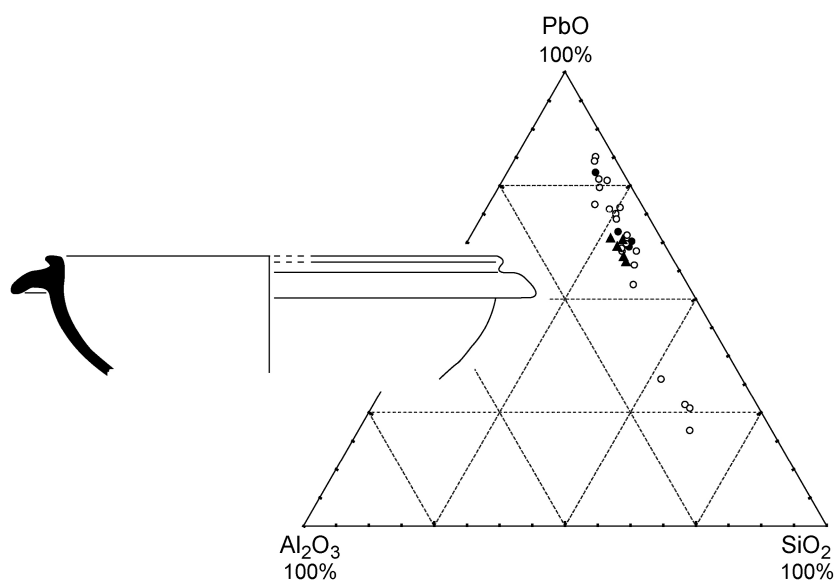


Archaeometric and Archaeological Approaches to Ceramics

Papers presented at EMAC '05, 8th European
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Cover illustration (left): Late Roman glazed mortar found in Saint-Blaise excavations, possibly from northern Italy. [After C.A.T.H.M.A., Importations de céramiques communes méditerranéennes dans le midi de la Gaule (Ve - VIIe s.), in *A cerâmica medieval no Mediterrâneo ocidental*, 1991, Mertola, p. 39, fig. 28]

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EXPLORING PATTERNS OF INTRA REGIONAL POTTERY DISTRIBUTION IN LATE MINOAN IIIA-B EAST CRETE: THE EVIDENCE FROM THE PETROGRAPHIC ANALYSIS OF THREE CERAMIC ASSEMBLAGES

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INTRODUCTION

Studies of the Late Minoan IIIA-B period (hereafter LM IIIA-B, c. 1400-1200 BC) have traditionally used the possible presence of the Mycenaeans in Crete as an important frame of reference. The starting point for many scholars is the generalized wave of destructions that hit the palaces and major sites at the end of the LM IB period. Opinions about the reason for this collapse vary from natural disasters and internal conflicts to external invasions by groups from the Mycenaean Mainland (Driessen and MacDonald 1997; Rehak and Younger 1998; Warren 2001). The subsequent period (LM II-early LM IIIA) is marked by the reoccupation of many sites and a series of transformations in the material culture (particularly in north central Crete), from mortuary (Preston 2004) and administrative practices (e.g. the introduction of Linear B script) to pottery shapes and decorative styles. The most distinctive style for the period appears to have developed at Knossos (Popham *et al.* 1984) and the presence of this Knossian or Knossian style pottery at sites outside north central Crete (e.g., Malia, Kommos, Chania) has been interpreted as an attempt by a new Knossian elite (whether Minoan or Mycenaean) to influence or even exercise control over parts of the island (Brogan *et al.* 2002; Driessen and Farnoux 1997). That this Knossian administration eventually succeeded in extending its authority over large parts of western and central Crete is suggested by the existence of place names of cities from both parts of the island in Linear B tablets found at Knossos (Bennett 1990).

Within this framework the study of the LM IIIA-B period has been traditionally dominated by the preeminence of Knossos, impeding the study of secondary centers and the relations that developed between them (Preston 2004). This was particularly the case of East Crete where no place-names are mentioned in the Linear B tablets, suggesting that this part of the island constituted a separate polity or incorporated a group of polities that were not subjected to the Knossian administrative system (Bennet 1987; 1990,

p. 209). In the last decade, however, the growing body of evidence from areas in East Crete opened the way to more regional approaches. Stylistic studies of pottery from well dated contexts, such as the tombs of Mochlos and Myrsini (Smith 2002; Brogan *et al.* 2002) and the settlement at Palaikastro (MacGillivray 1997a; b), demonstrated that major centers had developed in this part of the island as early as the beginning of LM IIIA, if not earlier.

These approaches have contributed greatly to the establishment of local chronological and stylistic sequences through the study of the individual ceramic assemblages. They opened the way to comparative regional studies exploring differences and similarities in the material culture, intra regional influence and interaction in a medium and small scale (e.g. Brogan *et al.* 2002; Smith 2002; Banou 2005), on an island like Crete where centers develop only a few kilometers from each other. However, this shift of stylistic studies towards intra-regional connections has not been followed by a similar shift of interest in the analytical studies. The issue that has been dealt with analytically is that of the transport stirrup jars (especially those bearing Linear B inscriptions) and their distribution, as an indication of the relationships between Mycenaean Greece and Crete (Day and Haskell 1995; Haskell 2005).

This paper resulted from three petrographic projects, carried out at the INSTAP Study Center for East Crete, and it attempts to investigate the nature and the individual characteristics of three ceramic assemblages: Chrysokamino, Mochlos and Petras (Fig. 1). From these separate studies there emerged a converging pattern related to the consumption of LM IIIA-B ceramics in East Crete and led to a synthetic study whose preliminary results are presented here. By combining analytical and stylistic information from three settlement sites of different size, history and importance, we explore how pottery moves on small or medium scale in East Crete and how this movement is interwoven with economic and social relationships.

THE SITES

Chrysokamino

The site of Chrysokamino is situated on a hill overlooking the coast, at the eastern side of the bay of Mirabello. The architectural remains suggest the presence of a small farmhouse whose main phase of occupation is LM IIIA and early LM IIIB (Betancourt *et al.* 1999, p. 343, 350). The pottery that characterizes this phase is primarily of domestic character, intended for storage, cooking and serving purposes, along with a limited amount of fine wares. The farmhouse at Chrysokamino represents a rather provincial site in East Crete during the LM III period but its geographical position makes it interesting. Located close to the narrow and relatively flat Isthmus of Ierapetra, Chrysokamino overlooks the northern end of an important overland crossroad for traffic between the north and the south coasts of Crete.

Mochlos

The small island of Mochlos lies on the north coast of Crete at the eastern limit of the Bay of Mirabello, *ca.* 10 km east of Chrysokamino. Geological studies suggest that in antiquity the island was connected to the mainland of Crete by a low isthmus, forming one of the best harbors on the north coast and providing easy access to nearby sources of water and the fertile coastal plain (Soles 2003, p. 1). Excavation on the island has revealed an extensive and multi-phased town occupied from the Early Bronze Age to the LM IB period (Soles and Davaras 1992; 1994; 1996). Destruction and abandonment seem to have resulted in an occupational gap until the late LM II/early LM IIIA period when the site was reoccupied (Brogan *et al.* 2002). The LM III architectural remains consist of at least thirteen houses constructed on top of earlier (LM IB) houses within the streets of the earlier settlement. They date from early LM IIIA to LM IIIB (Brogan *et al.* 2002, p. 98). The pottery assemblage of this re-occupation

phase is substantial, comprising domestic vessels as well as considerable amounts of fine wares (Smith 2002). It is marked by both continuity in certain pottery shapes known since the LM IB period and changes in others, most notably with the presence of new Knossian elements. The typological study of the material revealed potential connections with north-central and east Crete and allowed the formulation of hypotheses regarding the formation of regional identity during this period (Smith 2005). Moreover, the emergence of east Cretan regional traditions implies that Mochlos takes active part in the economy of the period and the re-emerging maritime trade, taking advantage of the site's position as a natural port and a gateway (Brogan *et al.* 2002, p. 117-118).

Petras

Petras is a low coastal hill in the bay of Siteia. The site was occupied from the Early Bronze Age and prospered particularly in the Old and New Palace periods as indicated by the presence of a large palatial building on top of the hill and a relatively large town on the side hills, of which two houses have been fully excavated. Unlike the earlier periods, the LM IIIA-B period is rather problematic since there are very few architectural remains preserved, namely two fragmentary buildings on top of the earlier palatial building (Tsipopoulou 2005, p. 314). However, the recent discovery of a double fortification wall in the foothills (Tsipopoulou 2005, p. 312) may suggest that in the LM IIIA-B period Petras was still an important settlement, acting as a gateway to the sea for the agricultural products from the Siteia plain and a controlling point for coastal maritime traffic. While the architectural remains are meager, the ceramic evidence of the LM IIIA-B period is significant in both quantity and quality. The shapes comprise a variety of domestic coarse and semi-coarse vessels intended for storage, cooking and transport purposes, as well as a multitude of fine wares some of which are thought to be imports (Tsipopoulou 1997). The material analyzed derives from House I (Tsipopoulou 1990).

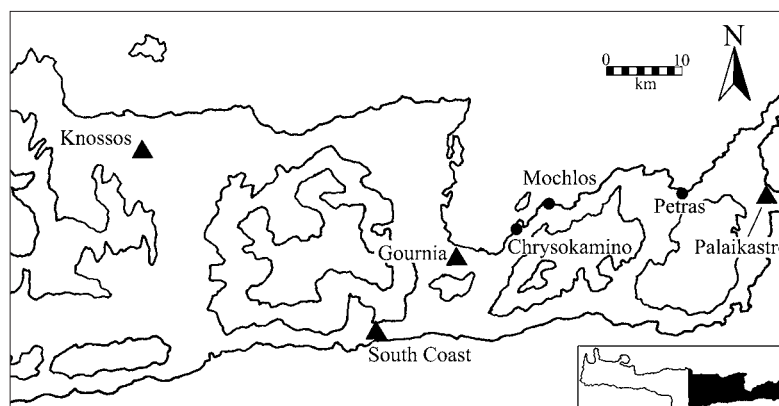


Fig. 1 – Map of East Crete and sites mentioned in the text.

THE LOCAL MATERIAL

In order to discuss the presence and distribution of pottery fabrics in East Crete it is essential to present a brief account of what is considered to be the local component of each assemblage, *i.e.* the fabrics that according to stylistic and petrographic criteria represent local production. The concept of local pottery production is in itself rather ambiguous since in most cases there is no production workshop within the site under study. It is only indirectly, through petrography and macroscopic study of pottery fabrics, that the presence of pottery workshops in the broad vicinity is deduced.

Chrysokamino

There is only one local fabric at Chrysokamino. It is coarse and is characterized by a fine grained, orange-red, non calcareous matrix. The non plastics consist primarily of low-grade metamorphic rock fragments, namely phyllite, along with small fragments of monocrystalline quartz, sandstone and very rare igneous rock fragments (Fig. 2). This fabric forms a very “tight” and homogeneous group in terms of composition and texture. All the samples of the group are very similar to each other, which, as we will see, is not always the case in the other sites. This fabric is related to the Phyllite-Quartzite series (IGSR 1959a) outcropping in the vicinity of the site, in the area of Kavousi.

The non-calcareous, phyllitic raw material has been used for the manufacture of coarse and semi-coarse vessels intended for domestic purposes, mainly cooking and storage, but there are also vessels for other kinds of domestic activities such as beehives and bowls.

Mochlos

In contrast to the provincial farmhouse of Chrysokamino, the town of Mochlos is characterized by both coarse and fine local fabrics.

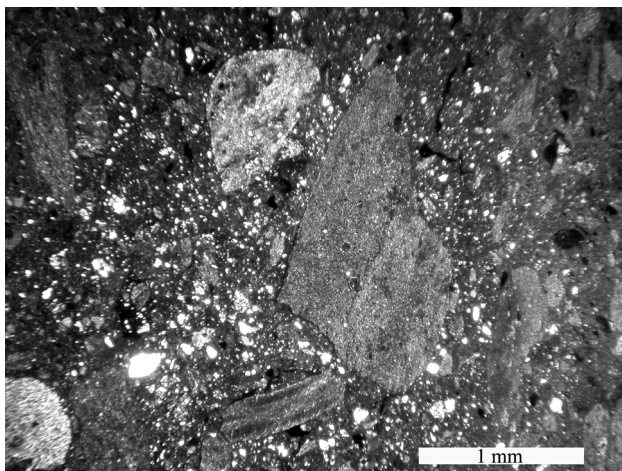


Fig. 2 – Chrysokamino, phyllite fabric (x25).

The most abundant and hence the main coarse fabric is characterized by a non calcareous, fine grained matrix and the presence of coarse and semi coarse inclusions consisting primarily of metamorphic rock fragments, namely phyllite and quartzite (Fig. 3). The other non-plastic components consist of chert, sandstone, rare plagioclase feldspar and altered igneous rock fragments. This rock and mineral suite is characteristic of the Phyllite-Quartzite series outcropping in the area of Mochlos in close proximity to the coast (IGSR 1959a). This fabric occurs at Mochlos from at least the Late Minoan IB period (Day *et al.* 2003); in the LM III assemblage it is used primarily for storage and cooking vessels, including basins, jars, pithoi, cooking dishes and cooking trays.

However, this is not the only phyllitic fabric present at Mochlos. Unlike the homogeneity of the Chrysokamino metamorphic fabric, at Mochlos there is a multitude of phyllitic fabrics that differ from each other primarily in texture. Through petrographic analysis an array of metamorphic fabrics has been established indicating that semi-coarse decorated vessels intended primarily for transport were manufactured using different clay recipes than the plain coarse wares (Fig. 4). The same differentiation between decorated and plain coarse wares is also attested at Petras.



Fig. 3 – Mochlos, phyllite fabric (x25).

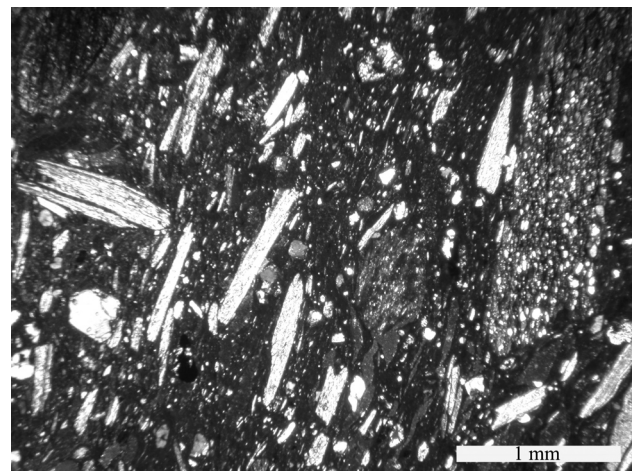


Fig. 4 – Mochlos, phyllite fabric for decorated vessels (x25).

The second major local fabric is used for fine vases. It is characterized by a fine calcareous matrix and semi-fine to fine inclusions, namely micrite, fossils and a few shell fragments (Fig. 5). There are also rare metamorphic rock fragments and textural features that lead us to suggest that it constitutes the product of mixing of the local red phyllitic clay with a fossiliferous marl. Clay mixing is widely practiced in Minoan Crete and it is attested in pottery manufacture up to present (Day 2004; Blitzer 1984). In this fabric are included fine and semi-fine vessels such as kylikes, bowls, cups, jugs, and dippers, *i.e.* shapes connected with serving and drinking liquids.

Petras

Like Mochlos, Petras includes both coarse and fine local fabrics. The main coarse fabric is characterized by the presence of low-grade metamorphic rocks, namely phyllite and quartzite, set in a fine groundmass composed primarily of monocrystalline quartz (Fig. 6). There is also some sandstone, chert and biotite mica. A similar fabric has already been identified in the Neopalatial pottery (Day 1995,

p. 157) and taking into account the geology of the area, it is very likely that it is local (I.G.S.R. 1959b). The vessels made in this fabric are cooking pots and storage jars.

The analysis of the ceramic assemblage reflects the variability of the metamorphic geology of the area. As was the case at Mochlos, although the raw materials used for the various types of pottery are all of metamorphic origin, the clay recipes change between the plain and the decorated coarse and semi-coarse vessels (Fig. 7).

As at Mochlos the second most common fabric at Petras is the product of a totally different recipe that is based on calcareous materials and used for fine and semi-fine vessels. It is characterized by a fine grained matrix and contains a few metamorphic rock fragments, mainly phyllite, along with some quartzite, sandstone, micrite and fossils (Fig. 8). This composition is similar to the coarse metamorphic fabric but the presence of the micrite, the fossils and the textural features indicates clay mixing of a red non-calcareous phyllitic clay and a Miocene calcareous marl. The vessels represented are medium and small sized, almost all decorated, used primarily for serving, drinking and storage purposes, such as jars, jugs, amphorae, small

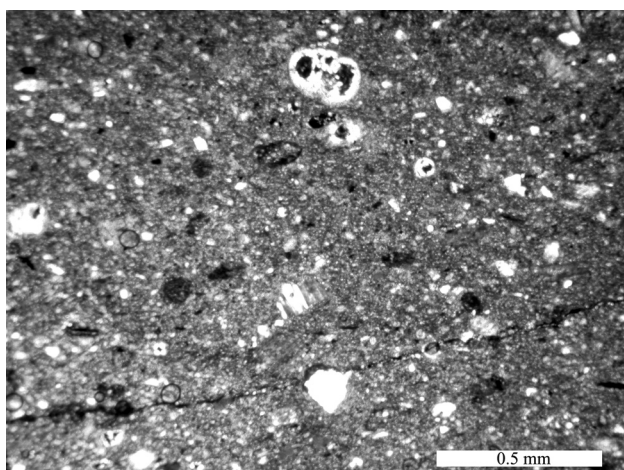


Fig. 5 – Mochlos, fine calcareous fabric (x50).

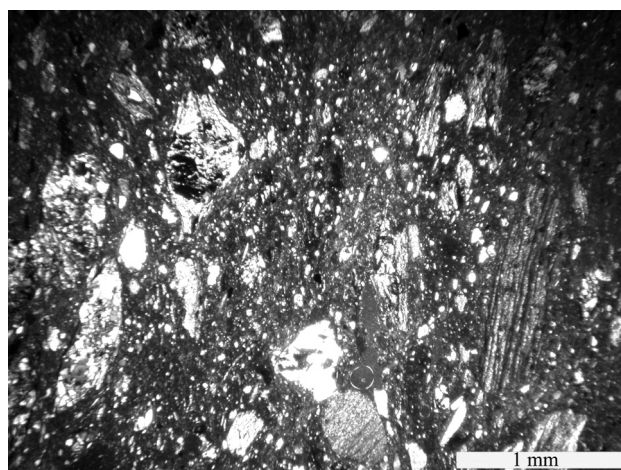


Fig. 6 – Petras, phyllite fabric (x25).

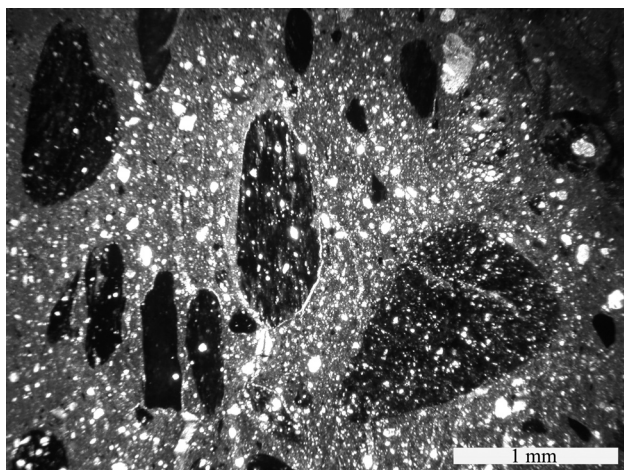


Fig. 7 – Petras, phyllite fabric for decorated wares (x25).

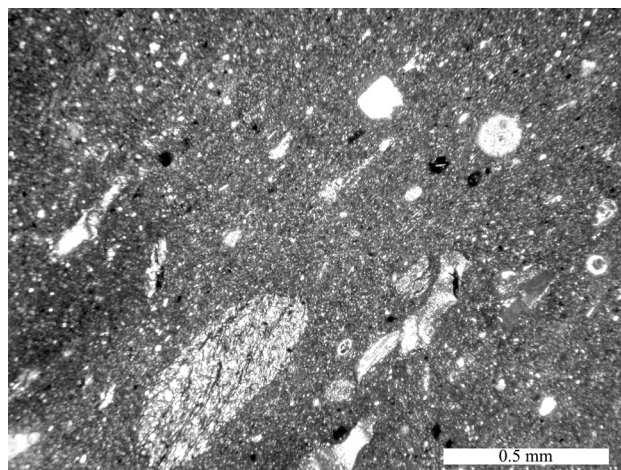


Fig. 8 – Petras, fine calcareous fabric (x50).

pithoi, fruitstands, and cups. It is not possible to be certain whether this fabric represents a different workshop but it is quite clear that there are different recipes for the coarse domestic wares and the fine decorated vessels.

THE IMPORTED MATERIAL

In addition to the material identified as local, all three sites contain imported pottery, *i.e.* a part of the assemblage that stylistically and/or fabric wise does not conform to the local component. In what follows, the imported material is presented by fabric (and not by site) in order to discuss provenance and distribution.

Serpentinite fabric

This is a coarse fabric characterized by the presence of angular and poorly-sorted serpentinite fragments in a reddish brown calcareous matrix (Fig. 9). The bimodal distribution and angularity of the non plastics indicate that serpentinite was deliberately added in a levigated clay paste as temper. Serpentinite occurs in the ophiolite series and the flysch mélange of the south coast of Crete, just west of Myrtos, which is possibly the place of origin of these vessels (IGSR 1993). This fabric has been used for storage and transport jars and is encountered at Chrysokamino and Petras, but is totally absent from Mochlos.

Sedimentary and igneous rock fabric

A second fabric can also be associated with the ophiolite series and the flysch mélange of the south coast containing sedimentary and igneous rock fragments (Fig. 10). A similar fabric has been identified at the Early Minoan settlement of Myrtos Fournou Korifi (Whitelaw *et al.* 1997, p. 268) and in the Early Minoan material from the Kavousi survey (Day *et al.* 2005, p. 180). Unlike the serpentinite fabric, this fabric occurs only at Chrysokamino and is used also for coarse amphorae and jars. Its presence at the small site of Chrysokamino is not surprising given the position of the site on the north coast of the Isthmus that provided one of the easiest and shortest points of travel (*ca.* 15 km) between the north and south coasts.

Granodiorite fabric

The granodiorite is one of the most common fabrics in East Crete. It has been given the name “Mirabello fabric” because it reflects the rock and mineral suite encountered in the area of Gournia-Kalo Chorio, around the bay of Mirabello (Day 1991). It is characterized by the presence of acid igneous rock fragments, namely granodiorite, set in a very fine, red firing matrix, along with some plagioclase, biotite and significant amounts of clay pellets (Fig. 11). The vessels represented in this fabric are mainly jugs, amphorae, and pithoid jars. The granodiorite fabric is

encountered in a number of sites in East Crete since the Early Minoan II period, throughout the Middle Minoan and to a lesser extent during the Neopalatial. In the LM IIIA-B period it occurs in significant quantities at Chrysokamino and Petras but it is totally absent from Mochlos.

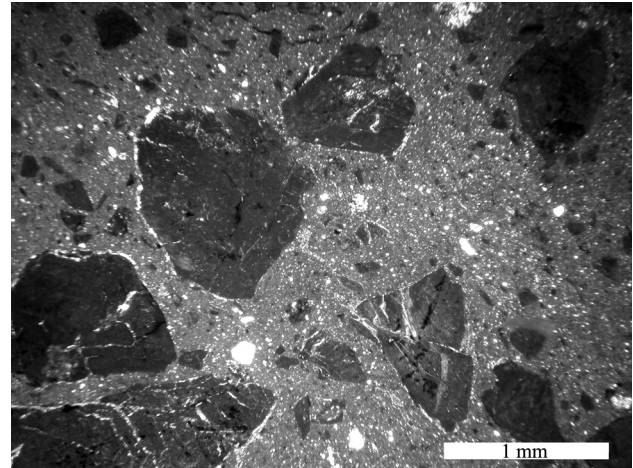


Fig. 9 – Serpentinite fabric (x25).

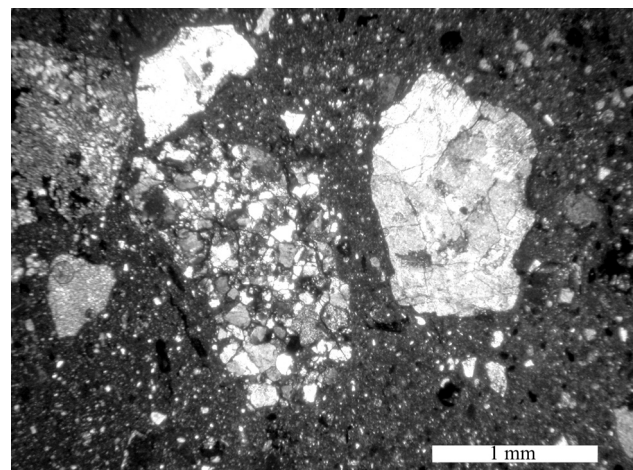


Fig. 10 – Sedimentary and igneous rock fabric (x25).

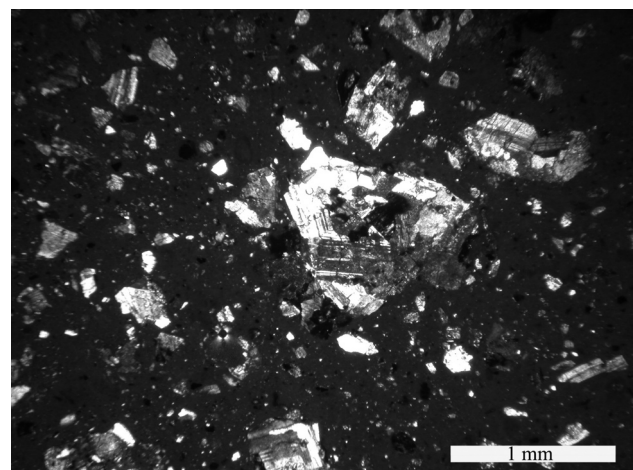


Fig. 11 – Granodiorite fabric (x25).

Fine red, quartz-rich fabric

This is a fine fabric characterized by a red matrix with frequent inclusions of monocrystalline quartz and a few fragments of phyllite and micrite, indicating raw materials of metamorphic and sedimentary origin respectively (Fig. 12). This fabric stands out macroscopically because of the pink color of the clay and the high firing. Its existence is known since the Neopalatial period and its provenance has been assigned to Palaikastro at the far east of Crete (Day 1995, p. 161). In the LM IIIA-B period it was found at all three sites examined. The shapes represented are mainly pulled-rim bowls and transport vessels, such as amphorae and jars.

Fine fabric with clay pellets

This is a very fine fabric characterized primarily by clay pellets. The rare non-plastics comprise a few small fragments of monocrystalline quartz and very rare fragments of fine-grained sandstone (Fig. 13). This fabric occurs at all three sites and on typological grounds it is considered to be an import from north central Crete. Until more data become available one has to assume the presence of one or more workshops at Knossos or its broader area near the north coast manufacturing wares intended for the transportation and consumption of liquids. The vessels represented consist of fine wares, mainly kylikes and small decorated transport jars.

DISCUSSION

This paper has dealt with the results of the petrographic analysis of three ceramic assemblages from East Crete dating to the LM IIIA-B period (for a detailed account of the samples examined per site and fabric, see Table 1). Despite the preliminary character of our study and the small number of sites included, it is possible to discern clear patterns in the production and distribution of the local and imported pottery.

With regard to the local pottery, all three sites share common traditions of pottery production both in the selection of raw materials and the clay recipes used for the domestic coarse and fine vessels. More specifically, the main coarse wares (mainly cooking and storage vessels) are manufactured with metamorphic raw materials, which reflect the Phyllite-Quartzite series of the north east coast. Although manufactured in similar fabrics, the decorated coarse and semi-coarse vessels, intended mainly for transporting liquids, seem to follow a different recipe from their undecorated counterparts. Finally, the local fine wares which consist primarily of small sized vessels intended for serving and drinking, exhibit common recipes based on clay mixing of a phyllitic non calcareous clay and a calcareous Neogene marl.

In contrast to the common trends observed in the local production, the three sites present clear differences in the

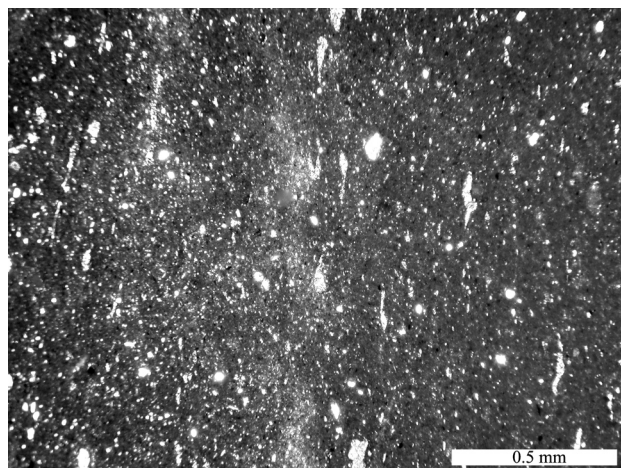


Fig. 12 – Fine red quartz-rich fabric (x50).

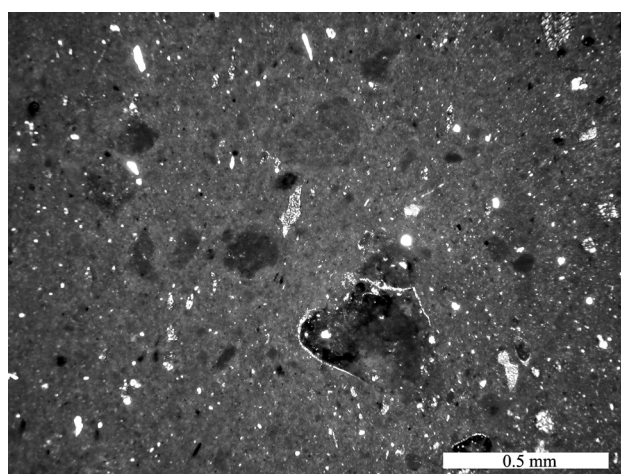


Fig. 13 – Fine fabric with clay pellets (x50).

Type of Fabric	Sites		
	Chrysokamino	Mochlos	Petras
Metamorphic for plain vessels	15	30	15
Metamorphic for decorated vessels		14	12
Metamorphic with fossils		10	12
Sedimentary & igneous rock	6		
Serpentinite	2		2
Granodiorite	18		12
Fine, red, quartz-rich	4	13	5
Fine with clay pellets	2	4	4
Other	11	29	8
TOTAL SAMPLES EXAMINED	58	100	70

Table 1 – Account of the LM III A-B samples examined per site and fabric.

consumption of imported pottery (Table 2). *Chrysokamino* has the closest connection to the South Coast as indicated by the presence of coarse and semi-coarse vessels in the serpentinite fabric and the fabric with sedimentary and igneous rock fragments. The former occurs also at Petras but not at Mochlos, whereas the latter is not seen in any other site except Chrysokamino. Despite its small scale

and remote location, Chrysokamino imports also pottery from other sources. There is a substantial amount of jars and pithoid jars in the granodiorite fabric originating from the neighboring Gournia/Kalo Chorio area. Finally, a small part of the fine wares consists of imports from further afield, such as Palaikastro and north central Crete.

Unlike Chrysokamino, the imported pottery encountered at *Mochlos* does not derive from any of the neighboring production areas, *i.e.* the South Coast and Gournia/Kalo Chorio region to the west. The absence of the latter (*i.e.* the vessels in the granodiorite fabric) continues the local consumption pattern of the later Neopalatial period when imports of granodiorite fabrics decreased dramatically from numbers seen in the EM III-MM III phases at Mochlos (Barnard 2003, p. 8; T. Brogan personal communication). Instead, the imported pottery of Mochlos is limited to fine wares deriving from north central Crete and Palaikastro. This suggests a highly selective strategy of pottery importation and consumption, involving medium and small sized fine wares, either for their visual appearance or their valuable content.

Finally, *Petras*, despite its apparent isolation in the far east of Crete, receives ceramic products from all production centers mentioned so far: transport jars from the South Coast and Gournia/Kalo Chorio, as well as an array of fine wares from north central Crete and Palaikastro. Mochlos and Petras are both long-lived and important settlements, occupying a strategic geographical position and controlling the adjacent plains and the maritime routes of the north coast. They differ markedly, however, in their preferences in ceramic imports. Products from Gournia/Kalo Chorio and the South Coast were imported to Petras, but not to Mochlos, although the latter is geographically closer to these production areas.

Moving from consumption sites to the centers of production and the distribution of their products across East Crete, it appears from the analysis that the South Coast products are limited to transport amphorae and jars, which were presumably exchanged for their content. The Gournia/Kalo Chorio products, which in earlier phases were exported in a wide range of cooking as well as transport shapes, change in the LM IIIA-B period to a more limited repertoire of transport jars. The latter maintain their popularity at Chrysokamino and Petras but are totally absent at Mochlos. The imports from north central Crete (*i.e.* the Knossos area) consist of shapes that exist also in local fabrics and seem to represent valued items. They include drinking vessels such as kylikes and

decorated small transport jars, which may have been used for transporting perfumes or other prestigious liquids (Brogan *et al.* 2002, Fig. 7, nos. P3390, P3393, P373, P3273). Finally, Palaikastro appears as an important and dynamic center in East Crete for the production of fine table wares. The vessels are also connected with the transport and consumption of liquids, such as pulled rim bowls, amphorae and jars (Smith 2005, fig. 7).

CONCLUSIONS

One of the primary aims of this study was to examine the distribution of various types of pottery and explore potential economic and social relationships between producers and consumers. The study of the local fabrics revealed the existence of a common language across these regions in terms of potting technologies, raw materials, and clay recipes, which cannot be simply attributed to the common geology of the areas. Possible explanations for this continuity include common traditions and practices, frequent contacts and the exchange of technologies and ideas.

Various archaeological and ethnographic studies have discussed the symbolic role of pottery as factor defining regional and personal identities and how regional variation in the material culture reflects not only preferential interaction between regions but also an attempt to establish and communicate one's idiosyncratic identity (Wiessner 1983; 1984; Shennan 1989; Gosselain 1999; 2000). Within this framework, the importation of specific ceramic products at the three settlements not only reflects trade routes but delineates potential spheres of interaction on a west-east and south-north axis where the presence of certain ceramic vessels is as significant as their absence (*e.g.* the absence of Gournia/Kalo Chorio pottery at Mochlos). It can be suggested that the preferential attitude observed in the consumption of imported ceramics at sites of similar status such as Mochlos and Petras reflects a complex network of sociopolitical relationships developed between the various East Cretan centers.

This is reinforced by the fact that, despite their geographical proximity, none of the three sites imports from the other. For the coarse wares this might imply that there was little or no exchange of agricultural products between these sites, whereas for the fine wares it might mean that the local table wares produced at Mochlos and Petras were not considered as prestigious as those of

Fabric	Origin	Sites		
		Chrysokamino	Mochlos	Petras
Serpentine	South Coast	x		x
Sedimentary and igneous	South Coast	x		
Granodiorite	Gournia/Kalo Chorio	x		x
Fine, red, quartz-rich	Palaikastro	x	x	x
Fine with clay pellets	North central Crete	x	x	x

Table 2 – Distribution of imported fabrics.

north central Crete or Palaikastro. Whatever the case, the above evidence reinforces the idea that the sociopolitical organization of East Crete was far more fragmented and that this part of the island, having perhaps a preference for smaller polities, followed a different trajectory from Central and West Crete (Bennet 1987, p. 87; MacGillivray 1997b, p. 279).

The three assemblages presented here offer a preliminary view of the patterning that characterizes the distribution of pottery in East Crete during the LM IIIA-B period. In order to establish a more secure explanatory framework, a broader study is needed encompassing a larger number of sites. More specifically, it should include more sites lying close to or within the production zones mentioned in the paper, *e.g.* Gournia and Palaikastro, as well as sites that are situated on major routes on the Isthmus of Ierapetra and the south coast. The study of the pottery should also be sustained by contextual information and the study of other classes of material culture. Through

the combination of stylistic study and petrographic analysis a more refined approach to the archaeological material can be achieved exploring patterns of inter- and intra-regional interaction and sociopolitical organization in this part of the island.

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REFERENCES

- BANOUE E. 2005, "LM III Mochlos (East Crete) versus LM III Viannos (Central Eastern Crete): differences and similarities", in A.L. D'Agata and J. Moody (eds.), *Ariadne's threads: connections between Crete and the Greek mainland in Late Minoan III (LM IIA2 to LM IIIC)*, Tripodes 3, Scuola Archaeologica Italiana di Atene. Atene, p. 145-178.
- BARNARD K.A. 2003, "A macroscopic analysis of the Neopalatial fabrics", in K.A. Barnard and T.M. Brogan (eds.), *Mochlos IB, Period III. Neopalatial settlement on the coast. The Artisans' Quarter and the Farmhouse at Chalinomouri. The Neopalatial Pottery*, Philadelphia, INSTAP Academic Press, p. 3-11.
- BENNET J. 1987, "The Wild Country East of Dikte: the problem of East Crete in the LM III Period", in J.T. Killen, J.L. Melena and J.-P. Olivier (eds.), *Studies in Mycenaean and Classical Greek presented to John Chadwick*, Minos 20-22, p. 77-88.
- BENNET J. 1990, "Knossos in context: comparative perspectives on the Linear B administration of LM II-III Crete", *AJA* 94, p. 193-211.
- BETANCOURT P.P., MUHLY J.D., FARRAND W.R., STEARNS C., ONYSHEVYCH L., HAFFORD W.B., EVELY D. 1999, "Research and excavation at Chrysokamino, Crete, 1995-1998", *Hesperia* 68, p. 343-370.
- BLITZER H. 1984, "Traditional pottery production in Kentri, Crete: workshops, materials, techniques and trade", in P.P. Betancourt (ed.), *East Cretan White-on-Dark Ware: studies of a Handmade Pottery of the Early to Middle Minoan periods*, University Museum Monograph 51, Pennsylvania, p. 143-157.
- BROGAN T.M., SMITH R.A.K., SOLES J.S. 2002, "Mycenaeans at Mochlos? Exploring culture and identity in the Late Minoan IB to IIIA1 transition", *Aegean Archaeology* 6, p. 89-118.
- DAY P.M. 1991, *A petrographic approach to the study of pottery in Neopalatial East Crete*, Ph.D., University of Cambridge.
- DAY P.M. 1995, "Pottery production and consumption in the Siteia Bay area during the New Palace period", in M. Tsipopoulou and L. Vagnetti, *Achladia: scavi e ricerche della Missione Greco-Italiana in Creta Orientale (1991-1993)*, Rome, p. 149-173.
- DAY P.M. 2004, "Marriage and mobility: traditions and the dynamics of the pottery system in Twentieth century East Crete", in P.P. Betancourt, C. Davaras and R.H. Simpson (eds.), *Pseira VIII: The archaeological survey of Pseira Island, Part I*. INSTAP Academic Press, p. 105-142.
- DAY P.M., HASKELL H.W. 1995, "Transport stirrup jars from Thebes as evidence of trade in Late Bronze Age Greece", in C. Gillis, C. Risberg and B. Sjöberg (eds.), *Trade and production in premonetary Greece: aspects of trade*, Studies in Mediterranean Archaeology and Literature Pocket-book 134, p. 87-109.
- DAY P.M., JOYNER L., RELAKI M. 2003, "A petrographic analysis of the Neopalatial pottery", in K.A. Barnard and T.M. Brogan (eds.), *Mochlos IB, Period III. Neopalatial settlement on the coast. The Artisans' Quarter and the Farmhouse at Chalinomouri. The Neopalatial Pottery*, INSTAP Academic Press, p. 13-32.

- DAY P.M., JOYNER L., KIRIATZI E., RELAKI M. 2005, "Petrographic analysis of some Final Neolithic-Early Minoan II pottery from the Kavousi area", in G.C. Gesell and L.P. Day (eds.), *Kavousi I, The Archaeological Survey of the Kavousi Region*, INSTAP Academic Press, Appendix 3, p. 177-195.
- DRIESSEN J., MACDONALD C.F. 1997, *The troubled Island: Minoan Crete before and after the Santorini eruption*, Aegaeum 17, Liège, Université de Liège.
- DRIESSEN J., FARNoux A. (eds.) 1997, *La Crète mycénienne, Actes de la table ronde internationale organisée par l'École française d'Athènes, 26-28 Mars 1991*, BCH, Suppl. 30, Paris.
- GOSSELAIN O.P. 1999, "In Pots We Trust: the processing of clay and symbols in Sub-Saharan Africa", *Journal of material culture* 4 (2), p. 205-230.
- GOSSELAIN O.P. 2000, "Materialising identities: an African perspective", *Journal of archaeological method and theory* 7 (3), p. 187-217.
- HASKELL H.W. 2005, "Region to region export of transport stirrup jars from LM IIIA2/B Crete", in A.L. D'Agata and J. Moody (eds.), *Ariadne's threads: connections between Crete and the Greek mainland in Late Minoan III (LM IIA2 to LM IIIC)*, Tripodes 3, Scuola Archeologica Italiana di Atene, Atene, p. 205-221.
- IGSR 1959a, *Geological map of Greece: 1:50 000*, Kato Chorion (Ierapetra) sheet, Institute for Geology and Subsurface Research.
- IGSR 1959b, *Geological map of Greece: 1:50 000*, Siteia sheet, Institute for Geology and Subsurface Research.
- IGSR 1993, *Geological map of Greece: 1:50 000*, Ierapetra sheet, Institute for Geology and Subsurface Research.
- MACGILLIVRAY J.A. 1997a, "Late Minoan II and III pottery and chronology at Palaikastro: an introduction", in E. Hallager and B.P. Hallager (eds.), *Late Minoan III pottery chronology and terminology, Acts of a meeting held at the Danish Institute at Athens, August 12-14, 1994*, Monographs of the Danish Institute at Athens 1, Aarhus, p. 193-202.
- MACGILLIVRAY J.A. 1997b, "The re-occupation of eastern Crete in the Late Minoan II-IIA1/2 periods", in J. Driessen and A. Farnoux (eds.), *La Crète mycénienne, Actes de la table ronde internationale organisée par l'École française d'Athènes, 26-28 Mars 1991*, BCH, Suppl. 30, Paris, p. 275-279.
- POPHAM M.R., BETTS J.H., CAMERON M., CATLING H.W. and E.A., EVELY D., HIGGINS R.A., SMYTH D. 1984, *The Minoan unexplored mansion at Knossos*, BSA Suppl. 17, London.
- PRESTON L. 2004, "A mortuary perspective on political changes in Late Minoan II-IIIB Crete", *AJA* 108, p. 321-348.
- REHAK P., YOUNGER J.G. 1998, "Neopalatial, Final Palatial, and Postpalatial Crete", *AJA* 102, p. 149-166.
- SHENNAN S.J. 1989, "Introduction: archaeological approaches to cultural identity", in J.S. Shennan (ed.), *Archaeological approaches to cultural identity*, London, Unwin Hyman, p. 1-32.
- SMITH R.A.K. 2002, "The tombs of Mochlos and Myrsini: pottery and cultural regionalism in Late Minoan III Crete", Ph.D., Bryn Mawr College, Bryn Mawr.
- SMITH R.A.K. 2005, "Minoans, Mycenaean and Mochlos: the formation of regional identity in Late Minoan III Crete", in A.L. D'Agata and J. Moody (eds.), *Ariadne's threads: connections between Crete and the Greek mainland in Late Minoan III (LM IIA2 to LM IIIC)*, Tripodes 3, Scuola Archeologica Italiana di Atene, Atene, p. 185-204.
- SOLES J.S. 2003, "Introduction", in J.S. Soles (ed.), *Mochlos IA, Period III. Neopalatial settlement on the Coast. The Artisans' Quarter and the Farmhouse at Chalinomouri, The Sites*, Philadelphia, INSTAP Academic Press, p. 1-3.
- SOLES J.S., DAVARAS C. 1992, "Excavations at Mochlos, 1989", *Hesperia* 61, p. 413-445.
- SOLES J.S., DAVARAS C. 1994, "Excavations at Mochlos, 1990-1991", *Hesperia* 63, p. 391-336.
- SOLES J.S., DAVARAS C. 1996, "Excavations at Mochlos, 1992-1993", *Hesperia* 65, p. 175-230.
- TSIPOPOULOU M. 1990, "Νέα στοιχεία για τη Μινωική κατοίκηση στην περιοχή της πόλης της Σητείας", in *Proceedings of the 6th Cretological Congress*, A2, Chania, p. 305-321.
- TSIPOPOULOU M. 1997, "Late Minoan III reoccupation in the area of the palatial building at Petras, Siteia", in E. Hallager and B.P. Hallager (eds.), *Late Minoan III pottery chronology and terminology, Acts of a meeting held at the Danish Institute at Athens, August 12-14, 1994*, Monographs of the Danish Institute at Athens 1, Aarhus, p. 209-252.
- TSIPOPOULOU M. 2005, "'Mycenaean' at the Isthmus of Ierapetra: some (preliminary) thoughts on the foundation of the (Eteo)Cretan cultural identity", in A.L. D'Agata and J. Moody (eds.), *Ariadne's threads: connections between Crete and the Greek mainland in Late Minoan III (LM IIA2 to LM IIIC)*, Tripodes 3, Scuola Archeologica Italiana di Atene, Atene, p. 303-333.
- WARREN P. 2001, "Review of The Troubled Island, by J. Driessen and C.F. MacDonald", *AJA* 105, p. 117-118.
- WHITELAW T.M., DAY P.M., KIRIATZI E., KILIKOGLU V., WILSON D.E. 1997, "Ceramic traditions at EM IIB Myrtos Fournou Korifi", in R. Laffineur and P.P. Betancourt (eds.), *TEXNH: craftsmen, craftswomen and craftsmanship in the Aegean Bronze Age*, Aegaeum 16, Liège, Université de Liège, p. 265-275.
- WIESSNER P. 1983, "Style and social information in Kalahari San projectile points", *American antiquity* 48, p. 253-276.
- WIESSNER P. 1984, "Reconsidering the behavioural basis for style: a case study among the Kalahari San", *Journal of anthropological archaeology* 3, p. 190-234.

