

**Saro Wallace**

## **Movement in time and space: Bronze to Iron Age connections in the north Lasithi area**

### **ABSTRACT**

An excavation, landscape survey and museum study project carried out from 2008 and focused on the north Lasithi area, is now able to provide useful insight on modes and directions of movement in the period between the Final Neolithic and Early Iron Ages. Embracing excavated material from Kera Karfi and Tzermiado Kastello and surface material from a range of Iron Age sites around Krasi and Kera, artefact studies to date show 1) a very long history of close cultural linkages between the Lasithi plain and Kera-Gonies valley area, and 2) some variability in cultural outlooks/connections between lowland sites at the furthest north edge of this zone, and those within the plain. The topics covered here, drawing on parts of this work, are the nature of potting traditions and technology as established in Lasithi from the FN period; the clays and recipes linking the Lasithi area, including the peak sanctuary at Karfi, to the Gonies-Kera valley; and shifts in communication/exchange patterns within the LBA-EIA period as Kera Papoura emerged as a major regional centre.

**KEYWORDS:** exchange networks, clay sourcing; ceramic technology; cultural landscapes; urbanisation

### **INTRODUCTION**

Two main models of the Lasithi plain and mountains during prehistory have emerged in the literature to date. One, which draws partly on the region's history as a locus of resistance and its topographical isolation (with only a few well-defined routes in from the surrounding lowlands) is of a self-contained cultural and political zone (e.g. Nowicki 1998; Watrous 1982; 1996; Spanakis and Calvert 1973; Fig. 1). As early as the Final Neolithic, specialised forms of the wider uptake of new pottery styles seen in the island can be noted here (e.g. Nowicki 2014: 178-82), while from the EB period there are practices like large group cave burial, tied into those developing elsewhere in the island, yet necessarily embedded deeply in local conceptions of and attachments to landscape (Betancourt 2014; Pendlebury et al 1936). By MM II, isolated strong

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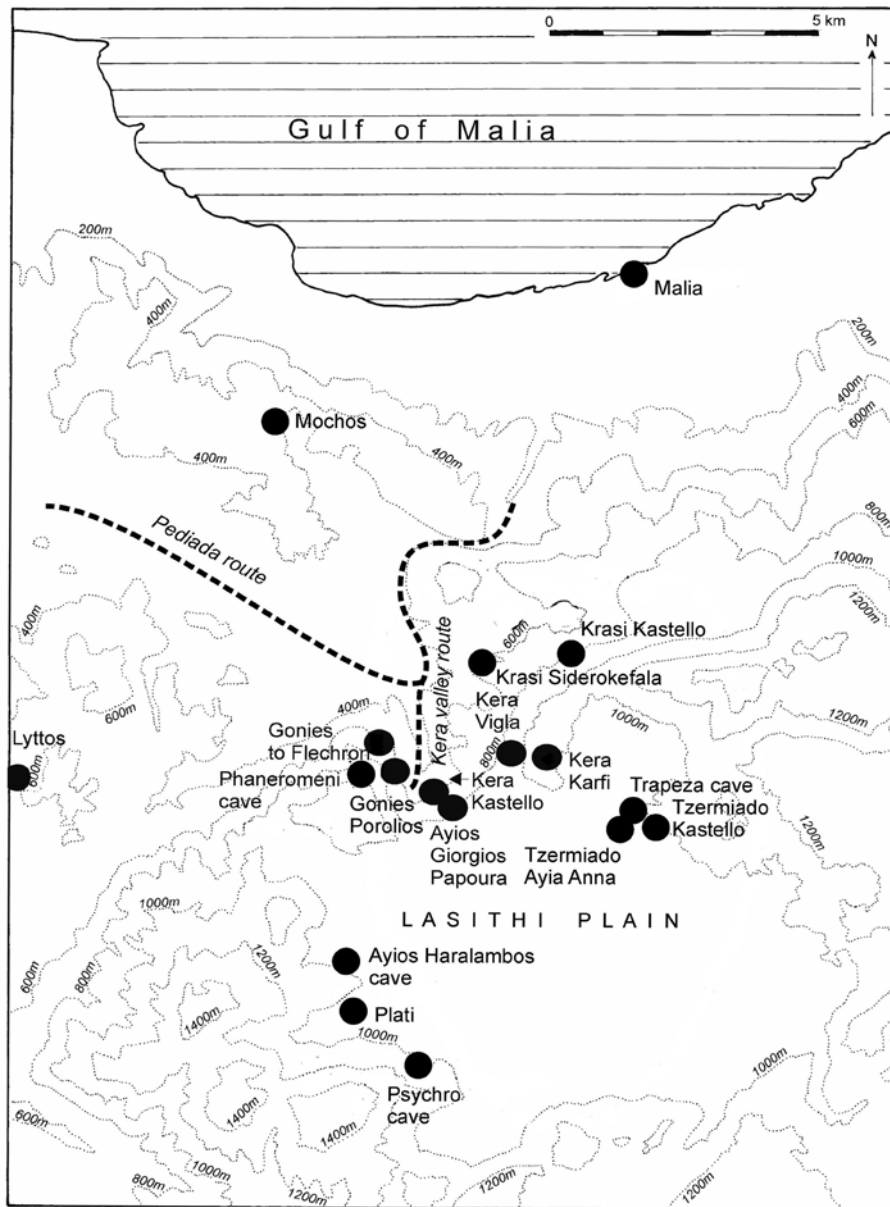


Fig. 1. Map of the north Lasithi area showing sites mentioned in the study.

buildings on the northern and eastern flanks of the Lasithi mountains suggest concerns with territorial definition for the inhabitants of the plain and surrounding mountains (Evans 1896; Nowicki 2011).

A contrasting model of the region sees it from at least EM III as politically sandwiched/embedded between the Malia and south coastal zones — part of the palatial and urban network, but not a centre of gravity in its own right. By MM II, attachment to or integration of the Lasithi plain/mountains region in a Malia-centred state extending south and east from the rich coastal zone has been suggested, based on strong connections visible across several dimensions of the artefact record (Cadogan 1990; Knappett 1999).

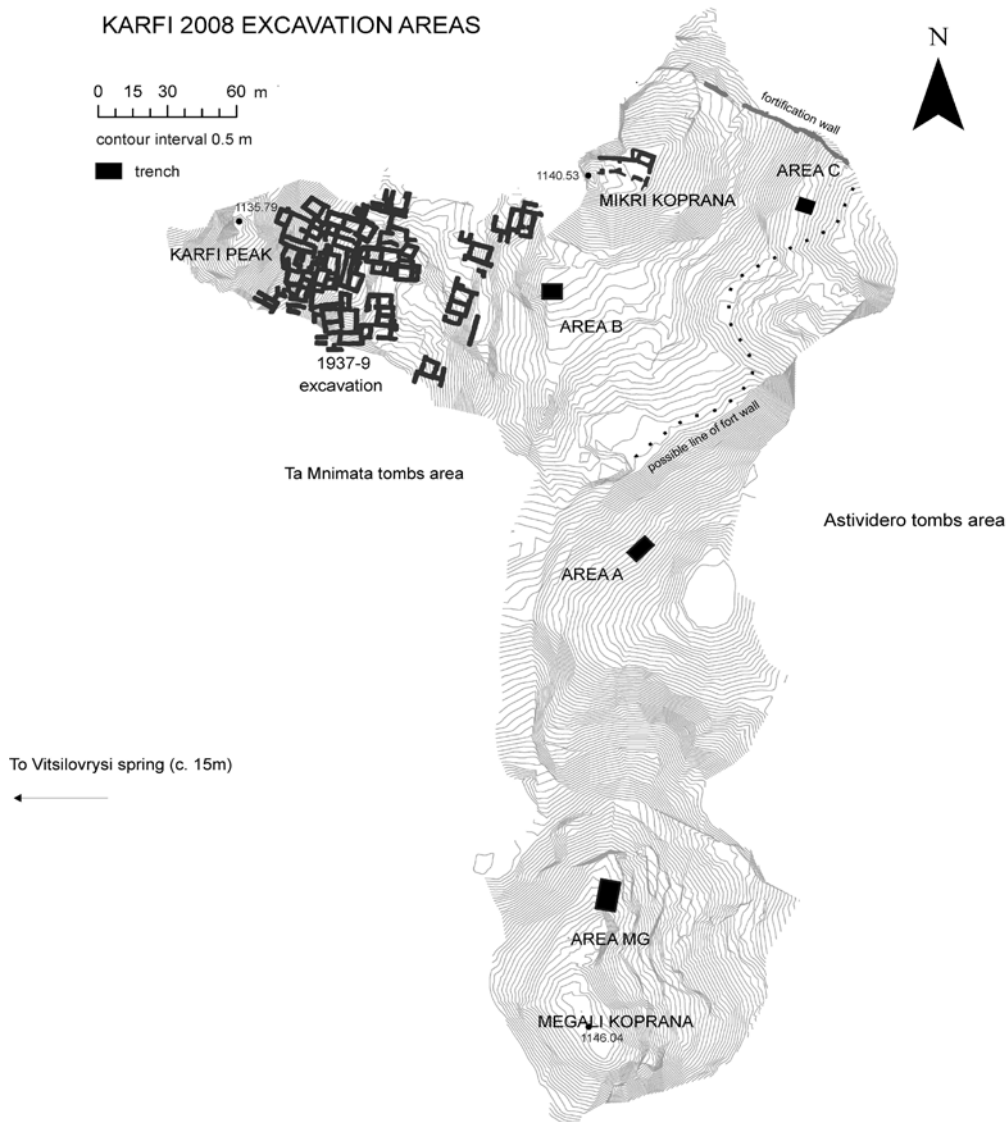


Fig. 2. Map of Karfi site with 1937-9 and 2008 excavation areas.

From the beginning of the Iron Age, c. 1200 BC, the evidence suggests that the Lasithi plain and surrounding mountains, especially on the north, gained new levels of population and influence, thanks to radical new Crete-wide priorities in economy and security fragmenting and dispersing existing settlement units (Nowicki 1992; Wallace 2010a: 60-8). We still know little about the structure of the deep socioeconomic reorganisation necessarily involved in this move. But a central polity clearly developed by the early Archaic period, c. 700 BC, on the hilltop of Kera Papoura just west of the Ambelos pass into the Kera valley – the latter is the main natural route into the Lasithi plain from the north coast (Eliopoulos 1995; Wallace 2010b; Watrous 1980). In the later Archaic, the plain and surrounding mountains evidently became part of the Lyttos state territory, centred outside the region (Wallace 2010a: 333 and references; Fig. 2).

This paper builds on studies at Karfi and in the wider Lasithi landscape from 2008 to 2012 to show how changing structures of connection between sites and the formation of new communities of technological practice in the region over a long time frame may be reflected archaeologically. The primary lens is ceramic technology and exchange. The petrographic component of the study was carried out with Eleni Nodarou of the INSTAP Study Center for East Crete, who has long experience of petrographic analysis of sites in this region (see e.g. Nodarou and Eliopoulos 2011; Nodarou 2014). The analysis below reflects my own current views following extensive discussion with Eleni and other colleagues in related fields about the data we produced. The close integration of petrography and systematic, extensive macroscopic studies allowed the sampling to inform fabric study across a large volume of material.

#### MATERIAL STUDIED

The contexts of the ceramic material are as follows. A pilot excavation in 2008 across four areas of the LM IIIC-PG Karfi settlement (c. 1200-1000 BC) found extensive Middle Bronze deposits (mostly MM II in date: c. 1900-1700 BC) under LM IIIC-PG architecture in one area, B1 (Fig. 3; see Wallace 2012). These were clearly contemporary with and connected to the known Karfi peak sanctuary, lying 150 m to the west (Pendlebury et al 1938b; Nowicki 1994; 1998). The excavation analysis reconstructed the B1 area as an auxiliary zone for the sanctuary since it contained numerous cups, some miniature vessels, much ash and some cooking equipment, but no figurines. The area offers views over the eastern approaches to the Karfi peak – those from the Lasithi plain, rather than the Kera valley route, which the peak itself overlooks.

In another part of the site, MG1, the 2008 excavation found another specialised deposit (of cooking pots only, in the uppermost layers of building collapse) dating in late Protogeometric to Archaic, long after the LM IIIC occupation. A limited and potentially ritualised re-use of part of the site was indicated, focused on cooking and contemporary with the flourishing of Papoura and several other smaller sites in the region. Parallel practices of specific re-use of abandoned sites by the Late Geometric/early Archaic period are known in other parts of Crete (see e.g. Wallace 2003; 2010a; Prent 2003).

These stratified and contextualised assemblages for three different periods (MM II, LM IIIC-PG, G-A), in a landscape context well known through survey and with very specific characteristics including limited natural routes/major natural barriers and altitude/topographic constraints on subsistence economy, offered useful opportunities to investigate long-term change in regional technological and exchange networks. This was developed by bringing the Karfi



Fig. 3. Karfi: B1 area excavated in 2008 and peak sanctuary to its W. From E.



Fig. 4. Tzermiado Kastello hill – site photograph from SE. The excavated area lies on the summit.

assemblages together in the analysis with two further components. One is another excavated and unpublished assemblage from the same region with a complementary and overlapping timescale, FN through late MM. This comes from Tzermiado Kastello,

which like Karfi was excavated by John Pendlebury for the British School at Athens in the 1930s; the site lies c. 2.5 km SE of and below Karfi, slightly more than an hour's walk (Pendlebury et al 1938a; Fig. 4). The other is a selection of unpublished surface material from Iron Age sites in the surrounding area, collected between the 1930s and 1960s by Pendlebury and other scholars of the BSA (see e.g. Pendlebury et al 1933; Hood et al 1964; Wallace 2010b (Fig. 5).

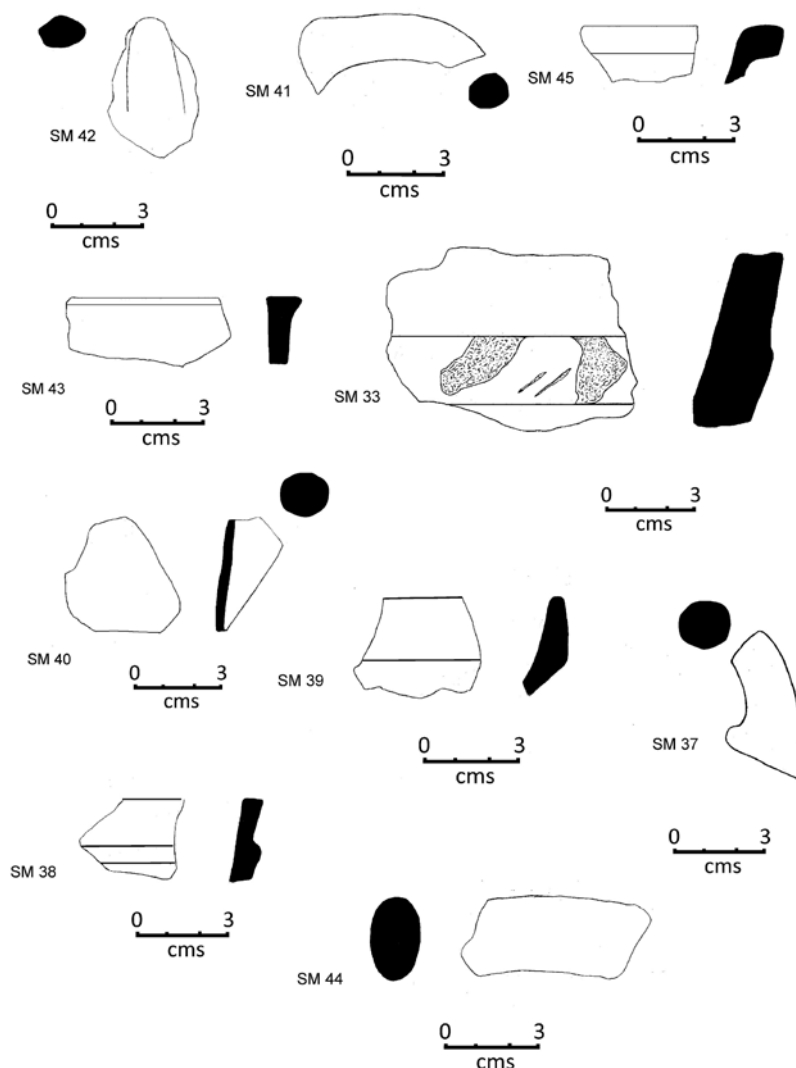


Fig. 5. Drawn examples of the LM IIIC-EA surface sherds from North Lasithi sites sampled petrographically for this study.

## POSSIBLE MODELS OF CHANGE IN TECHNOLOGICAL, SOCIAL AND ECONOMIC NETWORKS

At the outset of the study, it seemed possible to model and test several models of change. The establishment of the peak sanctuary, mirroring the spread of similar sites across Crete by MMII (Kyriakidis 2006; Nowicki 1994; 2008; Peatfield 1990; 2009) might well be assumed to be directly or indirectly linked to the activities of people based in developing palatial polities of the type absent in Lasithi. The main development of these sanctuaries across Crete coincides with the spread of palatially-linked politics/culture, including the building of long-distance on- and off-island connections. The landscape settings of many sanctuaries have close links to/visibility from palatial/ important sites of the period. We might, then, potentially expect to see new and specific cultural connections between the Karfi sanctuary material and those of Malia, the nearest palatial centre. Other signs of political reconfiguration in Lasithi by/from MM II in possible connection to palatial political/economic connections include the abandonment of the Trapeza and Haralambos burial caves and the Tzermiado Kastello settlement by MM III (Pendlebury et al 1936; Betancourt 2014; Verstegen 2015) and the growth of big settlements at Ayia Anna and Plati in LM I-III (Dawkins 1914; Nowicki 1998).

Changes expected in the record at c. 1200 BC, given the splitting and relocation of many communities in the area, might include very radical changes in economic activities including clay sourcing, pottery technology and exchange. But we cannot assume these shifts, if present, would have occurred automatically or comprehensively. For example, study of the LM IIIC Karfi excavation assemblage already indicates selective continuing use of economic practices and technologies connected to the LBA settlement landscape, such as the extensive use of olive cultivation and cattle herding (Wallace 2012). During the later Iron Age, we might expect classic processes of urban centralisation to take place at Papoura, with single dominant manufacturing traditions emerging and resource routing expanding in range and complexity.

## TESTING THE MODELS: CHANGES IN OUTLOOK AND CONNECTIONS IN LATER MM

To establish what local traditions in clay sourcing and technology looked like at the time the Karfi peak sanctuary came into use, we looked at the 2008 excavated sample of peak-sanctuary-related MM II material at Karfi (the originally excavated ceramic material from the sanctuary is currently under study by me) and the settlement assemblage at Tzermiado Kastello (as saved by the excavator and currently stored in the Heraklion Museum), dating between Final Neolithic and MM III. Looking first at the Karfi B1 MM assemblage, we can note the variety of cup types – more than 100 even in the limited exposure of the 2008 excavation (25 sq m). Most cup fabrics are red, but a fine buff fabric is also represented, most often in painted cups (Figs. 6-7). Most of the cup forms seen here, and both fabric colours, are also known at MM II Malia. Yet one common form – the cup with incurved profile – is not documented there, while it is known in Knossos and central Crete as early as MM IB.

This fact seems to need explanation when considering how peak sanctuary practice first developed at a point just above the major (Kera valley) route into Lasithi from the north and west, and highly visible from that route and from further afield to the west (Pediada), though not from the area of Malia (Fig. 8). Most other shapes in the MM II Karfi B1 assemblage have a wide range



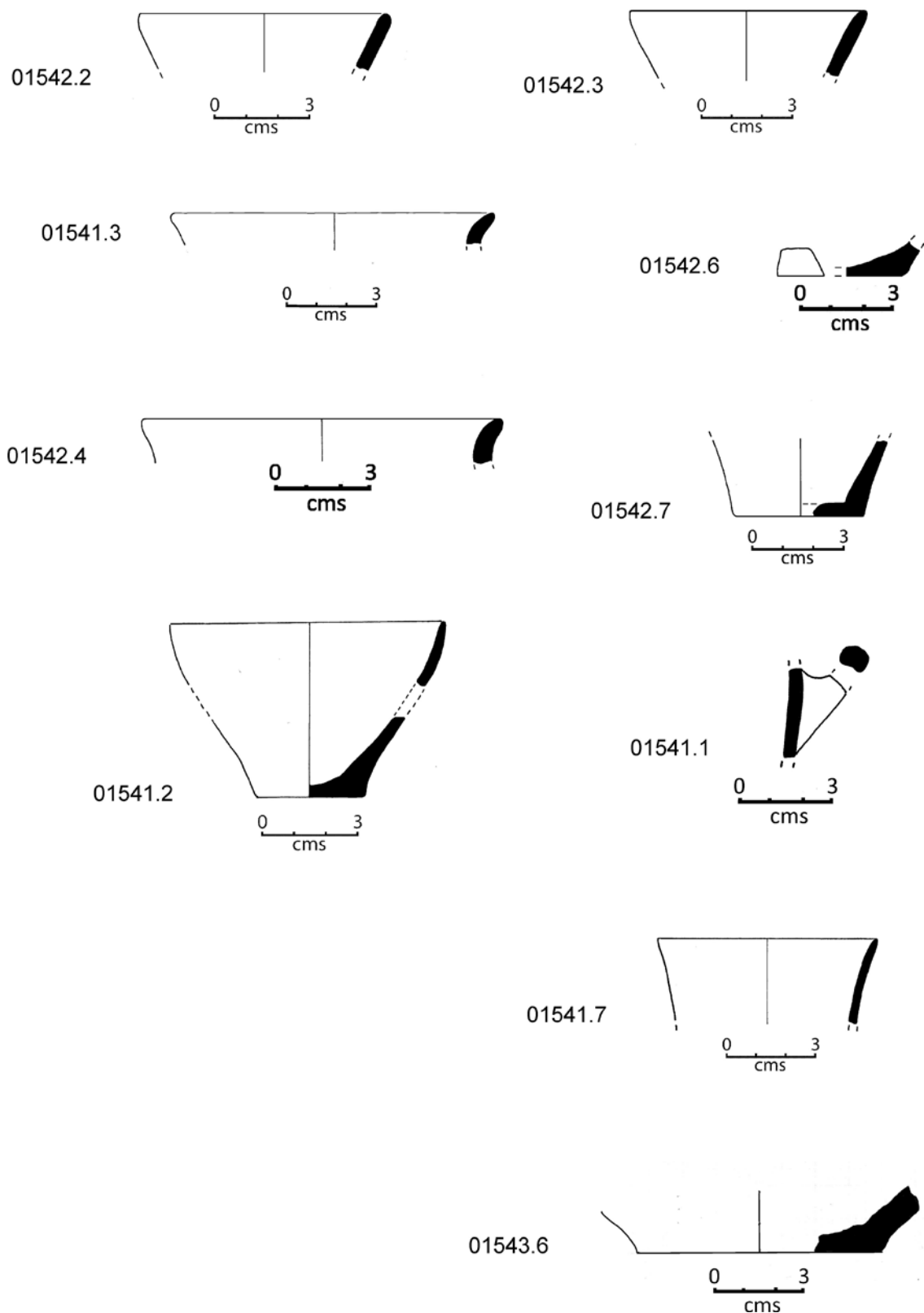


Fig. 6. MM pottery from the 2008 excavated assemblage at Karfi.

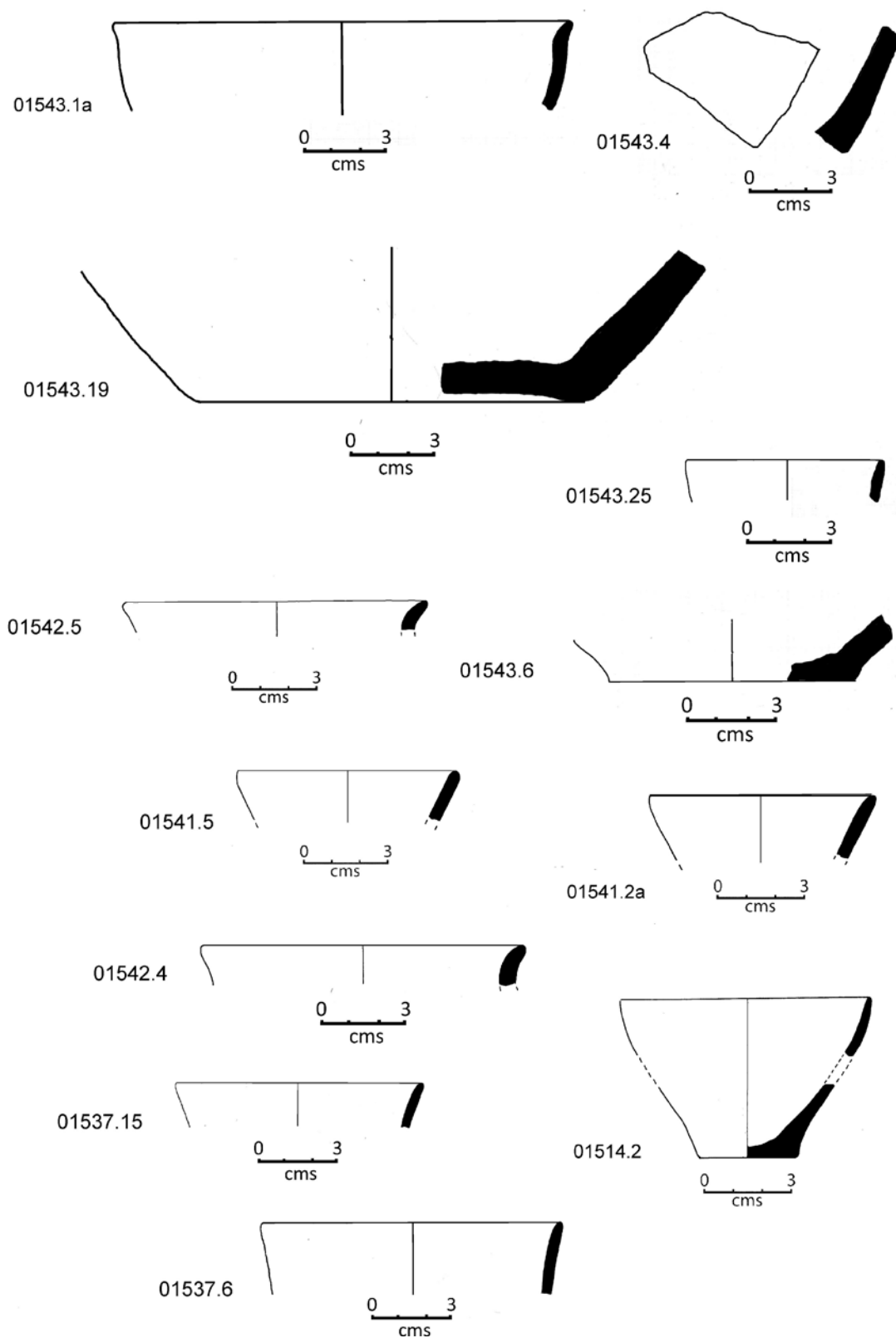


Fig. 7. MM pottery from the 2008 excavated assemblage at Karfi, including incurved-profile cups.





Fig. 8. Karfi peak from NW  
(taken from the Kera valley).

of comparisons, both at Malia and at nearby Pediada sites like Galatas and Kastelli (see e.g. Rethemiotakis and Christakis 2011).

We tried to get closer to finding out how the development of the sanctuary might have changed or built on ex-

isting local travel/procurement routes by comparing the Karfi peak sanctuary-related assemblage with the Tzermiado Kastello FN-MM settlement assemblage. The group living at Kastello appears to have used very few of the incurved-profile-type cups with their strong central Cretan heritage. As at Karfi, however, there *were* many general parallels with pottery from Malia and

central Crete (see Figs. 9-10 for a selection of pottery of FN-MM pottery from Kastello). In petrographic analysis of the two assemblages, we were able to draw on recent studies from Ayios Haralambos burial cave, where a few ordinary-type vessels/wares of this date were found: another assemblage for useful future comparison would be the settlement material from Plati excavated in the early twentieth century, dating MM III through LM I-III.

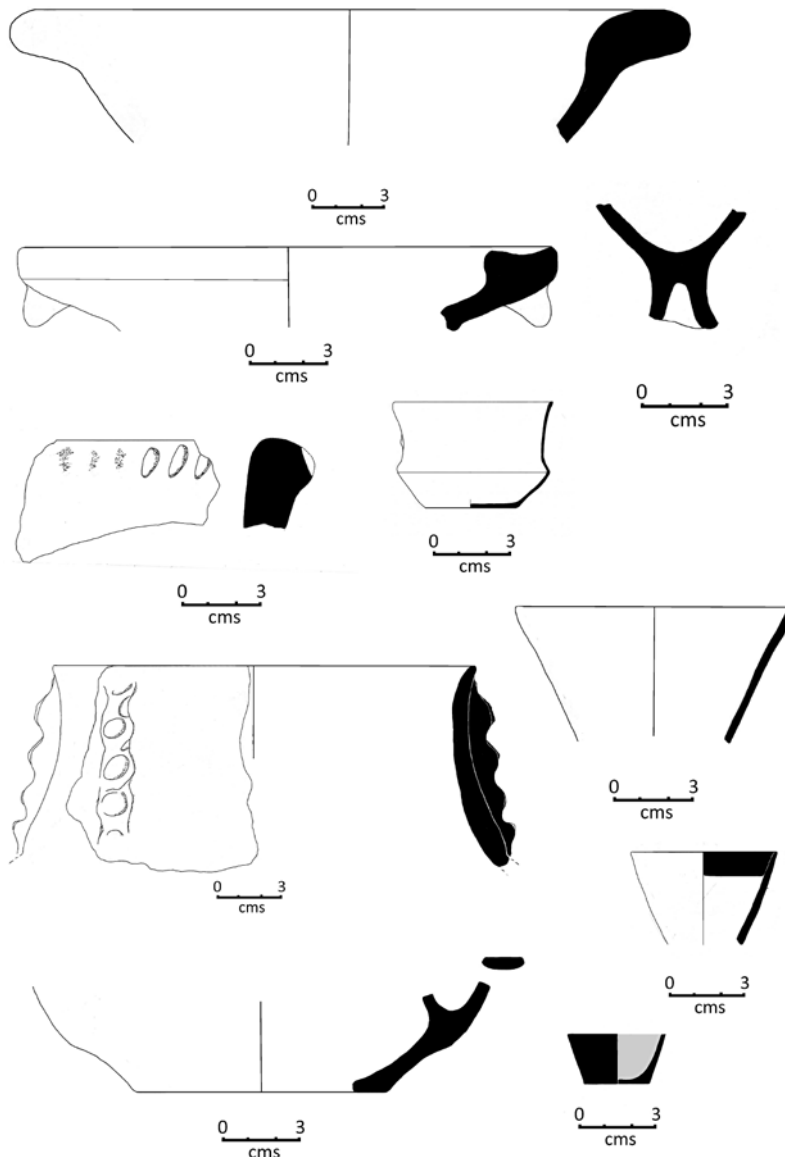


Fig. 9. Tzermiado Kastello: a selection of FN-MM vessels from the 1930s excavated assemblage under study.

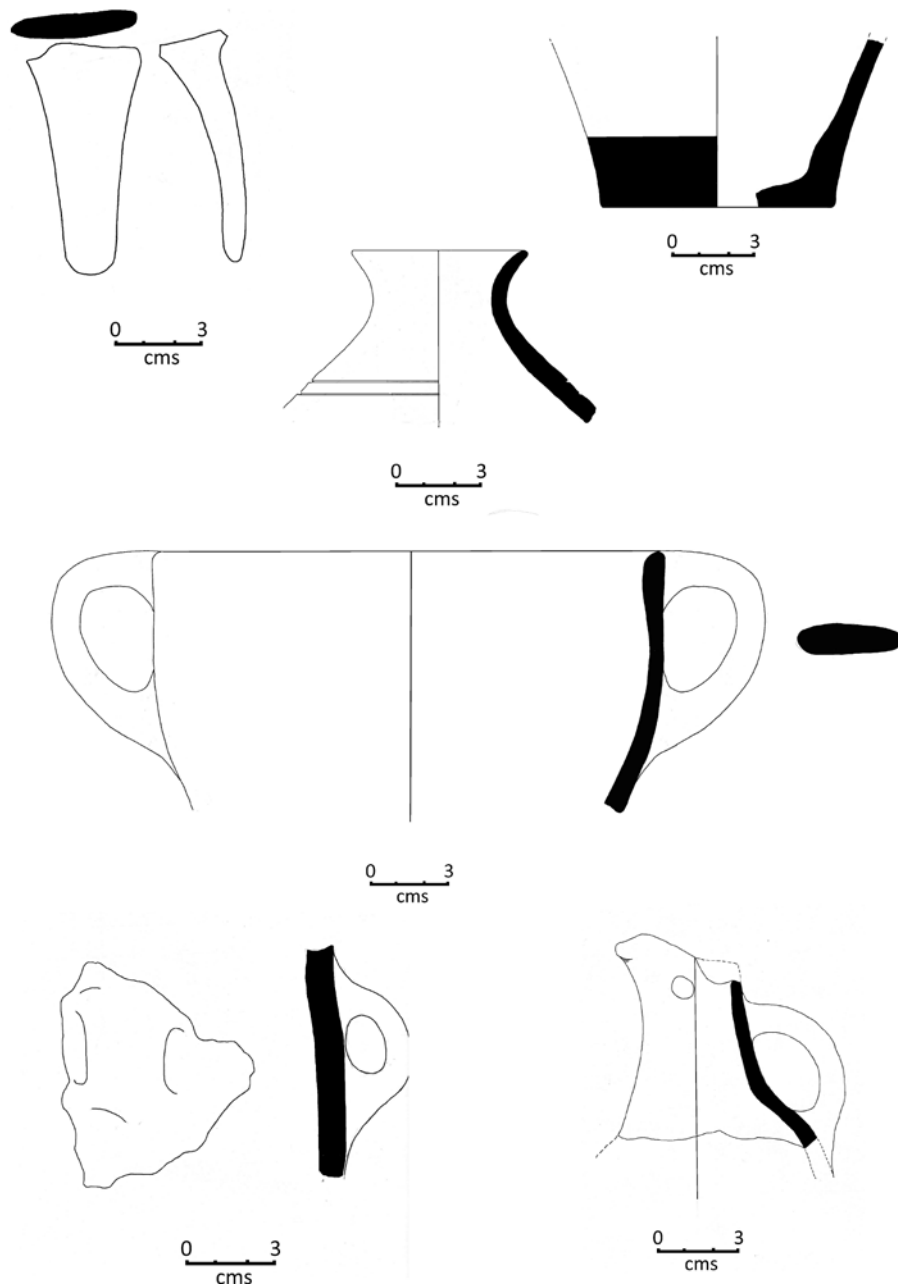


Fig. 10. Tzermiado Kastello: a selection of EM-MM vessels from the 1930s excavated assemblage under study.

The petrographic results show two very visually similar red fabrics with metamorphic inclusions as strongly in evidence at three contemporary Lasithi sites of very different types – Karfi, Kastello and Ayios Haralambos. One fabric (Nodarou’s Fabric Group 1) has clay pellet inclusions, apparently indicating a specific clay preparation practice; the other lacks the pellets and contains brown phyllite inclusions (Fabric Group 2; see Table 1; Fig. 11). At Kastello, both fabrics appear already in sherds of Final Neolithic date. By MM II, Nodarou notes (pers comm, citing Liard 2015) that Malia production had a similar pellet-containing recipe to Fabric Group 1, suggesting a wide regional tradition of preparing coarsewares in this way.

FABRIC GROUP	DESCRIPTION
1	Matrix grey brown to red brown; optically active to moderately active. Main non-plastic components low-grade metamorphic rocks (phyllite and quartzite) as well as common mudstone fragments and clay pellets. A semifine version of the fabric is widely present in MM cups. Metamorphic non-plastic inclusions point to raw materials connected with the Phyllite-Quartzite series. The regular presence of clay pellets indicates a rather consistent recipe/technology of manufacture.
2	Matrix orange brown to dark brown; optically active to inactive. Main non-plastic components are fine-grained brown phyllite, little quartzite, quartzite-schist, and a few fragments of angular quartz. Mineralogical composition compatible with Phyllite-Quartzite series materials and very similar to Fabric Group 1. The main difference is the absence of clay pellets.

TABLE 1. Descriptions slightly adapted from those produced by E. Nodarou for the project and to appear in Nodarou in press.

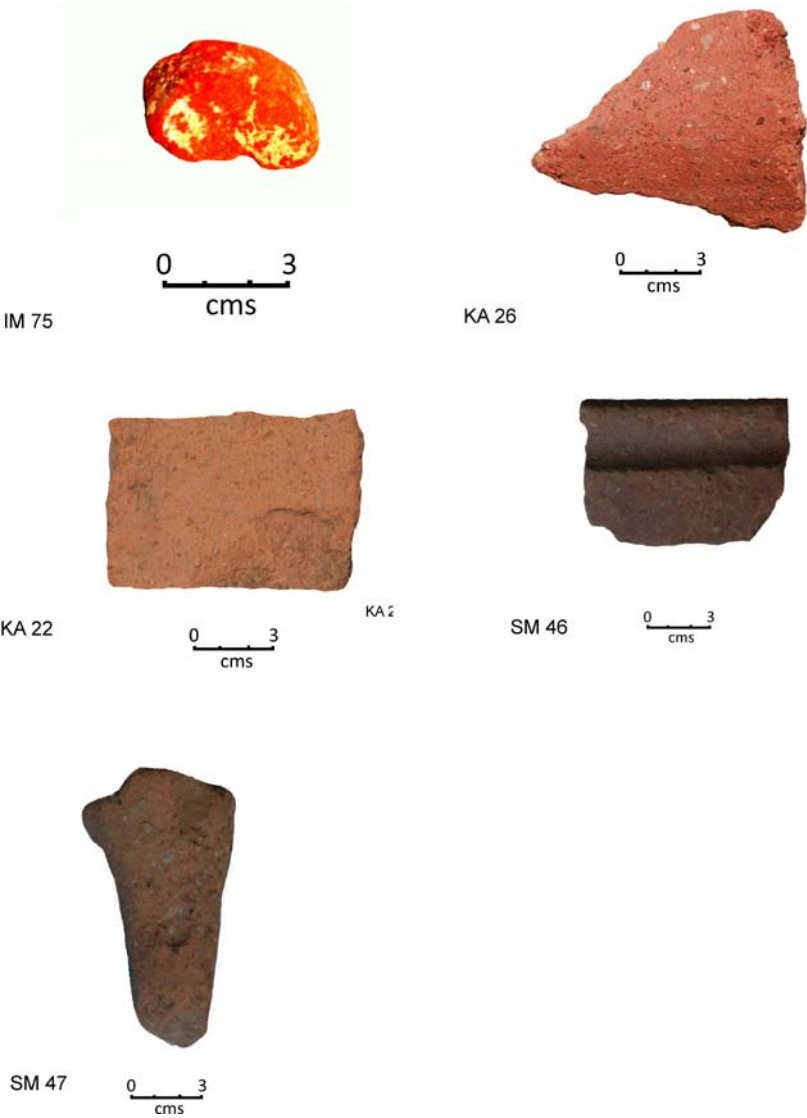


Fig. 11. Photographs: sherds from which petrographic thin-sections are illustrated here (with the exception of KA1).

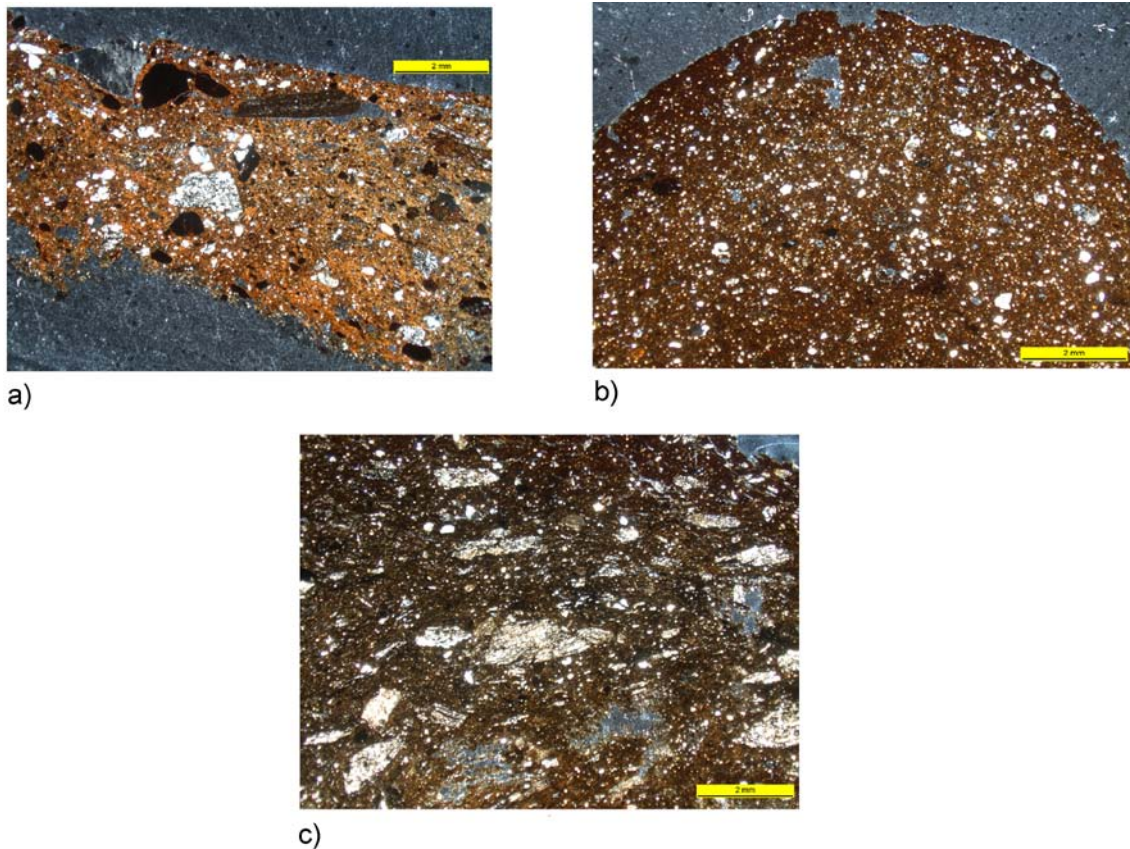


Fig. 12. Petrography slides (by E. Nodarou): examples of metamorphic fabrics from LM IIIC-PG Karfi, MM Tzermiado Kastello and PG Kera Papoura (all  $\times 12.5$ ):

- a) coarse with low grade metamorphic rocks and clay pellets, Fabric Group 1 (KA 26 [Karfi 2008]): LM IIIC–PG small cooking pot. Mid reddish brown, 5YR 5/6; medium hard. 20% quartz, 1mm; 25% phyllite, 2mm;
- b) semifine version, Fabric Group 1 (IM 75 [Tzermiado Kastello 1936]): MM red flaring-profile semicoarse cup. Int painted. Red, 5YR 5/4; medium hard; paint red, 5YR 5/4. 10% quartz, up to 1mm; 8% hard grey rock, up to 1mm);
- c) coarse with low grade metamorphic rocks, Fabric Group 2 (SM 46 [Kera Papoura surface]): PG red lekane. 20% calcite, 25% hard grey rock. Mid yellowish red, 5YR 5/6; hard).

The consistently overwhelmingly heavy representation of both these wares in our petrographic and macroscopic studies of material dating as far back as Final Neolithic at Kastello, and as late as G-A at Karfi suggest that these fabrics, hard to distinguish macroscopically, dominated Lasithi consumption in roughly equal strength throughout the period from Final Neolithic to at least PG. Several clay samples taken by the project around Afentis Christos and Avdou at the N end of the Kera valley in 2009 and analysed by Nodarou in thin section after firing showed close similarities to the metamorphic fabric with brown phyllite; the phyllite is dominant here too (Fig. 13).

We thus have every indication of a specific and very long-established pottery-making tradition for the Lasithi region (starting from at least FN and almost certainly locally based) which did not



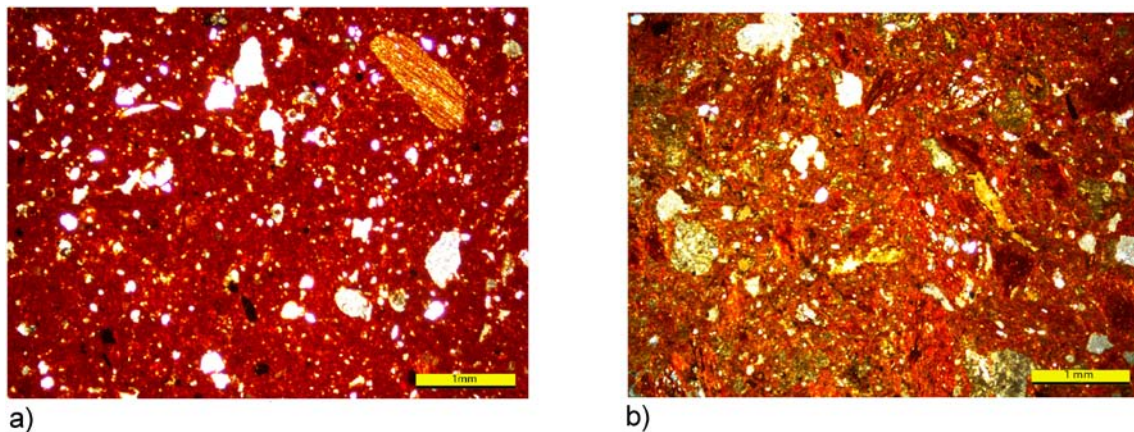


Fig. 13. Petrography slides (by E. Nodarou): fired clay samples collected by E. Nodarou and M. Morris in the north Lasithi region in 2009:  
a) red soil N of Kera (C/S 2); b) soil with phyllite related to flysch, near Avdou (C/S 7).

change fundamentally as imported goods used in burial and other ritual came into the plain during the late EM and MM periods (as seen in the Ayios Haralambos and Trapeza Caves: the ‘Trapeza ware’ sherds identified by Pendlebury et al 1936 at the latter have close macroscopic fabric matches with the FN-EM Kastello material) *or* as new practices including travel up to and ritual deposition at the Karfi peak sanctuary developed. The widespread occurrence of a fine buff fabric (also present in the Karfi MM assemblage) at the Kastello settlement from EM onward suggests another regularly accessible source of clay existed – one of the nearest likely geological areas being the low-lying Pediada zone to the west (Nodarou pers comm).

Overall, then, the studied evidence suggests that the majority of participants at the Karfi peak sanctuary could have been resident on or closely connected to the Lasithi plain and adjacent sites like Kastello, since the local base of manufacture and consumption of the pottery they deposited was long- and well-established. The positioning of the B1 area, as noted above, had already suggested that many visitors would have accessed that part of the site from the Lasithi plain. But the sanctuary as a whole was clearly also concerned with the main Kera valley route which the peak itself overlooks and is visible from (while in contrast *not* easily seen from the plain and approaches thence). The MM Karfi cup forms, with their links to central Crete, highlight the importance of this external zone of interaction, perhaps through the Pediada and not necessarily through Malia, in stimulating the sanctuary’s foundation and operation in direct or indirect ways.

In this context, direct transfer of peak sanctuary practice from outside polities, especially Malia, seems not to be an adequate model on its own. Yet from MM II-III Lasithi-based people did clearly become aware of, and actively mirrored, specific externally established practices which gave them an entrée into, and sharper identity within, the wider political world. In likely connection to this, they changed some of their existing ritual traditions (cave burials with goods/communal interments) and eventually their settlement patterns permanently and deeply.

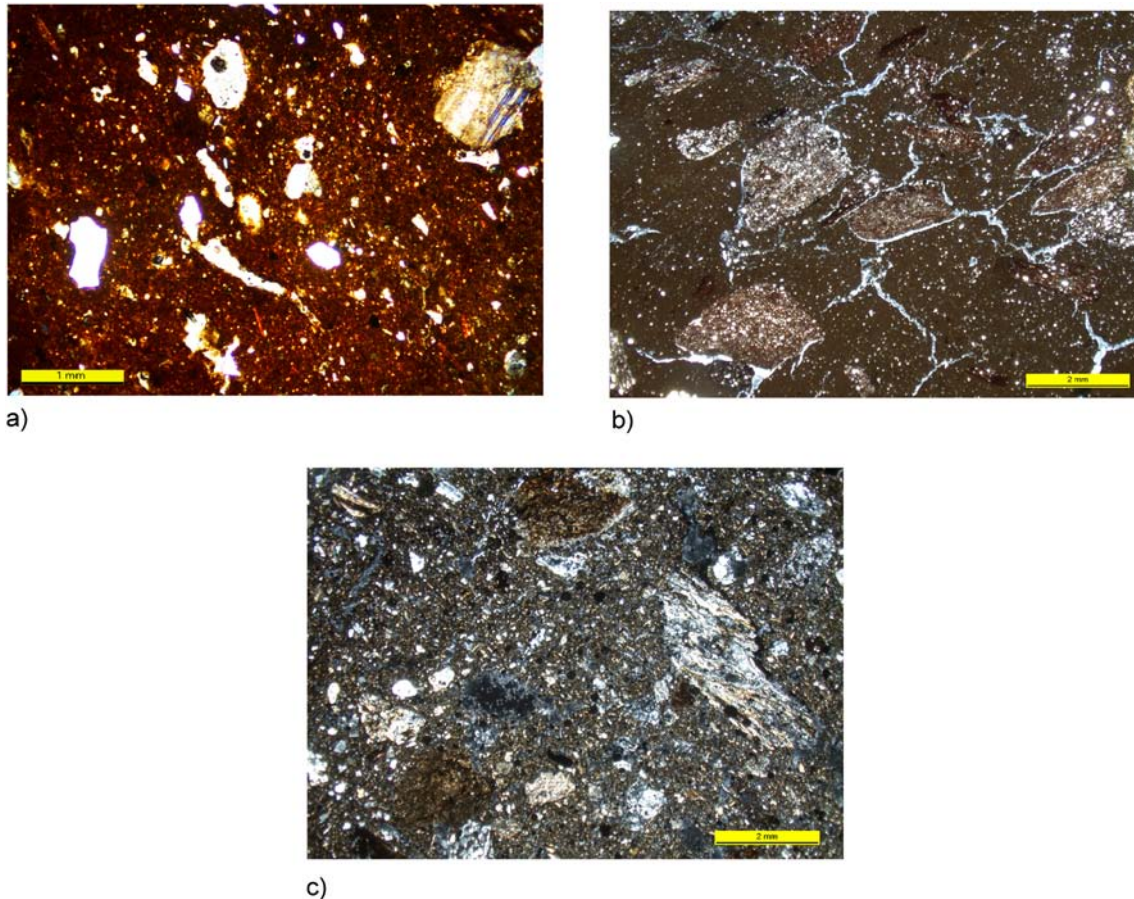


Fig. 14. Petrography slides (by E. Nodarou) from Karfi and other north Lasithi sites dating between LM IIIC and EA:

- a) flysch fabric, Fabric Group 4 (KA 22 [Karfi 2008]): LM IIIC pithos. Mid buff, 5YR 4/4; medium hard. 20 hard grey rock, 2 mm; 20% quartz, 1-2 mm). (× 12.5);
- b) granitic-dioritic fabric, Fabric Group 5 (KA 1 [Karfi 2008]): LM IIIC large jar or amphora with flattened ring base. Mid reddish brown, 7.5YR 5/6; hard. 15% quartz, 1-2mm; 8% hard grey rock, 1-2mm; 3% red sandstone, 1-2mm; 5% mica, speck. Observed macroscopically as 'quartz/mica-rich') (× 25);
- c) micaceous fabric, Fabric Group 6 (SM 47 [Kera Papoura surface]); LM IIIC CP. Mid reddish brown, 5YR 5/6; medium hard. 20% quartz, 1-2mm, 15% phyllite, 1-2mm; 3% mica, speck) (× 12.5).

#### IRON AGE CHANGES THROUGH AND AFTER CRISIS AND RELOCATION C. 1200 BC

The LM IIIC-PG deposits excavated at Karfi in 2008 provided a full new and well-contextualised set of pottery to sample, enhancing results already collected by Nodarou as part of Day's restudy of the 1930s assemblage (Nodarou and Iliopoulos 2011), and our analyses of earlier material from the region as discussed above. Sampling across a number of representative shapes and picking out macroscopically distinctive items on a systematic basis, our study of these deposits found considerably more variety in fabrics, including coarse fabrics, than was visible in the Karfi MM material. This was perhaps unsurprising given the size of the EIA town and the special nature of the MM deposits – though like those from Kastello, the latter did themselves contain a significant range of fabrics and vessel types. Despite the greater diversity of the LM IIIC-PG

FABRIC GROUP	DESCRIPTION
4	Very fine dark red brown- to dark brown-firing matrix, optically inactive. Macroscopically buff-firing fabric (Nodarou and Iliopoulos 2011: 344) due to the fact that the raw material(s) range from moderately to high calcareous. The fineness of the matrix indicates that it has been levigated; coarseness of non-plastic inclusions shows that they were added as temper. The nature and rounded shape of these inclusions points towards an origin in the flysch deposits found in the south Lasithi plain area and the Pediada. They consist of metamorphic rock fragments, mainly phyllite, quartzite, schist and smaller amounts of sedimentary (sandstone) and volcanic (basalt) rocks.
5	A well-known fabric, identifiable across central and east Crete. Semi-coarse, characterised by a dark brown-firing matrix and the presence of granitic and dioritic rock fragments. Non-plastic inclusions consist of small fragments of granite, a few fragments of plagioclase feldspar, some biotite, and little quartz. It originates from the area of Gournia/Kalo Chorio.
6	Characterised by a dark red- to dark brown-firing matrix, optically inactive. Non-plastic inclusions consist of metamorphic fragments, namely phyllites containing biotite laths, biotite schists and quartzite-schists. The clay base is filled with laths of biotite and muscovite mica giving a shiny appearance.

TABLE 2. Descriptions slightly adapted from those produced by E. Nodarou for the project and to appear in Nodarou in press.

fabrics, however, the two red metamorphic types dominant in the region's FN-MM material *remained* the dominant manufacturing tradition, with no sign of any large-scale shift revolution in clay sourcing or recipe accompanying the relocation into northern Lasithi from surrounding lowland areas and associated restructuring.

One new element which does appear by/from this time at Karfi and other north Lasithi sites studied here – and which was already appearing on the north coast in the Late Bronze Age prior to 1200 BC – are coarse buff clays with large igneous flysch-derived inclusions – most often used in large coarse vessels (see sample KA 26 in Figs. 11; 13; Table 2 (Fabric Group 4); Liard 2015; Poursat and Knappett 1995). The only flysch deposits known in the wider region are in the Pediada and the south Lasithi mountains, a fact once again again tending to suggest a northwestern direction in external procurement and contact for north Lasithi sites, now clearly developing in new ways. We cannot place the exact appearance of this fabric in the Lasithi area until LBA assemblages like those at Plati/Ayia Anna are studied in detail.

A new micaceous fabric also appears in limited but notable quantities at north Lasithi sites known from survey to date from early in the Iron Age (Fig. 14; Table 2; Fabric Group 6). It is mainly seen in jars and cooking pots. The source is not clear, but similar clays are known (also in survey material) from the Pediada area at around the same time. The impression gained in this study was that there may be higher occurrence of use in the fabric in north Lasithi over time during the Iron Age, though the nature of the surface sample is not good enough to establish this clearly – many surface sherds can be given only an 'early EIA' (LM IIIC-PG) or 'Late EIA' (PG-G/EA) date. The fabric was apparently absent or not widely present at the Karfi town itself during its



lifetime. However, the model of increasingly common manufacture over time in the local region seems partly borne out by the fact that it is consistently present in the G-A cooking pots from the re-use deposit in the MG 1 area.

Granodiorite-containing ceramic products from the Mirabello region are a further element of diversity in the LMIIIC-PG Karfi settlement assemblage – a fact not apparent in earlier petrographic studies on the 1930s saved material, indicating that the site clearly has a lot more to show us when assemblages from entire intact contexts are explored. Imported Mirabello vessels clearly appear in earlier periods in Lasithi, perhaps most often in special contexts (being found at the Ayios Haralambos caves (Verstegen 2015; Nodarou and Moody 2014), but their presence has a particular weight at this crisis-period settlement, situated so far from the coasts. The fact of these vessels' presence, combined with the other elements of diversity by/ from LM IIIC mentioned above, suggest complex and newly developing networks of connection and exchange around the new sites. The ceramic evidence combines with other aspects of the new LM IIIC-PG record at Karfi, such as large amounts of pumice, consumption of shellfish in some apparently wealthy contexts, and overall relatively high-volume metals acquisition (with uneven consumption across the site) to suggest quite regular, intensive, channelled contact with the lowlands and coasts through/from soon after settlement relocation (Wallace 2013). The Kera valley stands out as the route most likely to enable developing contacts for north Lasithi sites and may actually have intensified in use as a route at this period, during which a number of defended sites appear along it, including Kera Papoura. The influx of people into north Lasithi's defensive landscapes in LM IIIC surely included those from neighbouring regions like the flat and undefended eastern Pediada as well as the coast around Malia - a fact likely to directly disturb an economic and social environment where long-established local fabric recipes were in wide circulation as we have seen above.

The dense concentration of settlements in the north Lasithi area during the EIA – known mainly from survey and all strategic or defensible in nature – is striking (Fig. 1). Some of the sites were small (like Kera Vigla, on a spur below and between Karfi and Papoura); others were very large, like Papoura itself. The scale of earlier occupation at these sites, if present, is in most cases unable to be gauged, but their shared apparent EIA foundation/main occupation and their clear contraction in number as Papoura became regionally ascendant are important historical features. Of the sites from which material was analysed here, both Kera Castello, deep in the Kera valley at its S end, and Krasi Castello, at the northern edge of the Selena mountains ringing Lasithi, lasted into LG/early Archaic alongside Papoura, with Krasi Castello, though smaller, remaining of significant size (Kera Castello and Vigla look more like village satellites of Papoura; see Nowicki 1992; 2000: 147-70). Others, like Krasi Siderokefala, which was located further north along the valley than Papoura and lacked any extensive low-lying hinterland, were, like the high-altitude town of Karfi, abandoned after only about 200 years. We selected for petrography a sample of 5-10 of the collected sherds from each site, prioritising those where dating was reasonably accurate based on comparative knowledge of the EIA ceramic repertoire and *in situ* study of the surface assemblage at each site (for discussion of this type of material, including the Papoura assemblage, see Wallace 2010b).

The results were as follows: for the earliest part of the Iron Age (LM IIIC-PG; c. 1200-1000 BC), we found that both the red metamorphic fabrics (1 and 2) were *still* dominant and clearly in widespread circulation throughout this northern region right into the Iron Age. At the same time some new regional variations or boundaries in consumption/exchange may appear. The sizeable site of Krasi Castello, with its location away from the main Kera valley route, has a somewhat different fabric profile including 'loner' fabrics which may have more to do with a Mochos valley/Malia-oriented hinterland, even though its fabrics in general match /overlap with those of the other sites studied. Papoura's assemblage also hints at some special features. Use of the micaceous fabric appears here, (but may be absent from Karfi) in LM IIIC and then seems to grow in popularity over time here, as at other continuing sites in the region, especially in jars and cooking pots. Again, it must be stressed these interpretations are from small and surface-collected samples, and much more detailed and representative analysis could be done in future.

Across Crete the later Iron Age is a period of economic change seeing the expansion of agricultural territories, the growth of external trade, and the development of larger, more accessible settlements on selected sites (Wallace 2010a: 231-53). At this time Lasithi communities, as in the later MM and LM IIIC period, seem affected by island-wide incentives and practices, including competitive pressure. The types of symbolic re-use gestures seen in landscapes around emerging polities all across Crete (which I have suggested as often marking territorial claims by growing polities or groups within them) were in use in this region: Karfi tombs were re-used in PG-Archaic, a sanctuary was founded from late PG at the Vitsilovrysi spring to the S (Day 2011: 221-43), and as noted, a prominent part of the Karfi site seems to have been used in late PG-A for specialised cooking (in pots of which the micaceous fabric was perhaps visually resonant of Papoura's economic history and reach), as if groups within the emerging Papoura polity were laying claim to this topos. Given this and other various processes of material culture shift associated with urbanisation across contemporary Crete, we might suggest particularly early, focused and increasingly standardised pottery manufacture at Papoura, as the emerging regional centre, and regular feeding of this pottery to satellites like Vigla (which our study noted as also marked in PG-LG by strong uptake of the micaceous fabric). Once again it appears that Lasithi groups, while participating in a larger phenomenon — that of polity emergence at nucleated sites — were developing and adapting their own strongly locally-centred communications/exchange/power networks. Given the developmental background we have looked at here and the close consciousness of local regional history demonstrated in symbolic practices discussed, it is at least possible that Papoura became the focus of a self-conscious Lasithian economic and political identity. However, it will be necessary to test this large site further by survey, excavation, and petrography, to get further insight.

## CONCLUSIONS

I hope in this study to have made a start on characterising technological contexts and networks in prehistoric Lasithi in detail. Further planned work on the FN-MM Tzermiado Castello and MM-LM Plati material, and on the MM pottery and metals excavated at Karfi in 1937-9, will build a richer picture. Existing ideas about the region's self-containedness are partly justified

by the new study; there was clearly a real embedding of local production and consumption traditions over thousands of years. As external contacts and connections were developed/intensified at different times, this did not always occur in predictable directions or by predictable means, though natural routes played a strong part. In the important period of MM II palatial consolidation, for example, we cannot easily reconstruct direct or all-encompassing influence across ceramic production/uptake in Lasithi from the nearest palatial centre, Malia, despite strongly established general cultural connections and shared traditions between the areas. Through Crete's political fragmentation of c. 1200 BC, existing regional networks in the Lasithi zone remained remarkably strong. Yet aspects of innovation suggest new diversity in the spread, reach and capability of these networks. As centralisation occurred at Papoura in the later Iron Age, basic regional production traditions still continued. However, new regional identity boundaries were clearly being laid down via the increasing selection/targeting of particular technologies and consumption patterns — which in turn affected ongoing cultural, political and economic connections, and perceptions of them, in the whole wider area.

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