaeobotany, for examining the samples at the Wiener Lab, ASCSA.

49 For the Mycenaean (altar of Zeus on Mt. Lykaion) and Geometric (Apollo oracle at Aves, Kalapodi) periods, see Margaritis 2014, 283. For the sanctuaries at Pizzone, Oria-Monte Papaluccio and San Nicola di Albanella, see Poli 2006, 239–246; Pemberton 2020, 313 n. 130.

50 Langdon 2015, 21–36; Marangou 1994, 53.

51 Column craters were a Corinthian innovation of the last quarter of the 7th cent. BC, while bell craters become part of the fine ware repertoire in the early 5th cent. BC, cf. Cook 1994, 294 f. However, the column crater remains the most copied shape throughout the Classical period in the micrographic vocabulary, with rare imitations of its bell-shaped counterpart, Pemberton 2020, 297.

52 From Kalydon, see Bollen 2011, 475 no 284 pl. 256 (Archaic); from Chalkis, see Nielsen 2020, 303 no. 815 fig. 171 (Classical [?]).

53 The only available parallel comes from an Early Classical Paionian city in Northern Macedonia: see Mitrevski 2019, 327 pl. 10. During the conference, S. Barfoed kindly informed me that similar vessels have been found at Kalydon. I express my gratitude to her for the information and for the constructive conversation that followed.



9 Left: Figurines of double-flute players. Right: Human figurines with bird-like heads (photo P. Kostantopoulos)

wheel-thrown, made of reddish soft clay with brownish-red to brownish-black paint; parallels are dated to the late 6th century BC[54].

## Figurines

The figurine types found at the Sanctuary of Thea are very common in chthonian deity sanctuaries, in particular those dedicated to Demeter[55]. Among them are standing korai (worshippers), enthroned figures, bird-like beings, single or in a circle, representations of animals, busts and single deity figurines. Female figurines, including the numerous plaques of hydriaphoroi (hydria bearers), outnumber all other types. They were rarely painted: only faint signs of red colour can be seen, while many retain traces of white slip.

Handmade human figurines with bird-like faces were found in great numbers, most of them originally belonging to composite artefacts. One of them represented a circular dance, with the central figure preserving its right hand bent towards the chest, perhaps due to the existence of a flute. Figurines of double-flute players of the 6th century BC, probably its second half, must have come from similar complexes (fig. 9); the figures were possibly female, based on literary evidence stating that the chorus members were of the same sex as the worshipers, especially in the Thesmophoria. Music and dance must have played a significant role in the ritual. The large variety of bird-like figurines with specific facial expressions[56] suggests that they were produced in many different workshops. Many more types, dating to the 6th to 5th centuries BC, have strong burn marks. Among them is a handmade Satyr figurine that bears a remarkable similarity with the one from Lousoi[57].

54 Stillwell – Benson 1984, 186. 312 no. 1729 pl. 67.

55 Daffa-Nikonannou 1973, 39; Merker 2000, 38; Kozlowski 2015, 41–48; Patera 2020, 30.

56 In the late 6th cent. BC more handmade figurines were produced in the Corinthian workshops than mould-cast ones, and they were of better quality compared to their counterparts of the previous and the next centuries. They gradually disappear after the late 5th cent. BC. For the topic see Stillwell 1952, 10.

57 Reichel – Wilhelm 1901, 43 fig. 48.



10 Hydriaphoroi, selected types (photo P. Kostantopoulos)

## Hydriaphoroi

Hydria-bearing figures are commonly associated with the worship of Demeter and constitute the most numerous group of figurines. Many identical copies were either produced from the same moulds or they follow the same archetype in series. At least 26 iconographic types have been recognized, all of them in the form of a plaque (fig. 10), with the exception of a slightly later version that is also mould-cast but which is hollow with a large venting hole on its reverse.

Their variation is expressed both by their stance, dress and headdress as well as by the characteristics of manufacture, which have to do with type versions and derivative production by younger generations.

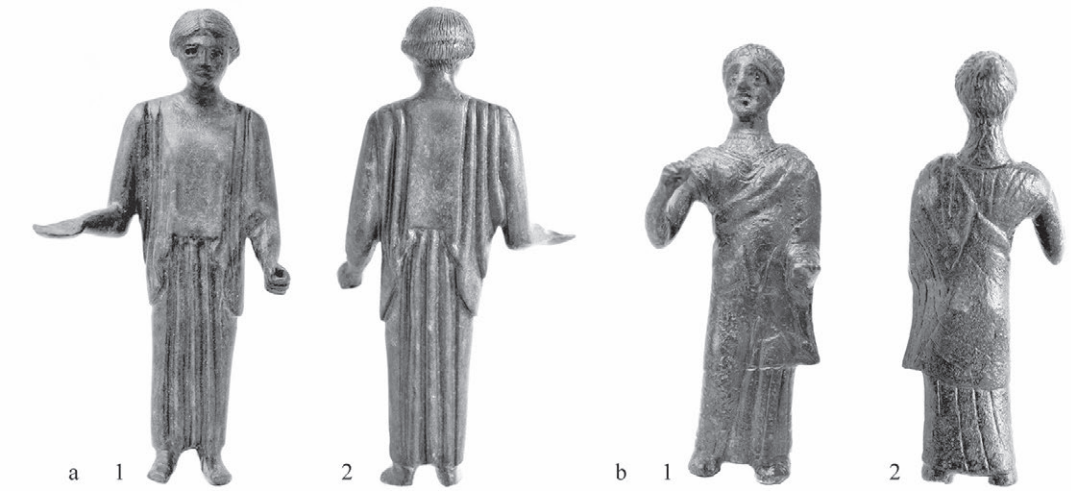
They vary in size between 0.10 m and 0.18 m, their dimensions sometimes being reduced by two-thirds of the archetype, as a result of the two-fold reduction of the clay quantity. This is manifest in younger generation copies, which are products of remoulding[58]. Their technical features suggest that they were produced en masse in more than one local workshop.

It has been established that the archetypes were not necessarily made in the same local workshops[59]. Iconographic types were disseminated by means of mould trade[60], the types being then

[58] The minimum height in younger generation copies reaches 0.078 m. For the copying process from a mould see Nichols 1952, 217–226; Muller 1994, 177–187; Muller 2014, 63–82.

[59] Besques 1963, 18; Baumer 1997, 84.

[60] Besques 1988, 20–24.




11 Bronze kore statuettes: Peplophoros Θ1374 (a1–a2) and hematiophoros Θ1375 (b1–b2) (photos A. Anthopoulos)

reproduced, altered and usually copied in a series of younger generations. Thus, despite the longevity of certain iconographic types, this substantial assemblage from Thea dates mainly to the 5th to 4th centuries BC.

## Metal Artefacts

The significant number of well preserved metal artefacts found in the sanctuary provides us with insights regarding the social stratification of its visitors[61]. Most of those artefacts were found in the deposits and in the area of the two-space building. No metal artefact was found near the altar.

Among them were two very well preserved bronze kore statuettes, one peplophoros (wearing a peplos) and one himatiophoros (wearing a himation), both with parallels from Peloponnesian workshops. The former (fig. 11 a) holds a bowl in her open right palm, while her left hand lies slightly lower, its clenched fist bearing a small hole, apparently to hold a long object, perhaps a spear. It dates to the second quarter of the 5th century BC[62]. The himatiophoros (fig. 11 b) is slightly shorter[63] with her arms bent, both hands with holes for the attachment of another object, possibly a dove, fruits or a flower. An attachment hole was opened below and between her feet; it should be dated in accordance with the peplophoros[64].

Also found were metal jewellery, among them bronze pins, earrings, ring stamps, snake-shaped armlets, accessories and parts of other bronze implements, one iron stone-worker's tool, the blade of an iron one-cut knife, probably a ritual one, one silver bowl and a miniature lead one, as well as a considerable number of iron nails around the two-spaced building.

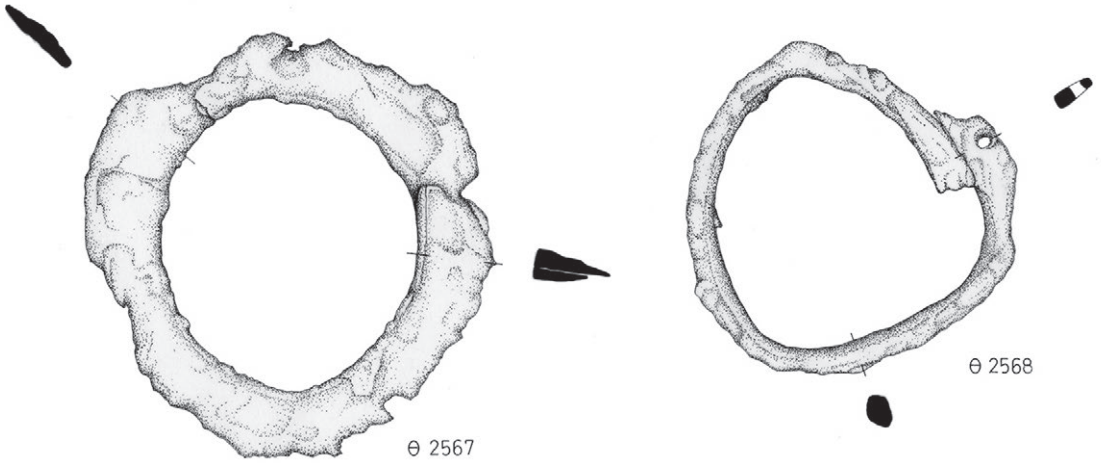
Worth noting is the finding of twelve iron hoops, identified as restraints. The hoops were found only in two of the deposits (in and around deposit α and in the eastern face deposit). Their classification as iron restraints raises questions regarding their presence in a rural sanctuary, as well as to the identity of the people wearing them. Very limited bibliographic references were found

61 Of the total of 398 lots of finds recovered in the excavation, only 60 comprised metal artefacts, a percentage of 6.63 %. The assemblage of 96 artefacts includes 45 iron, 43 bronze, 3 silver, one gold and 2 lead objects, as well as one glass bead.

62 Petropoulos – Nestoridou (forthcoming), inv. Θ1374. Θ1375; Karamitrou-Mentesidi 2005, in the exhibition of the Archaeological Museum of Aiani, at Kozani, bronze statue from Megali Rachi, Room B, case 3; see also peplophoros KAP 540 from Pindus 460–450 BC at the National Archaeological Museum, Athens.

63 Peplophoros Θ1374 is 0.12 m high, while himatiophoros Θ1375 is 0.088 m.

64 Carapanos 1878, II, 32. 185 no. 3 pl. 13, statuette of the 5th cent. BC; Fotiadi 2018, 20 no. 57, bronze figurine of Aphrodite, 5th cent. BC.




12 Iron restraints Θ2567 and Θ2568 (drawings M. Philippopoulou)

concerning those artefacts, referring only to captives' burials, mainly from Northern Greece[65]. Five of the restraints are fully preserved, with an inner diameter of ca. 0.10 m[66] (fig. 12), while the remaining have only been preserved just enough to be identified. Six have a horizontal cross section, five orthogonal and only one circular. Two hoops were interlocking and two more were parts of a chain. Their parallels date to the Hellenistic period. Their presence in the sanctuary becomes more problematic, taking into account the hypothesis that this was a Thesmophorion, where the worshipers' sex was crucial[67]. The captives' sex and social status has become the subject of debate in recent literature, based on a combination of ancient literary sources and the latest excavation data[68]. To my knowledge there is at least one sanctuary of Demeter in Southern Italy where restraints have been found, along with nine bronze plates bearing liberating inscriptions; the latter suggest a voluntary dedication to the goddess by slave women[69].

## Preliminary Remarks on the Rituals

The large number of perrirhanteria is an indication that ritual cleansing played an important role in the 6th century BC, with the practice still active in the 4th century BC, as suggested by the later finds. The primary role of water is further attested by the numerous figurines of hydriaphoroi, a type connected with the cult of Demeter[70]. Their offering represents the participation of women in

65 For double hoop foot-restraints from eastern Chalkidike see Trakasopoulou-Selekidou 1993, 414 pl. 3; for the older excavation of the ›Faliro captives‹, mainly Π-shaped handcuffs and fewer foot-restraints of the 4th cent. BC (the more recent research of 2013–2016 remains unpublished), see Pelekidis 1916, 53–56; for the ›crucifixion‹ on a board see also Keramopoulos 1923, 11 onward; for eight Hellenistic single burials with foot-restraints from the Cemetery of Akanthus see Faklaris 1986, 178–184; for the group burial of 120 dead in the North Cemetery of Pydna see Bessios – Triantafyllou 2002, 385–394; for a simple reference to iron restraints from Kaiadas see Themelis 1982, 183–200; from a burial with foot-restraints held by rivets from ancient Phthiotis see Deilaki 1973/1974, 547–549; for a skeleton with foot-restraints from Laurio's mines see Lauffer 1979, 51–53; for an analysis of the historical references on captives see Savopoulou 1987, 97–111.

66 Similar types of band rings with an inner diameter of ca. 0.10 m function either as necklaces or as foot-restraints in the Hellenistic period see Savopoulou 1987, 98 f. fig. 2, 7; Bessios – Triantafyllou 2002, 389. 394 fig. 4.

67 At Pydna, the skeletal remain analysis has shown that both sexes and all ages were represented; the captives had injuries caused by hard labour and/or torture and they were malnourished. It is most probable that they were all slaves.

68 Faklaris 1986; Savopoulou 1987; Youni 2005; recently also Vlassopoulos – Bathrellou 2020.

69 Gertl (2014, 235 f. pl. 12, 2) published among others five orthogonal section iron restraints, with an inner diameter of 0.10 m from the Sanctuary at Heraclea, in the modern commune of Policoro, in ancient Lucania, in the Gulf of Taranto.

70 On their production in specialized workshops on mainland Greece, the Aegean islands, Asia Minor and Cyprus from the 5th cent. BC to the late Hellenistic period see Tsakalou-Tzanavari 2002.

a water-bearing ritual[71], which, beyond the practical need, served a purifying purpose, as an act of *katharsis*. Water, being a valuable element, was considered worthy of protection[72] and springs, often within the limits of sanctuaries of various deities were considered as sacred[73]. With references to its oracular[74] and healing properties, as well as its use in sacrifices and libations, water is well suited to Demeter's cult and her binary role, both in agricultural production and in the mysteries[75]. The numerous hydriae must have been an indispensable part of the rituals related to the fertility of the land and of women.

Utilitarian artefacts were found in considerable quantities: cooking vessels are indications of meal preparation, implying also feasting; tableware cannot be safely associated with ritual meals or with votive acts. Perhaps they were devoted after their use[76]. Equally elusive is the possible interpretation of sheep/goat and piglet skeletal material[77] as remains of ritual banquets. In any case, most of them were found in the area around the altar and in the east face deposit.

The role of miniature vessels is still under consideration, both in regard to their use, following E. Pemberton's interesting approach[78], as well as whether they were a kind of ›ticket‹ that allowed one to partake in the rituals, as put forward by I. Patera[79]. A point worth making is that in some of the pottery groups from Thea we have found pairs of identical miniatures (›twins‹ for short), belonging to the same contexts, which either have no parallels in any other context or such parallels are very rare and isolated[80]. A similar offering of triple miniatures has been found in the Sanctuary of Athena Alea[81]. The issue has been noted by other scholars, with examples of other types of offerings[82].

## Local Workshops

Archaeometric analysis (see below) has confirmed the local provenance of the samples studied[83], the multiple workshops involved in their production and the location of them in regions not far from the sanctuary[84], in western Achaia. Having said that, more samples must be analysed that will lead to more extensive chronological conclusions, as well as facilitate the investigation of the most recent results of our study[85]. Some observations that concur with the archaeometric analyses pertain to the types of offerings considered so far and corroborated by the excavation data, constituting indications that assist us in locating the production workshops.

It can be assumed that ceramic products, which typologically belong to the Archaic period (specific types of miniatures, handmade figurines and some partially mould cast ones) were produced in

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71 For hydriaphoroi in sanctuaries of Demeter see Daffa-Nikonannou 1973, 38 f.; Merker 2000, 38 n. 101, with bibliography on the symbolism.

72 Cole 1988, 161 f.

73 Kopestonsky 2016, 721 n. 44.

74 Paus. 7, 21, 12; Cole 1988, 163; Petropoulos 2010, 157.

75 Paus. 2, 17, 1; Cole 1988, 162.

76 For the possible religious meaning of such artefacts and their ritual use, see Huber 2003, 48. 116. 118 n. 75; Hammond 2005, 420 f.; Patera 2012, 99 f.

77 H. Psathi made a preliminary assessment of the osteological material. The species identified include pigs/piglets and ovicaprids.

78 Pemberton 2020.

79 Patera 2012, 133.

80 The same is true for assemblages from the Athenian Agora of the late 4th/early 3rd cent. BC, see Rotroff 1997, 208 nos. 1400–1407.

81 Hammond 2005, 425 n. 45.

82 Marangou 1994, 50; Salapata 2011, 4; Barfoed 2018, 119.

83 Seventeen sherds of miniature hydriae, kraters and kantharoi (<0.004 m high) and sixteen fragments of korai and hydriaphoroi figurines, estimated as belonging to 5th–4th cent. BC types.

84 The hypothesis that offerings were procured from nearby distances has also been proposed by Salapata 2018, 102.

85 Including the miniatures from the ›specific‹ workshop, the ›twins‹, being possibly a double offering, determining the provenance of the most common type of kantharos, as well as of the possible imports.

the same workshops, specializing only in lesser sized artefacts made for ritual use[86]. Examples for such specialised workshops are the crudely constructed kilns found at Argos[87], as well as the organized Potters' Quarter at Corinth[88]. No such workshops of this period have been located in Achaia.

In regard to the Classical period products, which constitute the bulk of the miniatures and plaques found in the sanctuary, no workshops are known to us[89]. However, sporadic finds from older excavations of the Ephorate have been reported, which are identical to those from Thea and come from the plains of western Achaia[90]. Such examples have been found at Petrochori, Prevedos, Kato Mazaraki, Pharai and Palaia Peristera, indicating a region to the west of Patras bordered to the east by the foothills of Mt. Panachaiko (fig. 1).

Scanty and chronologically unclear evidence of similar finds has been recovered in rescue excavations in Patras[91]. Nevertheless, the typology of miniature vessels is the same, as are the iconographic types of hydriaphoroi. A later (Hellenistic or early Roman) four-sided ceramic kiln found in the centre of Patras, is of particular interest, having yielded only miniature hydriae, many triangular pot stands and hydriaphoroi of similar iconographic types[92].

The evidence presented in this paper suggests that there are specific votive types produced in Achaian workshops, which remained in use for a long period of time, with examples having been found to the west-southwest of Patras[93]. It is to be hoped that new excavation material will enrich the available evidence.

## ARCHAEOMETRIC RESEARCH

An attempt to investigate the hypothesis of ceramic workshops operated in the area close to the sanctuary led to the archaeometric research of a small number of representative ›miniatures‹ and ›figurines‹. These selected ceramic sherds were subject to a combination of analytical methods in order to determine the provenance of their raw materials and elucidate the way they were manufactured (i.e. firing conditions: temperature, atmosphere). Such information could establish the locations of workshops which produced these ceramics and the operation conditions which were applied.

### Materials and Methods

Seventeen miniature samples including the shapes krateriskos, miniature hydria, kanthariskos, kotyliskos and sixteen figurine samples of standing korae and different types of hydriaphoroi were selected for analysis.

Three types of analytical methods were planned for archaeometric study: a) petrographic analysis using a polarizing microscope, b) mineralogical analysis using a X-Ray Diffractometer (Bruker, D8 Advance Diffractometer equipped with a LynxEye®detector), both conducted at the Department of Geology, University of Patras, and finally c) geochemical analysis using a combination of Fusion Inductively Coupled Plasma (FUS-ICP) and Fusion Mass Spectroscopy (FUS-MS) carried out at ActLabs, Ancaster, Ontario, Canada.

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86 Sanidas 2017, 50.

87 Psarra 1996.

88 Stillwell 1948, 17 f.

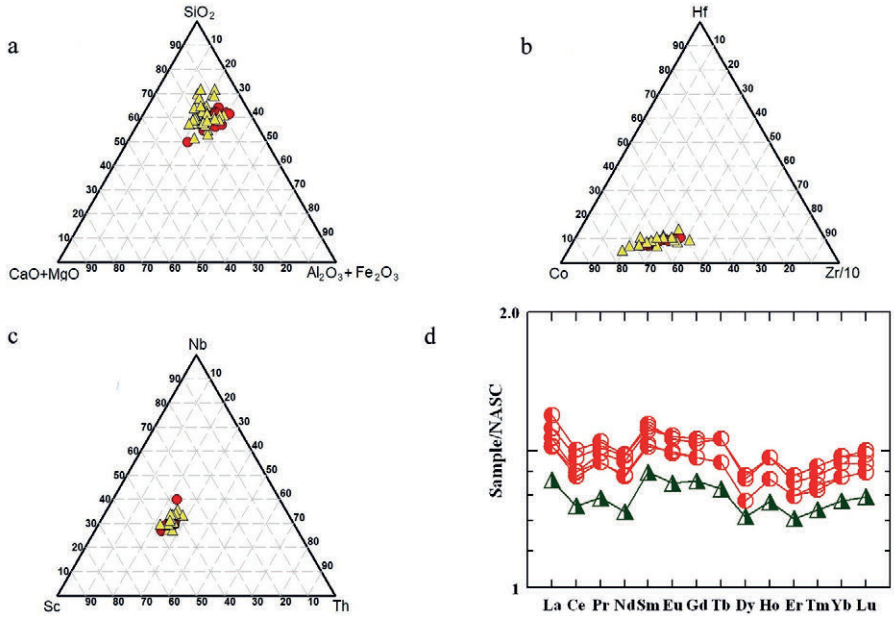
89 Very little is known about the Archaic and Classical periods in Achaia, see Stavropoulou-Gatsi 1998, 264–267; Petropoulos – Rizakis 2005, 11–17; Petropoulos 2006, esp. 41–43.

90 Petropoulos – Nestoridou (forthcoming).

91 Kotsaki 1985, 111; to my knowledge there is at least one unpublished stray find from Psila Alonia, Patra; Papapostolou 1973/1974, 358; Kotsaki 1990, 128.

92 Kotsaki 1985.

93 For the differences in the cultural identities of western and eastern Achaia, see Petropoulos 2010, 160; Petropoulos 2012.




13 Ternary plot of (a) major elements and (b, c) trace elements for miniature-figurine sherds (full circle) and local raw materials (full triangle). (d) REE patterns normalized to NASC of miniature-figurine sherds (half circle) as well as of a local raw material collected close to sanctuary (half triangle) (© C. Rathossi)

## Results

### Geochemical Analysis

Major, minor and trace element concentrations were measured in both ancient ceramic »body« and in clayey raw materials collected from sedimentary deposits nearby the excavation site and from quarries of modern brick factories which operate in the city of Patras[94]. The aim was to detect whether some of the analysed ceramic sherds were produced in local workshops by comparing their geochemical composition.

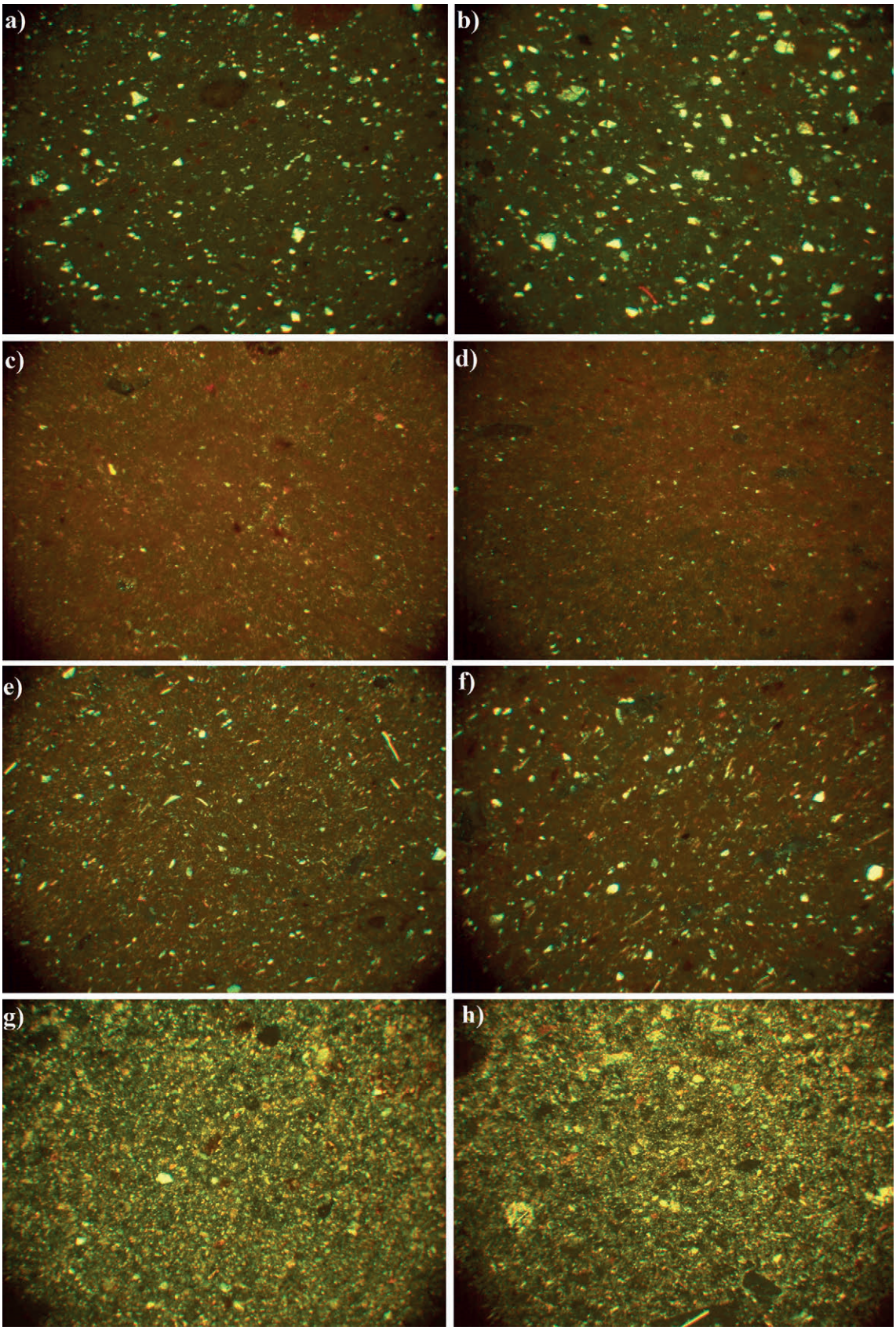
The ternary diagrams of major and trace elements illustrate the similar chemical nature of the ceramic samples and the collected clayey raw materials (fig. 13 a–c), suggesting a local origin for ceramics.

The Rare Earth Elements (REE) are considered to be the most confident elements for the provenance studies. The REE patterns (spidergrams) of ceramic sherds and raw materials, normalized to the composition of North American Shales (NASC)[95], show similar shapes (fig. 13 d). This result also indicates that the ceramics are local products and they were probably produced from the same clay paste derived from the Plio-Pleistocene sediments of western Achaia (i.e. the sediments around Patras and to the west-southwest of it).

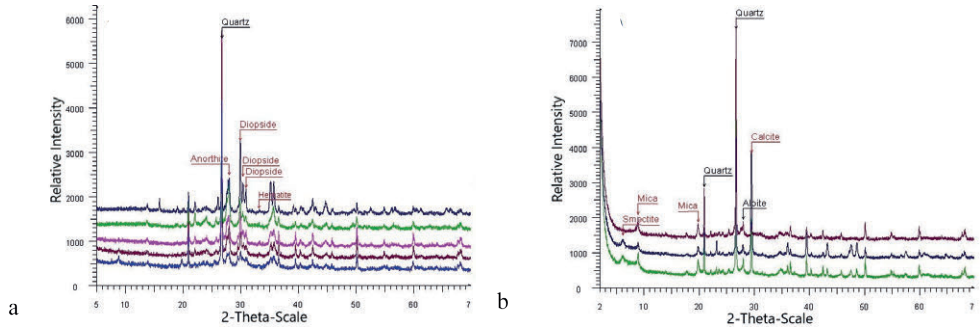
### Petrographic Analysis

The petrographic fabric of all samples is fine-grained and homogeneous in texture, composed of quartz, feldspars, white mica, calcite and iron oxides (fig. 14 a. c. e. g).

94 Rathossi 2005, 64–75.
95 Haskin et al. 1968.




14 Representative photomicrograph of petrographic fabrics of ceramic sherds (left column) and briquettes made in laboratory by local raw materials (right column). Left column: a) Kotyliskos; c) miniature hydria; e) figurine; g) figurine. Right column: b) briquette fired at T = 1050 °C; d) briquette fired at T = 1050 °C; f) briquette fired at T = 950 °C; h) briquette fired at T = 700 °C. (4× magnification, XPL) (© C. Rathossi)




15 Representative X-ray powder diffraction patterns of (a) miniature sherds at high firing temperature 850 °C ≤ T ≤ 1050 °C and (b) figurine at very low firing 500 °C ≤ T ≤ 700 °C (© C. Rathossi)

Sub-fabrics are distinguished on the basis of the colour and optical behaviour of micromass (i.e anisotropic, isotropic) which is an index for the degree of firing (low or high firing temperature), the preservation of white mica and calcite as well as the shape and grain size distribution[96].

No clear petro-fabric distinction is achieved between miniatures and the majority of figurines as they share the same petrographic features. Miniatures seem to have been fired at high temperature T > 800 °C as were most of the figurines. Only a few figurines seem to have been fired at low temperature T < 750 °C forming separate sub-fabrics.

Petrographic observations proved that ceramic fabrics are very similar to those fabrics of briquettes made in the laboratory using the collected local clayey raw materials (fig. 14). This is one more piece of evidence, demonstrating that Plio-Pleistocene clayey sediments cropping out around Patras and in the broader area of the excavation site could have been used as raw material for producing pottery.

### Mineralogical Analysis

Petrographic observation can suggest the firing temperature of ceramics, while the mineralogical analysis can better estimate the firing conditions, as the new minerals formed during firing can be detected. They are indicators for the firing conditions that prevailed in the kilns[97].

The mineralogical study of XRPD patterns established that miniatures were fired at high firing temperature 850 °C ≤T ≤ 1050 °C and under oxidizing-mild oxidizing atmosphere, as new high-T minerals crystallized during firing procedure such as: anorthite, diopside, hematite (fig. 15 a).

Figurines show a wider range of firing temperature. Most of them reveal that they were fired at high temperature 850 °C ≤ T ≤ 1100 °C as new high-T minerals were formed similar to those in the miniatures. For a few figurines, the firing temperature was very low 500 °C ≤T ≤ 700 °C and the pyrometamorphism was not achieved, since calcite and smectite, two minerals which existed in the raw materials used for their production, were preserved after the firing procedure (fig. 15 b).

## Summary

This research presents the analytical data obtained from the study of representative miniature vessels and figurines. Petrographic, mineralogical and chemical analyses were used to describe the ceramic sherds. The archaeometric results demonstrated that they are local products and that they were probably produced by workshops operated close to the sanctuary and/or in the broader area between Patras and Kaminia.

96 Whitbread 1995, 391–394.
97 Rathossi – Pontikes 2010.

Miniatures seem to be better quality products, while figurines are divided between good quality and poor quality products, suggesting a mass production in some cases.

The present archaeometric work provides the first indications for a local production of miniatures and figurines in western Achaia. However, additional samples should be examined, not only for more secure conclusions but also in order to investigate from which other regions pottery might have been imported to western Achaia.

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# NORTHERN ARKADIA

Gerald P. Schaus

# ARCHAIC POTTERY FROM TRIA GOUPATA, A MOUNTAIN CAVE SANCTUARY ABOVE LAFKA, STYMPHALIA

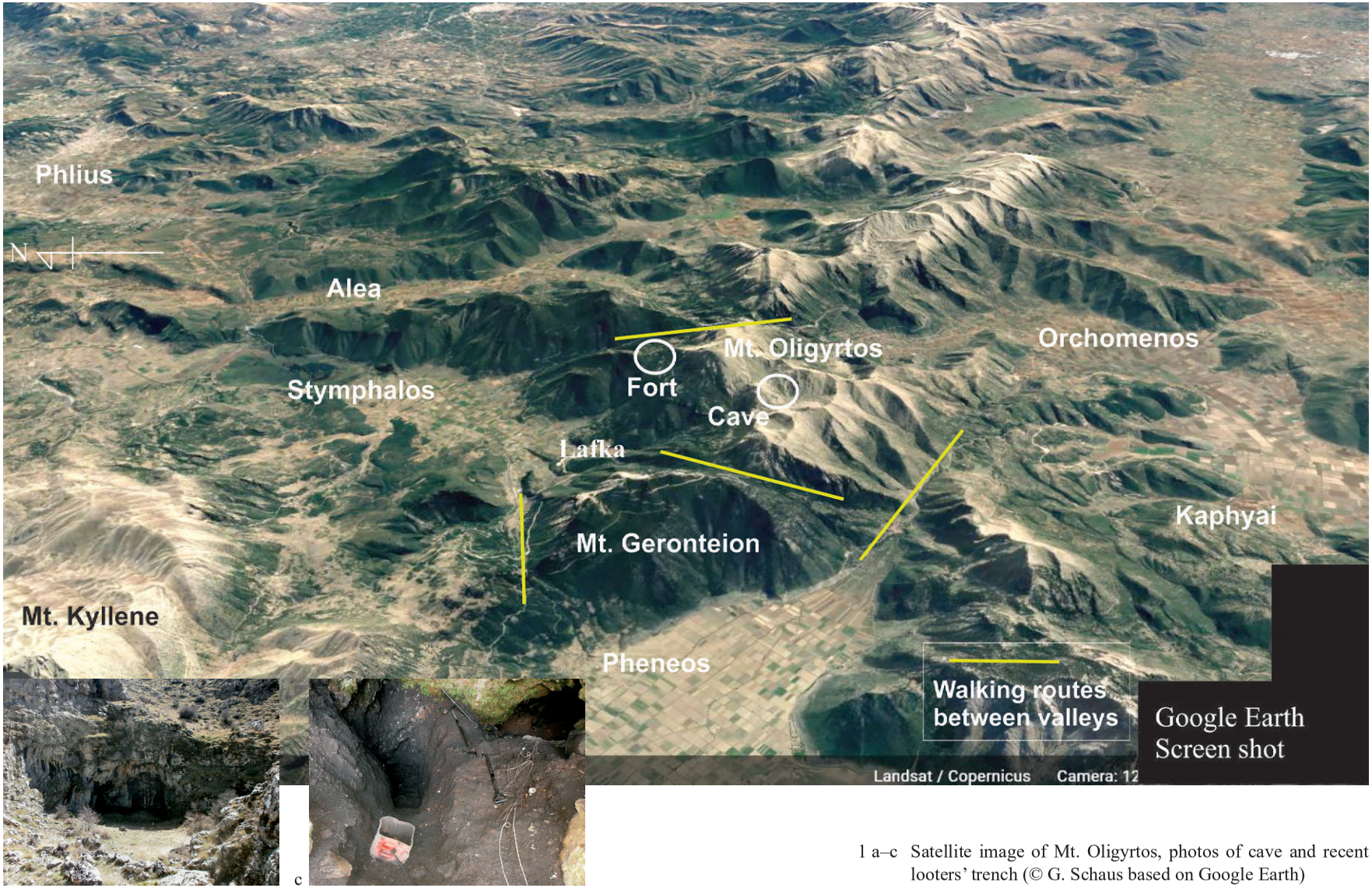
ABSTRACT

A little-known cave, or properly rock-shelter, sanctuary high on Mt. Oligyrtos in northeastern Arkadia has been seriously pillaged over the past thirty years. Some material salvaged from the surface debris is studied here. Pottery and figurines suggest that the sanctuary was popular for about 200 years, starting in the first half of the 6th century BC. Some Corinthian and Attic black-figure and silhouette style pottery occurs, but the most common fine wares are Corinthian miniature and Conventionalizing vessels. Both hand-made and mold-made figurines of draped, bejeweled females are common, while hand-made horse-and-rider figurines occur in smaller numbers. Objects of adornment – finger rings, beads, fibulae – were also left as votives. The identity of the cult, its history and ritual practices, its place in local inter-polis relations and its protection from ancient thievery are considered here.

A remarkable cave sanctuary located high on the western slopes of Mt. Oligyrtos, at close to 1,500 m asl, has received little attention until now. It should be emphasized that it is in an isolated location, not close to any of the more easily viable walking routes between valleys surrounding Stymphalos, including the route to Pheneos, or Orchomenos, or to ancient Kaphyai (fig. 1 a). The site is really more a rock shelter than a shallow cave, formed originally by the creation of a *katavothros* or sink hole in the porous limestone, allowing water to drain from the bowl formed here by the surrounding mountain slopes (fig. 1 b). Its local name is Tria Goupata (»Three Basins«). To reach the cave from the village of Lafka (Stymphalia), one must make a steep two-hour climb from the valley floor, to well above the present tree-line, along a rocky, goat path[1]. Shepherds are the most common visitors since it provides a cool place for sheep and goats to escape the summer sun, but there is no apparent nearby water source other than occasional drips from the cave ceiling. It must have been a difficult trek from the valley for all but the most fit. The author visited the site three times over the past eighteen years, always in the company of a local antiquarian, Giorgios Rigopoulos, who has helped provide background information and photographs.

Sadly, the cave has been regularly and systematically looted over the past 30 years (fig. 1 c). Many tons of soil have been dug, with deep spoil heaps, and many loose potsherds, bone and metal objects scattered on the surface, discarded by the looters. The site was briefly visited by Christos Piteros on behalf of the Ephorate of Antiquities for the Corinthia and Argolid in 1994 and a brief

[1] The Ephorate of Antiquities was alerted to clandestine excavations at the previously unknown cave site in 1994 through a letter from D. M. Legga, a resident of Kallianoi. A rough dirt road used by shepherds and bee keepers can be taken nowadays from Lafka to a point half-way up the mountain where there is a chapel dedicated to the Aghia Sotira (Holy Saviour).




a

b

c

1 a–c Satellite image of Mt. Oligyrtos, photos of cave and recent looters' trench (© G. Schaus based on Google Earth)

note published about the site[2]. Piteros brought back to the Nemea museum a shoe-box of small finds and three large bags of pottery, which the author was able to study in early March, 2020[3].

Lying loose on the cave floor among the spoil from the looters' efforts were fragments of miniature votive cups (e.g. fig. 7 f), bone double-axe beads (fig. 4 i), a knob bow fibula (fig. 2 d), lead wreaths (fig. 2 e), iron nails, and fragments of decorated bronze sheets including rosette attachments (fig. 2 b. c) and a rectangular fragment with a lovely embossed Early Classical figure of a youth holding a lotus blossom (?) (fig. 2 g). This may once have decorated a wooden box or piece of furniture. Lead wreaths similar to ones here were found by the tens of thousands at the Artemis Orthia Sanctuary in Sparta, suggesting a direction of importation for the examples from the cave. Two bronze finger rings with decorated intaglios were also found on the surface. Other bronze rings were brought back by Piteros to the Nemea Museum including one with a warrior or eros figure in its signet (fig. 2 f). Fragments of larger Corinthian red-figure vases were also in evidence (fig. 8). Either the looters were not attentive, or there were so many fine objects among their discoveries that they paid little attention to what they judged were lesser ones and so left them behind.

The great majority of the salvaged fine-ware pottery is Corinthian (figs. 5–8), but a few pieces of Attic (fig. 9), and even a couple fragments of Lakonian (fig. 10 a. b) were recovered from the site, along with dozens of terracotta figurines, both hand-made and mould-made (figs. 3. 4 a–f. k. l).

Clearly, the sanctuary was a site of popular worship, despite its remote location. Thousands of small, inexpensive objects were left behind, providing evidence for the identity and dedicatory behavior of the worshippers. In the small valleys of northern Arkadia, where farming and pastoralism provided the main source of livelihood, one would expect cheaper gifts to the deities, and the smaller in size they were, the easier they would be to transport up the mountain[4]. On the other hand, there were enough objects of value among the finds left behind by recent site pillagers to suggest that some wealth did indeed exist in the region in antiquity and that pious worshippers were willing to dedicate a portion of this wealth to the numina believed to reside here. The symbolic value of small, even miniature, objects, in honouring the divine essences affecting people's lives, need not mean that lack of material substance directed the value of gifts left at the sanctuary[5].

Several partial inscriptions have been preserved on objects from the site. One is the first four letters of an abecedarium; one preserves a dedication with part of the word »anetheke«; one is simply an epsilon (E). More intriguing is a fourth inscription, stamped on the rim of a miniature shield, perhaps a name, with several letters preserved: ]ϴΟΛ[…]ΧΟΣ, but not quite enough to be informative (fig. 2 a, detail).

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2 Piteros 1994. He (1994, 161) observed a large area dug by the site looters with approximate dimensions 15 × 3 m, and up to a depth of 2–2.5 m.

3 I wish to thank the Ephorate of Palaeoanthropology and Speleology and the Ephorate of Antiquities of Corinthia for permission to study this material, in particular, Iota Kasimi and Vasilis Papathanasiou, as well as Dr. Jonathan Tomlinson, Assistant Director, Canadian Institute in Greece, for assistance in preparing the application. Other objects have been salvaged and brought back to the Laographiko Kentro in Lafka. I was only able to spend a few hours (March 4–5, 2020) sorting and photographing this material. Outside the mouth of the cave, there are stone foundations of a small rectangular building, but these appear to be from a shepherd's shelter of no great age, rather than associated with the sanctuary.

4 Of the two qualities of miniatures highlighted by Barfoed (2018, 114), convenience (i.e. ease of transportation) and fascination (skill needed to reduce dimensions without losing identity), one supposes convenience was more valued in bringing votives up the mountain to the cave. One should not, however, disregard cost when seeking other values in miniatures. Miniature jewellery pieces, however, were not found, suggesting that regular jewellery pieces were already small enough to leave as dedications.

5 If piety is accepted and appreciated in cult through donations of tokens, whether miniature pottery or figurines, for example, rather than regular-sized objects, then many will certainly opt for the token gift, see Salapata 2018.




2 a–g Votive metal objects (© G. Schaus)

The most common local, hand-made figurine type is a seated goddess, heavily bedecked with jewellery and wearing a polos on her head (fig. 3 a–f)[6]. The body is normally plank-like; the head has a ›bird face‹ with large eyes and pinched-in nose/mouth. One torso fragment is unusual in being hollow and having the necklace decoration impressed on the surface of the figurine instead of rendered with added clay (fig. 3 d). Two tiny protrusions at the bottom of the ›plank‹ or dress indicate the feet (fig. 3 h). The figure sits on a kind of bench with four sturdy conical legs, although in one instance roundels suggest ›arms‹ for the chair (fig. 3 h). The type was described by J. M. Cook at Mycenae where it was thought to be made locally. It seems reasonable that examples were made in the Argolid and exported to places in Arkadia like Phlius and Stymphalia although clay analysis will be needed to confirm this[7]. Imported mould-made figurines from the cave tend to depict standing draped female figures with a dove in one hand at chest level, or sometimes an object in both hands (fig. 4 e)[8]. One female figurine is partially mould-made and partly hand-made (fig. 3 g). A veiled female is also known, as well as a doll with movable arms and legs.

Hand-made figurines of horses and riders, one apparently carrying a shield, also occur in some numbers, with Geometricizing features although no Geometric or even 7th-century pottery has yet been identified (fig. 4 a. b. f). W. R. Biers believed that similar ones from Phlius showed Argive influence, and that the prevalence of the horse and rider at Phlius indicated a shrine dedicated to a hero, of unknown identity[9]. Horse and armed rider figurines are found at the Agamemnoneion at Mycenae where the hero's identity is known[10]. Several other animals are represented among the figurines, including boar, cock, ram (fig. 4 c. d. k. l) and sphinx. Various and numerous finger-like clay objects are likely legs from ›benches‹ upon which female figures are sitting although some may also be from simple horse figurines. Another possibility is that some were handles, for instance, from hand-made ladles, or from incense burners used in the cult ritual.

Metal, bone and glass objects found at the site represent different types of jewelry. These tend to support the notion that women played an important role in the sanctuary's cultic life. Earrings (incl. a silver one), decorative pins, fibulae and small finger rings (fig. 2 d. f) are especially suggestive of women's presence. Bone astragaloi, both pierced and not, were quite common; decorated bone double axes were pierced at the narrow point of their sides for stringing (fig. 4 i). Glass objects include a green ›button‹ pendant and a blue-and-white mellon bead (fig. 4 g. h). Evidence for burning was found in the form of charcoal and ash mixed throughout the spoil heaps. This suggests that ritual acts of sacrifice, perhaps on an altar, were a regular part of the cult, although simple fire for heat, light and cooking of food is also possible. A single obsidian bladelet (fig. 4 j) was also found, but this probably indicates an earlier period of use for the cave.

Finally, the pottery: Thousands of fine ware pottery fragments have been salvaged from the cave, providing what should be a representative sample of both the votive and the practical vases brought to this remote sanctuary[11]. Caution is needed, however, since neither the original contents of the sanctuary nor the choices by the site looters when removing their discoveries can be judged with accuracy. After a rough sorting, it would seem that the earliest fine ware from the cave is decorated in Late Corinthian black-figure (fig. 5 a–f) and silhouette (fig. 5 g–m) styles from small drinking vessels, mostly kotylai or skyphoi, and at least one kylix, along with a squat lekythos (fig. 5 f). Corinthian is overwhelmingly the first choice for votive pottery at the cave, but some

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6 Very similar hand-made female figurines bedecked with jewellery were found at Phlius where 19 % of the total figurines were female types, Biers 1971, 401. 418 f. nos. 76–81 pl. 93; compare also from Lerna, Erickson 2018, 149 no. 225 fig. 123; 193 no. 367 fig. 161; 255 no. 568 fig. 234; 272 no. 612 fig. 255; and from Mycenae, Cook 1953, 62 pl. 22.

7 Cook 1953, 62; Biers 1971, 401. 418.

8 Figurines from the votive deposit at Phlius may be from the same or very similar moulds, compare Biers 1971, 422 f. nos. 100. 102 pl. 95, dated to the 5th cent. BC.

9 Biers 1971, 401. 416–418 nos. 61–72 pls. 91. 92. About 68 % of the terracotta figurines from Phlius were horse-and-rider types, some carrying shields, and one at least with a helmet.

10 Cook 1953, 33. 64 pl. 23. An inscription identifies the shrine's dedication to Agamemnon.

11 The larger number of these is stored in the Laographiko Kentro, Lafka.




3 a–I Female terracotta figurines (© G. Schaus)

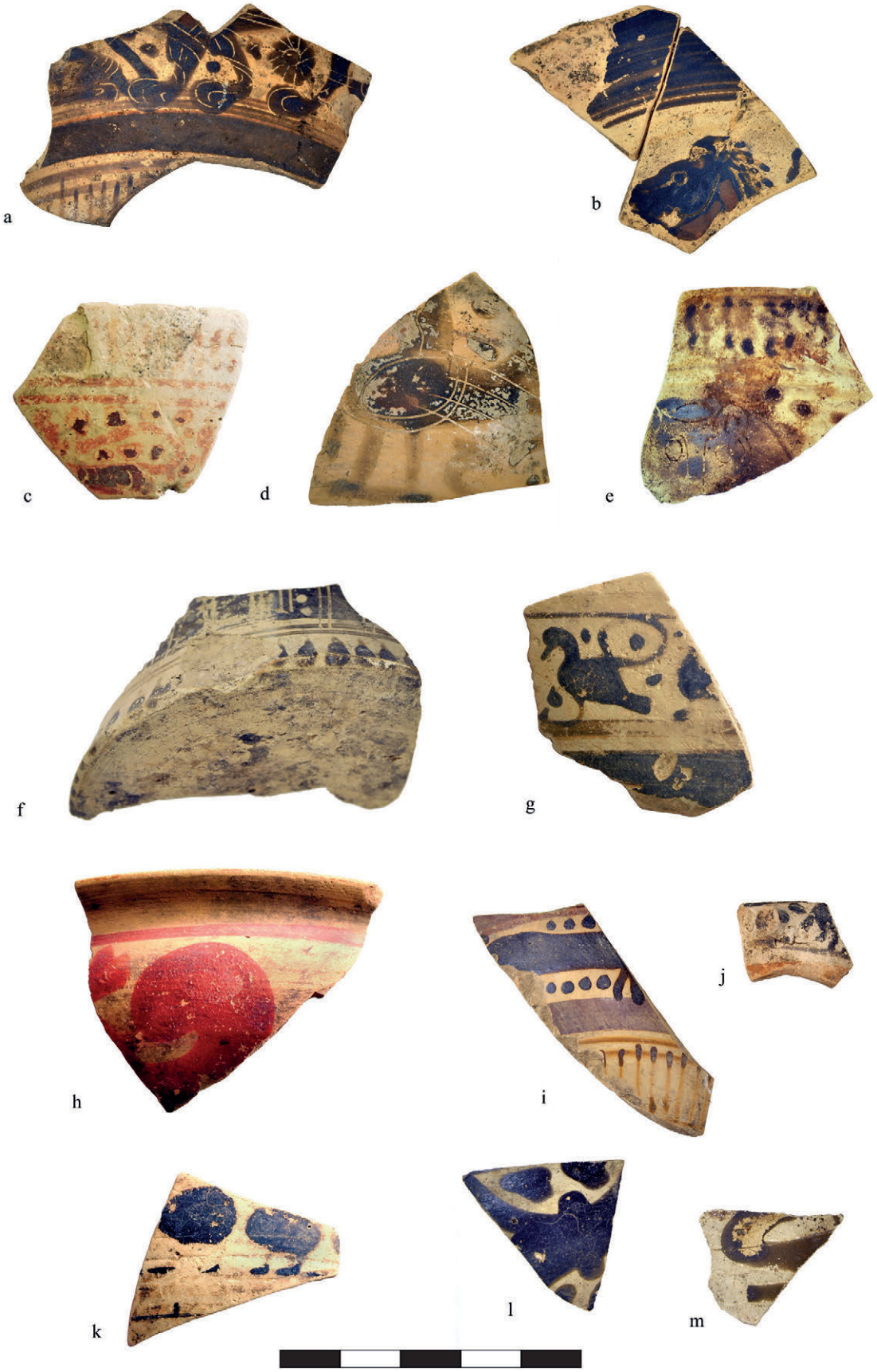



4 a–l Terracotta figurines (a–f. k. l), pendant (g), beads (h. i), obsidian bladelet (j) (© G. Schaus)

fragments of Athenian black-figure and silhouette styles from the late 6th and 5th centuries were found, including band and floral cup fragments and a little red-figure (figs. 9. 10 f. g). There is also some Attic black-painted pottery with ribbing and incising. One very unusual sherd dating around 525–500 BC is from an Attic black-figure white-ground plastic shape, probably a drinking vessel to judge by the accompanying male and female dancers (?) (fig. 9 a)[12]. Usually, one expects decoration of the highest quality on such a special vase, but here the incision work on the figures is careless; nevertheless, this fragment is tantalizing and indicative of what is missing and presumably lost from the site. Clearly, this unusual vase was brought from Athens, eventually carried up the high slopes of Mt. Oligyrtos and left as a gift in this isolated spot by a prosperous devotee to honour a beloved, or at least much respected, hero or divinity.

Two or three pieces of Archaic Lakonian fine ware have also been identified, including a decorated kylix, dating to the second quarter of the 6th century BC and a black one-handled mug

[12] The better-preserved figure is a draped female with legs to right and one arm raised, standing to the right of a second, male figure that wears a short chiton (?) with legs to right, but body turned to the left (?); an end of his long hair is visible below the arm pit. His bare arm is raised and overlaps the raised arm of the female. For Athenian white ground, see Mertens 2006, and for Athenian plastic vases, True 2006; Ebbinghaus 2008; Williams 2008.




5 a–m Corinthian black-figure (a–f) and silhouette style (g–m) (© G. Schaus)

fragment perhaps from the later 6th or earlier 5th century (fig. 10 a. b)[13]. One fragment possibly from a drinking vessel is especially puzzling since it is decorated with a row of red concentric lozenges directly on the clay (fig. 10 c). The fabric is not easily recognized and the pattern is difficult to place. Of the local pottery, the foot of a pedestalled krateriskos stands out (fig. 10 e), made of coarser clay and decorated with bands in orange-fired, as well as added red, paint[14]. A deep, black-painted cup with gently out-turned lip and added red stripe above the handle zone (fig. 10 d) may also be local[15].

The most common type of decorated pottery besides the miniatures is Corinthian Conventionalizing (fig. 6)[16]. Without a more thorough examination, it is difficult to know what shapes are most common and when, but among the identifiable ones, there are kotylai, pyxides, oinochoai, plates, phialai and lekanides. Pyxides of different types appear to be quite common, including flanged, convex and concave-sided ones, as well as ones with tripod bases or either lebes-type rims or vertical ones[17]. Pyxis lids (fig. 7 b) also occur in numbers, with flanged lips and knob handles. Stylized lotuses and palmettes on one drinking vessel (fig. 6 a) are linked by a red stem in a chain and have a red central petal for the lotuses[18]. The pattern rises above the normal conventionalizing motifs of loops, double dotted bands, and rows of tongues, buds, and stepped triangles. All these patterns found on pottery from the sanctuary to date fit comfortably within the period 550–450 BC according to Risser's chronology, except perhaps the type 2 palmettes on one fragment (fig. 6 j) which may date a little later[19].

Among the miniatures, over 600 bases were counted that preserved at least 50 % of their exterior surface (a selection in fig. 7 a). Most of these were Corinthian flat-based kotylai, decorated in perfunctory fashion (fig. 7 f). This represents just a fraction of the total number of Corinthian miniature vase fragments recovered from the site, but at least it provides a minimum number of vessels. Most of these were still quite carefully decorated with squiggly lines in the handle zone and both red and black bands below, suggesting a date in the 6th or 5th century. Other shapes were less common, but still found in numbers. These include lekanides, pyxides with lids, phialai (fig. 7 c), kalathiskoi (fig. 7 e), oinochoai, hydriai (fig. 7 d), cups, and kana[20]. At least one deliberately perforated vase fragment was found, comparable to perforated kalathoi, possibly used as

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13 The tondo pattern with spaced leaves (petals) is similar to a kylix fragment in Miletus and a more complete cup from Gravisca by the Boreads Painter. See Schaus 2020, no. L122 with references. The one-handled mug is similar to ones listed in Stibbe's (1994, 46) group E of the later 6th cent., but also to mugs from Corinth dating as late as the mid-5th cent. (Williams 1979, 140–142 fig. 7 no. C-1973-287). A third possible Lakonian fragment appears to depict a water bird with head turned back in Lakonian II style. A little Lakonian pottery, including an aryballos, was found at nearby Phlius from the 6th cent. (Biers 1971, 399. 413 no. 42 pl. 89), and some has been reported from excavations at Lousoi and Pheneos. My thanks to Regina Klöckl for sharing information about the Pheneos finds with me.

14 The hard orange clay has large white inclusions. Decoration on the stem has a band overpainted in red lying between narrower bands both above and below a wide band of orange paint. Thirteen similar examples were found at Phlius, Biers 1971, 405 nos. 15–17 pl. 86. Pedestalled kraters were common at the Agamemnoneion at Mycenae, while a few pedestalled krateriskoi, or miniature kraters, also appeared there. A special connection may be evident in their use as part of male devotion towards the hero, Cook 1953, 33 f. 40.

15 The orange clay is not particularly fine, with dark inclusions, but the black and red paints have fired and adhered well.

16 The style is studied carefully by Risser 2001.

17 Risser 2001, 36–53.

18 The solid palmettes belong in Risser's »type 1« palmettes, Risser 2001, 24. 29 f. tab. 1.

19 Risser 2001, 23–33.

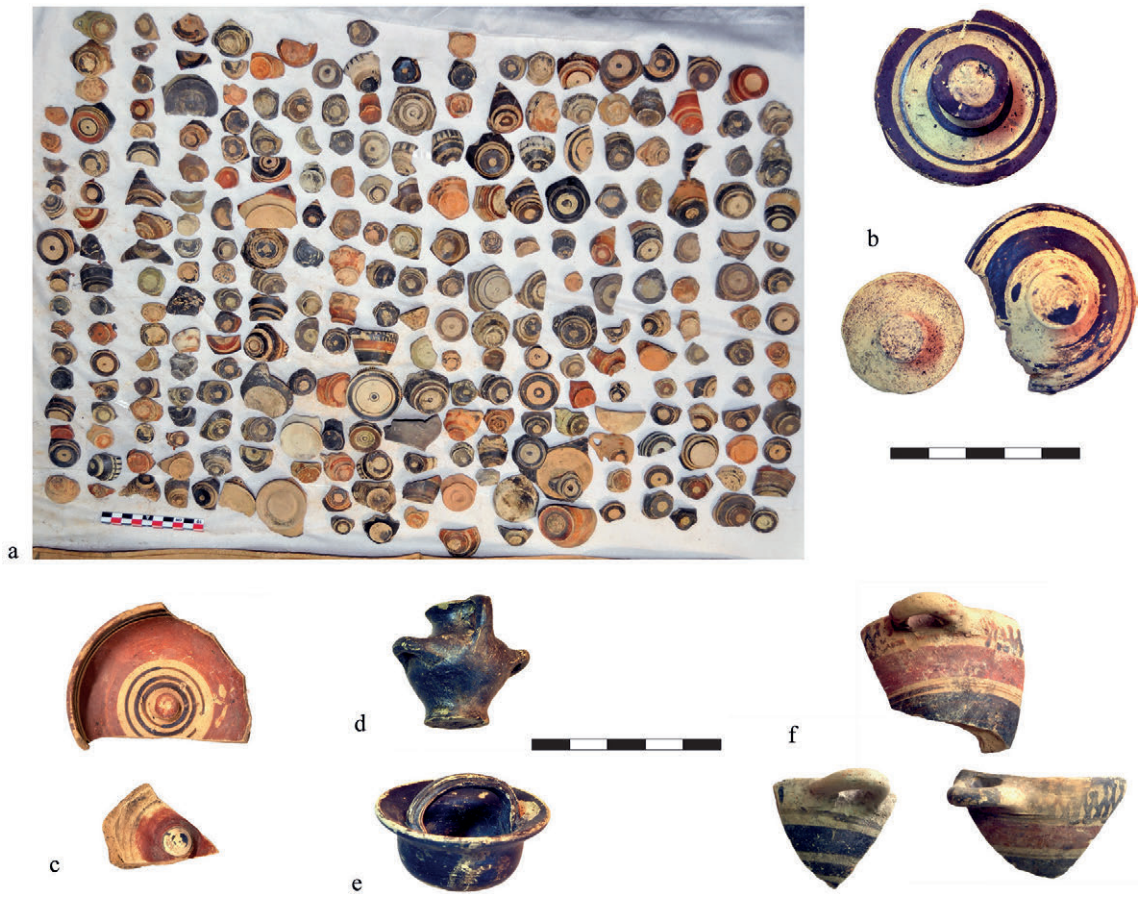
20 Shapes and dating of Corinthian miniature vases from the Potters' Quarter and the Sanctuary of Demeter and Kore are discussed respectively in Stillwell – Benson 1984, 309–343; Pemberton 1989, 64–66 and passim. Many miniature votive vessels occurred in the votive deposit at Phlius, but most of these were identified as local products or Argive imports, Biers 1971, 399 f. 406. 414–416, and esp. 412 f. for the few Corinthian miniatures. Corinthian miniatures were also common in the so-called Cave of Hermes, apparently dedicated to a female divinity or divinities, on Mt. Kyllene, Erath 1999, 242–246.




6 Corinthian Conventionalizing vases (© G. Schaus)

thymiateria for gifts of wool, found at Nemea, Asine and Tiryns[21]. It is possible that these miniatures once held a token food or drink offering for the deity[22].

21 Barfoed 2018, 120 f.
22 Nagel 2021, 125 for evidence of such a practice.




7 a–f Corinthian small and miniature vessels (a. c–f), lids (b) (© G. Schaus)

Several small glass vases, probably alabastra or amphoriskoi, may belong in the 5th century as do also Athenian red-figure fragments (fig. 10 f. g). The most impressive finds from the 4th century remain Corinthian, or perhaps Sikyonian, red-figure pottery fragments (fig. 8); noteworthy are very carefully decorated sherds from bell kraters, presumably a challenging shape to lug up the mountain. Two examples (fig. 8 b. d) belong to the first quarter of the 4th century; the latter (fig. 8 d) covered with dark red miltos, depicts a scene of Orestes seeking sanctuary from the Furies, otherwise rare in Corinthian red-figure[23].

The rise in popularity in the 7th century of both miniature pottery and terracotta figurines should be viewed together as a single phenomenon. G. Salapata, in discussing »tokens of piety«, recently noted, »in a religious sense, the act of giving, or the messages inherent in the form of the offering, would have been more important than the gift's monetary value and, in some cases, it could have signaled participation in a cultic activity«[24]. G. Ekroth and S. Barfoed likewise argue that miniatures were not just gifts from poorer worshippers and that some in fact may have had

[23] I am indebted to Ian McPhee for the following comments: »The piece is important because there are relatively few identifiable myth scenes in Corinthian. (This) fragment must show Orestes, who is clinging to a tall stele (probably over an altar), holding an empty scabbard in his left hand and probably a drawn sword in his right (not preserved). He wears a chlamys clasped with a round brooch. The figure at the right must be a winged Fury, given the snake in her hair, and there will have been one or two more. I don't recall another example of this myth in Corinthian.« (email of 03.10.2020). The fragments in fig. 8 b are not all correctly placed. The middle fragment should belong in the scene, but not here since the line of the sceptre (?) or thyrsus (?) does not continue onto the larger fragment above.

[24] Salapata 2018, 105.

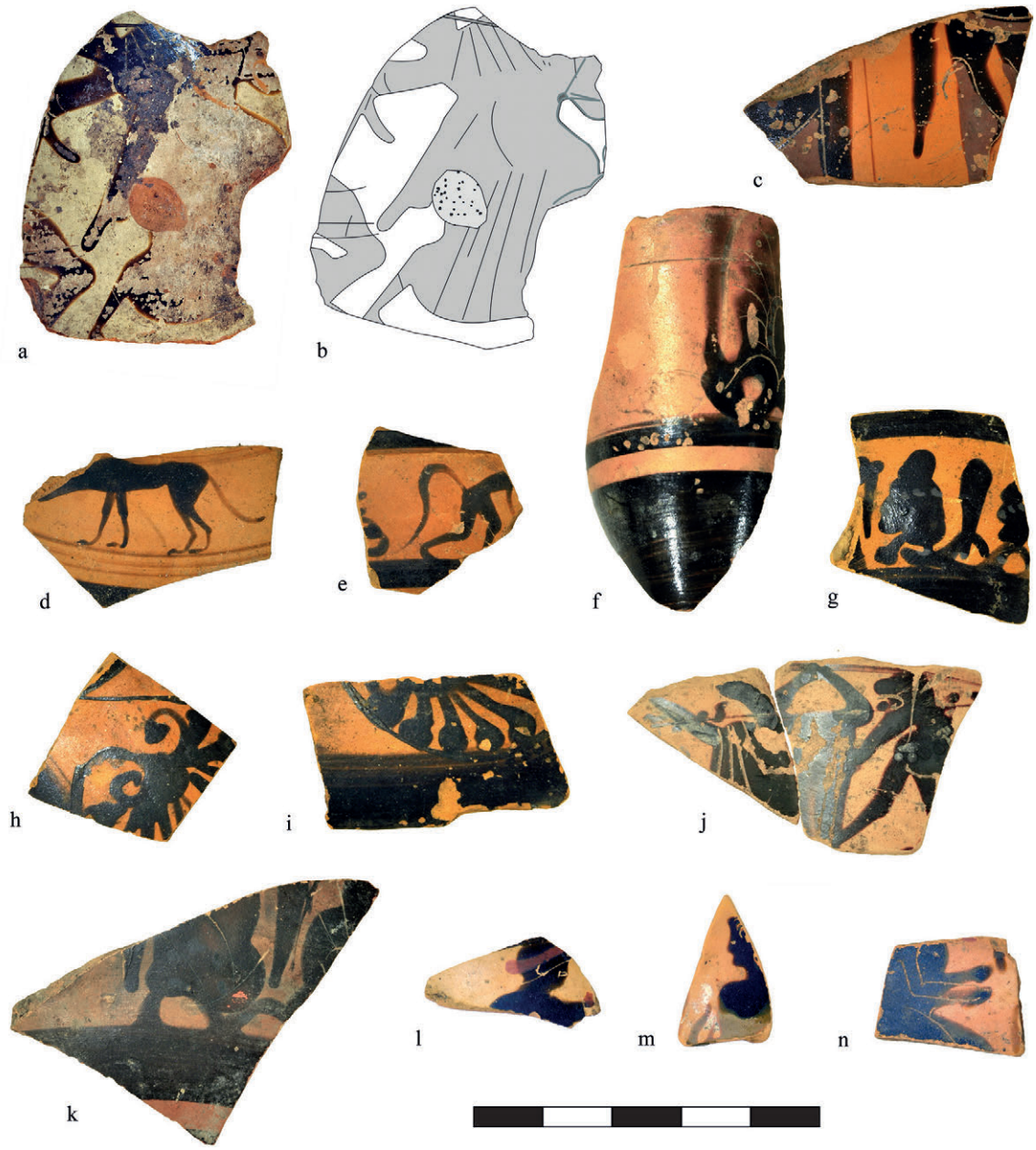



8 a–d Corinthian (Sicyonian [?]) red-figure fragments (© G. Schaus)

functional use[25]. Leaving a small vase behind in a cult place may have perpetuated the memory of an experience of worship as well as acted as a reminder to the deity or numen of an obligation owed the worshipper[26]. The quantity of a votive type seems also to be valued, whether it took the form of sets of objects, or simply dedications in large numbers such as with the miniature vases. The small size may have been a preference of female donors[27].

Without good inscriptional evidence, terracotta figurines are perhaps most helpful in learning about the divinity/divinities or numina worshipped at the cave[28]. One might expect Pan, for example, a popular local god worshipped especially by shepherds in Arkadia, but associated with caves more in Attika than Arkadia. A female divinity (e.g. Demeter, Eileithyia or Maia), but perhaps together with Hermes and/or Pan, seems to have been the object of worship at a cave site on the north slopes of Mt. Kyllene, presumably ›belonging‹ to Stymphalos or one of its northern

25 Ekroth 2003; Barfoed 2018.
26 Karadima 2021, 101.
27 Barfoed 2018, 119; Karadima 2021, 102.
28 See Sporn 2021, 167.




9 a–n Attic white ground (a. b), black figure (c. f. j–n), silhouette style (d. e. g–i. n) (© G. Schaus)

neighbours, at a boundary between them[29]. On the other hand, because so many of the figurines at the Oligyrtos cave sanctuary depict women, one might suggest the Nymphs, although they are commonly associated with springs, or apparently, deeper, narrow-mouthed caves at higher elevations[30]. The »Homeric Hymn to Aphrodite« (5, 257. 263–266) describes how the »deep-breasted mountain Nymphs … mate in the depths of pleasant caves; but at their birth, pines or high-topped oaks spring up with them upon the fruitful earth, beautiful, flourishing trees, towering high upon the lofty mountains« (transl. H. G. Evelyn-White, Loeb ed.). The setting of the Tria Goupata Cave set in a basin, above the wooded slopes of Mt. Oligyrtos, fits the description nicely, and in general,

[29] Commonly called the Cave of Hermes nowadays, but without ancient confirmation. Kusch 1999; Erath 1999, 242–246. Hom. h. Hermes 4. 18. For a chart listing identified cults at Greek cave sites, see Sporn 2013, 216.

[30] Pierce 2006, 3, 7.




10 a–g Laconian (a. b), Attic red figure (f–g), miscellaneous (c–e) (© G. Schaus)

it is the Nymphs who most often attract worship in caves[31]. Bearing this in mind, Pausanias (8, 16, 1) mentions a sanctuary of the Nymphs at a place close to the border between Pheneos and Stymphalos on mountains (or high hills) just to the north of Mt. Geronteion, called »the three springs« (Trikrena) and that this belongs to the Pheneates[32]. Here, according to myth, Nymphs bathed the new-born baby, Hermes. The location should be placed to the southwest of the main massif of Mt. Kyllene where Hermes was thought by Greeks to be born. M. Jost suggested that it

31 Sporn 2013, 202 f.

32 The word for mountain »oros« is used broadly in Greek for both tall peaks and unimpressive hills. Mountains themselves were perceived as imposing essences far beyond the bounds of their physical presence, see Cardete del Olmo 2005, 56.

was located somewhere around Mt. Geronteion between Kyllene (Ziria) and Oligyrtos (Skipieza), but this cannot be the same sanctuary as the Tria Goupata cave which is well to the south of Mt. Geronteion[33]. Furthermore, there is no evidence for Roman period worship at the Tria Goupata cave, as one would expect if Pausanias knew about it, nor were there any nearby springs in evidence near the cave for ritual washing. No other evidence so far known from the cave sanctuary, such as dancer figurines, specifically suggests the Nymphs[34].

Another suggestion, by Piteros, is that chthonic deities were worshipped at the cave sanctuary[35]. The hand-made figurines of seated women with ponderous necklaces and decorated poloi might perhaps suit such a figure as the queen of the Underworld, Persephone. In any case, the common appearance of terracotta figurines is generally held to be a sign of the worship of female divinities, especially concerned with aspects of the lives of women and children[36].

About 80 km directly north of the Oligyrtos Cave as the crow flies, is the Corycian Cave (Κωρύκειον άντρον), located on the slopes of Mt. Parnassos (at an altitude of 1,360 m asl) above a cultivated highland plateau, about a two and a half hour walk northeastward from Delphi. The cave is described by Pausanias (10, 32, 2, 5) and said to be dedicated to Pan and the Corycian Nymphs. The cave is large, about 90 m long, 30 m at its widest and 15 m or higher, divided into two chambers, a larger and a smaller. It was excavated by a French mission in 1970–1971, and published thoroughly by P. Amandry and his colleagues[37]. Among the remarkable finds were about 50,000 terracotta figurines and 24,000 knucklebones. Objects dating back to the Palaeolithic, Late Neolithic and Mycenean periods were discovered within the cave, but as a sanctuary to Pan and the Nymphs, material dates to the Archaic, Classical, Hellenistic and Roman periods, with the main deposits of pottery from the 6th century[38]. A preponderance of the pottery from the Archaic period is Corinthian, while Attic pottery begins later in the Archaic period, but continues strongly in the Classical. This is similar to the Oligyrtos cave, although pottery, in particular Corinthian kotylai and aryballoi, suggests an end of its popularity in the Late Classical period.

There was an older town of Stymphalos whose location is still not identified. Here once there were three sanctuaries to Hera as told to Pausanias (8, 22, 2). The newer location for the urban centre was in the middle of the valley beside the lake. It has pottery and other finds going back to the 5th century in small numbers; much larger quantities start in the 4th century[39]. Of the three or four poleis whose borders touch on Mt. Oligyrtos' slopes, Stymphalos, Pheneos, Orchomenos and perhaps also Kaphyai, the predominant fine ware pottery at the cave site, Corinthian, would come most directly and accessibly, through Stymphalos. This may not be an especially significant factor in evaluating which polis controlled the cave site, but it is worth bearing in mind. Another factor is the location of a small fort (fig. 1 a) built on a spur of Mt. Oligyrtos, high on its north side, which overlooked routes into the Stymphalos valley from every direction. Its position strongly suggests that it belonged to the Stymphalians. From there, it might also have served as a post from which the cave site on the upper western slopes of Oligyrtos might be accessed by peripoloi or patrollers of city-state territory if such existed at the time[40]. The site includes a foundation for a small structure built of ashlar blocks, perhaps indeed a temple, which suggests a Classical date. It is possible that the popularity of the cave sanctuary declined after the move by the Stymphalians to their new

33 Jost 1985, 28. 443.
34 Karadima 2021, 101. 107.
35 Piteros 1994, 161.
36 Sporn 2021, 172.
37 Amandry 1972, 256; Amandry 1981; L'Antre Corycien II 1984.
38 Jacquemin 1984.
39 Schaus 2014, 7 f. Besides the Late Archaic marble kore, a few scraps of floral cups, a coin or two and some bronze mirror attachments, little else from 5th century has been found in the acropolis sanctuary at Stymphalos. Tellingly, there is no Corinthian Conventionalizing pottery on the acropolis sanctuary site.
40 See Morgan – Hayward 2021, 82.

urban location beside the lake, especially if the new site was at a greater distance from the cave. At first glance, the two events appear to be relatively synchronous.

The religious experience of worshippers at cave sites in Greece has recently been the subject of study and speculation[41]. Ideas have been proposed concerning sacred space and ritual action, liminality, the sensory dimension of cognitive enhancement within the dark isolation of cave environments, and the illumination of numinous, karstic phenomena creating locations for manifestations of religious behaviours. »The cognitive fuses with the sensory to inform a wide spectrum of collective or individual religious experiences.«[42]. Although the ›cave‹ at Tria Goupata is more a rock shelter than the gloomy and foreboding cave of common imagination, its isolation and sunken location within a rocky bowl with broad vistas along the edge of the bowl across valleys and mountain peaks surrounding it, offers the visitor an experience with both impressive sensory and cognitive dimensions. It attracted considerable local attention for a period of perhaps two hundred years, and then lost its appeal.

»When circumstances change for rural communities because of the development of poleis and new power relations that draw a more complicated and extensive landscape, mountain cults decline or change towards different realities«, as stated by de Polignac. »Mountains are no longer limits of human environment, but peripheral localities. Landscape is understood in a different way. The material elements are the same, but the perception of them has changed. A rebuilding of mental landscapes takes place«[43].

Without clearly identifying which city-state controlled either or both of the cave sanctuaries respectively on the northern edge (so-called Cave of Hermes) and southern edge (Tria Goupata) of Stymphalian territory, it is evident that both these sites, as well as the Sanctuary of the Nymphs situated on the Trikrena hills in Pheneate territory (Paus. 8, 16, 1), suit the criteria for de Polignac's liminal sanctuaries, establishing the territorial limits of Stymphalos and its neighbours, including their spheres of influence[44]. If the ashlar foundation located within the fortified area on the northern side of Mt. Oligyrtos is another sanctuary structure, it would add a fourth extra-urban religious site to mark the local frontiers of Stymphalia.

A separate question is the method by which the local community protected such an isolated and inaccessible sanctuary site as the Tria Goupata cave. Many valuable objects were obviously deposited here in the course of ritual practice, including jewellery, furnishings, and carefully decorated vases. Modern looters now have regularly stripped the site of its more valuable objects, but the same could have been done in antiquity without provisions made to keep the site secure. The most effective protection might have been watchmen, but this would not be practical in wintertime when deep snow, howling winds and freezing temperatures would make living conditions difficult even if a sturdy house were built in a sheltered spot for priests/guards. Simply building a high wall with a locked gate would not deter robbers for any length of time. Thorny bushes placed to enclose the site, stakes or booby traps could potentially help. Minoan peak sanctuaries might provide some insight here, but votive objects found at these sites so far have tended to lack any exchangeable material value. Nor have there been substantial architectural remains at peak sanctuaries to suggest that votive gifts left here were protected from theft[45]. The open-air sanctuary on

41 Papalexandrou 2021; Nagel 2021.

42 Papalexandrou 2021, 51.

43 Cardete del Olmo 2005, 57.

44 De Polignac 1995, 36.

45 Natural terraces, such as at the Atsipadhes Korakias peak sanctuary (735 m asl), provided platforms for holding thousands of votives, but no structures/walls have been found to protect or enclose them (Peatfield 1992, 64). Minoan rural villas have sometimes been associated with sanctuaries at high altitudes. Examples include a monumental structure at Gaidourophas in the Ierapatra peninsula at 900 m asl, which is a half-hour walk from the peak sanctuary at Stavromenos (Papadatos – Chalikias 2019), or the even more impressive villa site at Zominthos at 1,200 m asl, far above the normal limit of 800–900 m asl for habitation. This villa is located on a route to the Idaean cave on Mt. Ida about 6.5 km away, but also close to a rock shelter and several peak sanctuaries in the vicinity (Sakellarakis – Panagiotopoulos 2006). My thanks to Rachel Dewan for discussing Minoan peak sanctuaries with me.

top of Mt. Juktas is an exception[46]. Built on two or three terraces, it has an altar, a series of five small rooms, a cyclopean temenos wall and a large MMIII building located about 50 m outside the temenos. Provision for housing people connected to the cult in the MMIII building seems likely, together with workshop and sanctuary storage areas. The temenos wall enclosing the sacred grounds no doubt acted as a protective measure for its valued assets. At an elevation of 810 m asl, however, living conditions were much more bearable in wintertime here than anywhere close to the cave on Mt. Oligyrtos at almost twice the elevation and a more northerly latitude[47]. Evidence for Minoan tripartite shrines being constructed on hillsides or hilltops is also found on two carved stone rhytons. The *agrimia* (wild goats) on the Kato Zakros rhyton suggests a high mountainous setting[48]. If these reflect actual shrines, they may have been constructed with mudbrick, as J. Shaw supposed, but exposed on the mountains, they would soon decompose and disappear from the archaeological record. In any case, such buildings, as far as they can be reconstructed from the evidence, were evidently not meant to protect valuable gifts from thievery. Survey and excavation at the Tria Goupata cave would help shed light on these and other questions.

Despite serious damage to the site and loss of contextual information from long-standing looting, small finds from the cave sanctuary at Tria Goupata provide an important record of worship at this isolated but popular sanctuary over two centuries of its existence. Both high-quality fine wares from Athens, Corinth and elsewhere, and locally-produced common wares, were brought up the mountain and left by devotees of the cult. Terracotta figurines, especially hand-made jewellery-clad females, and many types of actual jewellery offer further clues about the identity of the deity or deities being honoured. Clearly, valuable objects were left behind as votives without any apparent safeguards to protect them, yet they remained safely at the site until modern thieves discovered their existence thirty years ago.

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[46] The peak sanctuary of Petsophas, above Palaikastro in eastern Crete, is another with substantial buildings, see Peatfield 1992, 61 for references.

[47] Karetsou 2013; <http://www.minoancrete.com/juktas.htm>.

[48] Shaw 1978, 432–441 figs. 9. 10.

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Georgia Z. Alexopoulou

# TRACED *VIA* THEIR GIFTS

## CULTS IN THE ANCIENT REGION OF KALAVRYTA, AS SUGGESTED BY VOTIVE OFFERINGS*

ABSTRACT

This paper focuses on finds of the Geometric and the Archaic period from sanctuaries in the region of Kalavryta, which formed together with Pheneos and Stymphalos the nation (ἔθνος) of Azanes in Arkadia. Both excavation finds and antiquities collected in surveys are studied. Beyond their typological and chronological evaluation, the context of the votive offerings is of particular interest (temple, fortified citadel/acropolis, peak sanctuary). Their distribution or even concentration is discussed, as in the case of the spear-heads in the temple at Gremoulias (with implications for the identification of the deity worshipped there). Votive and ritual vessels (e.g. hydriae possibly representing prizes) are presented here, among them miniature vases (which are numerous at Gremoulias and at Psophis). A full evaluation of the votive offerings is possible only through a topographical approach, which offers the framework of cult and religion in the nation of Azanes.

The Province of Kalavryta, along with Pheneos and Stymphalos, initially belonged to the Azanes, one of the five nations of the Arkadian tribe (Eutrisioi, Parrhasioi, Mainalioi[1], Kynourioi and Azanes), that later became part of northwestern Arkadia during historic times[2] (fig. 1).

The location of thirteen LH sites in the area shows, according to the author, striking evidence of the Mycenaeans' diaspora throughout Achaia, including the mountainous part which, as mentioned, belonged to Arkadia during historic times[3].

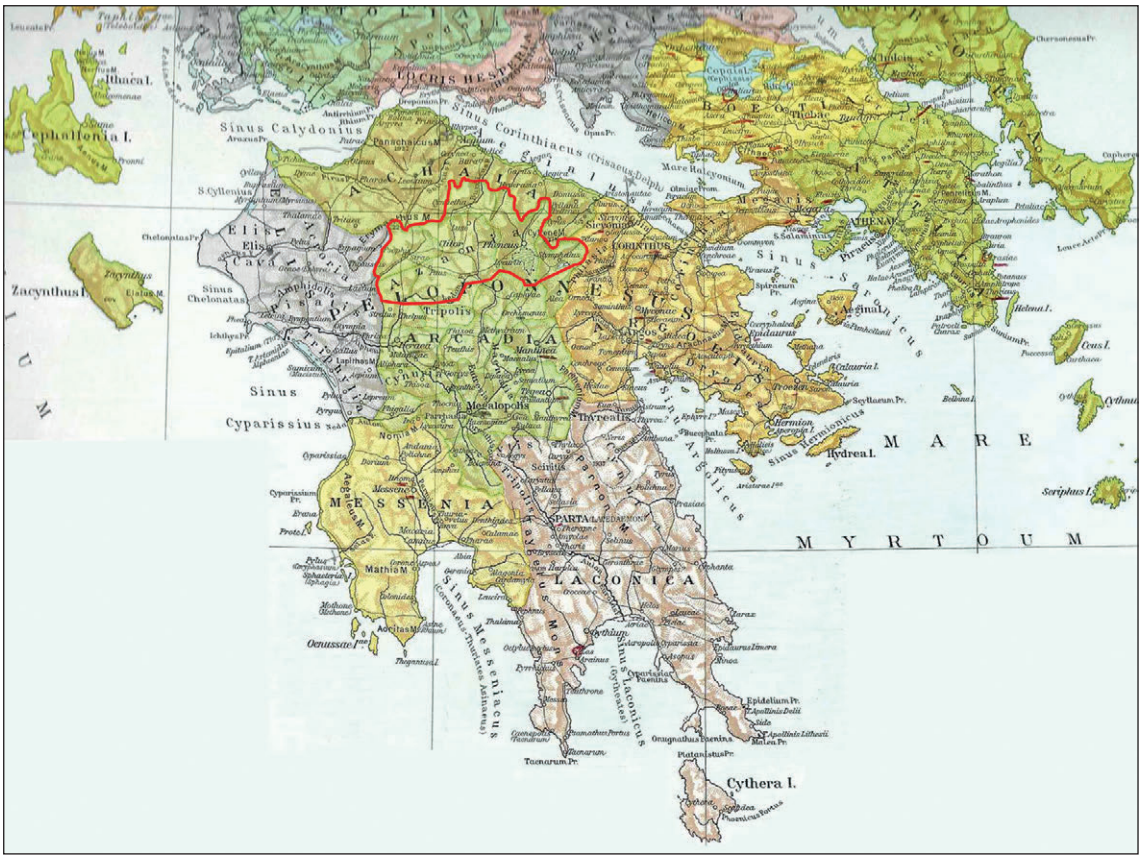
This fact suggests the existence of an adequately organized road network, which secured the communication with the coasts and brought to the mountainous population the benefits of maritime contacts. During the LHIIIC period, the area comprised an active part of western Achaia, in terms of social, administrative and financial organization, dynamically participating in the region's new development cycle. Following the downfall of the Mycenaean civilization at the end of the LHIIIC period, cultural deterioration and the debacle of administrative mechanism (system collapse) took place also in this area. This time period coincides with the period

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1 The Mainalioi inhabited the mountain range of Mainalon, while Parrhasioi occupied the massif of Lykaion. Apart from Azanes, who had settled in north-northwest Arkadia, the other four nations covered the west-southwest and western parts of Arkadia, where the powerful cities of Tegea, Mantineia and Orchomenos were located. According to Pikoulas 1990, by the 6th cent. BC Sparta had incorporated the areas of Mainalioi and Parrhasioi into their outer territory, because it was to its advantage to maintain strong urban centres in neighbouring areas. On the topic see Pikoulas 1990, 474–480; Pikoulas 2002, 280–287.

2 On the nation of Azanes see Pikoulas 1981/1982, 269–281; Jost 1985, 26; Nielsen – Roy 1998, 5–43.

3 On ancient northern Arkadia see Alexopoulou 2012, 314–320.




1 Map of the Peloponnese. The region of Azania is framed in red (from: Atlante Storico, Istituto Geografico de Agostini, Novara 1974–1977, illustr. 10)

of great migrations. Large centres shrink or even disappear completely, and small settlements emerge instead[4].

Eight locations in the area provide evidence from the Sub-Mycenaean/Protogeometric era that testify to the historical continuity[5]. However, it is certain that the usage of the graves of the Mycenaean cemetery in Vryssari[6] in the site of Agia Paraskevi, or Alonia, extended during the Sub-Mycenaean or Protogeometric period, as suggested by the iron tools[7]. The use of iron in Achaia was unknown in the Mycenaean era. Even though the area had developed contacts with Cyprus and subsequently with Anatolia during LHIIIC[8], it is striking to note the absence of any iron micro-objects (jewellery)[9]. Therefore, it is assumed that the presence of iron in the graves is attributed to the arrival of a different population in the area, one that was familiar with this metal. Moreover, it is possible that a Mycenaean chamber tomb in the Vryssari cemetery was intentionally used later in the Protogeometric period by people that evidently wished to appear as continuers

4 In the province of Kalavryta and nowhere else in the rest of Arkadia so far, no Mycenaean palace has been detected. Th. and G. Spyropoulos believe that the royal residential centre of Arkadia was probably situated in the area of Tegea, since its king, Agapenor, led the Arkadians to Troy and later to Paphos (Spyropoulos – Spyropoulos 2000, 13).

5 On the locations see Alexopoulou 2021, 392 f.

6 For the old toponym Gourzoumissa, see Pikoulas 2001, 111. 767.

7 Papazoglou-Manioudaki 1999, 269. Alexopoulou 2021, 123 f. 329. Alexopoulou – Kaskantiri 2021, 54–107.

8 Stavropoulou-Gatsi – Karageorgis 2003, 95–104.

9 Moschos 2009a, 345–414.



2 Vryssari (province of Kalavryta). Trefoil oinochoe and kantharos, Protogeometric (© Ephorate of Antiquities of Achaia)

of the ›Heroic Age‹[10]. Two particular vessels found at Vryssari date to the Protogeometric era[11]. One is a trefoil mouth oenochoe decorated with successive black lines on the neck and body, radial arrangement of triangles on the shoulder, and a wavy line on the neck base, while the other is a kantharos with carelessly applied black glaze (fig. 2).

In the western area of the existing village of Drossato, at the site of Lakkes or Potami at the western (= left) bank of the Manesaiikos torrent, which constitutes the main course of the Selinountas River, N. Zaphiropoulos had detected traces of a riverside unidentified small town[12]. During a survey in the area, apart from traces or visible construction material reused as building stones in rural warehouses, the area is rich in pottery sherds from the 8th to the 1st century BC[13]. Also, unfluted columns are found *in situ* close to the riverbank. From this area originates a bronze hipparion (small horse) that dates to the mid 8th century BC[14] (fig. 3).

The plethora of indications from this area suggests the existence of a Geometric settlement that probably occupied one of the low hills and which made use of the plain and fertile land to the side and along the river. This assumption is further supported by the fact that on the site of Prassino Chorafi or Paliachora, north of Lakkes or Potami, fragments of burial pithoi are visible, deriving from the settlement's cemetery[15]. The Selinountas River flowing next to the remains

10 Similar practices related to the usage of chamber tombs during Sub-Mycenaean or Protogeometric era are known in Aigion. See Papadopoulos 1979, 34 f. Some researchers regard the use of Mycenaean chamber tombs during Protogeometric times as an intentional act of presenting or considering oneself as a successor of the Mycenaeans and thus associated with the ›Heroic Age‹. On the topic see Crielaard 2006, 271–297 and esp. 272; Antonaccio 1994, 389–410. A similar example is found in Messenia, see Chatzi 1981/1982, 345.

11 Gadolou 2008, fig. 50; for a similar skyphos from Aigion, see Gadolou 2008, 99 fig. 48. The vessels were handed over to the Ephorate of Antiquities of Achaia (former ΣΤ΄ ΕΠΚΑ) by Mr. Tzivleris. See Alexopoulou 1998, 290 f.

12 See Alexopoulou 2021, 122 f.

13 Alexopoulou 2021, 452–455.

14 Acc. no. 3866 ΜΜΠ. The hipparion was handed over to the Ephorate of Antiquities of Achaia (former ΣΤ΄ ΕΠΚΑ) by P. D. Limperis, resident of Drossato. See Alexopoulou 2021, 125. Cf. Coldstream 1977, 150; Thomassen Flognfeldt 2009, 42, 12F.

15 Alexopoulou 2021, 118 f.





4 Vlassia (province of Kalavryta). Bronze spoon with double zig-zag line decoration on its handle, Protogeometric (© Ephorate of Antiquities of Achaia)

3 Drossato (province of Kalavryta). Small bronze horse, mid-8th century BC (© Ephorate of Antiquities of Achaia)

served as a channel of communication between mainland and coastline already from pre-historic times onwards[16].

West of Vryssari and Kalavryta, in the area of Kato Vlassia, from the site of Karamesinaiika, south of Agios Athanasios Mountain and the site of Kastritsi where ancient Leontion is located, a Protogeometric bronze spoon and a small skyphos of the 7th century BC were discovered[17]. The spoon, 0.10 m long, carries on the shank of its handle a double zigzag line decoration forming successive lozenges (fig. 4)[18]. The small skyphos is two-handled, with tall flaring rim imitating a metal vessel[19], and a fugitive glaze typical for the early 7th century BC[20].

A rather scattered habitation of new residents is more likely and the term κατά κώμας, in its political sense, where people live in scattered komai (small towns) rather than one polis, seems to describe very accurately this particular case. The broad dispersion of locations close to plains and knolls denotes that the inhabitants were mainly occupied with the cultivation of the lands around the hills. Possibly, those scattered settlements, along with their cemeteries, gathered together in Geometric times to form a group or cluster that later, during the Archaic/Classical periods, constituted the basis for the establishment of a polis.

The decrease in the number of locations during the Sub-Mycenaean period and the survival of specific settlements in Achaia, such as Voudeni[21], Chalandritsa[22]and Vryssari[23] demonstrate a possible attempt to unify scattered Mycenaean establishments into one settlement per area, in which it is assumed that efforts were made to provide strength and entity in the sense of early urban-

16 On the importance of this ancient route see Papazoglou-Manioudaki 1998, 157; Papazoglou-Manioudaki 1999, 279; Petropoulos 1997, 165–192; Gadolou 2008, 233. 323; Alexopoulou 2021, 524; Salavoura 2015, 544 f.

17 Based on a report by E. Mastrokostas (1961/1962), the spoon was found on the site of Karamesinaiika of Ano Vlassia, Kalavryta (prot. no. 625/11.9.1967). The skyphos was handed over to the Ephorate of Antiquities of Achaia by A. Lazouras, resident of Ano Vlassia, Kalavryta. Alexopoulou 2021, 176 f.

18 Acc. no. 341 ΜΜΠ. A similar decoration is found on an arched fibula from grave 41 of Kerameikos: Coldstream 1977, 58 f. fig. 14 d.

19 E.g. Langdon 1976, 68 no 301 pl. 23, 301 (difference on the handles).

20 Acc. no. 12788 ΠΜΠ. The survey that took place at the Karamesinaiika site, to the side of the western (= left) riverbank of Selinountas River, identified prehistoric sherds collected from the terraced embankments, which were poorly preserved, and no further remains could be identified. The Selinountas River constituted an important route that linked the mainland with the coastline. See Alexopoulou 2021, 524.

21 See Kolonas 1998 (unpubl. PhD thesis).

22 Kolonas – Gazis 2006, 25–30.

23 Papazoglou-Manioudaki 2020.

ization[24] through population concentration. Equivalent attempts in continental Greece were very successful, such as Lefkandi on Euboia and Athens[25]. The evidence, which so far is limited, does not allow the conclusion that such an attempt was also successful in the area under examination.

It is crucial to stress that the establishment of iron carriers in the area falls one stage short of the existing situation in the Sub-Mycenaean period, if the ›κατά κώμας theory‹ is adopted. It is therefore possible that the Protogeometric era did not last as long as the other periods, so that the Sub-Mycenaean period was extended in time. According to I. Moschos, a part of the Sub-Mycenaean period in the area overlaps the Protogeometric period[26].

Considering the fact that each settlement had its own cemetery, we can observe an increase in numbers during the Early Iron Age, though the individual settlements maintained their small scale[27]. They probably consisted of individual groups forming an autonomous community, with a plain structure and basic operating services/tasks. All settlements were established on mainland or river routes of communication, explaining the rich road network that is evident, connecting even the most isolated places[28].

In the area of Kalavryta, two sanctuaries have also been excavated. The most important one, of national significance, is that of Artemis Hemera(sia) at Panagia of Lousoi[29]. The other one is that at Gremoulias or the Monastery of Saint Theodores of Kalavryta[30]. Furthermore, based on the finds of field survey in the wide area of Kalavryta, more sanctuaries were detected, as described below. Therefore, given that ›the temple‹ exists from the Geometric period, if not earlier, according to A. Mazarakis Ainian, it served as a common place of worship of the surrounding scattered small towns that later produced the basis for the formation of city-states[31]. In that society, the practice and place of worship occupy a significant part of its interests, thus demonstrating that the polis is the outcome of the establishment of common worshipping and coherence[32].

Pausanias, the 2nd century AD traveller, provides plenty of information regarding the sanctuaries of Arkadia, many of which were destroyed even in his time; in addition, he also describes in detail temples connected to settlements and others located at the side of roads.

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24 Moschos 2009a, 345–414; Moschos 2009b, 253 f.

25 On Lefkandi: Popham – Sackett – Themelis 1979/1980. On Protogeometric Athens and detailed bibliography, see Whitley 1991.

26 A similar case is that of the fertile area of Stamna in Aitolia. See Moschos 2009b, 238. 256–260; Christakopoulou 2018.

27 In the area of Kalavryta, many Geometric sites have been detected, three of which are related to settlements. These are: the site of Lakkes or Potami in Drossato, the site of the cemetery of the village of Flamboura, and the site of Paliopigado (inside the village) of Kato Tripotama. See Alexopoulou 2021, 395.

28 According to the present author, all ancient routes (opened pathways) were in use since the Mycenaean period and later constituted the main road axes of this mountainous area over time, some being still in use as paths. See Alexopoulou 2021, 513–546.

29 The historian and philologist G. Papandreou, from Kalavryta, spotted the sanctuary on the Panagia Hill, which was excavated in 1899 by W. Reichel and A. Wilhelm, authorized by the Greek Government (Reichel – Wilhelm 1901, 1–88). Later, in 1981, under the direction of V. Mitsopoulos-Leon, excavations were resumed, including additional digging of the temple foundation, while G. Ladstätter produced an updated architectural layout. On the topic, see Mitsopoulos-Leon 2001, 131–142; Mitsopoulos-Leon – Ladstätter 2006, 53–60; Mitsopoulos-Leon 2012; Ladstätter 2001, 143–153. Since 2005 excavation research has continued in the lower town of Lousoi, under G. Ladstätter's direction, where important public buildings have been discovered.

30 Ladstätter 2006, 362 f.; Alexopoulou 2005, 367 f.; Alexopoulou 2006, 451 f.; Alexopoulou 2007, 516–518; Alexopoulou 2009, 454 f.; Alexopoulou 2010, 913 f.; Alexopoulou 2011, 421 f.; Alexopoulou (forthcoming).

31 Mazarakis Ainian 2000, 197 f.

32 De Polignac 2000, 113–115.




5 Synthesis of maps of the province of Kalavryta on which the cities and the sanctuaries with visible remains have been located: 1. Styx, 2. Temple of Gremoulias, 3. Brissovo, 4. Sanctuary of Athena Koria, 5. Sanctuary of Dioscuri, 6. Chelonospilia, 7. Sanctuary of Asclepius, 8. Sanctuary of Aphrodite Erykine, 9. Sanctuary on the Aphrodisian Mountains, 10. Sanctuary of Erymanthos, 11. Sanctuary of Acropolis (Athena [?]), 12. Aloni of Xenochristos, Kamenianoi, 13. Drovolovo Cave, 14. Kertezi ›Sanctuary on the Borders‹, 15. Paos, architectural members (after © Hellenic Military Geographical Service)

## 1 SANCTUARIES IN THE PROVINCE OF KALAVRYTA

### 1.1 Nonakris

Nonakris, according to Herodotus (6, 74), was the sacred city of the Arkadians, close to the rock of Styx (Στύξ), with the so-called down-flowing waters (κατειβόμενον ὕδωρ)[33]. Within the cities of Arkadia, worshipping Hermes and Styx was an old custom. In the pre-Mycenaean period, people in Arkadia were bound to Neolithic belief systems and only towards the end of the LH period (Mycenaean) religious life began to take shape. Thus, as mentioned by E. Salavoura, »one can detect Creto-Mycenaean elements surviving in temples, as well as in early cults«[34].

### 1.2 Hermes on Mount Kyllene

In reference to the sacred *polisma*[35] of the Arkadians, Pausanias (8, 17, 6) mentions the local cult of Hermes, who, according to mythology, was a local deity of Arkadia[36]. By the end of 7th to early 6th century BC, the Homeric »Hymn to Hermes« points to the deity's birth by Maia on the Arkadian Mount of Kyllene[37]. The 2nd century AD traveller mentions that the temples of Hermes are rare and amount to only four, three of which are situated in Arkadia. He even provides us the information that he saw one of Kyllenian Hermes' temples, abandoned and in ruins, and its eight-foot tall xoanon was made of juniper wood[38].

Hermes is also the patron god of shepherds, closely associated with Pan[39]. W. Burkert notes that Hermes developed his skills within the forests of Kyllene and among the Nymphs, and the multiplication of caprine animals depended on his power. Secrecy and sheep rustling is his domain[40].

### 1.3 Styx

The »water of Styx«, as noted by Pausanias (8, 17, 6), functioned as an assurance for the keeping of the sworn oaths between immortals and mortals[41]. To the south of Agios Athanasios hill rises the waterfall of Styx. The rock where the »miraculous« water originates is not part of the Aroania peak, but belongs to a lower summit called Neraidorachi (fig. 5, 1). The water flows out from a wide opening in the rock and then breaks into droplets[42]. Downwards, Styx meets the River Crathi. Homer calls it »the down-flowing water of Styx« and any oath sworn upon its waters was inviolable[43], stronger than any other, and even binding for the deities themselves. Hesiod informs us that, »when gods need to take an oath, they send Iris to bring, in a gold vessel, water from the Styx«[44]. Strabo names the Styx water ὀλέθριον (= fatal), whilst Pausanias mentions that it causes great suffering to man, as opposed to the water from the Alyssos spring in Kynaitha, which is blessed and counterbalances the evil of Styx[45]. A tradition that Plutarch preserved says that the

33 Pikoulas 1988, 191–198 and esp. 197. Meyer 1936, 860. At Agios Athanasios hill of Kloukinochoria, on the road to Solo village, Y. A. Pikoulas spotted the remains of the ancient polisma. See Pikoulas 1986, 313–318.
34 Salavoura 2015, 310 f.
35 The term polisma refers to a very small city and in cases to all of its buildings.
36 Jost 1985, 36. 439. 441.
37 Burkert 2015, 333; Salavoura 2015, 311–313.
38 See Paus. 8, 17, 2; 8, 30, 6; 8, 47, 4.
39 Salavoura 2015, 313.
40 Burkert 2015, 333–335.
41 Papachatzis 1980, 242 f.; Alexopoulou 2012, 314–320.
42 The waterfall extends to a great height because the cliff is very steep at that point. When the rays of the sun reflect upon the falling water, the waterfall takes up the colours of Iris (rainbow).
43 Hom. Il. 15, 36–37; Od. 5, 185.
44 Hes. theog. 719–806.
45 Strab. 8, 8, 4; Paus. 8, 19, 3.

only thing that could not be destroyed or corroded in the waters of Styx was the donkey's hoof[46]. Thereupon A. B. Cook supported the »notion of the donkey-head demons with the Styx water«, corresponding to the Underworld[47]. Those daemonic creatures, depictions of which we find on seals[48], are chthonic and have the privilege of safeguarding the water of the Underworld[49].

## 1.4 Kynaitha

### 1.4.1 Temple at Gremoulias, Kalavryta

In 2001, a fragment of a Doric stone geison with mutule and guttae was discovered which on one side preserved a joint made of molten lead poured in the carved grooves. Moreover, it was possible to detect stone blocks along a gap which evidently belonged to a large-scale building. This particular location is surrounded by fir forest and, to the south of the gap on the sloping ground, more stone blocks with worked surfaces were found. The temple is situated on a high plateau projecting significantly from the surrounding area. The temple itself is not recorded in ancient sources, nor is it known in contemporary research[50].

The temple occupies the plateau naturally formed between Great Gremoulias to the east and Small Gremoulias to the west, to the southeast of the Castle of Oria (fig. 5, 2). The gap is at an elevation of 1,370 m. The temple is a Doric peripteros with an east-west orientation, measuring 34.75 × 13.90 m[51] in dimensions. The temple is constructed upon pre-existing foundations dating to the Late Archaic period. Its sekos-cella is narrow, with emphasized longitudinal axis and no inner colonnade. It resembles the Temple of Arkadian Alipheira, which is 3.50 m wide, as well as the temple excavated by E.-I. Kollia at the site of Profitis Ilias of ancient Keryneia in Aigialeia (fig. 6).

On the eastern part of the south wall of the cella, in the foundations of the later temple, an Archaic bracelet[52] and a Late Geometric small tripod[53] were found intentionally placed as foundation deposits. The presence of earlier or partially damaged offerings in later sanctuaries demonstrates an interesting practice observed in other cases too, such as Delos, as well as at the small temple excavated by G. Ladstätter in Lousoi. According to P. Tsatsopoulou, the ritual of depositing such

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46 Plut. Alexander, 77: … φαρμακείας δ' ὑποψίαν παραυτίκα μὲν οὐδεὶς ἔσχεν, … οἱ δ' Ἀριστοτέλην φάσκοντες Ἀντιπάτρῳ σύμβουλον γεγενῆσθαι τῆς πράξεως καὶ ὅλως δι' ἐκείνου κομισθῆναι τὸ φὰρμακον Ἀγνοθεμίν τινα διηγεῖσθαι λέγουσιν ὡς Ἀντιγόνου τοῦ βασιλέως ἀκούσαντα· τὸ δὲ φάρμακον ὕδωρ εἶναι ψυχρὸν καὶ παγετῶδες, ἀπὸ πέτρας τινος ἐν Νωνάκριδι·εἰς ὄνον χηλὴν ἀποτίθενται· τῶν γὰρ ἄλλων οὐδὲν ἀγγείων στέγειν.

47 Cook 1894, 100–102.

48 Cook 1894, 100–102. 105; Salavoura 2015, 314 f.

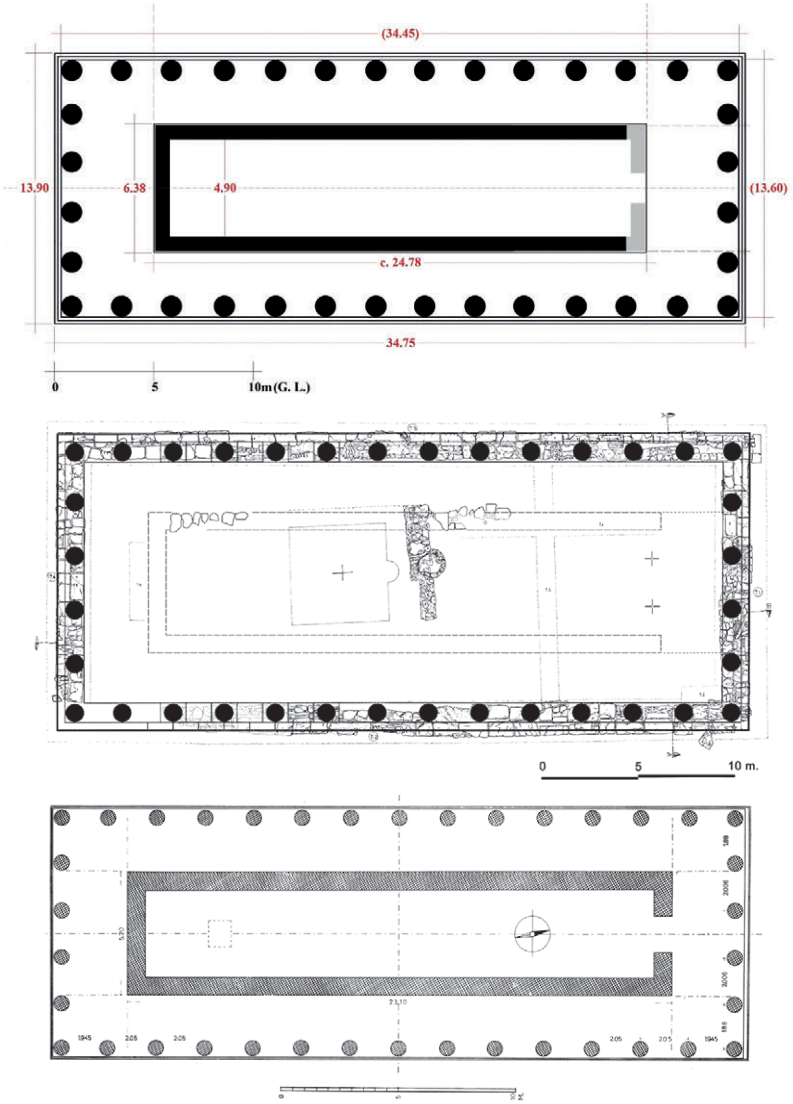
49 The surveys that took place in Nonakris did not produce evidence of any sanctuary previously existing there. The statuette witnessed by W. M. Leake in the hands of a villager is the only element that suggests the presence of a sanctuary (Leake 1968, III, 169). Nikolaos Drekis, inhabitant of the village of Peristera, very close to Messorougi and Agios Athanassios hill, reported that at the site of Alonakia, which belongs to the territorial region of Peristera, »his grandparents remembered that people would find during tillage plenty of terracotta birds and coins with pigeons on them«. The »terracotta birds« were probably bird-shaped figurines and the coins could refer to Sikyon numismatic issues, both types of objects being common votive offerings.

50 The archaeological research of the area started in 2005 on the initiative of the Ephorate of Antiquities of Achaia and in collaboration with the Austrian Archaeological Institute by G. Alexopoulou and G. Ladstätter. The excavation was declared systematic by the Ministry of Culture. This new project was the extension of an excellent on-going collaboration for the research executed by the Austrian Archaeological Institute in the area of Kato Lousoi, at the Temple of Artemis Hemerasia and the lower part of Lousoi, for many years now. Mere reference to the site is noted by A. Wilhelm and W. Reichel: »to the W-SW of the village Vrachnion there are ruins that belong to the Monastery of Saints Theodores« (see. Wilhelm – Reichel 1901, 2 n. 3). The site was also spotted in 1987 by Prof. Y. A. Pikoulas, as indicated in his personal diary (Diary no. VII 41β, 26.6.1987), who also refers to it as Monastery of Saints Theodores.

51 On ancient temple orientations, see Kaloudis 2015, 135–137.

52 Cf. Ignatiadou 2012, 388–411, esp. no. 15; 404. See also Despini et al. 1985, cat. 310. Note that this refers to silver bracelets.

53 A similar tripod has been found inside a Protoattic kantharos, cf. Burr 1933, 542–640, esp. 621 no. 329 fig. 87 (tripod); 589 no. 201 (kantharos).




6 Gremoulias (province of Kalavryta). Ground plans of the temples of Gremoulias near Kalavryta, of Keryneia in Aigialea and of Alipheira in Arkadia (OeAW-OeAI/G. Ladstätter; Kanellopoulos – Kollia 2011, fig. 10; Orlandos 1968, fig. 63)

objects in the foundations of new buildings contributed to and secured their stability and sustainability, thus »establishing the temple as sacred and legitimate«[54]. Architectural members connected with the first phase – the Archaic – of the temple were spotted to the east of the temple, where the altar was situated. These consisted of two capitals (fig. 7), fluted sections of columns and a fragment of a Doric sima found in the temple's cella bearing engraved decoration and red paint, all employed in secondary use as construction material of the monumental altar.

The pottery found during the excavation is completely fragmentary[55] with only a few datable sherds[56]. The Archaic era is represented by miniature vessels imitating those of drinking sets, including small oenochoae, small cups and small kraters, preserving traces of fugitive dark glaze both inside and out, and dating to the late 6th/early 5th century BC. These vessels contribute to the

54 Tsatsopoulou 2015, 164 f.

55 The archaeological layers were found disturbed. Even horseshoes were collected, a fact that testifies to the continuous cultivation of the land, as confirmed by locals.

56 The fragments of the 5th and 4th cent. BC constitute the majority of collected sherds, and belong to parts and handles of skyphoi with black glaze, as well as other types of vessels, with the drinking ones outnumbering the others.



7 Gremoulias (province of Kalavryta). Two Archaic capitals, first construction phase of the temple (© Ephorate of Antiquities of Achaia)

dating of the first phase of the temple. Other interesting finds include a female head with a low polos of the late 6th/early 5th century BC[57], a small krater dating to 620–590 BC[58], with traces of dark glaze on both sides between neck and body, two light grooves and a flat base, a sherd with raised decoration consisting of a rectangular hatched frame with two enclosed prominences[59], two phialae mesomphalos (libation bowls) made of thin metal sheets[60], a fragment of a small arybal-los of the 6th century BC (fig. 8)[61], and a fragment of an open vessel decorated with parallel and crossed lines dating to the early 7th century BC[62].

Excavation work at the temple also revealed four bronze fragments with raised *repoussé* deco-ration, from an Argolid workshop (fig. 9), which probably comprised part of a shield's sheathing. A fragment with very similar decoration dating to ca. 575–550 BC was found at ancient Oesyme[63]. Such shield elements could be interpreted as a personal votive, possibly of a veteran hoplite (war-rior). Another precious find from the Gremoulias temple is a part of a beaten bronze lebes, with partially preserved rim dating to the Early Archaic period. At this point, the metal sheet is folded and turned outside in order to shape a thin lip with narrow flat face[64].

57 Cf. Stillwell 1952, 88 f. nos. 1. 2 pl. 15 (X, 1–X, 2): standing Kore, late 6th–early 5th cent. BC; Mollard-Besques 1954, 25 (dated to 500–490 BC); Maniaki (forthcoming).

58 Cf. Boardman – Hayes 1973, 70 pls. 28. 36 fig. 2311.

59 Cf. Stillwell 1952, 280 f. pls. 58. 59.

60 Similar examples are found in the Sanctuary of Aphrodite Erykine, at the Agios Petros site in Kontovazaina, see Kardara 1988, tab. 116. Also, see Ignatiadou 2012, 406.

61 Payne 1962, 291 pl. 118 no. 2812.

62 Cf. Biers 1971, pl. 85, 7A.

63 Chalazonitis et al. 2018, 199–219. The same shield decoration is found at Paestum in Magna Graecia, in the Temple of Athena. See Longo 2018, 25–42; Longo – D'Antonio 2017, 755–765.

64 A similar example dating to the Early Archaic period was found at Mavriki of Aigialeia: see Gadolou 2008, 203 fig. 152.



8 Gremoulias (province of Kalavryta). Small aryballos, incomplete, 6th century BC (© Ephorate of Antiquities of Achaia)



9 Gremoulias (province of Kalavryta). Bronze fragments with *repoussé* relief decoration, Archaic (© Ephorate of Antiquities of Achaia)



10 Gremoulias (province of Kalavryta). Fragments of painted pottery, Geometric (© Ephorate of Antiquities of Achaia)

These votive offerings are possibly associated with the deity's character and with offerers' requests or occupation. The iron spearheads from the Gremoulias temple belong to the types D1, J, J2, M, M1, P, R as defined at the Molossian town of Vitsa, and cover a wide chronological spectrum from 850/800–750/725, 800/775–500/450, 775/750–700/650, 775/750–350/300 BC[65]. Spearheads were used by shepherds and hunters in order to fight single targets. The small iron spearheads and a bronze one found in the altar, made of a thin metal sheet, are comparable with similar ones found in the Sanctuary of Apollo Epikurios at Bassae[66] in Phigaleia and the Temple of Apollo Maleatas in Kynouria[67].

The few collected and dated sherds belong to votive vessels, including a fragment of a Corinthian lid[68], the upper part of an oenochoe with parallel triple-line groups between which double antennae develop, dating to the 8th century BC[69], a Late Geometric lip fragment of an open-vessel decorated with a continuous spiral on the metope and inscribed (graffito)[70], a part of a Protogeometric strip handle decorated with horizontal lines[71], a body fragment, probably of a Geometric kantharos, decorated with thick dark lines[72] (fig. 10) and part of a flaring rim from a skyphos, dark-glazed on the transition towards the shoulder, where black dots are visible[73].

Other finds which are older than the Archaic period are a ring with flat inner surface and wide convex outer surface slightly divided by a shallow rib, dating to the 9th century BC[74], a zoomorphic figurine of the 8th–7th century BC and a knife of the 7th century BC with one cutting edge.

Based on the limited number of finds coming from the excavations of the Gremoulias sanctuary in Kalavryta, a major question arises concerning the initial form of the temple. It is possible that no building existed. If an early temple did exist there, then it would probably have been plain and modest in construction, safeguarding the votive offerings of the venerated deity. In the absence of a building, it is possible that an altar was constructed, being a fundamental element of the cult.

### 1.4.2 Sanctuary of Dionysos

Pausanias (8, 19, 1) informs us that at Kynaitha, there was a Sanctuary of Dionysos in addition to the gods' altars and the statue of Hadrian. It was one of the most memorable and oldest sanctuaries of the area. In the middle of winter, particular festivities took place during which men of the settlement rubbed their bodies with oil, captured a bull from the cattle flock – one indicated by Dionysos –, carried the animal on their shoulders and brought it to the altar[75].

Being the god of vine and wine, Dionysos' cult was strongly associated with those elements[76] and his worshipping is evident in Azania, yet is, however, more restricted within the rest of Arkadia[77].

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65 Vokotopoulou 1986, A, 300–305.
66 Kourouniotis 1910, 318 f.
67 Faklaris 1990, 179.
68 Cf. Boardman – Hayes 1966, pl. 15 no. 219.
69 Cf. Burr 1933, 562 nos. 66–72 figs. 21. 22; Coldstream 1968, pl. 16, b. c.
70 Cf. Coldstream 1977, 168 fig. 54 d.
71 Cf. Palaiokrassa-Kopitsa – Vivliodetis 2015, 156. 168 no. 7.
72 Cf. Gadolou 2008, figs. 102. 109. 110. 140.
73 Cf. Weinberg 1943, pl. 36 no. 282.
74 Cf. Vokotopoulou 1986, A, grave 159 pl. 321 ε.
75 Paus. 8, 19, 2.
76 Pikoulas 1995, 269–288.
77 Jost 1985, 427 f. In relation to Dionysos cult in the region of Kalavryta, there are two sources of information: Pausanias and a numismatic issue of Caracalla. On the obverse of this coin is the depiction of the city's agora, fountain, buildings and Hadrian's statue (see Head 1911, 447). Despite S. Parnicki-Pudelko's efforts to interpret the reverse's context, it proved impossible to identify either the Temple of Dionysos or any of the other buildings. See Parnicki-Pudelko 1952/1953, 76–82.

### 1.4.3 The site of Brissovo/Primissi/Agios Ioannis Theologos

At this location and on the small plateau of the hill that rises on the western (= left) bank of the Kerassies stream, south-southwest of the Oria Castle, which constitutes an eastern foothill of the Velia mountain separated by a small gap, architectural members have been detected. These are sections of unfluted columns, a Doric capital and a base with plinth. Y. A. Pikoulas argues that these members were transferred to this place[78]. It is certain that this task would have been particularly challenging, due to the rugged mountainous terrain. The small plateau of the hill is nowadays partially occupied by the small church of Agios Ioannis Theologos, in the entrance of which a large ancient threshold with intact hinges is installed (fig. 5, 3). In case these finds were not transferred, one could accept the possibility of a modest sanctuary at exactly the same spot, which, due to the restricted space, would have been a simple *templum in antis*[79].

### 1.4.4 Zeus

In Kynaitha we also find the local cult of Zeus with the epithet Ζευς Κυναιθεύς (»Kynaithean Zeus«)[80]. Pausanias informs us that the Kynaitheans dedicated a larger than life-size statue of the god at Olympia (Paus. 5, 24, 9), where Zeus was depicted holding thunderbolts in both hands, causing awe in humans, and especially athletes, in order to prevent them from committing any sporting offences. Two thunderbolts were also the symbol of Ὅρκιος Ζευς (»Zeus Horkios«) who was keeper of oaths and functioned as an inhibitor against cheating during games. The similarity between the two statues lies in the element of two thunderbolts. Surely, the commissioning by the Kynaitheans is later than Zeus Horkios, a fact explained by the shifting of customs and traditions within their community[81]. Indeed, the historian Polybius (4, 17, 11–12) says that the Kynaitheans soon disrupted their tribal bonds with the other Arkadians due to their particularly violent and outlawish behaviour, resulting in their becoming notorious and widely detested, while also neglecting education and music. He continues to note that once the Arkadian cities refused representatives from Kynaitha to enter their borders, with the exception of Mantineia, which, following the ambassadors' departure, proceeded in ›catharsis‹[82].

## 1.5 Kleitor[83]

Kleitor was an important town of Arkadia, well established since Archaic times, for its ethnonym is already in use by the 6th century BC. Since prehistoric times, the Kleitoreans acquired the reputation of being libertarians, placing the king of Sparta, Soos, Lycurgus's ancestor, in a predicament, obliging him to eventual capitulation[84]. At the end of the Peloponnesian War, even

78 Pikoulas 1980/1981, 344–346.

79 Based on a report (05.01.1926) in the archives of the Ephorate of Antiquities by schoolteacher P. Pavlopoulos, curator of antiquities, the young shepherd K. Chronopoulos found fragments of ancient sculpture or statues and another shepherd, G. Douvos, found one fragment of an ancient statue. On the topic, see Alexopoulou 2009a, A1, 156–158. Also, in Pikoulas' personal diary (no. VIII, p. 45, 26.06.1987) on field survey of the area carried out in 1987, there is reference to somebody called Genovezos (i.e. from Genoa) who testifies finding on Maminades height »a small bronze piece that looked like finger«, possibly belonging to the above palm.

80 Paus. 8, 24, 19, 1.

81 Korres 1972, 232 f.

82 Pol. 4, 21, 8–9: καθ' οὓς γὰρ καιροὺς τὴν μεγάλην σφαγὴν ποιήσαντες Κυναιθεῖς ἐπρέσβευσαν πρὸς Λακεδαιμονίους, εἰς ἃς πόλεις ποτὲ Ἀρκαδικὰς εἰσῆλθον κατὰ τὴν ὁδόν, οἱ μὲν ἄλλοι παραχρῆμα πάντες αὐτοὺς ἐξεκήρυξαν, Μαντινεῖς δὲ μετὰ τὴν ἀπαλλαγὴν αὐτῶν καὶ καθαρμὸν ἐποιήσαντο καὶ σφάγια περιήνεγκαν τῆς τε πόλεως κύκλῳ καὶ τῆς χώρας πάσης.

83 On the sanctuaries of Lousoi, see G. Ladstätter in the present publication.

84 Lambrou 1994, 54 f.

though Sparta pursued a stiff policy posting oligarchs to all the cities under Kleitor maintained its political independence[85].

### 1.5.1 Sanctuary of Athena Koria

Pausanias (8, 21, 4) records that the Kleitoreans possessed a Temple of Athena Koria, at a distance of 30 stadia from the city, with undefined topographic indications (fig. 5, 4). W. M. Leake notes that, if this given distance is accurate, then the temple is presumably placed on Agios Athanasios hill in Skotani, or on Mount Tzipati, north of Kleitor[86]. E. Curtius and C. Bursian argue that the temple was located on Mount Profitis Ilias, called Koryfi or Koryfassion, on the eastern (= left) bank of the Karnesios or Zougra stream[87]. Y. A. Pikoulas was the first to carry out field survey in the area and identified the ἱερόν καθίδρυμα (»sacred foundation«), ascertaining that Agios Athanasios hill belonged to the regional defence system of Kleitor[88]. During survey, part of a decorated sima dating to the 6th century BC was discovered and handed over to the Ephorate of Antiquities[89].

Agios Athanasios hill substituted sufficiently for an acropolis, and as commented by Y. A. Pikoulas, functioned as a fortress. Furthermore, combined with the site of Voros to the west of the mountain and the tower of Planitero, it secured the defence system of Kleitor. Furthermore, it was common practice to establish defence in accordance with the deity's attribute[90].

Cicero says that Athena was born from Zeus and Okeanid Koryphi, daughter of Okeanos, named Koria by the Arkadians, supposed inventor of the chariot[91]. The Κοριάσια ἐν Κλείτορι agones (series of contests) were held in honour of the goddess[92]. M. Jost argues that the deity's attributes express particularly martial properties that match those of a state such as Kleitor[93]. Cicero's reference is in accord with the myth based on which Kleitor first organised funeral festivities in honour of his father Azan, including a horse race, among others. This myth is also described by Pausanias in his book on Elis (5, 1, 8), saying that Aitolos ran over and killed with his chariot Apis, the son of Jason, from Pallantion in Arkadia, at the games held in honour of Azan. Pausanias further explains that Aitolos' unintentional homicide was the reason he had to flee from Peloponnesos to Acheloos, giving to the dwellers and the area itself his name[94].

The 2002 field survey produced new evidence. On the upper plateau of Agios Athanasios mountain and its northern part, a building foundation and the archaeological site of Kleitor are visible, as well as Byzantine remains, while a retaining wall was discovered on the lower plateau. A small contemporary church of Agios Athanasios contains some elements of ancient construction.

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85 Lambrou 1994, 67–69.

86 Leake 1830, 107. 260.

87 Curtius 1851/1852, I, 377; Bursian 1868–1872, II, 264.

88 Pikoulas 1999, 137–154, esp. 152 pls. 24–53.

89 The part of the sima bears similarities with the fragment from Lousoi (Reichel – Wilhelm 1901, 62 fig. 132). G. Terzis believes that it belongs to the ›archaizing‹ type, because it combines Late Archaic elements and is chronologically connected to the Megarian Treasury of Olympia, around 500 BC. However, the sima volutes from Agios Athanasios have a stylistic element first observed on Corinthian/Megarian simae dating around 520 BC. On the topic see Terzis 2001/2002, 121–128.

90 Pikoulas 1999, 137–154, esp. 152. Pikoulas 2002, 416–434.

91 Cic. nat. deor. 3, 23, 59.

92 Pikoulas1999, 137–154 and esp. 149–151. Jost 1985, 41 f. 388. Pikoulas 2002, 416–434.

93 Pikoulas 1999, 137–154, esp. 152; Jost 1985, 388–390, without taking position of the temple's siting.

94 The 4th cent. BC numismatic issues of the city are construed as a clear reference to the myth. The obverse bears a depiction of Athena and the reverse a horse with column and lebes, dating to 360–350 BC. Also, on the reverse of a bronze Roman mintage of Septimius Severus is depicted a tetrastyle (four column) temple, in the centre of which there is a statue of Athena Koria (?) [uncertain], all situated on a mountain. See Walker 2006, 344 no. 1443.2.

On the eastern side of the upper plateau, a Doric capital was observed, covered in dense vegetation. Two sherds and a figurine were also collected from the area. One sherd is part of a conic base possibly from a krater, with successive strips running around its outer surface, dating to the Geometric period,[95] and the other is a cup base with dark horizontal lines, dating to the late 8th to early 7th century BC[96]. The poorly preserved terracotta figurine is of a female wearing a cloak, with her right hand resting over her breast[97], possibly dating to the late 6th century BC[98].

### 1.5.2 Sanctuary of Demeter

Pausanias (8, 21, 3) classifies the Sanctuary of Demeter amongst the most celebrated ones of the Kleitoreans, along with that of Asklepios. W. M. Leake places the sanctuary at the site of Damari, in the northwestern part of the city[99], whereas G. Papandreou locates it to the north-northeast of the theatre, on the site of Palati or Katarrachi and the site of Rigaiko Chorafi[100]. In the »Kalavryta« newspaper of 27.12.1929 it is noted that »at Damari were revealed a building, figurines and coins« and among other finds »an inscription referring to the Sanctuary of Demeter«. At a short distance from the above site one notices large stone plinths, column sections and other construction material, probably transferred there to function as a ›property line‹.

In my opinion, the Sanctuary of Demeter could equally have been placed outside the walls at a short distance from the city to the north, above the provincial road to Priolithos and Kalavryta, at the site of Lygouriotissa, to the west of the Rellos residency. M. Petritaki does not exclude the possibility of identifying the Sanctuary of Eileithyia at this spot[101].

### 1.5.3 Sanctuary of the Dioskouroi, or the Great Gods

Pausanias (8, 21, 4) makes reference to the Sanctuary of the Dioskouroi saying that it is located at a distance of four stadia outside the city walls. According to M. Jost their cult is confirmed by a 5th century BC inscription incised on a spear in the British Museum, dedicated to the Tyndaridae that, in her opinion, could originate from Kleitor[102]. I suspect that the most probable location for the Sanctuary of the Dioskouroi is the site of Gynaikeio Chani, or Xidia, as it meets the traveller's report of four stadia (fig. 5, 5). Also, in the courtyard of the Kassianos residence architectural members and scattered terracotta sherds are visible, as well as infinite flowing spring water[103].

### 1.5.4 Artemis Koria

Kallimachos, in his »Hymn to Artemis«, associates the epithet Koria with the goddess Artemis, and even informs that Proitos, King of Argos, had established two shrines, one of which was in Lousoi[104]. Therefore, the existence of the Temple of Artemis Koria should not surprise us because, as Potnia Theron (mistress of animals), she is inextricably linked to the summits of Azanian mountains. Apart from Kallimachos, no other testimony on the cult of Artemis in Kleitor is found.

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95 Cf. Brann 1970, 32 pl. 2 no. 20; 42 pl. 5 nos. 92. 93; Blegen – Palmer – Young 1964, 25 pl. 7 no. 17, 3.

96 Cf. Brann 1970, 54 pl. 10 no. 192.

97 Stillwell 1952, 93, no. 25, Class X, pl. 16, 25. Also cf. Preka-Alexandri 2010, 400–407 and esp. 402 no. f.

98 In June 2018, during field survey on Agios Athanasios hill, along with G. Ladstätter, O. Hülden and W. Kennedy, we discovered the small temple collapsed and thus we were able to collect a fragment of a painted sima of the Archaic period, undoubtedly part of the temple's decorative brickwork.

99 Leake 1830, 259.

100 Papandreou n. d., 40.

101 Petritaki 2005, 255–270.

102 Jost 1985, 41. 520 f.

103 On the obverse of an assarion of Kleitor, of Plautilla's time, the Dioskouroi in standing pose are depicted on both sides of a conic altar. See Walker 2006, 345 no. 1445.2.

104 Kall. h. Artemis, 233–236. Cf. Jost 1985, 42 f. 393–397.

It is unlikely that the other temple mentioned by Kallimachos was situated at Kleitor. North of the city, in Philomati or Ampelia, M. Petritaki excavated a potters' kiln[105] and found a terracotta mould depicting Aktaion surrounded by dogs, indicating the cult of Artemis. After studying the mould, it was concluded that the cult of Eileithyia mentioned by Pausanias probably »conceals the cult of Artemis Eileithyia, or Locheia«[106]. Due to lack of further evidence, the exact location of the temple is as yet unknown.

### 1.5.5 Sanctuary of Eileithyia

Bursian places the temple in the area now occupied by the small church of Fragkoklissi. However, M. Petritaki's field survey on the spot revealed an early Christian basilica. According to E. Curtius, the temple was on the left bank of the Kleitor River. Pausanias (8, 21, 3) ranks the temple third in importance in the region. Homer depicts the goddess either alone or multiplied, as Eileithyiai, daughters of Hera[107]. It is unfortunate that the temple has not yet been detected, and it should probably be searched for beyond the ward, since the deity was venerated far from the city borders.

### 1.5.6 Chelonospilia

The site of Chelonospilia is located in the χώρα (territory) of Kleitor, on the northern side of the road axis Kleitor-Pheneos, preceding the springs of Ladon River (fig. 5, 6). It is a mound that allows visibility towards αὐλών[108] (a narrow gorge) in the west, through which the above–mentioned passage to and from Kleitor crosses. The mound was excavated in 1970 during lightning-rod installation works. The excavation brought to light a standing female figurine, with missing head, her right hand holding a votive fruit/nut over her breast and her left hand gently holding her himation, dating to the 5th century BC[109]. In my view, this evidence points to the existence of a public building erected alongside the ancient route connecting Pheneos and Kleitor[110].

### 1.5.7 Sanctuary of Asklepios

E. Curtius places the Temple of Asklepios near the Karnesi stream flowing down from Ano Kleitoria, while G. Papandreou points to the summit of Agios Panteleimon hill that is elevated to the west of the city, beyond the walls. The latter supposition is less convincing, considering that the summit has not presented any archaeological remains or sherds. In my opinion, the temple is located to the west of the city, near the Kiafa spring[111] (fig. 5, 7).

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105 Petritaki 1992, 144–146.

106 Petritaki 2005, 255–270.

107 Hom. Il. 11, 270–271.

108 Paus. 8, 21, 1.

109 Pisani 2006, 331 no. 91 pl. 30 f. It should be noted that excavation works took place without the permission or the supervision of the Archaeological Ephorate and, when the keeper of antiquities handed over the figurine to the Ephorate, he also handed in prehistoric sherds including parts of pithoi with rope decoration. I suspect that, during the plateau configuration, plenty of archaeological data was lost.

110 Alexopoulou 2009a, A2, 493.

111 Alexopoulou 2009a, A2, 490 f. In the village of Ano Kleitoria an inscription was discovered dating to the 1st–2nd cent. AD, which refers to the occupation of the deceased as chief physician (ἀρχιατρός) [IG V 2, 385]. See Alexopoulou 2009a, A1, 352 no. 9.

### 1.5.8 Cults testified by numismatic evidence

It can be noted that, based on the numismatic issues of Kleitor, the deity Sun (Ἥλιος) was widely worshipped, represented on triobols and coppers[112]. Based on two other issues of Kleitor, Tyche was also worshipped in the area. On the reverse of an assarion of Septimius Severus, Tyche is depicted sacrificing, and on a coin from the time of Caracalla, Tyche is represented as Fortuna, holding a phiale and the cornucopia[113].

## 1.6 Psophis

Another important city of the nation of Azanians is Psophis: … ἔστιν μὲν ὁμολογούμενον καὶ παλαιόν Ἀρκάδων κτίσμα τῆς Ἀζανίδος …[114]. The city is situated on the confluence of three rivers and its beauty is praised by Polybius[115]. Its original name was Erymanthos deriving from the word ἔρυμα (»natural acropolis«) and the affix -νθος. It was afterwards called Phegia, not only deriving from the name of the mythical King Phegeus, but also from the oaks (Gr. phegoi) growing in the area. According to another version, the city was named after Psophis, daughter of the king of the city of Eryx in Sicily and with whom Herakles fell in love, impregnated and took with him to the city called Phegia until that time[116].

According to the myth, the connection with Sicily, like the epithet of Aphrodite Erykine after the king of Eryx of Sicily, could only suggest even earlier relationships between the two cities during the Geometric period, the time of colonization. The fact that Pausanias calls the acropolis of Zakynthos »Psophis« should also be linked to those events, the island being considered as the first ›port of call‹ of the Psophidians towards the west. Reference to that is also made by Thukydides[117].

In the Archaic period and especially in the 6th century BC, Psophis is already an established city-state, as suggested from a dedicatory inscription with its ethnonym found in Olympia. This opinion is equally shared by C. Morgan, who mentions that »at Psophis, polis status is attested in the sixth century by the use of the city-ethnic, and an inscribed shield survives from a trophy dedicated at Olympia, ca. 500–474 BC«[118]. This assumption is further supported by the information that a statue was dedicated by the Psophidians in the temple at Olympia, commissioned with the tithe from the booty, an incident proving that the city had an army and was well structured.

### 1.6.1 Sanctuary of Aphrodite Erykine

Pausanias mentions two temples in Psophis, one of Aphrodite Erykine, εὑρισκόμενο ἐν τῇ πόλει (= found in the city), noting the cult was brought to Psophis from Eryx of Sicily … ἐλέγοντο δὲ οἱ Ψωφῖδος αὐτό ἱδρύσασθαι παῖδες … ἔστι γὰρ καὶ ἐν Σικελίᾳ τῆς Ἐρυκίνης ἱερὸν ἐν τῇ χώρᾳ

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112 Walker 2006, 341 f. nos. 1429–1434.

113 Walker 2006, 344 no. 1443.1; 345 no. 1444 accordingly. On the worship of Sun and Tyche, see Jost 1985, 526. 529–530 accordingly.

114 Pol. 4, 70, 3–4.

115 Pol. 4, 70, 8–10.

116 Paus. 8, 24, 2–3: Ψωφίδος δὲ οἱ μέν φασιν οἰκιστὴν γενέσθαι Ψώφιδα τὸν Ἄρρωνος τοῦ Ἐρυμάνθου τοῦ Ἀρίστα τοῦ Παρθάονος τοῦ Περιφήτου τοῦ Νυκτίμου· τοῖς δέ ἐστιν εἰρημένα θυγατέρα Ψωφῖδα εἶναι Ξάνθου τοῦ Ἐρυμάνθου τοῦ Ἀρκάδος … ὁ δὲ ἀληθέστατος τῶν λόγων ἐστὶν Ἔρυκος τοῦ ἐν Σικανίᾳ δυναστεύσαντος παῖδα εἶναι τὴν Ψωφῖδα, ᾗ <συγγενόμενος Ἡρακλῆς ἀγαγέσθαι μὲν αὐτὴν> εἰς τὸν οἶκον οὐκ ἠξίου, καταλείπει δὲ ἔχουσαν ἐν τῇ γαστρὶ παρὰ Λυκόρτα, ξένῳ μὲν ὄντι αὐτοῦ, παροικοῦντι δὲ ἐν πόλει Φηγίᾳ πρὸ δὲ τοῦ Φηγέως τῆς βασιλείας Ἐρυμάνθῳ καλουμένη· ἐπιτραφέντες δὲ αὐτόθι Ἐχέφρων καὶ Πρόμαχος Ἡρακλέους τε ὄντες καὶ τῆς γυναικός τῆς σικανῆς μετέθεντο τῇ Φηγίᾳ τὸ ὄνομα Ψωφῖδα ἀπό τῆς μητρός.

117 Thuk. 2, 66; Paus. 8, 24, 3. The fact that the island had connections with the Peloponnese and that the first inhabitants of Zakynthos came from Arkadian Psophis is also mentioned by Baladié 1980, 3.

118 Morgan 1999, 382–456, esp. 422.




11 Psophis (province of Kalavryta). Small oinochoe (a) and hydria (b) (© Ephorate of Antiquities of Achaia)

τοῦ Ἔρυκος …, and the Temple of Erymanthos Ψωφιδίοις δὲ καὶ παρὰ τῷ Ἐρυμάνθῳ ναός ἐστιν Ἐρυμάνθου καὶ ἄγαλμα[119].

The sanctuary is presumably located at Monastiri, a site now occupied by a Late Byzantine courtyard and a church of Assumption (fig. 5, 8). The Temple of Aphrodite Erykine was discovered in the centre of the courtyard. In a section carried out by the Archaeological Ephorates (then 6th EBA and ΣΤ΄ ΕΠΚΑ) a capital was found. In 2008, archaeological site regeneration works were carried out by the 6th EBA Ephorate. When the southern courtyard wall was reinforced, sections of fluted columns were unearthed[120]. In my opinion[121], the temple should be located at this point, the site of Monastiri, a hypothesis also shared by G. Papandreou[122], M. Petropoulos[123] and M. Jost[124]. The temple of Aphrodite Erykine was established by the children of Psophis, daughter of king Eryx. In Eryx of Sicily, her sanctuary was splendid, just as rich as that in Paphos[125].

During a survey in the area in 1946, N. Zaphiropoulos collected a few antiquities in the possession of villagers of Psophida, such as female figurines, small lead finds, a small oinochoe and a small hydria (fig. 11), as well as bronze handles dating to 525 BC[126]. Even though of unknown origin, all of this material, given its nature, could be associated with the temple of Aphrodite. One cannot exclude

119 Paus. 8, 24, 6–7; 8, 24, 12.
120 Koumoussi 2008, 537 f.
121 Alexopoulou 1999–2001, 173.
122 Papandreou 1920, 139.
123 Petropoulos 1985, 63–73.
124 Jost 1985, 513 f.
125 Thuk. 6, 46; Paus. 8, 24, 6; Papachatzis 1980, 273 n. 4. The Temple of Aphrodite in Paphos was well known because it was considered an edifice of Agapenor, king of Arkadia: see Papachatzis 1980, 186. Burkert 2015, 324–331. R. Schilling argues that the cult of Aphrodite Erykine was introduced in Psophis in the 5th cent. BC from Arkadian mercenaries following their return from Sicily (see Schilling 1954). Even though this view seems quite hypothetical, it is indicative of the degree of connection between Arkadia and Sicily, and more specifically of Psophis with Sicily.
126 See Zaphiropoulos report no 670/24.10.1946, of the Ephorate of Antiquities of Achaia. Also, Alexopoulou 2009a, A1, 272 f.

the possibility that some of them were votive offerings of bystanders or worshippers. Some of the statuettes bear a resemblance to those excavated by Th. Spyropoulos in Akona at Gortynia, in the ancient region of Mainalia[127].

Ch. Kardara's view that the Temple of Aphrodite Erykine excavated in Agios Petros (site of Aphrodisian Mountains, in the area of Kontovazaina) belongs to the chora of Psophis, was convincingly refuted by Y. A. Pikoulas (fig. 5, 9)[128]. In his opinion, one should expect to find there an Artemision rather than an Aphrodision, belonging either to Thelpousa, to Paos, or even to Seirai. Furthermore, located on the margins and borders of all peripheries, the temple could equally belong to none of these, to what he characteristically calls »no man's land«. The finds of the field survey, as presented on the excerpt of a G.Y.S. (Military Geographical Service) map, scale 1 : 50.000[129], attest that the excavated temple is outside the borders of Psophis and far from its chora. That is because its south/southeastern limits reached Agios Vasileios hill and the location Keramidia, where, in my view, the kome of Seirai is located. This small town is known to comprise the borders of the land of the Kleitoreans and Psophidians, and additionally it is situated at a distance of thirty stadia in accordance with Pausanias' directions Σειρῶν μὲν δὴ σταδίοις ἐστὶν ἀπωτέρω τριάκοντα ἡ Ψωφίς[130].

### 1.6.2 Sanctuary of Erymanthos

G. Papandreou believes that the sanctuary is situated to the south of the theatre east of Alonia, near the small church of Agios Ioannis[131]. In my view, if the Sanctuary of Aphrodite is rightly located at Monastiri of Tripotama, then the Sanctuary of Erymanthos should be found in the place occupied by the school complex, or, as described by E. Meyer and M. Jost, »near the River Aroanios«[132]. The position of the school should also not be excluded as a possible location of the sanctuary because it is in *excelsissimo loco*, it facilitates inspection of the entire city environment and it lies close to water (fig. 5, 10).

The cult of the river god is also verified from a numismatic issue of Psophis of the first half of the 4th century BC, depicting on the obverse the head of the river god to the right, wearing a reed wreath, and on the reverse a swimming fish (trout) and the city's ethnonym[133].

### 1.6.3 Sanctuary of Acropolis (Athena [?])

A small single-nave temple was detected on the north-western plateau of the city acropolis in 1998 during cleaning and deforestation works in the area in collaboration with the 6th EBA. It was excavated by the Ephorate of Antiquities. Among the finds were two fragments of painted sima attesting to the existence of a sacred building[134] (fig. 5, 11). Archaeological evidence necessary for the identification of the deity is absent so far; however, the cult of Athena Polias (of the city) is one possibility, being the protector of acropoleis and cities[135]. The sanctuary is located at a focal point of the settlement, and this place meets all requirements from a topographic point of view.

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127 Spyropoulos – Spyropoulos 2000, 43. Several researchers believe that the dove or flower they usually hold represents either Persephone or Aphrodite (see Siganidou – Lilimpaki-Akamati 1996, 57–60).

128 Pikoulas 2000–2003, 333–344.

129 Alexopoulou 2009a, A1, 301 no. 264 map 9; 306 f. no. 273 map 9.

130 Paus. 8, 24, 3.

131 Papandreou n.d., 68. Pausanias provides limited information on the sanctuary, one being that the people of Psophis had a statue of Erymanthos near the River Erymanthos (Paus. 8, 24, 12).

132 Paus. 8, 24, 12. Meyer 1959, 1421–1428; Jost 1985, 54. 524–526.

133 See Walker 2006, 397 no. 1684. Generally on Erymanthos, see Jost 1985, 54. 60. 524 f.

134 Alexopoulou 1999–2001, 161–174. On the small temple see Moutzali 2004, 159–168.

135 Jost 1985, 361 f. 364; Burkert 2015, 300–307.

The cult of Athena could be linked to that of Zeus; a numismatic issue of the city is the only evidence suggesting that[136].

### 1.6.4 Sanctuary of Pan

According to Pausanias (8, 24, 4), the sanctuary is situated on Mount Lampeia, regarded by the traveller as μοῖρα τοῦ ὄρους Ἐρυμάνθου (part of Mount Erymanthos). Mount Lampeia is also mentioned by Diodorus Siculus (4, 12, 1), as the place where the Erymanthian boar διέτριβεν (= abode). Pan inhabits rocky summits, canyons, caves and dense forests. He is the god of flocks and rustic Arkadia is his homeland[137]. His cult is older than Classical times and the 2nd century AD traveller informs us that in Heraia there is a temple dedicated to Pan[138].

On the reverse of a Roman numismatic issue dating to the reign of Septimius Severus there is a rare depiction of Pan with the hindquarters, legs, and horns of a goat, his right hand holding the syrinx (pan flute), the left a lagobolon, completed with the ethnonym ΨΩΦΙΔΙΩΝ[139].

### 1.6.5 Sanctuary of Artemis

Erymanthos is a mountain of exquisite natural beauties, possessing plenty of confluences covered with deep forests of fir, kermes oak and pine. Homer makes reference to this mountain, saying that Artemis hunted … ἢ κατά Τηΰγετον … ἢ Ἐρύμανθον (either about Taygetos or Erymanthos)[140]. Diodorus Siculus and Pausanias speak of the whiteness and brilliance of the mountain, the history of which is connected to ancient Psophis established on its southern foothills[141].

The cult of Psophis is verified by the depiction of Artemis on the reverse of a Roman coinage issued during the reign of Septimius Severus, showing the deity on the right with the inscription ΨΩΦΙΔΙΩΝ[142].

### 1.6.6 Sanctuary of Dionysos

Despite Dionysos's Mycenaean origin, no testimony of his cult in Psophis is found, apart from a Roman coinage depicting the deity on the reverse in a standing pose on the left, holding a thyrsos with his left hand, a kantharos with his right, including the ethnonym ΨΩΦΙΔΙΩΝ[143]. Dionysos's representations are also identified on coins of other Arkadian cities, such as Kaphyai and Pheneos, demonstrating local worship of the deity, as mentioned by Pausanias[144].

### 1.6.7 Aloni of Xenochristos, Kamenianoi

This site is situated in Kamenianoi village, to the south of the parochial church of Agios Konstantinos and Agia Eleni, at a short distance from it. In the plateau that resembles a threshing floor (Gr. aloni), sections of fluted columns were detected, initially belonging to some public building (fig. 5, 12). Close to that, to the west of the church on the passage leading to the vil-

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136 Copper issue (dichalkon) of Psophis, 2nd half of the 4th cent. BC, depicting on the obverse the head of Athena wearing helmet right and on the reverse the Keryneian hind with horns, walking right, Ψ[ΩΦ]; cf. Walker 2006, 397 no. 1683.

137 Jost 1985, 460–476.

138 Paus. 8, 26, 2; Salavoura 2015, 313 f.

139 Walker 2006, 399 no. 1690.

140 Hom. Od. 6, 103.

141 Diod. 4, 12, 1; Paus. 8, 24, 4.

142 Walker 2006, 399 no. 1691.2.

143 Walker 2006, 399 no. 1690

144 Roy 2007, 17–23 pls. 1–4. Also, M. Jost grounded her work on the Dionysos cult on the Roman numismatic issues. Jost 1985, 427 f.



12 Kertezi (province of Kalavryta): Bronze statuette of a naked female figure, hydriaphoros, Late Geometric (© National Archaeological Museum of Athens)

lage stands a Doric capital *in situ*[145]. In fact, on every side of the church, one observes ancient bricks surely once belonging to an ancient building. The above-mentioned site is located within the chora of Psophis and the scant evidence known to us supports the view that a sanctuary was originally located at this spot, alongside the ancient route axis leading from Psophis to Kynaitha.

### 1.6.8 Drovolovo Cave

The cave is located east of the small homonymous settlement, on the lower slopes of the southwest foothills of Mount Makria Rachi, in the chora of Psophis (fig. 5, 13). Inside the cave, on a long strip of ground, there is a chapel dedicated to Zoodochos Pigi, now derelict, known as the Cave of Virgin Mary *(Spilaio tis Panagias)*. In the background water flows water in abundance and force. Survey at the site detected only parts of black-coated roof tiles. In a short historical publication of 1970 on the cave, Hieromonk P. Papadopoulos mentions the discovery of a female figurine of the end of the 5th to the beginning of the 4th century BC[146], an element suggesting a place of worship, perhaps even of earlier date[147].

### 1.6.9 Kertezi, Sanctuary of the Borders/Ιερό οπίων

In 1927, Anastasios Orlandos along with his assistant arrived in Kertezi in order to carry out retention works of the church of Assumption in the village's cemetery (fig. 5, 14). He conducted sections around the foundation of the church for the purpose of securing the wooden beams to prevent the building from collapsing. This digging brought to light a bronze statuette of a naked female figure, now at the National Archaeological Museum (acc. no. X 15129), 0.10 m in height, with missing upper limbs and partially preserved lower limbs. The figure carries on her head a vessel (hydria or oinochoe) originally sustained with her right hand, while the left would have rested on her hip (fig. 12). It dates to 750–700 BC[148]. Similar statuettes of hydriaphoroi are found in the Temple of Athena Alea

145 Alexopoulou 2009a, A1, 267; A2, 498.

146 Cf. Davidson 1984, 31 pl. 7 no. 103.

147 The villagers mention that, approx. 150–200 m from the cave to the south, at the location of the abandoned small church dedicated to Agios Panteleimon, near the roots of a centenarian kermes oak stands a section of fluted column initially belonging to some public building. The cave as well as the ruins of the small church are located near the ancient passage leading through Kaprivaina (foothill of the third to the east mountain branch of Erymanthos called Three Women) and then through Kertezi, to Kynaitha. See Alexopoulou 2009a, A1, 264 f.

148 See Jost 1985, 151–154 tabs. 37, 3; 39. Thomassen Flognfeldt 2009, 68 C–D.

in Tegea and the bearers of the vessels are interpreted by M. Voyatzis as Hiketides, suppliants, pleading the goddess for rain to assist field cultivation[149].

In the following year 1928, A. Philadelpheus carried out sections in the area, and at a depth of 3 m he found a foundation »of large stone blocks«. According to him, this element probably belonged to an ancient structure from which the statuette discovered the year before likely originated[150].

The bronze statuette and the building walls point to a sanctuary that fits the description of »mountain temples« (ιερό ορίων), located alongside the passage leading from Psophis to Kynaitha[151]. Additionally, the identification of the fortress by Y. A. Pikoulas in the location of Panagia, entering the village, proves that the passages to Psophis were not sufficiently controlled, and that it is located on the borders of three territories (Kleitor, Psophis, and Kynaitha)[152].

### 1.6.10 Herakles

In Psophis, Herakles was also worshipped, the only mortal honoured with Panhellenic veneration, initially as hero and later as god, for it was on the territory of Psophis that he caught the Erymanthian boar.

Numismatic issues of the city, silver and copper coins of the 5th and mid-4th century BC, depict on the obverse the Keryneian hind, while copper coinage of the 3rd century BC depicts on the obverse the head of Herakles and on the reverse the Erymanthian boar[153]. All these representations testify to the city's mythological tradition.

### 1.6.11 Heroon of Promachos and Echephron

In Psophis, Pausanias (8, 24, 7) also observed the heroa (hero-shrines) of Promachus and Echephron, the sons of Psophis. The phenomenon of hero cults appears in the end of the 8th century BC, and reflects the city's structure as well as contributing to the urban development and the establishment of small sanctuaries[154]. It is possible that the Psophidians considered the sons of Psophis as forefathers of the city and thus their worship could point to the aristocracy of the time. Many researchers believe that the sanctuary was initially just a grave, and that most sanctuaries pre-existed the stone temples[155].

### 1.6.12 Heroon of Alkmaion

Pausanias (8, 24, 7–11) mentions that Alkmaion, son of Amphiaraos, was buried in the city of Psophis. He even adds that »his tomb is a building remarkable for neither its size nor its ornament«.

## 1.7 Paos

The remains of Paos are situated in today's village of Paos (old toponym »Skoupi«), west of Kleitor[156]. Herodotos informs us that the Dioskouroi were hosted in the residence of Euphorion[157].

149 Voyatzis 1990, 116; Thomassen Flognfeldt 2009, 68.
150 Vorillas 1994, 17 f. On the report of A. Philadelpheus, see newspaper »ΠΑΤΡΙΣ«, 13.10.1928.
151 Alexopoulou 2009a, A2, 532.
152 Pikoulas 1991, 265–268.
153 Walker 2006, 394–398.
154 Palaiokrassa-Kopitsa 2008, 178; Vikela 2011, 161–163. Burkert 2015, 424–434.
155 Vikela 2011, 161–168.
156 Pikoulas 2001, 364 no. 3204. On Paos, see Alexopoulou 2009a, A2, 430–432.
157 Hdt. 6, 127. Jost 1985, 45.

In the location *Chani tou Kalatha*, south of the city's fortified acropolis, lie plenty of architectural members (sections of fluted columns and clay Doric capital inherent in the column) that could belong to an ancient residence or sanctuary (fig. 5, 15).

## 2 EPILOGUE

In the Sub-Mycenaean and Protogeometric periods, the economic and cultural status of northern Arkadia is relatively low in comparison to the Geometric era. During the first half of the 8th century BC, social rebirth is particularly noticeable, following the introduction of the alphabet, the flourishing of epic, and the gradual formation of the polis, credited with revitalizing Greece. In the Geometric period, there is evidence for a great interest in the Mycenaean past and its glory, and the heroes of the Mycenaean era were proudly proclaimed as ancestors.

In the Archaic period, progress is ongoing and cultural development continues from previous years, resulting in considerably advanced sanctuaries surpassing all the other buildings not only in the region of Kalavryta but throughout Greece. In this period, cult and sanctuaries are flourishing: the temple is dedicated to the deity whose statue is erected at the rear of the building facing the entrance. The altar becomes an important element of religious practices. Apart from the buildings, votive offerings also increase in value and diversity. Sanctuaries are places of common and public congregation, not only for a society or city, but also for nearby communities gathering to make sacrifice to the gods and to participate in communal events. These religious rituals had been practiced since Protogeometric times, continued in the Geometric era and expanded during the Archaic and Classical periods.

In the countryside, as indicated by the survey in the area of Kalavryta, plenty of sanctuaries are located, many of which hosted important cults and constituted religious centres of the surrounding settlements[158]. Furthermore, their location is intentionally in close proximity to major roads, ancient long-distance routes, and the selection of the appropriate site was the outcome of numerous and often interlinked factors, such as a local myth, the natural environment, as well as the deity's attributes.

The progression of the research and study of the remains and findings of the Protogeometric, Geometric and Archaic eras from Azania will provide us with valuable insight on the social organization and cultural character of this unique area, as well as its connections with the neighbouring regions.

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[158] Palaiokrassa-Kopitsa holds the opinion that »small rural sanctuaries in the area of Attica were very similar to the small urban sanctuaries«. On the topic see Palaiokrassa-Kopitsa 2008, 180.

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# LOUSOI DURING THE GEOMETRIC AND ARCHAIC PERIODS IN CONTEXT: THE ARTEMIS SANCTUARY AND THE EARLY SETTLEMENT

## AN INTRODUCTION

ABSTRACT

This paper is an introduction to a joint research project that examines the early contexts at the site of Lousoi situated in northern Arkadia. It offers a contextual analysis of these early assemblages in conjunction with a first assessment of the pottery finds, which comprise the most abundant material category, and offer the best preserved chronological markers for dating the activities of this inland community. Contextual analysis from the Artemis Sanctuary embankment deposit and the Lousoi town centre indicates the existence of two sites, which probably evolved roughly contemporaneously. The earliest pottery finds show that activities at Lousoi started early in the Geometric period: they indicate the presence of a long-term and rooted community, catering for its needs in the settlement and in the sanctuary alike.

### SETTING THE SCENE

The paper provides a preliminary analysis of the early contexts at Lousoi[1]: the Sanctuary of Artemis and the early settlement which were located in a geographical and cultural contact zone between the ancient territories of Arkadia and of Achaia in the northern Peloponnese (fig. 1). Emphasis is placed on the stratigraphical data in conjunction with the pottery finds, which can provide information on the beginnings and the timespan of the activities of the ancient inhabitants at the site. The effort to establish a chronological framework takes into account stratigraphical sequences and other relative as well as absolute chronologies[2]. Catherine Morgan's observation on the chronological difficulties existing in the northern Peloponnese, largely owing to the scarcity of closed/well stratified contexts, is particularly pertinent[3]. Indeed, the shortage of chronologically uncontaminated contexts was also stressed years ago by Elizabeth Pemberton, Kathleen Slane and Charles Williams, even for the best documented regions of the northern Peloponnese, such as Corinth itself[4]. For this reason, understanding the stratigraphical contexts of Lousoi, both the embankment deposit in the Artemis Sanctuary and the pre-Hellenistic deposits in the town centre of Lousoi[5] take on particular importance. To these must be added new evidence from recent well-stratified contexts in the northern and central Peloponnese, and especially so in areas that could concern the cultural periodization of this region, such as the altar sequence at the Sanctuary in Nikoleika[6], the cultic contexts at the Sanctuary

1 This research has been carried out as part of the project »Geometric/Archaic pottery from the Artemis Sanctuary, Lousoi« with Michael Kerschner as principal investigator. The project was funded by the Austrian Science Fund FWF (P 30095–G26).

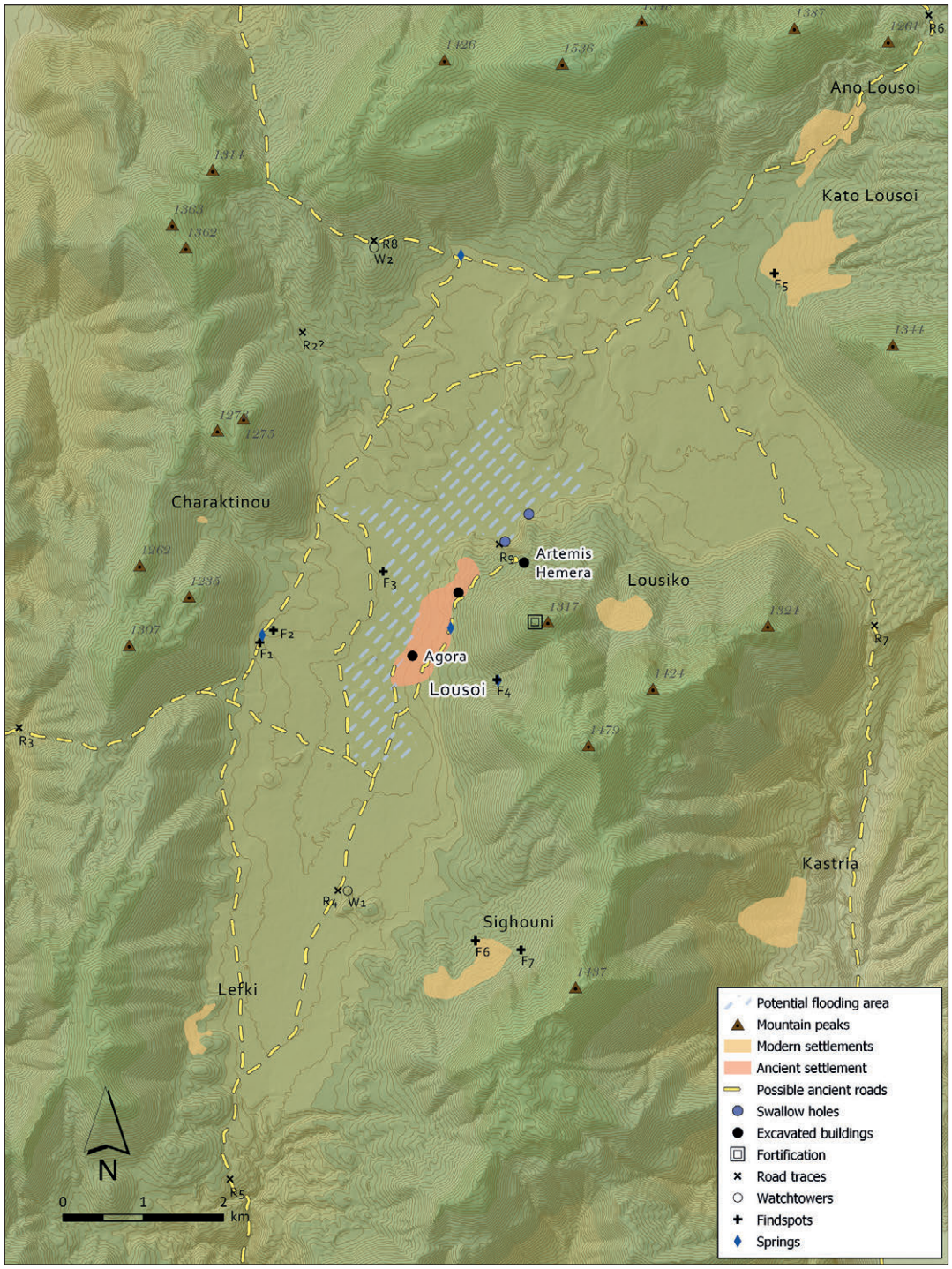
2 See the standard dating by Coldstream 2008, 302–331, and also reevaluations such as Folsberg 1995; Harrison 1996, especially 194; Dickinson 2006; Snodgrass 2006, 15–22 (with a summation). Absolute chronologies have recently shifted away from a reliance on Thucydides' dates (for colonial foundations) synchronisms towards science-based approaches (such as radiocarbon dating, see an overview in Facorellis 2017).

3 C. Morgan in this volume.

4 Pemberton 1989, 2–5.

5 See below for a definition of these contexts.

6 E.-I. Kolia and A. Gadolou this volume.




1 Lousoi. Map of the town and the Sanctuary of Artemis Hemera in the basin of Soudena, northern Arkadia (© OeAW-OeAI/from Baier et al. 2021, fig. 8)

of Athena Alea at Tegea[7], those at the Sanctuary of Zeus on Mt. Lykaion in southern Arkadia[8] and, much further afield, the domestic contexts at Chalkis in Aitolia[9].

7 Østby 2014a; Østby 2014b.
8 Voyatzis 2019.
9 Nielsen 2020.

The excavations at Lousoi from 1983 to 2012 under the direction of Veronika Mitsopoulos-Leon and Georg Ladstätter initially focused on the Hellenistic development of the city, which is archaeologically the best preserved period at Lousoi. Fieldwork restarted in the peri-urban Sanctuary of Artemis Hemera and new excavations were carried out in a complex of Hellenistic houses and in the Hellenistic town centre of Lousoi[10]. From 2015 onwards, surveys, geophysical prospections and excavations carried out by Christoph Baier have provided a new, more complete understanding of the structure and extension of the town, whose heyday was in the Hellenistic era (fig. 2)[11]. Both in the Sanctuary of Artemis and in the town centre, an extensive building programme was carried out on a massive scale starting in the early 3rd century BC, thus changing completely the older topography (fig. 3). The campaigns also revealed the early phases of Lousoi, even if the pre-Hellenistic phases are archaeologically not easily detected in these particular excavation areas. With regard to Geometric and Archaic periods of Lousoi, the evidence up to 500 years beforehand was either substantially destroyed, or built over by the constructions of the 3rd century BC. Despite the fragmentary character of these early remains, excavations nevertheless provided significant evidence and finds in both the sanctuary and the earliest settlement phases of Lousoi. In the following, the excavation and stratigraphy from the Geometric to the Archaic periods will be presented.

## SANCTUARY OF ARTEMIS

The peri-urban Sanctuary of Artemis Hemera (fig. 2) was redesigned in the Early Hellenistic period in a large-scale building programme (fig. 3). The higher southern terrace, representing the central cult area with the Temple of Artemis of the early 3rd century BC, makes up the major part of this area[12]. The so-called East Building was constructed in the late 4th century BC and was probably a small cult structure[13]. Other building remains have not been identified *in situ* on the upper terrace. However, decorated Archaic roof tiles, such as acroteria and antefixes of high quality, indicate that a monumental building existed, probably a small naiskos, maybe of the late 6th century BC[14].

The systematic excavations led by Veronika Mitsopoulos-Leon on this terrace from 1986 to 1999 provided much evidence of the early phases of the sanctuary (fig. 5). Although neither structures nor *in situ* occupation levels were excavated, layers with refilled Geometric and Archaic material were identified in the foundation trenches of the walls of the adyton and in an area directly to the north of the Hellenistic temple (fig. 3)[15]. These two contexts show clearly that even at the beginning of the 3rd century BC, layers and material from the earlier phases of the sanctuary did exist and were redeposited during the construction of the Early Hellenistic temple.

The large-scale excavations in the northeastern area of the temple have brought to light the most important contexts concerning the development of the sanctuary during the Geometric and Archaic periods. These are discussed in this contribution[16].

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10 Mitsopoulos-Leon 2017.

11 Baier et al. 2018; Baier et al. 2021.

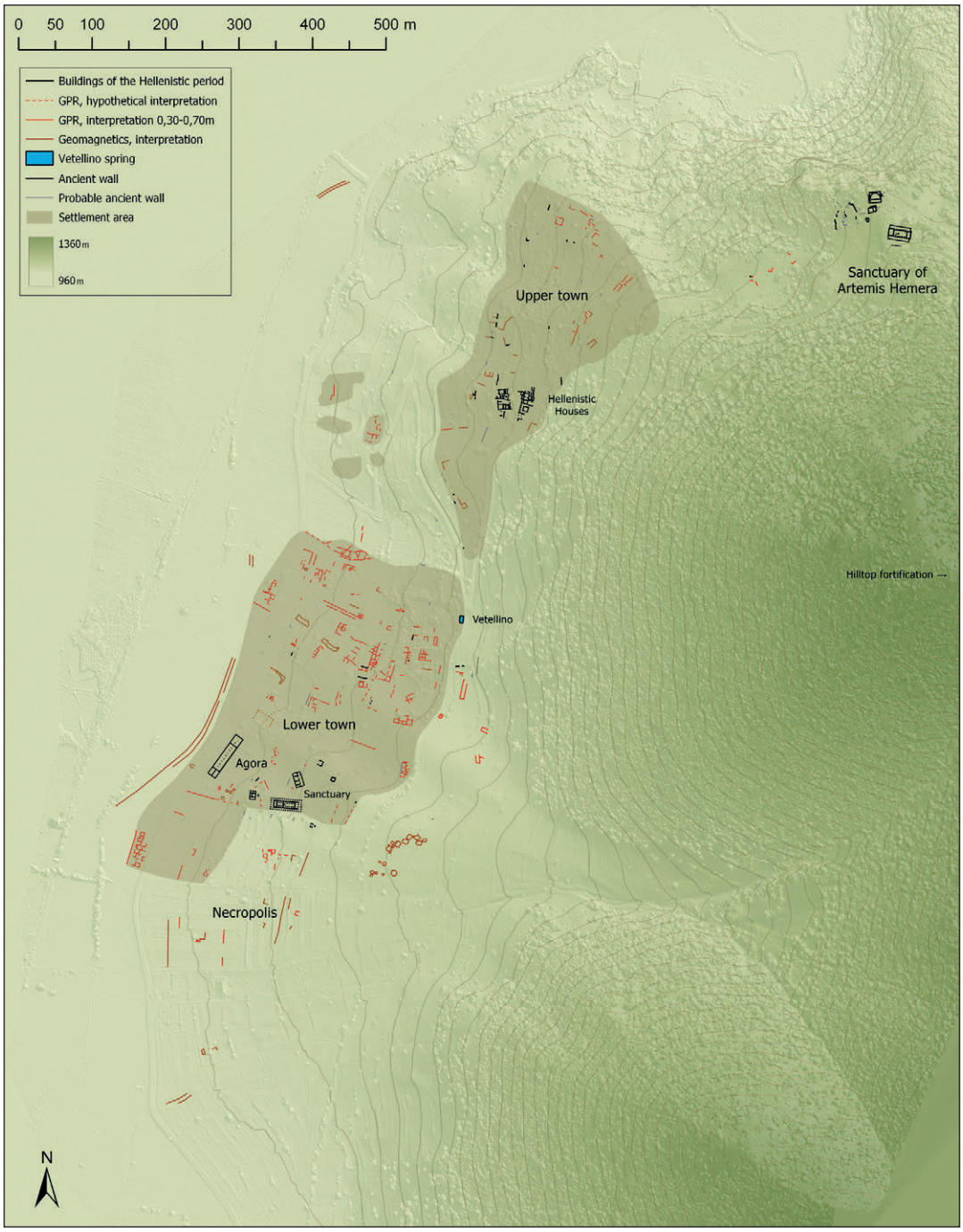
12 Mitsopoulos-Leon – Ladstätter 2006.

13 Mitsopoulos-Leon 2012, 29–31.

14 Mitsopoulos-Leon 1990.

15 In the adyton of the Hellenistic temple (trenches W 2/89 and W 3/89) a few Geometric and Archaic ceramic fragments have been found in the filling of the foundation trenches for the walls. Their fragmentary state of preservation excludes their being a ritual deposit. Immediately north of the northern foundations of the northern stoa of the temple (trench 12/95) a layer with Geometric and Archaic pottery fragments was identified. Broken architectural elements of the Hellenistic temple in fallen positions on top of this layer formed a Hellenistic walking level which was constructed by reusing older material.

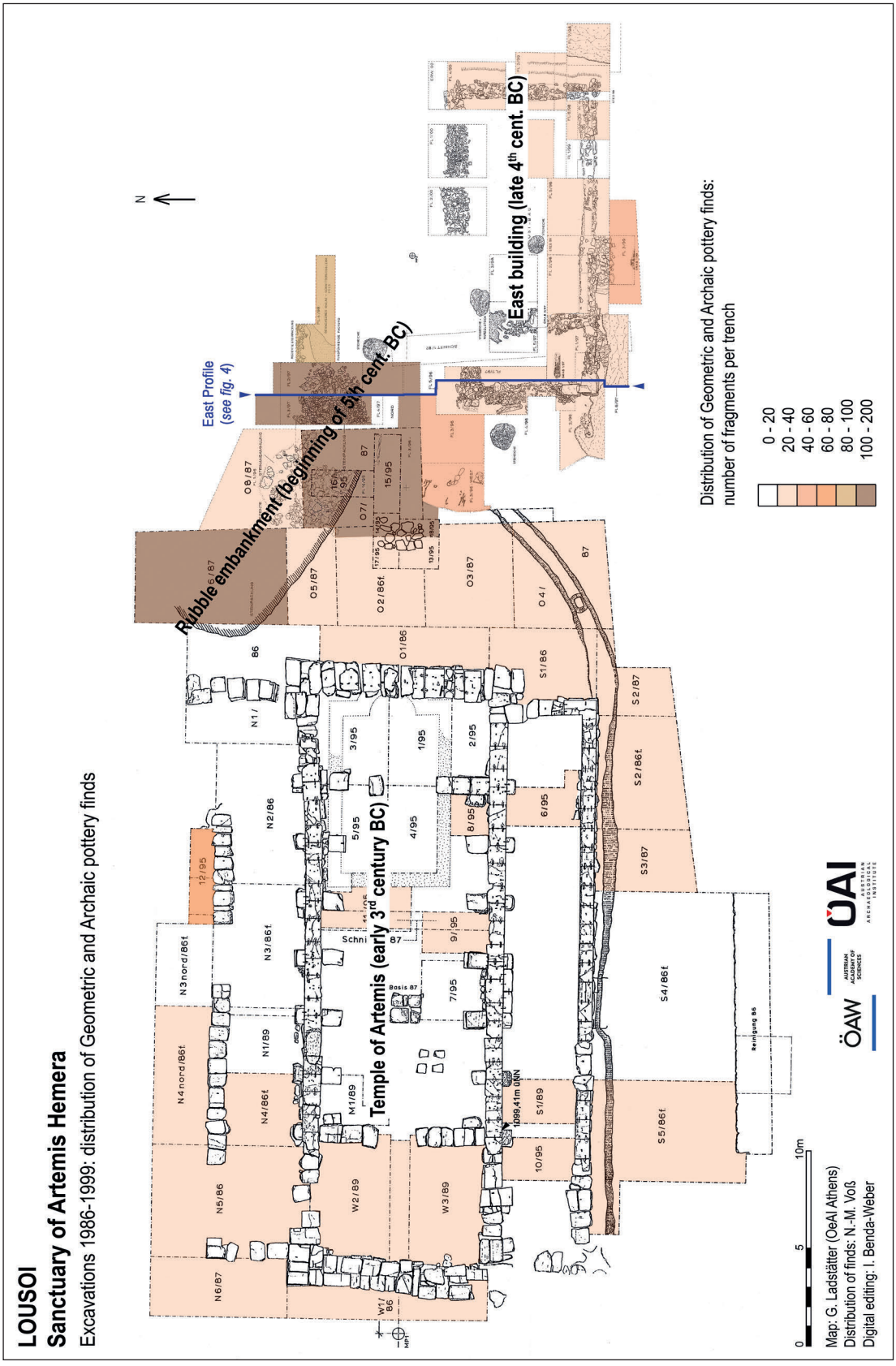
16 Excavation in this area has been carried out in the years 1986 and 1987 and from 1995 to 1998 (trenches O 1/86. O 2/86. O 3/86. O 4/86. O 5/87. O 6/87. O7/87 and trenches 13/95. 14/95. 16/95. 17/95. 18/95. 1/96. 3/96. 5/96. 2/97. 3/97. 4/97. 4/98).



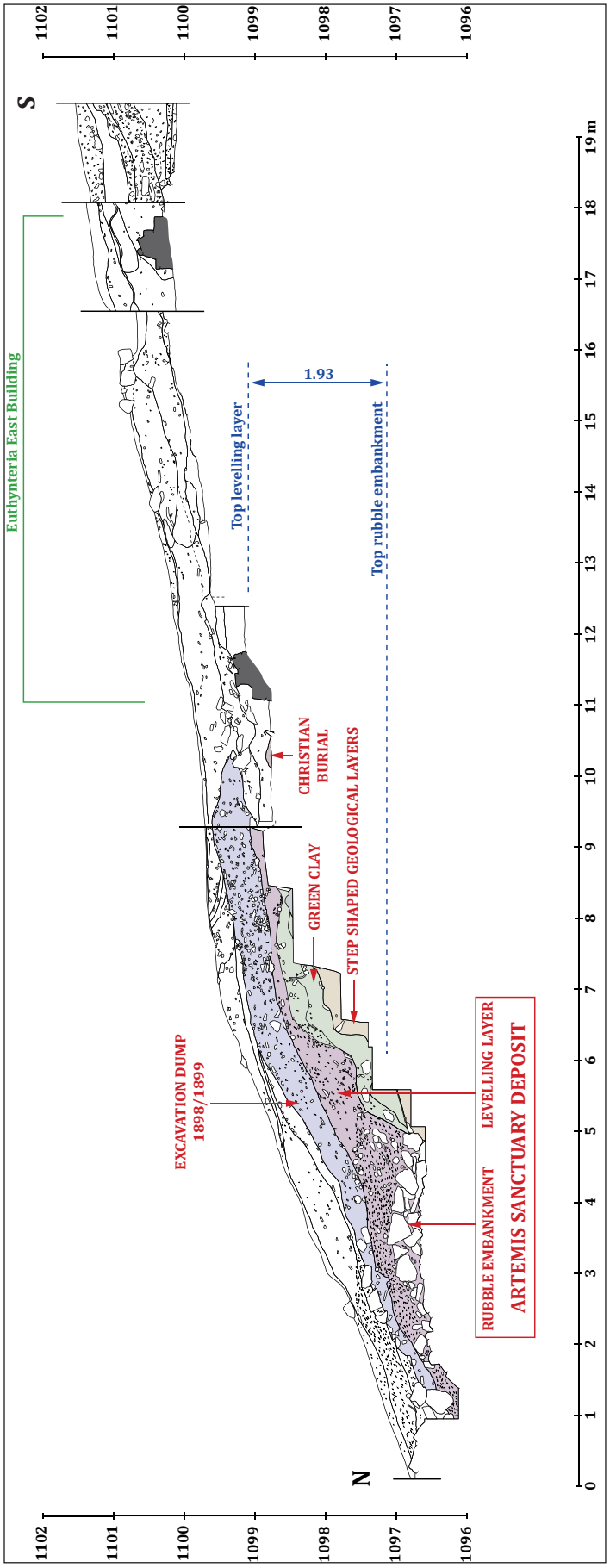

2 Lousoi. Town map of the Hellenistic period (©OeAW-OeAI, from Baier et al. 2021, fig. 13)

In the area approximately 12 m immediately to the east of the Hellenistic temple, the ancient levels and layers are severely disturbed down to a depth of 1,098.50 m (fig. 4). Numerous 19th-century AD burials related to a Christian chapel built on the site of the temple verify that these are recent interventions[17]. The northern part of this area inclines considerably to the north below at height of 1,098.50 m.

[17] In trench 3/96 west four Christian burials were excavated. On the Christian burials in general, see Hannemann 1995.




3 Lousoi. Sanctuary of Artemis Hemera. Distribution of Geometric and Archaic pottery finds in the excavations 1986–1999 (© OeAW-OeAI/map G. Ladstätter; distribution of finds N. Voß; digital editing I. Benda-Weber)




4 Lousoi. Sanctuary of Artemis Hemera, upper sanctuary terrace excavation 1996. Drawing of the east profile across the rubble embankment and levelling layer (© OeAW-OeAI/G. Ladstätter; digital editing N. Voß, I. Benda-Weber)




5 Lousoi. Sanctuary of Artemis Hemera, upper sanctuary terrace, excavation 1996. View from the Hellenistic temple (in the foreground the foundations of its eastern front) to the east. At the left, the rubble embankment, in the centre the levelling layer of the Late Archaic sanctuary terrace (© OeAW-OeAI/photo G. Ladstätter; digital editing I. Benda-Weber)

Only the easternmost trenches lying between 12 to 18 m east of the temple have provided undisturbed ancient layers. The stratigraphical sequence exposed is presented here (figs. 4. 5)[18].

The recent and refilled humus covers a layer of brown earth containing a few very small pottery fragments, chips from the marble architecture of the Hellenistic temple and fragmented human bones. In this layer we may recognize the excavation dump of the excavations of Adolf Wilhelm and Wilhelm Reichel in 1898 and 1899[19]. The human bones from the disturbed Christian burials are diagnostic here. For the interpretation of the stratigraphical sequence it is important to note that the lower layers in this area were not touched by the old excavations or other interventions.

The debris of the old excavation covers the extensive excavation units in a homogeneous levelling layer which partly lies over a large rubble embankment. These two stratigraphical units yielded the most important contexts with Geometric and Archaic pottery and contemporaneous votive offerings of other material (metal artefacts, terracotta figurines, etc.). They are labelled as the »Artemis Sanctuary embankment deposit«[20].

The levelling layer[21] is clearly separated from the excavation debris above it: it is composed of green weathered clay with countless small flysch chips and a large amount of the finds mentioned above. The preserved upper surface of this layer inclines considerably to the north. In its southern section, the lower surface of this levelling layer lies on geological layers of green clay, showing

18 Trenches 2/97, 3/97, 4/97 and 4/98.
19 Mitsopoulos-Leon 2012, 29–31.
20 On the Geometric and Archaic votive finds in various materials (other than pottery) which have been found in these contexts, see Mitsopoulos-Leon 2012.
21 Trenches 2/97, 3/97, 4/9, 4/98.




6 Lousoi. Sanctuary of Artemis Hemera, excavation 1997. Early Classical rubble embankment east of the Hellenistic Temple of Artemis (© OeAW-OeAI/photo G. Ladstätter)

a sort of step-shaped form (fig. 4). In its northern section, this levelling layer lies directly on the upper surface of the rubble embankment.

It has a maximum thickness of approximately 1.00 m and does not show any evidence of internal ›structuring‹. Neither in the course of the excavation nor in the analysis of the earth profiles have any micro layers been identified, and so therefore, in all likelihood, this deposit was laid down in one single process.

The rubble embankment (fig. 6) covered by the levelling layer shows a ground plan of an approximately oval shape which is oriented from northwest to southeast. Only parts of this structure have been excavated. Its original extension is unknown. In length and width, it measures roughly 16 × 8.50 m, with a maximum thickness of 1.50 m[22]. In its eastern half the excavation only reached the surface of this stone construction which has been left in place in order not to endanger the stability of the slope. Only in the western half were the stones of this rubble embankment removed down to the natural ground-level underneath.

The structure of this rubble embankment shows amongst other material some freshly quarried and unworked limestone (fig. 6). In the excavated western half, these stones lie quite loosely in an earth layer. To the east, in the top surface of this layer the stones are set more closely packed and bedded in the earth, while elsewhere in this area the stone material is extremely tight and interlocking. There is no evidence that these stones were partly reused material from older dismantled buildings; instead they seem to have been quarried just for this purpose.

It is this rubble embankment that produced a large amount of ceramics and votive offerings dating from the Geometric to the Late Archaic period, just as in the levelling layer above. Joining sherds between the levelling layer and the rubble embankment demonstrate clearly that these two

22 Trenches O 5/87, O 6/87, O 7/87 and trenches 16/95, 1/96, 2/97, 3/97, 4/97, 4/98.

stratigraphic units were part of one single construction process (see below). For this reason, they will be discussed together in their function and interpretation.

The function of the rubble embankment and the levelling layer is best described as an elaborate engineering construction (»Tiefbau«) designed to stabilize the eastern section of the upper sanctuary terrace. This very area is the most vulnerable to landslides because of the considerable inclination of the terrain. From the overall well-preserved foundations and euthynteria of the Hellenistic temple, only the eastern wall of the north stoa has slipped to the north significantly – at this very point.

To consolidate this area, probably after a destructive landslide, the rubble embankment was constructed of tightly packed limestone up to a volume of approximately 100 m³. The terrain had been partly prepared for this construction by cutting the geological green clay into a stepped-profile following the inclination of the terrain. The upper surface of this rubble embankment shows an irregular if approximately horizontal upper face, that lies about 2.25 m lower than the used ground surface of the upper sanctuary terrace in the west.

Immediately after the construction of the rubble embankment a levelling layer of green clay enriched with flysch chips was brought in to cover the stones. The green clay is presumably the material excavated in preparing the above mentioned stepped-profile[23].

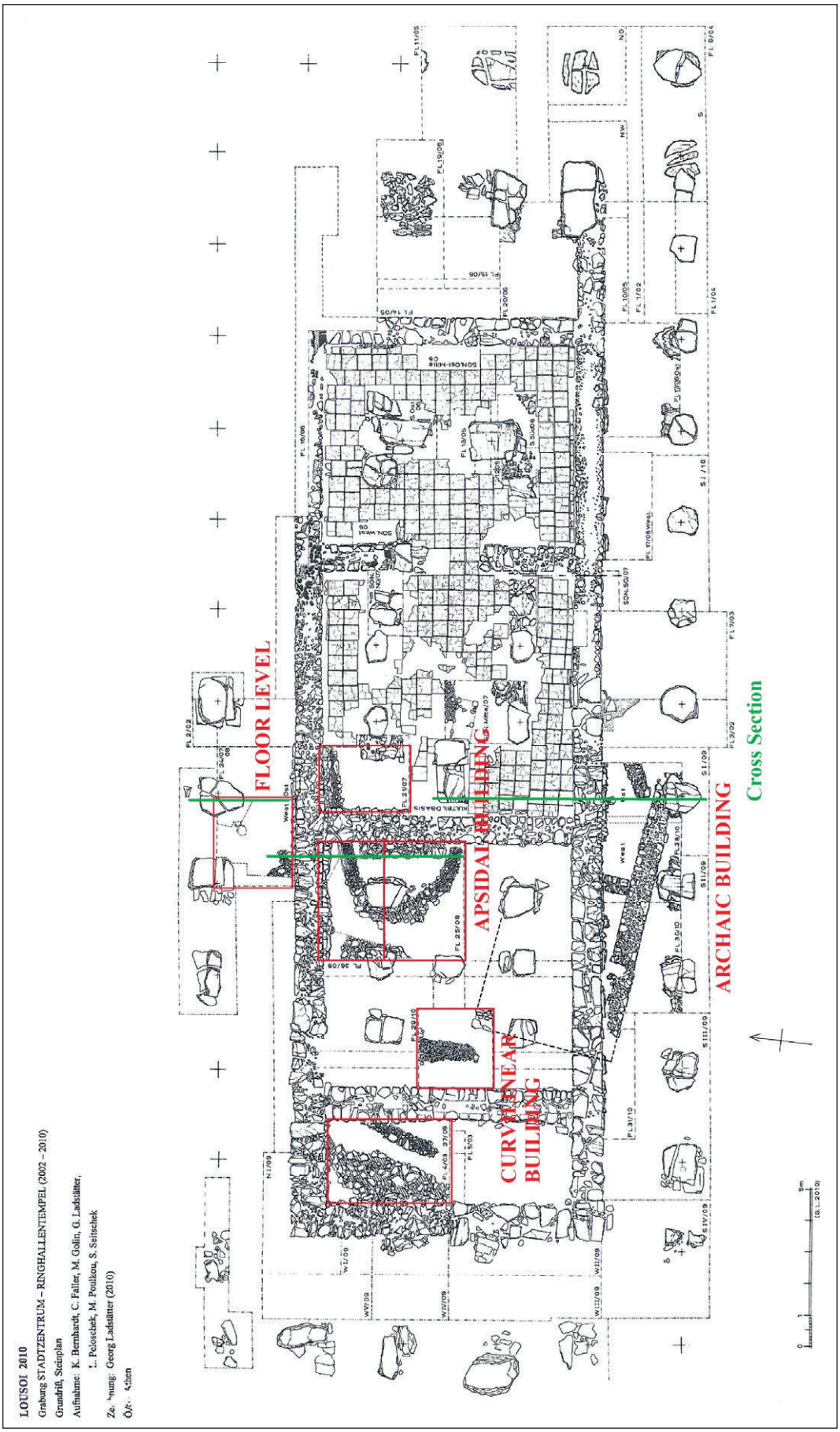
The highest preserved surface of this construction, that of the final levelling layer[24], lies at ca. 1,098.65 m. So, the top level of the Hellenistic temple terrace must once have been considerably higher than the preserved upper face of the levelling layer, but erosion had considerably altered this to create the incline visible up to the period when the excavation debris of 1898 and 1899 was dumped there. There is no indication as to how and in what form this stabilizing construction terminated to the north, but probably we can imagine an inclining embankment or a kind of retaining wall, which has fully eroded as well.

As this construction provided the largest context of Geometric and Archaic finds, we have to bear in mind the following facts. If the reconstruction of this elaborate engineering programme is correct, the excavated soils including the deposited material represent only a part of this construction, the upper sections being now missing. As the two components of this building, the rubble embankment, and the levelling layer as well, have provided a large amount of older pottery and votive offerings, it is to be assumed that during the process of building this material was deposited there intentionally, probably in a general ritual context of a bothros or apothetis. Concerning the architectural development on the upper terrace of the Sanctuary of Artemis, the construction of the rubble embankment with levelling layer was a major architectural intervention, probably an engineering solution (»Tiefbau«) to prepare or repair the terrain for further use.

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[23] This green weathered clay is the same material that was used for stabilizing the area of the Hellenistic peripteral temple in the Lousoi town centre. The same material was placed in between the foundation walls of the East Building. Apparently, the use of this locally available clay represents a specific construction technique at Lousoi for securing and stabilizing building constructions.

[24] The excavation did not reveal any evidence of Geometric and Archaic walking horizons on the upper sanctuary terrace. In building the Temple of Artemis, the natural rock was levelled out so one must assume that the ground-levels of earlier architecture must have been considerably higher. Even the euthynteria of the East Building is about 1.00 m higher in relation to the floors of the temple. Therefore the temple level should indicate the lowest possible position of the Geometric and Archaic ground levels.




7 Lousoi. Town centre, excavation 2002–2010. Plan of the early Hellenistic peripteral temple and Archaic and Geometric structures beneath it (© OeAW-OeAI/drawing G. Ladstätter; digital editing N. Voß, I. Benda-Weber)

## TOWN CENTRE

In the area of the Hellenistic town centre of Lousoi, the archaeological evidence for the Geometric and Archaic periods have been identified underneath the monumental Early Hellenistic peripteral temple[25].

Following the clearing of the preserved architecture of the temple six deep trenches have been excavated from the floor level of the building, in places to the natural ground level[26] (figs. 7. 10). As the location of these trenches had to be adapted to existing Hellenistic structures such as walls, columns and the floor of clay slabs the excavated sections covered only small areas between 4.50 and 2.50 m in their maximum extent. The maximum depth reached was 2.50 m.

The excavated sections can only partially show that an extensive area underneath the temple and probably beyond the bounds of the building was occupied in the Geometric and Archaic periods. Nevertheless, it is possible to reconstruct the general historical development of the site from the Geometric period to the construction of the Early Hellenistic peripteral temple, based on stratigraphical evidence and on the study of the finds, especially the pottery.

The stratigraphical sequence (figs. 8. 9) is numbered from the lowest and earliest level up to the topmost and latest. The excavation method applied was under an approach termed as »arbitrary excavation« or »metrical stratigraphy«[27]. Digging was done according to a metrical and three-dimensional grid-pattern and not according to physical layers; this means that units as defined can contain mixed material from two or more adjacent cultural strata. The later reconstruction of a stratigraphy, by assembling the measured arbitrary units into a sequence of physical layers, is accomplished by using section drawings[28].

Before discussing the phases in detail, it is helpful to characterize in general the gradual alterations of the temple area (figs. 8. 9).

The horizontal terrace of the monumental peripteral temple, measuring 41.27 × 15.55 m, which still characterizes the local landscape relief today, represents an Early Hellenistic remodelling of the area for the construction of this large building (phase 5b). To consolidate the construction site a stabilizing layer of green clay was laid down, covering nearly the entire ground plan of the building. This layer is on average 1.00 m thick; in the north, where the terrain slopes down, this layer measures up to 1.40 m. This filling is built up of hard green clay with nearly no finds in it[29].

According to the evidence of the excavated trenches the geological relief underneath the temple can be reconstructed as a series of several steps inclining from the south to north. The highest level of the physical ground under the south pteron lies at about 0.60 m below the floor level. A middle natural level under the northern half of the sekos has been identified at about 1.60 m beneath the floor, while the lowest evidence of the natural ground under the north pteron lies 2.60 m beneath the temple floor.

The pre-Hellenistic activities (phase 1–4) reaching back, in all likelihood, to the Early Geometric (EG) or Middle Geometric (MG) (I) period, are best characterized as a succession of

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25 Excavations on the site of the peripteral temple were carried out from 2001–2010; see the reports in Jahresbericht 2008; 2010; 2011. The chronology of the temple is based on finds in the filling of the foundation trenches for the columns of the southern peristasis (trenches 28/10 and 30/10). According to the study of these finds by C. Schauer the temple was constructed in the 3rd cent. BC. On this temple and its wider context is the town centre, see more recently Schauer 2021.

26 Trenches 21/07, 24/08, 25/08, 26/08, 27/09, 29/10.

27 Kerschner 2011, 20.

28 Kerschner 2011, 20.

29 This green clay is an erosion product of the geological flysch rock. To provide stabilizing layers, green clay was used in the substructure of the East Building of the late 4th cent. BC in the Sanctuary of Artemis, to create a large artificial terrace for the construction of the peripteral temple of the early 3rd cent. BC and as a floor construction in the small Hellenistic naiskos east of the peripteral temple in the town centre. Apparently, the application of this locally available clay represents a specific construction technique at Lousoi for stabilizing building constructions. Cf. n. 23.

horizontal usage levels and/or architecture in combination with different fillings, designed to level the south-north inclination of the terrain for their respective activities. The identified floor levels and/or architecture correspond roughly to the step-shaped natural terrain mentioned above. The artificial terrace of the Early Hellenistic temple represents the final overall levelling of the area.

As a result of the analysis of the stratigraphical data of the six trenches in the temple area the following five general phases in the historical development of the site can be reconstructed. These phases will later be discussed in conjunction with the pottery finds.

**Phase 1** (figs. 8. 9. 11)

In the lowest section of the excavation, 2.60 m below the north pteron of the temple, the earliest activities in the area that later became the Hellenistic town centre have been identified[30]. Directly on top of the natural ground-level, which was partially levelled, a floor level of reddish clay was constructed. On this floor the EG to MG (I) deposition of four vessels was found (fig. 11; see also figs. 19–22). The evidence for this early occupation is only based on a restricted area of approximately 2.30 m in square. It is not feasible to decide whether this floor is related to some architecture or whether it is an open space on the lowest section of the natural terrain of the excavated area.

**Phase 2** (figs. 8. 9)

The area between this earliest floor level and the apsidal building (see below) could not be excavated as the north wall of the Hellenistic sekos separates these two trenches[31]. Therefore, the precise relation between these two occupation levels has not been clarified.

The area above the earliest floor level[32] was covered by several filling layers which incorporate a small stone deposit[33]. The latter was covered by a filling layer topped by a charcoal layer, which was presumably a walking level. The charcoal layer is considerably deeper than the bottom edge of the foundations of the apsidal building. Therefore, it cannot be related to its outside ground level, and we have to assume a separate phase between the EG-MG (I) floor level and the Late Geometric (LG)-Early Archaic apsidal building. As the excavation of this walking level did not provide any diagnostic ceramics, the dating of this usage cannot be determined more precisely.

**Phase 3** (figs. 8. 9. 12)

The next clearly identifiable phase are remains of an apsidal building (fig. 12), probably dating to the LG-Early Archaic period[34]. This structure lies on the middle natural level to the south of the floor level mentioned above, and approximately over 1.00 m higher than it. Only the lowest part of the foundations of this building are preserved. They are built of unworked local flysch and small limestone pieces (phase 3b). The east-west orientated architecture has an apse at its western end. It is preserved up to 5.50 m in length and 4.40 m in width. Neither the floor of the building nor any occupation levels outside of it are preserved, so no archaeological contexts related directly to the apsidal building are available.

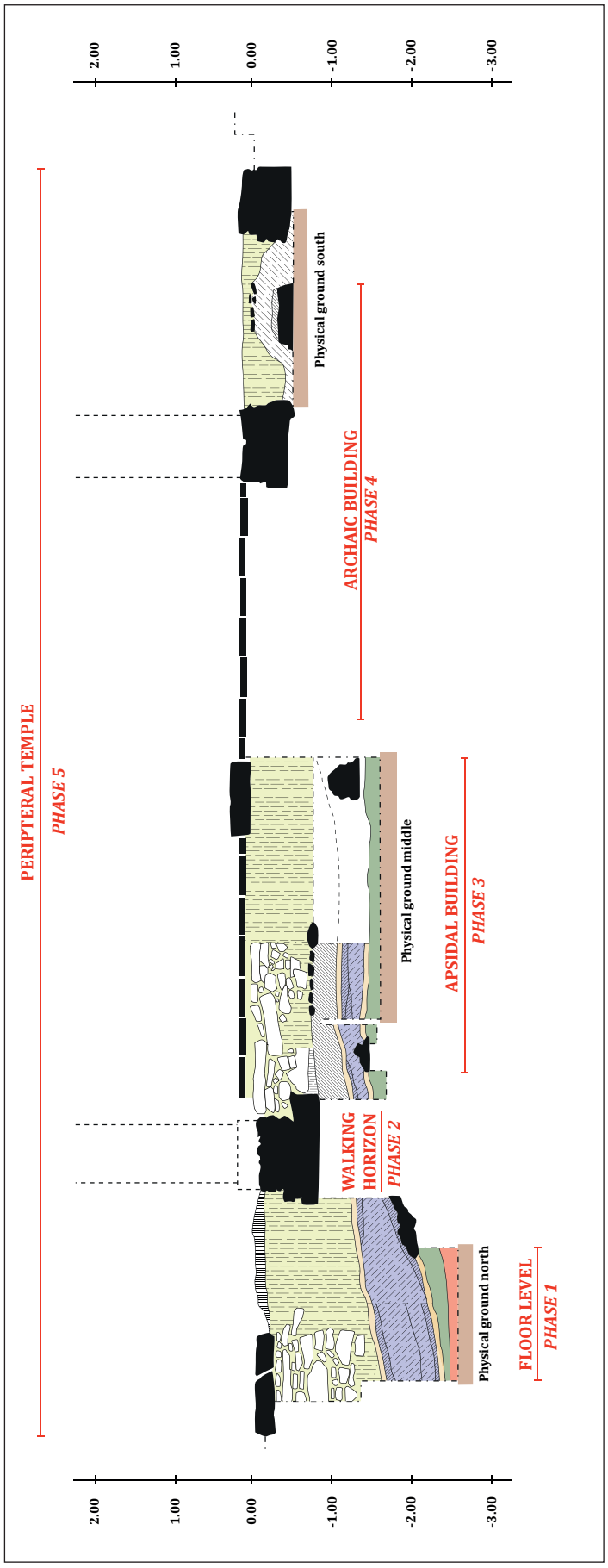
30 Trench 24/08.

31 Trenches 21/07 and 26/08 south of the sekos wall and trench 24/08 north of the wall.

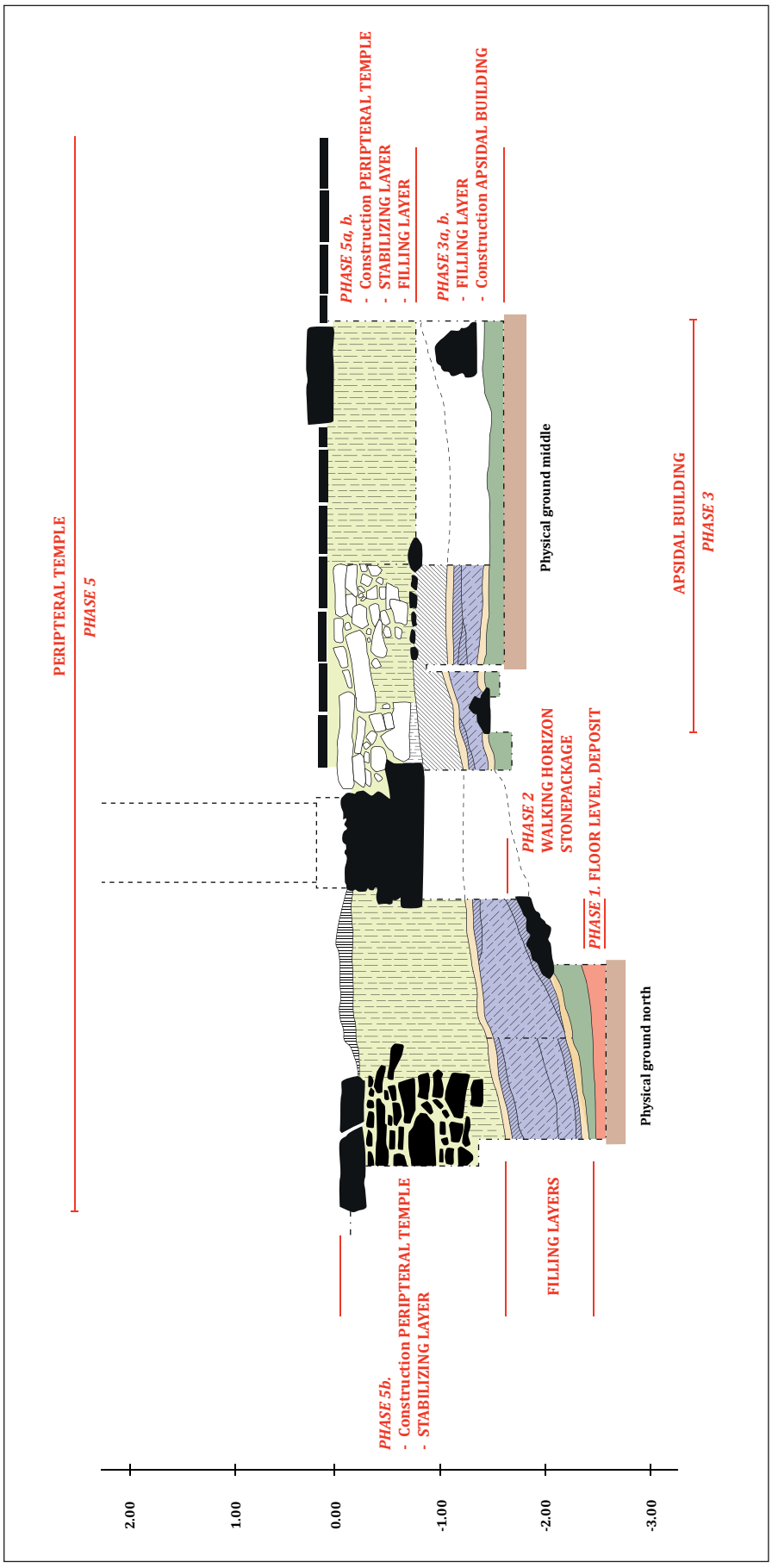
32 Trench 24/08.

33 This stone deposit at a distance of ca. 1.40 m north of the apse cannot be related to this building due to the stratigraphical evidence and their relative heights; thus, a sort of protoperistasis is to be excluded.

34 Trenches 21/07, 25/08 and 26/09.




8 Lousoi. Town centre, excavation 2002–2010. Profile looking east, showing the structures and layers of the Geometric and Archaic periods beneath the early Hellenistic peripteral temple (© OeAW-OeAI/drawing G. Ladstätter; digital editing N. Voß, I. Benda-Weber)




9 Lousoi. Town centre, excavation 2002–2010. Northern section of the profile fig. 8, showing phases 1–5 (© OeAW-OeAI/drawing G. Ladstätter; digital editing N. Voß, I. Benda-Weber)

The excavation in the southern half of the apse revealed a filling layer to level out the irregular natural terrain (phase 3a), and thereby to create a building horizon for the foundations[35]. In this filling layer the oinochoe **K 11/08** was recovered (see also below and fig. 23), providing a *terminus post quem* for the construction of the apsidal building.

West of the apsidal building two separate foundations can be reconstructed: they are from a curvilinear building oriented roughly north to south (trenches 27/09. 29/10)[36]. Although there are no direct stratigraphical connections to the layers and architecture of the apsidal building available, the same height and the similar building technique suggest that both buildings were approximately coeval.

**Phase 4** (figs. 8. 9)

Directly above the dismantled architecture of the two buildings filling layers have been identified in the trenches 25/08, 26/09, 27/09 and 29/10 (phase 4a). On the highest level of the physical ground in the area of the south pteron of the Hellenistic temple the foundations of a large building came to light. These foundations were set directly on the natural ground. In its height and building technique the stone construction in trench 29/10 is seen as the northwest corner of this building. Without going into further details here[37], this construction probably represents a (cult [?]) building of the Archaic period – possibly a predecessor of the monumental Hellenistic temple[38]. If the reconstruction of the building layout is correct, the southern part is set directly on the stable natural bedrock. To construct the northern sections of the building in the region of the middle natural level, the higher level required for the construction was formed by creating several filling layers (phase 4b)[39]. At the northwest corner foundation and covering the top of the filling layers, charcoal horizons utilized as walking levels to the south and west of the building have been identified (phase 4b)[40].

**Phase 5** (figs. 8–10)

As already mentioned above, in the Early Hellenistic period the whole area was remodelled completely to construct the monumental peripteral temple (fig. 10)[41]. The irregular ground resulting from the abandonment of the Archaic building was levelled locally by filling layers to achieve an approximately horizontal surface slightly inclining to the south (phase 5a).

Subsequently, a large artificial terrace measuring 41.27 × 15.55 m was constructed for the temple. This stabilizing layer comprises a deposit of green clay. This terrace represents the final building ground for the foundations and the superstructure of the building (phase 5b). Concerning these building activities it is worth mentioning that the Hellenistic temple builders encountered

35 Trench 25/08. For safety reasons – the foundation of the inner column of the Hellenistic sekos was free-standing during excavation – the natural terrain could not be reached. However, the lowest excavation unit showed only clayish earth with densely packed chips of flysch without any finds, therefore it is to be assumed that the excavation had nearly reached the bedrock.

36 Trenches 27/09 and 29/10.

37 Data will be presented in detail in the final Lousoi publication.

38 Concerning the chronology of this building there are no clear stratigraphical data available, except that the building precedes the peripteral temple of the 3rd cent. BC. A fragmented spearhead found close to the foundations of the building is dated by Christa Schauer in the 6th or early 5th cent. BC, see Schauer 2019, 180. In the area of the peripteral temple numerous fragments of a monumental Laconian roof, which is dated by Schauer in the 6th cent. BC, have come to light; see Schauer 2006, 75 f. As there is no other architectural evidence available, it is reasonable to relate this roof to the building under discussion.

39 Trenches 25/08 and 29/10.

40 Trenches 25/08 and 29/10.

41 The chronology of the temple is based on finds in the filling of the foundation trenches for the columns of the southern peristasis (trenches 28/10. 30/10). According to the study of these finds by Schauer the temple was constructed in the 3rd cent. BC, see above n. 25.



10 Lousoi. Town centre, excavation 2002–2010. Western part of the Early Hellenistic peripteral temple and the Archaic and Geometric structures beneath it. View from the west (© OeAW-OeAI/photo G. Ladstätter)

the ruins and in places the ground level of the Archaic (cult [?]) building. The Geometric occupations, however, were already covered by numerous filling layers, so these early phases were no longer visible in the Hellenistic period.

## POTTERY IN CONTEXT

Pottery remains the most abundant category of material evidence in both contexts at Lousoi, and the most ›secure‹ in terms of dating. The contextualization of pottery finds offers a framework for dating. Our efforts focus here on the relation between the excavation layers and the pottery finds, so as to offer preliminary observations on the chronology of the Lousoi early assemblages, as well as on the function of the pottery[42].

The connections between pottery and stratigraphy rest both on a selection of diagnostic pottery pieces[43] and the quantitative analysis of the assemblage as a whole[44]. In the case of the early contexts of the Lousoi town centre, the stratigraphical sequence (as mentioned above) is numbered from the lowest and earliest level up to the topmost. An effort has been made to understand which unit contains mixed material from two or more cultural phases and which is ›clean‹, with material from a single phase. An appreciation of the deposition history is also aided by the recording of

42 The relation of pottery finds with other important categories of material remains, such as the animal bones (from the Lousoi town centre), will only very briefly be touched upon here. They will be fully discussed in the final publication of Geometric and Archaic Lousoi. The animal bones in particular have been studied and will be published in the Lousoi final publication by Prof. Gerhard Forstenpointner.

43 On the term »diagnostic« and its interpretation, see Kerschner 2011, 22 f.

44 To be published in the Lousoi final publication.



11 Lousoi. Town centre, excavation 2002–2010. Cooking pot deposit of the Geometric period (phase 1) (© OeAW-OeAI/photo G. Ladstätter)



12 Lousoi. Town centre, excavation 2002–2010. Apsidal building of the Late Geometric-Early Archaic period beneath the Early Hellenistic temple. View from the east (© OeAW-OeAI/photo G. Ladstätter)

joining pottery sherds, especially in the case of the embankment deposit in the Artemis Sanctuary[45]. Dating is established primarily through the pottery that the stratigraphical layers contain, but also with assistance provided by other classes of finds (i.e. metal artefacts, figurines, especially in the case of the Artemis Sanctuary).

## The Two Early Assemblages at Lousoi

The pottery categories in the two assemblages are quite straightforward: they do show some similarities but also clear differences between the two contexts. It should be mentioned here that the total amount of pottery from the early phases of the Lousoi town centre is far less than at the Artemis Sanctuary. This difference may well reflect the ancient reality that the pottery assemblage was bigger in the sanctuary, nevertheless we should also note that excavations in the town were restricted to certain areas, where deeper layers could be excavated beneath the Hellenistic temple (figs. 11. 12). In the embankment deposit of the Artemis Sanctuary, the main pottery categories comprise[46]:

- ›Drinking vessels‹[47]: skyphoi, kantharoi, kotylai are the commonest forms (with the highest percentage claimed by the skyphoi and kantharoi) during the Geometric period, followed by the predominance of the kotylai throughout the Archaic period. One-handled cups occur,

45 This approach first made in another context (the early Sanctuary of Artemis in Ephesos) has proven useful in the case of early Lousoi as well (see Kerschner 2011, 20).

46 About 2,100 diagnostic sherds were catalogued and analysed and will be published in the Lousoi final publication.

47 Traditionally, small open forms are classified as drinking vessels, but they could have actually held both liquid and semi-liquid substances (i.e. drink or food), obscuring any rigid boundaries between how the two were consumed. As Morgan argues, the association of small open forms with drink was popular by Early Iron Age scholars, until it was recognised that most (post-sacrifice) meals were stews and so quite liquid. We should therefore be prepared to associate small open vessels with both liquids and semi-liquid comestibles: Morgan (in press); see also Kerschner 2011, 24; Charalambidou 2017, 259 (with bibliography); Charalambidou (forthcoming).

but in significantly smaller numbers. During the 6th century BC, other imported drinking vessels also appear, such as kylikes, as well as a very small number of (Lakonian) lakainai.
- Serving vessels (bowls, plates, lekanai)
- Kraters, krateriskoi, including small-sized pedestalled kraters
- Fast and slow pouring vessels (including oinochoai, round-mouthed jugs, lekythos-oinochoai, lekythoi, juglets, etc.)
- Amphorae
- Hydriai
- Stamnoid vessels
- Pyxides
- Perfume vessels (exaleiptron, aryballoi, alabastra)
- Miniature and diminutive vessels: kotyliskai, krateriskoi, kanthariskoi, kalathiskoi/other kalathoi in sizes smaller than the assumed functional ones would have been, miniature bowls (among them omphalos bowls), serving vessels, amphoriskoi, pouring vessels, pyxides, an exaleiptron, a tray, a few miniature skyphoi and a few possible hydriskai and miniature tripods
- Token (votive) vessels (see below): local/regional series of pyxides with conical lid and cylindrical body (pseudo-pyxides)
- Ring vase, perirrhanteria, stands fitted with ceramic utensils, used for various rituals
- Lamps.

In the early phases of the Lousoi town centre, the following main categories have been detected:
- ›Drinking vessels‹: mainly skyphoi and kantharoi
- Kraters, including (functional) small-sized ones
- Pouring vessels (especially oinochoai and round-mouthed jugs)
- Hydriai
- A few pyxides
- One miniature vessel
- Cooking pots.

## The Sanctuary of Artemis Hemera: The Pottery from the Embankment Deposit

The ceramic assemblage of the Artemis Sanctuary embankment deposit has two distinct features. The first observation is the different states of preservation of the ceramics found within the rubble embankment: this ranges from heavily fragmented pottery sherds to completely or almost completely restorable pots. The vast majority of the well-preserved vessels was found on top of the rubble. Concerning this pattern, it is worth noting Petra Pakkanen's argument about the character of ritual deposits: »(which) consists of intentionally laid out components resulting in a deposition which is characterized by formality and special care in spatial patterning, such as the layout, distribution and choice of deposited items or artefacts. In certain cases refuse disposal is clearly not a random act, but instead depositing for example *katharmata* or *oksythymia*, waste and residue from purification rituals or meals, is intentional.«[48]. In the embankment deposit, most of the best preserved vessels were, as it seems, carefully placed in the gaps between the stones, most notably at the top of the rubble embankment, during the construction work, and then covered with the levelling layer. Therefore, it becomes likely that this layout was intentional and was connected with some dumping event and/or some destruction rite.

The other important element is the significant amount of pottery sherds with joins across the layer boundaries of the levelling layer and the rubble embankment. When multiple joins occur between physically adjacent layers, it is likely that they were part of the one and the same deposition

48 Pakkanen 2015, 34.

process[49]. It is therefore possible, in agreement with the stratigraphical evidence (see above), that the deposition of this ›refuse‹ was a major dumping event and even probably a one-time single project.

In general, in the earliest phases of the Artemis Sanctuary there is a predominance of drinking and mixing shapes, which stress the importance of drinking/feasting activities at the sanctuary (again we should emphasize the multi-functionality of various vessel categories, such as the ›drinking‹ forms), but a scarcity of Geometric-Archaic coarse cooking pots, storage vessels and animal bones. A possible explanation may be that animal bones and ash (and the cooking pots [?]) may have been deposited at particular locations elsewhere within the cultic site, probably to avoid contamination, and that these remains have not been discovered yet in the Artemis Sanctuary. The significance of keeping these remains within the cultic context has recently been acknowledged by scholars who speak of a conscious saving of sacred ash and other material[50]. Selective deposition of the remains of the ritual dining was not always the case, however; there are examples of Greek sanctuaries where an intermingling of pottery, floral and faunal material and votive-objects has been attested in the sanctuaries' refuse areas[51]. Another important consideration here is that pithoi, jars and bins for bulk storage are extremely rarely encountered, if at all, in the Artemis Sanctuary deposit. One therefore may have to look elsewhere for the storage areas in this sanctuary, or argue that cooked meals were brought to the sanctuary by the participating households.

From the later part of the 8th century BC and throughout the Archaic period, miniature and diminutive pots discovered in the embankment deposit, alongside the figurines and other types of votives[52], reflect the clear and distinct ritual character of the assemblage. It should be noted that these categories have not been discovered in the early phases of the Lousoi town centre. The ritual character of the Artemis Sanctuary deposit is clearly underlined by various pottery categories in the list above: not only by the great variety of miniature/diminutive and token pottery, but also by other special vessel forms such as the small-sized pedestalled kraters or the ring vases, perirrhanteria, stands, etc.

Activities at the sanctuary seem to begin at an early stage in the Geometric period, more specifically within the EG to MG I periods, as is indicated by a good range of pottery shapes (examples cited below). The existence of pottery types that find parallels in the Late Protogeometric (LPG) should also be noted, but we remain cautious in claiming a starting-point of the activities of the Lousoi inhabitants in the LPG both because of the fragmentary state of preservation of most pottery fragments from Lousoi itself and from the difficulties of finding parallels in closed assemblages in the northern Peloponnese that could serve as chronological anchors.

Discussion here will be restricted to finds which can also serve as chronological markers[53]. We start with the ›drinking vessels‹. Skyphoi during the Geometric and Subgeometric periods were a common vessel shape found in the embankment deposit in the Artemis Sanctuary (and in the early contexts of the Lousoi town centre). Among the earliest skyphoi is a ›shallow‹ vessel (**K 395/87**), whose short offset lip and its direction in relation to the body contour may indicate a date early in the Geometric period (possibly in the EG II) (fig. 13)[54]. The favourite drinking vessel form in West Greece, the kantharos, especially in its shape with low handles, occurs at Lousoi in both contexts[55]. The earliest preserved kantharos (**K 26/97**) from the Artemis Sanctuary embankment deposit may date in the EG II or MG, judging from parallels from Aigion, Trapeza and Tegea (fig. 14)[56]. The kantharoi with offset rim and globular body also ap-

49 Kerschner 2011, 20.

50 See e.g. Ekroth 2017, esp. 42 f.

51 See e.g. the Apollo Daphnephoros Sanctuary at Eretria (Verdan 2013), the Plakari Sanctuary in Karystia (Crielaard 2017; Charalambidou 2017) and the Artemis Sanctuary in Ephesos (Kerschner 2017).

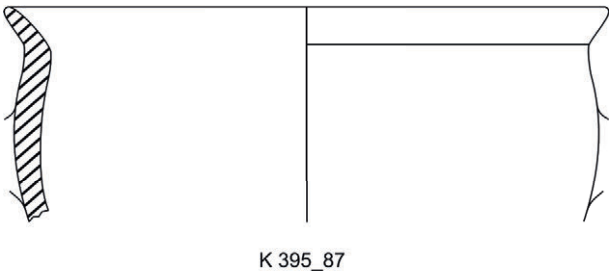
52 Mitsopoulos-Leon 2009; Mitsopoulos-Leon 2012, esp. 137 f.

53 We will discuss the full range of the vessel repertoire based on vessel shape and function in the final publication.

54 Cf. Coldstream 2008, 14 cat. 2b pl. 2.

55 Cf. Coldstream 2008, 221.

56 Papadopoulos 2001, 389 fig. 7; Gadolou 2007, 18 cat. 13 fig. 12; Voyatzis 2014, 272 cat. C-EG 32 fig. 31.




13 Skyphos K 395/87 (Rim Ø 8.0 cm; © OeAW-OeAI/drawing C. Schauer; digital editing L. Nicolae)

pear in the Artemis Sanctuary deposit (and the Lousoi town centre) and find their closest parallels in the LG and Subgeometric periods[57]. The fact that the kantharos is discovered in a broad range of sizes in the deposit (always black-glazed in the case of Lousoi)[58] may show the popularity of the shape, as later demonstrated with the kotyle (see below) and may also be connected with diverse consumption practices/rituals. Kotylai become the most common drinking vessel shape in the deposit from the Early Archaic period onwards (kotylai of the Protocorinthian and Corinthian periods are well attested). Nevertheless, the earliest kotylai discovered here, i.e. the protokotylai[59], can be dated from the beginning of the appearance of this shape, that is, from MG II–LG I. The latest examples may date at least to the end of the Archaic period (end of the 6th – beginning of the 5th cent. BC). The majority of kotylai are imported, especially from Corinth[60]. As in the case of the kantharoi, there is a wide size range. Diverse consumption practices can be assumed here as well, especially since a few kotylai are definitely on the large size. Cups/kylikes are represented in the embankment deposit in the Archaic period: among them are Attic, Corinthian and Lakonian examples. Among the 6th-century imported drinking vessel forms is the Lakonian lakaina; so far this shape is attested by two examples, which may date to the first half of the 6th century BC.

Mixing bowls, especially kraters of different sizes, are fewer than drinking vessels, a phenomenon to be observed in other Aegean sanctuaries as well[61]. The earliest preserved krater from this deposit may be recognized in two joining body fragments (**K 206a–b/95**) which, judging by the thickness of its walls, belong to a large mixing vessel; based on parallels from Olympia, this pot may date back to the EG or even the LPG (fig. 15)[62]. Both Geometric (especially MG and LG) and Archaic kraters are present in the deposit. Among the Archaic mixing bowls (especially Middle Corinthian) some column kraters are encountered. The presence of fully functional mixing bowls in the Archaic period is of special importance and speaks in favour of a continuity of drinking practices within the sanctuary.

There are not many well-preserved pouring vessels in the deposit. Both the round-mouthed jug and the oinochoe make their appearance. The round-mouthed jugs are well represented but very fragmentarily preserved. Some identifiable pieces can date to the Geometric period, especially the LG, and the Protocorinthian periods, while others find parallels in Late Archaic examples. The slow-pouring counterpart of the oinochoai and the jug, the lekythos-oinochoe, especially the form with conical body (conical lekythos-oinochoe), is well attested in the assemblage from the Early Protocorinthian period, the time of the wide circulation of this type in the Peloponnese and beyond[63].

57 See also Symeonoglou 2002, 122–126.

58 The size variation of the kantharoi at Lousoi is between 7 and 15 cm in height, with a rim diameter of less than 10 cm being surprisingly common.

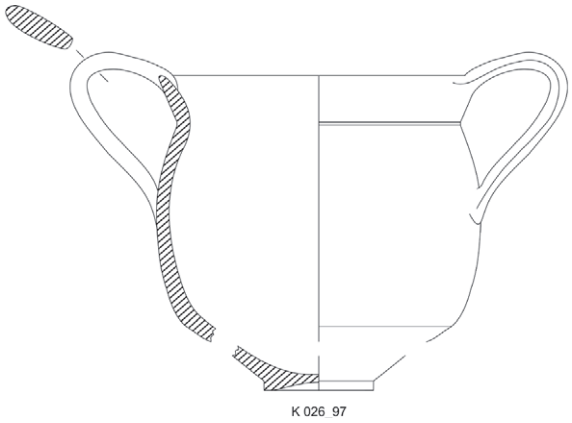
59 At least three such sherds were spotted in the assemblage.

60 Science-based analyses are part of this interdisciplinary project (petrographic, elemental analyses, and geological prospection) and will be included in the final Lousoi publication. Preliminary remarks will be presented in a joint article by Pamela Fragnoli, Michael Kerschner, Nora Voß and Xenia Charalambidou.

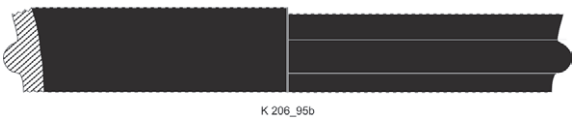
61 Kerschner 2011, 24; Charalambidou 2017, 260.

62 Lemos 2002, 50; <https://arachne.dainst.org/entity/1195513?offset=100&fl=20&q=Krater%20griechisch&resultIndex=150> (11.10.2021).

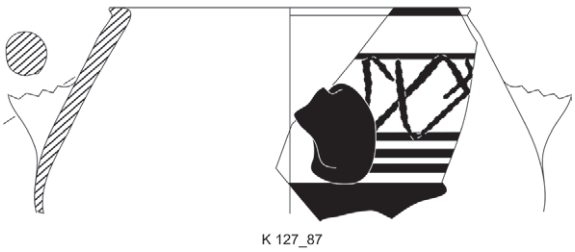
63 See e.g. Morgan 1999.




14 Kantharos K 26/97 (Rim Ø 7.2 cm; © OeAW-OeAI/ drawing C. Schauer; digital editing L. Nicolae)




15 Krater K 206/95 (Ø max. 18.0 cm; © OeAW-OeAI/drawing C. Schauer; digital editing L. Nicolae)




16 Pyxis K 127/87 (Rim Ø 9.0 cm; © OeAW-OeAI/ drawing C. Schauer; digital editing L. Nicolae)

Storage containers are, to date, mainly restricted to fine wares, while pithoi and other bins for bulk storage are extremely rare in the excavated assemblage (see above). Likewise, amphorae have only been sporadically found in the deposit and they are mainly fragmentarily preserved, apart from a 6th-century amphora (**K 10/87**), which bears figural decoration of a ritual nature[64].

A range of functional pyxides, in addition to the series of pseudo-pyxides, is attested in the deposit. The earliest, to date, pyxis from the deposit is a small one with linear decoration in the handle zone that finds close parallels in an EG or MG pyxis (**K 127/87**) from Tegea (fig. 16)[65].

Aryballoi in the Artemis Sanctuary deposit are imported, mainly from Corinthia and much more sporadically from Lakonia (two 6th-cent. pieces). Representative types of Corinthian aryballoi from the Protocorinthian to the Corinthian periods (until at least the Middle Corinthian) are documented in the assemblage. Alabastra, on the other hand, are very poorly represented.

The presence of a significant number of miniature/diminutive and token pots, together with the figurines and other types of votives, such as jewellery[66], strongly indicates the ritual character of this deposit (see above). In various Greek sanctuaries, miniature/diminutive pots usually appear in the 8th century BC[67], but become much more widespread during the 7th and 6th centuries. This miniaturization phenomenon at Lousoi occurs in conjunction with other ritual activities, as the varied range of Archaic functional pots present demonstrates. It has now been well shown that miniature pots are not cheap substitutes of wealthier offerings, but play a significant part in the Geometric and Archaic economies[68].

Among the types of LG and Archaic ceramic votives that include both open and closed forms, the commonest local/regional ›token‹ vessel category is the pyxis with a tall conical lid and cylindrical body, the so-called pseudo-pyxides (fig. 17)[69]. A good number of these pyxides were not functional and had a symbolic (purely votive) use. These do not have a lid separate from the body but were made of a piece, though still hollow inside; often an incised line around the cir-

64 Mitsopoulos-Leon 2011.
65 Voyatzis 2014, 278 cat. C-EG 76 fig. 37.
66 Mitsopoulos-Leon 2012.
67 With exceptions, e.g. in the Artemision of Ephesos, there are miniature vessels already in the Protogeometric deposit, see Kerschner 2017.
68 E.g. Gimatzidis 2011; Massar – Verbanck-Piérard 2013 (on miniature and other perfume vases); Barfoed 2018; C. Morgan in this volume; S. Barfoed in this volume.
69 Schauer 2001, 156; Schauer 2014, 238; von Miller 2016, 282.



17 Pseudo-pyxides (© OeAW-OeAI/photo N. Gail)

cumference of the pot alludes to the lid that a fully functional pot would have had. Such vessels are termed by Signe Barfoed as ›token‹; their function was purely ritual[70]. The homogeneous stratigraphy of the context as well as the lack of published parallels from other regions make the starting date, as well as their time range, of these pyxides particularly difficult to establish. Their production may possibly have begun in the LG or the early Archaic period[71], but it may have enjoyed a broad time span, especially since some of these pots seem more ›conventionalizing‹ in form and styles than others.

Kalathiskoi/other kalathoi in sizes smaller than the assumed functional ones would have been, although not many exist in the assemblage, comprise another special category. They could have served as actual containers, for instance, for fruit or wool, offered in symbolic proportions. From the last quarter of the 8th century BC, there comes a most characteristic ware type with impressed decoration imported to Lousoi, that of ›Achaian Impressed Ware‹[72]: it largely comprises a small number of handleless kalathoi, with a combination on the body of solid walls of impressed decoration with an open-work/perforated part[73]. Such a shape, strongly connected with the world of women and textile production[74], directly suggests the participation of women in rituals at the Artemis Sanctuary at least from the LG period. Other vessel shapes have no clear domestic function and are basically known from sanctuary contexts and more rarely in tombs; these latter are therefore considered as special shapes and are associated with cultic practices, i.e. vessels such as ring vases, perirrhanteria, stands which supported ceramic utensils used for various rituals. Concerning the ritual utensils, the earliest preserved to date is a fragment that may have come from a stand, the fine ware **K 286/87** (fig. 18) with its Geometric linear decoration, of MG (or the latest of LG [I (?)] date). If not a multiple vessel[75], it may have come from a large krater or an early type of thymiaterion (incense burner), a huge lamp stand or it may even be some sort of receptacle for libations.

70 Barfoed 2018, 116 f. fig. 5.

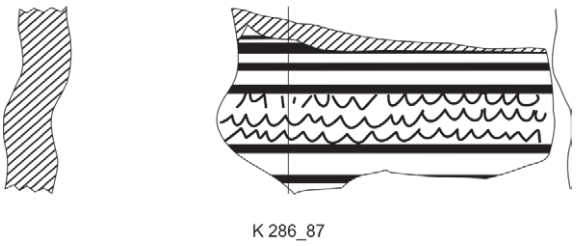
71 Schauer 2014, 238.

72 On this class of pottery, see Gadolou 2003; Gadolou 2008, 190. 305–307; Gadolou 2011; Gadolou 2017, passim.

73 As first reconstructed by Schauer 2014, 242–244 pls. 1. 8. A small number of other vessel shapes of the ›Impressed Ware‹ is also present in the Artemis Sanctuary deposit.

74 See e.g. Bundrick 2008.

75 On ›multi-storeyed‹ vases: Simantoni-Bournia 2011. We are grateful to Professor Eva Simantoni-Bournia for observing that such ›multi-storeyed‹ vessels usually have thinner walls than K 286/87, unless this particular vessel is an exception.




18 Stand K 286/87 (Ø max. 11.8 cm; © OeAW-OeAI/drawing C. Schauer; digital editing L. Nicolae)

On the possible time of deposition of this ›sacred refuse‹ assemblage in the Artemis Sanctuary, one has to stress that a wide range of the later pottery artefacts finds parallels in ceramics from other sites, especially in the Peloponnese, down to the mid-5th century BC. It should be mentioned, though, that the chronological range of the miniature/diminutive pots cannot be estimated with accuracy[76]. Views on the dating of the youngest objects found in the embankment deposit vary. Based on her research on the small finds from the Sanctuary of Artemis, Veronika Mitsopopoulos-Leon argues that the youngest terracotta figurines date from the early 5th to the early 4th century BC[77]. Christa Schauer[78] suggests an earlier dating for the enlargement of the upper terrace[79]. Her evaluation indicates that the youngest ceramics date from the late 6th/early 5th century BC. Based on our current evidence, we would like to suggest that the event of deposition may have taken place at an early stage in the Classical period.

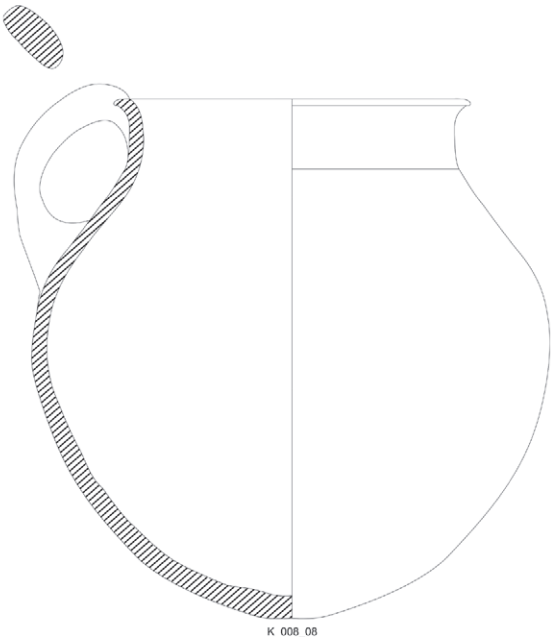
## The pre-Hellenistic Phases beneath the Peripteral Temple in the Town Centre and the Pottery Finds

In the other early assemblage from Lousoi, that of the Lousoi town centre[80], it is the pottery and the animal bones that provide the main material basis for reconstructing the early activities at this site. Both fine painted and coarse wares coexist here. We begin with a sketch of the vessel forms that are encountered in this area, before turning to a short discussion of the stratigraphical sequence in conjunction with the pottery finds for each phase. Discussion here is focused around certain characteristic types which can serve as chronological markers for the dating of the phases. Concerning the fine painted ware, among the open forms, ›drinking vessels‹ predominate, especially skyphoi and less often kantharoi. Mixing bowls are also common, especially kraters, including small sized ones (the latter is still a functional version), while the closed shapes are mainly represented by pouring vessels, a small number of pyxides as well as single occurrences, such as a hydria and a lekythos(-oinochoe). No figurines, and no miniature pots (apart from one bottom) have been spotted. Coarse wares are predominately cooking pots, but other forms appear very sporadically.

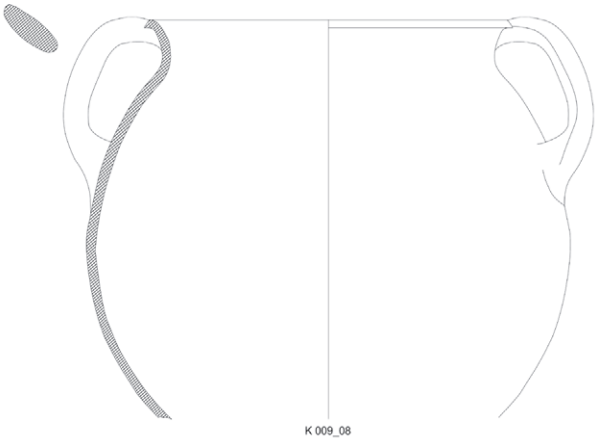
In the early phases of the Lousoi town centre, the predominance of drinking, mixing shapes and cooking pots indicate an emphasis on drinking, here unquestionably combined with the cooking of food and food consumption, as the presence of animal bones also designate.

The earliest period in the Lousoi town, phase 1, in terms of relative chronology, is a usage/occupation level from where there are no preserved architectural remains (see above). It includes, however, the deposition of the best preserved early assemblage in this area: two *in situ* coarse cooking pots (**K 8/08**. **K 9/09**), each of which contained a smaller fine painted vase in its interior (**K 6/08**. **K 7/08**). The larger two-handled cooking pot contained a lekythos(-oinochoe) (**K 6/08**) and the smaller one-handled cooking pot contained a kantharos (**K 7/08**) (figs. 19–22)[81]. The chronology of this important assemblage is approximately established in

76 On difficulties on dating miniature pots, see e.g. Risser 2001, 68.
77 Mitsopoulos-Leon 2012, 138 f.
78 This assumption is also confirmed by von Miller (2016, 279).
79 Schauer 1998, 271; Mitsopoulos-Leon – Ladstätter 1999, 70; Schauer 2001, 158; Mitsopoulos-Leon – Ladstätter – Schauer 2013, 92; Schauer 2014, 238 f.; von Miller 2016, 279.
80 About 240 diagnostic sherds have been catalogued and analysed.
81 Preliminary reports in Schauer 2018, 586–588 figs. 1. 2; Jahresbericht 2018, 105.



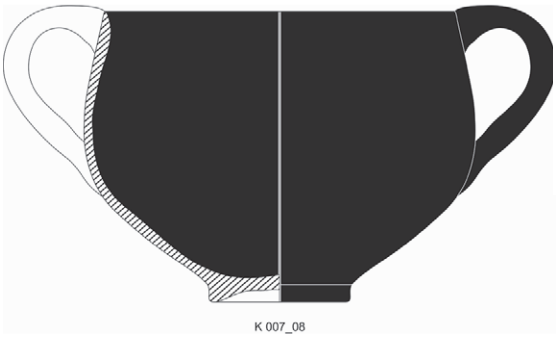

19 Cooking pot K 8/08 (Rim Ø max. 15–18 cm; © OeAW-OeAI/drawing C. Schauer; digital editing L. Nicolae)



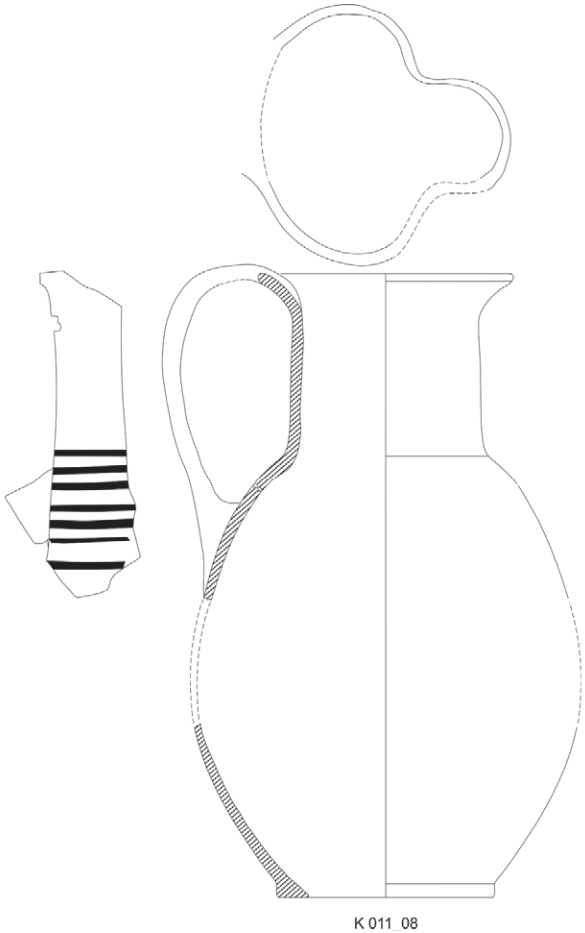

20 Cooking pot K 9/09 (Rim Ø max. 20 cm; © OeAW-OeAI/drawing C. Schauer; digital editing L. Nicolae)




21 Lekythos(-oinochoe) K 6/08 (Base Ø 4.2 cm; © OeAW-OeAI/drawing C. Schauer; digital editing L. Nicolae)




22 Kantharos K 7/08 (Rim Ø max. 10 cm; © OeAW-OeAI/drawing C. Schauer; digital editing L. Nicolae)




23 Oinochoe K 11/08 (Base Ø 4 cm; © OeAW-OeAI/drawing N. Voß, X. Charalambidou; digital editing L. Nicolae)

particular by the lekythos(-oinochoe) with the hatched triangles on the shoulder whose shape and decoration point towards it belonging to the EG or the latest the MG (probably I) period[82]. The dating of the cooking pots and the kantharos is more difficult to establish, the former on account of the lack of published examples[83], the latter on account of the conservative tendency of the shape[84]. This ceramic assemblage shows that activities began at the site before the construction of the apsidal/curvilinear buildings (see above) and is our earliest evidence of dining/feasting at the spot. It offers a chronological marker for phase 1, estimated to be in the EG–MG (I) periods.

Phase 2 comprises secondary filling layers to level up the south-north slope of the terrain, whereas phase 3 comprises both phase 3a (the further levelling of the filling layers to provide a flat level for the apsidal/curvilinear buildings, with the layout for the foundations of the buildings) and phase 3b (the first preserved architectural remains at the site, i.e. the construction of the apsidal/curvilinear buildings, see above). From the filling layer which was formed to set out the foundations of the apsidal structure, a trefoil pouring vessel, the oinochoe **K 11/08**, partly preserved and in many fragments, can serve as the best chronological marker for the period just before the construction of the building (fig. 23). Its dark-ground style (traces of black glaze are only preserved) and, especially, its profile may indicate a MG or LG date[85]. This oinochoe may serve as a *terminus post quem* for the construction of the apsidal building, which may have been built within the LG period, even towards its end[86].

Phase 4 is related to filling/levelling layers for the foundation of the Archaic orthogonal (cult [?]) building. It comprises various sub-phases (analytically above). Within the fill of phase 4a a small number of skyphoi (**K 2/08**. **K 3/08**. **K 4/08**. **K 5/08**) was included. The profile of skyphos **K 02/08** especially probably indicates a date between the MG II and the LG periods[87] (fig. 24), signifying that this filling may even have included material from earlier phas-

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82 In EIA Aegean workshops hatched triangles on fine painted wares are used already from the EG period, but this motif carried on, according to Nota Kourou (1999, 46), until MG I (in Corinth some examples may even survive until MG II, see below). A lekythos (with horizontal rim) with a similar decoration on the shoulder appears also in Tegea (Voyatzis 2014, 281 cat. C-EG 103 fig. 40), and is dated to the EG period; the shape of the body in Tegea is more rounded than the Lousoi example, while the Lousoi pot is more biconical. A lekythos(-oinochoe) with a biconical body and hatched triangles on the shoulder, followed by alternating light-ground set of horizontal zones and dark-ground bands, ascribed to the EG period, was also found in Achaia, in Aigio (Οδός Κολοκοτρώνη 16: Gadolou 2008, no. 80 fig. 85). A lekythos(-oinochoe) from the Sanctuary of Demeter and Kore in Corinth, with cross-hatched triangles on the shoulder, is dated to the MG II period, indicating, as mentioned above, that this ›conservative‹ type of decoration may even last to this period (Pfaff 1999, 61. 76 f. no. 8 fig. 4).

83 The two coarse cooking pots from the assemblage of the four vessels seem to share some morphological features, with slight variations. They both have an everted rim with downturned lip, the neck between the rim and the shoulder is dissociated, the vertical handle is attached from the rim to the shoulder, their body is globular. In K 8/08 the body ends in a flattened base (the base of K 9/08 is not preserved). The rim diameter of K 8/09 is 15–18 cm, whereas that of the bigger cooking pot K 9/08 is 22 cm. Judging from their similarities in form, they could be roughly contemporaneous. Concerning their manufacturing technique, they are both handmade. In its two-handled version, the closest parallel can probably be traced in a cooking pot from a burial context at Skepaston Kalavryton (Xirokampos; plot Αχαϊκές Πρωτεΐνες) (Alexopoulou 2009, 126 fig. 115/63 drawing 19). Coarse pots, described as χυτροειδή αγγεία occur in other contexts from Kalavryta as well, but they are too fragmentary to evaluate their profile characteristics and their similarities with the pots from Lousoi (see Alexopoulou 2009, figs. 154/72. 155/72). The vessel from Skepaston is again handmade and has been dated to the PG period, implying that this shape may have had a long tradition in the area. A two-handled coarse handmade pot, dated to the EG period, appears also at Drepanon in Achaea but it seems that this latter one belongs to a different type (Gadolou 2008, 93 fig. 38, 7; Alexopoulou 2009, 126).

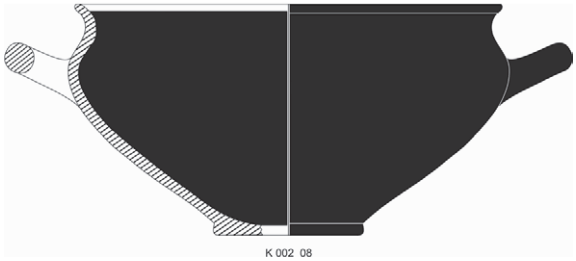
84 On difficulties in dating this shape, see Papadopoulos 2001; Symeonoglou 2002, 128 cat 125 fig. 69; Schauer 2018, 587; Jahresbericht 2018, 105.

85 Coldstream 2008, 94–98. We are grateful to Prof. Nota Kourou for remarks on the chronology of this very fragmentarily preserved pouring vessel.

86 It is worth observing that among the latest preserved pieces, the drinking vessel K 16/08, a 7th or early 6th cent. BC product (with horizontal banding on the exterior surface or the rim), found beneath the wall-footings of the apsidal building, is probably an intrusive piece.

87 Symeonoglou 2002, 113 f. cat. 66 fig. 58; Kolia – Gadolou 2007, 193. 204 fig. 6.

es, now in a secondary deposition in this context. Phase 5, which again included filling layers to level the pre-temple terrain, included mixed Geometric and Archaic, as well as Hellenistic pottery sherds.




24 Skyphos K 2/08 (Rim Ø 13 cm; © OeAW-OeAI/ drawing N. Voß; digital editing L. Nicolae)

## CONCLUDING REMARKS

The stratigraphy in conjunction with the pottery finds from the embankment deposit in the Artemis Sanctuary and the Lousoi town centre indicate two complementary sites, which probably evolved roughly contemporaneously. Their initial established chronological point, probably at an early stage in the Geometric period, offers us fresh insight into the early activities of the community in both contexts at Lousoi. Furthermore, it may necessitate a reassessment of the view that the ritual practices in the Artemis Sanctuary began in the 8th century BC[88]. It is highly likely that activities at the sanctuary started earlier, from at least the beginning of the Geometric period, reaching a peak in the 8th century BC, which was then maintained during the Archaic period. As for many other Greek communities, the 8th century BC was crucial for the development of the early poleis, their religious practices and the vitality of local communities[89].

The Lousoi town centre shows a successive series of activities, stratigraphically documented, which may also imply changes in function of the area before the final construction of the Hellenistic temple. The material remains in the embankment deposit in the Artemis Sanctuary, on the other hand, which was probably designed as a sanctuary from its outset, may indicate that the event of deposition, i.e. the dumping of these material remains as refuse in this particular deposit, may have taken place at an early stage in the Classical period, in the framework of new activities and structures in the cultic context of Artemis Hemera. The picture is of a sanctuary which had probably set out to attract participants from other sites in the Peloponnese and beyond, judging by the imports present at the sanctuary, if one allows that at least some were brought in from afar by their actual owners.

## CATALOGUE[90]

**Inv. K 395/87; T 87-3** **Fig. 13**
Sanctuary of Artemis. Enlargement of the upper terrace; Sondage O6/87
Skyphos; H: 2.75 cm; W: 3.4 cm; TH: 0.4 cm; Rim Ø: 8.0 cm; 10 %
Fabric: reddish-yellow (7.5 YR 6/6). Hard. Sparse, very fine, hard, rounded, black and angular red inclusions as well as sparse mica and fine, rounded voids. The surface is pink (7.5 YR 7/4).

**Inv. K 26/97; T 97-24+27** **Fig. 14**
Sanctuary of Artemis. Enlargement of the upper terrace; Sondage 2/97; Unit 19 and 20
Kantharos; H: 3.7 cm; W: 2.6 cm; TH: 0.4 cm; Rim Ø: 7.2 cm; 8 %; Base Ø: 3.4 cm; 100 %
Fabric: very pale brown (10 YR 8/4). Soft. Sparse to moderate very fine, hard, reddish rounded and angular black inclusions as well as soft white (lime [?]) particles. Sparse to moderate, fine, angular voids. The surface is worn away and very pale brown (10 YR 8/4).

88 Cf. with Schauer 2018.
89 C. Morgan in this volume, with bibliography.
90 The description of the inclusions follows the guideline of C. Orton – P. Tyers – A. Vince, Pottery in Archaeology (Cambridge 1993) 231–241 and D. P. S. Peacock (eds.), Pottery and Early Commerce. Characterization and Trade in Roman and Late Ceramics (London 1977) 28–32.

**Inv. K 206/95; T 95-43+65** **Fig. 15**
Sanctuary of Artemis. Enlargement of the upper terrace; Sondage 16/95 Nord; Unit 3
Krater; H: 4.6 cm + 3.8 cm; W: 6.25 cm + 6.85 cm; TH: 1 cm; Ø max.: 18 cm; 10.5 %
Fabric: reddish-brown (5 YR 7/6). Hard. Moderate very fine, hard, rounded black inclusions as well as sparse, fine, hard, angular orange, rounded brown and rounded colourless quartz particles. Sparse, fine, rounded voids. The exterior is covered with black paint.

**Inv. K 127/87; T 87-29** **Fig. 16**
Sanctuary of Artemis. Enlargement of the upper terrace; Sondage O7/87
Pyxis; H: 5 cm; W: 4.4 cm; TH: 0.4 cm; Rim Ø: 9 cm; 4 %.
Fabric: brown (10 Y 5/3). Hard. Common fine, hard, rounded black and soft, rounded white (lime [?]) inclusions as well as moderate rounded voids. The exterior is decorated with a thin band on the rim, an ornament at the shoulder, perhaps a lozenge and below another four bands. The lower part of the body and handle was presumably painted.

**Inv. K 286/87; T 87-6** **Fig. 18**
Sanctuary of Artemis. Enlargement of the upper terrace; Sondage O6/87
Stand (?); H: 3.7 cm; W: 6.9 cm + 4.8 cm; TH: 0.9 cm; Rim Ø max. 11.8 cm; 22.5 %
Fabric: pale brown (10 YR 6/3), light red (2.5 YR 6/6) at the core. Hard. Moderate of very fine, hard, rounded black inclusions as well as sparse, fine, angular orange, rounded brown and rounded colourless quartz particles. Sparse, fine, rounded voids. The exterior is decorated with six bands framing a row of three zigzag lines (10 YR 3/1 very dark gray).

**Inv. K 8/08; P 08-56** **Fig. 19**
Town centre. Beneath the peripteral temple; Sondage 24/08; Unit 18
Cooking pot; H: 23 cm; W: 24 cm; TH: 0.6–0.8 cm; Rim Ø max. 15–18 cm; 30 %
Fabric: light red (2.5 YR 6/6), in some parts grey (Gley1 8/1); Hard. Sparse, fine, soft, rounded-elongated black and reddish inclusions as well as moderate, medium, hard, angular reddish-brown and coarse, soft, angular-elongated yellowish (lime [?]) particles. Moderate, rounded voids. The surface is coarse and light red (2.5 YR 6/6).

**Inv. K 9/08; P 08-56** **Fig. 20**
Town centre. Beneath the peripteral temple; Sondage 24/08; Unit 18
Cooking pot; H: 24 cm; W: 30 cm; TH: 0.5–0.7 cm; Ø max. 22 cm; 17 %
Fabric: light red (2.5 YR 6/6), in some parts grey (Gley1 8-7/1); Hard. Moderate, hard, very coarse, rounded reddish and medium, soft angular also reddish inclusion as well as sparse very fine, angular, colourless quartz. Moderate, coarse, elongated voids. The surface is coarse and light red (2.5 YR 6/6).

**Inv. K 6/08; P 08-56** **Fig. 21**
Town centre. Beneath the peripteral temple; Sondage 24/08; Unit 21
Lekythos(-oinochoe); H: 7.3 cm; W: 8.6 cm; TH: 0.3 cm; Base Ø: 4.2 cm; 100 %
Fabric: light brownish-gray (10 YR 6/2). Hard. Moderate, hard, very fine, rounded black and soft, rounded reddish inclusions as well as fine, angular, colourless quartz. Sparse, fine, elongated voids. The exterior is decorated with hatched triangle at the shoulder and four bands below. The lower part is covered with black paint.

**Inv. K 7/08; P 08-57** **Fig. 22**
Town centre. Beneath the peripteral temple; Sondage 24/08; Unit 21
Kantharos; H: 8.8 cm; W: 10.9 cm; TH: 0.3 cm; Rim Ø: 10.0 cm; 100 %; Base Ø: 4.4cm
Fabric: reddish-yellow (7.5 YR 7/6). Hard. Moderate, fine, soft, rounded white (lime [?]) and moderate to sparse hard, rounded black inclusions as well as sparse very fine, soft, angular orange and very fine, angular colourless quartz particle. Moderate, fine, rounded-elongated voids. The surface is worn and reddish yellow (7.5 YR 7/6).

**Inv. K 11/08; P 08-26** **Fig. 23**
Town centre. Beneath the peripteral temple; Sondage 25/08; Unit 12
Oinochoe; H: 12.5 cm; W: 8.8 cm; TH: 0.3 cm; Base Ø: 4 cm; 5 %
Fabric: very pale brown (10 YR 8/4). Hard. Moderate to sparse medium, hard, rounded black and fine angular colourless quartz inclusions as well as sparse, coarse, soft rounded yellowish (lime [?]) particles. Sparse, fine, angular-elongated voids. Traces of matt, black paint at the exterior and horizontal lines at the handle.

**Inv. K 2/08; P 08-46** **Fig. 24**
Town centre. Beneath the peripteral temple; Sondage 24/08; Unit 16
Skyphos; H: 13.7 cm; W: 9.6 cm; TH: 0.4 cm; Rim Ø: 13cm; 19 %; Base Ø: 5 cm; 100 %
Fabric: gray (10 YR 5/1). Hard. Common to moderate, soft, fine, rounded yellowish (lime [?]) and coarse, angular orange inclusions as well as sparse fine, hard, rounded brownish, coarse, very hard, rounded-elongated black and angular colourless quartz particles. Moderate to sparse, fine, rounded-elongated voids. The exterior is covered with black paint.

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# ARCHAEOMETRIC INVESTIGATIONS OF GEOMETRIC-ARCHAIC POTTERY IN THE NORTHERN PELOPONNESE

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# CERAMIC TECHNOLOGY AND PROVENANCE STUDIES IN THE NORTHERN PELOPONNESE

## CURRENT STATE AND FUTURE PERSPECTIVES

ABSTRACT

The Mediterranean, as a major focus of archaeological research, has been both the setting and arena of a large and ever-growing body of work devoted to the study of ceramic material culture, with a steadily increasing contribution of interdisciplinary approaches. Even in this intensively studied part of the world, the northern Peloponnese stands out as one of the areas that has continuously attracted a large amount of science-based work on archaeological ceramics. This paper summarises the long and rich history of such inquiries in this area, highlighting a number of trends in the foci and scopes of investigations and the approaches taken by various researchers and research teams over time. It assesses the contribution of the work already undertaken and discusses prospects and opportunities for future science-based research on ceramics in the region.

## 1 INTRODUCTION

Archaeological investigations have revealed a rich history for the northern Peloponnese, a region which has hosted settlements of farming communities since the Neolithic[1]. While settlement patterns in this region have shifted over time, with landscape dynamics driven by socio-political factors and possibly impacted by tectonic activity and climatic variation[2], there are a number of long-lived sites, which at different stages of their history, developed into local or regional craft production and trading centres, while some had even further reaching connections. Sites like Sikyon[3] and Aigeira[4], mainly in the last centuries of the 1st millennium BC, developed into urban centres with significant territories and evidence of intra- and interregional connectivity and trade links. Other sites, mainly Corinth and to some extent Patras, at different points in their history, appear to have developed into even more widely linked hubs, acting as producers, potentially distributors, and definitely consumers of a range of craft and agricultural products from a much wider area[5]. The dense pattern of such important sites in a relatively small geographical area, especially during specific periods, may be explained not least by the rich natural resources of the region, but primarily the strategic positioning along the coastline of the Corinthian Gulf (opening to the west and connected through the Isthmus/Diolkos to the east). The geography of the area certainly provides exceptional communication and transportation opportunities with both neighbouring and more distant areas.

Within and beyond the settlements of the region, a number of sanctuaries became focal points at a local and regional level, providing arenas for economic transactions and socio-political negotiations, mainly through the ritualised consumption of local and imported craft and agricultural products. As the current volume underlines, pottery and other ceramic objects, ir-

1 Bintliff 2012, 47–49.
2 Knitter et al. 2019; Bonnier – Finné 2020.
3 Lolos 2011.
4 Gauß 2019.
5 E.g. Morgan 1988; Whitbread 1995; Slane 2004; White 2009; Villing – Pemberton 2010; Fantuzzi et al. 2020.

respective of their actual value, have traditionally comprised the most important and abundant surviving material evidence not only in settlement but also in sanctuary contexts. This material provides unique opportunities for investigating the history, function or role, and connections of individual sites and the region as a whole. For this reason, tracing the biography of such ceramic objects, from the clay pits to consumption, and deposition contexts, within but also beyond the northern Peloponnese, has attracted much attention since the early stages of archaeological research in the area.

Prolific ceramic production is documented in the ceramic assemblages excavated and by the growing number of confirmed production centres and kiln sites from all periods across the entire region. The most widely recognised and circulated products, at least in the 1st millennium BC, are decorated drinking sets and perfume containers, as well as plain transport amphorae that were traded for their contents, mainly wine and oil, and were distributed well beyond the Peloponnese, throughout the Mediterranean and as far as the coast of the Black Sea[6].

The long history of research in the area, with its emphasis on the study of ceramic assemblages, has made ceramic products of this region and their stylistic developments through time widely known, providing useful reference for chronology and provenance assignments for pottery excavated across the Mediterranean. Moreover, it has laid the foundation for the use of science-based techniques on pottery from the northern Peloponnese, from as early as 1942[7]. Indeed, a number of the early published studies are pioneering for their time, employing multi-analytical techniques to answer archaeologically and theoretically informed questions about ancient technology and trading networks. Overall, the large body of relevant work by various researchers and research teams accumulated over the years, provides valuable evidence for our understanding of the past in the region; it also reflects trends and developments in archaeological science, specifically in the analysis of ceramics, a field which has seen considerable developments over the last half a century or more.

This paper will provide a brief overview of the history of ceramic analysis in the northern Peloponnese, based on published studies, including Master and PhD theses, and covering material from the modern administrative units of Corinthia and Achaia[8]. It will underline and discuss shifts in the research questions, scale of analysis and methodology of relevant projects through time and the implications for the past[9], the present and mainly future developments in the archaeology of the region.

### 1.1 Background

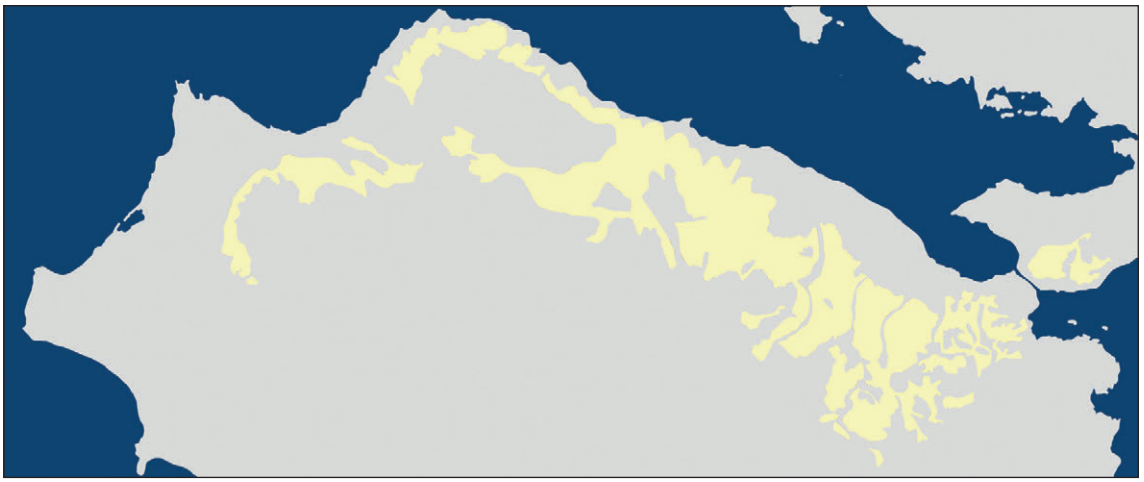
Science-based studies of archaeological ceramics, then and now, very often aim to determine provenance or reconstruct how an object was made. However, the way the information gained is subsequently evaluated and woven into the archaeological narrative has changed over time, from addressing simple questions dealing with where an object was made, to feeding into discussions of more complex theoretically informed questions about the social and cultural identity of the people producing and consuming the pottery analysed. Moreover, the methods and approaches used to investigate where and how a ceramic object has been made are constantly

6 Tsingarida – Viviers 2013; Lawall – Tzochev 2020.

7 Meaker – Rodman 1942.

8 We should acknowledge two categories of studies that are not covered by the current review: 1) a substantial body of research that has focused on the analysis of ceramic products from the northern Peloponnese (namely Corinth) found though on sites outside the area covered by this paper. Examples are Aegina (Kiriatzi et al. 2011; Pentedeka et al. 2012) and ›Corinthian B‹ amphora thought be produced at various locations including Corinth (e.g. Farnsworth et al. 1977; Jones 1986; Whitbread 1995; Barone et al. 2004; Katić 2005). A number of studies have also been completed on imports to the region. One example is the work on Punic amphorae, recently undertaken by Leandro Fantuzzi and colleagues (Fantuzzi et al. 2020).

9 For earlier extensive reviews of scientific studies of archaeological ceramics and raw materials from the area see Jones 1986, 169–208; Whitbread 1995, 255–268; Hayward 2003; Whitbread 2003.



1 Simplified geological map of the northern Peloponnese highlighting the spread of the marl beds (in yellow) across the region (adapted from: Papavassiliou et al. 1984)

evolving, even if some basic principles remain, at least partly, the same. For example, the provenance hypothesis, or postulate, traditionally worked on the assumption that characteristics of the geological source are reflected in the finished ceramic product. Based on this, in order to be able to distinguish materials from two different sources, the intersource variation must be higher than the intrasource one[10]. However, more recent theoretical developments and relevant research underlines that the characteristics of the raw materials are usually modified through technology (clay paste preparation, firing) and sometimes during use or burial[11]. Therefore, although the connection with specific source characteristics remains crucial, this relationship is acknowledged as being more complex than originally thought. Accordingly, the study of provenance is now widely accepted to require a more informed approach, considering the whole biography of the ceramic objects investigated, and crucially their manufacturing technology.

Based mainly on stylistic studies of ceramic artefacts, but also on scientific analysis of pottery dated to various periods, from prehistory to medieval times, sites in the northern Peloponnese have been identified as producers, distributors, and consumers of ceramic material culture. Indirect and direct archaeological evidence for ceramic production across the region is indeed substantial. Differentiating between the products from different sites and kilns becomes important for understanding patterns of production as well as regional and long-distance trade and distribution in different periods across the area. This has proved difficult on macroscopic grounds: typical products of this region are described as ›buff‹ in colour – light yellowish pink – and a number of the production sites' repertoire of products overlap, while imitations are also evident[12]. All of this makes identifying where a ceramic product is from, based on macroscopic fabric examination, typology or style alone, challenging. This led to the use of science-based techniques to try to overcome this, but early on, difficulties in provenancing ceramic material from within the northern Peloponnese were identified[13]. These difficulties are a product of both environmental constraints (the geology of this region is relatively homogenous with beds of marl topped with terra rossa stretching across the entire region, fig. 1), and human agency (pot-

10 Weigand et al. 1977.

11 E.g. Freestone et al. 1985; Neff et al. 1988; Day – Kiriatzi 1999; Buxeda et al. 2003; Schwedt et al. 2006; Kiriatzi et al. 2011; Maritan 2020.

12 Imitations of Corinthian products found at Nemea identified by Graybehl 2015; copies of Corinthian vessels dating to the late 8th cent. found at sites in Achaia, see Morgan 1988.

13 E.g. Farnsworth 1964; Jones 1986, 188 f.; Hein et al. 2002.

ters targeted these beds for clay exploitation across the region and through time). From as early as the 1960s[14], these issues have shaped the way the ceramics of this region have been studied scientifically: the questions asked, the approaches used, and the techniques employed.

## 2 HISTORY OF RESEARCH

Since 1942 there have been around 45 publications of science-based studies of ceramics from the region and a number of PhD and MSc theses too, many of which have now been published or are available online (tab. 1). Combined, the research projects presented in those papers have analysed just over 3,000 archaeological ceramic samples from 21 sites[15], dating from the Early Bronze Age to the Frankish period. Within the remits of many of these projects, geological prospection has been carried out, with around 220 geological samples published, the majority of which are clay rich sediments (tab. 2).

Table 1 List of sites in Achaia and Corinthia from where archaeological pottery samples have been collected for scientific analysis, and the relevant publications

| | Site | Publications |
|---|---|---|
| **Achaia** | Ancient Aigeira | Catling et al. 1963; Papadopoulos – Jones 1980; Jones 1986 |
| | Araxos | Jones 1986 |
| | Helike | Iliopoulos et al. 2011; Katsonopoulou et al. 2016; Iliopoulos – Xanthopoulou 2017; Xanthopoulou 2019; Xanthopoulou et al. 2022 |
| | Patras | Rathossi et al. 2004; Rathossi et al. 2005a; Rathossi et al. 2005b |
| | Voudeni | Hein et al. 2002; Mommsen – Maran 2000/2001 |
| | Various | Mommsen 2012 |
| | Teichos Dymaion | Benoit 2020 |
| **Corinthia** | Corinth | Meaker – Rodman 1942; Richter 1948; Catling et al. 1963; Farnsworth 1970; Gautier 1976; Farnsworth et al. 1977; Grimanis et al. 1980; Wright 1980; Attas 1982; Antoniou 1982; Megaw – Jones 1983; Watson 1985; Jones 1986; Vandiver – Koehler 1986; Whitbread 1986; Oladipo 1987; Whitbread 1987; Newton et al. 1988; Scott 1994; Withbread 1995; Joyner 1997; Joyner 2007; White 2009; Graybehl 2010; McPhee – Kartsonaki 2010; Palamara et al. 2016; Whitbread 2018; Rodríguez-Álvarez 2019; Burke et al. 2020; Rodríguez-Alvarez 2021; Liard et al. 2022; Adan-Bayewitz et al. 2023; Burke – Day 2023 |
| | Keramidhaki | Attas et al. 1987 |
| | Ancient Phlious | Attas 1980; Jones 1986; Attas et al. 1987 |
| | Korakou | Catling et al. 1963; Mountjoy et al. 1978; Attas 1980; Jones 1986; Attas et al. 1987; Mommsen et al. 2002; Tomlinson 2013; Trusty 2016; Burke et al. 2020 |
| | Nemea | Scott 1994; Graybehl 2015; Burke et al. 2016; Burke et al. 2020 |
| | Pheneos | Burke 2021; Burke et al. 2021 |
| | Sikyon | Lolos et al. 2012; Trainor 2015; Trainor – Stone 2015; Panagopoulou et al. 2016; Trainor – Kiriatzi 2021; |
| | Tsoungiza | Burke et al. 2017; Burke et al. 2020; Hoffmann et al. 2020 |
| | Vougliameni | Attas 1975; Attas et al. 1977; Attas 1980; Jones 1986; Attas et al. 1987 |
| | Zygouries | Attas 1980; Jones 1986; Attas et al. 1987; Scott 1994; Trusty 2016 |
| | Kalamianos | Trusty 2016 |
| | Stiri | Trusty 2016 |

[14] Farnsworth 1964.

[15] Including 18 sites in the region and 3 outside; the latter is only selectively covered, see n. 8.

Table 2 List of locations in Achaia and Corinthia from where geological raw materials have been collected as samples for scientific analysis, and the relevant publications

| | Site | Publications |
|---|---|---|
| **Achaia** | Aigion | Xanthopoulou 2019; Xanthopoulou et al. 2021 |
| | Helike | Xanthopoulou 2019; Xanthopoulou et al. 2021 |
| | Aigeira | Xanthopoulou 2019; Xanthopoulou et al. 2021 |
| | Patras | Rathossi et al. 2005a; Rathossi et al. 2010; Rathossi – Pontikes 2010a; Rathossi – Pontikes 2010b |
| **Corinthia** | Corinth | Farnsworth 1970; Gautier 1976; Farnsworth et al. 1977; Rostoker – Gebhard 1981; Antoniou 1982; Fillieres et al. 1983; Jones 1986; Vandiver – Koehler 1986; Oladipo 1987; Newton et al. 1988; Whitbread 1995; Rodríguez-Álvarez 2019; Xanthopoulou 2019; Xanthopolou et al. 2021 |
| | Vougliameni | Attas et al. 1977 |
| | Solomos | Farnsworth et al. 1977; Rostoker – Gebhard 1981; Jones 1986; Whitbread 1995 |
| | Xylocastro | Xanthopoulou 2019; Xanthopoulou et al. 2021 |
| | Sikyon | Lolos et al. 2012; Trainor 2015 |
| | Penteskoufi | Whitbread 1995 |
| | Rachiani | Antoniou 1982 |
| | Derveni | Xanthopoulou 2019; Xanthopoulou et al. 2021 |

## 2.1 Pre 1990s – the Early Years

Prior to the 1990s a number of publications (almost 20 out of 45) on ceramic materials from sites across this region appeared by teams and individual scholars affiliated with a range of institutions worldwide, including all major centres where archaeometry first emerged as a field (Lawrence Lab, California; Smithsonian Institution, DC; Brookhaven NL, New York; Amherst College, MA; McGill University, Canada; laboratories in the Universities of Oxford, Bradford and Manchester, in Paris, France; and in Greece, Fitch Laboratory, British School at Athens; National Centre for Scientific Research »Demokritos«; National Technical University). Their published work on ceramics from the northern Peloponnese is indicative of the experimentation with science-based methods applied to archaeological materials and includes different approaches to deal mainly with provenance issues, less often with technology, and even more rarely with both issues in the same study. Most of the projects are relatively small in scale, incorporating between 10 and 70 samples from one to three sites (tab. 3). Over half of the published works deal with Corinth, with the material dating to a range of different periods from the Bronze Age to the Byzantine period. Whilst these early projects taken together lack a focal point, a number of them are pioneering for their time for a variety of reasons.

Table 3 Number of publications, total number of samples, the average, maximum and minimum per publication, by decade

| | 1940s | 1950s | 1960s | 1970s | 1980s | 1990s | 2000s | 2010s | 2020s |
|---|---|---|---|---|---|---|---|---|---|
| No. of publications | 2 | 0 | 3 | 6 | 15 | 3 | 8 | 20 | 5 |
| Total no. of samples | 4 | – | 134 | 268 | 621 | 176 | 558 | 973 | 581 |
| Average per project[16] | 2 | – | 45 | 54 | 52 | 88 | 70 | 128 | 145 |
| Maximum | 3 | – | 72 | 94 | 272 | 156[17] | 170 | 243 | 374 |
| Minimum | 1 | – | 62 | 10 | 8 | 20 | 7 | 33 | 57 |

[16] A number of projects have published multiple papers using the same set of archaeological samples, therefore the average number per project is given to avoid bias in the statistics.

[17] For Whitbread (1995) only analyses of the material from Corinth are counted.

The works of Marie Farnsworth, Michael Attas, as well as Richard Jones and Ian Whitbread, the latter two at the Fitch Laboratory, stand out especially, and they constituted a prelude to subsequent important studies in the Aegean and beyond. In 1964, Farnsworth was one of the first to acknowledge the problem of provenancing material from Corinth and the need for scientific characterisation. In a series of three papers[18], she investigated different aspects of pottery with assumed Corinthian origin and compared it to pottery found, and presumably made, at other sites in order to characterise and distinguish it using a multi-analytical approach[19]. Farnsworth was also innovative in her approach as she included work on raw materials. She collected 22 geological samples, mainly clay rich sediments, subjected them to scientific analysis and experimented with firing them. This resulted in the identification of a further problem with the dominant type of potential raw material for potting in the region, the marl beds. The majority of the sampled marls are – at least when used on their own in an unprocessed state – unusable for ceramic production and often of a much higher calcium content than the archaeological ceramics[20].

Attas' work[21] on the other hand, was pioneering for designing and executing a coherent and well-integrated archaeological project on a regional scale, including a large number of samples from many sites. Using Neutron Activation Analysis (NAA), he targeted Early Helladic ceramic material from eight sites in the Argolid and Corinthia to investigate inter site and regional trade networks. Through this work, Attas argued that each of the study sites produced their own pottery, and he established chemical profiles that could potentially be used as reference for local production in more than half of them[22]. This regional study set the groundwork for the investigation of distribution patterns on a site-by-site basis and on a regional scale. He explored how the trends identified varied over time and across sites. Finally, Attas acknowledged certain limitations to the exclusive use of NAA, mainly in the case of coarse wares.

In the 1970s and 1980s, provenance investigation of pottery from a range of sites in the region was also undertaken by Richard Jones, the first Director of the then newly founded Fitch Laboratory of the British School at Athens. Incidentally, analysis of ceramics of all periods from Corinth became a major focus of the laboratory's research in the subsequent years and crucially contributed to the development of the institution's methods of approaching archaeological ceramics. The earliest work by Richard Jones used Optical Emission Spectrometry (OES) to investigate the provenance of material from a range of sites in the region. However, Jones identified early on that restrictions – due to the method and the particular setup (which only allowed for analysing eight elements, with lower precision, when compared to NAA) – was not effective at distinguishing between ceramics from different sources within the northern Peloponnese[23]. He highlighted the work of others using NAA as promising and also identified that ceramic petrology would likely reveal differences in the mineralogical composition of ceramics from this region and aid in provenancing them. This realisation opened the way for the introduction of ceramic petrology at the Fitch Laboratory, with Ian Whitbread's appointment in the 1979/1980 academic year[24]. Whilst Whitbread's work began in the 1980s, it continued through into the 1990s and beyond and is therefore discussed in detail in chapter 2.2.4.

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18 Farnsworth 1964; Farnsworth 1970; Farnsworth et al. 1977.

19 Petrography, X-ray diffraction (XRD), and neutron activation analysis (NAA).

20 See Farnsworth 1970, 20.

21 Attas 1980; Attas 1982; Attas et al. 1977; Attas et al. 1987.

22 See tab. 7.II in Attas 1982, 320 (repeated as tab. 3.6 in Jones 1986, 172).

23 Jones 1986, 189.

24 That was the prelude to the Williams Fellowship in Ceramic Petrology, reflecting the crucial role of Charles K. Williams II, Director of the Corinth excavations (1966–1997), in the development of such studies in the region. He encouraged and supported many of these projects from early on and the situation would be very different today without his continued encouragement and vision.

## 2.2 1990s to Present

From the 1990s onwards, there is an evident shift in the approaches used, the archaeological questions asked, and also the scale and scientific methodologies employed in the science-based projects on pottery from this region. Sample numbers increase and a combination of techniques are often applied to address more archaeologically informed questions, with an evident emphasis on the combined study of technology. It is during this period that science-based archaeology became an established field within archaeology and specific research foci, approaches, and methodologies were developed. This clearly reflected in the ceramic studies undertaken across the northern Peloponnese. The region continued, and continues today, to attract strong interest by a large number of scholars and institutions, often with specific research agendas. It is possible to distinguish four main research clusters with distinct research traditions operating in the area, each linked to either a specific institution and/or a specific (comparable) approach/methodology. These four clusters are discussed below.

The first cluster concerns a chain of projects by a number of institutions, linked through their investigation of regional trade through NAA. This work follows the tradition that Attas introduced in the area. The second is associated with a number of scholars based at the Geology Department of the University of Patras who have developed a landscape-based approach to the analysis of ceramics from the area. The third and fourth clusters have similar methodological approaches with emphasis on ceramic petrology, but usually with distinct research foci: the Sheffield cluster has focussed mainly on prehistory, with exceptions as discussed below, and the Fitch cluster which places more emphasis on the analysis of ceramics of the historical era from this region, using a more landscape-based approach. Important work has also been undertaken outside these four clusters[25] although often in some kind of collaboration with at least one of the above.

### 2.2.1 Regional Studies of Pottery Circulation through NAA

This series of projects, which builds upon earlier NAA of ceramics from the area conducted in various laboratories in Canada, France, Greece and the USA, including Attas' study (see chap. 2.1), was undertaken by researchers affiliated with three European institutions with a long tradition in ceramic analysis using NAA: the University of Manchester, the Institute for Radiation and Nuclear Physics at the University of Bonn, and the National Centre for Scientific Research »Demokritos«. Research focused on the investigation of regional trade and circulation of mostly Bronze Age pottery that was undertaken by Hans Mommsen and Joseph Maran at Bonn, and their collaborators, including Anno Hein and Alexandra Tsolakidou of NCSR Demokritos, as well as by Jonathan Tomlinson then at The University of Manchester with a more direct emphasis on Mycenaean pottery. These studies used the results of NAA primarily at Bonn, with data also collected at Manchester, and data that was made available from Berkeley[26].

The core area of this research has been the Argolid, while material from a number of sites in other regions, including Corinthia and Achaia, have also been analysed in the context of this regional project[27]. The statistical analysis of the large data set accumulated in the various laboratories over the years has allowed chemically distinct groups to be established, potentially reflecting production in specific areas or sites (described as ›production series‹). Such compositional groups provide a reference for assigning provenance to newly analysed pottery samples, and ultimately

[25] E.g. Debra Trusty's 2016 PhD thesis from Florida State University; Ian McPhee (La Trobe University) and Efi Kartsonaki's (then at University of Crete, now The University of Queensland) work on red-figure pottery from Corinth (2010); Emilio Rodríguez-Álvarez's 2019 PhD thesis at the University of Arizona.

[26] Perlman and Asaro's NAA data collected at Berkley was given to the Manchester group on pieces of paper. Manchester transcribed the data and standardised their own against the Berkley data. Mommsen and his team were given access to the Berkley-Manchester dataset and the Demokritos team also has access to all previous databases.

[27] Mommsen – Maran 2000/2001.

for reconstructing networks of pottery circulation within and across regions. However, the establishment of such reference groups for distinguishing products of different production locations is not always a straightforward process. In the context of the northern Peloponnese, for example, it has proven challenging to distinguish between pottery groups produced in Achaia from those produced in the Argolid with NAA alone. In this situation, elemental and mineralogical analyses have been integrated to further explore the potential to distinguish products of the two areas[28], using X-ray diffraction (XRD) analysis and by combining the comparative investigation of a few raw materials from the area. The issue remains open and distinguishing pottery made with clays of very similar properties and composition is a recurrent problem in provenance studies of fine wares in the area (see further discussion in chap. 3).

### 2.2.2 The Patras Cluster: Emphasis on Landscape Resources

A number of researchers affiliated with the Geology Department of the University of Patras have also worked in the northern Peloponnese with a particular focus on the sites of Patras and the western part of the region covered in this paper. This team, with its strong geological background, has focussed on raw materials, using their analysis and experimentation with them to inform the interpretation of results of scientific analysis of archaeological ceramics. The University of Patras ›cluster‹ uses a wide range of analytical techniques to characterise both archaeological samples and geological raw materials, in order to investigate the usability of the clayey-raw materials available, and to reconstruct aspects of production.

Work on material in this region began in the early 2000s by Christina Rathossi[29], whose early research focussed on Roman ceramic production in the ancient city of Patras. Rathossi investigated two kiln sites, both producing ceramic lamps, located within the Roman city. She was able to identify, through comparison with collected raw materials, that both kiln sites used the same raw materials, but that the products show subtle differences in body preparation and differences in clay-to-temper ratio. Rathossi and co-authors have also published a series of experiments with clay-rich sediments from the area and archaeological ceramics[30], which investigate how firing conditions and post-burial environments effect the composition of archaeological ceramics produced in this region.

Subsequently, a different team from the same department, led by Iliopoulos, analysed material from Bronze Age Helike. Ioannis Iliopoulos, Vayia Xanthopoulou, Dora Katsonopoulou and collaborators[31] have investigated various pottery categories from the site, from ›housewares‹ to pithoi, using ceramic petrology alongside elemental analysis to characterise the material and investigate the production processes. The results of this work have provided insights into transformations in ceramic production and procurement at the site. For example, they identified changes in procurement of housewares and pithoi between EH II and EH III, with Helike moving from being reliant on imports in EH II to primarily producing its own vessels in EH III. The team have also performed large scale geological sampling, with the analysis of clay-rich sediment forming the focus of Xanthopoulou's 2019 PhD thesis. This work has approached the clay-rich sediments of the region in a new way, using an array of scientific techniques to assess not only the mineralogical and elemental composition of the material, but also their suitability for pottery production, by assessing, for example, the workability of the clay. Xanthopoulou and Iliopoulos' work has indicated differences in the clayey raw materials across the region and revealed that, whilst

[28] Hein et al. 2002.

[29] Rathossi et al. 2004; Rathossi et al. 2005a; Rathossi et al. 2010; Rathossi – Pontikes 2010a; Rathossi – Pontikes 2010b.

[30] Rathossi – Pontikes 2010a; Rathossi – Pontikes 2010b.

[31] Iliopoulos et al. 2011; Iliopoulos – Xanthopoulou 2017; Katsonopoulou et al. 2016; Xanthopoulou 2019.

much of it is unusable in its raw state for the production of pottery, it is suitable for making large objects like roof tiles[32].

### 2.2.3 The Sheffield Cluster: Emphasis on Ceramic Petrology

The Department of Archaeology at the University of Sheffield has a long-standing link with archaeological research in the Aegean, and particularly science-based studies of archaeological pottery, mostly under the supervision of Peter Day[33]. Four researchers from Sheffield, focussed their attention on sites in the northern Peloponnese: Heather Graybehl, Clare Burke, Benoit Proulx[34], and Harriet White; Burke continues her research in the area today, first based at the Austrian Academy of Sciences and now at the University of York. Ceramic petrology plays a crucial role in the analysis of material by this group, often using a technological approach, and most of the studies are site specific. Unlike the Patras (chap. 2.2.2) and Fitch clusters (chap. 2.2.4), Sheffield do not as frequently include landscape resources in their research projects.

Graybehl's work[35] in the area is well known but unfortunately unpublished, though copies of the theses are available. For her MSc thesis she characterised a series of Late Roman cooking wares at Corinth and, later for her PhD, material from a kiln complex at the Panhellenic sanctuary site at Nemea. The work at Nemea was an in-depth study of the products from this kiln site and was used to characterise the production site's ceramic repertoire, which varied from loom weights through to jugs and pithoi, and the range of associated fabrics. Through the analysis of the plain, coarse, and cooking wares found at the sanctuary site, Graybehl was able to place the site within its trading network and through the comparison of the fabrics of imported and local material, identify a series of imitations of popular forms from other local production centres made at the kiln complex.

Clare Burke has completed a significant number of studies in the area, and beyond. Focussing on the Bronze Age in the northeastern Peloponnese (Corinthia and the Argolid), Burke, and co-authors, have been able to reconstruct the distribution patterns of ceramic products during this period by using a regional approach, developing on from Attas' earlier work. Using ceramic petrology as her primary analytical method, she was able to investigate and detail the *chaîne opératoires* in order to identify a series of technological traditions and to provide detailed fabric descriptions of the products from this area. Through this wide-scale project Burke has been able to investigate diachronic changes throughout the Bronze Age, both in terms of production and distribution, and has been able to document the increased demand for ›buff‹ pottery in her region of focus in EH II and early EH III, which is argued to have coincided with the possible rise in the dominance of Corinth, which produced high quality buff ware at this time[36]. This body of work has contributed to archaeologists' understanding of this area during the Bronze age, the production and consumption choices and the sphere of interaction of sites within the region.

Last, but certainly by no means least, is Harriet White's PhD thesis on Middle Byzantine[37] glazed pottery from Corinth; this thesis remains unpublished but is available online[38]. This research, covering a different period and type of ceramics, utilised a wider range of scientific techniques to analyse the study material than other projects from Sheffield. Ceramic petrology and Inductively coupled plasma-atomic emission spectroscopy (ICP-AES) were used to charac-

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32 Xanthopoulou et al. 2021. Cf. the contribution of V. Xanthopoulou – I. Iliopoulos in this volume.

33 Formerly Williams Fellow in Ceramic Petrology at the Fitch Laboratory, BSA, 1984–1987.

34 Proulx's thesis, completed in 2020 is still under embargo and therefore a more detailed discussion of this work is not possible; for this reason it is also not included in the statistics. The abstract indicates that it uses a similar approach to that of Burke and Graybehl.

35 Graybehl 2010; Graybehl 2015 available at »White Rose e-Thesis Online«.

36 Burke et al. 2017.

37 11th–13th cent. AD.

38 White 2009, available at »White Rose e-Thesis Online«.

terise the ceramic body whilst Electron probe microanalysis (EPMA) was used for the study of the associated glazes. White set out to investigate patterns of production and trade as well as to trace the development of glaze technology. Through this research she was able to identify that Middle Byzantine glaze technology was much more sophisticated than had previously been acknowledged and she was able to document developments too, disputing the earlier idea that this was a ›stagnant‹ period for glaze technology. Furthermore, through the detailed analysis of the ceramic fabrics, White was able to re-assign provenance to material that had previously been incorrectly characterised by typological or stylistic studies. Combining the results of analyses of both ceramic body and glaze, White was able to position Corinth in the wider Mediterranean network of production and circulation of glazed pottery. She also suggests that the trade of glazed ceramics facilitated the spread and development of technological knowledge of glazes.

### 2.2.4 The Fitch Laboratory Cluster

As indicated above, the Fitch Laboratory has a long history of research in the northern Peloponnese, starting with the work of Richard Jones. Over time, the lab has developed a technological approach to ceramics, integrating ceramic petrography, elemental analysis, landscape resources prospection, and replication experiments in order to understand where and how an object was made, and how this information reflects social, cultural, and economic factors. The development of this method is rooted in the lab's history of research in the area.

Following on from Richard Jones' earlier work (chap. 2.1), Ian Whitbread[39] completed a pioneering petrographic study of a range of transport amphorae both produced at and imported to Corinth, with a particular emphasis on the former. This work was initiated when Whitbread was the Williams Fellow at the Fitch Laboratory and it later became his PhD thesis at the University of Southampton. As part of this study, Whitbread also analysed a range of other ceramic products, such as terracotta figurines, roof tiles, and perirrhanteria, as reference material for local production. Furthermore, a relatively extensive survey of clayey raw materials was undertaken in the area and a series of firing and mixing experiments were performed. Through this study a series of Corinthian fabrics were characterised, all of which are still actively used as reference for products from Corinth. Changes over time in clay paste recipes and preparation were identified and used to infer either a change in the source of raw materials or production technology.

Much like Farnsworth, Whitbread found that most of the clays he sampled were unsuitable in their raw state. The clays that seemed most appropriate and survived firings were those from around the ›Tile Works‹ (one of the excavated potting centres of ancient Corinth[40]) and those associated with lignite deposits in the area[41]. He was able to find clays that bore some correlation to the archaeological ceramics he was investigating and experimented with the mixing of clays and tempering with mudstone from Acrocorinth. Whitbread's work in many ways formed the foundation for future science-based work at Corinth and in the wider region. This was not the only impact, however; his 1995 volume became the ›how to‹ for petrographic work world-wide, introducing a coherent methodology for the application of thin section petrography to the study of archaeological ceramics. Furthermore, the project introduced a landscape-based approach which has been adopted in research projects by the Fitch Laboratory ever since and in other areas too.

Louise Joyner[42] continued work in the region through a project which focussed on Byzantine and Frankish cooking pots from Corinth[43]. Using ceramic petrography, a number of ceramic fabrics were identified, adding to the reference material for Corinthian products. Joyner used the results of her analysis – which showed changes in raw material procurement, preparation, and

39 Whitbread 1987 (PhD); Whitbread 1995.
40 Merker 2006.
41 Whitbread 1995, 324.
42 Williams Fellow in Ceramic Petrology 1995–1997.
43 Joyner 1997.

standardisation – and combined it with detailed archaeological data to identify changes in cultural practices relating to food preparation and dining habits with the arrival of Venetian refugees in the Frankish period.

Then, in the early 2000s, the Fitch moved west and was involved in the »Sikyon Survey Project«. As part of this work, Evangelia Kiriatzi[44] collaborated with Conor Trainor[45] to investigate a range of Roman pottery types from the urban survey material. By combining results from ceramic petrography and raw material prospection with the archaeological interpretation of the survey results, it was possible to identify a series of local products. Furthermore, the analysis of imported material shed light on the connections the site had during this period and contributed to an understanding of the activity patterns across the city[46]. This study also confirmed the unsuitability of most of the Neogene marls collected in the vicinity of the site, as raw materials for pottery production – in their unprocessed state[47].

Work at Corinth and Sikyon by members of the Fitch and collaborators continues today using thin section petrography and elemental analysis by WD-XRF[48] to analyse archaeological ceramics and geological raw materials. Emphasis on a bottom-up landscape approach (see chap. 3) characterises a number of these current projects by Fitch researchers and collaborators, focusing on understanding and (if possible) differentiating ceramic production in Corinth and Sikyon through time. More specifically, current studies, building on the existing experience and data, aim not only at expanding our understanding of Corinthian products[49] but also at shedding light on aspects of production organisation. Additionally, a large-scale interdisciplinary study of products from Sikyon[50] have been analysed in collaboration with the »Finding Old Sikyon« project co-directed by Konstantinos Kissas (Greek Ministry of Culture and Sports), Silke Müth-Frederiksen (the National Museum of Denmark), Kristina Winther-Jacobsen (Danish Institute at Athens), and Wolfgang Rabbel (Institute of Geosciences of the Christian Albrechts University at Kiel) as well as a number of PhD candidates associated with the project[51]. Furthermore, collaboration with the »Sikyon Project«[52] (directed by Ioannis Lolos of the University of Thessaly) has resumed, placing emphasis now on the production areas identified in order to study the Hellenistic and Roman potting workshops of the city in close collaboration with the project's pottery experts[53].

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44 Fitch Laboratory Director 2001– present.

45 Then PhD candidate at Trinity College Dublin, now Research Fellow at University of Warwick.

46 Lolos et al. 2012; Trainor 2015; Trainor – Stone 2015; Panagopoulou et al. 2016; Trainor – Kiriatzi 2021.

47 Trainor 2015.

48 Wavelength dispersive X-ray fluorescence is employed at the Fitch for elemental analysis from 2012 onwards (see Georgakopoulou et al. 2017).

49 Analysis of Archaic and Classical mortaria and loom-weights, the latter in collaboration with Bela Dimova; Analysis of Roman cooking ware by Edyta Marzec, Evangelia Kiriatzi, and Kathleen Slane.

50 A range of Classical fine wares, cooking pots, and coarse architectural ceramics, thought to be of Sikyon origin, has been analysed, alongside their counterparts at Corinth, to build up our understanding of these two production contexts and whether it is possible to distinguish between them.

51 Giorgos Giannakopoulos (University of Crete/Ephorate of Corinth/Danish Institute at Athens): Classical Pottery from Sikyon: The Fine Wares; Kyriaki Tsirtsi (Science and Technology for Archaeology Research Centre (STARC) of the Cyprus Institute/ Ephorate of Corinth): Cooking Wares, Storage Vessels and Dietary Habits in Classical Sikyon; Zoe Spyranti (University of Crete/Ephorate of Corinth/Danish Institute at Athens): Architecture and Design of Private Space in Classical Sikyon.

52 The »Sikyon Project« focuses on the time after the end of the 3rd cent. BC when Sikyon had been moved to a plateau overlooking the plains where the old city, investigated by the »Finding Old Sikyon« project was situated.

53 Ioannis Lolos (University of Ioannina, Department of History and Archaeology), Chrysa Varela (University of Thessaly), Sarah James, and Scott Gallimore (Wilfrid Laurier University).

## 3 SUMMARY AND DISCUSSION OF RESEARCH TRENDS

Since 1942, an impressive amount of work has been dedicated to the investigation of pottery production and supply across the northern Peloponnese, with a large number of archaeological and geological samples analysed from many sites of the region. The distribution of the analysed archaeological samples[54] by location of finds/sample are illustrated in figure 2 and 3. Unsurprisingly, by far the highest number of samples analysed (approx. 1050) are from Corinth. As described above, the emphasis on Corinth is clear from the very beginning of science-based pottery studies in the region and this has continued through the work of a number of scholars and institutions, including the Fitch Laboratory and Sheffield University. This large body of work relating to Corinth can be explained by a number of factors. Firstly, the site was continually occupied from the Neolithic period onwards and has seemingly acted as both a producer and a distributor of ceramic vessels in various intensities and scales throughout its existence. Secondly, and influenced by its archaeological significance, it is one of the most extensively excavated and studied sites in Greece. It has a long history of excavation, which since 1896 has been directed by the American School of Classical Studies at Athens. More recently, research on pottery production and local typologies[55], the wider landscape and its resources[56] around Corinth, has resulted in a detailed understanding and a well published body of work. This research has prepared the ground for both larger and smaller scale, more targeted, science-based projects on ceramic products from the site. Beyond the boundaries of Corinth, large projects, both excavation and survey work, have been completed at a range of sites across the region, for example Sikyon and Helike. Through this and the study of ceramic products from these and other centres, our understanding of the broader region has also been developed. In this respect, the contribution of the studies undertaken by scholars at the Universities of Patras and Sheffield are particularly helpful in distributing the focus across the region.

Much of the work has focussed on characterising Bronze Age products and traditions, and how technological practice and use of raw materials changed over time and across the area[57]. Of course, a lot of this work directly links with research completed in neighbouring regions and particularly the Argolid[58]. The Archaic and Classical periods have also received considerable attention from researchers, as this is a period where the region, particularly Corinth, began to expand its activities across the Mediterranean, giving rise to extensive trading networks. This is reflected in the material analysed from this period with much of it concerning transport amphorae[59], while other material was mainly analysed for comparative purposes. The results have often been used to explore these networks and the economy of this region during these periods. Work on Hellenistic and Roman ceramics is less focused geographically[60] and spread across the region covering a range of objects[61]. This subsequently changes again, as another focus on Corinth is observed in the analysis of pottery dating to the Middle to Late Byzantine period[62].

Overall, each of the above research ›clusters‹ (chap. 2), as well as a number of independent scholars and earlier research, have contributed significantly to the study of archaeological ceramics in the area. Noticeable progress has been made on a site-by-site basis, and sometimes on a

54 Approximately 3,000 archaeological ceramic samples analysed in total.

55 E.g. Stillwell – Benson 1984; Merker 2006; James 2018.

56 E.g. Hayward 2003; Whitbread 2003; Hasadi 2021.

57 E.g. Burke et al. 2017.

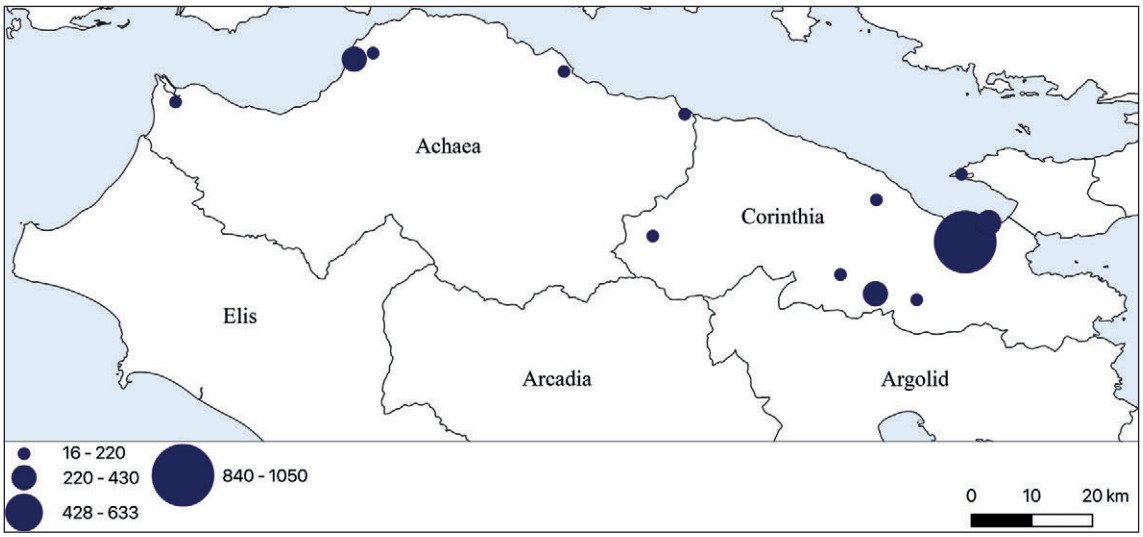
58 E.g. Mommsen – Maran 2000/2001; Tomlinson 2013.

59 Farnsworth 1970; Watson 1985; Whitbread 1995.

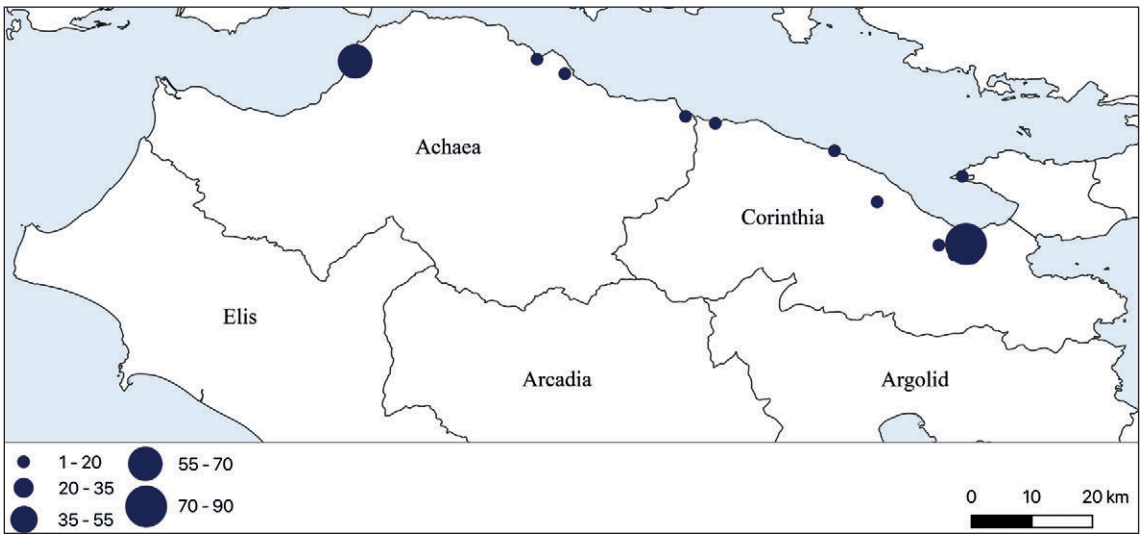
60 This picture is changing slightly with later material being analysed by current projects such as the »Corinthian Coarse and Cooking Wares Petrographic Project« by E. Marzec, K. Slane, and E. Kiriatzi; the Hellenistic and Roman pottery workshops at Sikyon by Y. Lolos, S. James, S. Gallimore in collaboration with the Fitch Laboratory.

61 I.e. Lamps from Patras (Rathossi et al. 2004; Rathossi et al. 2005b), Late Roman cooking ware from Corinth (Graybehl 2010); and a range of different products found during survey work in the Sikyon region (e.g. Trainor 2015; Trainor – Kiriatzi 2021).

62 Joyner 2007; White 2009; Palamara et al. 2016.




2 Map of the northern Peloponnese with regional units illustrated, the geographic distribution of scientific studies of ceramics from the region shown and scaled by number of samples (© C. Gardner)




3 Map of the northern Peloponnese with regional units illustrated, the geographic distribution of geological samples collected and analysed from the region shown and scaled by number of samples (© C. Gardner)

more regional level, for example by Attas and Burke's research on Bronze Age ceramics in the northeastern Peloponnese. However, despite this large volume of work across the northern Peloponnese, the results and their implications for the region as a whole are still not resolved: distinguishing between different production areas remains difficult in many if not most cases. Early on in the history of science-based research in the region, the limitations of elemental analysis, even NAA, due to the homogenous regional geology, became evident. This is one of the main reasons why we see the early application of multi-analytical techniques to archaeological ceramics from this region. It is also why, in more recent years, there is such an emphasis on the use of ceramic petrology and/or on a combined application of a range of techniques. Also, the attention given to the comparative analysis of and experimentation with raw materials seems rooted in the geological peculiarities of the region. Indeed, the comparative analysis of archaeological ceramics with raw materials sourced around sites and across the landscape, and experimentation with them is more intensively investigated in the northern Peloponnese than in any other region of the Aegean

(with over 220 samples analysed, tab. 2). Lastly, while the questions asked are similar, it is often difficult to combine and compare the findings of different projects due to different techniques being employed and different approaches used.

## 4 IMPLICATIONS FOR FUTURE WORK

Science-based ceramic studies completed in the northern Peloponnese have often been innovative, of high quality, and pioneering for their time. Almost from the earliest publication, multi-analytical approaches were employed to investigate not only provenance but also technology, and over time research questions have become more socially driven with a focus on investigating socio-economic questions relating to different sites, cultures, and periods. There are few areas in the Mediterranean where so much science-based work on archaeological ceramics has been completed. As illustrated by the discussion of the history of research, this work has contributed significantly to our understanding of the area so far. However, there are many valuable things to learn from the history of research in this region, not only in terms of archaeological implications, but also with regard to methodological approaches.

One of the key lessons that can be taken away from a review of this extensive body of literature is that elemental characterisation of pottery on its own is not ideal, especially in an area like the northern Peloponnese, with geological uniformity as already discussed. A more holistic approach which combines elemental and petrographic analysis of archaeological pottery along with experimentation with raw materials, appears to have greater potential for reconstructing manufacturing technology, including the choices and manipulation of raw materials by potters. Such an approach, especially in the context of the northern Peloponnese, seems to be more promising in terms of distinguishing between different products from the region, particularly in the case of fine-grained fabrics. A continued emphasis on using such a technological approach in our studies, which most research groups do already, will lay the groundwork for furthering our understanding of technological traditions and developments in ceramic technology, in a region that was such a prolific producer of ceramic goods over a very long time.

Work on the technological landscape, through geological sampling and experimentation, has proven invaluable to our understanding of pottery production in the area. While many of the key questions about the regional clays, posed by Ian Whitbread in 2003[63], have been answered by Xanthopoulou and Iliopoulos, many remain – not least the clays suitability for use in potting clays. Continued research in this area, combined with archaeological study on ceramics, will help to reconstruct how craftspeople interacted with their environment and shed light on the early stage of the *chaînes opératoires*, i.e. clay preparation. Given the number of production sites known, work with clays would benefit from a targeted effort, focussing on deposits near the many kiln sites excavated; Whitbread early on discovered the most suitable clays in the Corinth area were located close to the already excavated production site of the ›Tile Works‹ and modern quarries associated with brickworks.

Given the need to reconstruct micro-provenance within a rather homogeneous geological area, there seems to be scope, more than in other areas, for a bottom-up approach that will focus on the site level, adopting the methodology discussed above. A number of characteristics can be highlighted:

1. The need to focus on production sites.
2. Emphasis on the design of sampling strategies based on well-defined archaeological questions, awareness of the potential and limitations of the specific scientific techniques used, and the in-depth knowledge of the studied and sampled assemblages.
3. In the context of final publications, need for detailed presentation of the actual data as well as the methodology (both of the sampling and the analysis) to promote comparability.

[63] See Whitbread 2003 for a comprehensive list.

Due to a number of active research teams in the area which are working on multiple projects, some having already progressed to an advanced stage, the continuing communication, and discussion of both processes and results has proved invaluable and comprises an additional, even more important, requirement for current and future research in the area. With this in mind, we keenly anticipate the publication of current projects by the research clusters in chapter 2.2 and other scholars at different institutions, and look forward to working collaboratively to further our understanding of the archaeology of the northern Peloponnese through science-based studies of ceramics.

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# AN OVERVIEW OF THE CLAYEY RESOURCES FROM THE NORTHERN PELOPONNESE

## AN EXPERIMENTAL APPROACH

ABSTRACT

Since Early Bronze Age ceramic production has played an important role in the local and regional social and economic evolution of the northern Peloponnese, Greece. Particularly in Corinth, its ample natural resources led early settlers to establish a long-lasting ceramic legacy, recognizable until modern times. A similar circumstance is coming to light for the area of Achaia through recent studies concerning Roman times. The aim of this study is to examine clay sources cropping out in the territory of the northern Peloponnese, based upon petrographic characteristics, as well as compositional and technological properties. This was accomplished by the systematic sampling of clayey raw materials from a wide area spanning from the region of Aigialeia (northwestern Peloponnese) to Corinth (northeastern Peloponnese). The main differentiation revealed between the clayey deposits of Achaia and Corinth is the coarser size (ca. 1.9 mm) in the Achaian samples in contrast with the finer size (ca. 0.19 mm) of the Corinthian samples, in terms of the presence of inert inclusions.

## 1 INTRODUCTION

The regions of Achaia and Corinth are located in the northern Peloponnese and are well-known for their rich archaeological record dating back to the Neolithic period[1]. Western Achaia had the geographical privilege of controlling the seaways of the Ionian Sea[2], whereas eastern Achaia lies at the junction of land roads from the eastern Peloponnese and Central Greece. The diverse relations and contacts of each area during Mycenaean times confirm this view. During the last decades three important cities of Achaia have been brought to light: ancient Helike, ancient Aigeira and the settlement of Derveni, wherein a great deal of ceramic material has been revealed[3]. The area of Corinth has long been recognized as a major centre of ceramic production, triggering an extensive archaeological investigation of Corinthian pottery[4]. Its geological background is characterized by several clayey formations that certainly enhanced the straightforward development of such a thousand-year old productive ceramic tradition. The compositional diversity of the Corinthian clay deposits constitutes a significant issue, since different types of clays are cropping out in different localities. The compositional variability of the clay deposits within the two areas of interest in the present paper raises the question if these clays are equally suitable for the production of ceramic artefacts and if this might be impressed in the ancient ceramics.

So far, C. Rathossi has studied the clayey raw material cropping out in the western part of Achaia[5], whereas the clayey material of the eastern part of Achaia and a few sites of Corinth have been studied

1 Lavezzi – John 2003.
2 Kolonas 1998, 468–496.
3 Alarm-Stern 2011; Katsonopoulou 2011; Sarri 2011.
4 Whitbread 2003.
5 Rathossi 2005.

in terms of their physical and mechanical properties in relation with geotechnical constructions[6] and concerning their suitability for ceramic production[7].

Concerning the Corinthian clays, M. Farnsworth was the pioneer in their exploration and study, employing different analytical techniques, such as X-ray diffraction, petrography and elemental analysis[8]. Her studies provided some basic remarks, such as: (i) the diversity of the nature of Corinthian clay deposits, ascribing different types of clays to different localities; (ii) the high calcium concentration in the local clays in relation to the composition of the ancient pottery; and (iii) her consideration that Corinthian clays are useless as raw material for Corinthian pottery, due to their high calcareous character.

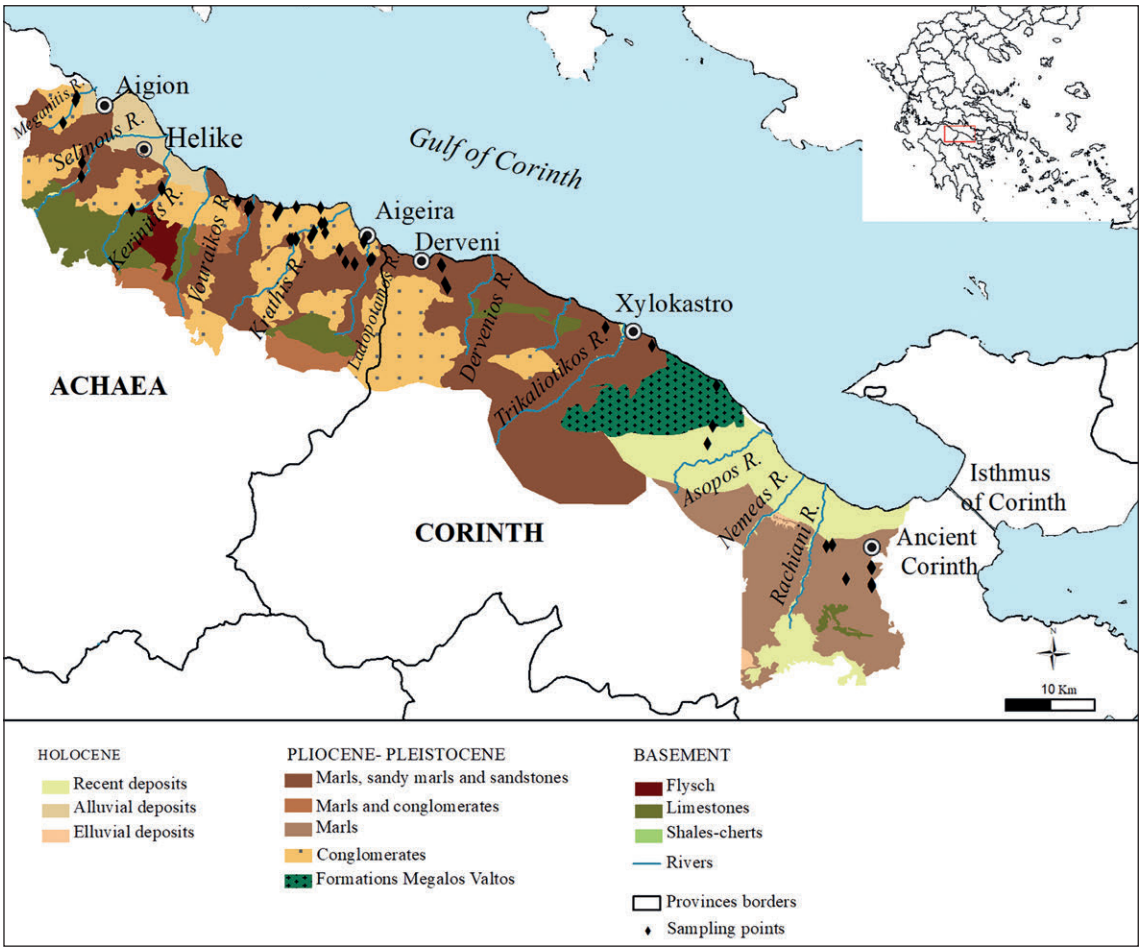
Further research followed in exploring Corinthian clay deposits, but most of these studies focused mainly on physico-chemical analysis. M. Antoniou examined three samples in regard to their grain size, the participation of the clay minerals and their composition[9]. He concluded that the large quantities of calcium oxide make the material of inferior quality in contrast to those that potters used for the Corinthian ceramics. W. Rostoker and E. Gebhard collected one sample from Solomos village for their tests on Corinthian tile manufacture[10]. This resource was used from a local brick factory and they concluded that it worked well for the replicas.

Later, in his project on the petrographic examination of Corinthian transport amphoras, I. Whitbread included the study of a larger number of clays from different localities of Corinth[11]. The main accomplishments of his research were: (i) the recognition of the diversity of Corinthian clays, attributed to the extensive marl deposits in the area; (ii) the identification of red clays or terra rossa soils, as prospective sources for the red-firing clays and their use in the production of blisterware and the Type A amphora fabrics; (iii) the correlation of the grey clays with the lignite beds; and (iv) the identification of clayey raw materials at Potters' Quarter. Nevertheless, some issues concerning clayey raw materials still remain open, such as: (i) the necessity of better means for the discrimination among the various clay deposits and (ii) an in-depth study of the highly calcareous clays.

## 2 GEOLOGICAL BACKGROUND

The province of Aigialeia lies to the east of the region of Achaia and consists of three Alpine units (fig. 1), which from the lower to the upper are: i) the Arna unit (Phyllite-Quartzite series), which appears only rarely in very limited outcrops and consists of phyllites and quartzites; (ii) the Tyros beds, comprising a lower clastic formation with pelites and sandstones intercalated with calcareous lenses and an upper volcano-sedimentary formation[12], and (iii) the Pindos unit which is present in the area in all its stratigraphy, from the Triassic clastic formation at the bottom up to the Eocene flysch at the top[13]. The Alpine metamorphic rocks appear only in the southeastern part of the study area. They belong either to the lower unit (Arna), including muscovite-rich layers, chloritic schists, phyllites and quartzites, or to the basement of the upper unit (Tripolis unit and Tyros beds), which mainly bears mafic igneous rocks, tuffs, marble intercalations and layers of phyllites and schists of upper Paleozoic-lower Triassic age[14]. The upper parts of the Tripolis unit comprise thick bedded limestones and dolomites with Megalodon of Triassic age, as well as

6 Christodoulopoulou 2000, A, 464; B, 130.
7 Xanthopoulou 2019; Xanthopoulou et al. 2021.
8 Farnsworth 1970.
9 Antoniou 1982.
10 Rostoker – Gebhard 1981.
11 Whitbread 1995, 338–342.
12 Skarpelis 1982.
13 Trikolas – Alexouli-Livaditi 2004.
14 De Wever 1975; Tsoflias 1976a; Tsoflias 1976b; Lekkas – Papanikolaou 1978; Dornsiepen et al. 1986; Xypolias – Doutsos 2000; Xypolias 2001.




1 Geological map of the study area, modified after IGME sheets: Aegio (1998), Derveni (1993), Xylokastro (1989), and Corinth (1972) (© V. Xanthopoulou)

some rare occurrences of upper Eocenic flysch beds[15]. The Pindos unit is the most widespread geological formation in the study area. It mainly comprises: a) sandstones with Triassic carbonate intercalations; b) the Drymos limestones; and c) a radiolaritic sequence[16].

The post-alpine deposits occur mostly within the major basins of the area and comprise mainly fluvio-torrential, terrestrial, lacustrine and lagoonal deposits, which are subdivided in different formations (fig. 1): a) the Kalavryta basin, with terrestrial and fluvio-torrential strata, which comprise alternations of clays and marls in the lower layers, and conglomerates with loam in the upper strata; b) the Valta basin, with fluvio-torrential strata, of lower Pliocene – upper Pleistocene age; and c) the western Paleo-Corinth Gulf basin with marine, terrestrial and fluvio-torrential strata, of middle-upper Pliocene – lower Pleistocene to upper Pleistocene – Holocene age[17].

In the mountainous area around the ancient city of Corinth carbonate rocks prevail. The area of Acrocorinth is made up of middle Jurassic limestones, which are thick-plated to thin-bedded, partially dolomitized and sporadically hosting reddish-brown to green marls with ophiolite bodies in them (fig. 1). The valleys between the mountains are filled with Neogene and younger sediments of marine, fluvial and lacustrine origin. They comprise calcareous clays, sandstones and conglomerates, laid down in cycles, some of which contain lignite layers. Pleistocene clays, sands, clayey

15 Tsoflias 1976a; Tsoflias 1976b.
16 Trikolas – Alexouli-Livaditi 2004.
17 Trikolas – Alexouli-Livaditi 2004.

limestones and conglomerates occur in terraces to the west of Corinth, and red clayey sands can be found in the region between ancient Corinth and the Isthmus of Corinth. The terraces around ancient Corinth owe their distinctive morphology to the hard limestone conglomerates that cap softer underlying Neogene sediments, protecting them from erosion and forming platforms.

Since our sampling was limited in the surroundings of Acrocorinth, it is considered necessary to include some additional samples from different geological formations such as those of Xylokastro. Xylokastro is an area located west of Corinth and east of Achaia. Its geological formations comprise upper Pliocene – lower Pleistocene sediments, which mainly occur in the formations encountered in Megalos Valtos, and in the Loutro formations, and sandy marls in the Rethio-Dendro formation[18]. The Megalos Valtos formation comprises mainly marine-brackish facies, with alternations of white to yellowish marls, grey sandy marls, sparse sand and loose conglomerate intercalations of small thickness. The Loutro formation is composed of marine-brackish-lacustrine facies with alternations of marls, and sandy marls of whitish to yellowish colour. Their upper members are of marine origin and consist of loose conglomerate and sand intercalation of more than 80 m thickness. Eastwards the lower members of these formations pass into well-bedded marly limestones of lacustrine facies.

## 3 SAMPLING AND ANALYTICAL METHODS

### 3.1 Geological prospection and sampling

The landscape of the northern Peloponnese (from Achaia to ancient Corinth) and its potential sources of raw materials for pottery manufacture were approached based upon the geological knowledge and the location of the archaeological sites as centres of ceramic production, as referenced in the literature. These include the Bronze Age settlements of Helike[19] and Aigeira[20] in Achaia, and Derveni[21], as well as the ancient city of Corinth and in the area of Corinth[22].

Following an initial comprehension of the ancient ceramic fabrics' composition and texture, based on preliminary results of the thin sections of pottery unearthed during the archaeological excavations in the site of Helike, raw material prospection and sampling were undertaken, in accordance with the stratigraphic and the compositional variability noted in the raw materials. The sampling was limited to areas in proximity to the archaeological excavations at the site of Helike, wherein twelve samples of clayey raw materials were collected. The prospection of clayey raw materials in the rest of the studied regions was undertaken around the archaeological sites, covering an area with an average radius of three to 6 km from each site. This time, special attention was given to the Pliocene-Pleistocene deposits and in some cases to those of the Holocene, following the relevant bibliographical references. Sampling was extended towards the archaeological sites of Aigeira and Derveni, aiming to cover a wider area from the archaeological site of Helike, as well as alongside the Dervenios River. In Xylokastro, the samples collected are sandy marls of the Megalos Valtos formation, which crops out in the Rethio-Dendro area[23].

In the case of ancient Corinth, clay prospection has benefited from previous research undertaken in the area. Whitbread identified a potential clay deposit in a pit near Solomos village, which had been used until recently by a local tile factory[24]. Two samples were collected in the vicinity of ancient Sikyon. The rest of the samples were collected within a radius of up to

18 Koutsouvelis et al. 1983.
19 Katsonopoulou 2011.
20 Alram-Stern 2011.
21 Sarri 2011.
22 Farnsworth 1970; Whitbread 1995.
23 Sampling was undertaken with the collaboration of Dr. Konstantinos Skourlis, the geologist employed on the METKA constructions.
24 Whitbread 2003.

ca. 3 km from ancient Corinth. Three of them were sampled from Pliocene sandy-silt deposits with a thickness of 4 m, appearing southeast of Acrocorinth and northwest of Solomos village (tab. 1).

Table 1 List of the studied samples and the relevant lithologies. Abbreviations: HS = Achaian samples; C = Corinth samples; X = Xylokastro samples

| Samples | Age | Lithology |
|---|---|---|
| HS10-HS17, HS20-HS22 | Upper Pliocene-Lower Pleistocene | Sandy marls, sands and sandstones |
| HS31 | | Conglomerates with intercalations of marly and clayey layers |
| HS32a-b | | Marls, sandy marls, and sandstones |
| HS33 | | |
| HS35a-b | | Conglomerates with intercalations of marly and clayey layers |
| HS36a–b | | |
| HS37 | | Marls and conglomerates |
| HS38 | | Upper Pliocene-Lower Pleistocene marls and conglomerates |
| HS39 | | Conglomerates with intercalations of marly and clayey layers |
| HS41a-b-c | | |
| HS44 | | Marls, sandy marls, and sandstones |
| HS45 | | |
| HS46-47-49-50 | | Sandy marls, sands and sandstones |
| HS51 | Holocene | Recent coastal and torrential deposits and terraces |
| HS54 | Upper Pliocene-Lower Pleistocene | Sandy marls, sands and sandstones |
| HS55a-b | Holocene | Recent coastal and torrential deposits and terraces |
| HS58 | Upper Pliocene-Lower Pleistocene | Sandy marls, sands and sandstones and clay layers |
| HS61 | | Sandy marls, sands and sandstones |
| HS62a-b | | Marls, sandy marls, and sandstones |
| HS64 | | |
| HS65 | | |
| HS66 | | Conglomerates with intercalations of marly and clayey layers |
| HS67 | Holocene | Scree and talus cones |
| HS68 | | Recent formations |
| C1 | Pliocene | Marls |
| C2 | | |
| C3 | | |
| C4 | | |
| C5 | | |
| C6 | | Marls/ lignite beds |
| C8 | | Marls |
| C9 | Holocene | Eluvial deposit |
| C10 | | Marls |
| C11 | Pliocene | Colluvial formations |
| C12 | | Marls |
| C13 | | |
| C14 | | |
| X1 | Upper Pliocene-Lower Pleistocene | Marls and sandy marls |
| X2 | | |
| X3 | | Sandy marls |
| X4 | | |

### 3.2 Analytical techniques

The clay-rich sediments were coarsely ground, mixed with tap water and left to soak for a few days. Then the sediments were refined removing the coarser fraction while keeping the finer fraction (< 2 mm). The resulting clayey material was left to dry to a workable state, at which point three briquettes, i.e. experimental test tiles made by hand or with a mould, were prepared from each sample. The briquettes were left to dry for a week at room temperature, and subsequently were fired at 700, 900 and 1050 °C, respectively. These temperatures were chosen according to the estimated firing temperatures of the ancient ceramics studied from the area, which were determined through scanning electron microscopy and X-ray diffraction[25]. Firing took place under oxidizing conditions, with the maximum temperature held for 6 hours. The firing duration was chosen following replication experiments undertaken with clays for the simulation of Minoan wares[26]. The briquettes were then left at room temperature for at least one week, allowing any lime re-hydration a chance to develop to observe its impact on the fabric consistency. Afterwards, all the briquettes were thin sectioned in order to be accessed through petrographic analysis. Thin section description was carried out following the classification scheme proposed by Whitbread[27]. Further details for the analytical techniques employed for the determination of mineralogical phases, composition as well as physical and technological properties can be found elsewhere[28].

## 4 RESULTS

### 4.1 Macroscopic features

Inter-site and intra-site workability of the samples considered in the present study is fairly variable. All the samples from Achaia show a range between poor to satisfactory workability, apart from HS33, HS36a, HS39, HS47, HS58 and HS62a, which showed excellent workability. Corinthian and Xylokastro samples show a higher plasticity in general terms, inheriting satisfactory to excellent workability. The greater part of the Achaian samples had a brown or yellowish-brown colour in the wet state, while after firing they tended to obtain a pale brown or yellow colour across all the temperatures (700, 900, 1050 °C), with only fairly few cases acquiring a pink (mainly at 700 °C) or red colour (fig. 2). The Corinthian samples are characterized by grey or olive-grey colours in the wet state and tend to acquire more pale brown or grey or yellow hues after firing. The only exceptions were samples C9 and C12, which are characterized by a reddish-brown colour in the wet state and reddish hues after firing, and a light grey colour in the wet state and a white colour after firing, respectively (fig. 2). All the samples from Xylokastro are characterized by an olive colour in their wet state and a pale yellow or brown colour after firing.

### 4.2 Petrographic study of the experimental briquettes fired at 700, 900 and 1050 °C

The following remarks are based on the results of the petrographic analysis of the fired clay-rich sediments, which can be classified into two broad groups, mainly according to their grain size and their mineralogical composition. The first group encompass ›coarse to semi-coarse‹ samples and can be subdivided further into two subgroups (calcareous and non-calcareous) whereas the second group includes the finer samples.

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25 Iliopoulos et al. 2011; Iliopoulos – Xanthopoulou 2017; Katsonopoulou et al. 2016; Xanthopoulou 2019; Xanthopoulou et al. 2020.

26 Jerolyn Morrison, personal communication.

27 Whitbread 1995, 379–388.

28 Xanthopoulou et al. 2021.

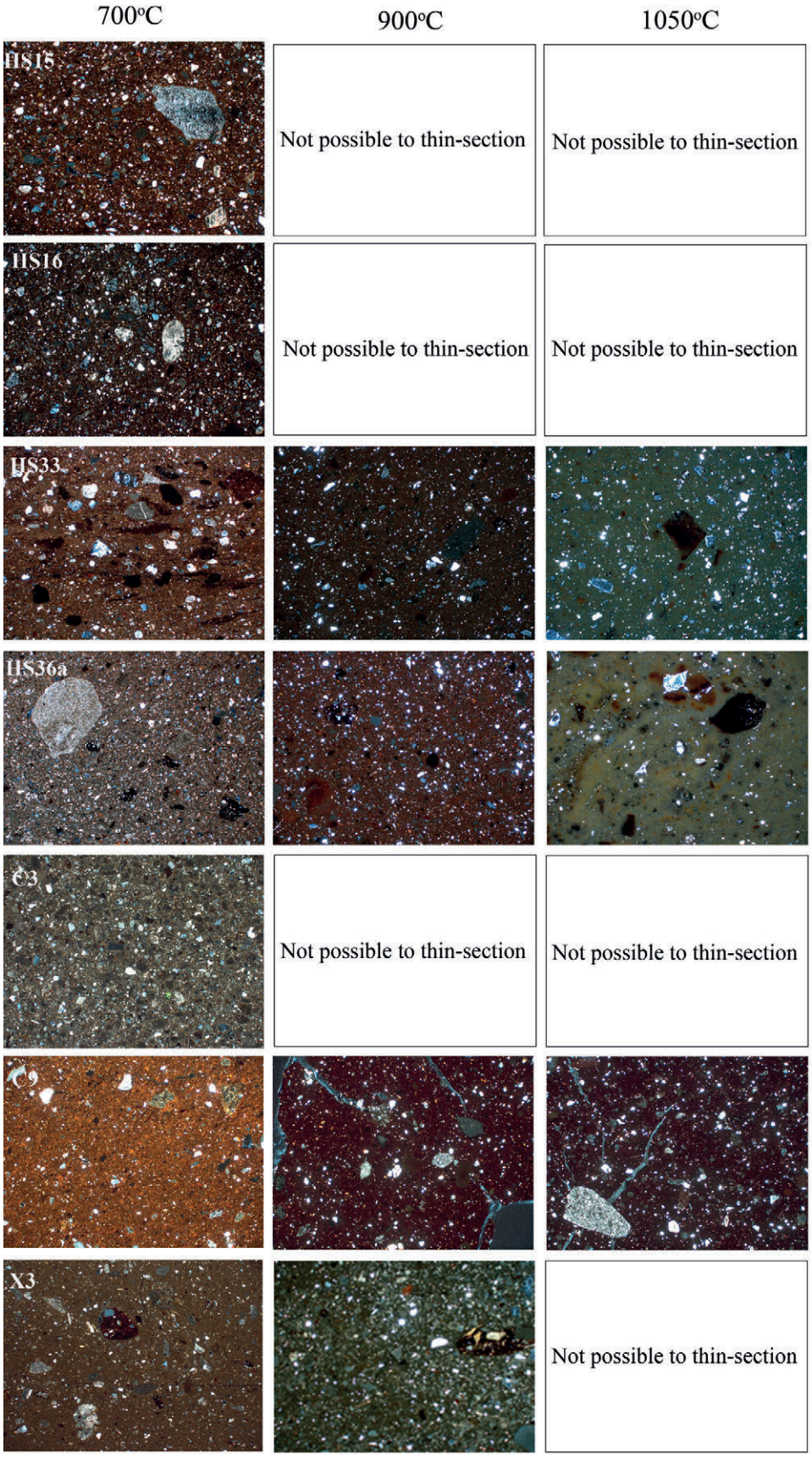



2 Representative experimental briquettes from the unfired state to the temperature of 1050 °C (© V. Xanthopoulou)

### Coarse – Semi-Coarse Group

The *calcareous* subgroup of this group includes fifteen samples from Achaia (HS15. HS16. HS33. HS36a. HS36b. HS38. HS41a. HS41ca. HS44. HS46. HS49. HS50. HS55b. HS58. HS67), two from Xylokastro (X1. X3) and two from Corinth (C3. C8). After firing at 700 °C the experimental briquettes exhibit an inhomogeneous groundmass and an optically active to moderately active micromass. The latter ranges in colour from light brown to yellowish brown under plane polarized light (PPL) and dark yellowish brown to yellow ›gold‹ under crossed polars (XP). Occasionally, textural concentration features (Tcf), such as clay pellets and amorphous concentration features (Acf), such as iron oxides, are observed.

The size of the aplastic inclusions ranges from the fine sand class (ca. 0.20 mm) to the very coarse sand class (ca. 1.92 mm). Inclusions have a coarse : fine (c : f) ratio between 10 : 90 and 20 : 80. The dominant constituents are sub-angular to sub-rounded quartz, sparitic limestone fragments and micritic calcite (fig. 3). Radiolarian chert and K-feldspar are less common. Under the higher firing temperatures, the clay minerals sinter, their edges being softened and sticking together. The sintering of the clay matrix leads to a considerable change in the birefringence of its constituent clay minerals. As they fuse together, the optical activity of the clay matrix is reduced. In the studied fabrics, the optical activity is reduced at 900 °C, whereas at 1050 °C the matrix has become inactive (i.e. optically isotropic). However, it is observed that among the samples fired at 900 °C, there are cases that are characterized by an optically active micromass and others that ex-




3 Representative photomicrographs of the calcareous sub-group of the first main group (coarse/semi-coarse samples). All are taken under XP nicols. Width of field of view: ca. 4.4 mm (© V. Xanthopoulou)

hibit an optically inactive micromass. The colour of micromass at this temperature is light brown to yellowish, greyish or reddish brown in PPL and dark brown to olive or greyish brown under crossed polars (XP). Silicates and mica (brown and/or white) have remained intact in almost all samples. In the replicates fired at of 1050 °C sintering is extensive and in many of the samples (HS33. HS36a. HS38, HS41a. HS49) the clay matrix has been vitrified. The micromass is optically inactive, exhibiting light greyish brown, greyish brown and olive colour under plane polarized light (PPL) and olive, olive brown and greyish brown colour in crossed polars (XP). Regarding the aplastic inclusions, only some of the silicates have survived firing at this temperature.

The *non-calcareous* subgroup includes only two samples, one from Achaia (HS45) and one from Corinth (C9). At 700 °C their colour ranges between light yellowish-brown to dark reddish-brown under parallel nicols (PPL) and dark reddish brown to red in crossed polars (XP). The micromass is characterized as optically active to moderately active. The dominant constituents in sample HS45 are the monocrystalline and polycrystalline quartz and the K-feldspar. Calcite, white mica and limestone fragments are also present but in subordinate quantities. Sample C9 is constituted mainly of monocrystalline quartz, K-feldspar and fragments of sedimentary rocks (sandstone, siltstone, mudstone, and radiolarian chert). The grain size of the aplastics ranges from coarse sand to very coarse sand (ca. 0.65–1.1 mm), whereas their shape is sub-angular to sub-rounded and the coarse:fine ratio is 30 : 70 (HS45) and 10 : 90 (C9). At higher temperatures the colour of the micromass exhibits darker hues than those recorded for the briquettes fired at 700 °C and is slightly optically active at 900 °C and optically inactive at 1050 °C. Only the silicates and partly the brown mica (in sample HS45) have escaped firing decomposition at 900 °C[29].

The second major group is characterized by a *fine calcareous* fabric and includes fifteen samples from Achaia (HS31. HS32a. HS35a. HS35b. HS39. HS47. HS51. HS54. HS55a. HS61. HS62a. HS62b. HS64. HS65. HS66), nine samples from Corinth (C2. C4. C5. C6. C10. C11. C12. C13. C14), and two samples from Xylokastro (X2. X4) (fig. 4). At 700 °C, the micromass is characterized as slightly optical active to optical active, whereas its colour varies from yellowish brown, brown, orange brown, or brown to grey under plane polarized light (PPL) and from yellow, dark yellowish brown to yellowish orange under crossed polars (XP). The coarse : fine ratio is 3 : 97 and the grain size of the coarse fraction reaches the class of fine sand (< 0.19 mm). The dominant constituents are micritic calcite and quartz, whereas white and brown mica and K-feldspar are present in smaller quantities.

At 900 °C the micromass is optically inactive, and only occasionally slightly optically active. Its colour ranges from brown to yellowish brown, greyish brown or olive brown in PPL, whereas under crossed polars (XP) is mainly dark brown, orange brown or greyish brown. Silicates and brown mica are the main constituents.

In higher temperature regime (1050 °C), clay matrix is extensively sintered and the micromass is mainly optically inactive. Its colour ranges mainly from grey to greyish brown under plane polarized light (PPL) and greyish olive to dark brown under crossed polars (XP). The main constituents are silicates, whilst in some cases redeposited calcite is observed, as well as some resistant brown mica[30].

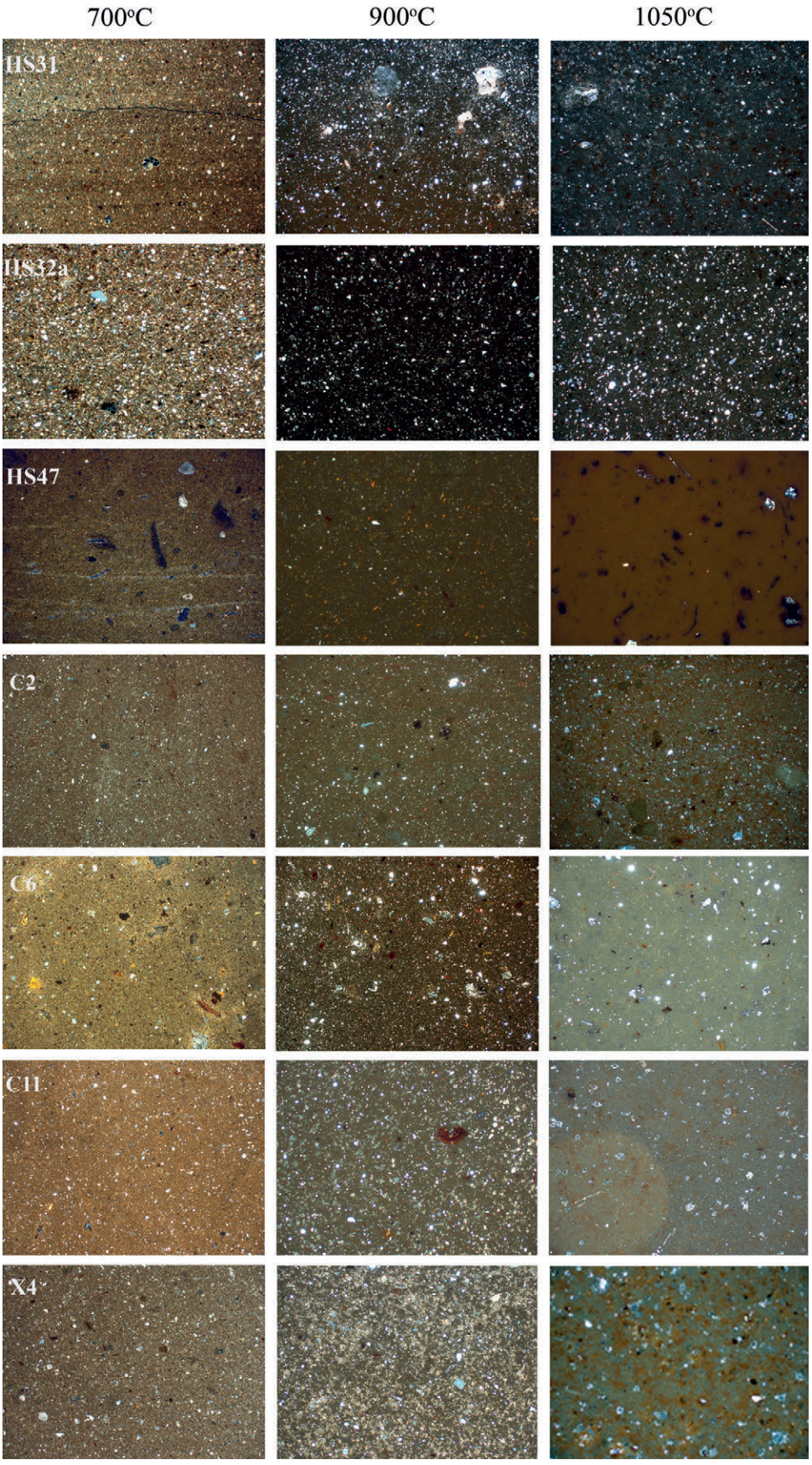
### 4.3 Technological, Compositional and Mineralogical Analysis

The technological properties as well as the compositional and mineralogical analyses have been examined in earlier researches[31]. The plasticity of the clay-rich sediments is a fundamental proper-

[29] Further details of the petrographic characteristics of each briquette fired at the various temperatures can be found in Xanthopoulou 2019, 113–123.

[30] Further details of the petrographic characteristics of each briquette fired at the various temperatures can be found in Xanthopoulou 2019, 113–123.

[31] Xanthopoulou 2019; Xanthopoulou et al. 2021.

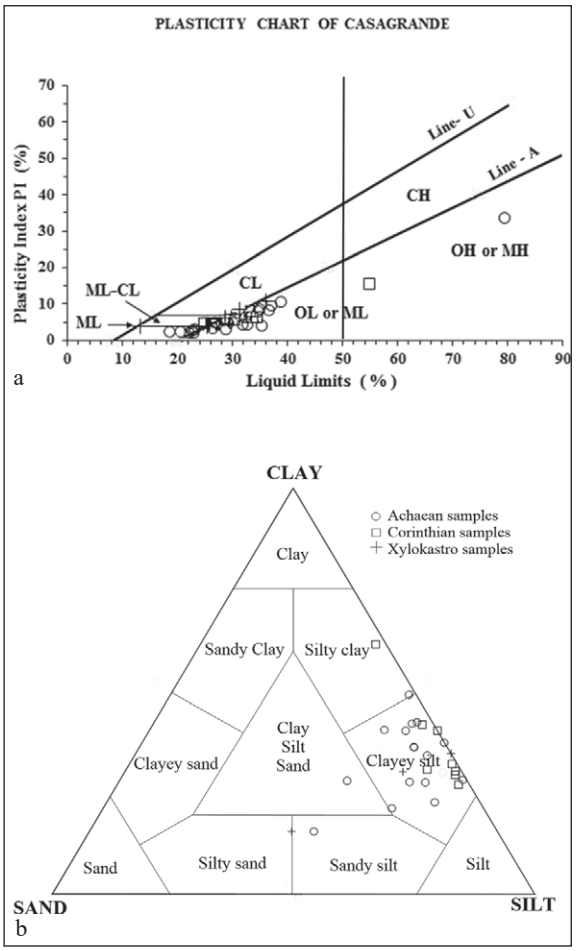



4 Representative photomicrographs of the second main group (finer samples). All are taken under XP nicols. Width of field of view: ca. 4.4 mm (© V. Xanthopoulou)

ty, since it defines the technical parameters to convert a ceramic mass into a given shape by application of pressure[32]. In the ceramic manufacturing the measurement and control of the plasticity of the clay are necessary for the optimization of the processing conditions. The plasticity can be influenced either by the clay itself or the moulding process[33]. The particle size of the raw materials significantly influences many properties of the finished products as well as the behaviour of the ceramic body during its manufacturing. Specifically, it affects the behaviour of the material during the shaping and drying procedures and consequently has a significant role on the plasticity of clay[34].

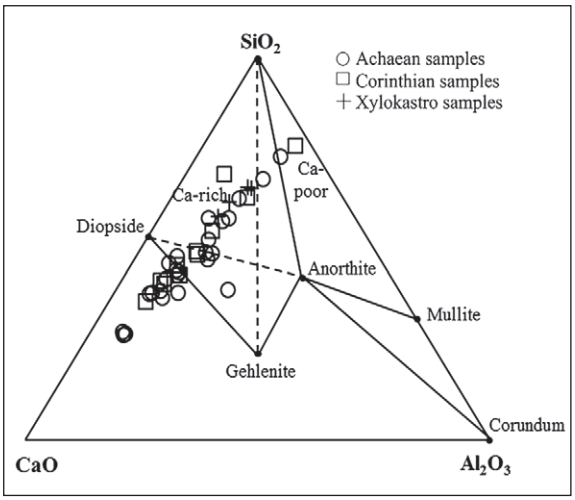
In our case, most of the studied samples are classified as clayey silts of low plasticity (fig. 5). One sample from Achaia (HS51) and one from Corinth (C9) exhibit higher plastic limits and plasticity index and are classified as silts of high plasticity.

Mineralogical analysis of the unfired raw material through X-ray powder diffraction showed that most of the samples (n = 59) are characterized as carbonatic, due to the high content of carbonate minerals calculated through the semi-quantitative evaluation of the relative diffraction patterns of each sample. This main mineralogical group is in turn sub-divided into calcareous and calcareous/dolomitic clayey sediments. Only two samples (n = 2) among the studied samples are characterized as siliceous, because of their very low content in carbonate minerals, thus forming a second mineralogical group. The samples of the first group (carbonatic) come from Achaia, Xylokastro and Corinth, whilst the second group includes one sample (HS45) from Achaia and one (C9) from Corinth. The calcareous sub-group of the carbonatic samples is characterized by the mineralogical assemblage calcite + quartz + plagioclase + illite + chlorite ± K-feldspar ± gypsum ± paragonite, whereas the subgroup of calcareous/dolomitic clays is represented by the assemblage quartz + calcite + dolomite + plagioclase + illite + chlorite ± K-feldspar. The siliceous group is represented by the mineralogical assemblage quartz + plagioclase + illite + chlorite ± calcite ± K-feldspars.




5 (a) Plot on Casagrande's plasticity chart (after Casagrande 1958) of Achaian clayey samples. Abbreviations: ML-CL = Soils of clay and silt, ML = Silt of low plasticity, OL or ML = Organic silt or silt of low plasticity, OH or MH = Organic silt or silt of high plasticity, CL = Clay of low plasticity or lean clay, CH = Clay of high plasticity or fat clay. Blue line shows the liquid limit 50 % that divines the chart into four main fields and (b) classification of the clay-rich sediments according to their grain size distribution and their projection on the Shepard diagram (Shepard 1954) (© V. Xanthopoulou)

32 Norton 1938; Norton 1974, 78 f.; Moore 1965; Astbury et al. 1966; Singer – Singer 1979, 299–302.
33 Henry 1943; Carman 1949; Marshall 1955.
34 Norton 1938; Norton 1974, 78 f.; Moore 1965; Astbury et al. 1966; Singer – Singer 1979, 299–302.




6 Plot of the chemical data of the studied samples on the ternary diagram $Al_2O_3$-CaO-$SiO_2$ (ACS) (Levin et al. 1964) (© V. Xanthopoulou)

Clay mineralogy was determined through XRPD (= X-ray Powder Diffraction) as well, after a series of pretreatment performed in the raw material[35]. Thus, about half of the Achaian samples consists of illite + chlorite ± kaolinite and could be characterized as illitic-chloritic raw materials, since these samples are very rich in illite and chlorite. The rest of the Achaian samples are characterized by the assemblage illite ± chlorite ± vermiculite ± kaolinite, as well as by the presence of various mixed-phases (illite-smectite, chlorite-smectite, chlorite-vermiculite, and mica-vermiculite). Illite and mixed-phases are the dominant constituents among the clay mineralogy for those samples. Illite is present in fewer quantities in the Corinthian samples than compared to the Achaian. The mineralogical assemblage of the Corinthian samples, in terms of the clay minerals presence is chlorite + kaolinite + illite + vermiculite ± smectite ± mixed layers. In the case of Xylokastro the clay mineral identified are illite + kaolinite + smectite ± chlorite and the mixed-layers chlorite-smectite and illite-smectite. Illite and mixed-phases are abundant in the clay mineralogy of Xylokastro samples, whereas chlorite and smectite are common constituents.

The bulk geochemical analyses confirmed the mineralogical examination, since the majority of the studied samples are rich in calcium content (ca. 16–47 wt%). The projection of the geochemical analyses on the ternary diagram $SiO_2$-CaO-$Al_2O_3$ led to two broad main groups considering their CaO content (fig. 6)[36]. Most of the samples are chiefly plotted in the Ca-rich field. Those samples can be subdivided further in two subgroups: one comprises 22 samples, including Achaian and Corinthian ones, (HS31. HS36a. HS38. HS46. HS47. HS49. HS50. HS51. HS62a. HS62b. HS64. HS67. C2. C3. C4. C8. C10. C11. C13), which are characterized as high calcareous sediments, since their content in CaO (wt%) exceeds 30 wt% and reaches 49 wt% (for instance the sample HS51). All the Xylokastro samples have a content of CaO less than 26 % by weight. Two exceptions, the samples HS45 and C9, are plotted at Ca-poor field and their content in CaO (wt%) is 6.77 % and 2.87 % respectively. The $SiO_2$ content of the studied samples ranges from 24 % to 63 %, being higher in those samples with low contents in CaO, whereas their $SiO_2/Al_2O_3$ ratio remains constant.

Concerning the trace elements, the processes which control the composition of the sedimentary rocks can be investigated using Rare Earth Elements (REE). The use of the ternary diagram (La-Sc-Th) can provide significant information for the provenance of the fine-grained sediments, since according to Cullers it can discriminate those originating from low-silica parent rocks (basic) from those linked to high-silica parent rocks (felsic)[37]. The clayey sediments considered in the present study (Achaian, Corinthian and Xylokastro) are plotted in the La-Sc-Th ternary diagram together with the analyses of clayey sediments reported elsewhere from the western part of Achaia[38], in order to examine possible geochemical similarities or discrepancies among them. All the studied samples are plotted towards the apex of La and in the field of clays, silts, sands and gravels from mixed sources, indicating a high-silica source of provenance or sediments that

35 Xanthopoulou 2019; Xanthopoulou et al. 2021.
36 Levin et al. 1964.
37 Cullers 1994a; Cullers 1994b.
38 Rathossi 2005, 331 f.

came from different sources, rather than a source of basic compositions (metabasic and amphibolitic sources). The samples from western Achaia tend to plot towards the apex of Sc, suggesting a low-silica source[39]. The fact that all the studied samples are plotted close to the values of UC (Upper Continental Crust), NASC (North American Shale) and PAAS (Post-Archaean Average Shale), suggests that although the sediments were subjected intense weathering, La, Sc and Th have remained immobile[40].

### 4.4 Discussion

The macroscopic description of the experimental briquettes at the dry state and after firing highlights some slight discrepancies in colouring among the various sampling sites. The Achaian samples have mainly brown or pale brown or yellow hues in the dry state, whereas the Corinthian samples have light grey or pale-yellow tints, apart from the sample C9 which is reddish brown. The unfired samples from Xylokastro exhibit an olive colour, presumably due to the smectite presence.

After firing, all the samples tend to obtain a pale brown, yellow or pink colour, with a very few cases of pale grey and white. The presence of significant quantities of CaO, as recorded by the geochemical analyses, contribute to the prevalence of pale yellow or white colour of the briquettes fired at 900 °C. Grey or brown tints are the result of the presence of either organic matter or manganese oxides in the unfired raw material. Samples HS45 and C9 when fired at 700 and 900 °C acquired a red colour and then, under 1050 °C became olive grey and reddish-brown respectively, as a result of their very low content of carbonate substances and the possible existence of iron compounds.

Concerning the briquettes' condition after firing, the general picture is that they are in good condition, except for some that exhibit shallow or deep cracks, mainly after firing at temperatures of 700 °C and less so at 900 °C. This may be due to several factors, such as differences in texture, composition, and structure and surface characteristics. The state of briquettes left for one week at room temperature varied hugely between samples which were all in good condition after firing: particularly so for those in the 700 and 900 °C sets. The most significant feature was the creation of lime spalling, which emerges by reactions involving the formation of CaO at room temperatures. Its formation on the surface of the briquettes in the form of large particles contributed to the cracking or the complete fragmentation of the preparations. This fact did not allow the thin-sectioning of a number of the experimental briquettes and particularly those of the coarse/semi-coarse fabric group (fig. 4).

Thin-section analysis of the experimental briquettes fired at 700 °C revealed no mineralogical transformation and structural changes. The first group is characterized as coarse to semi-coarse and is further subdivided into two subgroups, *calcareous* and *non-calcareous,* due to their compositional diversity.

The calcareous subgroup includes mostly the Achaian samples, as well as two Corinthian samples and two from Xylokastro. Their main characteristic is the coarse-sized fraction, which consists of sparitic limestone fragments and quartz grains. The briquettes fired up to 900 °C are characterized by the presence of silicates, calcite decomposition or residual micrite and in some cases the presence of brown and white mica. Residual calcite is attributed possibly to the coarse grain size of the primary calcite and the insufficient time of firing to ensure the complete decomposition of CaO and the formation of new minerals. Brown mica is pleochroic with a pale red colour in plane polarized light (PPL) and a red-orange colour under crossed polars (XP). This may be explained as indicative of the presence of oxidized biotite. However, biotite was not detected through the XRD evaluation, probably because the chemical composition of the brown

39 Rathossi 2005, 331 f.

40 Cullers 1994a; Nyakairu – Koeberl 2001; Xanthopoulou et al. 2021.

mica resembles a clay mineral with interstratified layers rather than that of a proper pure biotite. The optical properties of this mineral phase are similar to those of »metamorphic vermiculite«, as defined by B. Velde[41]. The chemical composition of this mineral is close to that of chlorite but contains low levels of potassium and calcium. Its stability field in a P-T diagram is at slightly lower conditions than those of pure biotite. Furthermore, microanalyses obtained from phyllosilicate crystals through scanning electron microscopy showed elevated values of K and Ca, indicating the possible presence of »metamorphic vermiculite«[42]. The determination of the specific mineral indicates the presence of the interstratified clay minerals, chlorite-vermiculite and mica-vermiculite in the raw material, which are grouped with »metamorphic vermiculite«. According to Velde, the temperature stability field of this mineralogical phase which is considered as the intermediate metamorphic phase from chlorite to biotite or as the altered product of biotite, does not exceed 400 °C[43]. Recently C. Rathossi and Y. Pontikes as well as C. Ionescu and V. Hoeck have upheld the belief that the metamorphic vermiculite structure can be maintained up to 1000 °C in the composition of archaeological ceramics, as well as in experimental briquettes[44]. The briquettes fired at 1050 °C acquired a yellowish-brown, olive-brown or yellow colour, which is due to the high content of calcium in the raw material. Only silicates have remained, whereas in some cases the redeposition of micrite is observed, probably due to the free lime produced by the decomposition of the primary calcite and its reaction with atmospheric $CO_2$[45].

The non-calcareous group comprises samples HS45 and C9, which is in concordance with the geochemical results and their very low content in CaO. They both contain monocrystalline quartz, k-feldspars and minor chert fragments, whilst C9 additionally bears siltstone fragments as well as a few mudstone fragments. The matrix colour of both samples ranges from reddish-brown to red under crossed polars (XP), unlike the rest of the fabric in which yellow or a yellowish-brown or brown colour (in XP) dominates. In firing up to 1050 °C, the ceramic matrix was partly sintered and vitrified, whereas the silicates resist, and brown mica was observed again in sample HS45.

The second main group is characterized as a *fine calcareous* fabric, since the grain size does not exceed that of the class of fine sand. This group includes all the Corinthian samples, two from Xylokastro and the rest of the Achaian samples. Residual calcite and brown mica are present alike up to 900 °C, and in some cases brown mica was observed up to 1050 °C.

According to the physical and technological parameters, there is no significant differentiation among the samples from eastern Achaia, Xylokastro and Corinthian samples. The same goes for their composition.

## 5 CONCLUSIONS

The results obtained by the physical and technological properties showed no significant differentiation among the samples from the northern Peloponnese. As for their potentiality as ceramic raw materials, they could only have been considered as suitable, if specific technological improvements, such as levigation or settling, were followed. Such interventions would have increased the potential of use of similar clays in the ancient ceramic manufacture[46]. The construction of the experimental briquettes, as a simulation of the ceramic products from the studied raw materials, gave us more information about the end product which can be prepared with these raw materials. The raw materials from Corinth and Xylokastro exhibit excellent workability, whereas only six samples from Achaia were moulded easily. Due to the high content of calcium the firing colours

41 Velde 1978.
42 Xanthopoulou 2019, 282 f.
43 Velde 1978, 319–323.
44 Rathossi – Pontikes 2010; Ionescu – Hoeck 2011.
45 Fabbri et al. 2014.
46 Xanthopoulou 2019; Xanthopoulou et al. 2021.

which dominate after their firing at 700 and 900 °C are of light hues, such as pink, pale brown and yellow. The samples from Xylokastro have olive colour in the unfired state, which changes to pale yellow or pale brown in the different temperatures of firing. The siliceous samples (HS45 and C9) are characterized by reddish hues. As far as their condition after firing and their exposure to ambient conditions is concerned, failures due to the lime spalling were observed in some samples and mainly for those fired at 700 and 900 °C. The petrographic assessment provided considerable differences among the studied areas, since almost the half number of the Achaian samples were characterized by a coarse/semi-coarse fabric, while only three Corinthian samples were assigned in the same fabrica. Xylokastro samples were equally grouped. Furthermore, most of the coarse/semi-coarse samples did not stand after firing, indicating either their unsuitability as ceramic raw materials or the need for further improvement of the initial raw material.

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# PROVENANCE AND BEYOND – A MULTI-ANALYTICAL ARCHAEOMETRIC APPROACH TO THE STUDY OF CERAMICS FROM OLYMPIA AND THE REGION

ABSTRACT

The present work is part of a project that includes archaeometric research of Early Iron Age and Archaic era pottery from various archaeological sites in the western Peloponnese and western mainland Greece. This paper provides an overview of the current archaeometric research for the local and imported pottery of Olympia (western Peloponnese). Using a multi-analytical approach, supported by geological sampling and experimental firing, the geochemical, petrographic and technological features of the local pottery are established, thus enabling observable distinctions to be made from imported ware. The archaeometric analyses also provide clues to the economic-political, ecological and social milieu of the site and its environs. For this reason, aspects beyond the question of provenance that arise from archaeometric analyses are also discussed.

## INTRODUCTION

Olympia is one of the most important Panhellenic sanctuaries of ancient Greece, renowned throughout the Greek world, and the site of the famed ancient Olympic Games every four years. This major event, which regularly threw Olympia and the surrounding region into a frenzy, brought with it a huge logistical and infrastructural challenge in antiquity. While Olympia has long been explored, the environs, and the nature of their relationship with the sanctuary, are less well known.

To address this, a survey project commenced in 2015[1]. The aim of the project is to contextualize Olympia within its paleo-environment, to analyse their interdependence and, among other things, to frame questions about the nature of the close and distant relationships between Olympia and its surrounding areas. Based on the well-documented myth-historical traditions close links between Olympia and its environs can be proven[2].

The organisation of the internal structure of the environs and contacts as well as its integration into the networks of Olympia and the broader Greek world can be reconstructed through the material culture, especially ceramics[3].

Because of its Panhellenic importance, Olympia also indirectly represents a network of ceramic workshops – local and supra-local – insofar as many agents brought products from different workshops to Olympia and its environs. This means that we can draw on a large variety of pottery from many different ›production sites‹ that accumulated in one place: this can be very useful as a

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1 »Olympia (Greece) as a multi-dimensional space – a landscape archaeology approach to structure, interdependency and change of spatial networks« is funded by the German Research Foundation (DFG). This interdisciplinary project is conducted by B. Eder, J. Huber, F. Lang, G. Pantelidis (archaeology), H.-J. Gehrke (Ancient History), A. Vött, L. Obrocki (Geoarchaeology) in cooperation with the German Archaeological Institute (R. Senff), the Greek Department of Antiquities (E. Kolia): <https://www.archaeologie.architektur.tu-darmstadt.de/arch/projekte_arch/projekte_27/olympia_phase_2.de.jsp> (10.03.2021); Eder et al. 2015/2016, 52–59; Eder et al. 2017/2018, 63–67; Eder et al (forthcoming).

2 Gehrke 2019.

3 Generally, Lang 2020.

reference for various aspects of ceramic research. In particular, finds from the Olympian region can be considered and compared to this reference group, contributing to the broader aims of our survey project.

## OBJECTIVES

Ceramic research in Olympia has a long history, the results of which have become important as they cover a wide range of typologies and provenances. Methodologically, the archaeological results are based on a stylistic-typological approach, which centres on the design of form and surface. With an archaeometric approach, there is a change of research perspective, focusing on raw materials, their processing and production technology.

As part of the project »Early Iron Age and Archaic ceramics in Western Greece«, ceramics from Olympia were examined[4]. The objectives of this project are focused on potentially determining the geographical/geological provenance of analysed ceramics – characterizing local and imported fabrics – and the exploration of technological processes applied by potters for the recipe (i.e. the clayey paste preparation), the firing conditions and ›finger prints‹ of workshops. In addition, the results are the starting point for considerations of economic-political, ecological and social perspectives of archaeometric research.

This article concentrates on the archaeometric studies of Geometric and Archaic fine wares unearthed in Olympia, which have already been published. The samples of Archaic ceramics are mostly decorated vessels. They represent different types and different provenances according to the archaeological interpretation (i.e. from local sites as well as from Achaia, Attica, Corinth, Lakonia, Sicily, and Asia Minor).

The great potential of this archaeometric project lies in the multi-method approach (tab. 1), in which geochemical, petrographic and mineralogical analyses (P-ED-XRF, ICP-MS, PLM, XRPD,) as well as geological surveys/sampling and experimental firing are used to explore the dataset. This multi-analytical approach is also significant in illuminating relevant characteristics of the geological context of Olympia – in contrast to the igneous and metamorphic rocks in the Eastern Aegean, the clay matrix of the sedimentary rock predominant in the Elian/Achaian regions is difficult to differentiate[5].

## WORKFLOW DESCRIPTION AND METHODS

The ceramic analysis process was multi-stage. First, the clay matrix of the ceramic was described macroscopically or microscopically in order to compile product groups. This was followed by archaeometric analyses. The archaeometric research has evolved as a two-step process, of which the first lays the groundwork for the second.

Firstly, a non-destructive *in situ* geochemical analysis was conducted on a large number of ceramic sherds and a significant quantity of clayey raw material samples collected around and in the broader area of Olympia. The purpose was to interpret the obtained chemical data in order to: (a) undertake the preliminary grouping of ceramics and to make suggestions about their possible origins and (b) to select a smaller number of samples for the second step. This second step included

[4] »Early Iron Age and Archaic ceramics in Western Greece. Multiple archaeometric analysis methods« funded by the Gerda Henkel Stiftung and carried out by C. Rathossi and F. Lang; <https://www.archaeologie.architektur.tu-darmstadt.de/forschung_klarch/forschungsprojekte_klarch/frueheisenzeitlicher_keramik_im_westlichen_griechenland_klarch.de.jsp> (12.03.2021). The publication is in preparation.

[5] It is known that pottery can be altered by soil storage, as elements from the soil are absorbed by the pottery, which can lead to changes in colour as well as clay consistency. So far, there is a lack of systematic research on this; see Heiden 1995, 10; Kyrieleis 2000, V f.; Burow 2000, 20. 203 f.; Hübinger 2005, 53; Döhner 2014, 598; see also below.

laboratory work with destructive analytical methods which determined the region of provenance and the technology of the studied pottery.

The parameters for the investigation were clay colour, clay matrix and temper particles. Four types of analytical techniques were planned for archaeometric study. Specifically, 400 ceramic samples have been analysed using a non-destructive technique with a portable energy dispersive X-ray fluorescence analyser (P-ED-XRF)[6]. Two to three readings, each lasting 300 sec., were taken for each sherd in different positions avoiding the slip or colour decoration where they existed.

The advantage of this method lies in the reduction of costs as well as the time and technical measurement effort. This allows a mass screening to be carried out, with which the selection of samples for further laboratory tests can be carried out in a much more qualified manner than by macroscopic approach[7].

For laboratory analysis using destructive techniques, 155 ceramic samples were selected. Three analyses were applied: (a) petrographic analysis (thin-sections of 80 samples) using a polarizing microscope (b) mineralogical analysis (40 samples) using a X-Ray Diffractometer[8], and (c) geochemical analysis (powders of 27 samples) using a combination of Fusion Inductively Coupled Plasma (FUS-ICP) and Inductively Coupled Plasma Mass Spectroscopy (ICP-MS)[9].

## ARCHAEOMETRIC RESULTS AND DISCUSSION

### Non-Destructive Methods

In situ Geochemical Analysis (P-ED-XRF)

The geochemical data concern the 400 ceramic wares and sherds dating back from the EIA to the Archaic period and attributed by archaeologists (a) to local or (b) local (?) or uncertain origin and (c) imported production, the latter from a variety of ceramic centres (Athens, Corinth, Laconian, Sicily and Asia Minor). Specific attention has been paid for the Early Iron Age ceramics collected from the excavation of the Pelopion (»Schwarze Erde«)[10] as also from Archaic ceramics which have an origin from Elis or/and western Peloponnese according to archaeological research. These ceramic samples in Olympia were used, in the present archaeometric work, as reference ceramic materials for pottery production. The interpretation of obtained chemical data was based on those critical minor and trace elements which have a predominantly heavy-mineral signature and could be representative of raw material source of ceramic sherds, as they are relatively immobile and insoluble and as a consequence resistant to post-burial mineralogical alterations (i.e. Zr, Nb, Y, Ti, Cr, Ni, Th).

Variation diagrams (bivariate plots) were performed which established the distinguishable trace elements (i.e. Cr, Ni, Zr, Y, Nb, Th) that define four ceramic groups (figs. 1 a; 2 a).

Group A: This includes the majority of Pelopion's samples which are archaeologically classified as local products along with some of the archaeologically classified imports (i.e. Attic, Corinthian, Lakonian, Asia Minor, Sicily), as well as a large number of archaeologically categorized local (?) or uncertain origin sherds and the sherds from survey (fig. 1). Chemically group A determines the pottery production in Elis as also in western Peloponnese.

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6 The portable Thermo Scientific NITON XL3t EDXRF analyser is equipped with a X-ray tube (Au anode at 50 kV) and a Si PIN detector, using a combination of »main«, »low« and »light« range filters to optimize reading of heavier and lighter elements in the pre-calibrated »TestAll GEO Mode«. Value of 28 elements – Mo, Zr, Sr, U, Rb, Th, Pb, As, Hg, Zn, Cu, Ni, Fe, Mn, Cr, V, Ti, Ca, K, S, Ba, Nb, Y, Al, Si, P, Cl, Mg – were recorded in ppm. Prior to the measurement each position was cleaned.

7 Helfert et al. 2011; Helfert 2013; Lang et al. 2014.

8 Thin section preparation-Polarizing Microscopy, Diffractometer (Bruker, D8 Advance Diffractometer equipped with a LynxEye®detector). Both methods were conducted at the Department of Geology, University of Patras.

9 The analysis was carried out at ActLabs, Ancaster, Ontario, Canada.

10 Eder 2006.

Group B: This includes the archaeologically characterized Attic pottery which creates a clear distinct group due to the high Ni, Cr and As content in these ceramics (fig. 1 a. c). Very few Attic ceramics seem to have a different origin. Chemically group B established the Attic pottery.

Group C: This is a small and dispersed cluster which includes some Lakonian ceramics plus Asia Minor products and a few Sicilian due to their higher Zr, Nb, Y, Th content compared to the local and Attic pottery (fig. 1 a). Even so, the small number of ceramics which comprise this group could not create a distinct group representative of their origin such as the A and B groups, but it could only suggest an origin of Lakonia or/and Asia Minor. However, Asia Minor's ceramics seem to display a higher concentration of Nb element than Lakonian pots, which could be an index for a better discrimination. The scattering of Asia Minor samples could be attributed to their production in different workshop centres which were located along the Asia Minor coast where the geological setting differs from north to south[11].

Archaeologically classified Corinthian samples were found to chemically resemble the composition of local sherds in the majority of chemical elements (fig. 1 a. c), except for one sample which has an origin other than Corinthian or local. However, in some of the archaeologically Corinthian ceramics, the content of strontium (Sr) is higher.

Group D: Sr is a good indicator to distinguish Corinthian ceramics from local ones as they display a higher concentration (fig. 2 a) of this. Since Sr is a mobile element and is affected by the post-burial chemical alterations in the ceramic ›body‹, these results must be checked in further investigations[12].

The chemical composition for some samples suggests their imported origin without determining their production centre with certainty. Only hypotheses could be done for these samples such as samples with high Cr/V and Y/Ni ratio which probably were produced in workshops in central Macedonia (fig. 1 d, samples in circle).

## Geological Survey

Raw material sampling was carried out on outcrops of Plio-Pleistocene sedimentary deposits of Elis prefecture (fig. 3 a). Firstly, raw materials collected in the vicinity of Olympia (fig. 3 d) and secondly from other locations within a radius up to ca. 30 km from Olympia (fig. 3 b). In addition, the Panagiotopoulos Brick and Tile Factory which is located at Douneika (13 km NW of Pyrgos) supplied us with the raw materials they use for their products (fig. 3 c).

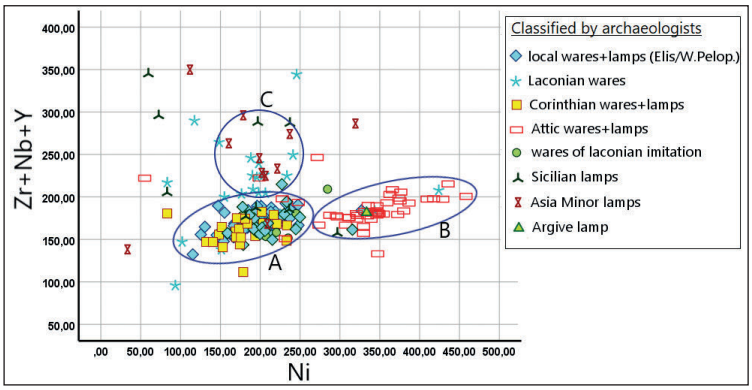
Due to the fact that the analysed pottery in the present study consists of fine wares, the sampling was limited to these brownish red, brownish, yellowish and greyish sequences which consist of laminated beds of sandy silts, silts, silty clays and clays[13].

Subsequent laboratory work revealed the suitability of Elian clayey sediments in pottery production. Small briquettes were prepared without proceeding to any specific preparation of raw materials and fired at four temperatures (750 °C, 850 °C, 950 °C, 1050 °C) in an electric oven. The macroscopic colour of experimental briquettes was compatible with a large number of ancient ceramics' colour-body, either reddish, brownish or whitish hues (fig. 3 b–d).

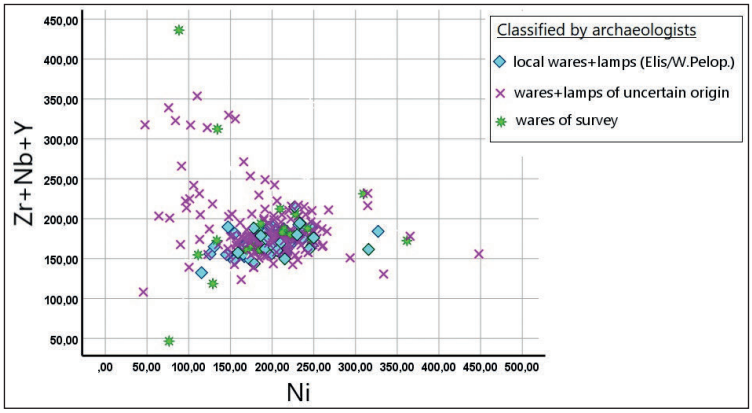
## P-ED-XRF Comparison

The raw materials were subjected in geochemical analysis with P-ED-XRF in order to compare their chemical data with those of ancient ceramics.

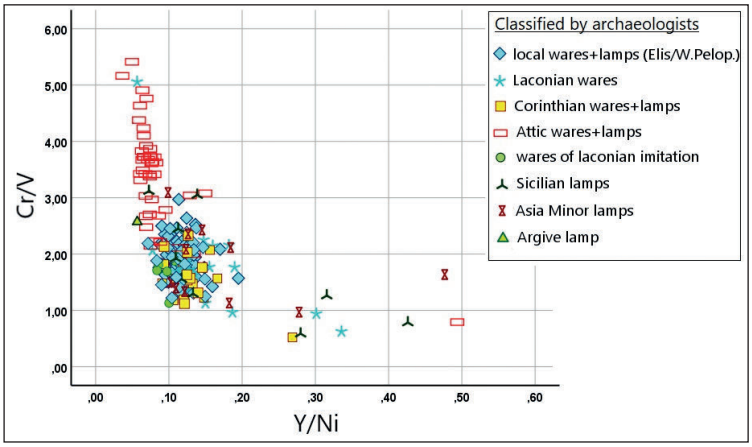
11 Dilek – Altunkaynak 2010.
12 Maritan 2020.
13 Streif 1980; Streif 1981.



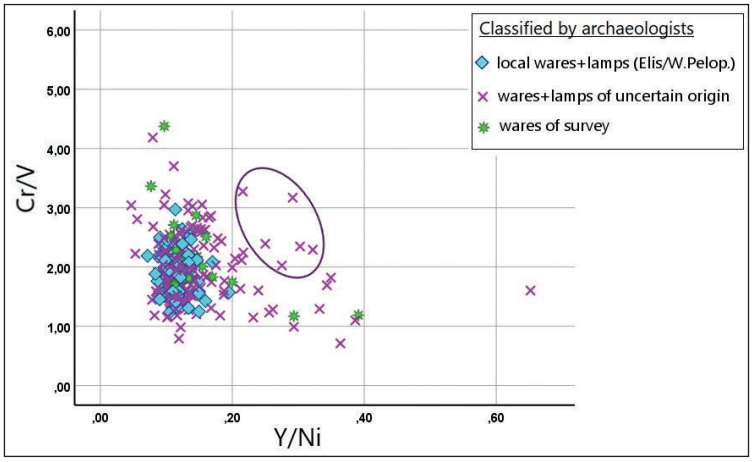

a




b

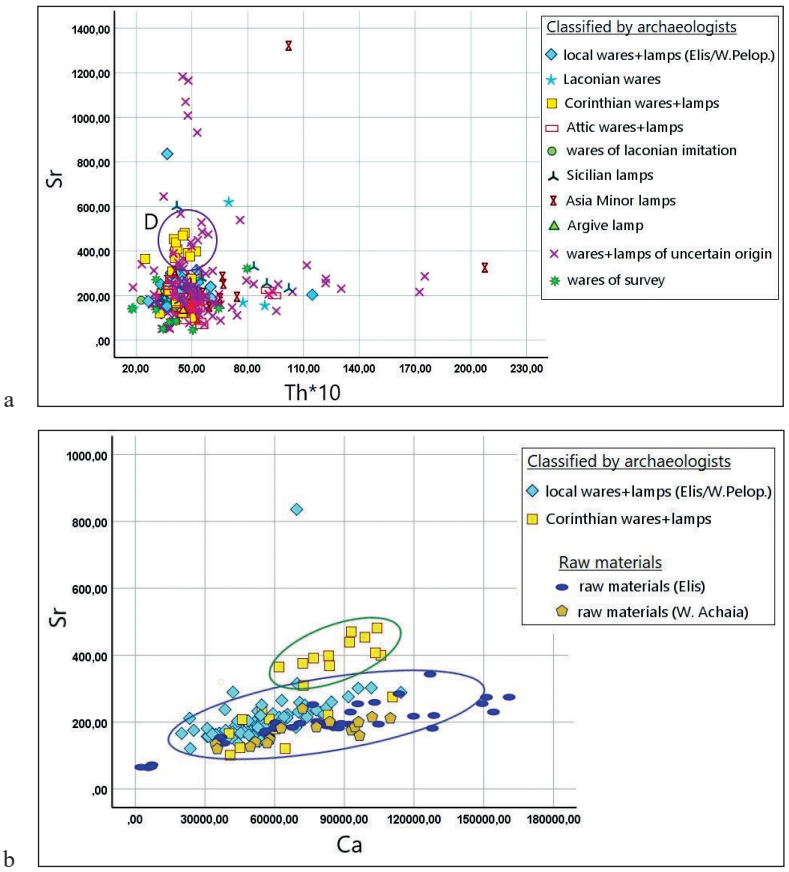



c




d

1 Bivariate plots of pEDXRF data for selected minor and trace elements in ceramic sherds (© C. Rathossi)




2 Bivariate plots of pEDXRF data for selected major and trace elements in ceramic sherds (a) and in ceramics and raw materials (b) (© C. Rathossi)

The P-ED-XRF data for both ceramics and raw material samples were submitted to Principal Components Analysis (PCA) in addition with P-ED-XRF data of Achaian raw materials collected from outcrops around Patras and to the west-southwest of it[14].

The biplot of PC1 and PC2 of Principal Component Analysis suggests that a large part of analysed ceramics could be produced in workshops operated in Elis and/or western Achaia (NW Peloponnese) (fig. 4 b). A small discrimination could be achieved between two production locations as Achaian raw materials exhibit slightly higher concentration of Cr and Ni elements and slightly lower Zr content compared to Elian raw materials.

The bivariate plot of Sr vs. Ca for ceramics and raw materials indicates also that some archaeologically classified Corinthian pots could have Elian or/and Achaian provenance (fig. 2 b).

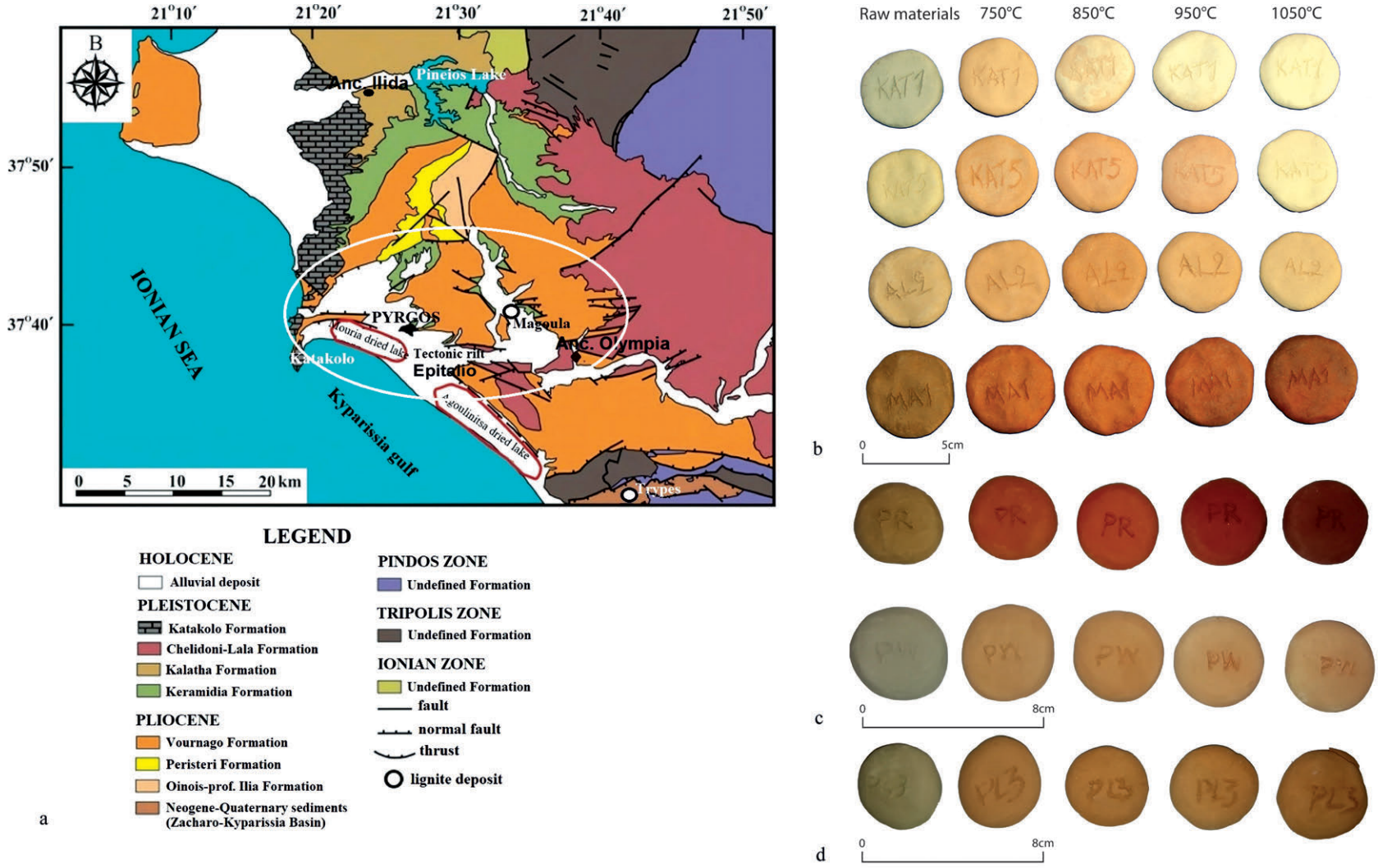
## Destructive Methods

### Petrographic Analysis

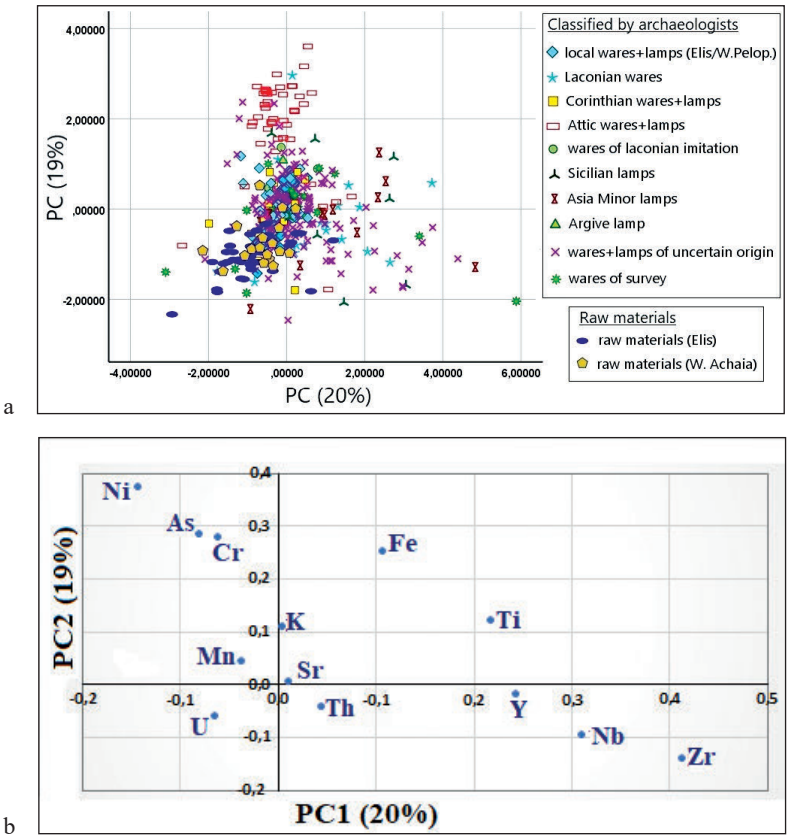
This method determined the fabric of geochemically classified local pottery (Group A) and provided clues concerning their manufacture. Also, the petrographic description provided additional evidence which supplemented the chemical data and clarified better the origin of imported pots.

The geochemically defined ceramic samples (produced in Elis/NW Achaia) is characterized by a homogeneous fine-grained fabric with a similar mineralogical composition composed of

14 Rathossi 2005.




3 (a) Synoptic geological map of W. Peloponnese (Chatziapostolou 2009); (b, c and d) Representative experimental briquettes made by Elian raw materials and fired at four temperatures (more details in the text) (© C. Rathossi)




4 Biplots of the first two components (PC1, PC2) of Principal Component Analysis applied to Ancient Olympia's ceramic samples and Elian raw and Achaian raw materials. (a) Score Plot; (b) Loading Plot (© C. Rathossi)

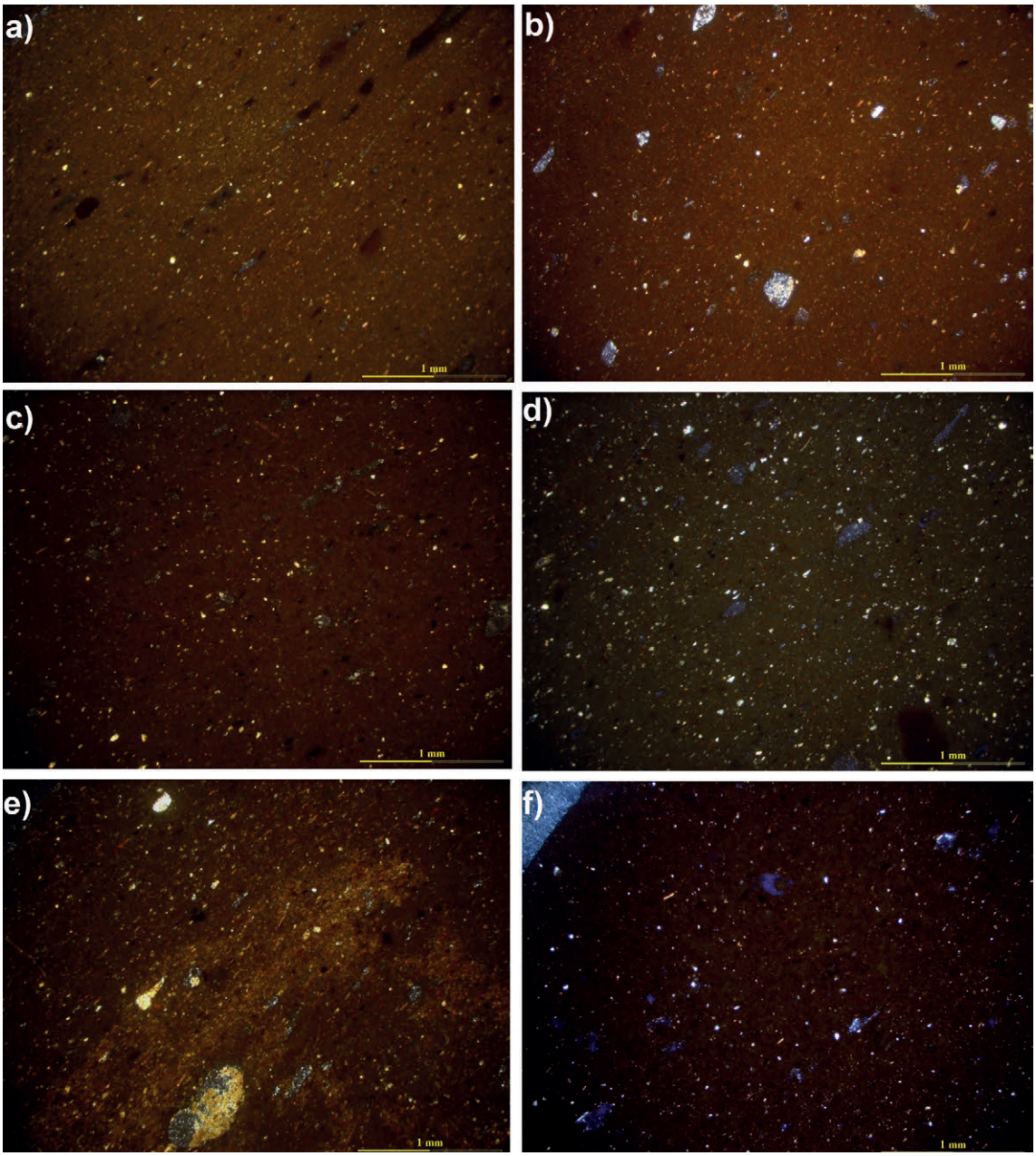
quartz, feldspars, white mica, calcite and iron oxides. These minerals are not diagnostic for detailed provenance study as they dominate in the sedimentary rocks of the northwestern Peloponnese[15].

The petro-fabric groups were assorted according to the colour and optical behaviour of micromass, which indicates the degree of firing temperature and atmosphere, the sorting of aplastic inclusions, the preservation of mica and the existence of textural concentration features[16].

The homogeneous colour of micromass and the perfect- to well-sorted aplastic inclusions indicated that potters did not apply a specific procedure such as mixing or tempering in order to transform the raw materials to the ceramic paste; instead, they used a single source for clayey raw materials.

Concerning the firing conditions, the optical behaviour of micromass from semi-isotropic to isotropic and the preservation or not of mica established a firing temperature for ceramics greater than 800 °C reaching up to 1000–1050 °C for some ceramics. The homogeneous colour of micromass ascertains a slow firing-cycle leading to a complete sintering. The slightly different colour of micromass is an indicator of the calcium concentration in ceramics' raw materials. A greenish hue suggests that a more Ca-rich raw material was used (fig. 5). The ceramic samples which are presented in figure 5 have been produced in Elian workshops according to the geochemical analysis.

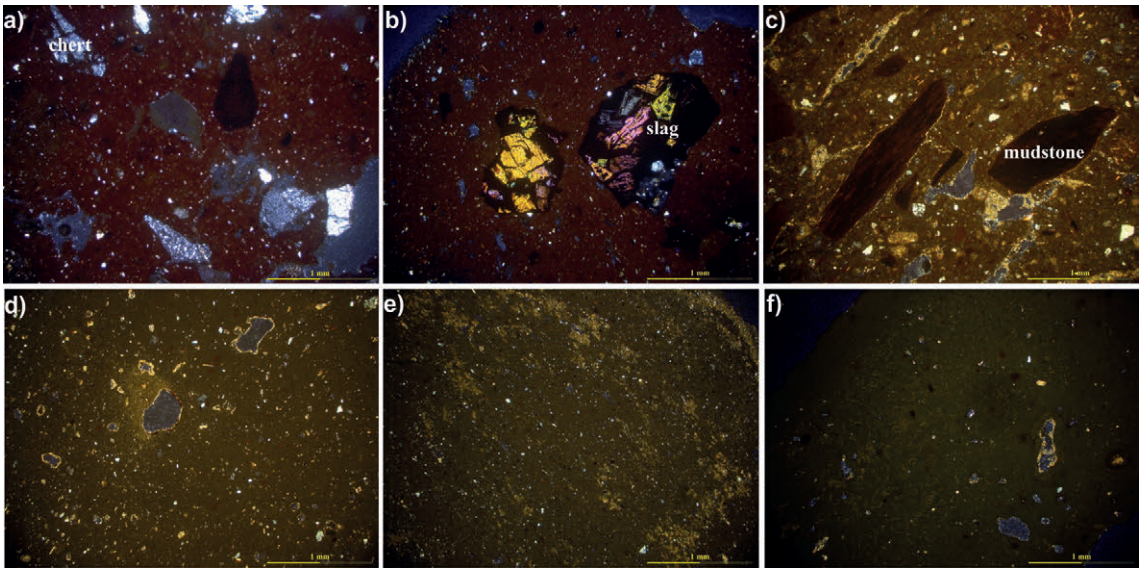
15 Rathossi 2005; Parcharidis et al. 2009.
16 Whitbread 1995; Quinn 2013.




5 Representative thin-section photomicrographs of local fabric (under cross polarized light, XPL) (© C. Rathossi)

Only two chemically classified local samples reveal a tempered fabric. The first concerns a lamp where the archaeological inquiry assumed a possible Sicilian origin[17] and which displays a chert-tempered fabric (fig. 6 a). The second is an Attic ceramic, according to archaeologists, with a slag-tempered fabric (fig. 6 b). Chert tempering has not been recognised in Sicily or Attica, but in pottery from western Greece and Ionian islands as well as from northeast Peloponnese[18]. The fact that cherts have also been recorded in the upper parts of Elian Neogene Formations[19], a local origin for this lamp cannot be excluded. The smelting furnace slag inclusions in the second

17 Hübinger 2005.
18 Moore 2000; Pentedeka et al. 2014; Graybehl 2014; Xanthopoulou 2019.
19 Streif 1980; Streif 1981.




6 Thin-section photomicrographs of tempered fabric and Corinthian fabric (under cross polarized light, XPL) (© C. Rathossi)

ceramic seem to be copper or iron slags, as the main mineral phases found in slag are fayalite and magnetite. During the Iron Age, this paste recipe has been recognised in regions with copper mining and smelting activities such as the southern Levant[20].

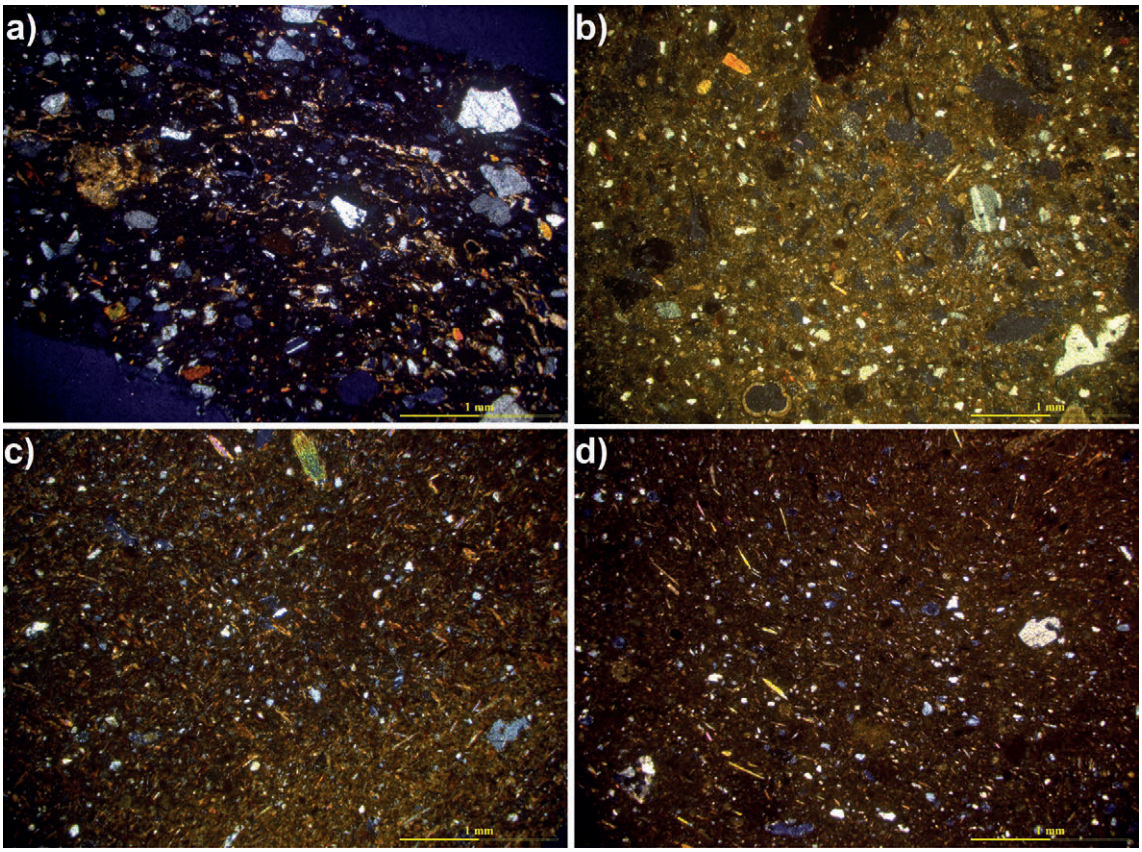
One pithos sherd collected during the survey shows macroscopically a coarse texture; its chemical composition suggested an origin from the eastern Peloponnese as it has a similar chemical composition to an archaeologically classified Argive lamp. Its petrographic examination confirmed that its fabric is characterized by a tempering of angular mudstone in a micritic micromass (fig. 6 c), a petrographic fabric found in the pottery of northeastern Peloponnese (Corinth, Nemea)[21].

The petrographic fabric of geochemically classified Corinthian sherds is characterized by a very fine to fine greenish micritic micromass with occasionally microfossils. From these three samples only one sample is archaeologically classified as of Corinthian origin (fig. 6 d). The two others are archaeologically characterized as western Peloponnesian origin (fig. 6 e) and uncertain origin (fig. 6 f).

The petrographic analysis allowed the possibility to define the origin of those samples which geochemical analysis had assigned as imported pots without determining their concrete provenance. The detection of specific minerals and rock fragments was indicative of the production centre of the imported samples[22].

Figure 7 a depicts a ceramic lamp which the archaeological report categorized as imported from Asia Minor or Aigina. The geochemical analysis identifies it as an imported piece and its fabric, with intermediate volcanic inclusions and the characteristic amphibole in calcareous micromass, clearly demonstrates its Aiginetan origin[23]. The existence of mafic minerals and volcanic glass shards (Y-shaped) in a fossiliferous micromass characterized the fabric of the sherd in figure 7 b. Archaeologically this ceramic is a local product but both geochemical and petrographic analysis suggests an imported origin probably from Italy. The two lamps in figures 7 c and 7 d were categorized as Asia Minor products by archaeological inquiry[24], while the

20 Martin et al. 2013.
21 Graybehl 2014; Xanthopoulou 2019.
22 Quinn 2013.
23 Dorais – Shriner 2002; Gauß – Kiriazi 2011; Christidis et al. 2014.
24 Hübinger 2005.




7 Representative thin-section photomicrographs of imported fabrics (under cross polarized light, XPL) (© C. Rathossi)

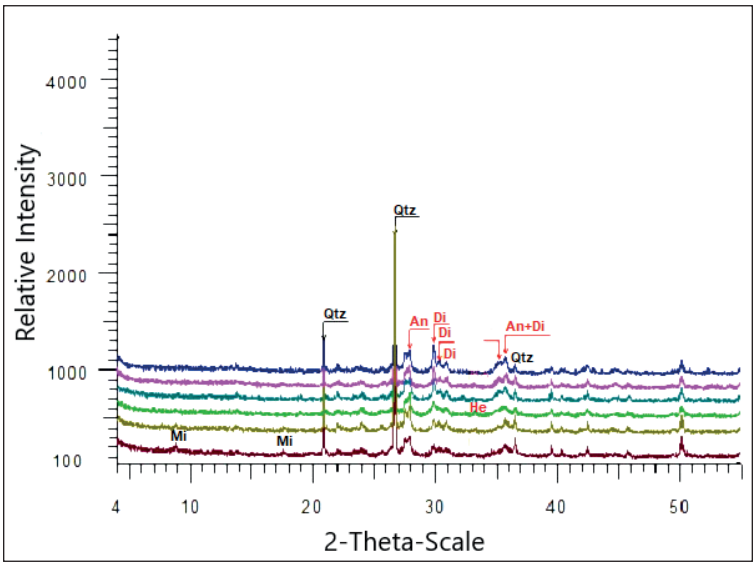
geochemical investigation distinguished them also as imports belonging to chemical Group C (fig. 1 a). They exhibit a strongly micaceous fabric which is characteristic of western Asia Minor pottery. However, these two lamps have probably not been produced in the same workshop as one of them has a more calcareous micromass according to its chemistry (fig. 7 d).

## Mineralogical Analysis

The mineralogical investigation of archaeometrically defined local ceramics using the XRPD methods aims at detecting the transformations that occur in the clayey paste during the pyrometamorphic process. The minerals of the clayey paste have undergone thermal decomposition at specific temperatures leading to the crystallization of new mineral phases in the ceramic body. Detecting these newly formed high-temperature minerals, one is able to estimate the firing conditions (i.e. temperature and atmosphere) at which the ceramics were fired.

The evaluation of X-ray diffraction patterns led to the conclusion that the analysed ceramic sherds were fired at high temperature 850 °C ≤ T ≤ 1050 °C as their mineralogical composition is represented by the assemblage: Quartz + Anorthite + Diopside ± Mica ± Hematite (fig. 8). The absence of primitive minerals which existed in clayey paste like calcite, clay minerals and the crystallization of new high-T mineral phase like ferrian aluminian diopside (fassaite) is indicative that the firing temperature exceeded 800 °C[25]. The presence of ferrian aluminian diopside is attributable to the reactions involving calcium oxide, free silica, alumina, magnesium and iron compounds, from the breakdown of calcite, quartz and clay minerals which compose

25 Rathossi – Pontikes 2010; Gliozzo 2020.




8 Representative X-ray powder diffraction patterns of ceramic samples made by Elian raw materials. Abbreviations: Qtz = quartz; An = anorthite; Di = ferrian aluminian diopside (fassaite); He = hematite; Mi = white mica (illite/muscovite) (© C. Rathossi)

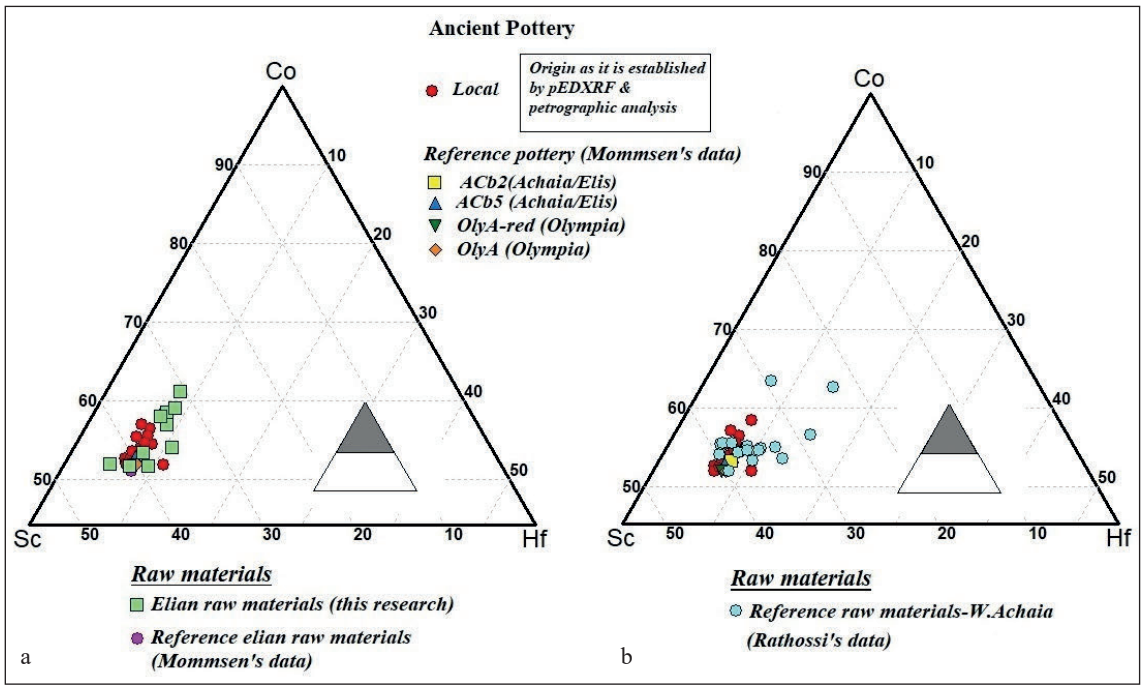
the starting raw material used for the clayey paste[26]. Additionally, the crystallization, in some sherds, of iron oxides such as hematite suggests that an oxidizing – mild oxidizing atmosphere prevailed in the kilns.

## Geochemical Analysis

Representative ceramic samples and Elian raw materials were selected for a complementary geochemical analysis (FUS-ICP, ICP-MS) in order to obtain the concentration of the major oxide elements along with the concentration of those trace elements and rare earth elements (REE) which cannot be detected with the non-destructive technique (P-ED-XRF). The REE are considered to be the most confident elements for provenance studies of ancient ceramics because these elements are insoluble and the effects of pyrometamorphism (firing procedure) and weathering (post-burial alteration phenomena) upon them are minor[27]. Thus, they can be more reliable in the elucidation of the origin of ancient pottery as REE seem to reflect the chemistry of ceramics' raw materials. Thus, the main reasons for this complementary geochemical analysis were: a) to determine additional reliable information which also will test the archaeometric data obtained so far concerning the geochemical features of the pottery production in Olympia and the wider area of Elis prefecture, b) to attempt to achieve a clearer discrimination between the sediments of Elis and western Achaia which do not show strongly contrasting geology.

The projection of geochemical analyses of classified local ceramics, Elian raw materials plus the literature data from Olympia and Achaia[28] on the ternary diagram Co-Sc-Hf highlights the chemical similarity of ceramics with Elian and Achaian raw material samples (fig. 9 a. b). This result confirms the conclusions of P-ED-XRF and petrographic analysis, that the pottery of Olympia was produced in workshops operated in Elis exploiting the clayey sedimentary formations exposed around Olympia, but also in a broader area up to the ancient city of Elis and/or in

26 Rathossi – Pontikes 2010; Rathossi et al. 2010.
27 Rollinson 1993.
28 Hein et al. 2002; Mommsen et al. 2016.




9 Ternary plot of Co-Sc-Hf: (a) local ceramics, Elian raw materials and reference data; (b) local ceramics and Achaian raw materials (© C. Rathossi)

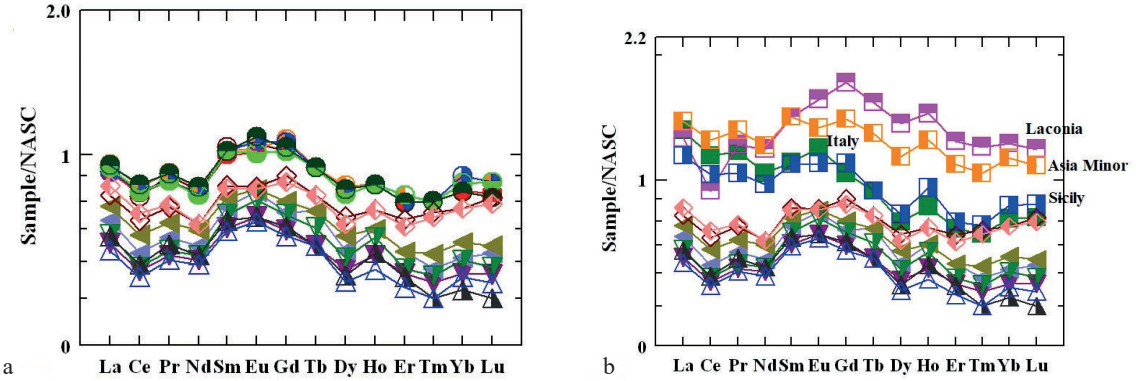
workshops which were located in western Achaia and which exploited the outcropping sediments around Patras and west-southwest of it.

In order to obtain more evidence regarding the local pottery production in Olympia, we compared the patterns of Rare Earth Element variation diagrams (REE-spidergrams) normalized to the composition of North American Shales (NASC)[29] of local ceramic samples, juxtaposed with the REE distribution patterns of the Elian and Achaian raw materials (fig. 10 a. b). The comparison revealed that the REE patterns of ceramics are similar to the REE patterns of the Elian raw materials; furthermore, the REE pattern of the raw material from the Panagiotopoulos Brick and Tile Factory collected from an area between Olympia and Elis is projected together with the ceramics' pattern. REE patterns of Achaian raw materials show a small difference in the distribution pattern of heavy rare earth elements-HREE (Er to Lu). The similar REE patterns indicated that ceramics were produced from the outcropping clayey sediments dominating between the region of Olympia and between Olympia and Elis.

## The Many Dimensions of Archaeometric Multi-Analytic Approach

The diagnostic potential of ceramics lies in their spatio-temporal meaningfulness based on their design and technology. With the results of the archaeometric investigations, the geological origin of the products can be located geographically, and the technical-technological clues as well as production-related decisions, such as the choice and processing of clays or moulding techniques, can be identified. This, in turn, provides information about the physiographic and socio-political milieu. Therefore, further aspects of ceramic research beyond the question of provenance are discussed in the following, resulting from archaeometric analyses.

29 Haskin et al. 1968.




10 NASC-normalized REE spidergrams of (a) local ceramics (circle symbol), Elian raw materials: raw material from Katakolo area (down pointing triangle symbol, fig. 3 b)-raw material from Panagiotopoulos Brick Factory (left pointing triangle symbol, fig. 3 c)-raw material very close to Ancient Olympia (up pointing triangle symbol, fig. 3 d) and Achaian raw materials (diamond symbol); (b) imported ceramics from Laconia, Asia Minor and South Italy (?) and Elian and Achaian raw materials (© C. Rathossi)

## Dimension of Provenance

In Olympia, locally produced pottery has already been archaeologically separated from imports[30].

In general, the results of the archaeometric research show that the majority of the samples measured were produced in Elis or western Achaia. Furthermore, the archaeometric measurements of the selected fine ware examples confirmed many archaeological attributions, but could also identify deviations (tab. 2). The fundamental challenge is the scarcely pronounced diversity of the sedimentary rocks of the north-western Peloponnese, which makes it difficult to discriminate archaeologically-macroscopically between local and, say, Achaian or Corinthian fabrics[31].

The Early Iron Age pottery from the Pelopion excavation had been classified as locally produced, which was largely confirmed[32]. Using REE analysis, of the eleven fragments measured in the laboratory, seven vessels could be assigned to Elian and two to western Achaian workshops, while two further vessels seem to have an origin outside of northwestern Peloponnese[33].

The Archaic Lakonian painted pottery has already been archaeologically differentiated into imports and into Elian ceramics made in a Lakonian manner, which was recognized in the inferior finishes (tab. 2)[34]. Eighteen of the published fragments were measured in the laboratory. Of thirteen vessels that were referred to as Lakonian, one was produced locally and two more were imported (Attic, Argive). Of the five Elian-Lakonian vessels, three could be assigned to Elis and two to Achaia.

In the case of Corinthian ceramics, an assumed import was archaeometrically identified as locally produced[35]. Of the thirteen samples of supposed Attic ceramics, one vessel came from South Italy and one from Central Greece[36].

30 So far, it has not been possible to distinguish archaeologically the local or regional fabric. Different terms are found in the publications: local, indigenous, Elian, western Peloponnesian, Achaian, cf. Hübinger 2005, 81–94.

31 Gauer 1975, 211–212; Heiden 2000, 171; Hübinger 2005, 87.

32 Eder 2006, 143–145.

33 Groups of vessels made of geochemically and mineralogically similar fabric are fictitiously labelled as coming from a workshop.

34 Kunze-Götte 2000, 9. 126–128; Gauer 1975, 84. 210–212.

35 Heiden 2000.

36 Burow 2000.

Archaic lamps offered the greatest variation with regard to the production locations (tab. 2)[37]. Fifty published lamps were analysed in the laboratory. Twenty-nine of them had been assigned archaeologically to different production landscapes: Attic (6), Corinthian (4), Eastern Greek (7), Sicilian (3), western Peloponnesian/Elian (9). These assignments were confirmed in whole (Eastern Greek) or for the most part (Attic, Sicilian) by laboratory analysis. One local and one Achaian lamp were identified among the supposed Corinthian lamps, and seven lamps from the western Peloponnesian/Elian lamps could be assigned to Achaia. There are several archaeological proposals of provenance for each of the 21 lamps. Except for three pieces, these could be substantiated through the measurements. For six lamps, the archaeometric identification did not match any archaeological suggestion, four of which were produced from Elian clay.

There were imitations in all product groups. It is interesting that Attic vessels were apparently not imitated at Olympia but in the workshops of other regions.

Two interesting results of the archaeometric analysis should be mentioned as well. The temper also included anthropogenically created materials such as slag inclusions perhaps derived from copper or iron smelting processes. How did the slag inclusion get into the clay? Two scenarios are possible. Firstly, as archaeometric researches in Olympia have established, during the Iron Age, Olympia imported copper from Faynan and produced metal objects[38]. It is also possible to import iron from iron sources in southern Peloponnese for the metallurgical works[39]. The slag as a waste product of the local metal production in Olympia was added to the clay by the potter. Secondly, slag circulated as a commodity. Nevertheless, more investigation using SEM-EDS analysis is needed in order to detect if the crushed slag inclusions derived from copper or iron foundries and how slag affects the clay matrix.

A very important result was achieved for the classification of Elian and western Achaian workshops. With REE it is now possible – although further studies are required – to differentiate the Elian and Achaian clays, which are difficult to distinguish due to the geological formation. Based on this result, the northwestern Peloponnesian product landscape can be reconstructed more precisely in the future.

Thanks to the archaeometric identification of local and imported ceramics, there is now a reference system with which the survey ceramics can be compared. Once the results are available, the landscape of products in and around Olympia can be characterized.

The need to produce ceramics locally arose, among other things, from the demands made in Olympia during the Games[40]. The majority of the many visitors will at best have brought vessels with them for special occasions. For the ritual activities, festivities and for secular activities during their stay, they could fall back on local products.

This led to an increased demand for ceramics. Because of the regularity of the event, the potters were able to plan and start their production in good time. It is currently not possible to decide whether they had pre-produced in the meantime or ramped up their production accordingly at short notice. But this large-scale production definitely had an impact on the ecological regime in the area around Olympia.

## Economic-Political Dimension

Economic aspects of ceramic production depend on the desired end product. The use of certain technologies and raw materials may have been decided upon because of the efficiency of production, but also because of the achievement of certain (aesthetic) effects.

37 Hübinger 2005, 52–54. 65–98.

38 Kiderlen et al. 2016; Kiderlen et al. 2017.

39 Bassiakos 1988; Bassiakos et al. 1989; Backe-Forsberg et al. 2006; Zianni 2012.

40 The many shrines and places in the environs have not yet been taken into account.

The classification of local and imported ware is closely related to issues of exchange and trade. However, the terms »local« – »imported« contain a blurring insofar as they imply distance[41]. Therefore, the question arises as to the geographical radius at which ceramics are considered to still be local or imported. Specifically, it must be clarified for Olympia: are vessels from Achaia already imported or still local?

The knowledge of the international nature of the audience in Olympia is well documented by the written sources, leading to a desire among archaeologists to find this ›internationality‹ in material culture. The cosmopolitanism of Olympia is determined via the classification ›local – imported‹, the extent of which is archaeologically represented by the number of imports at the investigation site. From this, economic-political implications are construed by the archaeologists in that many ceramic imports from a politically important place are taken as evidence of its influence in Olympia. Furthermore, from this attribution, in turn, the products from such places received greater attention by archaeologists, and for a long time they were therefore given preferential research. In general, it should be considered whether ›internationality‹ and political connectivity can be determined by finds, especially ceramics, since we can only describe the exchange of (ceramic) products but not the respective actors behind it.

Vessels as physical objects were distributed through dealers, travellers, craftsmen, by the medium of moulds and as concepts through ideas and knowledge. The following co-existing mechanisms can be described for the exchange of goods: (a) the direct purchase of a vessel from the potter, (b) indirectly via traders or at the marketplace, or (c) vessels reaching a place as a dowry or gift[42].

The various exchange options would have affected the potter's planning processes. A spontaneous sale in the workshop would not require any dedicated sales planning. In contrast, the exchange at the marketplace and in long-distance trade would need to be planned by the producer. The situation would again be different in relation to reused vessels, such as transport containers, that do not take a direct route from the production site to the place of discovery, thereby precluding a direct relationship between the two. This is linked to considerations for trading certain products in possibly specific types of containers. All these exchange options apply in antiquity to Olympia.

Because of the site of Olympia, a specific situation in terms of options of exchange and trade developed for the environs. The Olympic Games were undoubtedly the highlight of sales opportunities. Craftsmen and traders probably met at the festival, and certainly not only those from the surrounding area. A concrete place of exchange would have been the Olympian Agora which, although documented in ancient sources, has so far not been located[43]. Here, local and regional products could be sold and international ones purchased. It can be assumed that any regular market activity here was raised to a different scale during the period of the Olympic Games. Another marketplace in the environs is mentioned by Strabo and more places or meeting points for the regular exchange of goods are to be assumed[44]. These options co-existed, but could be organised in terms of time by specifying market days.

Beyond the Olympic Games, there were regular activities in Olympia that guaranteed employment for the craftsmen[45]. For instance, many cult sites in the area around Olympia would have offered income opportunities.

Through the Sanctuary in Olympia, the residents of the environs had access to its network and access to supra-regional products. The networking of Olympia existed on water and on land. Today Olympia is about 20 km inland and the visitors who came by ship would have crossed the surrounding area. The ports were transhipment points for goods. The ancient port of Pheia is probably on the west coast near the modern village of Ag. Andreas near Katakolon[46]. Perhaps

41 The category ›regional‹ is not considered here because it would not help categorically.
42 Meyer et al. 2016, 193 f.
43 Hitzl 1996; Baitinger – Eder 2001, 191–196; Heiden 2006; Senff, 2018/2019, 60–63.
44 Strab. 8, 3, 10.
45 E.g. the monthly altar processions, Paus. 5, 14, 5–10.
46 Vött et al. 2011; Taita 2013, 346–350.

there was a river port at the level of the modern railway bridge near the village of Salmone, where geoarchaeological evidence of still water sediments was found[47].

Access to resources was always dependent on the socio-political context, which changes over the course of time. Archaeometrically, this can be proven by identifying the raw materials used in the finished products and mapping their distribution. That way the structuring of production and distribution areas can be determined, territorialising the surrounding area of Olympia. Furthermore, aspects of economic activity can be taken into account in the evaluation of the Olympia-Environs-Survey, for example, where and to what extent specific products were used, can settlement hierarchies be identified, and were certain vessels only used in selected locations?

## Technological Dimension

Pottery production is a linear process in which every decision and every production step has an impact on the subsequent phase. The potters have to know their end product to be able to plan and organise the whole production process[48]. Moreover, they need a high degree of technological knowledge about, for example, clay quality and ceramic aggregates or firing processes.

The potter's skills, knowledge and knowledge transfer are embedded in the shape of a vessel and fired clay. These, as well as the decision-making possibilities of the potters, can be reconstructed using technological parameters of the ceramics by archaeometric analyses.

The texture, grain size and mineralogical content, which can be determined by the petrography of thin sections or with XRD measurements of clay chemistry and mineralogical composition, provide clues for raw material processing and production techniques. This procedure makes the potter's knowledge of the material, raw materials and its processing verifiable. Because of the good quality of the Elian clay, the potters did not need to mix this clay with other clays, which is suggested by the results of the petrographic survey.

The firing of vessels is the final act of ceramic production. The Elian fine ceramics were high-fired and the uniformity of colour of the clay mass is particularly interesting. They make the slow burning time of a controlled burning process evident. Knowledge of the clay minerals, such as the proportion of calcium in the clay mass, is also important for firing. The higher the calcium content, the greater the required technical knowledge regarding firing temperature, firing time and firing atmosphere. Because calcium becomes hygroscopic during burning, it can crack the vessel. Since the selected ceramics from Olympia are mostly well preserved and high-fired, which increases the risk of breakage, the expertise of the local potters in handling calcium-rich clay from Elis is well documented.

Clay colour also has heuristic value in ceramic analysis and indicates technical knowledge[49]. In Olympia, the clay colour of pre-Classical ceramics is more varied than that of the Classical period[50]. According to an initial assessment of the clay colour of Olympian fine wares dated to the Classical period, beige is dominant, whereas the contemporaneous ceramics from Epitalion, located at the mouth of the Alpheios, are red. After experimental firing of the local raw material, it could be determined that the same clay took on different colours – brownish, beige or red(dish) – depending on the firing temperature (fig. 3 b–d)[51]. The colour variance of the raw material thus coincided with that of the products found. That means that the clay colour is testament to characteristics of the firing processes and the resulting degrees of hardness of pottery, and beyond that the technical knowledge of the potters. But here we are discussing the clay colour of the break,

47 Eder et al. 2015/2016, 59; Eder et al. 2017/2018, 65 fig. 5; Pliny (4, 6, 14) mentions that the Alpheios was navigable six Roman miles from the coast. Determining the exact distance is difficult because the ancient and modern coastline are not congruent. Discussion on the change of the coastline, see Vött 2013, 38–40.

48 Sigaut 1997, 438–442; Santacreu 2017, 238 f.

49 Lang 2020, 13 f.

50 Gauer 1975, 99. 121. 210–212; Hübinger 2005, 90.

51 Cf. also the briquettes in the context of the investigation of the tiles in Olympia, Heiden 1995, 10 f. colour pl. II, 1.

which was not perceptible to the consumer. To what extent the clay colour of the vessel surface was important for the consumer in general is beyond our knowledge. But if the vessel was to be decorated by an even coating, painting or alternating glazed and unglazed surfaces, then the clay colour became a conscious, because perceived, parameter.

Surface treatments can represent certain specialized production or standardization activities. Slip investigation and technology can be identified by SEM-EDS and XRD analysis.

In addition to the local and imported products, imitations could be identified. They form a hybrid category involving local clay and imported styles. Technically, one can describe two levels of challenges in imitation, which are directly related to the technical competence and knowledge of the potters. Based on their experience, potters can imitate vessel shapes because they can study the shape in concrete terms. It is more difficult to imitate the cover or decoration, especially in terms of its effect. Vessels decorated with mechanical incisions, rolls and stamps are easy to copy, e.g. by importing moulds. The coating, however, requires knowledge of the clay properties and the firing behaviour. The potters would need to know which clay reacts at which temperature and how. It would therefore be much more difficult for the potters to reverse-engineer the manufacturing steps from certain surface treatments of the final product than from the mould or other mechanical decoration processes.

Two scenarios can be formulated for the question of who imitated the ceramic. Potters came to Olympia, where they came across a socio-cultural and material landscape new to them, and produced pots with local clay in their own workshop tradition[52]. It is more likely, however, that local potters imitated imports; perhaps individual workshops specialized in the various import imitations. In any case, the imitation of vessels reveals the technical understanding and experience of the potters. It also documents new local production practices, learning strategies and the potters' perceptions[53], which can be demonstrated through technological analysis.

In general, the examined ceramics from Olympia point in sum to a broad expertise of the potters. Many vessels can be characterized as standardized, which requires a specific knowledge of the individual potters. Knowledge was exchanged and passed on. The cosmopolitanism of Olympia provided a good place for this transfer. The local imitations required changes in technique and testify to new knowledge that had to be integrated into the local knowledge structure and potter's repertoire of practices to become routine tacit knowledge.

## Ecology of Ceramic and Ecosystem Services

The vast amount of ceramics found at Olympia is useful for providing clues as to the nature and extent of the resources used, as well as the potter's environmental knowledge[54]. Therefore, one objective of the survey project is to investigate the ecosystem around Olympia, which would have provided the potters with the raw material (clay, temper, etc.) as well as other infrastructural supplies.

Through geological surveys and geoarchaeological investigations in the area around Olympia, indications of resources such as clay deposits, water or firing material were found[55]. The results of these investigations were compared with the ceramic products. The archaeometric comparison of the raw material and the products verified the use of local raw clays and aggregates. An important source of water would have been the Alpheios River, which, unlike the Kladeos River, may have had water all year round in antiquity. To the east of Olympia, the Ladon and Erymanthos Rivers may also have had sufficient water in antiquity. In the next step, the distribution of the respective potential raw material sources and the excavated pottery kilns of the region will be mapped in order to determine more precisely the possible areas of resources of the raw materials used[56].

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52 Heitz 2017, 285.
53 Heitz 2017, 282.
54 In general, Meyer et al. 2016, 192.
55 Resources for fuel like olive pits, pressing waste, brushwood, etc.
56 Hübinger 2005, 291.

Geoarchaeological research and pollen analysis provide the basic data to identify evidence for changes in the paleoenvironment of Olympia. The tectonic uplift of the region in the Holocene of at least 12 m – probably up to 30 m – is beyond question, and shifts in the sediment layers as well as high-energetic events have been detected[57]. These changes indirectly affect production opportunities, for example, when stock of wood, an important fuel, declines because cropland or erosion increases, or tsunamis destroyed the natural environments.

## Social Dimension

Social aspects can also be discussed in connection with local or imported products, but also taking technological aspects into account. The manufacture of ceramics represents the material configuration of social time and social space[58]. Ceramics are ubiquitous, multifunctional and many consumer practices cannot be implemented without them. Most of the ceramics were used in everyday activities, in which the vessel itself was probably not given any special attention, but its useful handling was in the foreground. In terms of shape and surface treatment, potters were able to develop their creative potential and offer it to the consumer. Over time, the potters changed the design of the vessels, which became the stylistic and typological basis of the archaeological epochs. The mobility of vessels enabled their exchange and could become part of trans-local history.

The potters are involved in the construction of social practices that can be seen in rituals. Olympia was a place of many ritualized practices and recurring events with fixed rules regarding cultic acts. The same actions are always to be expected for these events, for which a constant set of objects existed. These regular activities are reflected in types of vessels. The potters provided the consumers with the necessary products for these rituals and festivities. Many of the Early Iron Age and Archaic vessels in Olympia can be functionally assigned to drinking and consumption. That is, products are transformations of skills and knowledge of specific material practices of the craftsmen, and they also embody the behaviour and cultural practices of a community.

Similarities in design and technology between vessels suggest a common design identity, which in turn provides clues for the association of people in a social group, the workshop, its organizational form, such as the number of people, the structure of work and people, and their social status (hierarchies, slaves, etc.).

Some evidence of this can be gained through archaeometric analyses. The use of the same clay over a long period of time represents a long pottery tradition and the passing on of knowledge and practices from the workshop to the next generation, which suggests a consistent production structure – both socially and technically. This diachronic production-technical decision could also indicate long-lasting notions of quality, but also the tradition of specific consumption practices or rituals for which these vessels were needed. The transmission of practices and knowledge over a longer period of time is indicative of the reproduction and meaning of the same norms, which means that the potters contribute to the maintenance of normative processes and ideas. The potters are involved in the process of developing and disseminating aesthetic ideas, technologies, etc.

Imported, local, or imitation ceramics, which can be determined by archaeometric research, also provide clues as to the ideas and practices of a community. There are many reasons for an import. Whether vessels were deliberately produced for export has to be checked elsewhere. What is of interest here is what can be said about the potter and consumer. In general, imported vessels document a spatial distance between the place of production and that of consumption. The more independent the pottery of the original workshop was, the greater the distance to the local pottery tradition as well as the technical and cultural skills of the producer to the consumer. The presence of imported objects also embodies the local openness to other means of design and the willingness

[57] Vött et al. 2015, 114–117.
[58] Sigaut 1997, 445–449.

to include them in one's own cultural repertoire. The existence of imported ceramics testifies to an interaction, however organized, and a desire for certain forms of design.

The desire to imitate ceramics can be found in Olympia from the 6th century onwards and is implicitly interpreted by archaeologists as a special appreciation for the place of production and its political influence[59]. For the consumer, however, political influence will have played a subordinate role in the purchase of vessels. It is conceivable that the imitation was understood as an appreciation for the design, which corresponded to a translocal trend, which, depending on the starting point in the Mediterranean, found widespread use, such as Corinthian ceramics. Similar to today, the trendy designs were imitated in local pottery shops.

The existence of imitations leads to questions such as who produced them, who was the target group, and what does it say about the aesthetic worlds of imagination? The archaeological classification of pottery as local imitation is often based on the assumption that local imitations of ceramics at Olympia could be recognized by their inferior design, as for example with Lakonian ceramics[60]. Were the buyers aware of the imitation and, if so, were they aware of the different quality compared to the originals? Did one choose to copy a pot because one could not or did not want to afford the original? However, imitations indicate the conscious aesthetic perception and recognition of design by the producer and consumer.

## CONCLUSION

Olympia is an invaluable repository for ceramic research in that, due to its Panhellenic importance, many locally and supra-locally produced vessels were brought there. This has made it possible to examine products archaeometrically from many nearby and distant workshops as comparative references at a single location.

For the archaeometric analyses of selected pottery from Olympia, a multi-analytical approach was chosen in order to capture the complexity of the ceramic products. This approach aimed to go beyond the determination of provenance and to explore the technological, political-economic, ecological and social parameters embodied by the pottery.

Measurements with P-ED-XRF enabled a mass screening of the ceramics to identify local or imported products. The laboratory methods made it possible to determine technological aspects as well as the geological origin of the clay products. The analyses helped to confirm the archaeological classifications of local, imported or imitation fine ceramics, but also to identify deviations. Furthermore, the determination of Rare Earth Elements (REE) served to better our understanding of the profile of northwest Peloponnesian pottery production and to improve the distinction between Elian and west Achaian sediments. That is, ceramics in Olympia were also produced in workshops operated in western Achaia, and the region from Patras to the west-southwest of it. Analyses based on petrographic fabric and strontium concentrations provide hints to distinguish the light-coloured Corinthian ceramics from Elian sediments, which may produce light-coloured ceramic similar to Corinthian pottery.

The geochemical and petrographic ›fingerprints‹ of pottery in Olympia have been determined. The pottery technology (i.e. paste recipe, firing conditions) illuminates that local potters working in the region did not have to prepare the raw material in a specific way or mix it with other clays, as the Elian and Achaian sediments were suitable for the production of fine ceramics. Potters showed a high professional standard of production technology in that they fired the ceramics at high temperature (850 °C $\leq$T $\leq$1050 °C) in oxidizing or mildly oxidizing conditions, and were able to maintain an adequate sintering duration.

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59 Kunze-Götte 2000, 7. Many examples could be given for such an argumentation. From this can also be deduced the long practice in finds processing showing little interest in local (utilitarian) pottery.

60 Kunze-Götte 2000, 9.

The analysis of the provenance and technology of the pottery is not only informative for the Sanctuary of Olympia, but also provides a starting point for exploring the relationship between Olympia and its surrounding area. The Olympian regional survey recorded the ceramic spectrum of many sites. Raw material and the similar characteristics of these products can be determined by archaeometric investigations and compared with those from the Olympia Sanctuary. Furthermore, technical knowledge, skills practices, style, and the decisions of the potters can be characterised by archaeological-archaeometric product analysis. Based on these results, the landscape of local and supra-regional pottery in and around Olympia can be reconstructed, as well as the relationship of this landscape of products to Panhellenic Olympia.

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# BEYOND THE BORDERS OF THE NORTHERN PELOPONNESE

Agathi Karadima

# INTERREGIONAL MOBILITY IN THE SEASCAPE OF SOUTHEAST KEPHALLONIA, COASTAL ACHAIA AND ELIS

ABSTRACT

The purpose of this paper is to examine the nature of the influence that Peloponnesian ceramic production exercised on the ceramics that were used and produced at Drakaina cave close to the port of Poros (Kephallonia) during the Archaic period. For the earliest part of the cult there is evident contact and influence from the Peloponnese and particularly the northwestern part of the region on the local production of pottery from Kephallonia. The bulk of the imported pottery points to a somewhat different relation. The port of Poros seems to have attracted vessels that transported pottery from Corinth, Elis, Achaia and Athens especially, made for markets beyond Greece. I will mainly focus on the preference of the local community to produce and use Peloponnesian pottery in the cave cult and to identify what motivated this choice.

Located at the exit of the Corinthian Gulf, Poros is one of the first natural harbours for the passing ships on their route westward (fig. 1). The shrine of Drakaina Cave overlooks the Corinthian Gulf and was an ancient meeting point for local and probably interregional communities. The most popular class of pottery for the Archaic period is imported or locally imitated vessels from Achaia and Elis.

Was the use and dedication of Elean pottery a local phenomenon? Did people travel and exchange goods strictly in this regional unit or as part of a western Greek milieu? Were the Elean type of kantharoi, which is the shape of choice for the early 6th century, produced locally or are they imports from Elis? I will examine if the vessels were produced synchronically or in a different time period and if the very small variations indicate different workshops.

The archaic history of the Peloponnese is partially known and the available evidence offers uneven information. Achaia, Corinth and Elis founded colonies to the west (Achaia, Corinth) and north (Elis)[1]. The assemblage in the cave probably reflects this northern Peloponnesian mobility.

I will examine whether the choice of specific vessels such as the Elean type of kantharos reflects similar cults that adopt related symbols as a way to demonstrate alliances and display their stature in the Greek world.

The range of the sanctuary's clientele during its earliest use, regardless of the reason, was wider than local. It seems to have been regional, including Kephallonia, regions in the Peloponnese (Achaia and Elis) and areas north of the Corinthian Gulf[2].

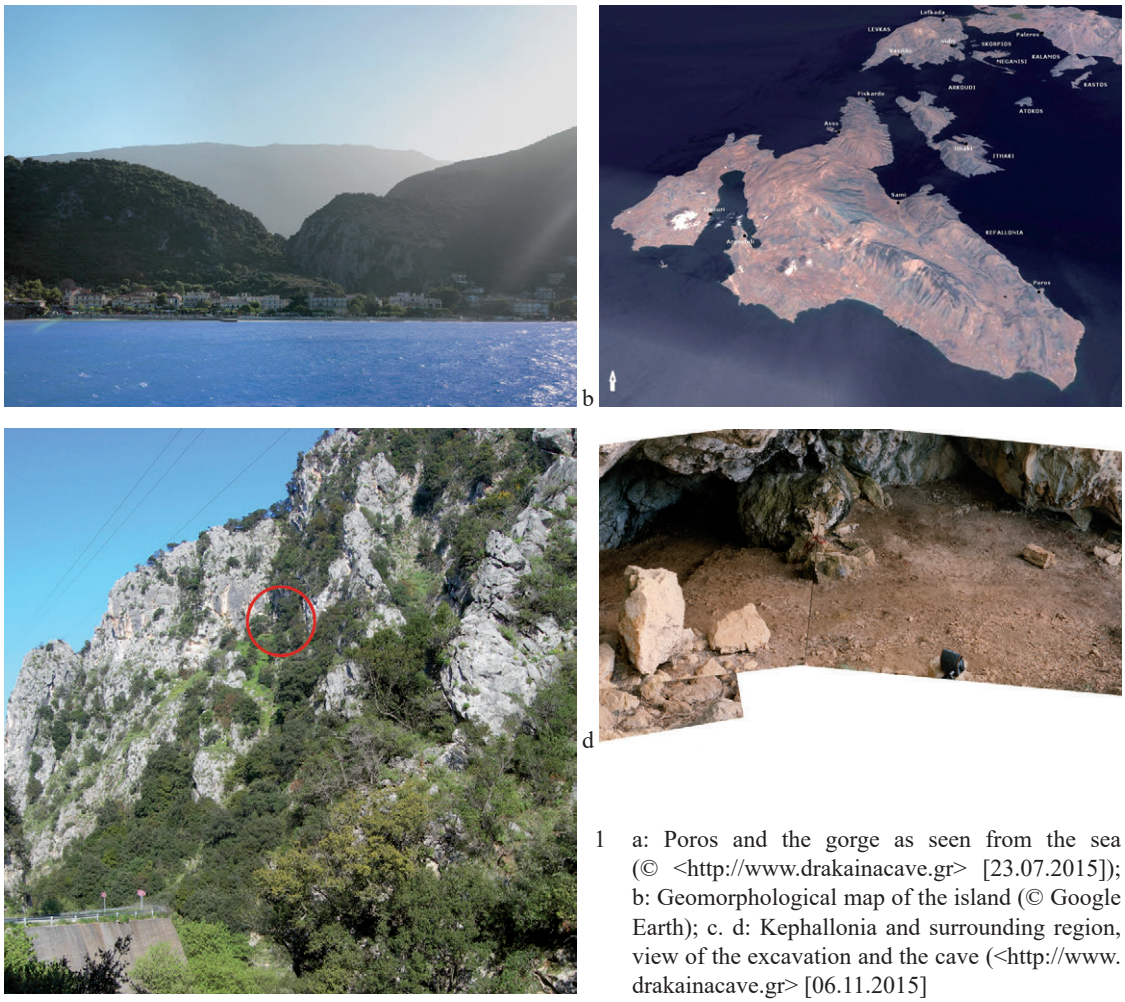
## KANTHAROI

Nicholas Coldstream noted the popularity of the kantharos in Western Greece during the Early Iron Age[3]. In this study I will examine the possibility that the imitation of a black polychrome

1 Morgan – Hall 1996 with bibliography.

2 For a description of the cult in Drakaina Cave see Karadima 2020. For a summary of terms that concern locality and religion see Constantakopoulou 2015, 273–289.

3 Coldstream 2008, 220.




1 a: Poros and the gorge as seen from the sea (© <http://www.drakainacave.gr> [23.07.2015]); b: Geomorphological map of the island (© Google Earth); c. d: Kephallonia and surrounding region, view of the excavation and the cave (<http://www.drakainacave.gr> [06.11.2015]

kantharos, one of the most popular drinking cups that was used and dedicated in the cave, was linked with cults in Elis.

Kantharoi from Western Greece can be divided according to Coldstream into two main groups, with each having a separate evolution pattern: vessels with a broad body and tall vessels with a narrower profile[4]. Common characteristics are a triangular body shape, a triangular handle and a high rim set off by a carination. As argued below, there is a possible connection with metalworking[5].

For assemblages of the Archaic period at the Drakaina Cave I classified kantharoi into two main categories, although a few singular examples stand apart. The first group consists of two subcategories that imitate the Achaian production. The first subcategory has a single specimen (fig. 2 a) – vessel 9 – which is a broad, shallow vessel with a low ring foot and vertical strap handles[6]. William D. Coulson attributes this type to a western Greek koiné tradition[7]. The aforementioned kantharos (9) has many parallels among kantharoi from the Achaian region. Particularly close is a kantharos from Starohori found in a pithos burial dated to the Middle Geometric period[8].

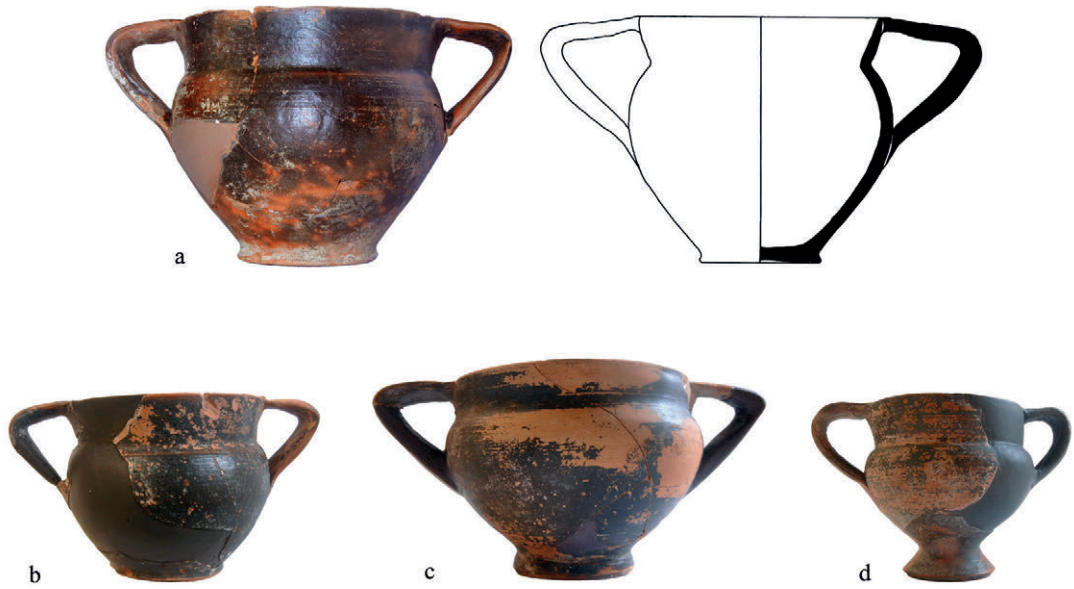
4 Coldstream 2008, 221.

5 For a summary of the evolution of the shape see Gadolou 2008, 254–259.

6 Although vase 9 is a singular example in the Drakaina assemblage I consider this singleton as part of a wider group with many more specimens in other assemblages; see Gadolou 2008, 99 fig. 48 no. 22; 102 fig. 52 no. 28; 113 no. 73; 145.

7 Coulson 1991, 47 fig. 1 type B nos. 3. 4.

8 Gadolou 2008, 138 f. 173 K155.




2 Achaian type kantharoi, Inv. 393 (115), 392 (6), 9 (129), 399 (5), drawing 391 (52) (© drawing T. Vaillas, photo A. Karadima)

The evolution of the shape is based on the relation of the vertical and horizontal axes; shorter vessels that have their widest diameter low on the body tend to be earlier, while later examples are taller and have their widest diameter below the handles[9]. Our kantharos is probably earlier than the Starohori example, as the widest diameter is lower on the body. The second subcategory is a deeper vase with more upright sides and a low disc foot (fig. 2 b).

The second category is the most common in the cave and has a tall body, a conical or splayed foot and an upright rim; the full-size vessels bear a decoration of red bands framed by two white lines (fig. 3). Each full-size type has its miniature counterpart. They are part of the Achaian-style tradition that has a long history in the region[10]. John Papadopoulos has provided an overview of the distribution of the Achaian-type kantharos in the Peloponnese, Aitolia, Akarnania, Epirus, on Ithaka, Sicily, in Southern Italy and North Africa[11]. Conrad Stibbe examines the development of the style in Lakonia and its distribution in the Peloponnese and Southern Italy[12]. The earliest vessels with a low base appear in the early Geometric period[13]. The type persists until the early 7th century, while the banded type is dated to the period between the second half of the 7th and the first decades of the 6th century; this is supported by comparable kantharoi that were found in Tocra and Olympia and come from stratified contexts[14]. The style is described as Achaian by virtue of the Achaian colonisation of Italy, which explains the distribution of the shape. However, it has not yet been possible to assign the fabric or the manufacture to a specific Achaian workshop. The synchronic appearance of this type of kantharos at various sites and its many local variants suggest an open circulation of artefacts and potters, and support the hypothesis of the existence of a ceramic koiné as a meaningful way to explain the phenomenon. After all, the kantharos is a shape

9 Gadolou 2008, 173–175; 254–259 for the evolution of the shape during the Early Iron Age.

10 Classification according to Papadopoulos 2001. Coldstream 2008, 220–232, describes the style as West Greek Geometric, with its main characteristics being angular strap handles, a broad or tall body and a conical to flat foot. C. M. Stibbe distinguishes five groups of Lakonian kantharoi: Stibbe 1994, 37–40.

11 Papadopoulos 2001, 373–460.

12 Stibbe 1994, 37–40.

13 Gadolou 2008, 99 fig. 48 no. 22; 102 fig. 52 no. 28; 113 no. 73; 145; Coulson 1991, 45–47.

14 Gauer 1975, 169 dates the Elean series from the middle of the 7th to the middle of the 6th cent.



3 Elean type kantharoi. Inv. 34 (46), drawing 34 (46), 34 (45), drawing 34 (45), 17 (341), 12 (34), 16 (339), 10 (345) (© drawing T. Vaillas, photo A. Karadima)

widely known in the Peloponnese and Western Greece in the Mycenaean period[15]. Also, in Etruria the kantharos is very frequent in various contexts[16].

The banded type of kantharos is already known on the Ionian Islands, as one or two specimens were found in Polis Cave on Ithaka[17]. In Olympia, where the series has a long history, this specific shape and style appears at the end of the 8th century and remains in use until the 6th century[18]. However, it clearly originates from the area of Southwestern Greece and the Peloponnese, evolving from a deep vessel with a flat bottom and usually monochrome or banded decoration in the late 8th and 7th centuries.

The banded type in Drakaina has three distinct fabrics. The first ranges from 2.5YR 6/6 to 5YR 7/4–6/6, is hard fired with thin walls and a fine fabric that often preserves a dark-grey metallic sheen; it is very similar to specimens from Lakonia and Olympia. The second fabric is lighter, 7.5YR 7/4 (e.g. 341), being more a pink to light brown; it too is hard fired. It is found in vessels with thin walls. Sometimes the glaze is a very dark-grey matte with neatly added thick white lines. The third ranges from 10YR 8/3 to 2.5Y 8/3–8/4. It is found in vessels with thicker walls; it is medium fired and the glaze is poorly preserved. There were therefore potentially three different workshops involved in the production of this vessel.

The kantharoi of the second category, although numerous, exhibit remarkable homogeneity compared to the finds from Olympia and Elean Pylos. The non-mendable sherds belonging to this type of kantharos weigh 2.5 kg in total. There is a considerable quantity of this shape at the site, establishing its popularity among the drinking cups for the earliest part of the 6th century.

An important question is the lifespan of the kantharoi of the second category at the site. There are no considerable differences in terms of size or decoration and there are only two sherds, one being a handle fragment that bears traces of very limited decoration added in white (fig. 4 b. c). I assume that these fragments are from a vessel imported from Elis. Among the nearly intact vessels, one (fig. 4 a) has an added red band on the interior of the rim, and there are a few more sherds with this feature. In contrast to the series of this type at Olympia, Elean Pylos and at Achaian sites,

15 For the Mycenaean shape see Furumark 1972, 62 fig. 16.
16 Ramage 1970, 27–30.
17 Benton 1932, 20 pl. 10 nos. 20. 21.
18 Gauer 1975, 165–172 pls. 33. 34 presents in detail the series that was found in the wells of Olympia and establishes their chronology.




4 Elean kantharoi, details of decoration. Inv. 43 (175) (© photo A. Karadima)

these vessels are decorated on the handles, body and rim zone with abstract and floral motifs in added white lines[19]. The time span of the kantharoi from Drakaina Cave could be two or three generations even with so similar a style. It is likely that the choice of this vessel shape is linked with the specific character of the cult. Therefore, it is probable that the style of the vessel remained unchanged as it expressed the same, unchanging cultic concerns.

Drakaina Cave is the third site, as far as we know, after Olympia and Elean Pylos, where there are indications for a local production of the banded type of kantharos. A few more sites have a single or only a few specimens. Sylvia Benton describes the colour of the fabric of the two vessels from Ithaka as dark red[20]. Another banded kantharos was recovered from the Archaic layers of Tocra. John Hayes recognises it as Lakonian and generally describes the Lakonian fabric in the assemblage, which includes many vessels, as ranging in colour from light brown to tan, brick red, purplish, maroon to deep brown; he did not specifically describe the fabric of the banded kantharos[21]. As mentioned above a large corpus of banded kantharoi was excavated in Elean Pylos[22]. The excavator assigns the vessels to three categories, with the banded series being the most popular. Kantharoi from Elean Pylos and Olympia bear figural decoration in added white and red on the rim and strap handles.

The very fragmentary vessel 11 (fig. 5 a), which preserves most of its profile, is very similar to a bronze kantharos from Olympia that is dated to the early 6th century (fig. 5 b)[23]. Additionally, the form of type 2 Elean kantharoi reveals a close relation with metalworking. The parts of the vessel, the angular strap handles, the curvature of the body and the band decoration seem to replicate corresponding elements of the metal counterparts. Even the shiny dark glaze, usually grey for the regular-sized kantharoi, reddish or brown in some cases, conveys the lustrous quality of metal.

The miniature version of type 2 kantharoi, the most popular at the site, is not an exact replica of the full-sized vessel, as it appears without the banded decoration (fig. 6)[24]. There are eight

19 Gadolou 2008, 118. 142 figs. 90. 123.
20 Benton 1932, 20.
21 Boardman – Hayes 1966, 87–89 pl. 68 no. 993.
22 Coleman – Abramovitz 1986, 53–57 fig. 12, C110. C111.
23 Furtwängler 1890, 96 nos. 670. 671 pl. 35.
24 There are 17 triangular bases of miniature kantharoi.




5 a–c: Kantharoi (a). Inv.11 (135), 12 (34); d: Metal kantharoi from Olympia (© 5 a–c: photo A. Karadima, 5 d: drawings P. Finnetry in: Furtwängler 1890, 96 pl. 35, 670. 671)



6 Miniature kantharoi. Inv. 400 (81), drawing 400 (81), 402 (247), drawing 402 (247), 403 (342), 404 (420), 397 (405), 401 (124) (© drawing T. Vaillas, photo A. Karadima)

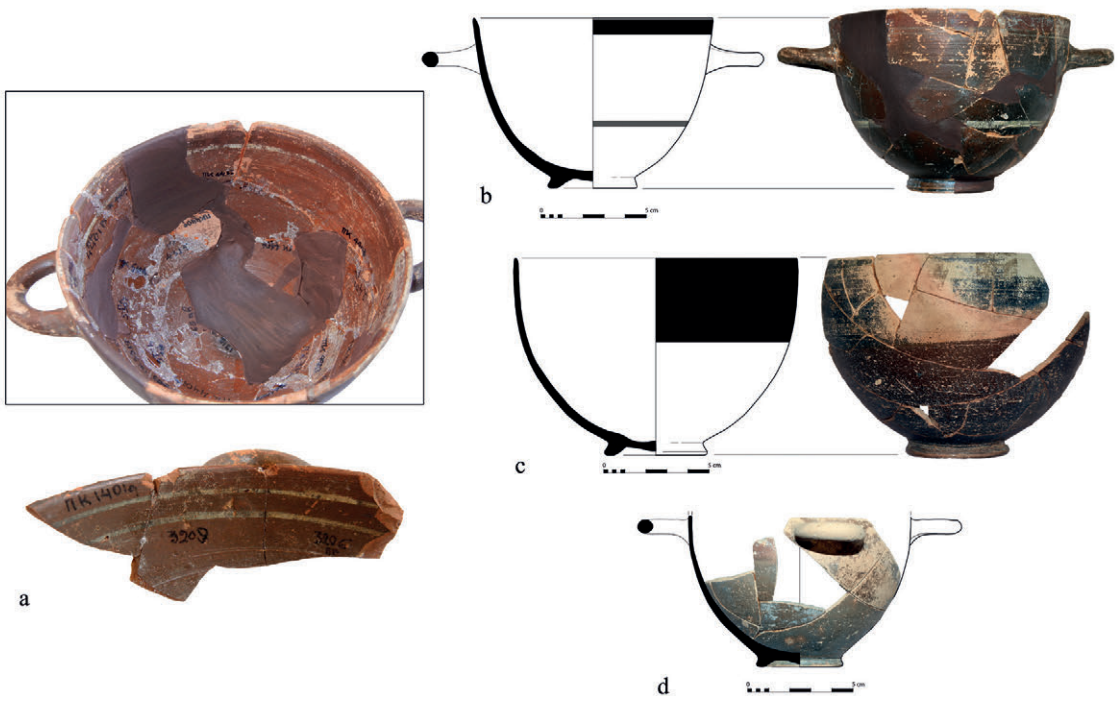
miniature vessels that fall in the type 2 category. Comparanda come mainly from Achaia, Epirus, Aitolia, Akarnania and Elis[25].

Olympia and Elean Pylos, the two sites that have a series of this type of kantharos, do not offer any indication regarding the type of cult with which the vessels were associated. In both cases, kantharoi were found in wells; they were found close to the stadium in Olympia and close to a local settlement in the area of ancient Pylos[26]. We know that the cult in Tocra was of Demeter and Kore, but the identity of the Pylos cult remains unknown[27]. The type spread to Italy and has been found in the vicinity of Taras, the Spartan colony, but there are no excavation details for the southern Italian

25 Coleman – Abramovitz 1986, 54 fig. 11 no. c108; Gauer 1975, 164–167; Gadolou 2008, 146 fig. 128 nos. 153. 154; Vallet – Villard 1964, 181. 185 pl. 207 no. 5.

26 Coleman – Abramovitz 1986, 64 f.

27 Boardman – Hayes 1966, 15.




7 Skyphoi, Inv. 138 (349), 139 (351), 140 (352), 137 (41) (© photo of interior 138 (349) and 137 (41) A. Karadima, combined photograph and drawing of b, c, d D. Nenova)

kantharoi[28]. Their connection to Sparta is the only plausible explanation for their presence there. The kantharos as a shape is associated with the cult of Dionysos and the drinking of wine[29].

For the type 2 kantharos, the main decorative motif, the red band framed by white lines, appeared first in Lakonian pottery around 630 BC, at the end of Lakonian I. Furthermore, it is rather difficult to distinguish between the local and imported specimens. Studying the fabric and the overall appearance of the vessels, I relate the kantharoi with a fabric colour of 2.5YR and 5YR to a Peloponnesian workshop which could be Lakonian or Elean. The main motif, the black polychrome banding, is generally associated with the Lakonian decorative repertoire. The other two fabrics could be local as they are similar to other fabrics from the site. I describe the type 2 as Achaian because of its affinities with material from Achaia and Western Greece in general. Again, many of the specimens were probably produced locally. The banded type seems a reduced-scale version of Lakonian kraters. The functionality of the shape as a drinking cup made it a staple in the Lakonian repertoire. Consequently, it is not possible to attribute styles and shapes from the Peloponnese to specific geographical units within the area. It is likely that vessels and other artistic artefacts circulated widely and easily; therefore, copying and adapting shapes and motifs was the norm among potters and painters.

## SKYPHOI

Apart from kantharoi two more shapes that were excavated in the cave are related to material from Elis. The first is a type of hemispherical skyphos with a narrow heavy ring foot (fig. 7). The shape evolved from shallower vessels to deeper ones with more upright walls[30]. Few examples

28 Stibbe 1994, 39 f. 131 pl. 6, 1 E10; fig. 46 E11. Tomay 2002, offers an overview of Achaian kantharoi in Timpone della Motta and elsewhere.

29 Isler-Kerenyi 2007, 36 f. 55; Lissarague 1987, 112–116.

30 Williams 1981, 144 fig. 3, 29.

excavated in the cave display similar decoration – either banded polychrome or added white bands (fig. 7). This group is close to Lakonian and Ithakan pottery. However, its production area is uncertain. This may be due to vases having been produced in more than one place in the wider area of Western Greece. In which case, their circulation indicates the intense mobility that took place in this area, which is associated with foreign trade. Alternatively, it may be that we do not know the main region of their origin due to the limited number of excavated and published sites in this area. Thus, they may have originated in a specific centre or workshop and then been imitated locally as a result of their popularity. Although it is not possible to confirm their place of production, in view of what we know to date it is possible to draw some conclusions about this type of cup with relative safety.

Based on close parallels from datable contexts at Olympia and Ithaka, vase 41 (fig. 7 a) should be dated to the last quarter of the 7th century[31]. This group's decoration consists of black-polychrome banding (on fig. 7 a) and bands in white with applied colour (fig. 7 a. b). Both motifs are used on Archaic Lakonian pottery starting from the late 7th century onwards[32]. Added white bands and motifs are also used on Ithakan pottery. Furthermore, Late Geometric and Protocorinthian pottery often displays supplementary motifs in added white[33]. Charles K. Williams has traced the introduction of added white during the Late Geometric era, as a transitional stage between the multilinear Geometric style and the more figurative and less abstract style of the Archaic period[34].

Bettina von Freytag concludes that a very similar vessel from Olympia came from an Elean workshop[35]. Vase 41 (fig. 7 a) is identical in shape to the Elean specimen[36]. Her rather late dating is in accord with the lack of added white on the surface. The shape of the aforementioned vessels is close to that of a kotyle from Corinth[37]. Vessels 349 (fig. 7 b) and 41 have a similar reddish fabric, while 351 and 352 (fig. 7 c. d) could be products of a local workshop as their fabric is paler and lacks any decoration in added colour; their decoration is limited to the brown glaze and perhaps a reserved area on the upper body. Cup 349 could be the earliest in the series, as added white bands appear in Lakonian II around 630[38]. It may be that vases 351 and 352 were influenced by Corinthian pottery and that they are a local version of the early hemispherical kotylai dating from the end of the eighth to the early 7th century. The closer affinities with Elean pottery place this group, most likely, within Elis' sphere of influence.

## PLATES

To the Elean imported corpus of pottery should be added two plates (fig. 8). The motif of a purple band with added white lines that frames the rim on plate figure 8 a is reminiscent of the black-polychrome Lakonian style on kantharoi and cup-skyphoi. The unpainted surface is unusual though, as this motif is more often applied on dark metallic glaze, at least among the known Achaian, Lakonian or Lakonian-influenced examples[39]. However, a small lakaina from Sparta has the polychrome motif on a reserved surface[40]. Linear decoration on the rim is found on transitional

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31 Mallwitz 1981, 384 f. figs. 123 d; 124 b. For the same shape but with different decoration see kotyle 99; Livitsanis 2014, 335.

32 Stibbe 1994, 59 pl. 10, 1. This type of decoration is most often dated to the end of Lakonian II, ca. 630 BC. The brownish glaze decorated with added white lines is also found on several vessels from Megara Hyblaia. They are classified as Subgeometric: Villard – Vallet 1964, 153–155 pls. 158. 160.

33 Livitsanis 2015, 76 f. vases 36–43 (all belong to the Red-Ithakan group, which is the most popular class of Ithakan pottery). For Lakonian decoration in added white, see Stibbe 1994, 31.

34 Williams 1981, 140 fig. 1, 8.

35 Mallwitz 1981, 385 f. skyphos 4.

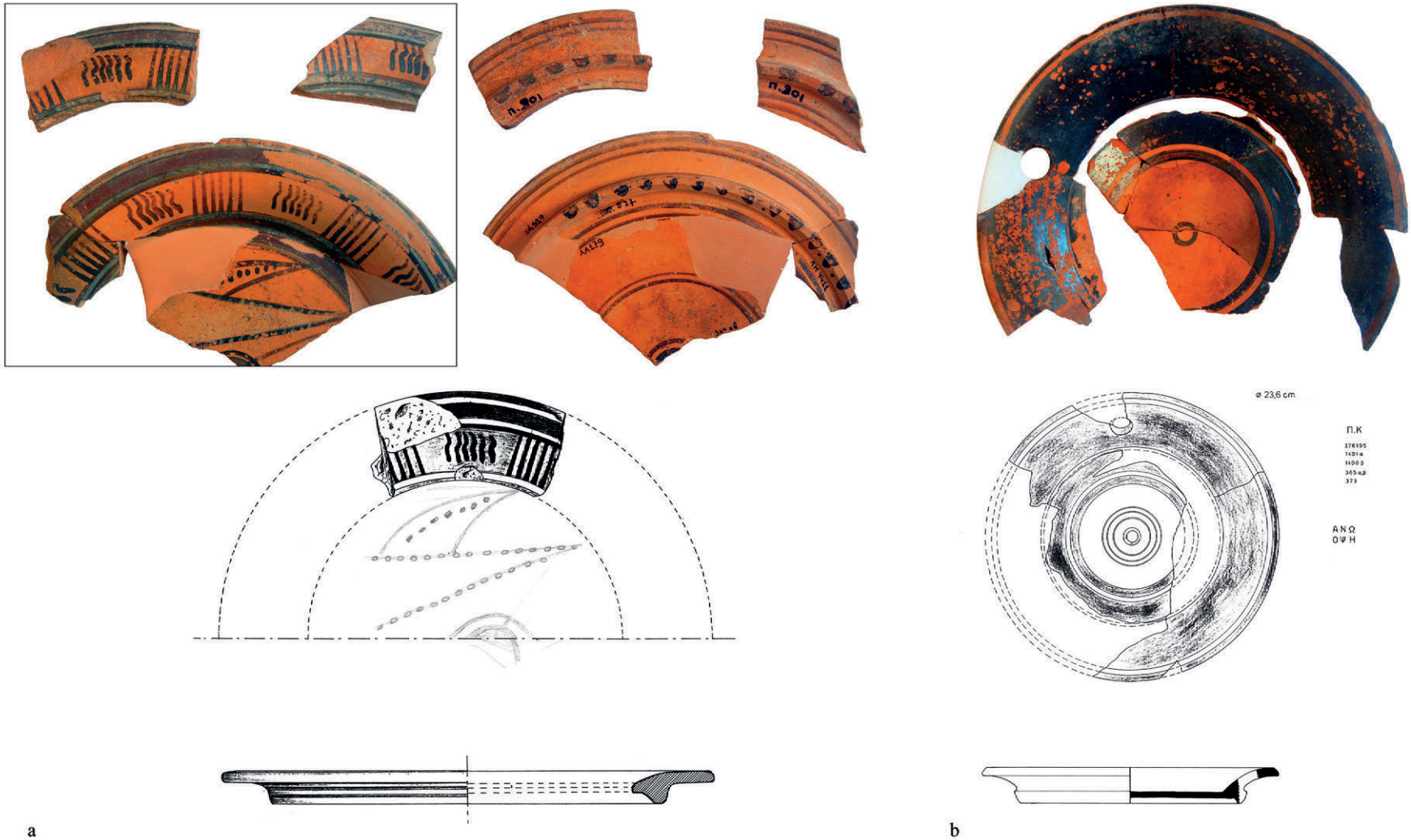
36 Georgiadou 2005, 102: provides further information on the Elean clay.

37 Williams 1981, 144 fig. 3, 29.

38 Coldstream 2008, 107 pls. 20 f; 21 d; Stibbe 1994, 31. 59. 167 no. B28 pl. 10, 1.

39 Coleman – Abramovitz 1986, pl. 26 no. C3; pl. 29 nos. C59. C60.

40 Stibbe 1994, 31 G3.




a b

8 Plates. Inv. 203 (179), 204 (183) (© drawing T. Vaillas, photo A. Karadima)

Lakonian plates[41]. The pattern on the rim (vertical bands alternating with a set of s-shaped lines floating in the otherwise empty space of a metope) is evident on Late Geometric Lakonian pottery[42]. Then again, metopes are a loan from the Protocorinthian style[43]. Polychrome banded decoration on black glaze appears around 630[44]. Thus, this plate could be dated to the middle of the 7th century or, more likely, to between 650 and 630, at the end of the Transitional Lakonian period. The transition from a purely Geometric to an Orientalising/Archaic style for Lakonian pottery without an intermediate phase has been noted, so the use of patterns from both periods on a single vessel is not unexpected[45]. The central motif is difficult to reconstruct. It could be a ship or a bird. Nevertheless, the nearly horizontal rim is also found on plates from Elean Pylos, where the red band is very popular. It is thus possible that the plate is Elean or influenced by Elean decoration. The reserved surface and the decoration with linear and figural motifs, and the detail with added white dots at the perimeter are also found on plates from Elean Pylos[46]. Finally, the rim decoration (motifs in panels) is evident on the banded type of kantharoi from Pylos[47].

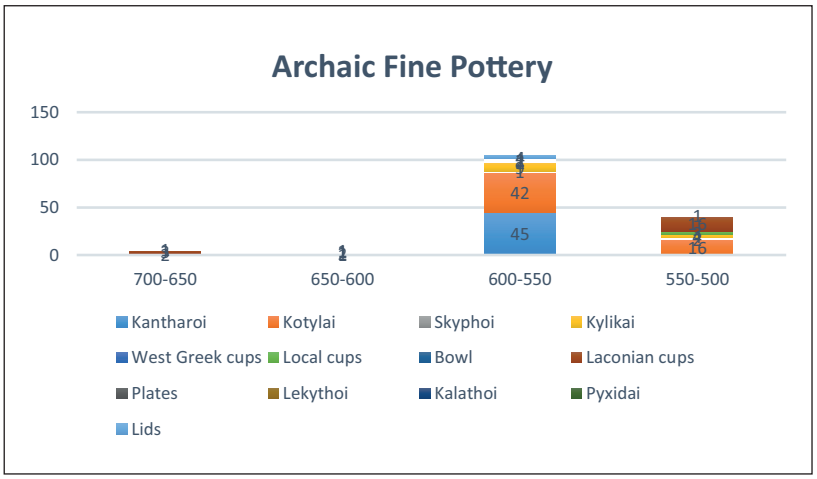
The second plate (fig. 8 b) is very similar to an Elean plate from Olympia, belonging to the variant 1 group of type 1, which is dated to the second quarter of the 5th century[48]. Furthermore, black-glazed plates from Elean Pylos are almost identical in shape and very similar in their arrangement of decorative zones[49]. As far as their chronology is concerned, similar plates from wells at Olympia are considered Late Archaic by Werner Gauer[50], whilst John Coleman considers Elean plates from the assemblage of Elean Pylos to be no later than the middle of the 6th century[51].

## WORSHIP IN THE CAVE

Regarding the cult that was practised in Drakaina Cave, one aspect was probably linked to childbirth, and the anxieties that accompany it. The study of the terracotta assemblage indicates that Artemis Bendis and the Nymphs were venerated in the cave. The dedications reflect concerns related to the upbringing of children, the well-being of the family and female health in particular[52]. In connection with this aspect of the cult, it is possible that kantharoi could have been used not only for the consumption of wine, but also as emblematic vessels in childbirth rituals. The specific type of kantharos with white and red-on-black decoration, which is so easily recognisable, was possibly used only at sanctuaries with a similar cultic profile and similar function. Their find-spots at Olympia and Elean Pylos are not conclusive as to the type of cult the material was related to, but both sites have a well-known presence of deities who oversaw childbirth as I will explain below.

With regard to kantharoi, there is an association that points to the banded type of kantharos having a very specific function in the cult, at least in the region of Western Greece. I refer to those sites that have large series of the type and which are related with a deity (Artemis, Eileithyia, Demeter) who functioned as a protectress of women and child rearing. Since the finds from Olympia were excavated in a well, it is not easy to associate them with a specific cult. However, the cult of Eileithyia is known at Olympia; she had a small Archaic temple, where she was co-worshipped

41 Lane 1933, 106.
42 Lane 1933, 106.
43 Lane 1933, 106.
44 Stibbe 1994, 30.
45 Boardman – Hayes 1966, 3; Stibbe 1994, 24.
46 Coleman – Abramovitz 1986, pl. 29 no. C55.
47 Coleman – Abramovitz 1986, 56 pl. 22 nos. C110. C112.
48 Schilbach 1995, 31 f. 67 pl. 1, 1 T7.
49 Coleman – Abramovitz 1986, 46 f. 64 pl. 29 nos. C59. C60.
50 Gauer 1975, 163.
51 Coleman – Abramovitz 1986, 46. 64.
52 Karadima 2020, 107.




9 Chart, Archaic fine pottery (© A. Karadima)

with Sosipolis[53]. The actual position of the temple is not yet clear[54]. Eileithyia was worshipped, like Artemis with whom she is often assimilated, on the outskirts of poleis and settlements because childbirth, like death, was considered a form of pollution. Springs with running water located close to sanctuaries of Eileithyia were believed to have the power to offer an easy delivery. We hear from Photios that pregnant women visited a cave on Mount Hymettus in order to drink from the spring[55]. The cave was sacred to Aphrodite Kolias, a name that literally means easy birth.

A figurine representing a pregnant woman drinking from a Lakonian kantharos with vertical handles, similar to the type from Elis, was discovered in Olympia[56]. It is likely then that drinking from a kantharos in the context of a sanctuary was a common practice among pregnant women as part of a ritual designed to ensure an easy delivery. Therefore, it is plausible to explain the preference of dedicating krateriskoi to Artemis as being related to the consumption of a potion or water that would enable a safe birth. Furthermore, if the Elean Archaic kantharos is a vessel that as a shape results from the reduction in scale of a krater, then two conclusions may be drawn from these observations. First, krateriskoi were significant for the cult of Artemis, because they were connected with the consumption by pregnant women of a liquid that was believed to enable an easy delivery; and second, kantharoi can be perceived as the same as the miniature vessels that we recognize as krateriskoi, in the context of specific cults, and thus had the same function. They were not exclusively used for the consumption of wine, which is more often associated with male festivities, and, in this instance, were employed in relation to a female religious practice.

## CONCLUSION

Cultic activity in the Drakaina Cave started in the Geometric period with the dedication of a few imported oil containers and storage vessels of local manufacture. During the Archaic period (fig. 9) the cave gradually saw a vast increase in the number of visitors, as is suggested by the number of vessels and figurines that date to this phase. There is material evidence of a local pottery production at this time. Dedications start from the first half of the 7th century. The total

53 Paus. 6, 20, 2–5.

54 Mallwitz 1972, 156–159. The temple was located in Altis either on the northern side of the Sanctuary of Zeus or at the western end of the Treasury Terrace, between the Nymphaion and the Treasury of the Sikyonians; Treu 1897, 242 pl. 59 no. 10; a further possibility is that it was built west of the Heraion.

55 Phot. Lex. 185, 21.

56 Sinn 2000, 79 f. fig. 14.

Archaic assemblage is an illustration of the contemporary trends for this era, and as such strongly indicates a flow of goods from the Peloponnese and western mainland Greece to the West[57]. The main areas of origin of the pottery found in the Drakaina Cave are Achaia, Lakonia and Aitolia. This pattern is a continuation of that seen in the earliest phase. The principal change is that lekythoi were replaced by drinking cups. The origins of the ceramics suggest that Corinthian influence, at least in as far as it is manifested through pottery, is equally decisive as is the influence of the aforementioned regions during the Archaic period. According to the extant evidence, there was never a significant presence of Corinthians on Kephallonia. After the mid-5th century, Athens had the principal political influence on the island[58], but this is not reflected in the archaeological evidence of the Drakaina Cave.

A large number of vessels can be attributed to the turn of the 7th/6th century: the series of Elean kantharoi, many Early Corinthian ray kotylai and a few miniature kalathiskoi, Lakonian cups, a lamp, a pyxis lid, miniature kotylai and kantharoi. Their origins are Elis, Athens and Corinth. Drinking cups increased disproportionately, as 45 kantharoi, 42 kotylai and 9 kylikes arrived in the cave from Achaia and perhaps Aitolia, Elis, Corinth and Athens; while many of the kantharoi were probably produced locally, imitating Elean vessels. Similarly, during the second half of the 6th century miniature vessels increased in number. This material testifies to the function of the area as a stopover location on a maritime route used by many ships as they made their way to the western Mediterranean or mainland Greece. The use and thus importance of the site clearly increased at this time, and this may be linked to the trade in ship timber from Mt. Ainos. The flow of pots continued in the first half of the 5th century, but the proportion was reversed; the quantity of fine ware was reduced and that of miniatures increased[59].

The ceramic assemblage from sites at the northwestern Peloponnese (mainly Olympia and Elean Pylos) display links with material from Drakaina Cave. The distribution of similar types of pottery at all three sites suggests a connection that was created by people who travelled from one place to another for specific reasons; for instance, travelling or trading apart from pilgrimage. What connected certain communities in Elis and Achaia and those that maintained the cult at Poros is a matter of speculation. Research has established that the Achaian colonies prospered considerably compared to the poleis on the motherland[60]. Imports are found on the north coast of Achaia during the second half of the 8th century[61]. This area is also the place of origin of the settlers of the first Achaian colonies in Italy[62].

Similar cults made use of similar objects that were perceived to have a significance for the audiences at these sanctuaries. The choice to share a ritual behaviour was the manifestation of a network between the communities that served and maintained the cults. Using identical vessels to practice common rituals probably demonstrated a shared identity for the people who participated and maintained the cult[63]. Ultimately, the festivals, rituals or gatherings that took place in Drakaina Cave linked a strategic port in a border territory and the interregional network of sanctuaries and poleis that shared ritual practices and economic benefits derived from trade.

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57 On a summary of this trend see Papadopoulos 2001.

58 Randsborg 2002, II, 321.

59 Barfoed 2015. S. Barfoed examines what the absence of miniatures demonstrates for cults in the Peloponnese and Attica.

60 Nielsen – Roy 2009, 265 f.

61 Morgan – Hall 2000, 108 f.

62 Morgan – Hall 1996, 204–212.

63 Boardman 2004, 149 f. Concerning the matter of copying pottery, J. Boardman regards that identifying motivation is the only problem for the archaeologist that studies the pottery.

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Signe Barfoed

# TRACING RELIGIOUS NETWORKS ACROSS THE CORINTHIAN GULF THROUGH MINIATURE POTTERY

ABSTRACT

The role of miniature pottery in ancient Greek ritual practice has gained increased scholarly attention the past decade, and a recent increase in publications of miniature pottery from various sites now enables us to propose new frameworks for the practical use of miniature vessels in sanctuary contexts. Miniature vessels are often understood as symbolic and non-functional votive offerings, but there is evidence to suggest that they might also have served as containers for the dedication of small consumables, such as different grains associated with the dedication of Aparche (ἀπαρχή), the First Fruit offerings. In the following, I will present the evidence that instigated this novel hypothesis and trace the possible similar ritual practice that appears to have existed in the regions Aitolia and Achaia in the Archaic period.

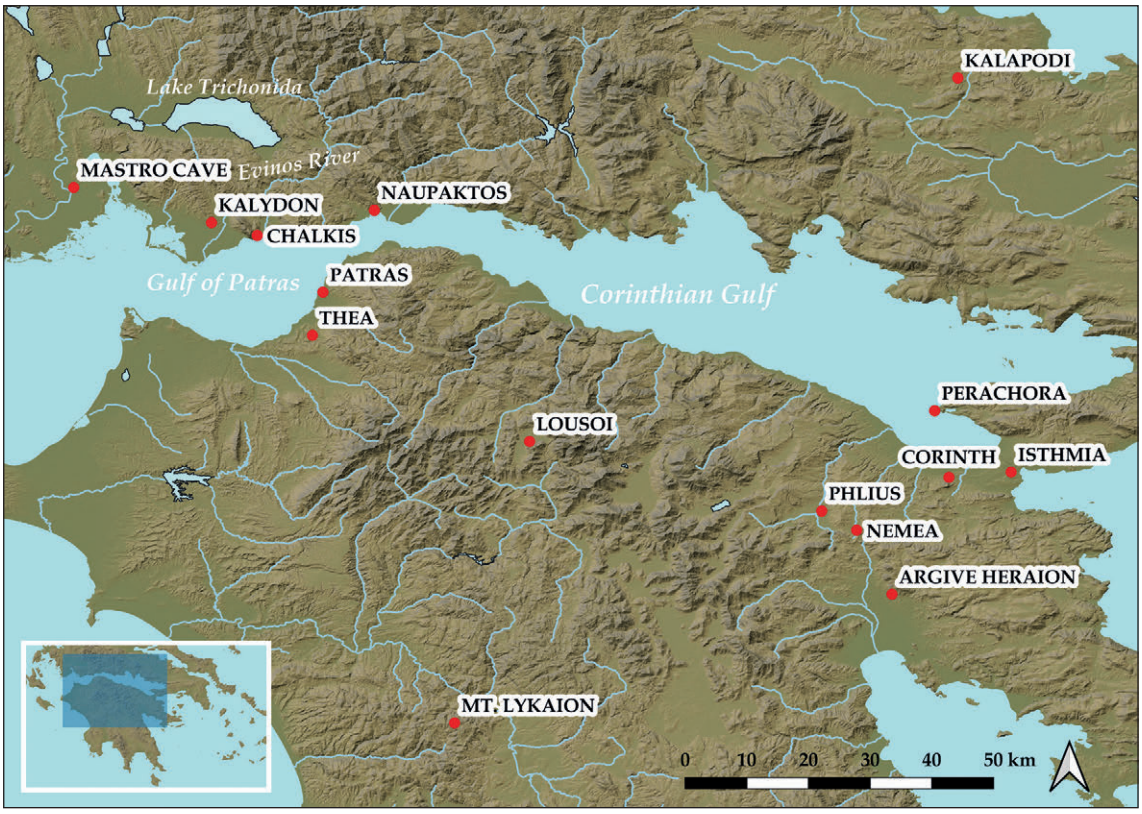
## LITERARY AND ARCHAEOLOGICAL EVIDENCE FOR APARCHE

The phenomenon Aparche (ἀπαρχή), the First Fruit offering, is attested in ancient literary sources, but it has been difficult to identify the ritual in the archaeological record. Below I will argue for a potential connection between miniature pottery and First Fruit offerings. Unfortunately, miniature pottery's role in ancient Greek rituals is not explicitly mentioned in preserved ancient written sources, so we must turn to the pots themselves and their contexts for answers. More specifically, I will examine the connections of miniature pottery between Aitolia and the northern Peloponnese (fig. 1), and the possible connections with regard to rituals and their participants. To the best of my knowledge, this will be the first case-study in support of the hypothesis that miniature pottery is connected to First Fruit offerings.

Theodora Jim's recent review of the practice of First Fruit offerings in the ancient Greek world has shown that First Fruit offerings can be divided into four sub-categories: 1) dedications; made either by an individual or cities when they were successful after an enterprise; 2) blood and bloodless sacrifice of animals; 3) the offering of food and drinks; and 4) cult payment embedded in sacred finance, for instance, fixed sums paid for the use of cult utilities[1]. It is the third category of Jim's First Fruit offering, »offering of food and drinks« that I will argue can potentially be connected to the use of miniature pottery.

The etymology of the word for First Fruit offerings, Aparche (ἀπαρχή), is a combination of ἀπό and ἄρχω, indicating »an initial offering from a greater whole«[2]. The earliest mention of First Fruit offerings (ἀπαρχή) as a noun comes from Herodotus (Hdt. 1, 92, 2; 4, 71, 4; 4, 88, 1), for instance, when he described a Scythian burial ritual: »… in the open space which is left in the tomb they bury one of the king's concubines, his cupbearer, his cook, his groom, his squire, and his messenger, after strangling them, besides horses, and First Fruits of everything else, and golden

1 Jim 2014a, 18 f.
2 Jim 2011.




1 Map of sites mentioned (created by J. Melander based on Corinth Archaeological Data and Basemaps by American School of Classical Studies at Athens licensed under a Creative Commons Attribution-ShareAlike 4.0 International License)

cups; for the Scythians do not use silver or bronze …« (Hdt. 4, 71, 4)[3]. In this passage, one may argue that Herodotus' aim is not to describe the First Fruit offering, but rather to paint a picture of Scythian burial customs to his readers. The other two mentions by Herodotus of Aparche do not mention specifically what was dedicated either. Consequently, for this paper, his descriptions of what constitutes a First Fruit offering are insufficient. Nevertheless, based on epigraphic and literary sources it is clear that First Fruit offerings were connected to agriculture, and to the ploughing and sowing that took place in the autumn and early winter[4]. The harvest of crops took place at the beginning of the summer, and vegetables and fruit were continuously gathered through the autumn. Festivals were held that celebrated the different points in time of this seasonal cycle[5].

Homer did not use the word »aparché«, but instead employed the verb »aparchesthai« (ἀπάρχεσθαι) when speaking of sacrificial contexts[6]. In Book 9 of the Iliad (Hom. Il. 9, 525–600), when he described how king Oeneos of Kalydon neglected to include Artemis when sacrificing to the gods, which promoted Artemis to send an enormous boar to ravage the countryside, Homer uses the word »thalysia« (θαλύσια); this is the introduction of the famous Kalydonian boar-hunt myth. However, when later sources such as Aristophanes (θύων ἀπαρχάς, Aristoph. Frogs

3 … καὶ ἔπειτα, ἐπεὰν θέωσι τὸν νέκυν ἐν τῇσι θήκῃσι ἐπὶ στιβάδος, παραπήξαντες αἰχμὰς ἔνθεν καὶ ἔνθεν τοῦ νεκροῦ ξύλα ὑπερτείνουσι καὶ ἔπειτα ῥιψὶ καταστεγάζουσι, ἐν δὲ τῇ λοιπῇ εὐρυχωρίῃ τῆς θήκης τῶν παλλακέων τε μίαν ἀποπνίξαντες θάπτουσι καὶ τὸν οἰνοχόον καὶ μάγειρον καὶ ἱπποκόμον καὶ διήκονον καὶ ἀγγελιηφόρον καὶ ἵππους καὶ τῶν ἄλλων πάντων ἀπαρχὰς καὶ φιάλας χρυσέας: ἀργύρῳ δὲ οὐδὲν οὐδὲ χαλκῷ χρέωνται … (transl. A. D. Godley).

4 Best attested are Attic and Eleusinian festivals see e.g. Clinton 1996; Parker 2007; Clinton 2009.

5 Foxhall 1995, 104; Jim 2014a, 97.

6 Jim 2011, 41–44; Patera 2012, 30.

1240–1241), Euripides (Meleager 516, θύων ἀπαρχάς), and Apollodoros (τὰς ἀπαρχὰς, Apollod. 1, 8, 2) describe the myth of the Kalydonian boar-hunt, they all use »aparchai« for Oeneos' offerings, which suggests that the two terms »thalysia« and »aparchai« in time became similar generic terms. It is therefore likely that »aparchai« offerings are a very old tradition, a suggestion supported by the mention of barley and wheat as offerings in Mycenaean Linear B tablets[7]. Two scholia to Homer's Iliad mentioned Thalysia (θαλύσια) as a festival[8], and additionally, the poet Theokritos, who wrote in the 3rd century BC described a festival where harvest offerings, Thalysia (θαλύσια), were made to the goddess Demeter on the island of Kos[9]. It is not possible from the passage to deduce exactly when this festival took place, but Theokritos described how: »Demeter in rich measures had piled their threshing floor with barley« (Theokr. Idyll 7, 31–34). Based on these ancient sources, it seems plausible that festivals where First Fruit offerings were carried out, could have been referred to as both Thalysia (θαλύσια) and Aparche (ἀπαρχή).

As the quotation from Herodotus mentioned above exemplifies, First Fruit offerings could be »of everything else«, and one can imagine that people would offer a part of their crops to the gods, whether that was grain of some kind or a single lamb from a shepherd's herd[10]. Some evidence of perishable offering exists in ancient sources, for instance, in Xenophon's »Anabasis«. Xenophon described how he built an altar and a temple for Artemis at Skillous in Triphylia (ca. 20 km south-east of Olympia), and how the citizens and the men and women of the neighbourhood took part in the ritual offering of barley kernels, bread, wine, dried fruit, and a portion of the sacrificial victims from the sacred herd, as well as hunted animals (Xen. an. 5, 3, 9)[11]. Interestingly Xenophon distinguished between citizens and »the men and women of the neighbourhood«, so here we have an example of a ritual where a large variety of people presumably from diverse levels of society and a large geographical area took part.

Pausanias, albeit a later source, likewise described a fascinating ritual that took place at a cave sacred to Demeter Melaines in Phigalia, Arkadia (Paus. 8, 42, 11)[12]. Here the local population offered fresh (not burnt) sacrifices of grapes and other fruit, honeycombs and raw wool still full of grease[13]. Pausanias explains how, after placing these things on the altar, they poured oil over the offerings. Wool was part of First Fruit offerings and Athenaios mentioned unwashed sheep's wool when he listed the perishable offerings found in the ritual vessel, the kernos (Athen. 473c)[14]. Pausanias and Athenaios both associated wool with the offering of various fruits and seeds made to Zeus Ktesios, as a possible deity of the storeroom, and Demeter (Paus. 8, 42, 11; Athen. 473c)[15].

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7 Palmer 1992, 484–486. 493–497; Halstead 1995, 232; Killen 2004, 156; Palaima 2004, 229. Beer brewing with barley has now been attested to as far back as the Bronze Age, see Valamoti 2018.

8 Jim 2014a, n. 34.

9 Jim 2014a, 105 f.

10 Larson argued that the animals offered to Artemis Laphria in Patras (a cult transferred from Kalydon according to Paus. 7, 18, 8–13) were considered First Fruits, Larson 2007a, 103. An inscription briefly mentioned by Parker refers to the dedication of a catch by two fishermen from Eleusis »given by Poseidon« (IG I3 828), Parker 2007, 410 n. 94. For more on the dedication of fish, see Bevan 1985, 131.

11 Graf 2013, 117–120.

12 Patera 2012, 37–39.

13 Larson mentioned how perishable and modest offerings are archaeologically invisible, as for example in the »Odyssey« (Hom. Od. 14, 434–436) where the swineherd Eumaios sets aside a portion of his meal for Hermes and the Nymphs, Larson 2007b, 62; Hoffmann has recently suggested that terracotta figurines from Lindos, Rhodes, were connected to First Fruit offerings, Hoffmann 2014. The inscription Ἀθαναίας ἄπαργμα Πείσιος ἀνέθεκε was found on an Attic vase dating to the 5th cent. BC from Ialysos and the word ἄπαργμα has been interpreted as a local variation of aparché, both are bases of kylikes, one dating to the 5th cent. B.C., the other to the end of the 5th to the beginning of the 4th cent. BC, Martelli 1988, 113 f. nos. d (inv. 9947). f (inv. 9946) fig. 12 b; Jim 2014a, 41.

14 Brumfield 1997, 154.

15 Elsewhere I have suggested that the miniature kalathos (kalathiskos) is connected to the dedication of wool and that this miniature shape could also have been used as a thymiaterion, Barfoed 2018, 120 f. Zeus Ktesios was mentioned as the guardian of household wealth by Aischyl. Suppl. 445.

Another variant of Aparche is relevant here. In Homer, a private ritual is mentioned, rarely debated by scholars: the offering of a part of your food before eating the meal or before initiating a feast[16]. In the »Odyssey«, Odysseus and his companions entered the Cyclops' cave and took his cheeses while the Cyclops was herding his flocks, and they lit a fire to make offerings, presumably of the cheeses, before they took them for themselves (Hom. Od. 9, 231–232)[17]. The word used in the passage is neither Aparche nor Thalysia, but the verb ἐθύσαμεν (from θύω, »offer by burning«) that some scholia and lexicographers equate with Aparche and the verb »aparchesthai« (ἀπάρξασθαι)[18]. Theodora S. F. Jim suggested, and I concur, that the fact that Odysseus and his companion made such an offering even in their perilous situation could suggest that the Greeks would customarily make first offerings to the gods before eating[19]. This suggestion is supported by Athenaios, who stated: »moreover Homer teaches us what we ought to do before we feast, which is to offer aparchai of the food to the gods« (Athen. 5, 179b–c), thus it is very like that this kind of offering was common in Athenaios' day[20].

In two instances, Xenophon also provides evidence of this custom. The first, in the »Cyropaedia«, »Cyros remained standing just as he was and first offered to the gods a part and then began his breakfast ...« (Xen. Kyr. 7, 1, 1)[21]. In the other example from Xenophon's »Hiero«, Hiero stated that tyrants have so little trust in other people that, for fear of being poisoned, they have their servants taste their food and drink »before making first offerings to the gods« (Xen. Hier. 4, 2)[22], which suggests that this rite of »aparchesthai« was carried out every time the tyrant drank or ate[23]. This passage also shows how liquid was offered to the gods, as well as food and other First Fruit offerings. Theophrastos' description of a person, perhaps a huntsman in a hunting expedition[24], makes the »smallest first offering« (ἀπάρχεσθαι ἐλάχιστον) presumably of wine to Artemis[25]. I have previously presented the idea that miniature pottery could have been used for ›mini‹ libations[26], an idea that might be what Theophrastos describes here, and it seems plausible that different shapes of miniature vessels were ideal for First Fruit offerings, both in rituals at larger civic festivals, but also in more private settings such as the Aparche carried out before having a meal.

Agricultural festivals where First Fruit offerings took place, such as the famous sowing festival, the Thesmophoria, are better attested in Attica in the Classical period[27], but it is likely that similar local and regional agricultural festivals and rituals would have taken place all over the ancient Greek world, also in earlier periods[28]. The fertility of the land, which was connected to crops that were essential for survival, must always have been a concern for the ancient Greeks, as Lin Foxhall has pointed out: »Cereals were not only the most important food staple in practical terms

16 Jim 2014a, 117–121; this Aparche ritual seems to have aspects in common with the Trapezomata ritual (placing food, and other offerings for the gods on a table in a shrine/sanctuary) as discussed by Gill 1974; and Patera 2012, 113–133, however, there is no current proof that the Trapezomata ritual goes back to the Archaic period, Gill 1974, 133–136. It is, nevertheless, very plausible that there is overlap in the different ritual practices; see also Jameson 1994.

17 Jameson 1994, 37–39; Jim 2014a, 119 f.

18 For these references see, Jim 2014a, 119 n. 6.

19 Jim 2014a, 120.

20 Καὶ πρὸ τοῦ θοινᾶσθαι δὲ ἃ δεῖ ποιεῖν ἡμᾶς διδάσκει πάλιν Ὅμηρος, ἀπαρχὰς τῶν βρωμάτων νέμειν … (transl. S. Douglas Olson). According to Jim, the practice is certainly described, but the use of the term »aparchai« is post-Homeric and wrongly assigned to Homer, Jim 2014a, 120.

21 … ὁ δὲ Κῦρος ὥσπερ εἶχεν ἑστηκὼς ἀπαρξάμενος ἠρίστα καὶ μετεδίδου ἀεὶ τῷ μάλιστα δεομένῳ … (transl. W. Miller).

22 … πρὶν ἀπάρχεσθαι τοῖς θεοῖς … (transl. E. C. Marchant – G. W. Bowersock).

23 Jim 2014a, 121. Plutarch also mentions a similar offering, see Jim 2014a, 122 f.

24 Ussher 1960, 105.

25 Theophr. char. 10, 3; Jim 2014a, 122.

26 Barfoed 2015, 174.

27 See e.g. Parker 2007, 270–289.

28 At such festivals, people would have met from different neighbouring regions, Foxhall 1995, 106 f.



2 Offering trays (bottom) and likna (top) from the Sanctuary of Demeter and Kore, Acrocorinth (photo P. Dellatolas. © American School of Classical Studies at Athens, Corinth Excavations. Reproduction courtesy of Corinth Excavations, the American School of Classical Studies at Athens)

but also the most important agricultural signifier of civilisation«.[29] Some evidence, albeit sparse, therefore exists in the ancient written sources concerning First Fruit offerings and their connected rituals. Below I will draw attention to miniature pottery with plant remains that might attest to the dedication of perishables offerings.

## ARCHAEOLOGICAL EVIDENCE FOR FIRST FRUIT OFFERINGS

In this section, I will present and discuss the perishable evidence published from sanctuary contexts dating from the Mycenaean to the Archaic periods, present contexts where both plant remains and miniature pottery occur, and suggest how miniature pottery could have been used for First Fruit offerings.

Two miniature pottery shapes that might relate to First Fruit offerings are found in large numbers in the Demeter and Kore Sanctuary at Acrocorinth, miniature offering trays and the likna. The liknon is a miniature terracotta tray with fruit or cakes inside[30], whereas the miniature offering trays are trays with miniature pottery inside, for instance, cups, kalathiskoi or miniature phialai (fig. 2). Elizabeth Pemberton has shown that trays, and not baskets (kana) with their characteristic three handles, were carried by young women in ritual processions in Corinthian vase painting[31]. A large number of miniature offering trays have also been found in the Potters' Quarter in Corinth, and it is commonly agreed to be a Corinthian votive related to rituals for Demeter and Kore. However, miniature offering trays have also been found in sanctuaries dedicated to other deities, for instance, at Perachora

29 Foxhall – Forbes 1982; Foxhall 1995, 108.
30 Brumfield 1997.
31 Bookidis – Pemberton 2015, 127–130.

(Hera)[32], Nemea (unknown deity, possibly the nymph Nemea)[33], and Isthmia (Poseidon)[34], so we cannot for certain link one specific shape to this goddess[35]. It therefore seems more plausible that this miniature shape should be linked to a specific ritual involving First Fruit offerings.

Elizabeth Pemberton suggested that the miniature offering trays dating to the 6th century BC (that commonly held three cups and phialai) were deep enough to hold kernels of grain or drops and oil or wine, and she also suggested that the empty trays could have held grain for First Fruit offerings[36]. However, Pemberton also asserts that later, when the interior cups became shallower, they could not have held anything, but rather that the cups symbolised different grains and foodstuff used in the Demeter and Kore rituals as a kind of commemorative offering[37]. The miniature offering trays from Corinth may be a unique example of a functional ritual shape transforming in time into a symbolic votive. Allaire Brumfield, who published the miniature likna from Corinth, likewise suggested that the likna may have been »dedicated as a memorial of the ceremony in which real cakes were sacrificed to the goddesses«[38].

Further evidence of the connection between the miniature offering trays, plant remains, and possible First Fruit offerings can be surmised based on the excavation in the dining rooms of the Sanctuary of Demeter and Kore carried out in 1994. These excavations aimed to analyse botanical remains from the dining rooms and special attention was naturally paid to the cooking ware, because of the focus on ritual dining. However, miniature pottery was also found in great quantity[39], but here the focus will be on the offering trays. When assessing the published contexts from the Demeter and Kore Sanctuary, a total of six miniature offering trays are found in contexts that contained plant remains. The dates of these different contexts spanned the late 7th to the early 4th century BC, and many different remains were found, for instance, barley, wheat, olive, grape, fig, lentil and legumes, and the highlighted columns in table 1 show that barley, olive and grape were found in all three layers with miniature offering trays (tab. 1).

Based on the evidence presented above, I believe it is plausible that some of the miniature offering trays, and possibly also some of the other miniature pottery from these contexts, were used as receptacles for small perishable offerings for a First Fruit ritual[40]. It is also possible, as Pemberton suggested, that the empty miniature trays were used to hold grain for the ingredients to make cakes to be offered, in the case of Corinth, to Demeter. A grape pit found on the floor in one of the dining rooms in the Sanctuary of Demeter and Kore must have been fresh when it was dropped according to Evi Margaritis[41]. Nancy Bookidis has suggested that this grape in combination with the figs and pomegranate suggests that at least one festival in the Demeter and Kore Sanctuary must have taken place in the late summer or early autumn, most likely the Thesmophoria[42].

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32 Dunbabin 1962, 300. 330 cat. 3049. 3050. 3470. 3471 pl. 127.

33 Barfoed 2017, 665 f.; Barfoed 2019a.

34 Bookidis – Pemberton 2015, 123.

35 Pemberton on the other hand stated that »the close association of the offering tray with Demeter is unmistakable«, Bookidis – Pemberton 2015, 124.

36 Bookidis – Pemberton 2015, 125. 130 f.

37 Bookidis – Pemberton 2015, 130; Barfoed 2015, 173 f. 183 f.

38 Brumfield 1997, 158 f.; for the dedication of cakes in 5th–4th cent. BC epigraphical sources see Kearns 1994.

39 »Apart from votive miniatures, which permeate every shovelful of earth in the sanctuary, we find the following shapes which undoubtedly relate to dining. Cups are the most numerous ...«, Bookidis et al. 1999, 14.

40 X. Charalambidou has suggested a connection between First Fruit offerings and a small-sized coarse ware vessel from Plakari, Karystos, on Euboea, dating to the Early Iron Age-Early Archaic period, Charalambidou 2017, 258–260 fig. 8 a. b; the shape imitates a regular-sized storage jar; I am very grateful to X. Charalambidou for sharing and discussing this evidence with me, personal communication.

41 Margaritis – Jones 2006, 798.

42 Bookidis et al. 1999, 28. 52. See also Patera 2012, 133–139, who evaluates the interpretation made by the excavators, Bookidis – Stroud 1997, 161 f., that a stone-lined offering pit (Pit A, dating to the end of the 5th cent. BC) containing kalathiskoi in this sanctuary (Middle Terrace) was connected to chthonian deities.

Table 1 Table showing contexts in the Sanctuary of Demeter and Kore, Acrocorinth, with miniature pottery and plant remains (barley, grape and olive in green vertical highlight, and contexts with miniature offering trays in blue horizontal highlights) source (table): Bookidis et al. 1999, 25 tab. 3; source (contexts with miniature offering trays): Bookidis – Pemberton 2015, appendix

| **AREA 1, BUILDING N: 21** | **Wheat** | **Barley** | **Lentil** | **Vetch** | **Pea** | **Grape** | **Olive** | **Fig** |
|---|---|---|---|---|---|---|---|---|
| ROOM 1 | | | | | | | | |
| *Phase 1* | | | | | | | | |
| Floor 4 (1994-79) | x | x | | | | x | x | x |
| Fill (1994-80) | x | | | | | | | |
| | | | | | | | | |
| *Construction fills of Phase 2* | | | | | | | | |
| Fill (1994-78) | | x | x | | | x | x | |
| Fill (1994-77) | x | | x | | | | x | x |
| | | | | | | | | |
| *Phase 2* | | | | | | | | |
| Floor 3 (1994-70) | x | x | x | x | | x | x | x |
| Floor 2 (1994-68) | x | x | | x | | | | x |
| Floor 1 (1994-67) | | x | | | | x | x | |
| Fill (1994-69) | x | x | x | x | | x | x | x |
| | | | | | | | | |
| ROOM 2 | | | | | | | | |
| *Phase 1* | | | | | | | | |
| Fill (1994-62) | x | x | x | x | | x | x | x |
| Fill (1994-63) | x | x | x | x | x | x | x | x |
| Fill (1994-64) | x | x | x | | x | x | x | x |
| | | | | | | | | |
| *Construction fills of Phase 2* | | | | | | | | |
| Fill (1994-65) | x | x | | x | | x | x | x |
| Fill (1994-66) | x | x | x | x | | x | x | x |
| | | | | | | | | |
| *Phase 2* | | | | | | | | |
| Floor 1 (NB 637 B 127) | | | | | | x | | |

Analyses of archaeobotanic material from the layers of the altar of the Sanctuary to Zeus on Mt. Lykaion in Arkadia have been carried out, but await final publication[43]. The preliminary investigations revealed that barley grain dominated among the plant remain assemblages in layers datable from the Mycenaean through to the Archaic periods. Other remains of plants and fruit were also present in lesser quantities, such as grape, fig, pea, wheat and nutshells. Interestingly, the evidence shows two different parts or stages of the rituals: the barley from the Mycenaean levels were burnt and found with burnt animal bone. However, the bones were very heavily burnt, probably at temperatures higher than 600 degrees, which suggests that the plant remains were not part of the same offering event as the animals. The temperature was simply too high for the grain to have been preserved[44]. Thus, this example suggests that the burnt barley came from a different ritual event, separate from the animal sacrifice[45]. More than 700 fragments of miniature pottery were identified in the excavations of the altar, and chemical residue analysis will be done

43 Romano – Voyatzis 2014.
44 Romano – Voyatzis 2014, 642 f. 647 f.
45 Margaritis 2014, 283.

on some examples, which might reveal more information about the rituals that involved the use of miniature vessels[46].

An even wider range of plant remains comes from Kalapodi, the oracular Sanctuary of Apollo of Abai, both from Bronze and Iron Age layers[47]. The two most dominant types are barley and wheat, but other cereal such as emmer, and legumes, such as lentils, chick-pea, and olive and fig were also present. In the Iron Age layers in the northeast corner of the Archaic south temple, more grain types were present: einkorn, millet, spelt, rye and oat, as well as broad bean, pea, linseed, grape, and opium poppy. Evi Margaritis, who is working on publishing the plant remains, reported that the remains from the Geometric layers were found in association with miniature pottery, a bronze hoard and animal bones, even if it is unclear whether the plants remains were burnt *in situ* or elsewhere before deposition[48].

The Sanctuary of Demeter at Thea near Patras equally revealed contexts of miniature pottery and perishables. An undetermined food mass was discovered and barley seeds were found in a miniature hydria[49]. Further evidence of possible First Fruit offerings exists from Thea in the form of fragmented kernoi; a ring-kernos with attached miniature hydriai, and a handmade kernos, a flat round plate with three very small vessels attached, were found, which could have been connected to offerings of grain and other perishables[50]. Athenaios described that the ritual vessel, the kernos, a shape possibly used for First Fruit offerings, held various perishable offerings: »An earthenware vessel, holding on it a large number of small cups (kotyliskoi) stuck together. ›In these,‹ [Polemon] says, ›are white poppy-heads, grains of wheat and barley, peas, vetches, okra-seeds, and lentils‹« (Athen. 11, 478D)[51]. The purpose of the kernos, or the similar vessel, the plemochoai[52], must have been to make multiple offerings of all the various ingredients at one time, and it must also have been a visually fascinating offering. Demeter's connection to the fertility of the land and agriculture is clear, and the large amount of miniature pottery from the sanctuary and the remains of consumables found at Thea underlines the possible connection between them[53]. Miniature pottery, both local and Corinthian imports, is found in the thousands[54]. However, one must be cautious to draw conclusions between pottery shapes and specific deities, given that both kernoi and miniature pottery generally are found abundantly in sanctuaries to many different deities.

The unpublished find assemblage from the 1920–1930s excavations of the Artemis Laphria Sanctuary in Kalydon (figs. 3. 4) yielded 256 fragmented or complete miniature vessels out of ca. 1,150 catalogue entries[55]. Among the miniature pottery, a rare example of a miniature kotyle with

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46 According to Leslie Hammond, who is working on publishing the miniature pottery, the layers of the altar are very disturbed, which complicates the dating of the miniatures, L. Hammond, personal communication; Romano – Voyatzis 2014, 612–614.

47 Kroll 1993; Margaritis 2014.

48 The pottery and plant remains from this context await full publication, Margaritis 2014, 283.

49 S. Nestoridou in this volume.

50 S. Nestoridou in this volume (no. Θ 1402).

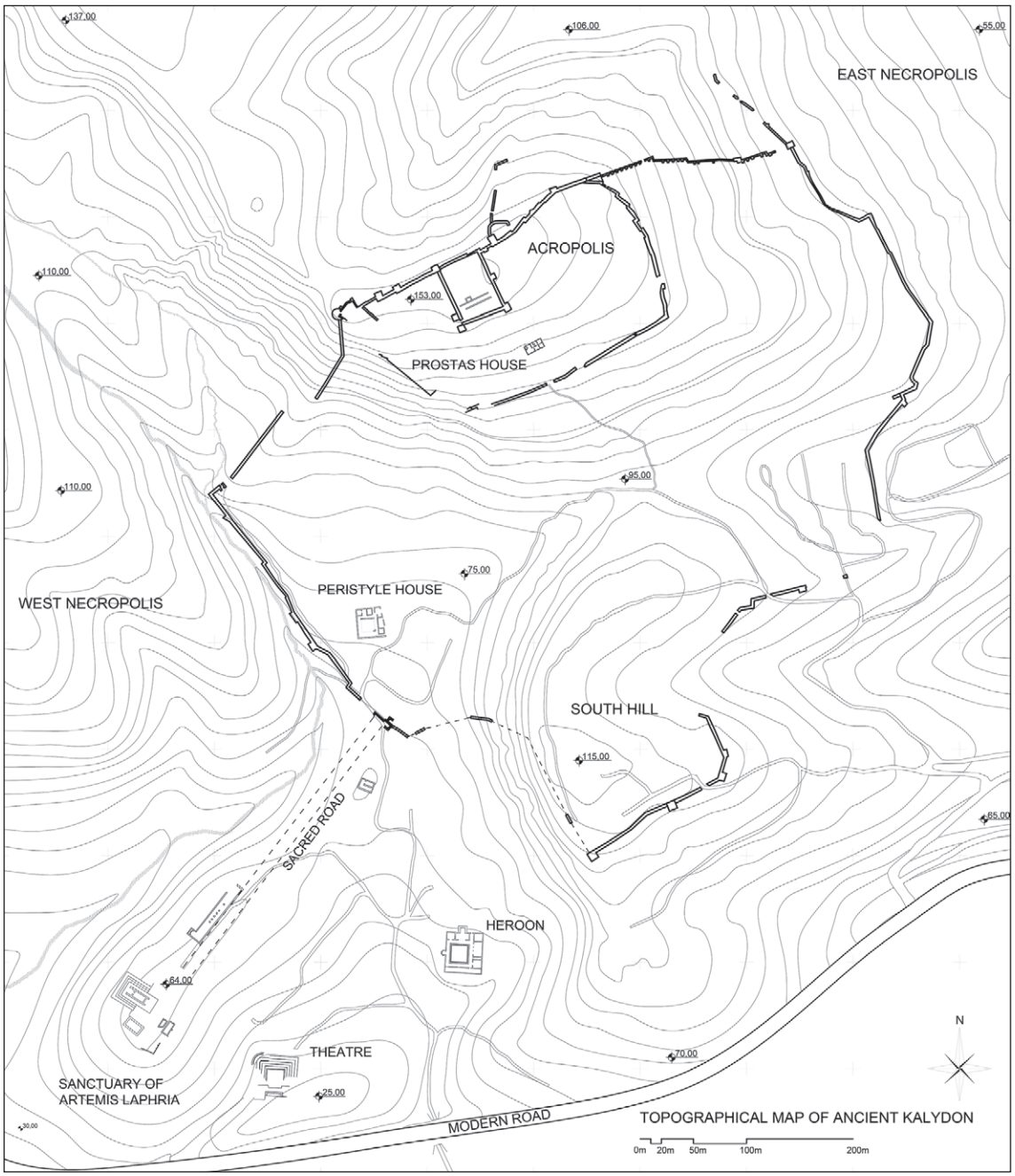
51 Pollitt 1979; Clinton 2009.

52 Ochsenschlager 1968, 59; Clinton 2009, 241–243.

53 »Many festivals of Demeter and Kore were tied to the annual cycle of grain cultivation«, Larson 2007a, 72 f. However, aparché of grain was also offered to other deities, e.g. Poseidon Phytalmios near Troizen, see Larson 2007a, 63 f.

54 S. Nestoridou – Ch. Rathossi in this volume; Petropoulos 2007; Petropoulos 2010, 155–158. For chemical analyses of the clay of the pottery from the Demeter Sanctuary at Thea, see Nestoridou – Rathossi in this volume; for more on the clays in the region of Achaia, see I. Iliopoulos in this volume, and note the difficulties discerning some of the Achaian fabrics from the Corinthian. A recent article about the clay sources in Achaia and the Corinthia states, »the overall comparison between the sampling locations considered reveals differences in terms of their mineralogy whereas their bulk chemical composition and the technological properties are very similar«, Xanthopoulou – Iliopoulos – Avramidis 2021, 11.

55 The author is currently preparing this assemblage for publication; for a preliminary report, see Barfoed 2019b.




3 Topographical map of Ancient Kalydon (from: Vikatou et al. 2019, 162 fig. 1 © courtesy Aarhus University Press)

a possible olive pit preserved inside has been discovered[56]. After the miniature kotyle was cleaned, the stone-like object at the bottom of the vessel has the neat shape of an olive pit (fig. 5)[57]. The grey patches on the exterior and interior wall look very much like traces of burning, which could suggest that this may be a rare case of a complete olive in a miniature kotyle, which either intentionally was

56 Excavations in the city of Kalydon were carried out from 2001–2005, see Dietz – Stavropoulou-Gatsi 2011, and continued in the Hellenistic theatre from 2011–2014, see Vikatou et al. 2014; and the Lower Acropolis from 2013–2017, see Vikatou – Handberg 2017; Vikatou – Handberg 2018; Vikatou et al. 2019; Frederiksen – Vidatou 2023.

57 An unpublished token miniature krater, temp. inv. 1928/2.48, has solidified contents inside, which may also be foodstuff, but further analysis is pending.



4 Aerial photo of the Artemis Laphria Sanctuary, Kalydon (photo C. Giatrakos)



5 Miniature kotyle with burnt olive pit (?) inside, from the Artemis Laphria Sanctuary, Kalydon (temp. inv. 1928/4.59) (photos © J. Vanderpool)

burnt as an offering, or accidentally burnt when something caught fire in the sanctuary. Size-wise, this example is slightly smaller than a raw olive. A burnt olive pit that was recovered from the altar fill in the Aphrodite Ourania Sanctuary in Athens has a length of 11.25 mm compared to the 13.30 mm of the possible olive pit from Kalydon[58]. However, archaeobotanical analysis remains to be done, so firm conclusions concerning this interesting find from Kalydon will have to wait[59].

From the Mastro Cave, Aitolia, an example of a miniature kotyle with foodstuff inside has recently been discussed[60]. Rescue excavations in the cave were carried out in 2016, and showed that the cave extends to one chamber. The assemblage from the cave is currently in the process of being fully published, but Alexander Nagel's recent article provides a first look at this fascinating evidence. Terracotta protomes and figurines resemble types known from elsewhere in Aitolia, and the enthroned goddess, the standing kore type figurine, the dancing group type and protomes are all types which are also found in the Artemis Laphria Sanctuary in Kalydon[61]. Alexander Nagel does not mention how many miniature vessels were found in the Mastro Cave, but mentions that the shapes are lekythoi, krateriskoi and kotyliskoi[62]. The vessel that contained foodstuff is a miniature conventionalizing kotyle, possibly Corinthian, a type that is commonly found outside Corinth in sanctuary contexts. Nagel adds that »at least one

58 Reese 1989, 68 pl. 16 f.
59 Further studies of the object will hopefully determine the nature of it, if it is an olive pit or something else.
60 Nagel 2021.
61 For Kalydon, see Barfoed 2017, 136–141 figs. 4. 8; for the Mastro Cave, see Nagel 2021, 120–123 fig. 6, 4. 5.
62 Nagel 2021, 125 fig. 6, 9.

such painted kotyliskos … is completely preserved with original organic contents«[63]. The foodstuff inside the miniature vessel (s [?]) from the Mastro Cave has not yet been analysed, but Nagel suggests that the contents were some sort of edible food offering[64]. Thus, at least two examples of miniature pottery with foodstuff from the region of ancient Aitolia are now attested.

Although the survey presented here shows that examples of plant remains found in association with miniature pottery in pre-Classical periods are relatively rare in Greece, examples can be found outside Greece. For instance, a ritual well at the Etruscan site of Cetamura del Chianti, about 20 km northeast of Siena, yielded plant remains and miniature pottery dating between 700 to 500 BC[65]. The 32 m deep well contained wood, charcoal, burnt remains of seeds and fruits, especially grape pits[66]. Pollen analyses also revealed the presence of the flower Asphodelus, a flower that presently grows in the area, as well as pollen from other flowers[67]. The miniature pottery consisted entirely of cups[68], which are well-suited for containing, for instance, a single grape or two, depending on the size of the miniature vessels exemplified with miniature pottery from Lousoi, Arkadia[69].

More, and clearer, examples of miniature pottery associated with plant remains exist from later periods, for instance, from Pompeii where at least three clear cases are known. Beneath the tablinum of the House of the Vestals a pit dating to the late 3rd century BC that contained eight miniature vessels was found in association with piglet bones and organic remains of whole fruit pomegranates, grape pits and pips of fig[70]. The miniature vessels all had traces of burning on the rim, thus it has been suggested that perhaps the vessels had been used for incense or oil[71]. Furthermore, two ritual deposits excavated in the peristyle of the House of Herakles' Wedding, dating from the second half of the 2nd century BC to AD 79, contained miniature pottery and a wide range of plant species, for instance, barley, wheat, figs, charred olive pits, grapes, nuts, and remains of legumes were also present[72]. These later examples of miniature vessels found with plant remains further emphasise a close relationship between the ritual use of miniature pottery and perishables, some of which could be considered First Fruit offerings. Although the documented examples of sanctuary contexts where both miniature pottery and plant remains are found are sparse[73], more examples may be revealed in the future and may support the connection between miniature pottery and offerings of perishables[74].

## TRACING PARTICIPANTS AND REGIONAL NETWORKS IN FIRST FRUIT RITUALS

In the following, I will discuss the proposed connection between miniature pottery and First Fruit offerings and whether this supposed connection can help us reconstruct the religious networks of the participants from the regions of Aitolia and northern Achaia.

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63 Nagel 2021, 125 f.

64 Nagel 2021, 125 f. fig. 6, 10.

65 Mariotti Lippi et al. 2020.

66 Mariotti Lippi et al. 2020, 34.

67 Mariotti Lippi et al. 2020, 34 f.

68 Mariotti Lippi et al. 2020, 35, see for further references.

69 See the cover illustrations of this volume.

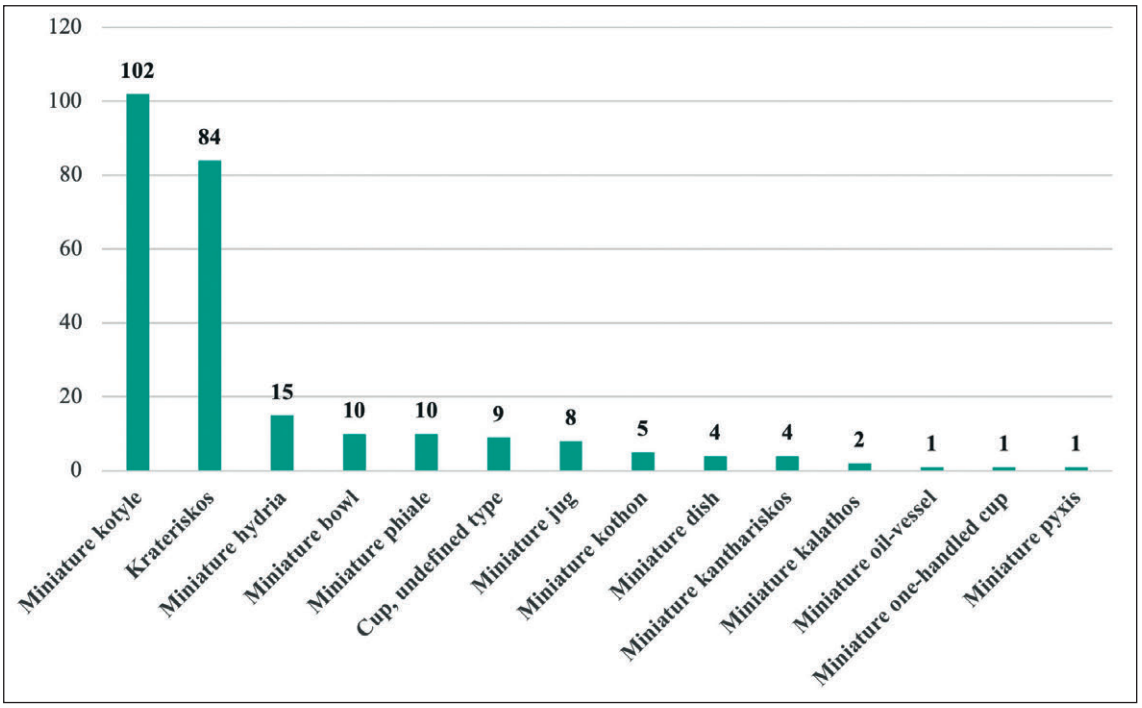
70 This pit has been suggested to predate the house, Richardson et al. 1997, 91 f.; Ciaraldi – Richardson 2000, 79 f.; Cool – Griffiths 2015, 8.

71 Ciaraldi 2007, 116 f.; Cool – Griffiths 2015, 10.

72 Ciaraldi 2007, 146 f. 156–158.

73 Plant remains have also been documented in funerary contexts, see e.g. Mégaloudi et al. 2007.

74 Other sites may reveal similar evidence, for instance, the following sites where both miniature pottery and plant remains have been separately documented, the Heraion at Samos: Kučan 1995 (plants); Avramidou 2016, 49 f. (pottery); Furtwängler – Kienast 1989, 86 n. 359; 117–119 fig. 22 pl. 25 (Ia/1 and Ib/2, pottery); Tiryns: Kroll 1982 (plants); Brüggemann 2015, 201–207 pls. 17. 22 (pottery). Mégaloudi has also discussed the plant evidence from Messene dating to the Hellenistic period, Mégaloudi 2005.




6 Shape distribution of miniature pottery (256 vessels/fragments) from the Artemis Laphria Sanctuary, Kalydon (S. Barfoed)

The phenomenon of travelling miniature pottery was first discussed by Gunnel Ekroth; she detected that a two-handled miniature cup from Phlius in the Peloponnese made it to both the Argive Heraion and Perachora (fig. 1), which indicates that the Phliasians dedicated their pottery outside Phlius[75]. When travelling, the small size of miniature pottery (and terracotta figurines) would make them easy to bring along and they would fit easily in a bag, or could be packed into a larger pottery vessel[76]. One can speculate if by bringing a locally produced miniature pot with you for dedication in a foreign sanctuary, might you increase the personal aspect of the dedication, and thus enhance your private connection with the deity? Anthony Snodgrass argued that individuals carried small portable objects with them as a kind of private pilgrimage, a scenario that corresponds with the miniatures that travelled from Phlius, and the miniature hydriskoi and krateriskoi found in both Achaia, Arkadia and Aitolia[77].

Returning to the miniature pottery from the Artemis Laphria Sanctuary in Kalydon, the preliminary studies of the fabric of the 256 vessels and fragments suggest that about half is Corinthian, and about half is local or regional, and just one is of Attic fabric. In Kalydon both Corinthian terracotta figurines and Corinthian regular-sized pottery have been found in both the old and more recent excavations[78]. Based on the Kalydon publication from 2011, Corinthian regular-sized pottery amounts to just seven catalogue entries[79]. As mentioned above, the pottery assemblage from the Artemis Laphria Sanctuary is still not fully analysed, but so far it seems that about 20 % is Corinthian, 22 % Attic and 46 % of local production (based on ca. 1,000 catalogued vessels dating to the Geometric-Hellenistic period, not including the Bronze Age pottery). There is a small amount

75 Ekroth 2003.
76 Uhlenbrock 1985; Barfoed 2015, 183; Uhlenbrock 2016, 4 f.
77 Snodgrass 1980, 57.
78 Barfoed 2017, 137–141.
79 Bollen 2011, 459 f. 462. 464. 470. 472 f. 476 cat. 224 (oinochoe [?]). 232 (Pyxis-Kalathos). 234 (conical oinochoe). 247 (kotyle). 254 (kotyle). 268 (aryballos). 288 (krater [?]). The 2011 publication does not mention how large a representation of the excavated pottery from the 2001–2005 excavations has been included in the publication.




7 Miniature hydriai from the Artemis Laphria Sanctuary, Kalydon; a. b: temp. inv. 1928/2.56, 1928/4.22 (Achaian); c: 1928/2.50 (Corinthian) (photos © J. Vanderpool)

of Elean, Achaian and undetermined pottery. As mentioned earlier, miniature pottery amounts to 32 % of the assemblage, and in the Artemis Laphria assemblage, the three most popular miniature shapes are the kotyle (102; 40 %), the krateriskos (84; 32.9 %), and the hydria (15; 5.8 %). The remaining 21.3 % consist of various jug types, phialai, bowls, dishes, and cups (kanthariskoi, one-handler) (fig. 6).

Although the processing of the pottery from the Artemis Laphria Sanctuary is ongoing, the work concerning the miniature pottery is close to finalised, so it is possible to present a few preliminary results; so far 256 complete or fragmentary miniature vessels (minimum vessel count) have been catalogued, representing about 32 % of the total pottery assemblage[80]. Miniature kotyle and krateriskoi dominate the miniature assemblage, and both imported Corinthian vessels as well as locally produced vessels exist[81].

A group of 15 unique miniature vessels found in the Artemis Laphria Sanctuary finds parallels across the gulf in the Sanctuary at Thea, Patras[82]. In Kalydon, these three types have been found only in the Artemis Laphria Sanctuary and not elsewhere in the city, i.e. the shrine on the Central Acropolis (fig. 3) and the cult room in the Peristyle Building in Kalydon's Lower Town (fig. 3)[83]. The most popular Achaian shape is a squat and undecorated miniature hydria, with eight examples being found (fig. 7 a. b); it has a very squat and square shape, is often lopsided, and quite different from the taller and perhaps more elegant miniature hydriai from Corinth (fig. 7 c). Five examples of a krateriskos with a conical foot, a so-called skyphoid krateriskos often have black glaze on the upper body, and one example is completely covered in white slip (fig. 8). The third shape group consists of just two kanthariskoi with conical feet, and both have traces of black-brown glaze throughout (fig. 9).

None of these Achaian miniatures has been found elsewhere in Kalydon or nearby Chalkis. So, a small group of 15 Achaian miniature pottery vessels was found in the Artemis Laphria Sanctuary in Kalydon (5.8 % of the miniature pottery assemblage), which perhaps suggests that visitors from the area of Patras came to the Artemis Sanctuary in Kalydon and dedicated their locally produced votives. One can only speculate how many people they represent: 15 people present for one specific event, or three people dedicating five vessels each, who came for a festival two years in a row? Interestingly, it seems that in Kalydon attempts were made to imitate these Achaian miniature pots, perhaps by a particular experimental potter? For now, this suggestion cannot be

80 The pottery assemblage amounts to ca. 1150 vessels/fragments, but is still being processed, so the numbers might change in the final publication of the assemblage from the Artemis Laphria Sanctuary, Kalydon.

81 Barfoed 2019b.

82 I am very grateful to Stella Nestoridou, who kindly discussed the unpublished miniature pottery from Thea with me, and her shared photos and thoughts on dates, contexts, and other aspects; see also S. Nestoridou in this volume.

83 For an overview of the cults of Kalydon, see Barfoed 2017.




8 Achaian miniature ›skyphoid krateriskos‹ from the Artemis Laphria Sanctuary, Kalydon; temp. inv. 1928/2.64 (a), 1928/2.7 (b), 1928/5.23 (c). National Archaeological Museum, Athens (photos: a: I. Dalla – K. Xylina – T. Koutoubali © Hellenic Ministry of Culture and Sports/Hellenic Organization of Cultural Resources Development [H.O.C.RE.D.]; b. c: © J. Vanderpool)



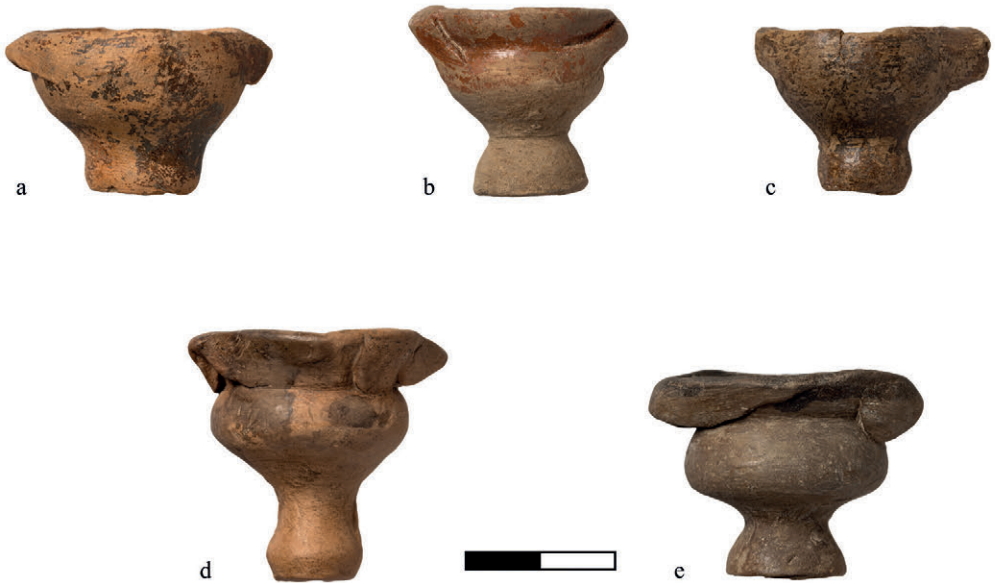

9 Achaian miniature kanthariskoi from the Artemis Laphria Sanctuary, Kalydon; temp. inv. 1928/2.63 (a), 1928/8.18 (b). National Archaeological Museum, Athens (photos: a: © J. Vanderpool; b: I. Dalla – S. Barfoed © Hellenic Ministry of Culture and Sports/Hellenic Organization of Cultural Resources Development [H.O.C.RE.D.])

certified, but from the preliminary analyses of these small pots, perhaps the Achaian miniatures inspired a potter in a local workshop in Kalydon to attempt to replicate them, which resulted in a few examples with a taller foot and even more knob-like handles than the Achaian ›proto-types‹ (fig. 10)? Future analyses of the Kalydonian fabrics will help to substantiate or dismiss this suggestion. The possible ›Kalydonian imitations‹ do not find parallels in the Thea Sanctuary, to the best of my knowledge, but these possible local miniatures are present both in a deposit found on the Central Acropolis in Kalydon and Aitolian Chalkis, but in very small numbers: only two examples are known from each location[84].

Based on preliminary analyses it is possible that the Achaian squat miniature hydriai have also been found in Lousoi[85]. These and other Achaian miniature shapes from Lousoi further support the idea of travelling dedicants. Perhaps in some cases, such as travelling miniature votives, ›pots

[84] Central Acropolis, Kalydon: Bollen 2011, 482 cat. 323. 324 figs. 257. 360 pl. 47 (Trench Z10b/7); Chalkis, Aitolia: Houby-Nielsen 2020, 305 cat. 817 fig. 171.

[85] I am very grateful to Nora Voß for discussing the miniature pottery from Lousoi with me, personal communication.




10 Achaian krateriskoi and Kalydonian imitation of Achaian krateriskoi from the Artemis Laphria Sanctuary, Kalydon; a–c: Achaian, temp. inv. 1928/6.50, 1928/6.51, 1928/5.6; d. e: Kalydonian imitation, temp. inv. 1928/2.61, 1928/2.59 (photos © J. Vanderpool)

did equal people‹? That the possible Achaian miniature pottery has only been found in the Artemis Laphria Sanctuary and not elsewhere in Kalydon, for instance, the shrine within the city walls on the Central Acropolis, might suggest that these miniatures were used in a specific ritual that took place in the main sanctuary of the city, the Artemis Laphria Sanctuary. The large amount of imported pottery found in the Artemis Laphria Sanctuary in combination with the Achaian miniatures might indicate that, as Søren Dietz has already suggested, the sanctuary was Pan-Aitolian and accommodated visitors from the neighbouring regions[86]. Perhaps the Achaian and Corinthian miniatures were dedicated by a small group of Achaians and Corinthians who came to Kalydon to participate in a festival? The evidence presented here could suggest that the miniature pottery played a specific role during such a festival in the dedication of grain, barley, wheat, and other agricultural first fruits.

Returning to Homer's passage on the Kalydonian boar-hunt mentioned above, the text revealed that First Fruit offerings, »thalysia« (θαλύσια), took place in Kalydon, and scholia suggested that Thalysia (Θαλύσια) was the name of a festival. The passage in the Iliad is the following: »For upon their folk had Artemis of the golden throne sent a plague in wrath that Oeneos offered not to her the first-fruits of the harvest in his rich orchard land; whereas the other gods feasted on hecatombs …« (Homer. Il. 9, 533–536)[87]. In other words, Artemis was neglected offerings whereas the other gods received hecatombs. Whether the hecatomb here refers to the canonical 100 oxen as is known from the famous Panathenaeia is of course uncertain[88], and as Fred S. Naiden has pointed out, a hecatomb could be less than 100 oxen. Athenaios mentioned an instance where a nominal and not genuine hecatomb was offered and therefore Naiden suggested that nominal hecatombs were common[89]. In this connection, Theodora Jim proposed that the reference to a hecatomb

86 Dietz 2011, 133.

87 ... καὶ γὰρ τοῖσι κακὸν χρυσόθρονος Ἄρτεμις ὦρσε χωσαμένη ὅ οἱ οὔ τι θαλύσια γουνῷ ἀλωῆς Οἰνεὺς ῥέξ': ἄλλοι δὲ θεοὶ δαίνυνθ' ἑκατόμβας ... Hom. Il. 9, 533–536 (transl. A. T. Murray).

88 An inscription mentioning payments from the treasury of Athena dating to 410/409 BC, IG I3 375; for the Panathenaia festival, see also Parker 2007, 253–269.

89 Naiden 2015, 263 f.

Table 2 Ancient Greek calendars (the Aitolian month Laphraios highlighted) (Sources: Daux 1932, 321; Samuel 1972, 78; Foxhall 1995, tab. 6, 1; Boutsikas 2007, 102)

| Gregorian | Delphi | Athens | Aitolia |
|---|---|---|---|
| July-August | Appelaios | Hekatombaion | Laphraios |
| August-September | Boukatios | Metageitnion | Panamos |
| September-October | Boathoös | Boedromion | Prokyklios |
| October-November | Heraios | Pyanopsion | Athanaios |
| November-December | Daidaphoros | Maimakterion | Boukatios |
| December-January | Poitropios | Poseideon | Dios |
| January-February | Amalios | Gamelion | Euthyaios |
| February-March | Bysios | Anthesterion | Homoloios |
| March-April | Theoxenios | Elaphebolion | Hermaios |
| April-May | Endispoitropios | Mounychion | Dionysios |
| May-June | Herakleios | Thargelion | Agyeios |
| June-July | Ilaios | Skirophorion | Hippodromios |

suggests that the Thalysia mentioned in this passage consisted of animal sacrifices funded by the profits of the collected harvest, which seems like a plausible suggestion[90].

A Kalydonian harvest festival might have taken place after the harvesting of crops, which in the Attic calendar took place during the months of Thargelion and Skirophorion, that is from May to July[91]. Inscriptions provide the evidence for an Aitolian calendar that George Daux succinctly presented (tab. 2)[92]. According to Alan Samuel this calendar must have been in use during the operation of the Aitolian League and until the league was dissolved at the beginning of the 2nd century BC[93]. The month named Laphraios in the Aitolian calendar corresponds with our months of July and August (the Laphraios month corresponds with the Delphian month Appelaios and the Attic month Hekatombaion, see tab. 2). The Laphraios was thus the month following the months of harvesting. It has been suggested that local versions of Attic agricultural festivals existed[94], and in a region like Aitolia where agricultural products played such an important part of people's sustenance and daily life, it would be logical to conclude that this indeed was the case in Kalydon. Homer's mention of Thalysia (Θαλύσια) might suggest a somewhat organised practice from an early date, but it remains unclear whether such a festival indeed included the burnt sacrifices in honour of the Kalydonian Artemis Laphria in Patras during the Roman period that Pausanias described (Paus. 7, 18, 8–13). It is a possibility that Homer's mention of hecatomb is tentative evidence for a precursor to the Laphria festival as Pausanias described it. Perhaps this festival was held in the month Laphraios, and included rituals of all kinds of First Fruit offerings related to agriculture, including the sacrifices of animals, both wild and domesticated. A Pan-Aitolian festival would have been important for both the economy of Kalydon and the cultural ties that connected the different regions and would presumably have accommodated visitors from near and far.

It is of course extremely difficult to determine ritual practice in detail given the scarce evidence that exists from the excavations in the Artemis Laphria Sanctuary in the 1920–1930s, exactly which role the participants from neighbouring regions coming to Kalydon played, and whether their role differed from the local participants or not. It is possible that the miniature ves-

90 Jim 2011, 118.
91 Foxhall 1995, tab. 6, 1; Boutsikas 2007, 102.
92 Daux 1932, 320–325.
93 Samuel 1972, 78.
94 Foxhall 1995, 103.

sels from the Artemis Laphria Sanctuary were either used to dedicate perishables and/or grain as discussed above, and were used for a single offering by one person, as Kevin Clinton has also suggested for participants in Thesmophoria rituals[95]. A civic calendar from Miletos dating to the last quarter of the 6th century BC lists ingredients for rituals for Dionysos, Apollo, Hera and perhaps Zeus, including barley, wheat, honey, cheese, and other perishables[96]. To Dionysos an ingredient mentioned is garlic cloves (σκόροδα), which suggests that even small types of perishables were important as dedications in large, civic rituals[97]. Similarly, grain, fruit and other perishables could have been offerings made by ›ordinary‹ people, inhabitants from throughout the region of Aitolia, merchants, and/or other travellers in both large civic and smaller everyday rituals involving first fruits[98]. The miniature pottery from Corinth and Patras (as well as the Achaian miniatures in Lousoi, and travelling miniatures from Phlius) could be evidence of such offerings carried out by people coming from afar. This idea is further supported by the lack of Attic miniature pottery in the Artemis Laphria assemblage: only one vessel was found, a black-glazed salt cellar, possibly dating to the 4th century BC[99]. It is possible that people undertook a private pilgrimage from Corinth and Patras, carrying locally produced votives with them, but the Athenian pottery might have made it to Kalydon by other means, perhaps via Naupaktos that was an Athenian garrison in the 5th century BC[100].

## CONCLUDING REMARKS

In summary, I have presented the idea that that miniature pottery was utilised for offerings of various perishable First Fruit offerings (Aparche) during agricultural festivals, and that miniature pottery from Patras and Corinth might reflect participants from these locations. Votive deposits represent clean-up of votives in shrines and sanctuaries at a specific point in time[101], and the large amounts of miniature pottery found in such deposits might directly reflect participants, both the number of participants present during the rituals, but also, in some cases, where the dedicants came from. It is imaginable that the miniature vessels provide a suggestive idea of how many people participated in the rituals, and perhaps even from different layers of society as Xenophon described at Skillous, Tryphylia, although exactly how the number and frequency of participants can be estimated still needs further work. The epigraphical evidence for the Laphraios month in the Aitolian calendar and its position in the yearly cycle may even connect the famous Artemis Laphria ritual to a First Fruit festival in which visiting, regional participants could have partaken. Furthermore, based on the examples of First Fruit offerings related to meals in Homer and Xenophon, it seems plausible that miniature pottery could have been an integral part of this type of Aparche. This Aparche variant related to meals would thus make use of miniature pottery both for civic feasts, but also for lesser private meals, as well as containers used for ›mini‹ libations, a novel idea that provides us with a broader comprehension of these small pots. Future publications of miniature pottery in combination with various analyses of their contents and contexts may further reveal additional secrets held by these small vessels.

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95 Clinton 2009, 245.

96 Inv. IvMiletus 31a–c; Kawerau – Rehm 1914, 162–166; Herda 2006; for a discussion of its date, see Herda 2005, 265–268; for a possible reconstruction of the calendar and its placement, see Herda 2005, 268–272. A new fragment belonging to IvMiletus 31a–c was discovered in 2006 and will be published by A. Herda, personal communication

97 In the commentary for this inscription, it is suggested that garlic was a snack or poor meal, see CGRN 6, l. x-x <http://cgrn.philo.ulg.ac.be/file/6/> (11.01.2021).

98 Jim has argued that theoroi from Thasos carried offerings termed aparché to the god(s) in other sanctuaries based on an inscription, Jim 2014b, however, what this aparché consisted of, which is common when mentioned in inscriptions, is unknown; for this inscription see also Graham 2001, 231–256.

99 This unpublished miniature handleless bowl, temp. inv. 1928/4.7, is a miniature version of a »footed salt cellar«, Sparkes – Talcott 1970, 302 f. nos. 944–947 figs. 9. 22 pl. 34 (375–325 BC).

100 Kallet 2016, 15 f.

101 For a succinct description of votive and sacred deposits, see Patera 2012, 194 f.

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Vicky Vlachou

# INTERPRETING THE POTTERY DEPOSITS FROM THE SPARTAN AMYKLAION

## PROVIDING A FRAMEWORK FOR THE EARLY STAGES OF CULT AND RITUAL*

ABSTRACT

The numerous pottery deposits from the Sanctuary of Apollo Hyakinthos at Amykles provide evidence for the earliest activities at the site, from the Protogeometric down to the late 8th century BC including the construction of the earliest peribolos wall that defined the sacred space. What can pottery reveal about cult and votive practices? Beyond typological and stylistic analysis, other components such as the large quantity and breakage patterns of the pots manifest the regularity of the activities at the site and the increasing number of the participants in them. The good quality of the pottery, its material aspects, the function of particular forms and their potential use as ritual utensils, votive offerings and consumption receptacles provide a view into the various stages of ritual performance. Material remains demonstrate two significant moments in the course of the early history of the sanctuary; the earliest may be placed in the latter half of the 10th century BC and the other in the second half of the 8th century BC. The distribution of the distinctive Lakonian Protogeometric pottery style in deposits from sanctuaries beyond the territory of Sparta, materialize the early connections between the sites of the southern Peloponnese, and presumably also the intra-regional movements of artisans. By the Late Geometric period, chorus performances, athletic competitions, shared consumption and dedication of prestige items outline the ritual practice and performance at the Amyklaion. Festivities at the sanctuary should be linked to the annual festival of the Hyakinthia that is attested from at least the 6th century BC onwards; the early beginnings of the festival may now be considered on archaeological evidence as well.

## INTRODUCTION

The Sanctuary of Apollo Hyakinthos at Amykles near Sparta is located on the west bank of Eurotas, on top of the low hill of Agia Kyriaki. It is marked by its seniority and precedence within the Lakonian territory, providing evidence for cultic activity from around 1200 BC down to the Archaic period, and beyond into Roman times[1]. Material assemblages and particularly the pottery deposits

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1 Demakopoulou 2012; Vlachou 2012; Vlachou 2017. See also, Pettersson 1992, 91–123 (with further bibliography on this issue); Antonaccio 1994, 88. 103.

from the sanctuary area show that EIA ritual activity and performance largely occupied the space of the preceding post-palatial shrine. For a period of more than two centuries, from around the mid-10th to the late 8th century BC ritual activity at Amykles seems to have maintained a hypaethral character. The earliest large-scale construction at the sanctuary may be dated to the late 8th/early 7th century BC, when a large part of the hill was delimited by the erection of the earliest peribolos wall[2]. Comparable operations may be observed in other cult places within the Spartan territory, such as the remodelling of the Sanctuary of Artemis Orthia at Limnai and the foundation of the cult of Menelaos and Helen at the Menelaion. If we consider these operations as the material expressions relating to the new polis institutions, then the Hyakinthia festival, as equally the festival at Orthia, should have been well established in the religious calendar of early Sparta.

Scholars place the cult of Hyakinthos on the hill of Agia Kyriaki much earlier than that of Apollo. First P. Calligas and later on A. Petropoulou suggested a date around the end of the 9th century BC, based on the material evidence from the hill. Miniature clay vessels, namely in the form of aryballoi, hydriae and skyphoi have been taken as ritual utensils and gifts to a heroic cult for Hyakinthos[3]. This interpretation draws comparisons to pottery sets found in tombs and shrines related to heroic cults of the late 8th century BC[4]. The arrival of the cult of Apollo has been partly recognized in the material collected from the early excavations at the sanctuary. One such is the handle of a bronze object inscribed with a name of a certain Δορκονίδα and dated to the very end of the 7th century BC[5].

By the Late Archaic period, myth, texts and the architectural remains of the famous »Throne of Apollonos en Amyklai« [Ἀπόλλων(ος) ἐν Ἀμυκλαίοι] (IG V 1.823) that dominated the sanctuary area provide a rich account of the cult and of the Hyakinthia festival honoured annually at the site. Mythological narrations explain that Hyakinthos, a handsome youth, was accidentally killed by the discus of Apollo; he was thus worshipped as a hero thereafter[6]. Euripides mentioned the Pannychis by the Eurotas, founded by Apollo in memory of Hyakinthos that comprised female choruses and animal sacrifices[7]. Herodotus made a reference to the Hyakinthia in connection with the Athenian embassy seeking military aid from Sparta against the Persians at 479 BC[8]. Yet, the components of the cult of the ›divine pair‹, that of Apollo and Hyakinthos at Amykles, have been largely considered as having been shaped at an earlier date before the late 6th century BC and prior to the popularity later accruing to the sanctuary and its festival[9].

The earliest mention of the Hyakinthia links the festival to the conspiracy of the Partheniai, an event that led to the foundation of Taras[10]. The signal for the attack was given during the athletic contest (αγών) and in the presence of all the Spartans, who participated at the festivities. Although the historicity of the event remains a matter of individual opinion, the foundation of the only Spartan colony has been traditionally dated to the late 8th century BC (706 BC). Recent archaeological finds from the sanctuary area have thrown some light on the early stages of the cult and

2 Vlizos 2009; Vlizos 2012; Vlizos 2018; Vlizos 2019.

3 Calligas 1992, 46; Petropoulou 2012, 153 f.; Petropoulou 2015.

4 According to Petropoulou (2012, 157 f. endnote 7) »the hydrias were perhaps used for the preparation of the bath often found in connection with hero cults«. This is largely based on Hägg 1987; Ekroth 2007, 102.

5 SEG 11 (1954), 129 no. 689; Petropoulou 2012.

6 The earliest mention of the myth is given in fragment 171 of the »Catalogue of the Women«, largely dated to the 6th cent. BC. See also Moreno Conde 2000; Moreno Conde 2008, 9–11.

7 Eur. Hel. 1465–1474. See also Dietrich 1975; Calame 2001, 181 f.; Moreno Conde 2008, 13 f.; Petropoulou 2012; Petropoulou 2015.

8 Moreno Conde 2008, 21; Petropoulou 2015.

9 Nilsson (1906, 130) was among the first to note that the festival at Amykles was older than the cult of Apollo at the site; West 1985, 156, 95 no. 3; 180; Petropoulou 2012.

10 Strab. 6, 3, 2 = FGrHist 555 F 13 [from Antiochus' work Περί Ιταλίας (Πολιτεῖαι)]. For a discussion, see Kõiv 2003, 108–118; Nafissi 1999, 254–258; Cartledge 2002, 106 f.; Luraghi 2003, 115–117; Kennell 2010, 35 f.; Petropoulou 2012, 153 f.

ritual at the Spartan Amyklaion[11]. Ritual practice and performance were progressively shaped by the communities existing in the wider area, and negotiated through participation and elite display. This paper considers the early ritual activity and performance at the Amyklaion hill by assessing the material remains and in particular the numerous pottery deposits investigated during the most recent work at the site. Pottery dating from the 10th to the late 8th century BC serves as an indicator for identifying the activities and performance within a cultic context on the hill.

## THE POTTERY DEPOSITS FROM THE AMYKLAION AND THE DATING OF THE LAKONIAN POTTERY: STATE OF SCHOLARSHIP

Pottery from the Spartan Amyklaion represents up to now the largest corpus of EIA material in the wider region of Lakonia. The earliest excavations were conducted by Ch. Tsountas in 1890, followed by Furtwängler in 1904, and then by Furtwängler and Fiechter in 1907[12]. Pottery deposits from the area of the later altar of the sanctuary were contained in a layer of black fatty earth first investigated by Tsountas[13]. The composition of these deposits and the presence of animal bones and burnt remains is typical in Greek sanctuaries, representing both burnt sacrificial remains and residues from the consumption of food and drink[14]. There are only two published pots from these early excavations at the Amyklaion, both exhibited today in the National Archaeological Museum at Athens. They were both found in the area around the altar, along with numerous metal and terracotta finds[15]. Yet it was only after the works by E. Buschor and W. von Massow in 1925 that the pottery of the PG style was discussed separately from that of the Geometric period and a number of mostly fragmentary pots were illustrated[16]. Pottery deposits were investigated largely to the south of the later altar and mainly along the Archaic peribolos wall. The dating, however, of the material remained tentative, as the largest part came mainly from unstratified deposits within the sanctuary area. The PG material was related to the early phases of the sanctuary and was considered as used for liquid offerings of milk and oil, and equally as utensils for the sacrifice left behind by the participants after the ritual activities. Unlike the distinctive PG style, the material of the following Geometric period was compared to the Attic series, thus providing a chronological framework for the Amyklaian series.

A synthesis and classification of the available material from Sparta was first offered by V. R. d'A. Desborough, followed by P. Cartledge and completed by W. Coulson[17]. Desborough characterizes the distinctive PG style as the ›Amyklaian style‹ and specified that this was represented at Amykles and equally at Sparta. He further suggested a chronological framework for the production and use of the PG style from the 11th down to the 9th century BC, largely in accordance

11 Vlachou 2017; Vlizos 2017; Vlachou 2018.

12 Tsountas 1892; Skias 1907, 104–107; Fiechter 1918; Buschor – von Massow 1927; for a short history of the excavations in the sanctuary area, see Demakopoulou 1982, 29–42; Calligas 1992, 31–33; Pettersson 1992, 92–99; Moreno Conde 2008, 61–69; Vlizos 2009, 11–13; Vlizos 2012.

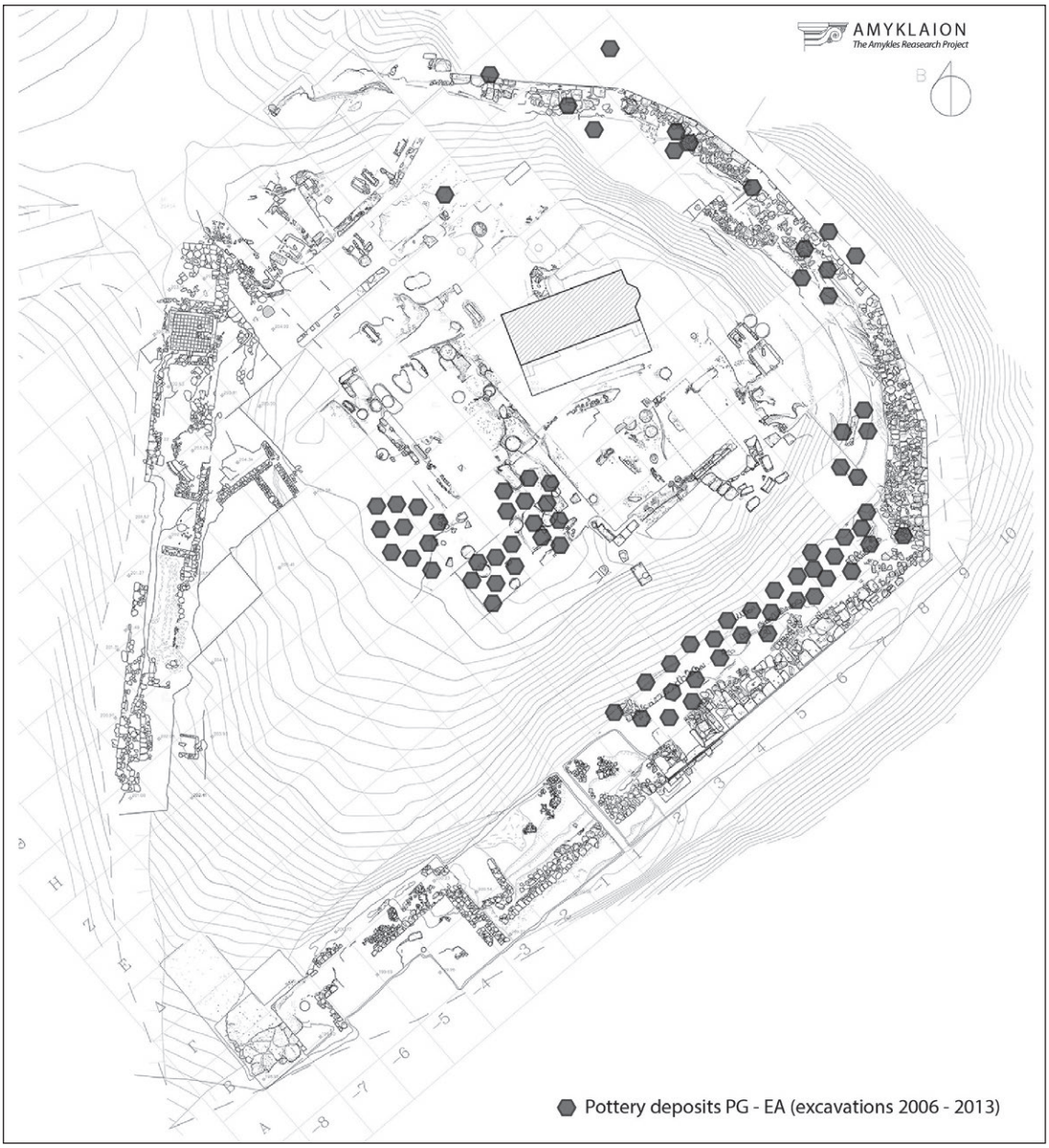
13 Tsountas 1892, 1–26. The deposition of the LBA and EIA material was marked in certain areas by the existence of a clay layer, on top of which later material was deposited. Moreno Conde 2008, 66 and n. 239, has associated this situation with work undertaken for the construction of the Throne in the Archaic period, and it has been used as an argument in favour of the continuity of ritual activity in the same area from the Mycenaean to the Geometric period.

14 Sourvinou-Inwood 1993; Morgan 1999, 319–321; Ekroth 2017.

15 For the two pyxides, see Tsountas 1892, pl. 4, 1–2; Kaltsas 2006, 61 f. nos. 12. 13. Metal finds from the Amyklaion include an iron sword, two more iron blades, an iron knife, bronze earrings and finger-rings, bronze hair fasteners, bronze pins, small bronze double axes, parts of bronze tripods, a small bronze lyre, and a number of bronze and terracotta animal figurines, among others. For the metal finds, see Calligas 1992, 34–39 and figs. 13. 14. Also, Buschor – von Massow 1927, 34–37 and fig. 17, Beil. 7. 8. For the bronze figurines once serving as attachments to the handles of bronze tripods recovered from the recent excavations on the hill, see Vlizos 2017, 79 f. 83 f. 86. 88. For parallels to the bronze jewellery, see Raftopoulou 1998, 133 f. figs. 12. 15. A large number of the metal finds from the Amyklaion have been dated to the late 10th and the mid-8th cent. BC.

16 Buschor – von Massow 1927, 12–15. 24–53 pls. 2–12.

17 Desborough 1952, 283–290; Coulson 1985; Coulson 1988; Coulson 1991; Cartledge 2002, 70–80.




1 Topographical plan after the 2019 excavations at the Amyklaion (© Th. Bilis – M. Magnisali, The Amykles Research Project). Marked is the location of the pottery deposits discussed in the text, identified and excavated between 2006 and 2013

with the early impression expressed by Furtwängler of the long duration of this individual style in Lakonia. Coulson provided extensive catalogues of the pieces found at Amykles up until 1925, and from the Sanctuary of Artemis Orthia, the Acropolis of Sparta, and the Heroon. Along with the pieces stored in the storerooms of the Sparta Archaeological Museum, he also considered the published fragments from the British and German collections (at the Ashmolean, at Cambridge, at Mainz, and at Heidelberg) and those in the collections in Greece of the American School at Athens, the British School at Athens and the German Archaeological Institute. In his pioneer publication of the »Dark Age Pottery of Sparta« in 1985, Coulson counted 1,300 pieces in all major collections and he actually published one third of those, approximately 500 pieces, that formed his typology (shape and decoration) of the Spartan ›Dark Age‹ pottery.

Coulson was also the first to suggest the evolution of certain types of the PG pottery style directly from the Mycenaean repertory, and thus to demonstrate a certain continuity of shapes and deco-

rations in the local pottery production[18]. His observations draw equally on comparable examples from the concurrent pottery production of Messenia. The presence of stemmed kylikes with ribbed stems, and equally the preference for the kantharos and the latticed decoration have been discussed in the context of the ceramic style of the West Greek koiné[19]. Freehand, standing packed triangles and cross-hatching are among the commonest motifs of PG Spartan pottery, already apparent in the decoration of the latest series of the figurines offered to the post-palatial shrine[20]. Yet the shiny black paint, the grooves and ridges used in separating patterned registers (or not), as well as the density of the typically superimposed and patterned bands, reveal the individuality of the PG Lakonian style.

During the last decades, work undertaken by the Ephorate of Antiquities has provided additional evidence concerning the PG and Geometric pottery production in the wider area of Sparta. An important site was investigated further to the south in the plain and along the Eurotas, in between the modern villages of Peristeri/Solaki and Filisi. The chamber tombs that have been identified and partly investigated in this area date from LH IIIA to LH IIIC, and until the SM/EPG in certain cases, thus providing evidence for the much-discussed transition period in this area and the continuity of the occupation into the EIA[21]. The settlement of the same period extended over some distance close to the modern village of Filisi, where a settlement of the EIA was also identified as well as a pithos burial of the Geometric period[22]. In the area of the modern village of Amykles, a small group of twelve PG tombs was identified and excavated by E. Zavvou[23]. The published pottery, a kantharos from grave 7 and a trefoil oinochoe from grave 14 belong to the types commonly found in the Amyklaian deposits.

The rich material from the Sanctuary of Artemis Orthia formed the basis for the classification of the sequence of the Lakonian Geometric pottery devised by J. P. Droop and E. A. Lane[24]. The very fragmentary material from the Amyklaion, as well as that from the Sanctuary of Athena Chalkioikos on the acropolis, provided only ancillary information. J. N. Coldstream noted in his treatment of the Lakonian style, »no regional Geometric style is enshrouded in deeper obscurity than Lakonian«[25]. He placed the beginning of the Geometric style after the mid-9th century BC[26]. I. Margreiter was the first to present the continuous development of the Lakonian pottery style from the Protogeometric down to the Archaic period[27]. Among the 347 pieces in her catalogue representing the PG and Geometric material, the pottery from the Amyklaion represents only a small part, not exceeding a total of 70 pieces. For the dating of the Lakonian pottery, she followed earlier studies in placing the beginning of the PG style at Sparta in the late 10th century and the beginning of the Geometric style late in the 9th century BC.

New evidence from the ongoing excavations at the sanctuary as part of »The Amykles Research Project« offered the opportunity to revisit the material afresh. Pottery deposits were mainly identified along the newly discovered LG or Early Archaic peribolos wall (fig. 1). These deposits

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18 A provenance from the preceding Mycenaean repertory has been demonstrated for several Lakonian shapes, such as the carinated skyphos (from the Mycenaean stemmed bowls), the flaring skyphos (from the Mycenaean conical bowl), the krater (from the Late Mycenaean deep bowls with horizontal handles) and certain types of cups: see Coulson 1985, 38 f. 44 f. 57 f. 61–66; Coulson 1986, 35–48. 55 f.; Coulson 1988; for the Lakonian isolation as a reason for the late occurrence of the Protogeometric style in the region, see Desborough 1952, 284. 287 f.; Cartledge 2002, 70–80; contra Pettersson 1992, 97–100.

19 EIA pottery from Lakonia has been discussed within the ceramic style of the West Greek koiné, a broad category of pottery, which typically includes Achaia, Elis, Arkadia, Messenia, Aitolia and the Ionian islands. For a recent discussion, see Voyatzis 2017 (with further bibliography).

20 Demakopoulou 1982, pls. 17, 4; 21, 56; 22, 59. 60; 28, 70; 30, 72; Demakopoulou 2012, 110 f. for the matter of continuity from the LBA to the EIA shrine.

21 Themos 2001–2004, 286 f.; Themos 2007, 460–463.

22 Zavvou – Themos 1999, 187; Zavvou 2001–2004, 25.

23 Zavvou 1996.

24 Droop 1929, 52–68; Lane 1933/1934, 99–115.

25 Coldstream 1968, 212.

26 Coldstream 1968, 212–219.

27 Margreiter 1988.

contained mixed pottery dating from the LBA to the Early and the Late Archaic periods, most probably representing the result of at least two large cleaning operations on the hill in relation to the construction of the two successive enclosure walls, in the late 8th/early 7th century BC and again in the Late Archaic period. Of interest to this discussion are the stratigraphical trenches that were made during the 2019 operations on the hill, in contact with the south wall of the Geometric peribolos. LBA pottery was found with PG and Geometric pottery in the lowest layers, while higher layers contained pottery dated down to the late Archaic period[28]. Joining fragments from the earlier excavations on the hill and the most recent works have been also been identified, thus confirming the widespread disturbances caused by the re-organisation and the large-scale constructions on the hill in the Late Archaic period.

## THE EARLY BEGINNINGS: PROTOGEOMETRIC POTTERY AND RITUAL ACTIVITY

The earliest evidence of cultic activity has been dated to the late 13th century BC in a time of profound changes in the human and cultural landscape of the wider area of Sparta and Lakonia, marked by the final abandonment of the Mycenaean installations at Agios Vasileios, most probably the largest administrative centre of that time in Lakonia, and at the Menelaion[29]. The importance of this post-palatial hypaethral cult on the hill of Agia Kyriaki is reflected in the associated material remains. Large terracotta figures, numerous small figurines of the Psi and Phi types, small handmade animal figurines and larger wheel-made bull figures, as well as quantities of nicely decorated pottery of a mainly sympotic character represent the visible remains of ritual activity on the hill; these have been considered within the context of regular gatherings, most probably as part of a festival with a mainly regional character. The site is among the few sacred places in the Peloponnese where ritual activity was maintained in the EIA and intensified around the middle of the 10th century BC. K. Demakopoulou has argued for the ritual continuity at the LBA shrine throughout the 11th and possibly even the very beginning of the 10th century BC, although at a much lesser frequency, on the basis of the material deposited.



2 Fragment of a skyphos decorated in a SM/EPG style from the Amyklaion (photo V. Vlachou)

On the other hand, the large corpus of material found on the hill points to an apparent increase in the number of visitors, and possibly the rate of visitation during the latter half of the 10th century BC. Although the evidence from the first half of the 10th century BC is still weak, the presence of a few fragments that seem related to the MPG style elsewhere leave no doubt that activity progressively resumed well before the middle of the 10th century BC[30]. Consequently, it is possible on material evidence to propose a slight revision of the date previously suggested for the beginning of the EIA activity and thus to narrow the much-discussed

28 Vlizos 2019. This has been equally stressed by Buschor after the excavation and uncovering of the Archaic peribolos wall. Buschor – von Massow 1927, 10. 32 f.

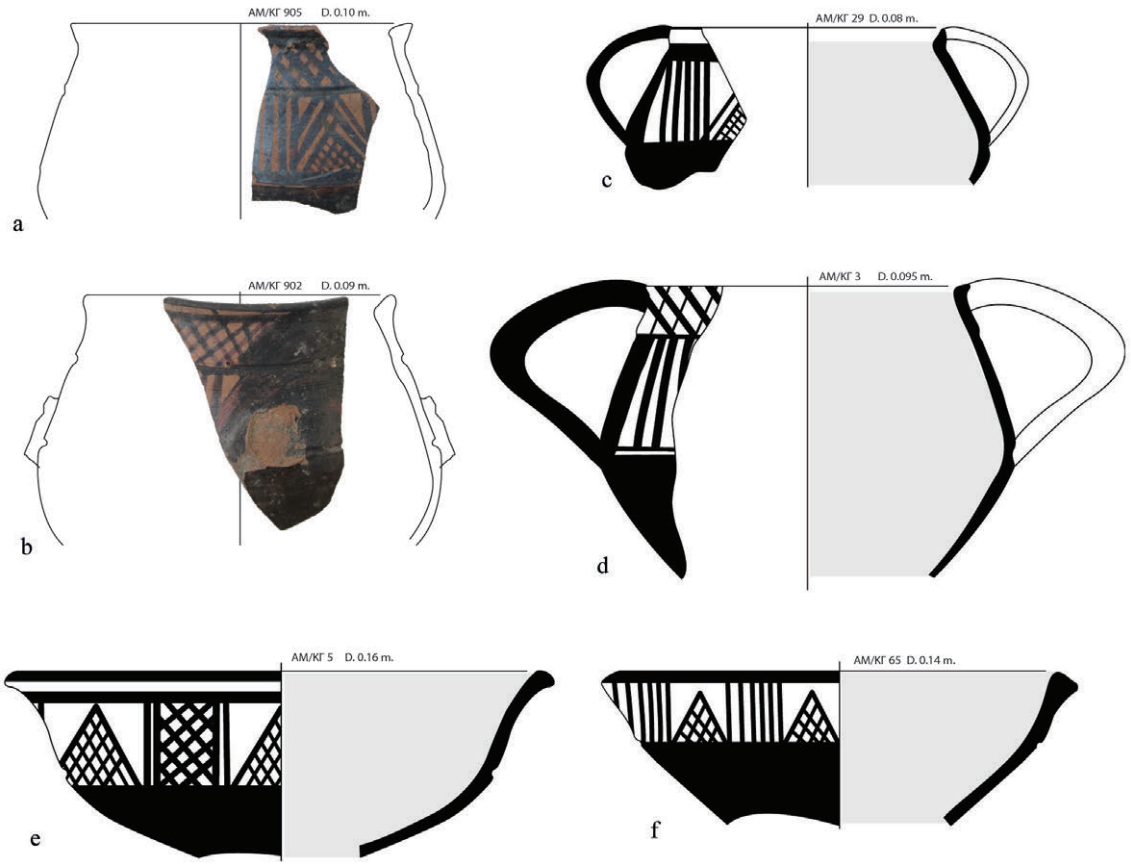
29 Demakopoulou 1982, 80 f.; Wright 1994, 65; Pettersson 1992, 92–99; Demakopoulou 2009; Demakopoulou 2012.

30 Vlachou 2012, 114 fig. 1 a. b; Vlachou 2018, 100 f. fig. 4, 3 a. b.




3 A: Selection of PG skyphos fragments decorated with triangles and latticed motifs from the Amyklaion; B: a–d Selection of PG fragments with painted and incised decoration, inv. AM/KΓ 13 (a), AM/KΓ 161 (b), AM/KΓ 2640.8 (c), AM/KΓ 1058 (d) (photo V. Vlachou)

chronological gap of the transitional period at the site. A single fragment of a skyphos is from a unique piece at Amykles, decorated with zigzags and hand-drawn semi-circles on a dark ground (fig. 2). Comparable although not identical pots can be seen from Athens, Kerameikos




4 Drawings of the characteristic PG open shapes: skyphoi (a. b), kantharoi (c. d) and lekanides (e. r) (photo V. Vlachou)

PG grave 22 and PG grave 4 dated to the EPG[31]. Among the earliest pieces, those that combine latticed patterns (triangles, lozenges and panels) resemble the EPG/MPG style of the Argolid, as well as the Protogeometric style of Ithaka (fig. 3)[32]. The latter are distinguished by their decoration of rectilinear motifs and plastic incised rings; they date to the Polis II/Aetos I phase[33]. This largely corresponds to Coulson's DA II phase for Messenia and Lakonia[34]. Although extremely fragmentary, the specimens from the Amyklaion mark the beginnings of what becomes a continuous and distinctive pottery tradition in this area.

Pottery of the PG style is quite homogeneous. It is easily distinguishable by the hard-fired fabric that varies in colour from light brown to red and the good quality of the black paint that gives a metallic shiny impression, possibly due to the high firing conditions[35]. It should be noted however that not all pieces possess this metallic sheen to the black paint; some may be distinguished macroscopically by the clay, that is usually lighter and buff in colour and possibly indicates a different

31 Kübler 1943, pls. 3 inv. 924; 4 inv. 921. 922; Kraiker – Kübler 1939, pl. 63 inv. 554.

32 The best parallels are from the Asine material, see Wells 1983.

33 Heurtley – Lorimer 1932/1933, 43 fig. 26 b and pl. 3; Souyoudzoglou-Haywood 1999, 190 no. 112; 191 no. 143 and pls. 41 V117; 42 b. Beyond decoration techniques, both closed and open shapes are comparable. See also a krater from Kalapodi, Jacob-Felsch 1996, 32 no. 453 and pl. 47.

34 This phase covers approximately a century, from the early 10th to the 1st quarter of the 9th cent. BC (995/990–875 BC). For a discussion, see Souyoudzoglou-Haywood 1999, 142 f. The Amyklaian material however cannot be dated before the 2nd quarter of the 10th cent. BC Also, Coulson 1985; Coulson 1986.

35 For chemical analysis of the Protogeometric pottery from Amykles and Tegea and a discussion of the results, see Fenn – Ponting – Voyatzis 2014, 571–584.



5 Fragmentary lekanis from the Amyklaion, inv. AM/ΚΓ 267 (photo V. Vlachou)

production centre, although not necessarily one outside of Sparta. PG pottery lacks any trace of slip; the surface of the vessels is very well polished. The production techniques and firing of this class of pottery bear clear witness to the high degree of specialization involved, and thus point to the activity of some of the craftsmen and workshops installed in this area.

The fineware assemblage demonstrates a consistently high presence of small- and medium-sized open vessels that should have served as the basic equipment for the consumption of food, drink and presumably also for libations. The commonest shapes in the pottery deposits are four in number: the carinated skyphos, with a rim diameter that does not exceed 0.10 m and a stemmed foot (fig. 4 a. b); the kantharos that largely follows the shape of the skyphos, thus making the distinction between the two quite difficult (fig. 4 c. d); the one-handled cup, solidly painted inside and out; and a variant that is characterized by a shallower profile, much wider at the rim and with a lip that overhangs the body. This type is better described here as a lekanis, as it is usually equipped with two horizontal handles and a stemmed foot (fig. 4 e. f). The decoration of the surface is organized in single or successive patterned zones repeating a small repertory of linear patterns frequently latticed. The introduction of concentric circles seems a slightly later addition, possibly in the late 10th and through the 9th century BC (fig. 5). All types have black glazed variants, covered in a metallic and shiny glaze inside and out; grooves are consistently added immediately below the lip and around the belly[36].

Large open vessels are scarce and their greatly fragmentary state does not allow a systematic study of their profile. The range of the types is possibly connected to the range of their functions, either as containers of liquids or other materials. Different types coexist; commonest is the type with almost straight walls, close to the shape of the smaller bowls[37]. The diameter of largest specimens ranges between 0.30 and 0.48 m. Whether all these had a function as kraters for the drinking carried out at the site, or served as containers of some kind is impossible to say. In any case they provide some evidence as to the quantity of the provisions during the rituals on the hill.

Large amphorae and large vessels for storing and carrying greater quantities of food and drink are entirely absent[38]. There are only a few sherds possibly from oinochoae or hydriae. On the

36 Coulson 1985, 34–58 Types A–L. P–R. For the new finds from the Amyklaion, see Vlachou 2012; Vlachou 2018.

37 Vlachou 2012, 115; Vlachou 2018, 104.

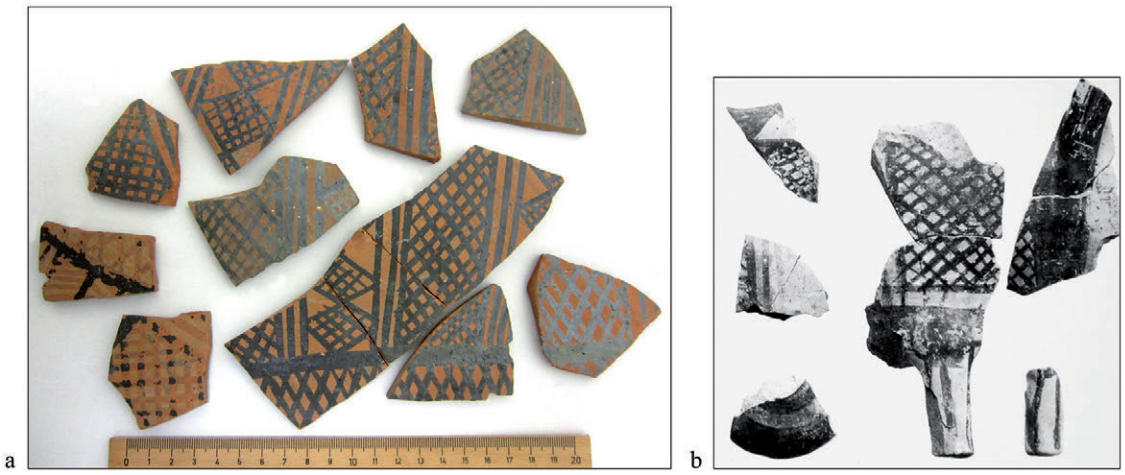
38 Cf. the paucity of large closed vessels in other early sanctuaries; Isthmia: Morgan 1999, 392 f. Olympia: Eder 2009, 205. Kalapodi: Nitsche 1987, 35–49; Felsch 1980, 47–54.




6 Selection of PG small closed shapes: trefoil oinochoae and lekythoi (a. b. e), oinochoe (c), lekythos-oinochoe inv. AM/ΚΓ 294 (d) (photo V. Vlachou)

contrary, small pouring vessels, namely small hydriae, small trefoil oinochoae and lekythoi are common (fig. 6)[39]. Although all specimens are extremely fragmentary, horizontal bands are characteristic on the necks of small trefoil oinochoae and lekythoi. On the shoulder latticed motifs are preferred, while paneled decoration continues well into the 9th century BC. The earliest mention of a lekythos can be found in the Homeric epics, where a golden lekythos contained olive oil and served for the anointment of the skin after a bath[40]. Oil containers such as lekythoi were commonly buried or burnt with the dead body, and equally used for the anointment of the skin of the living[41]. As such, they represent one of the commonest burial offerings in PG tombs, although there are no published pieces from the burial context of Sparta so far. Hydriae served as water containers, and when found in tombs or cultic contexts they have been associated with bathing, before a wedding and as part of the care of the dead body before the funeral. Miniature hydriae are found in numbers in sanctuaries associated with female donors and wedding rituals[42]. Most pieces though date from the late 8th to the 6th century BC, that is, much later than the Amyklaian specimens. All three shapes could be related to libation rituals and have been deposited as gifts at this early cult place along with their contents. Lekythoi-oinochoae with a squat profile continue in

39 Coulson 1985, 60–62.
40 Hom. Od. 6, 79. 215.
41 Kurtz 1984.
42 Argos: Waldstein 1902, 100 f.; Amandry – Caskey (1952, 175. 197 f.) reported around 700 miniature hydriae mostly of local production. Eretria: Huber 2003, 48–63. 116–120; Huber 2013. Marathon, Attica: Vlachou 2020.



7 a: Fragmentary four-sided pyxis from the Amyklaion inv. AM/KΓ 1000 photo V. Vlachou); b: Fragmentary pyxis from Athens Kerameikos (from: Bohen 1988, pl. 1)

the 9th and early 8th century BC[43], while their function seems replaced only after the middle of the 8th century BC by the aryballos. The earliest Corinthian specimens are very fragmentary, yet they introduce a continuous series, of both fine wheel-made examples and miniature handmade ones down to the Archaic and Classical periods. Such continuities in the use of particular shapes with specific functions must be influenced by the aspects of the rituals performed at the site already from an early period.

A new shape that may be reconstructed from the fragmentary pottery deposits is the tripod pyxis resembling more a four-sided terracotta box with slightly convex profiles (fig. 7 a). The distribution of the type in the Greek mainland during the PG period is limited, with a few examples known from Argos and Tiryns dated to the LPG[44], and also a fragmentary example from Asine, associated with phase 1 or 4 of the Karmaniola settlement[45]. The Amyklaian specimen seems to follow the Argive examples in its shape and use of cross-hatching for the decoration of the surface. If we consider the pyxis as a container of some kind, then it should be considered as an offering in the early cult place, along with other artefacts equally represented such as small painted whorls, bronze and terracotta figurines, and bronze accessories also dating from the LPG. The connections between Sparta and Messenia in the pottery styles have been described in detail by Coulson. Besides the material from Nichoria, the material published from Kaphirio, close to the modern town of Longa on the eastern part of the Messenian Gulf, is comparable to that from the Amyklaion. The pottery has been dated by Coulson to his DA II and DA II/III phases, largely covering the period from the end of the second quarter of the 10th to the late 9th century BC[46].

The majority of the pottery retained the sharpness of their broken edges, indicating that they were deliberately broken and left behind by the participants to the rituals. Indeed, several joins exist between the fragments in the deposits indicating that these did not suffer multiple re-depositions[47]. The local character of the material and the standardization of the sets destined for consumption could reflect a shared social status and identity of the participants at these early activities. In fact, the

43 For the shape and decoration, see Courbin 1966, pl. 23 inv. C. 2482–2483 (EG II), and C. 832 (MG I).
44 Lemos 2002, 79; Argos: Roux 1957, 653–655 fig. 30 (pyxis II 539); Tiryns: Aupert 1975, 615 fig. 56.
45 Wells 1983, 105 f. 256 fig. 194, 761.
46 Coulson 1986, 37–48.
47 See also Isthmia, Morgan 1999, 323 f.

scarcity of imported wares and the rarity of clear external influences in the material remains should proclaim the regional, and possibly also the exclusive, character of the activities on the hill.

## THE WIDER PROTOGEOMETRIC CONTEXT: SPARTA AND BEYOND

PG pottery, although in much smaller quantities, has been identified at the most important cult places of the Spartan territory, unfortunately in disturbed contexts: at the acropolis, the Heroon and the Sanctuary of Artemis Orthia[48]. The published fragments belong mainly to small open vessels demonstrating once more the importance of communal drinking in the consolidation of ritual activity in early cult places. PG pottery has been also reported from the area of Anthochori, further to the south of Sparta on the west side of the Eurotas Plain; a sanctuary has been identified in this area, later dedicated to the cult of Zeus Messapeus[49].

Beyond the territory of Sparta, the presence of Lakonian PG pottery at Asine is of particular importance for the dating of its successive phases. B. Wells associated the Lakonian wares with the earliest phase of the settlement at Karmaniola (phase 1)[50]. Among the earliest decorative patterns, assigned by Wells to phases I and II, are open shapes decorated with the distinctive latticed patterns (triangles, lozenges, chains of lozenges), also found in the Amyklaian deposits. These however do not seem to antedate the MPG on stylistic criteria. It is thus possible that the earliest Lakonian material from Asine phases I and II corresponds to the MPG material from the Amyklaion, largely dated to the second quarter of the 10th century BC. The earliest imported sherds to the Amyklaion from the Argolid, presumably from Asine, belong largely to the same period, MPG/LPG. At least two fragmentary large skyphoi with deep profiles are decorated with groups of concentric circles; in shape, decoration and fabric they clearly differ from that of the local vessels[51]. It is possible that contacts with Asine were made through the port of Vrasies, where Lakonian PG pottery has also been identified[52].

PG sherds of the ›Amyklaian style‹ have been identified at Tegea, inside the deposit revealed under the pronaos of the later 4th century BC temple and below the metal workshop of the late 8th century BC in the same area[53]. According to the dating of the successive depositions in the bothros from the temple, Lakonian pottery was present in the lowest level (B-8b) dated to the second quarter of the 10th century BC (LPG); numerous sherds were contained in levels B-3 to B-7 that covered the 9th and the early 8th centuries BC (EG II–MG II)[54]. The combined evidence from the stratified contexts at Asine and Tegea may provide a framework for the development of the PG Lakonian pottery[55]. An interesting feature is the wide distribution of the Lakonian PG style in Arkadia, namely found in sanctuary deposits. In addition to Tegea, a large number of sherds has been identified by M. Voyatzis at the peak sanctuary of Zeus on Mount Lykaion[56], and also in the

48 Acropolis: Droop 1926/1927, 50–55; Coulson 1985, 30 n. 14. Heroon: Wace 1905/1906, 288–294; Coldstream 1968, pl. 46 b. c. Sanctuary of Artemis Orthia: Droop 1929, 60–63. 65 and fig. 39 a. b. For a discussion, see Coulson 1985, 30–33. Coulson counted 31 sherds and two almost entire vessels in the storerooms of the Sparta Museum that he lists with their inventory numbers and their exact place in the museum.

49 Zavvou 2009, 29–31 figs. 4. 7.

50 Wells 1983, 19. 64. 83; Coldstream 1985; Langdon 1985.

51 The fragmentary skyphos from the Heroon seems of Argive inspiration and demonstrates early contacts between the two areas: Wells 1983, 122; Desborough 1952, 289.

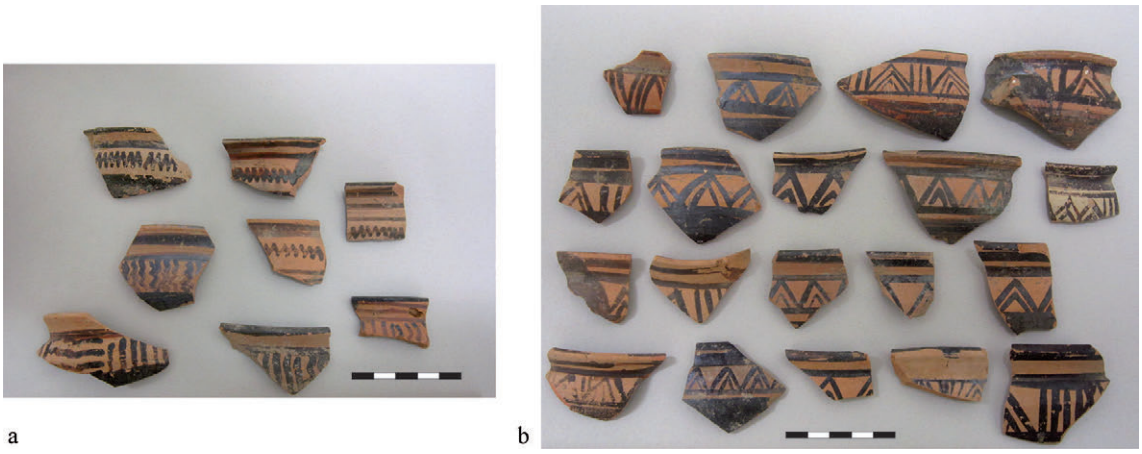
52 Cave Sitzas: Faklaris 1990, 159–169 pl. 72 c. d. For Prasies or Vrasies: Faklaris 1990, 129–137. The published sherds do not seem to antedate the LPG.

53 Voyatzis 1990, 269–273; Voyatzis 2014, 224–258. 571–584.

54 Voyatzis 2014, 230 f. 358 f.

55 Characteristic types, such as the carinated skyphos with grooves at the belly and decorated with a hatched framed triangle, appear in levels B-7 at Tegea and at phase III at Asine. Cf. Voyatzis 2014, 234. 269 nos. C-LacPG 41 and 44, with Wells 1983, 247 fig. 188 no. 692.

56 Voyatzis 2017; Voyatzis 2019.



a b

8 a. b: Selection of EG and MG fragmentary skyphoi from the Amyklaion (photos V. Vlachou)

area of Asea at the Sanctuary of Agios Elias[57]. Both sites have revealed a nearly unbroken chain of ritual activity and cult practice from the LBA to the EIA and onwards. Chemical analysis of the PG Lakonian pottery from Tegea has clearly shown that this differed from local PG and Geometric pottery, and originated from somewhere in Lakonia. As many scholars have noted, the carinations, grooves, ridges and shiny metallic glaze of the Lakonian PG pottery recalls metalware. Could this distribution of the pottery actually be related to the mobility and operation of artisans, producing metal artefacts and pottery containers for the participants in the cult and rituals at the regional sanctuaries in the late 10th and 9th century BC?

## POTTERY AND CULT ACTIVITY DURING THE GEOMETRIC PERIOD

New shapes and decorative patterns entered the Amyklaian repertory in the course of the 9th century BC. Skyphoi and cups demonstrate a low vertical or slightly off-set lip, shallow body with accentuated shoulders, and a low ring foot; they seem to draw their shape from the concurrent EG and MG styles of the Argolid, Corinth and Attica. Yet their decoration with superimposed triangles derives from the local PG repertory, thus revealing a continuity in the strong local tradition (fig. 8 a. b)[58]. In addition, horizontal parallel lines or single zigzags, horizontal lozenge chains, meanders with diagonal hatching, and vertical bars all represent common alternatives. Their popularity continues into the LG period. Sets of concentric circles that originate in the LPG repertory continue on in the decoration of open and closed shapes throughout the Geometric period. Likewise, the few fragmentary pyxides follow the PG style for the decoration of the surface; their manufacture and firing, resulting in this shiny almost metallic effect of the black glaze, equally points to the potting tradition of the Protogeometric. Although all specimens from Amykles are much fragmented, they may be dated to the early 9th century BC, following the Argive examples[59]. Lakonian pyxides of largely the same type as the specimens from the Amyklaion have been published for the deposits at Tegea; these seem to cover the 9th century BC[60].

Around the middle of the 8th century BC, the pottery found at the sanctuary demonstrates a significant shift from the PG tradition, under the growing influence of the Argive and to a lesser degree

57 Forsén – Forsén – Østby 1999. Lakonian PG fragments and equally some earlier LH III sherds and small finds have been associated with an early cult place on Agios Elias, centred around an ash altar that according to the excavators remained in use till the Late Archaic period and possibly later still.

58 Buschor – von Massow 1927, pl. 3, 19; Margreiter 1988, pl. 9, 99–103; Vlachou 2012, fig. 3.

59 Courbin 1966, pl. 77; Coldstream 1968, 114. 116 pls. 22 e. f; 23 h; 25 d; Nitsche 1987, 44. 45 fig. 62, 2.

60 Voyatzis 2014, 240 f. 255 fig. 24; 265. 266 nos. C-EG 76–81; 376 pl. 15.



9 Selection of fragments from the tall lips of open vessels dated to the LG from the Amyklaion (photo V. Vlachou)

of Corinthian pottery styles[61]. New pottery shapes and a variety of decorative motifs mark the beginning of the LG, most of which continue into the Early Archaic period. Pottery manufacturing adopts new techniques, such as the presence of a thick light-coloured slip that is now applied on the surface of most vessels (fig. 9). The characteristic carinated forms of the PG tradition are almost completely absent, while the existence of a substantial number of different fabrics may be taken as an argument for the existence of more pottery workshops active in the immediate area and possibly beyond that. The black shiny glaze is still to be found throughout the LG period.

Unfortunately, the material is extremely fragmentary and individual shapes are not easily discernible. There is a substantial number of tall lips, mostly belonging to skyphoi and kantharoi that could be taken as representing an early stage in the evolution of the Lakonian lakaina, one of the most typical shapes of the Archaic period (fig. 9)[62]. A distinctive feature of the LG shapes is a single groove just below the rim. The lower part of the body cannot be safely restored, although it seems that the walls turn inwards, more or less abruptly just below the handles[63]. The profile seems to develop entirely in the local style, independent from parallel forms in Attica and Boiotia during the LG period. An equally new shape in the LG pottery repertory is the one-handled deep cylindrical cup; the walls are almost vertical, slightly converging towards the low disc base, and a vertical loop handle is attached at the lip and the middle of the body (fig. 10 a)[64]. The type persists into the Early Archaic period, usually with an off-set lip, flat base and a smaller loop handle[65].

A quite distinctive shape in the LG repertory – with tall vertical walls tapering to a low disc base – has been generally described as a cup or a pyxis. There are two almost entire specimens

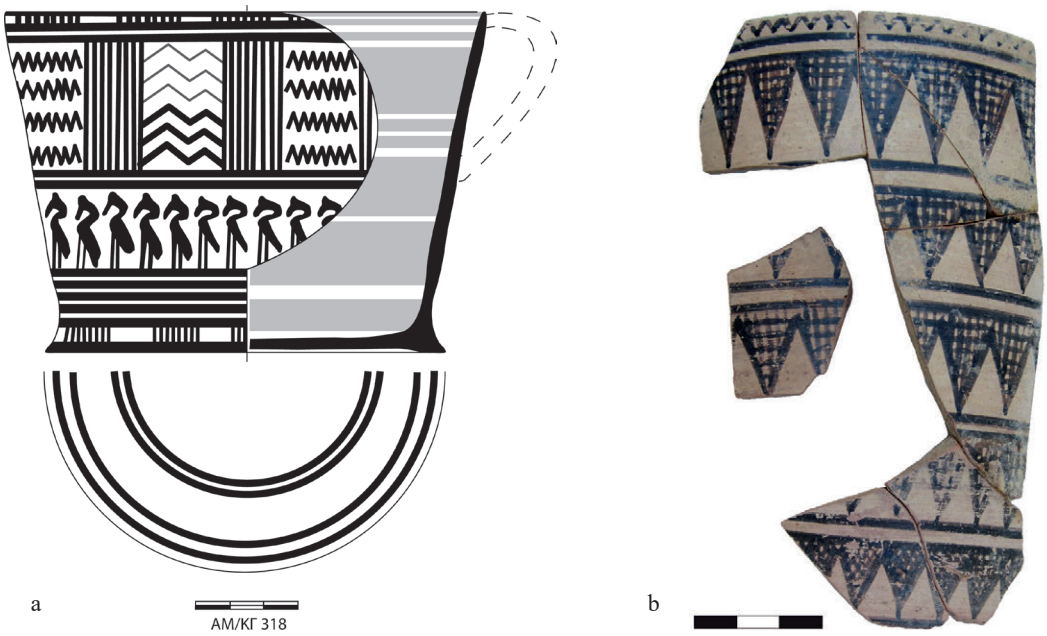
61 Cf. to the Amyklaian series are those from the deposits in the Sanctuary of Athena Alea in Tegea; see Voyatzis 2014, 283–289 nos. C-MG 1–73; 378–380 pls. 17–19.

62 Coldstream 1968, 215 f.; Stibbe 1994, 21–24.

63 A similar type from the area of Sparta, see Zavvou 1997, pl. 71 d.

64 For a fragmentary example from Sparta, see Zavvou 1997, pl. 71 c. A 7th cent. BC cup of this type from Orthia has been dated by Stibbe (1994, fig. 148 inv. 5165).

65 For an intact example from Sparta, see Themos 1996, 109 drawing 4.




10 a: Reconstruction drawing of an LG deep cup from the Amyklaion, inv. AM/KΓ 318 (drawing V. Vlachou); b: Fragmentary LG deep pyxis or kalathiskos from the Amyklaion, inv. AM/KΓ 554 (photo V. Vlachou)




11 a: Fragmentary LG krater from the Amyklaion, inv. AM/KΓ 306; b: Fragmentary LG krater from the Amyklaion, inv. AM/KΓ 308 (photos V. Vlachou)

from Tsountas' excavations, today in the National Archaeological Museum at Athens[66]. One more has been reconstructed out of many fragments from different parts of the deposits; it stands at more than 0.16 m high and shows reversed latticed triangles in superimposed zones (fig. 10 b). The absence of handles or lids for these vessels should be related to their function, but that would make them neither a cup nor a pyxis. Although no entire profile shape survives, there is a considerable number of fragmentary bases typical of the shape. Perhaps these vessels may have served as offering baskets, small kalathiskoi, possibly containing flowers, fruits or any other perishable offerings that would have made an appropriate offering at the early sanctuary. An addition in the

66 Tsountas 1892, pl. 4, 1. 2; Coldstream 1968, 215 f. (deep cup); Margreiter 1988, 50 fig. 7, 33 (cup; in the drawing, a strap handle has been added); Kaltsas 2006, 61 f. nos. 12. 13 (pyxis). Some later »cylinder vases« according to Droop (1929, 80 fig. 53, Lakonian II), may represent similar kalathiskoi.



12 Fragmentary Argive krater from the Amyklaion, inv. AM/ΚΓ 2640.2 (photo V. Vlachou)

late 8th century BC to the repertory is the broad shallow dish, usually with two horizontal handles attached at the rim and a low ring base. The large size of certain of these vessels may be taken as an indication of their votive character; smaller plates and bowls with a deeper profile seem more suitable for the consumption and/or offering of food.

Large open vessels are extremely fragmentary: thus, any reconstruction of the entire profile remains tentative. Yet one may distinguish a shape with almost vertical walls, also attested at the Sanctuary of Artemis Orthia[67]. The type continues well into the 7th century BC as is manifested by some fragmentary pieces from Amykles and the Menelaion[68]. A few kraters of this type, although burnt and thus badly preserved, seem to have been coated with a thick slip, typical of the local production; decoration varies from panelled geometric motifs to figured decoration (fig. 11 a. b). The fact that some were heavily burnt could be taken as an indication that they were thrown in the fire at some time during the rituals. All surviving examples have a distinctive grooving just below the rim, an element that particularly links the shape to the strong local tradition. In addition, LG Argive kraters, both imported and local adaptations of the Argive type, were quite popular. Among the most characteristic pieces of the old excavations is the krater depicting a horse attached to a manger, with a bird added below the belly of the animal, assigned by Coldstream to the style of the Argive Fence Workshop (fig. 12)[69]. Most pieces reproduce the characteristic angular zigzags of the Argive LG in combination with some simpler meander hooks of probably local inspiration.

## IMAGES OF YOUTHS AND MAIDENS: THE BIRTH OF A CIVIC IDEOLOGY?

Figured iconography that is applied on the surface of both closed and open vessels in the late 8th century BC mainly consists of repetitive dances formed by naked males, and females dressed in long skirts of mainly Argive inspiration. Male dancers are by far the commonest at Amykles. A much-fragmented amphora demands a special mention. Action is deployed in two successive figured zones. A processional dance is depicted, formed by naked male figures, three of whom are preserved. Between the first and second figure there are three oval pendent objects, attached to a linear component (fig. 13). Their destination is unclear, though their origin may be found in certain Argive dancing scenes, where they are held by the female dancers[70]. P. Courbin has suggested that these objects are rattles or branches facing downwards, or even a thyrsus. The Amyklaian fragment, however, gives the impression that these should be taken as weaponry, namely spears, if compared to the definite examples of such presented in the lower zone of the amphora. This is

67 Droop 1929, 57 fig. 31 b.
68 Stibbe 1994, 22. 23 fig. A.
69 Coldstream 1968, 217 pl. 46 o.
70 Waldstein 1902, pl. 57, 17. 19; Courbin 1966, 430 f. and n. 14; pl. 147, both dated to LG IIb.



13 Fragments of possibly an amphora with figured decoration in two successive zones (inv. AM/ΚΓ 315) (photo V. Vlachou)

clearly a scene of battle, a rare theme in the Lakonian and equally the Argive figured repertory. From the characteristic hand-postures of the figures, shown with their fingers clearly separated one from the other, at least two figures are shown as already wounded, while others are still fighting.

Military prowess and honour were largely emphasized as expressions of status and authority in both sanctuaries and burials[71]. Iconographic evidence from the Amyklaion is complemented by the surviving bronze and terracotta figurines from the sanctuary. A male figure holding a spear was originally attached to the large handles of a hammered-up bronze tripod[72]; a second male figurine is equipped with a conical helmet, close to the helmet of the male terracotta head from the sanctuary[73]. It is probable that the helmeted figurines from Amykles were shown as holding a spear and a shield, thus following the posture of a largely contemporary figurine, that of Apollo Mantiklos[74]. The reference to the iconography of Apollo is thus rather straightforward. The dedication of weapons, pieces of armour and bronze tripods at the Amyklaian Sanctuary further emphasizes the role of the sanctuaries as the arena for competitive display among the early elites[75]. Tradition places a series of events in the course of the 8th century BC that involve the settlement

71 For an LG pithos burial accompanied by a sword and daggers from Sparta, see Raftopoulou 1998, 133 f. fig. 12, 15. For an LG tomb from Nichoria, see McDonald 1972, 228 (pithos burial containing an iron sword). For a discussion of the LG »warrior burials«, see van Wees 1998; Whitley 2000, 188.

72 Vlizos 2017, 78–80 and pl. 1 a–d.

73 Vlizos 2017, 83–86 and pl. 29 a–d. For the terracotta head of a male warrior today in the National Museum at Athens, see Tsountas 1892, 14 pl. 4, 4. 5; Sweeny – Curry – Tzedakis 1987, 86–89 nos. 16. 17. The head of a female wearing a short polos accompanied the male head, see Langdon 1998; Kaltsas 2006, 59 f. nos. 10. 11.

74 Boston Museum of Fine Arts, 03.997: Vermeule – Comstock 1988, 118 no. 15; Rolley 1994, 129 fig. 109 (with further bibliography). On the performative aspect of the inscription, see Day 1994. N. Papalexandrou (2005, 84–86; Papalexandrou 2011, 256 f.) has suggested that the statuette was originally an attachment to a tripod that was dedicated at the sanctuary.

75 Nafissi 2009, 117–124; Kennell – Luraghi 2009, 249–251.

of Lakonians on Thera (ca. 800 BC), the annexation of Amykles into the Spartan polis (ca. 760–740 BC), the foundation of Taras (ca. 700 BC), all reflections of contemporary social and political upheavals[76].

Images of females are much fewer and limited to dancing maidens, resembling the Argive treatment of the scene. In Euripides' »Helen« (1465–1477), we learn from the chorus members that on the event of her return to Sparta, Helen shall join the choral dances performed in front of the Temple of Athena (that is the Spartan Chalkioikos), and the choral processions marking the festival of Hyakinthia, the great ritual celebration dedicated to Apollo of Amykles and his *erómenos*, the young athlete Hyakinthos[77]. The dedication of arms and the display of artefacts such as bronze tripods have been largely related to the male expression, while the female traces at the sanctuary are less marked. The dedication of hydriae and terracotta spindle whorls have been mainly associated with female donors at the Greek sanctuaries. Yet, regional variations have demonstrated that there are no fixed patterns by which one may to link the gender of the donor to the type or value of the offering, at least for the EIA.




14 a–l: Selection of small-sized and miniature vessels of the PG and Geometric periods from the Amyklaion (photos V. Vlachou)

A specific class of pottery that could serve in this discussion are the small-sized and miniature handmade vessels that may be associated with both the PG and Geometric phases of the cult and rituals. The stylistic development and change of the shapes, fabrication techniques and firing of these vessels largely follow the features observed for the larger pots from the sanctuary. At least two different classes of miniatures may be distinguished; the first consists of coarse and unpainted shapes, mainly bowls with no handles or with two horizontal ones, tripod pots and cooking jugs (fig. 14 a–e)[78]. A small group of fragmentary pieces stands apart; these are made in a much lighter clay and decorated with incised decoration. They are close to certain Argive specimens, especially those from Asine dated in the LPG (Asine phase III)[79]. Differences in the fabric, finishing and firing of certain pieces seem related to different pottery workshops, and presumably some of these vessels could be Argive in

[76] Pelagatti 1956, 7–44; Nafissi 1999. For interpretations of the events that led to the annexation of Amykles, see Pettersson 1992, 106–112; Cartledge 2002, 92–106.

[77] Calame 2018, 179.

[78] Comparable are the miniatures from the earlier phase I at Tegea, Hammond 2014, 401–406 figs. 2. 3.

[79] Wells 1983, 254 figs. 192. 193 no. 734.

origin. The second category includes mainly decorated open shapes that can be dated from the LPG to the Archaic period. The earliest specimens are decorated in the distinctive Lakonian PG style (fig. 14 f. g). By the late 8th century BC, the small shallow bowls with painted decoration, frequently two crossing lines on the interior, increase in numbers and continue to the 7th and 6th century BC (fig. 14 h–l)[80]. During the same period, miniature coarse aryballoi represent by far the commonest ›cheap‹ offering at the sanctuary; miniature kraters and lakainai among other shapes were equally dedicated throughout the Archaic and Classical periods[81].

Although miniature pots have been largely treated as a single category of offerings, their function should have been varied. The miniature aryballoi that typically lack any interior shaping and thus could not have been used as containers of any kind seem to have had a merely symbolic use. As has already been suggested by the excavator, S. Vlizos, they may have served as commemorative items of a modest sort that would have marked the participation in the ritual and festival[82]. The earliest small-sized coarse pots largely imitate domestic coarse pottery that could be compared to the image of the oikos at a reduced scale. These vessels have nicely shaped interiors and could have been offered with their specific content. Shape and occasionally decoration leave no doubt as to their presence at the sanctuary already by the late 10th century BC. In a similar way, the shallow decorated bowls that appear in much larger numbers from the late 8th century BC onwards could equally have been offered along with their content or not.

The large quantity of miniatures from the Amyklaion and from most Peloponnesian sanctuaries, as well as the continuity of certain types over time, ensure these small offerings a place in the cult and rituals. They seem to have had a specific meaning for those that deposited them and should have been assigned specific connotations and symbolisms throughout this long period of time. Yet, their function is far from clear[83]; their frequent placement in child burials has been related to their being offerings suitable for children. Their imitation of larger shapes, such as dinoi and tripod cauldrons, could make them cheap replicas of these offerings, and thus relate them to the lower social strata[84]. If we consider the small size of the pots to mark the presence of children and their modest participation in the rituals due to their young age, then is it possible to consider at least a part of the small-sized and miniature vessels as material markers for the introduction of the youngest members to the official cults of the community and later to those of the polis? The miniaturization of shapes in relation to children and rituals is not uncommon in other areas, although from a much later period[85]. In connecting the deposition of these small, ›cheap‹ and commonly neglected finds to specific social groups, such as very young children, what is revealed is the participation of a wide range of social groups in the cult and rituals.

## SOME CONCLUSIONS

Trying to pull the evidence together, it is obvious that pottery remains the largest corpus of evidence for attempting any reconstructions of the ritual activity at the site. The predominance of drinking shapes throughout the early phases manifest that feasting formed a central part of the ritual expression at Amykles, following the examples of an ever-increasing list of the early Greek sanctuaries. On the other hand, cooking ware is largely missing from the pottery deposits, as well as other types of ceramics such as stands, braziers and the like, of supplementary use after the preparation of food. Large closed forms that would have contained the necessary provisions for preparing the feasts are equally absent. It would seem that what was left behind by the participants

80 Shallow bowls with comparable decoration are popular in many Peloponnesian sanctuaries, see Ekroth 2003; Hammond 2005; Hammond 2014; Barfoed 2015.

81 For the presence of comparable type at the Spartan heroa (the Menelaion, the Achillion) see Stibbe 2000, 91.

82 Vlizos 2019, 31. For the semiotics of the dedication of miniature cauldrons see Pilz 2011.

83 Cf. the contribution of S. Barfoed in this volume.

84 For a discussion, see Hammond 2009; Gimatzidis 2011; Ekroth 2013; Barfoed 2018.

85 For the Athenian Choes, see van Hoorn 1951; Hamilton 1992.

was only a part of the pottery used and which was deliberately broken *in situ*. Pottery not related to consumption practices – such as lekythoi, small-sized hydriae and ring vases – seem to have held some kind of liquid offerings, possibly for the performance of libations. In addition, other shapes and classes of items such as pyxides, kalathiskoi, tripod cauldrons, spindle-whorls, and miniature handmade vessels were equally deposited at the Amyklaion by the participants in the early cultic activities.

Taking into account the changes observed in the material used and deposited at the Amyklaion, the second half of the 10th century BC represents the earliest important phase in the early history of the sanctuary. The large quantities of repeating material groups, namely those related to feasting activities, and the diversity of the artefacts dedicated may be associated with the number of the participants and the consistency of the rituals through time, possibly in the form of a festival. Material evidence from other cult sites in the wider region manifests the homogeneity of the quite distinctive local pottery style. The presence of Lakonian pottery in the Arkadian sanctuaries around this time is important in identifying active networks connecting all the earliest cult places in central and southeast Peloponnese. Pottery assemblages reveal that Lakonian pottery continued in these areas throughout the 9th and 8th century BC. The finding of moulds for the casting of tripods at Amyklaion and the evidence for metal-working at the Sanctuary at Tegea provide additional evidence for the presence of smiths and other craftspeople at the early sanctuaries.

Asine provides the earliest evidence for contacts between Amykles and the Argolid Gulf. Already since the late 10th century BC, imported Argive pottery at the Amyklaion provides evidence for at least the circulation of ceramics, and possibly also craftspeople between these two areas, something that becomes more visible throughout the Geometric period. Indeed, the Argive style of the 8th century BC is the more influential. In addition, the early connections between Lakonia and Messenia have been described on the basis of style in the ceramics. The Sanctuary of Apollo Hyakinthos at Amykles therefore occupies a central place in the early history of Sparta and of the southern Peloponnese. By the 9th and 8th century BC, the dedication of bronze tripods at the sanctuary, among other valuable offerings, displays its important role in negotiating power and elite status in a period marked by internal struggles and long-distance activities. The large-scale constructions undertaken at the end of this period, with the erection of the earliest peribolos wall around the hill, highlight the importance of the site in the religious life of early Sparta. Such construction should have been motivated by collective decisions in maintaining and reinforcing aspects of the cult and festival.

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# CONNECTING ACTIVITIES AND SPACE: THE CASE OF THE ›WESTKOMPLEX‹ IN AIGINA-KOLONNA[1]

ABSTRACT

The interpretation of small-scale buildings in or at the boundaries of sanctuaries is an interesting issue. Often these structures lack specific architectural features allowing a clear determination of their function, and thus are not clearly recognisable as sacred, public or domestic. Therefore the analysis of find assemblages associated with buildings in marginal or transitional areas to sanctuaries are of major importance to clarify their function and their relation to the sanctuary proper. An ongoing research project at Aigina-Kolonna deals with one such building, the so-called Westkomplex, and attempts to illuminate its history and function in the course of time on the basis of the find assemblage and a contextualised analysis. The focus of this paper is on the Late Archaic or Early Classical structures. The large quantities of drinking, storage and cooking pottery unearthed, clear indications of ritual feasting, the careful construction and the location at the bounds of the sanctuary clearly indicate that the complex facilitated dining events of larger gatherings accompanied by ritual activities. Furthermore a public or even sacred function has to be assumed.

## HISTORY AND STRUCTURE OF THE ›WESTKOMPLEX‹

The island of Aigina situated in the centre of the Saronic Gulf exactly 20 km south of Athens and even less to the eastern coast of Corinthia and Argolid does not exactyl fall within the geographical core area of this volume. However, Aigina's close ties with the Peloponnese are manifold and go beyond geographical proximity. From the beginning of the historical period, Aigina's history was closely linked to the eastern Peloponnese, on the one hand through a strong sense of Doric identity among the island's inhabitants[2], and on the other hand through changing political entanglements, especially with Epidauros, Argos and later Sparta[3]. A close connection, especially with Corinthia, can also be deduced from the ceramic spectrum represented on Aigina. Already in the Late Geometric and Early Proto-Corinthians periods, a strinkingly high number of Corinthian imports can be observed[4]. Particularly remarkable is the large quantity of varoius shapes of Corinthian pottery that found their way to Aegina in the 6th and 5th centuries[5]. This situation is rather different from many other sites of this period, including Athens, where Corinthian pottery imports are usually much less common[6]. The high quantity of Corinthian products on Aigina supports the assumption made earlier that the island maintained close trade connections with Corinth and that the distribution of Corinthian pottery in the Mediterranean was at least partly in the hands of the

1 For their support, critical reviews and help, I would like to thank G. Forstenpointner, W. Gauß, G. Ladstätter, E. Pollhammer and C. Reinholdt. I also would like to thank the department Altertumswissenschaften/Klassische und Frühägäische Archäologie at Salzburg University for the permission to use plans and images for this paper. Responsibility for the contents rests, of course, with the author alone. The research project »Pottery and other finds from the Westkomplex at Aegina-Kolonna. Exploring chronology, function and change of this area from the Protogeometric to the Hellenistic periods« by the author as principal investigator was funded by the Austrian Science Fund (P 25663-G19).

2 Walter-Karydi 2002, 336.

3 For an overview on Aeginetan history see, among others, Figueira 2004, 620–622.

4 Kraiker 1951, 12 f.; Jarosch-Reinholdt 2009, 37.

5 Klebinder-Gauß 2012, 201.

6 For this see Klebinder-Gauß 2012, 201 n. 958.



1 Kolonna on Aigina, Orthophoto 2012 with the ›Westkomplex‹ at the western end of the promontory, the Late Archaic Temple of Apollo in the centre (surrounded by prehistoric structures), the temenos wall in the north and the ›Priesterhäuser‹ (partially overbuilt by the Hellenistic fortification wall) bottom right (© Salzburg University, Department of Classics/Classical and Aegean Archaeology in cooperation with the Interfaculty Department of Geoinformatics – Z_GIS)

Aeginetan fleet[7]. The range of shapes of Corinthian vessels from the ›Westkomplex‹ has, as will be shown in the following, some parallels in other sites presented in this volume.

The so-called Westkomplex is situated at the very western end of Kolonna, a rocky hill projecting into the sea at the northwestern part of the island, and no doubt one of or the most important cultic centres of the island's ancient capital (fig. 1)[8]. The Late Archaic peripteros in the centre of the promontory is usually associated with Apollo, even though direct evidence for this assumption is still lacking[9]. The presence of altars, votive pillars, etc. strongly indicates that the Kolonna hill housed also other cultic installations. The lack of incontrovertible epigraphic or archaeological evidence, however, does not allow for any certain conclusion on cultic activities at the site. As yet it has hardly been possible to securely associate particular finds with specific cults or divine addressees, or to unambiguously localize among the known structures cult installations as mentioned in ancient sources[10]. The reasons for this, among others, lie in the intensive building activi-

7 See, among others, Figueira 1981, 265: Boardman 1981, 53. 146; Morris 1984, 100; Alexandrescu 1990, 54.

8 F. Felten considers an identification of the Kolonna hill as the acropolis of the city of Aigina: Felten 2001, 127. 130; Felten 2007, 20; but see also Polinskaya 2013, 392 n. 39 pointing out that no ancient source mentions an acropolis on Aigina.

9 Welter 1938, 49 f.; Felten 2001, 127; Felten 2003, 41 f.; Polinskaya 2013, 211–215.

10 Welter 1938, 49 f. 119–122; Felten 2001, esp. 128; Polinskaya 2013, 214–219 and 609.



2 ›Westkomplex‹, view from south with the ›Südbau‹ bottom left and the ›Ostbau‹ bottom right (photo M. DelNegro © Salzburg University, Department of Classics/Classical and Aegean Archaeology)

ties at the hill until Late Antiquity and in the re-use of ancient building material in the 19th century, e.g. for the construction of the harbour moles[11].

Recent excavations at the so-called Westkomplex (fig. 2) now offer the opportunity, thus far unique on Aigina, for a holistic study of a building from the historical period[12]. The contextual analysis of the material record, i.e. most notably pottery, but also terracottas, textile implements, jewellery, as well as human and faunal remains, aims at the clarification of the chronology and function of the ›Westkomplex‹ and its relation to the development of the Sanctuary at the Kolonna hill. Furthermore, our study also seeks insights into local processes, social practices, and technological developments. Using up-to-date methods, we evaluate the individual finds chronologically and functionally, review stratigraphy and quantification through a standardized procedure, analyze human and zoological remains, and pursue further archaeometric studies.

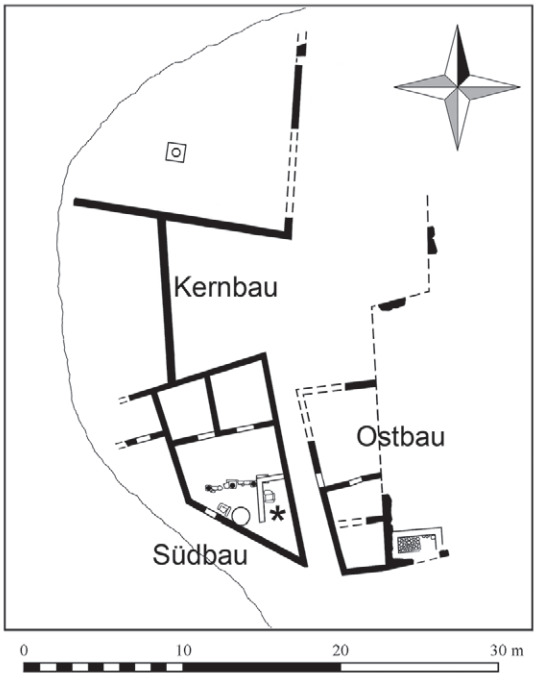
The ›Westkomplex‹ was the first large-scale building to be constructed in this area. However, the premises were already in use long before its foundation at the very end of the Late Archaic or beginning of the Early Classical period: in prehistoric times it was a place for domestic housing, whereas in the late Protogeometric and Early Geometric period the area was occupied by a burial ground[13]. The foundation of the ›Westkomplex‹ occurred during a period formative for Aigina's economy and political identity, and during a phase of architectural elaboration involving Kolonna and other major sites of the island[14]. Approximately contemporary with the ›Westkomplex‹, buildings similar in structure were constructed on the southern slope of the Kolonna hill, furthermore the peripteral temple assigned to Apollo in its centre, and a

11 Welter 1938, 117 and Felten 2005, 183; Margreiter 1988 with the most comprehensive presentation of small finds to date, esp. 11 on the lack of stratigraphic information; for this see also Polinskaya 2013, 215–217.

12 The excavations at the ›Westkomplex‹ were conducted in the years between 2004 and 2010 by Salzburg University with Claus Reinholdt as local field director and Florens Felten as head of the Kolonna project. For first presentation of the results, see the annual reports in »Jahreshefte des Österreichischen Archäologischen Instituts « 2005–2012.

13 For the graveyard underneath the ›Westkomplex‹ see Jarosch-Reinholdt 2009, 19 f. 62; Felten et al. 2006, 14. 15. 18; Felten et al. 2007, 91 f. fig. 3; Felten et al. 2008, 49–51.

14 Polinskaya 2013, 443.




3 Schematic plan of the ›Westkomplex‹ in the early 5th century; stone enclosure with faunal remains marked with an asterisk (plan by C. Reinholdt in: Felten et al. 2008, 53 fig. 9, with additions by G. Klebinder-Gauß © Salzburg University, Department of Classics/Classical and Aegean Archaeology)

massive perimeter wall with a wide stairway at its northeast corner[15]. The abandonment of the ›Westkomplex‹ in the later 5th century presumably coincided with the expulsion of the Aeginetan population from their island by the Athenians in 431 BC[16]. The area was not reoccupied until the middle Hellenistic period.

Even though the rebuilding of the area in subsequent periods and the cliff's continuous erosion do not allow for an assessment of the original dimension of the Late Archaic-Early Classical ›Westkomplex‹, some basic characteristics of its structure can be reconstructed (fig. 3)[17]. The area west of a narrow north-south oriented path is covered by several linked units of rooms and courtyards: the so-called Südbau consists of two small rooms and an adjacent courtyard with a small open chamber. The so-called Kernbau north of it is an courtyard open to the east. Both are carefully built from ashlars and orthostats with a superstructure of mud bricks covered with white plaster. At the eastern side of this path a multi-room oikos, the so-called Ostbau, was carefully built from polygonal masonry. All rooms are of rather small size and irregular shape, equipped with plain clay or lime mortar floors.

The position of the ›Westkomplex‹ within the topography of the sacred district at the Kolonna hill and its relation to the sanctuary proper is as yet difficult to determine. The massive perimeter wall of the Late Archaic-Early Classical sanctuary, also called the temenos wall, is known only by a long section on the northern side and by a wide stairway at the northeast corner of the hill[18]. Its further course to the west and south is unclear. Thus, it is not clear if a north-south running section of the perimeter wall existed to the west of the temple. It may be that due to the steep cliff edge at the western end of the hill a wall was not considered necessary to demarcate the boundary of the sanctuary[19]. Thus, for the time being, the question remains unanswered whether the Late Archaic-Early Classical ›Westkomplex‹ was located within or outside the sacred district. At least since the Hellenistic period the ›Westkomplex‹ was included within the sacred district, as shown by the section of a wall to the south of it that separates the sacred district from the area outside[20].

15 Felten 2005, 184–187; Felten et al. 2005, 9; Felten 2007, 28; Klebinder-Gauß – Gauß 2015, 71–77.

16 Felten et al. 2008, 54 f. with n. 14.

17 A systematic analysis and interpretation of the architecture of the ›Westkomplex‹ is undertaken by Claus Reinholdt. The following remarks on the architectural structure reflect the preliminary results presented by the excavators, esp. Felten et al. 2003, 51 f.; Felten et al. 2004, 106; Felten et al. 2006, 22–26; Felten et al. 2008, 53 f.

18 Felten 2005, 184 f.; see also Pollhammer 2003, pl. 54 fig. 190 for the known sections of the Late Archaic perimeter wall; 166 n. 20 for the correction of a previous reconstruction of the wall by Hoffelner 1999, 129–132; Polinskaya 2013, 594; Cooper 2001, 125 assumes a date of the perimeter wall later than the 520 BC suggested by Hoffelner 1999, 132, while Mattern 2001, 207 f. agrees with a Late Archaic date.

19 So Pollhammer 2002, 105.

20 For this so-called Diateichisma see Felten et al. 2006, 27; Pollhammer 2009, 121; Pollhammer 2020, 343 fig. 1 with an updated plan.

## THEORIZING THE QUESTION OF THE FUNCTION OF THE ›WESTKOMPLEX‹

Small buildings of various layout and function are frequently found within or in the immediate neighbourhood of sanctuaries. In Kolonna, a building ensemble of similar date and pattern as the ›Südbau‹ is located at the southern slope of the hill. Like the ›Südbau‹ its compartments are constructed from orthostats and consist of two or three small, not specifically equipped rooms behind a courtyard[21]. The find assemblage indicates that sympotic and dining activities took place in at least one of its compartments, but also other functions such as houses for priests (›Priesterhäuser‹), shops or cultic activities have been considered[22]. Small-scale buildings at the edges of or within sacred districts are known also from other places. Often, despite the lack of specific architectural features, an interpretation as dining facilities is considered[23].

Particularly common at the boundaries of sanctuaries are multi-room buildings that can be clearly identified as dining facilities because of their specific architectural and decorative features, such as adjusted room dimensions, raised platforms around the walls for couches, mosaics and drainages[24]. Often there is also evidence for ritual activities. Examples are, among others, the so-called Südosthäuser at the entrance to the Sanctuary of Aphaia on Aigina, the dining complex in the Sanctuary of Demeter and Kore in Corinth, situated on the slope below the sacred area, and so-called Building D next to the Temple of Poseidon in Kalauria on Poros[25].

In the case of the so-called Westkomplex the building proper provides only a few clues as to its function and its relation to the sanctuary. The presence of installations for dining, permanent fire places, or any other built features for domestic, commercial or cultic activities could not be identified. Also, the small-scale layout of the ›Westkomplex‹ does not have an explicit ›sacred‹ appearance. However, already the excavators pointed out that this would not *a priori* exclude a function in relation to the sanctuary, as elsewhere similar small-scale structures were identified as cult buildings[26]. Also the elaborate construction of parts of the ›Westkomplex‹ from large orthostats and ashlars indicates a role of the building beyond a simple dwelling[27]. Furthermore, its location at or perhaps even within the bounds of the sacral district and its prominent position at the outermost edge of the promontory suggest a more particular meaning, possibly in relation to the sanctuary. Keeping all this in mind, one is inclined to consider a purely domestic, or a commercial function of the ›Westkomplex‹ doubtful. The find assemblage can, as will be shown in the following, add further information to clarify this query.

Already the very first excavators in the early decades of the 20th century considered a non-domestic function of the site. They based their assumption on the discovery of several pits filled with miniature skyphoi and burnt offerings, some of them still covered by omphalos-shaped stone lids

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21 Walter 1980, 90; Klebinder-Gauß 2012, 26–28 figs. 1. 2 pls. 130, 1. 2; 131, 1. 5; see also Felten et al. 2003, 47 on the close similarity in structure.

22 Walter 1980, 90 suggested the term »Priesterhäuser« and proposed a possible function as »Kultgebäude, Priesterhäuser, Verkaufsläden«; Felten 2005, 185–187 considers an identification of the building complex with the Thesmophorion mentioned by Herodotus; critical of this Polinskaya 2013, 285 f.; Klebinder-Gauß 2012, 26 on the pottery assemblage from well FG 306 that indicates sympotic activity in these premises.

23 E.g. Baumer 2004, 98 fig. 28 (Rhamnous, Heroon); 58. 98 fig. 29 (Rhamnous, Sanctuary of Aphrodite Hegemone); see also Baumer 2004, 57. 112 fig. 70 on a similar small-scale building in the southern necropolis of Voula-Ano Voula that might have been the meeting place of a funeral organisation for ritual dining or drinking.

24 On the characteristics and definition of banquet houses and dining rooms, see e.g. Bookidis – Stroud 1997, 393–402; Lynch 2007, 243; on banquet houses in Greek sanctuaries see Leypold 2008, esp. 6–10.

25 Felten et al. 2005, 22 with n. 40. 41 with further references, among others to the following structures: Leypold 2008, 15–27 (Aigina, Aphaia); Bookidis et al. 1999 (Corinth, Sanctuary of Demeter and Kore); Wells et al. 2003; Wells et al. 2005 (Kalauria, Sanctuary of Poseidon).

26 See Felten et al. 2005, 22 n. 39, referring to the Sanctuary of Demeter and Dioskouroi in Messene. For a discussion on cultic activities at sites without appropriate installations, see also in this volume G. Schaus on Tria Goupata, W. Gauß – F. Ruppenstein on Aigeira, X. Charalambidou – G. Ladstätter – N. Voß on Lousoi, and C. Morgan.

27 See Felten 2003, 43 for a similar conclusion drawn from the elaborate construction of orthostates and ashlars in the above mentioned ›Priesterhäuser‹ at the south slope of the Kolonna hill.




4 Grave marker and grave in the area of the eastern room of the later ›Südbau‹ (photo M. DelNegro © Salzburg University, Department of Classics/Classical and Aegean Archaeology)

with handles[28]. One of these stone lids, found next to a looted pit, bears the inscription ΦΡΑ which is read as ΦΡΑΤΡΙΑΣ or »property of the phratry«. Another lid is inscribed with ΠΡΟΣΣΑΡΙΔΩΝ which is probably the name of a family in the genitive plural[29]. The inscribed stone lids may thus indicate a kinship group's ownership of the particular pit they originally covered and thus led the first excavators to the assumption that this was a place for hero worship, performed by phratry-like groups[30].

New evidence that might support this assumption was provided by the recent excavations in the southeastern unit ›Südbau‹. Here an elaborate cut-out in the lowest row of orthostats in the back wall of the east room houses the top of a 0.56 m high grave marker (fig. 4). The grave marker belongs to a Protogeometric grave that is part of the graveyard underneath[31]. The grave contained a crouched inhumation, and bronze, iron, and ivory jewellery on a floor of pebbles, snails, and shells[32]. The marker must thus have stood upright over the centuries until the construction of the building in the Late Archaic-Early Classical period, when the marker was incorporated into the wall and covered by the first floor of the newly erected building. This might indicate a respectful attitude or even a conscious reverence shown to this grave marker; if so, the new archaeological evidence would support the old excavators' interpretation of the ›Westkomplex‹ as a place where ancestors or heroes were venerated[33].

## ANALYZING THE FIND ASSEMBLAGE

Unfortunately we have no information of the whereabouts of the finds from the early excavations, and our knowledge is limited to the few published comments and illustrations[34]. Meanwhile, the new excavations have yielded a large amount of pottery, some metal and stone objects, and a small number of animal bones. As with many other sites, we have to deal in the so-called Westkomplex with the problem of mostly very fragmentary finds, deriving from secondary deposits, i.e. mainly levelling layers that occurred presumably during periods of construction or cleaning

28 Welter 1932, 162 fig. 21; see also Felten et al. 2003, 41 f. on the early exploration of the ›Westkomplex‹.
29 For the reading and dating of both inscriptions see IG IV² (2007) 93 nos. 1002. 1003; for further references see Klebinder-Gauß 2019, 117 f. n. 8.
30 Welter 1932, 162.
31 For the graveyard see above n. 13.
32 Felten et al. 2006, 14 f. 17 ›Grab 2‹; figs. 5; 8, 2. 10–13; Felten et al. 2007, 91 fig. 2.
33 So Felten et al. 2006, 17–19.
34 See above n. 28.



5 Selection of finds from pit AT 22 (photo G. Klebinder-Gauß)

up[35]. Primary deposits of vessels deliberately stored during or immediately after use are absent, and so far no rubbish pits were found within the area of the ›Westkomplex‹.

Only in very few cases can formation processes be traced more precisely. A probable act of deliberate deposition is illustrated by a small pit (AT 22), dug into the floor of the western chamber of the ›Südbau‹. The pit contained several miniature kotylai, a small bowl, a loom-weight, a spoon and ring made of bronze, as well as a considerable number of terracotta figurines of a varied range of types such as a fig, tortoises, birds, and seated or standing male and female figurines (fig. 5)[36]. After being backfilled with these objects the pit was covered by a massive destruction layer associated with the abandonment of the Late Archaic-Early Classical building. The specific concentration of terracottas, their largely good state of preservation and the interspersion of the soil with ash all indicate that we are dealing with a deliberate act of deposition, created during one or several acts of clearing up the remains of a ritual act or in a ritual connected with the dismantling of the building, rather than being a random fill[37].

A second outstanding assemblage was encountered in a small stone enclosure (AT 76) situated in an open chamber in the courtyard of the ›Südbau‹ (fig. 3). The enclosure yielded ashy earth, a small number of single pottery sherds, and a total of 515 faunal remains[38]. The latter include 182 skeletal elements from sheep/goat, most of them showing signs of heavy burning from black charring to white-greyish calcination (figs. 6. 7). According to G. Forstenpointner this taphonomic feature strongly recalls the traditions of Greek burnt offerings, according to which mainly thigh bones/meria (often including the kneecap) and lumbar to caudal vertebrae/osphys underwent burning. In fact, the burnt sample from this deposition comprises 115 finds of ovicaprine meria and osphys bones, together with 24 fragments of frontal bones and horn-cores and some burnt ribs. As far as determination up to species level proved feasible, the thigh bones and horn-cores exclusively came from

35 Regarding the interpretation of secondary deposits see in this volume W. Gauß – F. Ruppenstein on Aigeira and X. Charalambidou et al. on Lousoi.

36 Felten et al. 2003, 48 f. figs. 9–11; Felten et al. 2006, 19 f.; Felten et al. 2008, 53.

37 The few single fragments of fine and coarse ware vessels of various date that were also found in the pit are probably intermixture from rubbish.

38 The faunal remains are under study by Gerhard Forstenpointner/University of Veterinary Medicine Vienna whom I cordially thank for sharing his research results with me.



6 Charred and partly calcined fragments of ovicaprine thigh bones (meria) from enclosure AT 76 (photo G. Forstenpointner)



7 Charred and partly calcined fragments of ovicaprine caudal vertebrae (os-phys) from enclosure AT 76 (photo G. Forstenpointner)



8 Items for drinking and dining (photo M. DelNegro, G. Klebinder-Gauß)

sheep, allowing the calculation of 14 (thigh bones) and 6 (horn-cores) individuals at a minimum. The fact that the bones were found in high concentration in ashy earth within a stone enclosure strongly indicates that we are dealing with a largely undisturbed primary deposition.

Keeping in mind the previously mentioned limitations imposed by the stratigraphic situation, the interpretation of specific compartments on the basis of quantification of the find assemblage must be undertaken with caution. Yet the general homogeneity in the range of pottery finds within the whole area of the ›Westkomplex‹ leads us to suspect that the finds were actually used within these premises and were then broken and re-deposited as the nearest fill material at hand[39]. Furthermore, a few depositions allow for a reliable association with activities performed at the ›Westkomplex‹. Based on these assumptions, the pottery finds provide important additional information on the function of the building.

## DRINKING, DINING AND FOOD PREPARATION IN THE ›WESTKOMPLEX‹

The extraordinary high proportion of shapes associated with the preparation and consumption of beverages and food is the first thing that stands out when trying to reconstruct the activities that took place in the Late Archaic-Early Classical ›Westkomplex‹. Among the various kinds of fine ware drinking cups, containers for serving wine, and vessels for serving and consuming food, imports from Athens, Corinth and Laconia have the highest share (fig. 8). Fine ware drinking cups and kraters are an essential part of sympotic activities, used for mixing and drinking wine[40]. The only example found so far of a bronze grater (fig. 8) should also be seen in this context, as it is generally assumed that these items were used for grating cheese or aromatic substances, especially in connection with the preparation of flavoured wine for the symposium[41]. In the Aegean region, graters of this kind are mainly known from sanctuaries of various deities where they could have been used as votive gifts or in cult meals or libations; finds from domestic contexts are, however, rare[42]. The occurrence of graters in graves, especially in Italy, together with sympotic pottery indicates their use in funerary ceremonies. Salt cellars and small containers (fig. 8) for oil

39 For this query see also Bookidis et al. 1999, 16; Pakkanen 2015, 40.
40 For a description of the sympotic equipment see Lynch 2011, 77–79.
41 Klebinder-Gauß 2007, 186 f. with n. 1300–1307; Krapf 2009, 520; Kilian-Dirlmeier 2002, 202.
42 Krapf 2009, 515.



9 Items for storage and food preparation (photo G. Klebinder-Gauß)

probably contained flavourings, while one-handled bowls are assumed to be an all-purpose shape for the consumption also of soups and stews[43].

The consumption of stews or boiled meat is also illustrated through the numerous fragments of lopades, chytrai of common type and lidded chytrai, while pans, grills and escharai may have been used for parching barley and beans, and for roasting meat (fig. 9). The occurrence of portable hearths shows that the dishes were kept warm or even cooked on the ground, and also explains the absence of permanent installations for firing on the premises of the ›Westkomplex‹[44]. The cooking items are – as also known from other contemporaneous find assemblages in Kolonna – almost exclusively of local manufacture. Intensive study over the last few years, undertaken in cooperation with the Fitch Laboratory of the British School at Athens, showed that in the Late Archaic to Early Classical periods Aigina had a highly specialized production of cooking items made of a local volcanic fabric and with specific manufacturing techniques[45].

Furthermore, the vast number of vessels and items used for storing and processing food such as transport amphorae, bins, mortars and grinding stones lead us to assume that the stews, roasted meat, bread, cakes and other dishes were also prepared on the ground (fig. 9)[46].

43 Lynch 2011, 135–139. 142 f. 148.

44 For the absence of permanently installed fire places in most Greek houses see Tsakirgis 2007, 226. 228 f. and Lynch 2011, 155 for Archaic and Classical Athens; see also Cahill 2002, 162; Ault 2015, 208 f.; but see also Bookidis 1993, 52 f. on the Sanctuary of Demeter and Kore at Corinth where most of the Classical and Hellenistic banquet buildings had some sort of provision for cooking in another room outside of the dining room itself.

45 Klebinder-Gauß 2012, 87–90. 173–193. 197–200; Pentedeka et al. 2012, 104–115; Gauß – Kiriatzi 2011 on previous research on pottery production in Aigina in the prehistoric period; esp. 47–49. 93–99; Klebinder-Gauß – Gauß 2015, 74 f. fig. 8 on the wide distribution of Archaic and Classical Aeginetan cooking pottery.

46 On the occurrence of grinding stones in the Sanctuary of Demeter and Kore in Corinth, which suggest that grain was grated on the premises, see Bookidis 1993, 55.

The large water basins of Corinthian manufacture, represented by a number of fragments, should also be seen in the context of drinking and dining. The occurrence of such clay basins in virtually every dining room in the Sanctuary of Demeter and Kore in Corinth shows that they were part and parcel of dining activities and used for personal cleaning[47].

## RITUAL ACTIVITIES

The find assemblage yields also unambiguous proof that ritual activities were performed in the Late Archaic-Early Classical ›Westkomplex‹. This had already been indicated during the early excavations by the above-mentioned discovery of pits containing miniature vessels, burnt offerings and inscribed omphalos-shaped stone lids[48]. The above-mentioned pit AT 22 in the ›Südbau‹, even though not covered by a stone lid, provides further evidence: it contained a striking accumulation of terracottas and miniature vessels that in all likelihood should be interpreted as deliberate deposition of older offerings (fig. 5). Likewise, also the assemblage of numerous burned animal bones in a stone enclosure AT 76 in the courtyard of the ›Südbau‹ discussed above, and its association with the tradition of the so-called Olympic offering[49], illustrates the performance of ritual activities in the ›Westkomplex‹ (figs. 6. 7).

Furthermore, miniature vessels, terracotta figurines and loom weights were found in remarkable quantities throughout the Late Archaic-Early Classical ›Westkomplex‹. The approximately 60 complete or fragmentary miniature vessels comprise mainly kotylai and, far less numerous, krateriskoi, all of them products of Corinthian workshops. The meaning of miniature vessels beyond the everyday is hardly to be doubted as their small scale clearly sets them apart from full-scale vessels[50]. However, miniature vessels seem to have different connotations in their respective find context. In the case of the so-called Westkomplex both the clear indication for drinking and dining activities, and the frequent appearance of full-scale kotylai and kraters seems to be revealing. One can well imagine that the miniature vessels found here did not have a sole votive function, but were deposited to commemorate eating and drinking during banqueting or ritual practices such as libations in banquet settings[51].

The terracottas discovered in the Late Archaic-Early Classical ›Westkomplex‹ display a varied range of motifs. Standing and sitting female and male figurines of various types dominate, but depictions of animals such as tortoises and cocks, and vegetal shapes such as figs were also found. The motifs represented clearly speak for an association with ritual activities, even though no clear conclusions can be drawn about the nature of the practices they were part of[52]. The total number of terracottas found in the ›Westkomplex‹ clearly exceeds what is known from residential houses and thus implies more frequent ritual activities or a higher number of participants[53].

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47 Bookidis 1993, 52; Pimpl 1997, 72–78. 154–156; for an overview on Corinthian perirrhanteria found in Kolonna and for a general discussion of their function both in civic and sacral contexts see Kerschner 1996, 97–106; see also S. Nestoridou – C. Rathossi in this volume on Corinthian perirrhanetria from Thea.

48 See above n. 28.

49 On zoo-archaeological aspects of Greek burnt offerings see e. g Forstenpointner 2003.

50 For this see, among others Ekroth 2003, 36; Barfoed 2018, 113–115; for finds of miniature vessels presented in this volume see S. Barfoed on Kalydon, X. Charalambidou et al. on Lousoi, G. Schaus on Tria Goupata and S. Nestoridou – C. Rathossi on Thea, and V. Vlachou on the Amyklaion.

51 Barfoed 2015, 177–182; Barfoed 2018, 121.

52 The use of terracottas from sacral contexts as votive offerings is obvious, but also those from domestic contexts are often associated with household cult: see e.g. Lynch 2011, 163; Robinson 1952, 64; regarding the interpretation of terracotta figurines see also G. Alexopoulou, W. Gauß – F. Ruppenstein, G. Schaus, and S. Nestroridou – C. Rathossi in this volume.

53 See e.g. Robinson 1952, 66 noting that most of the houses in Olynthus contained two to seven terracottas; Lynch 2011, 163 mentions five or at most eight terracotta figurines from a Late Archaic house at the Athenian Agora.

An association with some kind of ritual performance is also evident for the textile implements found at the ›Westkomplex‹, as their different sizes and types, and the lack of deposition in large concentrations make a use in the context of textile production unlikely[54].

## CONNECTING ACTIVITIES AND SPACE

The analysis of the find assemblage provides strong evidence that frequent dining and drinking events as well as food storage and preparation took place at the premises of the Late Archaic-Early Classical ›Westkomplex‹. Furthermore, ritual activities of as yet not precisely clarified nature were also performed. The range of sympotic and utilitarian pottery noted, in association with textile tools, terracottas and miniature vessels could also be found in a domestic assemblage. However, in the so-called Westkomplex the high number of species of the various categories clearly exceeds that of an ›ordinary‹ residential building[55]. Also, the deposition of miniature vessels, terracotta figurines and loom weights in pits covered by inscribed omphalos-shaped stone lids, and the accumulation of burnt bones associated with the tradition of the so-called Olympic offering all point towards ritual practices beyond mere domestic cult. This, along with the location, the careful construction and its reference to an older grave marker, suggests that ritual and dining were closely intertwined in the ›Westkomplex‹, and that the character of these practices was not simply domestic, but in some way related to a larger private or public group. As argued elsewhere, it is reasonable to assume that the participants of these communal meals formed a rather exclusive, perhaps a particular high-ranked and influential social group that gathered at the ›Westkomplex‹ to celebrate certain events[56]. Furthermore, if the assumption that the ›Westkomplex‹ was a place of ancestor veneration is correct, then the dining and ritual activities could have been performed in this context.

As mentioned above, permanent installations or built features for dining, cooking or cultic practices were not identified. Therefore, it is unclear how these assumed activities can be related to the existing building. Neither the ›Südbau‹ nor the ›Ostbau‹ are at first glance well adapted either for food preparation and cooking or for large gatherings for drinking and dining: the rooms are small-sized, irregularly shaped and not equipped with architectural and decorative features specific for conventional dining facilities[57]. Thus, drinking and dining is likely to have taken place outdoors in the open areas and courtyards, with beverages and food being consumed by small groups of people sitting on or reclining upon pillows on the floor[58]. Also the food preparation and cooking was probably performed outdoors, as indicated by the ample use of mobile heating sources such as escharai and portable hearths[59]. Probably all these activities happened during the daytime, as lamps, even though common finds, are not numerous enough to infer a specific preponderance of nocturnal activities.

Quantification of the find assemblage – with the above mentioned constraint that we are mainly dealing with secondary deposits – provides only limited information of the use of the particular room compartments (fig. 10). Comparison of the so-called Südbau and Ostbau illustrates that in some areas, such as the courtyard of the ›Südbau‹, the proportion of items for storage, cooking and food preparation comprises almost 50 % of the total pottery assemblage and is significantly higher than in the room compartments of the ›Ostbau‹. This allows us to consider that the courtyard of the ›Südbau‹ was the area where most of the food preparation took place. The spatial distribution

54 Gleba 2009 on the occurrence of textile implements in sacred and secular contexts of various kinds; esp. 76 on sanctuary textile workshops; Bookidis 1990, 90 on the large number of loom weights from the Sanctuary of Demeter and Kore in Corinth.

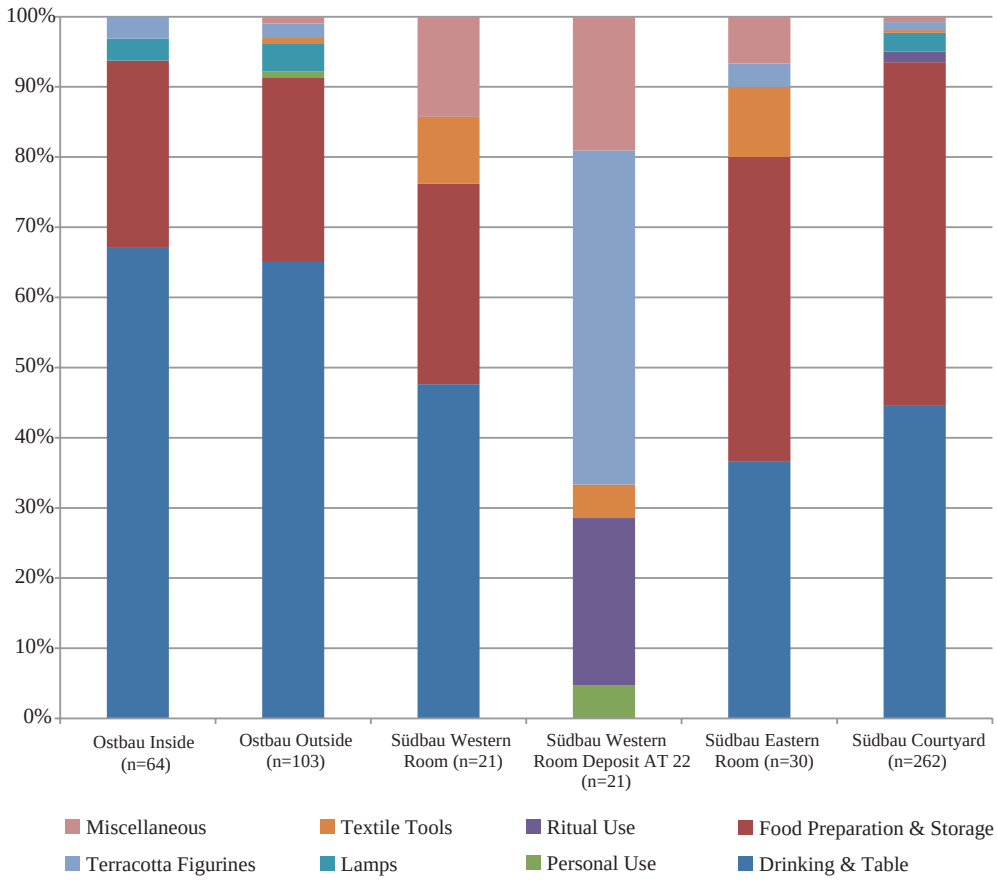
55 Cf., e.g. the small number of cooking pots in Lynch 2011.

56 On this question see Klebinder-Gauß 2019, 123–126.

57 On the ›strange‹ features of the so-called Westkomplex see also Felten et al. 2005, 22.

58 Lynch 2007, 244 on written evidence and depictions on vases for drinking and dining in spaces without specific architectural features.

59 See Ault 2015, 208 f. on the mobility of the Greek kitchen.




10 Quantification of Late Archaic/Early Classical assemblages (pottery and small finds) from the ›Ostbau‹ and ›Südbau‹ (Graphic G. Klebinder-Gauß)

of sympotic pottery is less diagnostic as it occurs in almost all compartments in equal measure. Unfortunately, due to later building activity no indicative stratigraphy is preserved from the area of the ›Kernbau‹ – a courtyard open at the front that would have been well suited for drinking and eating. Areas with ritual activities stand out much more clearly in the statistical analysis. The diagram illustrates the particular importance of the western room of the ›Südbau‹ for ritual practice, since all terracottas found in this unit, most of the loom weights and many miniature vessels were found there, most of them in the pit mentioned above. The diagram of the ›Südbau‹ also shows that the majority of the miniature vessels came from pits.

The analysis of the find assemblage from the Late Archaic-Early Classical ›Westkomplex‹ contributes significantly towards the clarification of its chronology, its function, its relation to the sacred district, and its position within the history of the island. Needless to say, there are also a number of issues that require further clarification: there is no firm evidence about who participated in these dining activities and how regularly the facilities were used. It is also not possible to assess with certainty whether the so-called Westkomplex was operated by the sanctuary or privately, and whether the meals and rituals performed on its premises were public or private acts. Also, the assumption that this is a place for ancestral or hero worship has yet to be conclusively verified. Closely related to this is the question of whether there was a continuous tradition of references to older remains located on this site, that ultimately culminated in the construction of the western complex in the 6th century BC[60].

60 For these questions see also Klebinder-Gauß 2019.

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# SYNTHESIS

Michael Kerschner

# INTERPRETING THE POTTERY RECORD FROM GEOMETRIC AND ARCHAIC SANCTUARIES IN THE NORTHWESTERN PELOPONNESE

## FINDINGS OF THE SYMPOSIUM AND QUESTIONS FOR FUTURE RESEARCH

The northern Peloponnese played an important role in the development of Greek sanctuaries during the first half of the 1st millennium BC. The state of research within this region, however, is uneven. While the northeastern part of the peninsula was in the focus of sanctuary studies early on, the central and western areas of the northern Peloponnese led a comparatively shadowy existence for a long time. This situation has improved considerably over the last three decades[1]. This volume gives an overview of recent results and ongoing research in the northwestern Peloponnese with a focus on the ceramic finds as analytical tool[2].

Archaeologists working at sites like Corinth, Isthmia, Perachora (beyond the Isthmos, but belonging to the territory of Corinth), or the Argive Heraion contributed pioneering studies both on early temple architecture and on the artefacts excavated in the sacred precincts in the early and mid-20th century[3]. At that time, excavation finds were divided according to their material, and primarily studied from the point of view of typology, chronology, and style. These publications laid the foundations on which contemporary studies are still building, although the main interest has shifted from the classification of finds to a holistic interpretation of the archaeological evidence. Today, we look into sacred and profane activities that took place in and around the temene, about the way rituals were performed, about the function of individual sectors within them, or about the role that sanctuaries played in the society, including their economic aspects, to name only some of the currently much discussed research questions.

Studies in the northeastern Peloponnese have made significant contributions to these topics, too. The contextual analyses of the pottery assemblages in the Sanctuaries of Demeter and Kore at Corinth and of Poseidon at Isthmia have set standards[4]. Current research in southern Arkadia (Tegea, Lykaion) and Lakonia (Amyklaion) has added important stimuli[5]. Recent studies have opened up these research fields also in the northwestern Peloponnese[6].

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1 Contribution of C. Morgan. For recent overviews, see Greco – Rizakis 2019; Jost 2018; Gadolou – Paschalidis 2020; Pilz 2020; Baier – Gauß (forthcoming) and several contributions in Moustaka – Niemeier (forthcoming; all with bibliography).

2 The original concept of the symposium included ongoing research projects from the entire northern Peloponnese, but unfortunately, the planned contributions on the Corinthia and the Argolis could not be realised. On these regions, see Kissas – Niemeier 2013. Gadolou – Paschalidis 2020, 837 f. consider Achaia, northern Arkadia and Elis as parts of a larger geographical and cultural entity which they call »the central west mainland«.

3 To quote some milestones, among others: Waldstein 1905; Payne 1940; Dunbabin 1962; Broneer 1971.

4 Bookidis 1993; Bookidis et al. 1999; Morgan 1999a; Pfaff 1999.

5 Amyklaion: contribution of V. Vlachou (with bibliography). Lykaion: Voyatzis 2019; Romano – Voyatzis 2021. Tegea: Voyatzis 2014.

6 Eder 2006; Gadolou 2008.

This volume continues in the same direction by discussing contextual evidence from sanctuaries which are currently under study. Ceramic assemblages and other archaeological record from recent and ongoing excavations[7] contribute to the overall picture of early sanctuaries in the region, as do finds from excavations dating back a long time[8] and material rescued from illegal digs[9]. Resumed excavations and the renewed study of old finds shed new light on well-known sanctuaries[10]. Sometimes they even lead to a substantial reinterpretation of a site, its chronology and function, and contribute to a reassessment of previous views that had already been incorporated into the handbook knowledge.

## THE REGION AND ITS CONNECTIVITY

This volume considers the northwestern Peloponnese (fig. I) as a larger cultural unity with regional and local differentiations[11]. In this manner, we emphasize the connectivity between the mountainous areas of northern Arkadia and the coastal plains and hills of Achaia and Elis.

In its central part, the northern Peloponnese is dominated by high mountains rising with steep slopes behind a narrow coastal plain. Narrow river valleys cut through these mountains and provide access to the Arkadian highland with its small intra-mountainous basins, many of which are drained by ponors instead of rivers. This rough terrain structured the region into small-scale environmental zones which played a fundamental role in the formation of local, subregional and regional identities during the early historic period[12].

Although the mountains, high and steep as they are, constituted a barrier, they were not insurmountable. Surveys discovered passageways running along the river valleys, crossing mountain passes and thus connecting the harbour cities along the Corinthian Gulf with the towns and settlements in the highland of Arkadia[13]. These routes enabled a connectivity between geographically distinct areas and a considerable cultural exchange which can also be traced in the pottery assemblages from sanctuaries[14]. Already in the Early Iron Age, some important sanctuaries were founded along major communication routes, as e.g. those of Athena at Trapeza, of Artemis Aontia at Ano Mazaraki, or of Artemis Hemera at Lousoi[15].

Most of the sites discussed in this volume are located in Achaia and in northern Arkadia (fig. I). The latter region is generally called Azania after the ethnonym Azanes[16]. Written sources tell us little about this ancient tribe which declined already before the 5th century BC[17]. The precise extension of the Azanian settlement area and its political organisation remain unclear[18]. However, it is evident that the area called Azania formed a cultural subzone within Arkadia[19], and that its material culture was closely linked to Achaia[20].

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7 Contributions of A. Gadolou, A. Karadima, C. Katsarou, G. Klebinder-Gauß, E.-I. Kolia, X. Charalambidou – G. Ladstätter – N.-M. Voß, S. Nestoridou – C. Rathossi, and V. Vlachou.

8 Contributions of G. Alexopoulou, S. Barfoed, and C. Morgan.

9 Contribution of G. P. Schaus.

10 Contributions of W. Gauß – F. Ruppenstein, and V. Vlachou. Also Eder 2006.

11 Contribution of C. Morgan. Cf. Morgan 1999b; Morgan 2003, 31–44. 155–161; Petropoulos 2016; Gadolou – Paschalidis 2020, 837–839.

12 Morgan 1999b; Morgan 2003, 31–44.

13 Contributions of G. Alexopoulou and C. Katsarou. Cf. Tausend 1995; Osanna 1996, 303 f.; Pikoulas 1999; Morgan 2002, 109; Petropoulos 2002, 148. 156 f.; Bonnier 2016.

14 Contributions of G. Alexopoulou and C. Morgan.

15 Contributions of X. Charalambidou – G. Ladstätter – N.-M. Voß. Cf. Osanna 1996, 303 f.; Morgan 1999b, 418; Petropoulos 2002, 148. 156 f. fig. 14; Vordos 2002; Vordos 2019a; Vordos 2019b; Kerschner et al. (forthcoming). Cf. the situation at Tegea: Voyatzis 2014, 361.

16 Contribution of G. Alexopoulou. Cf. Pikoulas 1981/1982.

17 Jost 1985, 25–27; Morgan 2002, 109; Morgan 2003, 42.

18 Nielsen – Roy 1998.

19 Morgan 1999b, 416 f.; Morgan 2003, 175–187; Kerschner et al. (forthcoming).

20 Contribution G. Alexopoulou. Cf. Morgan 2002, 109; Morgan 2003, 177; Gadolou – Paschalidis 2020, 838. 848.

The terrestrial connectivity of Achaia to the south and westeast along the coast was complemented by maritime links with the mainland in the north, Corinth in the east and the Ionian islands in the west[21]. The Corinthian Gulf not only connected the riparian communities with each other, as the archaeological evidence from Kalydon, Ithaka and Leukas shows[22]. It was also a major east-west axis of communication, transportation and trade going westward to the Adriatic and Southern Italy, where the Achaians were involved in the foundation of apoikiai in the late 8th and 7th centuries BC[23].

Corinth was the leading economic and cultural centre at the eastern end of this waterway. From the second half of the 8th century BC onwards, this flourishing city exerted a noticeable influence on the northwestern Peloponnese, which can be seen most strongly in the pottery. Ceramic imports from Corinth are now ubiquitous, although variations in the amount are distinctive at the individual sites[24]. The style of Corinthian potters also influenced local workshops. The best-known example of this is the so-called Thapsos class, which spread as a ceramic koiné around the Gulf and further west[25].

## GEOMETRIC AND ARCHAIC SANCTUARIES: THE CHOICE OF LOCATION AND EARLY MONUMENTAL ARCHITECTURE

Many sanctuaries were focal points in cityscapes or topographical markers in the landscape. Some of them underscored physically the territorial claims of a polis and defined borderlands, as for example Kertezi between Psophis and Kynaitha, or Tria Goupata between Stymphalos, Pheneos and Orchomenos[26]. Other cult places were founded at prominent places along the main communication routes connecting the coastal cities along the Corinthian Gulf with the mountainous interior of the Peloponnese (Ano Mazaraki between Aigion/Trapeza and Kynaitha; Chelonospilia between Kleitor and Pheneos, Phelloe between Aigeira and Nonakris/Kynaitha)[27]. In rural areas, sanctuaries could serve as gathering places at sub-polis level (Thea)[28] or of a wider region (Ano Mazaraki)[29]. On the other hand, there also existed small cult places of only local importance, like the cave of Tria Goupata, a remote rock shelter high on Mt. Oligyrtos off the main communication routes[30].

Distinctive natural features often stand at the beginning of a cult. Their conspicuousness caused the notion of divine presence at a specific place and thus sparked worship. This subjective perception of a peculiar element of nature continued to provide inspiration for the cult and created in the worshippers the feeling of being close to the deity. Caves are such natural settings which played a major role in the area investigated in this volume, especially in the Late Geometric, Archaic and Classical periods[31]. The phenomenon of ponors *(katavothres)* for draining the flooding

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21 Contribution C. Morgan. On the Corinthian Gulf as interconnected cultural space: Morgan 1988; Freitag 2000; Morgan 2003, 213–220; Gadolou 2017a; Morgan (forthcoming; with bibliography). On the connectivity during the final phase of the LBA: Borgna – Vordos 2019, 16. 18 (with bibliography).

22 Contributions of S. Barfoed and C. Morgan. Cf. Morgan 2003, 213–220.

23 Greco – Rizakis 2019 (with bibliography).

24 Contributions of G. Alexopoulou, S. Barfoed, W. Gauß – F. Ruppenstein, C. Kastarou, X. Charalambidou – G. Ladstätter – N.-M. Voß, F. Lang – C. Rathossi, C. Morgan, S. Nestoridou – C. Rathossi and G. P. Schaus.

25 Contributions of A. Gadolou and C. Katsarou. Cf. Gadolou 2011; Gadolou 2012, 16–18; Gadolou 2017c.

26 Contributions of G. Alexopoulou, C. Morgan, and G. Schaus. In general: Polignac 1995, 32–88, to be read with the critical remarks of Morgan 1999b, 418 f. with n. 250. On the sacred land belonging to border sanctuaries: McInerney 2006, 50–53.

27 Contributions of G. Alexopoulou, C. Katsarou, C. Morgan. Cf. Osanna 1996, 303 f.; Morgan 2002, 109; Petropoulos 2002, 148. 156 f.; Bonnier 2016.

28 Contribution of S. Nestoridou – C. Rathossi. Cf. Petropoulos 2006, 50–56.

29 Cf. Gadolou 2017b, 284.

30 Contribution of G. P. Schaus.

31 Contributions of A. Karadima, C. Morgan, and G. Schaus. For an overview on the ritual usage of caves: Sporn 2007; Katsarou – Nagel 2021.

caused by heavy winter rains was crucial for the agriculture in the small intra-mountainous basins of Arkadia. In ancient Greek notion, these natural features required divine protection, as in the case of the Sanctuary of Artemis Hemera at Lousoi[32].

The physical space of a sanctuary is more than the stage where ritual was performed. Rituals and sacred space were intertwined and influenced each other. Excavations in recent decades have shown that Achaia made a significant contribution to the early development of Greek sacred architecture. Already at the end of the 8th century BC, monumental buildings were constructed in the Sanctuaries of Artemis Aontia at Ano Mazaraki, of Poseidon Helikonios at Helike (modern Nikoleika), and of Athena at Trapeza (ancient Rhypes [?])[33]. The Late Geometric temple at Ano Mazaraki is one of the earliest Greek temples with a peristasis, as Michalis Petropoulos was able to show[34]. It has not only the apsidal ground plan in common with the coeval temple at Helike, but also the semi-circular porch, which is a special feature of the early sacred architecture in Achaia, as Erofili-Iris Kolia pointed out[35]. The wooden columns of the porch stood on a continuous stylobate and gave the Temple of Helike a monumental character, although it had no peristasis. In the Sanctuary of Trapeza, there are two large buildings of the late 8th century BC, one of which Andreas Vordos tentatively interprets as a temple, the other as a »temple-hestiatorion«[36].

Such buildings were monumental for their time and the available technical possibilities. They presuppose a communal organisation and effort that suggest a complex political and social hierarchy already in the late 8th century BC. Thus, the archaeological evidence of the early temples in Achaia challenges the view suggested by the literary tradition that this region was late in the formation of poleis[37]. Anastasia Gadolou and Andreas Vordos therefore suggested that there may have been early poleis in the central area of Achaia, at least at Helike and Trapeza[38]. If this hypothesis were confirmed, it would shed new light on the role of Achaia in the founding of Greek apoikiai in Southern Italy as recorded in the literary sources.

## RECONSTRUCTING RITUALS: POTENTIAL AND LIMITATIONS OF INTERPRETING ARCHAEOLOGICAL CONTEXTS FROM SANCTUARIES

Our understanding of ancient Greek religion is based on three main types of evidence: written sources, iconography and the archaeological record[39]. It is the texts that provide us with insights into the belief system, into the structure of cults, and into the meaning of rituals. Images add valuable information on the figurative conception of gods and heroes, on mythology, and on the performance of rites[40]. Deposits of artefacts and ecofacts preserved in sanctuaries allow conclusions to be drawn about the activities ongoing in a temenos, the sacred ones as well as the profane.

The three main types of evidence of Greek religion and cult – texts, images and archaeological contexts – are unequally distributed in terms of chronology, geography and quantity. In the Early Iron Age, we depend largely on the contextual analysis of finds. Pottery and animal bones

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32 Jost 1994, 219 f.; Kerschner et al. (forthcoming). Cf. the contribution of X. Charalambidou – G. Ladstätter – N.-M. Voß.

33 Contribution of E.-I. Kolia. Cf. Petropoulos 2002; Kolia 2011; Vordos 2019a; Vordos – Hellner (forthcoming).

34 Cf. Petropoulos 2002, 150–154 figs. 6–12; Mazarakis Ainian 2016, 22. 25.

35 Contribution E.-I. Kolia. Cf. Kolia 2011, 231.

36 On the large Late Geometric building beneath the Archaic Temple of Athena at Trapeza: Vordos 2019a, 144–146 figs. 2–10. On the reconstruction of this building: Vordos – Hellner (forthcoming). On the Late Geometric oikos (Building E), presumably another cult building: Vordos 2019a, 147 f. figs. 11–15. On the identification of the deity worshipped in the temple: Vordos 2019a, 149–153. The identification of Trapeza with ancient Rhypes was proposed by Vordos 2002.

37 Morgan – Hall 1996; Morgan 2003, 37. 45 f. (with bibliography).

38 Gadolou 2017b, esp. 285, who suggests that this impression could change through future field research; Vordos 2019a, 153; Gadolou – Paschalidis 2020, 852.

39 For a recent overview: Eidinow – Kindt 2015, 51–149.

40 Contribution of V. Vlachou. Cf. Gaifman 2015; Mylonopoulos 2015, 334–343 (both with bibliography).

are usually most numerous in sanctuaries. This is what gives them their special heuristic value. Images of rites, often dances[41], emerge in the Late Geometric period. Votive figurines made of clay and bronze were dedicated from the Protogeometric period onwards and convey the religious concerns and hopes of the devotees[42]. Already our earliest preserved literary sources, Homer and Hesiod, provide important information on mythology and cult practice. Archaic poets and inscriptions add further aspects, although epigraphic evidence only became more frequent in Late Archaic times. However, there is no book of revelation and nothing like an ancient Greek manual on cults. Ancient authors report on only a small fraction of the sanctuaries in the Greek-speaking world. Often these are only brief mentions that refer to a single aspect that interested the respective author. Reconstruction and understanding of Greek cult can only be achieved by putting together pieces of different types of evidence[43].

There is a strong geographical imbalance in the available evidence of ancient Greek cults. By far the majority of literary sources deal with Athens. The same is true of the iconographic evidence: Athenian potters and sculptors were the most prolific creators of images illustrating rituals. It is therefore not surprising that Athens is at the centre of most studies on Greek religion. Athens is the centre of the mass of the surviving evidence – but it was not the centre of Greek religion, towards which the cults of the rest of the poleis would have been oriented. Athens was not to the ancient Greeks what Rome was later to Catholic Christianity. This is especially true of the pre-Classical period, before Athens succeeded in significantly expanding its political and cultural influence within the Aegean and beyond[44].

Myths, cults and rituals differed from region to region within the Greek-speaking world, often from polis to polis[45]. This diversity was most pronounced before the 5th century BC, in the world of the small communities of the Early Iron Age and the emergent, then flourishing poleis of the Archaic period. The northwestern Peloponnese, our area of study, was a central part of the early Greek world, and its importance and interaction grew steadily from the 8th century BC onwards.

Outside Athens, we are largely dependent on the archaeological evidence when dealing with early Greek cult. The northwestern Peloponnese is not an exception to this rule, but rather confirms it. Written sources are patchy, and most of them are much later than the period in question[46]. The Panhellenic Sanctuary of Zeus at Olympia alone occupies a certain special position here.

In the time covered by this volume, the Geometric and Archaic periods, written and iconographical sources are still relatively rare. For that reason, written testimonies from later times have often been used to explain older archaeological evidence. A general tendency of conservatism observable in cults supports this approach, but we should never forget that religion and cult followed their own dynamics, and sometimes we notice even fundamental changes over time[47]. This means that the essential value of the *longue durée* perspective lies in recognising changes and constants in a particular cult. Directly retrojecting later patterns onto earlier epochs, on the other hand, would be grossly simplistic[48]. Changes in society and the lifeworld are reflected in

41 Contribution of V. Vlachou.

42 Contributions of G. Alexopoulou, W. Gauß – F. Ruppenstein, G. Klebinder-Gauß, S. Nestoridou – C. Rathossi, and G. P. Schaus. Cf. van Straten 2000 (with bibliography).

43 Cf. Elsner 2012, 4: »In art history, archaeology, or architectural history, ritual is not an empirical observation but rather an inference, a best guess, derived from material culture with the help of any other evidence (contextual, written, comparative) that can be supplied to help the argument work.«

44 On the »Athenocentric bias«: Bremmer 2021, 11. Cf. contribution of C. Morgan.

45 On the local, regional and Panhellenic levels of Greek religion and cult: Parker 2011, 225–236; Versnel 2011, 110–142; Bremmer 2021, 1. 11. On the model of »polis religion«: Sourvinou-Inwood 1990. For a critical evaluation of this concept: Kindt 2012, 11–35.

46 On Achaia: Osanna 1996; Rizakis 2005. On Arkadia: Jost 1985; Jost 2018. On Elis and Triphylia: Pilz 2020. On northern Arcadia: contribution of G. Alexopoulou.

47 Fogelin 2007, 57 f.; Keane 2008, 124; Insoll 2011, 3; Öhlinger 2015, 23 f.; Pakkanen 2015, 29 (all with bibliography).

48 Contribution of C. Morgan.

religious practice. This is particularly obvious if we analyse the range of votive offerings over time[49]. But it can equally be grasped in the diachronic changes in the composition of ceramic assemblages from sanctuaries, as Vicky Vlachou shows with the example of the Amyklaion[50].

For the last two decades, there has been growing interest in the material aspects of the cult, whereas previously studies of ancient Greek religion relied largely on literary and epigraphic sources[51]. The representatives of this ›material turn‹ have devoted increased attention to the materiality of ritual and religion with the aim to explore »what this might tell us about defining religion … and reconstructing rituals and potentially (albeit often elusively) beliefs«[52]. The relationship between religion and material culture is complex, and the discussion about what exactly we see in the archaeological evidence continues[53].

It is predominantly the activities in a sanctuary that we can infer from the archaeological record[54]. The belief system behind it remains largely closed to us without explicit written sources[55]. Sometimes, images can provide information, but they need interpretation, as do the texts[56].

If, as in the case of the early historical sanctuaries of the northwestern Peloponnese, contemporary local written sources are largely lacking, comparisons can help to a certain extent – with other sites in the Greek-speaking world and/or with later, better documented periods. Nevertheless, we should always be aware that such comparisons can only offer probable explanatory models[57]. They rarely have probative value, since ancient Greek religion and its cults were characterized by regional differences and were subject to dynamic development[58].

Both sacred and profane activities took place in ancient Greek sanctuaries. It is sometimes difficult to draw a line between the two, as religion was embedded in everyday life in antiquity[59]. A strict separation between profane and religious spheres, as demanded by the European Enlightenment, was alien to the ancient Greeks. This entanglement between the sacred and the profane sphere means, on the other hand, that also secular activities took place in a sanctuary: temene could accommodate workshops, market stalls, areas for asylum and accommodation for cult personnel, to name just a few of them[60]. Evidence for temporary bronze workshops operating on site to meet the local demand was detected in the Amyklaion[61], at Tegea, Olympia and other sanctuaries of the Geometric and Archaic periods[62].

It is even more difficult to make this separation based on the archaeological evidence, since many of the artefacts and ecofacts could be used in both ways[63]. The context can help make a de-

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49 Lindström – Pilz 2013.

50 Contribution V. Vlachou. Cf. Vlachou 2018.

51 For an overview of worldwide research on cults including those of ancient Greece: Insoll 2004, 67–100.

52 Insoll 2011, 1.

53 Contribution of C. Morgan.

54 Fogelin 2007, 59–61; Kyriakidis 2007b, 9; Voyatzis 2019, 144.

55 Renfrew 1994, 49; Öhlinger 2015, 23; Pakkanen 2015, 28. A lack of texts makes the etic perspective of the researcher even more problematic: Kyriakidis 2007c, 292–294.

56 Renfrew 1985, 13 f.; Renfrew 1994, 49. 53 f.

57 Comparisons with cultures that were spatially and temporally distant and had no knowledge of each other seem less helpful in my view, as such analogies can only reveal very general patterns of human behaviour. They can contribute little to the reconstruction of a specific cult; cf. Pakkanen 2015, 35–37 with comparisons from South- and Mesoamerican archaeology. Cf. the critical remarks of Kyriakidis 2007c, 297 f.

58 Contribution C. Morgan. Cf. Parker 2011, 225–236; Pakkanen 2015, 28; Bremmer 2021, 1.

59 Bremmer 1994, 2–4; Renfrew 1994, 47; Price 1999, 3; Kyriakidis 2007b, 10. 16–18; Öhlinger 2015, 18; Pakkanen 2015, 32; Bremmer 2021, 2–5.

60 Sinn 2005; Ekroth et al. (forthcoming) (both with bibliography). The ancient concept of temenos and its practical use are investigated in the ongoing research project »The ›profanity‹ of Greek sanctuaries? Defining the temenos as space for divine-human interaction 600 BC – 200 AD« under the direction of Gunnel Ekroth, <https://www.arkeologi.uu.se/staff/Presentations/gunnel-ekroth-en/> (09.11.2023).

61 Contribution of V. Vlachou. Cf. Vlizos 2017, 87 f. pl. 30.

62 Tegea: Nordquist 2014, 157–178; Olympia: Zimmer 1990, 156–159.

63 Renfrew 2007, 117. 120; Elsner 2012, 9.

cision here, but the majority of finds in sanctuaries come from secondary deposits that no longer permit a definite assignment to one specific event and often not even to a specific activity[64]. The cases of the acropolis of Aigeira, of the town centre at Lousoi, and of the ›Westkomplex‹ at Aigina-Kolonna demonstrate the difficulties in interpreting secondary deposits[65].

Most religious activities were ritualized. Colin Renfrew defined religious rituals as »practices that are time-structured and involve performance, with the repetition of words and actions in formalized ways«[66]. The purpose of ritualizing procedures is »setting some activities off from others, for creating and privileging a qualitative distinction between the ›sacred‹ and the ›profane‹ and for ascribing such distinctions to realities thought to transcend the powers of human actors«, as Catherine Bell put it[67].

Rituals are those parts of the cult that are most comprehensible to us in the archaeological record[68]. Among them, we can best understand animal sacrifices, feasting with collective eating and drinking and setting up votive offerings[69]. It is therefore no coincidence that archaeological research focuses on these cult practices, as other rituals left little or no trace in the archaeological record. This is also true for our volume.

In his seminal study »The Archaeology of Cult«, Colin Renfrew compiled and systematized archaeological correlates for sacred rituals in the Aegean[70]. None of them alone can be considered a sure indicator of cult. Rather, it is a combination of several correlates in a specific context that suggests the performance of sacred rituals. Originally developed for the Bronze Age, Renfrew's catalogue of criteria was adopted by subsequent researchers and modified for the historical period, among them Korinna Pilafidis-Williams, Catherine Morgan, Helmut Kyrieleis and Birgit Öhlinger[71].

The majority of the sites discussed in this volume are clearly identifiable as sanctuaries through written sources and/or architectural features. Temples were the focal points in the early sanctuaries of Poseidon Helikonios at Helike, of Artemis Aontia at Ano Mazaraki, of Athena at Trapeza and at Gremoulias[72], altars in the Sanctuaries of Demeter at Thea and of Apollo at Amykles[73]. The Early Hellenistic Temple of Artemis Hemera at Lousoi had possibly a Late Archaic predecessor[74]. Here, the site continuity of the extra-urban sanctuary is a strong argument for the cultic interpretation of the Geometric and Archaic finds[75].

The above criteria are particularly important in all those cases where explicit evidence of cult, such as inscriptions, temples or altars is lacking. The caves of Tria Goupata near Stymphalos, Drakaina on Kephallonia, Boliatso on Leukas and the Polis cave on Ithaka did not have any clearly sacred structures. It is the analysis of the pottery and votive offerings which provides insights

64 Kyriakidis 2007b, 10. 14 f. 18–20; Lindström – Pilz 2013, 268.

65 Contributions of W. Gauß – F. Ruppenstein, of X. Charalambidou – G. Ladstätter – N.-M. Voß, and of G. Klebinder-Gauß.

66 Renfrew 2007, 109 f.; further details on 115 f. The concept of ritual has been the subject of an extensive discussion which has not led to a universally accepted definition: see, among others, Bell 1992, esp. 92; Bell 1997, 138–169; Fogelin 2007, esp. 58 f.; Kyriakidis 2007c, 289–294; Elsner 2012, esp. 10–12; Mylonopoulos 2015, 328 f. (all with bibliography).

67 Bell 1992, 74.

68 Renfrew 1985, 14–16; Renfrew 1994, 49. Cf. contribution of C. Morgan.

69 Cf. Renfrew 2007, 117.

70 Renfrew 1985, 18–21; Renfrew 1994, 51–53 (with 16 correlates). For a less optimistic view on the possibilities of identifying cult in the archaeological record: Elsner 2012, 6–13 (with bibliography).

71 Pilafidis-Williams 1998, 121–125; Morgan 1999a, 298–304. 315–343; Kyrieleis 2006, 62–69; Öhlinger 2015, 23–29.

72 Contributions of G. Alexopoulou and E.-I. Kolia. Cf. Petropoulos 2002; Kolia 2011. On the Archaic temple at Trapeza and the monumental Late Geometric building beneath it: Hellner – Gennatou 2015; Hellner 2019; Vordos 2019a; Vordos 2019b.

73 Contributions of S. Nestoridou – C. Rathossi and of V. Vlachou.

74 Mitsopoulos-Leon 1990.

75 Contribution of X. Charalambidou – G. Ladstätter – N.-M. Voß.

into the cultic use of these natural features[76]. This also applies to the situation at Aigeira, Lousoi and Aigina-Kolonna. The Late Geometric and Archaic structures on the acropolis of Aigeira were severely destroyed by later constructional measures. Pottery, terracotta figurines, metal objects and building elements were found in secondary deposits. Walter Gauß and Florian Ruppenstein interpret them in a holistic approach[77]. This is also the method of Gudrun Klebinder-Gauß at Aigina, where it is unclear if the so-called Westkomplex was still part of the temenos on the promontory of Kolonna. The architecture gives no clear indication of the original use. At Aigina, the archaeozoological analysis provided important additional arguments, as did several deposits in bothroi which were covered with omphalos-shaped stone lids[78]. The same combination of methods helped Xenia Charalambidou and Nora-Miriam Voß to understand the Geometric deposit in the town centre of Lousoi, after Georg Ladstätter had shown that the remains of two apsidal buildings belong to a younger phase than originally assumed[79].

Similarly, the functional analysis of the ceramic assemblage together with the study of the animal bones (and, if available, palaeobotanic remains) is the key to understanding the Protogeometric phases of the sites at Amykles, Ano Mazaraki, Helike, Olympia and Trapeza[80]. At the beginning of the Early Iron Age, there were no cult buildings in the northwestern Peloponnese, as in most other regions of Greece. Rituals and ceremonies took place in the open air. Archaeologically, they are reflected in secondary deposits containing mainly pottery, animal bones and ashes. Votive offerings are still rare in the 10th and 9th centuries BC. It is therefore mainly the analysis of the pottery and animal bone assemblages that provides evidence of cultic activities. A weighty argument for an early cultic use at these sites is the continuity, since they were undoubtedly sanctuaries in later times.

A special case is Seliana, the ancient kome of Phelloe, in the interior part of eastern Achaia. A Late Geometric apsidal building is situated in a necropolis, close to an extraordinarily rich burial. Christina Katsarou interprets this conspicuous spatial relation as an indication of a possible hero cult, corroborated by the chthonic iconography of one of the funerary objects[81].

Pottery is never the only archaeological evidence at a cult site, but it is often the most numerous kind of artefacts in early Greek sanctuaries. Due to its large number and the diverse range of shapes and fabrics, pottery can provide clues to larger phenomena of which ceramic containers are only a part[82]. It provides indirect evidence of activities, both cultic and profane, that took place in a sanctuary[83]; it may give an idea of the degree of connectedness of two sites of regions[84]; and it may help trace the role of perishable commodities such as food[85].

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76 Contributions of G. P. Schaus, A. Karadima and C. Morgan.

77 Contribution of W. Gauß – F. Ruppenstein.

78 Contribution of G. Klebinder-Gauß.

79 Contribution of X. Charalambidou – G. Ladstätter – N.-M. Voß. For the previous interpretation of the stratigraphy: Schauer 2018, 585 f. fig. 1.

80 Contributions of A. Gadolou and V. Vlachou. Ano Mazaraki: Gadolou 2002. Olympia: Eder 2006. Trapeza: Borgna – Vordos 2019, 18 f. figs. 10–14; Vordos 2019a, 146. 153. For further Protogeometric sites in the discussed area see the contribution of G. Alexopoulou. The cult in the Sanctuary of Artemis at Lousoi starts a little later, in the 9th cent. BC: contribution of X. Charalambidou – G. Ladstätter – N.-M. Voß.

81 Contribution of C. A. Katsarou.

82 Morgan 1999a, 315–340, esp. 321–326; Eder 2006, 202–210 (both with bibliography).

83 Contributions of S. Barfoed, X. Charalambidou – G. Ladstätter – N.-M. Voß, A. Gadolou, W. Gauß – F. Ruppenstein, A. Karadima, G. Klebinder-Gauß, C. Morgan, S. Nestoridou – C. Rathossi, G. P. Schaus and V. Vlachou.

84 Contributions of A. Karadima, C. Rathossi – F. Lang, and V. Vlachou.

85 Contribution of S. Barfoed.

## Stratigraphy and Contexts

According to Colin Renfrew, »the recognition of cult must be on the basis of *context:* single indications are rarely sufficient in themselves«[86]. When studying ceramic assemblages from sanctuaries, researchers often face the problem of stratigraphic contexts that contain objects which accumulated over a long period of time. Time spans of several centuries are not uncommon, as in the cases of the famous ›black layer‹ at Olympia and the large dumps on the ›east terrace‹ at Isthmia[87]. Further examples discussed in this volume are the grey layer in the Sanctuary of Poseidon at Helike, the embankment deposit in the Artemis Sanctuary at Lousoi, as well as the deposits at Thea and in the Amyklaion[88]. Such extensive deposits were often part of large construction projects which entailed a clearance and re-landscaping of the temenos. Large amounts of pottery, votive offerings together with animal bones and ashes from sacrifices and the subsequent communal meals were (re-)deposited in large levelling layers. Through these re-depositions, artefacts and ecofacts of different dates were mixed together. Often there are several centuries between the oldest and the youngest pieces. Under these conditions the pottery analysis is largely based on independently datable ceramic classes, mostly on finewares. Since coarse and cooking pottery is often less well studied and typologically more difficult to date, it can only be taken into account to a limited extent in a diachronic interpretation of such deposits with a long duration. As a consequence, there is sometimes a bias in the interpretation of the overall assemblage at the expense of coarse wares[89]. Although such levelling layers have generally no internal stratification with chronological significance, sometimes lots of recently discharged objects can be discerned within them[90]. This is the case in the Artemis Sanctuary at Lousoi, where Xenia Charalambidou and Nora-Miriam Voß identified several complete vessels which were intentionally placed between the uppermost stones of the embankment that stabilizes the north side of the upper sanctuary terrace[91]. At Thea, the miniature hydriae were deposited in a similar way – densely packed with stones in between, but in large numbers, as Stella Nestoridou showed[92]. At Aigina-Kolonna, a small pit in the ›Südbau‹ contained a deposit of miniature vessels and numerous terracotta figurines, as Gudrun Klebinder-Gauß pointed out[93].

In the northwestern Peloponnese, the diachronic development of pottery was mainly established on the basis of burial groups[94]. Well-dated contexts from sanctuaries are rare in this region. The exceptions are all the more important: in the Poseidon Sanctuary of Helike, Erofili-Iris Kolia and Anastasia Gadolou were able to work out a detailed stratigraphy of the Early Iron Age layers[95]. Likewise, Georg Ladstätter was able to define two closed deposits of the Geometric Period in the town centre of Lousoi[96].

The handling of legacy data poses a particular challenge. This is due to early recording methods on excavation, inadequate documentation and a selection of the kept finds, the criteria of which can only be inferred indirectly[97]. The consequence of a re-evaluation is sometimes the deconstruction of earlier hypotheses. This is the case at the acropolis of Aigeira, where Walter Gauß, Georg Ladstätter and Florian Ruppenstein were able to show that Wilhelm Alzinger's hy-

86 Renfrew 1985, 15.
87 Gebhard 1999, 195–208. 213–217 figs. I.66–67 (Isthmia). Eder 2006, 197–202; Kyrieleis 2006, 27–55 (Olympia).
88 Contributions of A. Gadolou, E. Kolia, X. Charalambidou - G. Ladstätter – N. Voß, S. Nestoridou – C. Rathossi and of V. Vlachou.
89 Contribution of C. Morgan.
90 Contribution of C. Morgan.
91 Contribution of X. Charalambidou – G. Ladstätter – N.-M. Voß.
92 Contribution S. Nestoridou – C. Rathossi.
93 Contribution of G. Klebinder-Gauß.
94 Gadolou 2008.
95 Contributions of E.-I. Kolia and A. Gadolou.
96 Contribution of X. Charalambidou – G. Ladstätter – N.-M. Voß.
97 Contribution C. Morgan. Cf. Harris 1989, 22–28; Altekamp 2004.

pothetical reconstruction and dating of the building remains are untenable[98]. The oldest actually verifiable sacred architecture dates only from the Late Archaic period.

## Functional Analysis of Pottery Assemblages from Sanctuaries

If we look at the range of vessels from various sanctuary assemblages, then we find both generally widespread traits and those that differ greatly locally. The pottery assemblages discussed in this volume confirm our notion of the great societal importance that communal consumption in sanctuaries had for society in early historic Greece[99]. The preponderance of vessels for consumption is characteristic for cult places of the Geometric and Archaic period. The northwestern Peloponnese is no exception to this rule, as the evidence from Aigeira, Ano Mazaraki, Helike, Lousoi, Olympia and Trapeza shows[100]. Together with considerable amounts of animal bones, the high percentage of drinking vessels, supplemented by vessels for pouring and mixing, reveals that communal eating and drinking must have been an important activity in early Greek sanctuaries also in this region. While the animal sacrifice served to maintain a good relationship with the gods, the subsequent communal consumption of the sacrificial meat had a strong social component by strengthening the sense of community, making hierarchies visible and distributing meat within the entire population[101]. However, we should not forget that such festive meals are well visible in the archaeological evidence, while rituals such as dances, chants and prayers leave (almost) no material traces[102].

If the high proportion of consumption vessels can be considered a general characteristic, the individual cult places often differ significantly in the frequency of other classes of pottery, as for example vessels for cooking and storage. This segment of the assemblage can tell us whether the food consumed at the celebrations was prepared at the site and if the foodstuffs were stored in the temenos or brought from the nearby settlement[103]. Cooking pots were found in large numbers in the Boliatso Cave on Leukas and in the ›Westkomplex‹ at Aigina-Kolonna[104], as was the case, for example, in the Protogeometric deposits of Kalapodi and Ephesos[105]. A considerable amount of coarse ware cooking pots, amphorae, plates and bowls were excavated at Helike[106]. Cooking vessels were also part of the ceramic assemblage of the Late Geometric period at Trapeza[107]. Cooking pots, amphorae and mortars occur in smaller numbers in the Archaic layers at Thea[108]. In contrast, cooking and storage vessels are rare or even absent in the excavated assemblages of the

98 Contribution of W. Gauß – F. Ruppenstein.

99 Contribution of C. Morgan (with bibliography).

100 Contributions of X. Charalambidou – G. Ladstätter – N.-M. Voß, A. Gadolou, W. Gauß – F. Ruppenstein, A. Karadima, G. Klebinder-Gauß, and V. Vlachou. Cf. Morgan 1999a, 261 f. 266–268. 322. 392 f. (Isthmia); Gadolou 2002, 167. 172 (Ano Mazaraki); Eder 2006, 209 (Olympia); Nordquist 2014. 154 (Tegea); Borgna – Vordos 2019, 18 figs. 12. 13; Vordos 2019a, 146 (Trapeza); Voyatzis 2017, 75. 85 f.; Voyatzis 2019, 144 (Mt. Lykaion).

101 Bremmer 2007, 143–144; Sossau 2019, 66–69. 126–130.

102 On chants and dances in Greek cult: Kowalzig 2007.

103 Contribution C. Morgan. However, several factors that can influence the explanatory power of the range of vessels must be taken into account. If only a part of a sanctuary was excavated, the finds are not necessarily representative of the entire material culture of that site. If metal vessels and implements were used for food preparation, they may have been later reused or recycled and are therefore missing from the archaeological record.

104 Contributions of G. Klebinder-Gauß and C. Morgan.

105 Ephesos: Kerschner 2003, 247 fig. 47 pl. 39, 3. Kalapodi: Nitsche 1987, 36–87; Jacob-Felsch 1996, 73–85. For an overview of the diachronic development of the sanctuary: Niemeier 2016. Cf. also the Geometric sanctuary deposit at Minoa on Amorgos: Blanas 2003, 115 pl. 20 g–i.

106 Contribution A. Gadolou (quoting a preliminary report of J.-S. Gros).

107 Vordos 2019a, 146.

108 Contribution S. Nestoridou – C. Rathossi.

sanctuaries of Amykles, Ano Mazaraki, Isthmia, Lousoi, Olympia, Tegea, in the ash altar on Mt. Lykaion and in the Early Iron Age contexts of the Sanctuary of Demeter and Kore at Corinth[109].

In the Geometric period, the standard set of cooking utensils consisted of a few vessel shapes – chytra, lekane and tray – to which were added knives and iron obeloi[110]. Grilling and cooking were the main ways of preparing meals. It was not until the Archaic period that a diversification of cooking ware shapes allowed for a growing variety of dishes[111]. As Gunnel Ekroth convincingly argued, stews combining meat with grains, legumes and spices were the principal meals in Early Iron Age sanctuaries[112]. Stewing made it possible to mix the meat of sacrificial animals – mostly sheep, goats, cattle and pigs – with that of other animals, which was ›sacralised‹ in this way[113]. This form of stew made it possible to feed many more people than would have been possible with grilling of the sacrificial victims alone. Therefore, the frequency, rarity, or absence of cooking pots can be used as a significant indicator to distinguish whether the food was prepared directly in a sanctuary or brought from outside[114]. However, this indicator is not absolute, as we must take into account that stews may also have been cooked in bronze cauldrons, which are sometimes not preserved in the archaeological record because the metal was reused.

The Sanctuary of Trapeza offers rare *in situ* evidence for the preparation of meals within a temenos. Andreas Vordos discovered »a succession of pyres« inside the Late Geometric building beneath the Archaic temple and interpreted them as »remnants of food preparation for the ceremonial meals that were taking place inside it«[115].

In the case of cult sites in a settlement area, the question often arises as to whether it is a cultic or a domestic deposit[116]. One such case is the ›Westkomplex‹ in Aigina, where it is not clear whether it lies on the fringe of the Sanctuary of Apollo or already outside it[117]. Differentiating between a domestic and a sacred context can be rather a question of quantities and ratios of individual artefact types than of the mere occurrence of a specific category. For example, the share of terracotta figurines in the ›Westkomplex‹ at Aigina is significantly higher than the average in a household. Gudrun Klebinder-Gauß argues that a high degree of variation within a certain class of objects may also be a valid indicator of votive offerings rather than artefacts of profane use[118].

The state of preservation of an object can lead us on the trail of rituals. Vicky Vlachou interprets the burnt fragments of Geometric kraters at the Amyklaion as having been thrown into a fire in the course of a ceremony[119]. Sharp broken edges may indicate that the pots were deliberately broken, possibly after a communal meal. In any case, they show that the pottery fragments were not relocated after they were shattered.

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109 Amyklaion: contribution of V. Vlachou. It is interesting to note that cooking vessels are represented among the miniature pots: Vlachou 2018, 101 f. Ano Mazaraki: Gadolou 2002, 170. Isthmia: Morgan 1999a, 289 f. 323; Morgan 2013, 249 (the picture may be biased by the selection of fragments kept by the excavators). Corinth, Demeter and Kore: Pfaff 1999, 71. Lousoi: contribution of X. Charalambidou – G. Ladstätter – N.-M. Voß; von Miller 2016, 279. Lykaion: Romano – Voyatzis 2014, 589–612; Voyatzis 2017. Olympia: Eder 2006, 205. Tegea: Voyatzis 2014, 356–358. The cooking pots from the deepest EIA layers at Trapeza belong presumably to a settlement context: Borgna – Vordos 2019, 18 f. fig. 13, 5 B.

110 Contribution C. Morgan.

111 Gros 2017.

112 Ekroth 2008.

113 Ekroth 2007, esp. 265–268.

114 Contribution C. Morgan.

115 Vordos 2019a, 145 fig. 9.

116 Other uses are also conceivable, but difficult to determine on the basis of the range of vessels, e.g. a tavern or a meeting place of an association.

117 Contribution of G. Klebinder-Gauß.

118 Contribution of G. Klebinder-Gauß.

119 Contribution of V. Vlachou.

**Factors Influencing Find Statistics and Their Interpretation**

The functional analysis of a ceramic assemblage is based on the statistics of the finds. There are several factors which influence the figures and have therefore to be considered. It is important to know whether the context under investigation is complete or at least represented in a representative set of finds. Erosion or later construction work can reduce ancient deposits[120]. Sometimes they can only be partially excavated, for example in emergency excavations that end at an arbitrary property boundary, although the findings extend beyond it, as in the cases of Thea and Seliana[121]. The excavation method also influences the interpretation. If metric excavation was applied, the natural layers have to be reconstructed afterwards, whereby there are always overlaps and unclear spots that cannot be completely resolved[122].

Excavators often make a selection of finds and save only a part of the objects for reasons of limited storage capacity[123]. Here it is important to know the criteria according to which the finds were selected. In older excavations, this often concerns coarse and cooking pottery, which was only kept in a few, well-preserved specimens[124]. The definition of which fragments are regarded as diagnostics depends largely on the experience and intentions of the archaeologists who study the finds. It depends on them which and how many fragments find their way into the statistics. All these preconditions are important for the evaluation of an interpretation based on statistics. Therefore, they should be noted in a publication.

Most of the pottery finds from sanctuaries come from levelling and filling layers in which the vessels are fragmented. In the fragmented state, certain vessel shapes are easier to identify than others. Therefore, they are often over-represented in the statistics. This applies, for example, to painted fine pottery and drinking vessels compared to bowls or cooking pots. Catherine Morgan assumes that also the actual amount of kraters is frequently underestimated due to their state of preservation[125].

The precept οὐκ ἐκφορά which is mentioned in some preserved ritual norms should no longer be considered as a rigorously applied rule, as sometimes assumed in earlier research[126]. This was certainly not the case in all places and at all times, and it is likely that rare or costly equipment could have been borrowed for certain occasions, especially at small and remote shrines[127].

Another phenomenon that occasionally occurs is the selective deposition of sacrificial residues and votives by type. Animal bones and ashes were separated from the pottery in the Boliatso Cave on Leukas[128], and this was possibly also the case in the Sanctuary of Artemis Hemera at Lousoi, where only very few animal bones have been found so far[129].

The multifunctionality of individual vessel shapes is a challenge in the interpretation of ceramic assemblages, as it can significantly influence the result of a statistic, as Catherine Morgan points out[130]. Vessels, like many other objects, can be used differently by people depending on available resources, local habits and changes over time[131]. Lekythoi and small oinochoai were used both for offering liquids and for libations[132]. At remote cult sites that can only be reached by

120 In the Artemis Sanctuary of Lousoi, the upper parts of the embankment deposit have slid down the slope. Other parts could not be excavated for static reasons. Cf. contribution of X. Charlambidou – G. Ladstätter – N.-M. Voß.
121 Contributions of C. A. Katsarou and S. Nestoridou – C. Rathossi.
122 Contribution of X. Charlambidou – G. Ladstätter – N.-M. Voß. Cf. Kerschner 2011, 20 f. fig. 1 (Ephesos).
123 Contribution of W. Gauß – F. Ruppenstein.
124 Morgan 2013, 249 (Isthmia).
125 Contribution of C. Morgan.
126 E.g. Burkert 2011, 95 n. 3.
127 Contribution of C. Morgan.
128 Contribution of C. Morgan
129 Contribution of X. Charalambidou – G. Ladstätter – N.-M. Voß. Cf. Mitsopoulos-Leon 2018, 340 f.; Kerschner et al. (forthcoming). For a different hypothesis: von Miller 2016, 279.
130 Contribution C. Morgan.
131 Stockhammer 2015, 277 calls this property of objects »Wandelbarkeit«.
132 Contribution V. Vlachou.

a difficult route, it is obvious to use the same vessels for different purposes in order to reduce the transport weight. Smaller chytrai, for example, could be used for cooking, eating and drinking[133]. This would never have become a general rule, but must be considered in certain places.

In contrast, the combined use of deep skyphoi for eating and drinking »as a simple multipurpose vessel as basic equipment for an entire meal« may have been widespread in the Protogeometric era[134]. Thus, a consistent division according to eating and drinking vessels is not possible in the Early Iron Age. Consequently, Catherine Morgan suggests that the functional analysis of the ceramic assemblage should not distinguish between vessels for eating and for drinking, but rather group them together under the common aspect of consumption[135].

Another variable we need to keep in mind when analysing the function of sanctuary deposits is the biography of the artefacts, which can include changing uses. An illustrative case are the amphorae in which wine, olive oil or solid foodstuffs were transported to a cult place. After they were emptied, the amphorae continued to be useful and could be reused to store other goods, but also to transport water, or to remove waste. Even when fragmented, there were uses, for example as building material; severed mouths could be embedded in the ground as holders for other amphorae[136]. So, if we want to classify a fragment of an amphora in the functional analysis of an assemblage, we should ask ourselves whether it fulfilled one or more purposes in its object biography[137].

These considerations lead to the consequence that the mere assessment of the prime or main functions of the individual forms is not enough, if we want to interpret the range of vessel shapes in a certain assemblage. Several forms could be used for several purposes; changes over time occur, and a possible use deviating from the normal function of an object should also be taken into account.

If, in addition, one also considers the biases in the find statistics that may have resulted from erosion or displacement of parts of a deposit, from its incomplete excavation or inadequate documentation, a scepticism arises as to the identifiability of rituals. What we can gain from interpreting the range of finds is a general impression of the essential and frequently repeated activities in a sanctuary. For two reasons it is mostly impossible to prove individual rituals: firstly, objects may have been used at more than one occasion; secondly, artefacts and ecofacts are mostly found in secondary deposits[138]. There are, however, important exceptions – for example, when separate deposits of individual events are found (e.g. building sacrifices), or when a particular ritual essentially dominated at a cult site.

Another challenge is the comparison of the find ranges of different sanctuaries. Several hurdles have to be overcome here: not only the varying excavation and documentation methods at the individual sites, but also variations in the classification of vessel categories and their function. A round table organised by Samuel Verdan, Thierry Theurillat and Anne Kenzelmann Pfyffer contributed significantly to raising awareness here[139]. However, a uniform approach has not yet emerged.

## Miniature Pottery

Miniature vessels occur in greater or lesser numbers in most, if not all of the sanctuaries discussed here[140]. Most of them are scaled-down versions of common size pots, generally about 10 cm high

133 Contribution of C. Morgan.
134 Morgan 1999a, 323. Cf. Eder 2006.
135 Contribution C. Morgan.
136 On the biography of transport amphorae from prime use to discard: Lawall 2011, 43–47.
137 Contribution of C. Morgan.
138 Kyriakidis 2007c, 14 f. 18–20.
139 Verdan et al. 2011.
140 Contributions of G. Alexopoulou; S. Barfoed, X. Charalambidou – G. Ladstätter – N.-M. Voß, A. Karadima, C. Morgan, S. Nestoridou – C. Rathossi, G. P. Schaus, and V. Vlachou. Cf. Ano Mazaraki: Gadolou 2002, 179. 183.

or smaller[141]. There exist also vessels of such a small size without a corresponding larger model which are also called miniatures. The pseudo-pyxides in the Sanctuary of Artemis at Lousoi are an example[142].

In the Early Iron Age miniature vessels were rare, but they occur in some sanctuaries, among them the Amyklaion, the Sanctuary of Athena Alea at Tegea and the Artemision at Ephesos[143]. Small-scale pots quickly became popular as votive offerings in the 7th century BC and remained so until the Classical era[144]. They often occur as larger sets of the same types. The rapidly increasing demand from Early Archaic times onwards stimulated productions near the sanctuaries, as e.g. at or near Kalydon, Lousoi, Sparta and Thea[145]. In the northeastern Peloponnese, especially in Corinth and Argos, pottery workshops specialized in a serial production of miniature vessels. Extraordinarily popular were Corinthian kotyliskoi which were exported within Greece (e.g. Aigina-Kolonna, Drakaina on Kephallonia, Gremoulias, Kalydon, Lousoi and Tria Goupata)[146] and beyond in the Mediterranean and the Black Sea[147].

At some sites, miniature pots occur in huge numbers. One of them is the Demeter Sanctuary at Thea, where a total of 21,000 miniature vessels were found, accounting for two-thirds of the total pottery assemblage[148]. As miniature vessels predominate, they must have played a special role in the cult, comparable in the northern Peloponnese to the Sanctuary of an unknown deity on the acropolis of Phlius[149]. Signe Barfoed suggests that miniature pots are personal dedications and thus may allow obtaining a rough estimate of the number of the participants in a ceremony[150]. However, we do not know whether individual participants did not offer several such small objects, perhaps even many at one occasion. It is conceivable that a dedicator thought that a multiple offer might make the deity more favourable to the request[151]. We can find an indication of the extent of a single dedication in the Demeter Sanctuary of Thea, where Stella Nestoridou detected identical pairs of miniature vessels of a special shape variant each found in the same context[152]. Similarly, Leslie Hammond identified triples of such identical vessels at Tegea[153]. This suggests dedications of pairs or triples, but does not exclude the offering of larger numbers of items at a single occasion. Furthermore, we do not know if the dedication of two miniature pots was a rule at Thea or only a possibility. It is also conceivable that entire sets of a drinking equipment *en miniature* were dedicated, consisting of small-scale oinochoai, cups and kraters, as Georgia Alexopoulou suggests for Gremoulias[154].

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141 For definitions: Morgan 1999a, 325 (»vessels too small to fulfil the normal function of the shape«); Hammond 2014, 401; Barfoed 2018, 112–115.

142 Contribution X. Charalambidou – G. Ladstätter – N.-M. Voß. Cf. Schauer 2001, 155–159 (here called »Kultpyxiden«).

143 Amyklaion: contribution of V. Vlachou. Tegea: Hammond 2014, 402. 412–419. Ephesos: Kerschner 2003, 248 f. pl. 38, 3; Kerschner 2017, 22 f. fig. 6. On the other hand, miniature vessels are absent from the EIA assemblages at Helike – contribution of A. Gadolou, Isthmia – Morgan 1999a, 325, and Olympia – Eder 2006, 206.

144 Gimatzidis 2011, 82–84; Barfoed 2018, 121 f.

145 Contributions of S. Barfoed, X. Charalambidou – G. Ladstätter – N.-M. Voß, S. Nestoridou – C. Rathossi, and V. Vlachou. Cf. Kerschner et al. (forthcoming).

146 Contributions of G. Alexopoulou, S. Barfoed, X. Charalambidou – G. Ladstätter – N.-M. Voß, A. Karadima, S. Nestoridou – C. Rathossi, and G. P. Schaus.

147 Gimatzidis 2011, 84; Barfoed 2018, 114 fig. 1 (both with bibliography).

148 Contribution S. Nestoridou – C. Rathossi. Cf. the contribution of S. Barfoed.

149 Biers 1971. On »travelling« miniature pots from Phlius in the Argive Heraion and at Perachora: Ekroth 2003, 36 and the contribution of S. Barfoed. Cf. the Archaic deposit in the Argive Heraion: Caskey – Amandry 1952, 197 (hydriskai count for ca. 50 % of the whole assemblage). About 700 miniature vessels were excavated in the ash altar of Zeus at Mt. Lykaion: Romano – Voyatzis 2014, 612–614 fig. 24.

150 Contribution of S. Barfoed.

151 Barfoed 2018, 119.

152 Contribution S. Nestoridou – C. Rathossi.

153 Hammond 2005, 425 n. 45.

154 Contribution G. Alexopoulou.

Individual sites show a preference for a specific shape of miniature vessel[155]: At Thea, the hydriskai constitute two-thirds of the whole pottery assemblage, followed by krateriskoi (about one quarter of the whole)[156]. At Lousoi, the pyxis prevails, often the pseudo-pyxis with non-removable lid[157]. At the Amyklaion, miniature coarse aryballoi were popular in the Archaic period[158]. At the Drakaina Cave, kanthariskoi are frequent and of the same type as their normally sized counterparts[159]. Various shapes of miniature pottery were part of the votive deposits at Ano Mazaraki, including oinochoai and cylindrical vessels[160]. Similar amphoriskoi were found in the sanctuaries of Lousoi and Helike[161].

For a long time, miniature vessels were considered by researchers as cheap substitutes for large dedications, and therefore were not given much attention. This has changed gradually in more recent times, and in the last two decades there has been increasing discussion of the importance of objects of reduced scale in cult practice[162].

Various explanations have been given for the large number of miniature vessels found in some sanctuaries. Stefanos Gimatzidis proposed that »the abundant miniature pottery reflects a more massive participation, from the Early Archaic Period, in religious activities, by a growing clientele from a wide range of social groups«[163]. The cheap price allowed even ordinary people to consecrate such mass-produced items and thus actively participate in the cult. Beyond the social aspect, other factors may have played a role as well. Gunnel Ekroth emphasized an inherent quality of the small objects, as their »small scale ... demanded the scrutiny of inspection«; consequently, miniature pots »may have expressed a more personal mode of dedication rather than just being a result of limited resources«[164]. The technical skill in making the fine examples among the miniatures may have evoked admiration[165]. In the case of remote sites like the caves of Tria Goupata and Drakaina, which could only be reached by an arduous route, the ease of carrying small objects instead of heavier ones may also have played a role, as Gerald Schaus suggests[166]. In some cases, miniature pots may have been consecrated by a special group among the cult followers, such as women or children[167]. However, the large quantities of miniature vessels that we find in some sanctuaries also suggest special rituals.

Several of the contributions in this volume emphasize the symbolic content of miniature ceramics: Catherine Morgan suggests a symbolic relationship between the assemblage of normally sized pots and their counterparts *en miniature*[168]. Just like Signe Barfoed, Gudrun Klebinder-Gauß, and Vicky Vlachou, she interprets small-scale pots as tokens for the memorialisation of previously enacted rituals[169]. Vicky Vlachou proposes that the miniaturized coarse ware cooking pots from the Amyklaion may have been symbols of the oikos, possibly offered with a symbolic portion of their usual content[170].

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155 Cf. Gimatzidis 2011, 83 f.
156 Contribution of S. Nestoridou – C. Rathossi.
157 Contribution of X. Charalambidou – G. Ladstätter – N.-M. Voß.
158 Contribution of V. Vlachou.
159 Contribution of A. Karadima.
160 Gadolou 2002, 179. 183.
161 Lousoi: Schauer 2018, 588 f. fig. 5. Helike: Kolia 2011, 218 fig. 25.
162 Ekroth 2003; Gimatzidis 2011; Luce 2011; Hammond 2014, 401 f.; Barfoed 2018 (all with bibliography). For an overview of the research history: Hammond 2014, 402; Barfoed 2018, 111 f.
163 Gimatzidis 2011, 85 f.
164 Ekroth 2003, 36.
165 Barfoed 2018, 114.
166 Contributions of S. Barfoed, A. Karadima and of G. P. Schaus. Cf. Ekroth 2003, 36.
167 Women at Tria Goupata: contribution of G. P. Schaus. Children at the Amyklaion: contribution of V. Vlachou.
168 Contribution C. Morgan.
169 Cf. Barfoed 2018, 117.
170 Contribution V. Vlachou.

The idea that miniature pots may have been used for offering a small, symbolic amount of fruit, liquids, wool or other perishable goods is expressed in several contributions of this volume[171]. Signe Barfoed hypothesizes that these small vases may have been used for mini-libations and pars-pro-toto offering of fruit at the Aparche celebrations. This hypothesis is supported by archaeobotanical evidence from Thea, where grains of barley and figs were detected in a miniature hydriske[172]. Similar evidence of food stuff inside miniature pots comes from Kalydon and the Mastro Cave in Akarnania[173].

Small-scale vases could also have been used for burning incense or scented wood[174]. Miniature lamps from the Demeter Sanctuary at Thea have traces of burning, proving their actual use[175].

## The Provenance of Pottery as Indicator of Economic, Social and Religious Networks

Pottery is one of the best indicators of interregional and intraregional contacts in the Early Iron Age and the Archaic period, when contemporary written sources are still scarce. The extant quantities of diagnostic vessel fragments in sanctuary assemblages usually allow a statistically reliable interpretation of the extent to which certain contacts did or did not play a role for the individual site[176]. But what do we actually see when we study the provenance of the vessels that make up an assemblage?

Rather than revealing a certain ethnic identity, acquiring a specific pot is an individual choice that depends on many factors including availability, affordability, popular trends, the desire to display wealth and status, the specific customs and rituals at an individual sanctuary or the supply at the site[177]. Therefore distribution patterns represent rather economic systems and/or social and religious networks than the ethnic background of the people who used the pots.

We can often determine the place of production by means of stylistic and archaeometric analysis of a vessel. We can also discern the context of its last use[178]. However, we usually know little of the pot's biography between these two endpoints. We rarely know anything about the transporters and possible intermediate stations and uses.

The appearance of objects from place A at place B testifies to a contact between the two, but whether this contact took place directly or indirectly is usually impossible to discern without written testimony. This is where interpretation comes in. An important criterion is whether the class of pottery concerned is common or rare.

If a class of pottery is widespread, its occurrence cannot be taken as a clear indication of a direct connection between the place of production and the individual sanctuary. For example, Corinthian miniature kotylai were found at Aigina-Kolonna, Kalydon, Lousoi, in the caves of Drakaina, Mastro and Tria Goupata[179], as well as in many other places in Greece and along the coasts of the Mediterranean and Black Sea[180]. The distribution of these vessels does not, therefore, produce a coherent pattern that can be explained by a specific network of the Corinthians, either religious or economic. Rather, we must reckon with different intermediaries[181]. We cannot deduce that these pots were brought by Corinthian worshippers, nor that there were close contacts be-

171 Contributions of S. Barfoed, S. Nestoridou – C. Rathossi, V. Vlachou.
172 Contribution of S. Nestoridou – C. Rathossi.
173 Contribution of S. Barfoed. On the Mastro cave: Nagel 2021.
174 Barfoed 2018, 120 f. fig. 9.
175 Contribution of S. Nestoridou – C. Rathossi.
176 Verdan et al. 2011.
177 Contribution of C. Morgan.
178 Stockhammer 2015, 275 (»we have to bear in mind that even a primary context only represents the very last use of an object«).
179 Contributions of S. Barfoed, X. Charalambidou – G. Ladstätter – N.-M. Voß; A. Karadima, G. Klebinder-Gauß, and G. P. Schaus.
180 Morgan 1995 (with bibliography).
181 Cf. Gimatzidis 2011, 76.

tween the two places. However, we can just as little exclude the possibility that there were visitors from Corinth in these sanctuaries. The occurrence of Corinthian miniature vessels in a sanctuary can have so many different reasons that we cannot draw any specific conclusions from it without additional circumstantial evidence.

The case is different when a specific type of pottery that has a limited distribution appears in an individual sanctuary. The Impressed Ware, for example, is found outside eastern Achaia only at Lousoi, and even there only in the Artemis Sanctuary and not in the settlement[182]. This distribution pattern makes it much more likely that there was direct contact between the Lousiotes and their neighbours in eastern Achaia. However, whether the vessels were dedicated by Achaians or by Lousiotes eludes us.

A similar case is the Drakaina Cave on Kephallonia, where Corinthian pottery is rare, while the proportion of pottery from Elis and western Achaia is strikingly high[183]. This is especially true for the kantharoi of Elian type. It is therefore plausible when Agathi Karadima deduces that there were direct contacts between Kephallonia and the opposite coastal region of the Peloponnese, whether of a religious or economic nature, or a combination of both.

The occurrence of a widespread commodity like Protocorinthian and Corinthian fine ware tells more about the connectivity of a site than about its political or religious relation with the production place Corinth. Nonetheless, diverse factors have to be considered as possible reasons for a local distribution pattern, as each place has its own environmental, societal and political background. The high percentage of Corinthian pottery at Aigeira from the Late Geometric period onwards may reflect the importance of its harbour and the relative proximity to Corinth[184]. In contrast, the rarity of Corinthian pottery in the Sanctuaries of Helike and Lousoi points to the relative isolation of these sites in Geometric and Early Archaic times and to a predominantly local significance of the cults there[185].

If a high frequency of a non-local product coincides with a particular shape, it may be a bulk product offered at an attractive price due to its standardised manufacture[186]. This was possibly the case with the large quantities of Corinthian miniature vessels found in the Sanctuary of Artemis Laphria at Kalydon, in the Cave of Tria Goupata or in the ›Westkomplex‹ at Aigina-Kolonna[187]. The price is, however, only one of several factors that determine choice. In the assemblages from Aigina and Tria Goupata, Corinthian vessels make up a large proportion of the fine ware. Thus, they may have been acquired in the context of well-established trade links that were favoured by geographical proximity. Less common vessels, like the terracotta perirrhanteria and/or louteria at Thea and at Aigina-Kolonna, may rather point to a local need for a particular product in which Corinthian potters had specialised[188].

The Thapsos class is an important indicator of the connections between the Corinthian Gulf area and Southern Italy in the 8th and early 7th century BC[189]. Anastasia Gadolou was able to show that an important production site was located in Achaia, inspired by the Late Geometric style of Corinth[190]. From Achaia, this style spread as a koine around the Corinthian Gulf via the Ionian

182 Contributions of X. Charalambidou – G. Ladstätter – N.-M. Voß and A. Gadolou. On the Impressed Ware: Gadolou 2003; Gadolou 2012, 13–16. On the Impressed Ware at Lousoi: Schauer 2014. On Impressed Wared at Ano Mazaraki: Gadolou 2022,166–171. 183 f. pls. 16–17.

183 Contribution of A. Karadima.

184 Contribution of W. Gauß – F. Ruppenstein.

185 Contributions of A. Gadolou and X. Charalambidou – G. Ladstätter – N.-M. Voß. Cf. Kerschner et al. (forthcoming).

186 On the phenomenon of standardization and koinai in the 1st half of the 1st millennium BC: Handberg – Gadolou 2017.

187 Contributions of S. Barfoed, G. Klebinder-Gauß, and G. P. Schaus.

188 Contributions of G. Klebinder-Gauß and S. Nestoridou – C. Rathossi. Cf. Iozzo 1987; Kerschner 1996, 97–106.

189 Gadolou 2012, 16–18 (with bibliography).

190 Gadolou 2011, 46 f.

islands to Magna Graecia, but also to Central Greece and was produced at various places[191]. In this case, the Corinthian potters were not the suppliers of fine ware, but they provided the models for stylistically related local productions in a region with high connectivity. Wealthy Corinth provided the role model for the local elites who used this prestigious tableware for conspicuous consumption displayed in graves (Phelloe/Seliana) or in sanctuaries (Helike and Ano Mazaraki)[192].

Finally, we have to ask if the distribution pattern of provenances within the ceramic assemblage at a sanctuary reflects the intra-regional and sometimes even inter-regional community of cult participants, or if it rather indicates networks of procurement[193]. Both may be true, as the different ways pots may have entered a sanctuary may be intertwined.

Franziska Lang warns against a possible bias in the interpretation of the distribution pattern, as ceramic imports from politically powerful poleis are more in the focus of the research than others[194]. Due to this increased attention, they may be given greater weight und therefore seen as a strong indicator of political influence. If this case occurs, it is a classic circular argument.

## Ceramic Archaeometry

As we have seen, it is of major importance to know the production sites of each ceramic ware represented in a sanctuary. Consequently, archaeometric analyses have now become a standard tool in pottery studies, which previously depended entirely on typological and stylistic criteria, together with the error-prone macroscopic assessment of the fabric.

Ceramic archaeometry has a long tradition in the northern Peloponnese. Carlotta Gardner, Evangelia Kiriatzi and Noémi Müller outline the shift of research questions and development of methods through the past eighty years[195]. Questions of provenance are still the focus, with different methods being applied. However, science-based techniques face problems in the northern Peloponnese due to the geological homogeneity with beds of marl topped with terra rossa, as Vayia Xanthopoulou and Ioannis Iliopoulos demonstrate[196]. For this reason, especially chemical techniques that have proved to be powerful analytical tools elsewhere like NAA or WD-XRF are less effective in this region. Multi-analytical approaches have shown the most promising results in defining local production sites. Holistic approaches combine petrographic and chemical techniques as well as systematic observations of technological aspects of the pottery along with surveys and experimental studies of raw materials. Yet, despite the progress which has been made through intensive archaeometric studies in the northern Peloponnese (with a quantitative focus on Corinth), it is still difficult to define individual pottery centres and to differentiate them from each other.

Pottery specialists are often expected to classify large quantities of finds. For logistical and financial reasons, only a small proportion of the pieces can be investigated with science-based techniques. In order to resolve this discrepancy, Franziska Lang and Christina Rathossi suggest prescreening of the assemblage with a portable energy dispersive X-ray fluorescence analyser (P-ED-XRF) to form provisional groups[197]. This technique is non-destructive and can be carried out quickly so that large quantities of pottery can be processed within a reasonable time. Subsequently, representative samples can then be selected from the provisional groups to be analysed using more precise techniques such as WD-XRF or NAA.

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191 Gadolou 2017c, esp. 327–332. 337–339.

192 Contributions of A. Gadolou, C. Katsarou. Cf. Gadolou 2002, 166–171. 184 f. pls. 4–5. 16–17 (Ano Mazaraki); Gadolou 2017c, 336.

193 Contribution of C. Morgan.

194 Contribution of C. Rathossi – F. Lang.

195 Contribution of C. Gardner – E. Kiriatzi – N. S. Müller. For ceramic archaeometry at the Lykaion: Kordatzaki et al. 2016; Voyatzis 2019, 138 f.; at Tegea and at the Amyklaion: Fenn et al. 2014.

196 Contribution of V. Xanthopoulou – I. Iliopoulos.

197 Contribution C. Rathossi – F. Lang.

Chemical and petrographic data provide a factual basis for determining the origin of pottery, but they require interpretation. Christina Rathossi and Franziska Lang demonstrate how the combination of scientific techniques with systematic observation of technological and stylistic features helps to outline production traditions which may be indicative for an individual workshop, a group of workshops, a potters' centre or even an area of production[198].

By combining archaeometric analyses and systematic technological observations, it was possible to prove that the miniature pottery at Thea and at Lousoi was for the most part produced by local workshops[199]. At Kalydon, some miniature vessels of Achaian type were found, which are typologically and technically very similar to the pieces from Thea[200]. Archaeometric analyses would be necessary to investigate whether they were actually made in western Achaia.

Clay resources and pottery technology are important parts of the whole biography of ceramic objects. Vayia Xanthopoulou and Ioannis Iliopoulos take a landscape-based approach focused on usability of available raw clays in the northern Peloponnese. The physical and technological properties turned out to be similar: all of them required levigation or settling before being used for throwing pots. Corinthian clays have in general a better workability than raw material from eastern Achaia[201]. Christina Rathossi detected crushed iron and copper slag as deliberately added temper in pottery from Olympia[202]. These slags may have come from metal workshops that supplied the sanctuary. If this assumption were confirmed, it would shed new light on the cooperation of workshops of different kinds in the area of Olympia already in the Early Iron Age.

Clay colour can be used as an indicator of the hardness of the fabric if reference samples from a particular deposit are fired at different temperatures[203]. In this way, the clay colour provides information about the technological skills of the local potters. Furthermore, the availability of fuel should also be considered as a factor as a lot of wood, charcoal or dung is needed to reach high temperatures in the kiln.

## CONCLUSION

This volume provides an overview of recent and ongoing research in and on the sanctuaries of the northwestern Peloponnese from Aigeira and the Stymphalia in the east to Olympia in the west, with views beyond to the Ionian Islands, Aitolia, the Saronic Gulf and Laconia. The central theme is the pottery found and used at the cult places. The majority of the contributions in this volume explore the different aspects of ceramic assemblages that can provide information about the cultic, but also the profane activities that took place in these sanctuaries.

»The recognition of cult must be on the basis of context.«[204] Therefore, our first look is at the places and contexts where the pottery was found. The location of a cult place determines its connectivity and thus influences the composition of ceramic wares represented there. Easy or difficult accessibility affects the choice of vessel shapes. The relative chronology of the pottery builds on the stratigraphy. The association of objects in the deposits interconnects the biographies of ceramic vessels with those of the other artefacts and ecofacts. The sequence of deposits sheds light on the development and changes of a sanctuary and its cult.

If vessel shapes are analysed according to their function, they yield important clues about the sacred and profane activities that took place at a cult place. It should be borne in mind that vessels could be used in different ways. Here again, it is important to consider the find context. Minia-

198 Contributions of C. Rathossi – F. Lang and S. Nestoridou – C. Rathossi.

199 Contribution of S. Nestoridou – C. Rathossi. The results of the archaeometric investigations at Lousoi were presented at the symposium by Pamela Fragnoli (Vienna). Her paper will be published as a separate article.

200 Contribution of S. Barfoed.

201 Contribution V. Xanthopoulou – I. Iliopoulos.

202 Contribution C. Rathossi – F. Lang.

203 Contributions of C. Rathossi – F. Lang and of V. Xanthopoulou – I. Iliopoulos.

204 Renfrew 1985, 15.

ture vessels are a special case in assemblages from sanctuaries. They could both hold offerings in small quantities and be dedicated for their own sake. In both cases they have a symbolic role. Painted pottery can depict rituals that otherwise left no trace in the archaeological record, such as processions, music and dance.

A key role in the analysis of ceramic find complexes is the origin of the individual wares. There are still many unanswered questions in the northwestern Peloponnese, but progress has been made in localising individual production centres by combining different methods. Traditional typological and stylistic criteria are increasingly combined with various scientific techniques and technological observations.

The way in which the raw clay was prepared and how the vessels were technically shaped allows conclusions to be drawn about the forms of production. In the sanctuaries discussed, various organisational forms of the potter's craft can be traced – from household production to mass production in large potteries.

The variety of ceramic wares found in a sanctuary and their share of the total assemblage provide information about the connectivity of the site. From these, however, it is not possible to draw direct conclusions about the participants in the cult, since vessels may also have reached a site in other ways. Rare pottery types that show a characteristic distribution pattern are most likely to be significant for the specific religious network.

All these manifold aspects of pottery from sanctuary contexts are discussed in the contributions to this volume. The individual cult places of the northwestern Peloponnese show specific patterns that require interpretation in the respective regional context, but also in a supra-regional comparison. Yet, it is rarely, if ever, possible to give definite answers, since archaeologists have to interpret the complex reality of a distant period on the basis of a fragmented data set.

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# ABBREVIATIONS USED IN THIS VOLUME

| | |
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| Acf | Amorphous concentration features |
| asl | above sea level |
| EG | Early Geometric |
| EIA | Early Iron Age |
| EPG | Early Protogeometric |
| EPMA | Electron probe microanalysis |
| FUS-ICP | Fusion Inductively Coupled Plasma |
| HREE | Heavy rare earth elements |
| ICP-AES | Inductively Coupled Plasma-Atomic Emission Spectroscopy |
| ICP-MS | Inductively Coupled Plasma Mass Spectrometry |
| LBA | Late Bronze Age |
| LG | Late Geometric |
| LH | Late Helladic |
| LPG | Late Protogeometric |
| MG | Middle Geometric |
| MPG | Middle Protogeometric |
| NMA | National Museum Athens |
| NASC | North American Shale |
| OES | Optical Emission Spectrometry |
| PAAS | Post-Archaean Average Shale |
| PCA | Principal components analysis |
| P-ED-XRF | Portable energy dispersive X-ray fluorescence spectrometry |
| PG | Protogeometric |
| PLM | Polarizing microscopy |
| PPL | Plane polarized light |
| REE | Rare earth elements |
| SEM-EDS | Scanning electron microscopy – Energy dispersive X-ray spectroscopy |
| SM | Sub-Mycenaean |
| Tcf | Textural concentration features |
| UC | Upper Continental Crust |
| WD-XRF | Wavelength dispersive X-ray fluorescence |
| XP | Crossed polars |
| XRD | X-ray diffraction |
| XRPD | X-ray powder diffraction |

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The northwestern Peloponnese played an important role in Greece during the Geometric and Archaic periods. This has only become clear with the research of the last three decades. The sanctuaries of Achaia and northern Arkadia made significant contributions to early temple architecture. Their range of finds attests to both supra-regional connections and regional specificities. The 17 papers in this symposium provide an overview of the state of research on Early Greek sanctuaries in the northwestern Peloponnese and neighbouring areas. Well-studied sanctuaries are discussed alongside lesser-known ones in order to provide as complete a picture as possible. Sanctuaries of supra-regional importance such as Nikoleika and Lousoi are discussed, as well as local cult sites in caves that are difficult to access (Tria Goupata, Drakaina). The focus is on the interpretation of ceramic assemblages. The functional analysis of the pottery allows conclusions to be drawn about ritual and profane activities in the temene. Together with the votive offerings, it also provides information about the composition of the cult communities and their concerns for the worshipped deity. The origin of the pottery provides information on the connectivity of the sanctuary. Special emphasis is placed on archaeometric analyses of pottery and the function of miniature vessels. Other papers deal with early sacred architecture and the layout of sacred precincts.

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