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**Metallurgy in the
Early Bronze Age Aegean**

Edited by

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The Beginning of Metallurgy in Crete: New Evidence from the FN – EM I Settlement at Kephala Petras, Siteia

Yiannis Papadatos

Introduction

The beginning of metallurgy in Crete constitutes the subject of an ongoing discussion with various, often contentious, ideas expressed on the basis of the scanty available evidence. Branigan and Renfrew, in their seminal work on Aegean metallurgy suggested a *metallshock* in the EBA II period, marked by a sharp increase not only of metallurgical activities but also of the importance of metals in Aegean material culture. Branigan accepted that there were no copper objects found in pure EM I deposits in Crete, with the possible exceptions of Pyrgos and Kyparissi caves (Branigan 1968: 54). He also suggested that metallurgy was rather a local, indigenous development, based on the small number of limited metal sources in Crete (Branigan 1974: 101), although he did not dismiss the possibility of an impetus, through an influx of related knowledge and ideas from the eastern Mediterranean (namely Syria-Cilicia) at some point in the EM I period. On the other hand, Renfrew tended to consider the increase in metallurgy, not only in Crete but in the rest of the Aegean, as part of his “International Spirit”, characterized by intensive interaction between regions and people, involving raw materials, artefacts, technological skills, ideas and distant knowledge (Renfrew 1972: 451–455). Metals triggered this phenomenon, since they constituted the first “commodity really worth trading” (Renfrew 1972: 455). Their acquisition and production involved technological advances, which enabled the imposition of power through (a) warfare and (b) the storage of wealth, which reflected the status of emergent ruling elites (Renfrew 1972: 319–320, 1984).

Since then, two important discoveries have been made in Crete. At Aghia Photia, near Siteia, copper artifacts and crucibles were found inside tombs dated to the later part of the EM I period (Davaras 1971; Davaras and Betancourt 2004; Day *et al.* 1998, 2000) and moulds for the production of copper artefacts in the

associated settlement (Tsipopoulou this volume). Also, at the settlement of Poros Katsambas near Herakleion substantial evidence for metalworking (including crucibles, copper artefacts, slag, moulds and tuyères) was found in late EM I and EM IIA levels (Dimopoulou 1997; Doonan *et al.* this volume). These sites allowed us to reconsider previously excavated assemblages such as the burial caves of Kyparissi (Alexiou 1951) and Pyrgos (Xanthoudides 1918) and the tholos tomb of Krasi (Marinatos 1929), which are also dated to EM I, and contain metal artefacts (Muhly 2002: 79, 2004: 284). A copper blade was also found in a late EM I house at Kalo Chorio (Haggis 1996: 680). All these sites, which produced the earliest direct and indirect evidence for metallurgy in Crete are located on the North Coast, and they all are dated to an advanced stage of EM I. Moreover, their ceramic assemblages, with the exception of Kalo Chorio (Haggis 1996: 677, 680), display strong affinities with the Cyclades, being contemporary with the pottery of the so-called “Kampos group”, which in the Cyclades represents the final stage of EC I, just before the Keros-Syros (EC II) horizon (Renfrew 1984; Warren and Hankey 1989; Zapheirou 1984). The strong links with the material culture of the Cyclades, the lack of important metal sources in Crete, in contrast to the Cyclades, and the location of these Cretan sites on the north coast led to the reasonable suggestion that the raw materials, the associated metal technology and perhaps the smiths themselves were of Cycladic origin (Betancourt 2003; Broodbank 2000: 298–9, 302–3; Day *et al.* 1998: 145–7). In other words, the appearance of metallurgy on Crete was still viewed as part of the “International Spirit” phenomenon, but slightly earlier, that is in the late EBA I rather than the EBA II (Doonan *et al.* this volume).

The above picture concerning the beginnings of metallurgy in Crete comes in sharp contrast to what is known from the rest of the Aegean. Metal objects have been found in several LN and FN contexts, while the first direct evidence for metalworking comes from FN levels at Sitagroi, Kephala on Keos and Gyalı (Muhly 2002: 77; Nakou 1995: 3–8). However, when it comes to the Cretan Neolithic, the picture is rather obscure. The LN copper flat axe from Knossos is the earliest metal artefact found on the island, but (a) it does not come from a secure context, (b) it is a rather isolated find, and (c) it does not constitute direct evidence for metalworking, and could be an import (Muhly 2004: 284). Especially in the FN, despite the evidence for long-distance communications, demographic expansion and colonization by newcomers in some Cretan areas (Betancourt 1999; Hayden 2003; Nowicki 2002; Vagnetti 1996), there is no secure evidence for metalworking, not even of copper artefacts used in this period. The excavations at Chrysokamino added significant new evidence, but the metallurgical activities (copper smelting) at the site are mainly associated with EM III pottery, while the FN pottery is rather scanty. The excavators suggest that the history of the copper smelting activity at Chrysokamino possibly goes back into the FN period (Betancourt this volume; Betancourt *et al.* 1999: 363). Although we agree with Muhly, who rightly has criticized the reluctance of many scholars to accept an

advanced metallurgy in Crete before the EM II period (2004: 287), it should be accepted that, for the moment, the evidence is not secure, Chrysokamino is a rather isolated find, and FN metallurgical activity in the site remains a hypothesis.

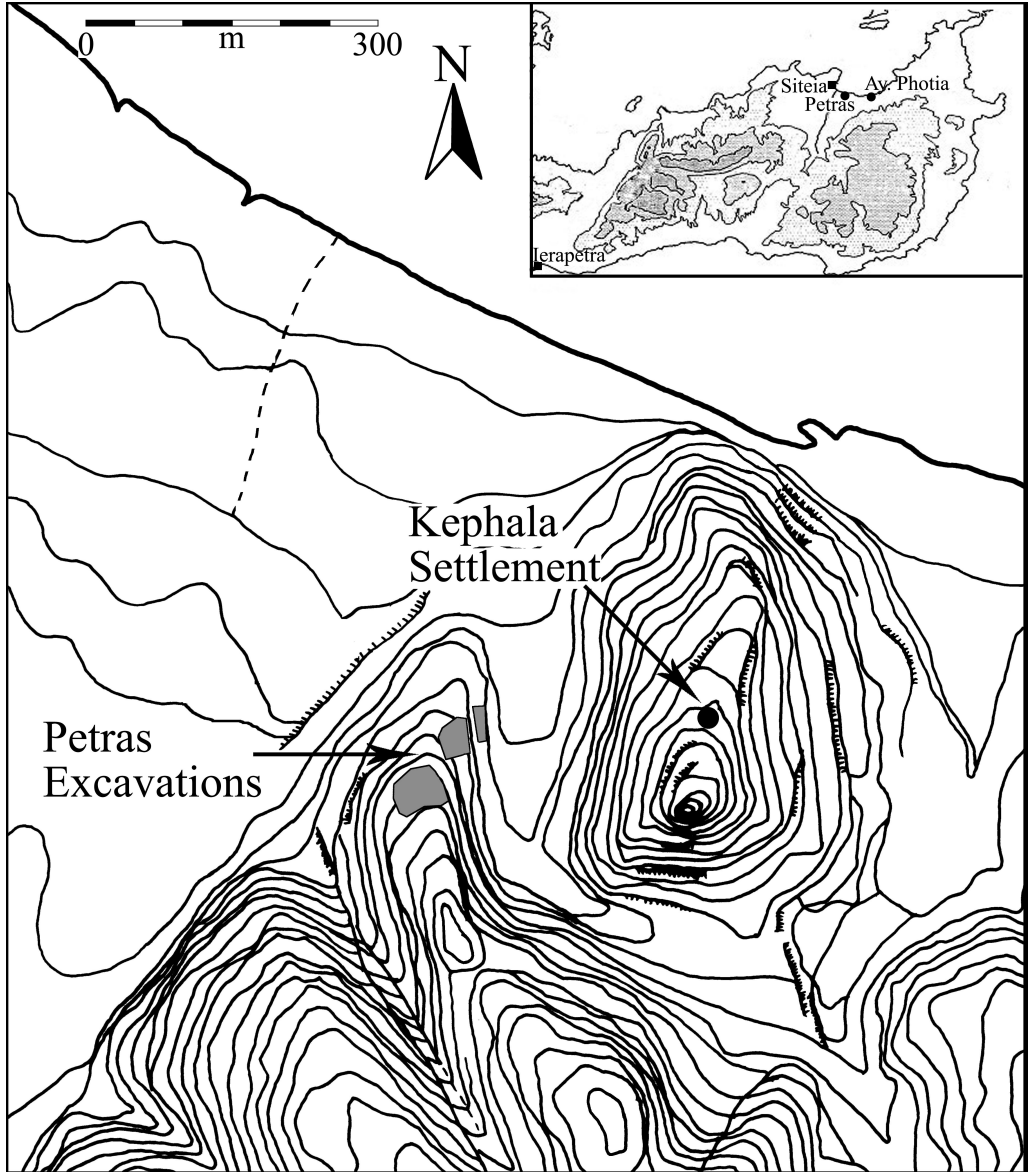


Figure 10.1. Map of the Petras area.

The Site

Recent discoveries at Petras, near Siteia, allow us to reconsider the above evidence, and shed new light on the issue of the earliest metallurgy in Crete. Test excavations at Petras Siteia, carried out by the 24th Ephoreia of Prehistoric and Classical Antiquities in the years 2002–2004, confirmed the results of earlier surveys in the area (Nowicki 2002: 28; Tsipopoulou 1990: 321) by revealing the remains of a settlement dated to the transition from the FN to the EBA. The site lies on the Kephala hill (Figures 10.1–10.2), 200 m northeast of the lower hill, where the Minoan settlement and palace of Petras have been excavated in the 1980s and 1990s (Tsipopoulou 1990, 1999, 2002).

The architecture and the pottery of the site indicate two major phases of occupation. The settlement was first established towards the end of the FN period, but the architectural evidence of this period is rather fragmentary, consisting of two rectilinear rooms parallel to each other in the NW edge of the excavated area. The latest architectural remains are dated in the EM I period, consisting of a large building complex, with at least 8 rooms. There are also several curvilinear walls, which clearly belong to an earlier architectural phase, which is either contemporary with the FN rooms or intermediate between the FN rooms and the EM I building complex. There is no evidence for any dramatic event separating the two phases. The same is true for the end of the settlement, which occurred before the end of the EM I period. No evidence for burning was found, indicating that the site was abandoned, rather than destroyed by fire.

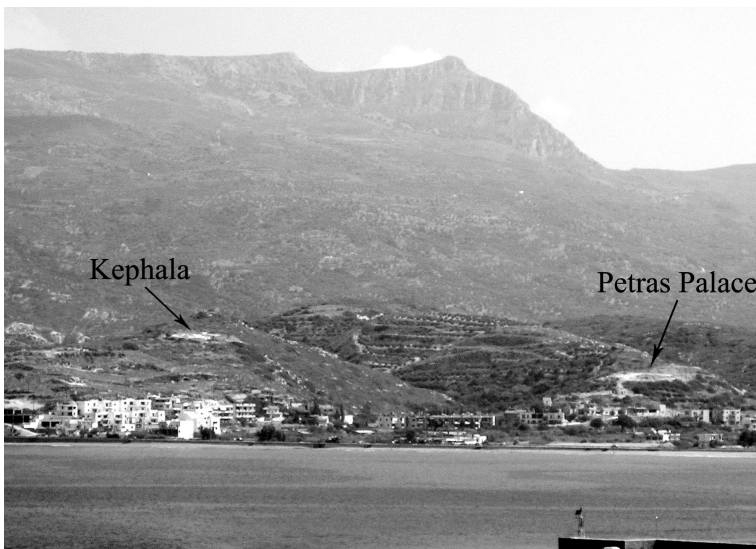


Figure 10.2. The area of Petras, Siteia.



Figure 10.3. Kephala Petras: General view of the settlement, from East.

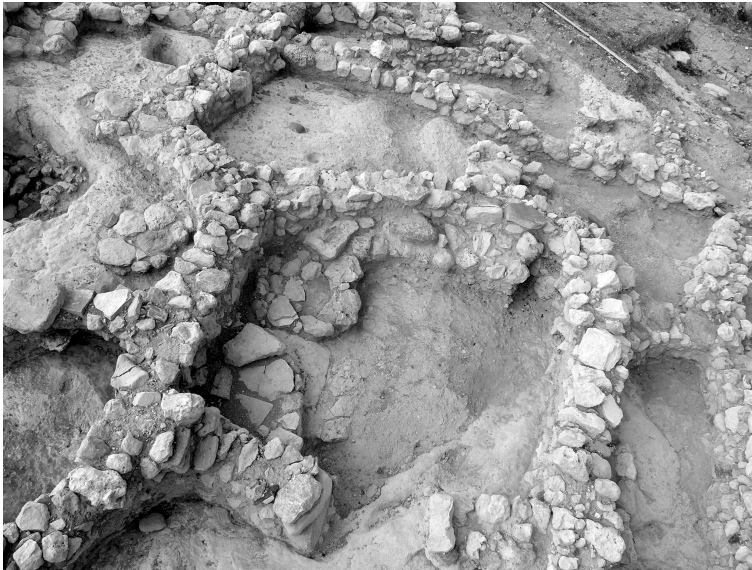


Figure 10.4. Kephala Petras: Architectural remains of the EM I period.

The study of the material from Kephala is currently in progress, and the excavation has unearthed only a small part of what seems to be a relatively extensive settlement (Nowicki 2002: 28). It is possible, however, to give some preliminary information, especially concerning the dating of the site. Pottery of the FN period comes mainly from the deep earth fills of the FN structures that remained undisturbed by the later (EM I) occupation. Smaller quantities have

been also found in shallow basal deposits beneath the EM I floors and walls (only in the cases that the EM I walls were not founded directly on the bedrock). The pottery comprises coarse and fine vases, with brown to grey burnished, polished or smoothed surface treatment. The shapes include cups, jars, bowls as well as the so-called “cheesepots”. The closest parallels for a large portion of the Neolithic material, in terms of shapes and surface treatment, come from sites at the Dodecanese such as Alimnia near Rhodes, Partheni on Leros, Gyali near Nissyros (Sampson 1984, 1987, 1988), as well as from surface pottery found on Karpathos (Nowicki 2002: 28). The remainder of the assemblage has parallels with the latest FN material from Phaistos and Knossos. The strong affinities of the Kephala ceramic assemblage with the Dodecanese are also reinforced by the existence of curvilinear architecture in the contemporary sites of Alimnia and Gyali.

The EM I pottery is more abundant and consists of two major ware groups: (a) the burnished wares (mainly the Dark Grey Burnished and the Red/Brown Burnished), and (b) the Red Washed ware, often with wiping. The shapes include high pedestalled bowls, with holes or fenestrations on the foot, cups with convex bases, bowls, miniature pyxides, shallow plates, spherical jars with curved base and baking trays. The EM I pottery does not indicate any significant influence or affinity with areas outside Crete. The rarity of Dark-on-Light pottery (one specimen) and of jugs (two specimens), as well as other typological features such as the fenestrated chalices, the large strap handles and the convex bases in cups indicate that the material should be placed in the earlier part of the EM I period. Moreover, the site lacks typical vases of the “Kampos group”, which are common in sites of the later EM I, such as Aghia Photia (Davaras and Betancourt 2004; Day *et al.* 1998, 2000), Kyparissi (Alexiou 1951), Pyrgos (Xanthoudides 1918) and Poros



Figure 10.5. Kephala Petras: Earth filling beneath the foundation of an EM I wall.

Katsambas (Day *et al.* 1998: 136–7; Wilson and Day 2000: 53, 58). Concerning Aghia Photia particularly, which is only 2 km east of Kephala, there are but a few similarities, indicating temporal rather than depositional or cultural differences, although we cannot exclude the possibility of some chronological overlapping. What seems certain is that Kephala Petras starts earlier and is abandoned before the end of the EM I, while Aghia Photia starts late in EM I and perhaps continues, though for a short period of time, in EM IIA. The study of the material from both sites is at an early stage, and it is better for the moment to leave this question open.

The Metallurgical Evidence

The finds that can be associated at present with metallurgical activities include two pieces of copper ore and six pieces of slag, some containing copper prills (Figure 10.6). To these we should also add a tiny piece of copper wire. The analysis of the finds is currently in progress by Yiannis Bassiakos and Michalis Catapotis at “NCSR Demokritos” in Athens, and the results will be published elsewhere. However, the preliminary evidence clearly shows copper smelting, namely production of metallic copper from secondary copper-bearing ores.

Concerning their context, none of these finds seems to have been found *in situ*. Two copper slags were found on top of the destruction level of the EM I rooms, associated mainly with EM I, but also small quantities of LM III and FN pottery. A third copper slag was found outside, above the bedrock, together with pottery mainly of LM III, but also of EM I and FN dating. Another copper slag was also found outside, inside a circular mortar, cut in the bedrock, together with



Figure 10.6. Kephala Petras: The metallurgical evidence.

FN and EM I pottery. Finally, the copper wire, the two copper ore fragments and two more copper slags were found in deep fillings, beneath the EM I floors and wall foundations, associated mainly with EM I, but also some FN pottery (between 3% and 14%). From the above it seems certain that metallurgy is not associated directly with the use and function of the EM I building complex. The metallurgical activities were probably taking place in the broader area of the Kephala hill, and some by-products ended in the filling beneath the EM I floors, or fell inside the rooms after their destruction.

The associated pottery is mainly EM I. However, because these finds are not *in situ*, we should accept that the EM I phase of occupation is the *terminus ante quem* for these finds. But what about the *terminus post quem*? Could the two slags and the copper ores that were found beneath the foundation of the EM I walls support a hypothesis that metallurgy on the Kephala hill goes back in the FN? Indeed, there is some, though indirect, evidence to suggest this. More specifically, there are several fragments of clay, heavily burnt in rather high temperatures, some with bloating pores (Figures 10.7–10.8). All these were found in the northwest edge of the site, inside deep, undisturbed *in situ* deposits with solely FN pottery. Due to the lack of evidence for fire destruction elsewhere in the settlement, these finds are definitely related to some sort of pyrotechnology. Although it is impossible to associate them securely with metallurgical activity, this hypothesis seems very likely on the basis of the other metallurgical evidence from the site.

To summarize, there is secure evidence that metallurgical activity was taking place somewhere on the Kephala hill, perhaps not far from the excavated area of the FN–EM I buildings. The location and topography of the site cannot be irrelevant. It is high on a hill, looking north and exposed to the strong north winds, and is ideal for metallurgical activities which need frequent, constant and

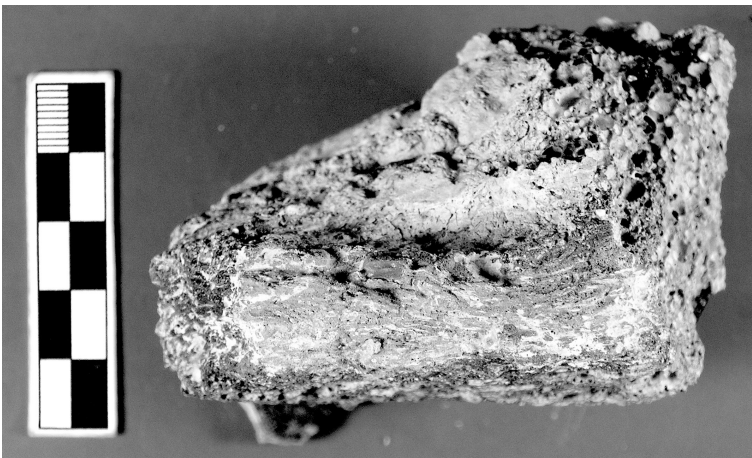


Figure 10.7. Kephala Petras: Burnt fragment of clay dated to the FN period.

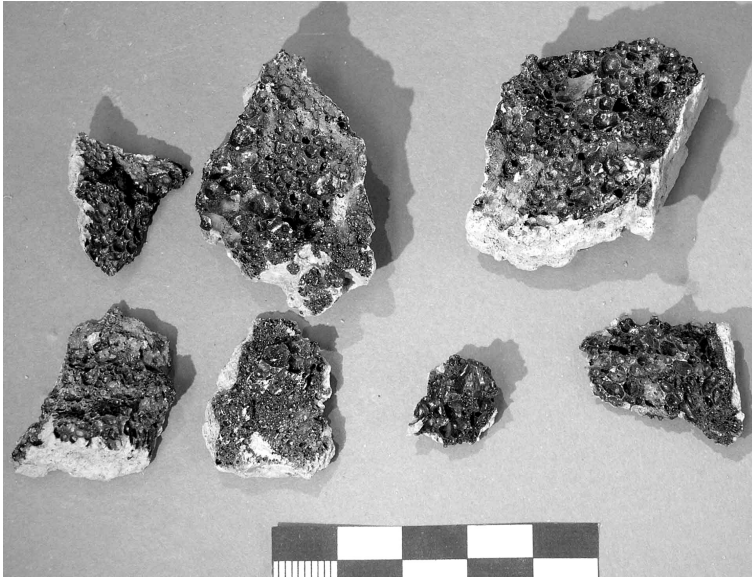


Figure 10.8. Kephala Petras: Burnt fragments of clay dated to the FN period

strong natural drafts for achieving high firing temperatures. The *terminus ante quem* for this activity is the earliest part of EM I period, while there is good, though indirect, evidence to imply that the metallurgical activity at the site goes back to the FN period.

The Significance of the Kephala Petras Evidence

The immediate implication of the Kephala evidence is that the beginning of metallurgy in Crete now goes back several decades, or even hundreds of years, from the later to the earlier part of EM I, or even earlier to the end of the FN. From this point of view, Kephala Petras can be added to the small number of FN sites from the rest of the Aegean, which have produced direct evidence for metallurgy (Sitagroi, Kephala on Keos and Gyali). Moreover, the beginning of metallurgy on Crete should not be regarded as belated as previously thought in comparison to the rest of the Aegean. This should not come as a surprise, since the FN is the period when Crete “enters the wide-world” (Vagnetti 1996). However, the parameters of the Kephala material are not restricted to chronological issues.

As mentioned in the introduction, the location of the Cretan sites with the earliest evidence for metallurgy, their dating and the character of their material culture made reasonable the link between the appearance of metallurgy in Crete and the intensification of the Cretan-Cycladic contacts, as part of an “International Spirit” that started to emerge in the late EBA 1 period. However, the finds from

Kephala Petras are earlier than the “Kampos horizon” and the related Cretan sites (Pyrgos, Aghia Photia, Poros Katsambas). Therefore, they are dated to a period that precedes that of the earliest Cycladic expansion. Moreover, the material culture of the Kephala settlement has no Cycladic affinities, in terms of pottery or any other finds, and the only clear Cycladic connection is the obsidian imported from Melos.

The above become of particular importance if considered within the local Cretan context. FN and EM I are two periods of critical importance for the entire East Crete, including not only Siteia, but the Mirabello Bay as well. Evidence, mainly from surface surveys, has already shown that in the FN/EM I transition East Crete was the focus of one or more waves of newcomers occupying, for the first time so densely, the area of the Mirabello Bay (Betancourt 1999; Hayden 2003: 398; Hood 1990; Nowicki 2002: 66–69). The character of the pottery suggests strong contacts between East Crete and the Dodecanese, or even further, to Southwest Anatolia (Nowicki 2002: 66–69; Sampson 1984: 242). This hypothesis, which has up to now been based on unstratified material collected from the surface, is now confirmed for the first time from well-stratified, excavated deposits at Kephala Petras.

What seems certain, therefore, is that the beginning of metallurgy in Crete predates the period of intensive Cretan-Cycladic relations and should not necessarily be associated with the Cyclades, but perhaps with the settlement of East Crete by newcomers from the Southeast Aegean. It is an idea first expressed by Muhly (2004: 285) for the Mirabello area on the basis of the evidence from Chrysokamino, and now can be supported more securely for the Siteia area on the basis of the Kephala evidence. In this sense it is very striking that Sampson’s excavations at Gyali revealed FN occupation with pottery similar to that of Kephala, architecture consisting of curvilinear structures, reminiscent of the Kephala settlement, and two crucibles for melting copper (Davis 1992: 746).

The disconnection of the appearance of metal technology on Crete from the Cyclades, has important implications regarding the source of the raw material. It is better to leave this subject for later, when we will have the results from lead isotope analysis. However, the Kephala evidence should make us consider other alternative sources, apart from the Cyclades, including Anatolia, and perhaps Crete itself. On the other hand, we should not forget the abundance of Melian obsidian, suggesting that the people of Kephala had access to Cycladic raw materials. However, even if the metal did indeed come from the Cyclades, it seems certain that the system of acquisition and the networks of exchange were very different from that responsible for the metallurgy of the “Kampos group” sites such as Poros Katsambas, Aghia Photia and Pyrgos in the later part of EM I period.

This suggestion is reinforced by two more pieces of evidence. The first is related to metal production. In the “Kampos group” sites of Poros and Aghia Photia the metallurgical evidence indicates melting and/or alloying of metals

(Betancourt and Muhly this volume; Doonan *et al.* this volume; Tsipopoulou this volume), in contrast to Kephala where smelting activities were taking place. We cannot dismiss the possibility that this pattern is a result of taphonomy or chance. However, on the basis of the present evidence, it seems reasonable to suggest that (a) in the “Kampos group” metallurgical sites, the raw material was transported already processed and smelted, while (b) in the earlier site of Kephala it was transported unprocessed and was smelted on site. Although we cannot exclude other possibilities, the most likely explanation is perhaps related to the origin of the raw material. More specifically the “Kampos group” metallurgical sites imported already smelted copper from the Cyclades, while at Kephala the smelted copper originated from local Cretan ores. Unfortunately, no such source has been identified in the area so far.

The second piece of evidence is related to the consumption of metals. In the “Kampos group” sites, metal objects were deposited as prestige artefacts inside tombs. This is the case for the cemetery of Aghia Photia (Day *et al.* 1998: 145; Davaras and Betancourt 2004) and the cave tombs of Kyparissi and Pyrgos. In contrast, in the FN/early EM I transitional period the picture seems to be rather different. The only cemetery of this period in East Crete, on Pseira (Betancourt and Davaras 2003), has not produced a single metal object. Moreover, the general scarcity of tombs and cemeteries in FN/EM I transition, which comes in sharp contrast to the succeeding periods, suggests that the funerary practices were not yet an important domain of social life. From this point of view, it is reasonable to suggest that metals in FN/early EM I Crete were not directed to funerary practices, but to other, yet unknown, arenas of social communication and life.

If the above are accepted, it seems that there are sharp differences between the two periods in the acquisition, production and consumption of metals. Several years ago Nakou (1995: 23) identified a shift in the depositional/behavioural practices in relation to metals, from curation and occasional ritual deposition in the Neolithic to frequent use as insignia in formal burials in the EBA. In Crete, although there is ample evidence for burial use of metals from the later EM I onwards, there is no evidence for occasional ritual deposition in the Neolithic. However, the above described differences between the “Kampos group” sites and Kephala Petras may correspond to clear changes, perhaps different from what Nakou implied for the rest of the Aegean. Moreover, it seems probable that these changes took place in Crete during the transition from the early to the later part of the EM I period, and perhaps our best opportunity to observe them is the Siteia Bay. The two important sites of the area, Kephala Petras and Aghia Photia are separated by only 2 km and perhaps a few decades. However, they present so many, sharp differences in every aspect of their material culture (including metallurgy), they look like an entirely different world. The completion of their study will definitely add significant new evidence concerning the above issues.

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Bibliography

Alexiou, S.

1951 Protominoikai tafai para to Kanli-Kastelli Irakleiou. *Kr Chron* 5: 275–294.

Betancourt, P. P.

1999 What is Minoan? FN/EM I in the Gulf of Mirabello Region, in P. P. Betancourt, V. Karageorghis, R. Laffineur and W.-D. Niemeier (eds) *Meletemata, Studies in Aegean Archaeology presented to Malcolm H. Wiener as he enters his 65th Year*, *Aegaeum* 20: 33–40.

2003 The Impact of Cycladic Settlers on Early Minoan Crete, *Mediterranean Archaeology and Archaeometry*, 231–241.

Betancourt, P. P. and C. Floyd

1999 Research and Excavation at Chrysokamino, Crete, 1995–1998, *Hesperia* 68: 343–370.

Betancourt, P. P. and C. Davaras (eds)

2003 *Pseira VII. The Pseira Cemetery 2. Excavation of the Tombs*. Prehistory Monographs 6 (Philadelphia).

Branigan, K.

1968 *Copper and Bronzeworking in Early Bronze Age Crete*. SIMA XIX (Lund).

1974 *Aegean metalwork of the Early and Middle Bronze Age* (Oxford).

Broodbank, C.

2000 *An Island Archaeology of the Early Cyclades* (Cambridge).

Davaras, C.

1971 Protominoikon nekrotapheion Hagias Photias Seteias. *AAA* 4: 392–396.

Davaras, C. and P. P. Betancourt

2004 *The Haghia Photia Cemetery I. The Tomb Groups and Architecture* (Philadelphia).

Davis, J. L.

1992 Review of the Aegean Prehistory I: The Islands of the Aegean. *AJA* 96: 699–756.

Day, P. M., D. E. Wilson and E. Kiriati

1998 Pots, labels and people: burying ethnicity in the cemetery of Aghia Photia, Siteias in K. Branigan (ed.) *Cemetery and Society in the Bronze Age* (Sheffield), 133–149.

Day, P. M., D. E. Wilson, E. Kiriati, and L. Joyner

2000 I Kerameiki apo to PMI Nekrotapheio stin Agia Photia Siteias: topiki i

- eisagmeni?, In Karetsoy, A. (ed.) *Proceedings of the 8th Cretological Conference, Heraklion 9–14 September 1996* (Heraklion), 341–353.
- Dimopoulou, N.
1997 Workshops and craftsmen in the harbour town of Knossos at Poros-Katsambas in TEXNH: *Craftsmen, Craftswomen and Craftmanship in the Aegean Bronze Age, Aegaeum* 16 (Liège), 433–438.
- Haggis, D. C.
1996 Excavations at Kalo Khorio, East Crete, *AJA* 100: 645–681.
- Hayden, J. H.
2003 Final Neolithic – Early Minoan I/IIA Settlement in the Vrokastro Area, Eastern Crete. *AJA* 107: 363–412.
- Hood, M. S. F.
1990 Settlers in Crete c. 3000 B.C. *Cretan Studies* 2: 150–158.
- Marinatos, S.
1929 Protominoikon Tholotos Taphos para to Khorion Krasi Padiadhos, *AD* 12: 102–141.
- Muhly, J. D.
2004 Chrysokamino and the Beginnings of Metal Technology on Crete and in the Aegean in L. Preston Day, M. S. Mook and J. D. Muhly (eds) *Crete Beyond the Palaces: Proceedings of the Crete 2000 Conference* (Philadelphia), 283–289.
- Muhly, J. D.
2002 Early Metallurgy in Greece and Cyprus in Ü. Yalçin (ed.) *Anatolian Metal II* (Bochum), 77–82.
- Nakou, G.
1995 The cutting edge: a new look at early Aegean metallurgy, *JMA* 8 (2): 1–32.
- Nowicki, K.
2002 The End of the Neolithic in Crete, *Aegean Archaeology* 6: 7–72.
- Renfrew, A. C.
1972 *The Emergence of civilisation. The Cyclades and the Aegean in the third millennium BC* (London).
1984 From Melos to Syros: Kapros Grave D and the Kampos Group. In J. A. MacGillivray and R. L. N. Barber (eds) *The Prehistoric Cyclades* (Edinburgh), 41–54.
- Warren, P. and V. Hankey
1989 *Aegean Bronze Age chronology* (Bristol).
- Sampson, A.
1984 The Neolithic of the Dodecanese and Aegean Neolithic culture, *BSA* 79: 239–249.
1987 *E Neolithike Periodos sta Dodekanesa* (Athens).
1988 *E Neolithike katoikise sto Gyali tes Nisyrou* (Athens).
- Tsipopoulou, M.
1990 Minoiki katoikisi stin periochi tis polis tis Siteias, In *Proceedings of the ST' (6th) International Cretological Congress, A2* (Chania), 305–321.
1999 Before, During, After: The Architectural Phases of the Palatial Building at Petras, Siteia, in P. P. Betancourt, V. Karageorghis, R. Laffineur and W.-D. Niemeier (eds) *Meletemata, Studies in Aegean Archaeology presented to Malcom H. Wiener as he enters his 65th Year, Aegaeum* 20 (Liège).
2002 Petras Siteia: The Palace, the Town, the Hinterland and the Protopalatial Background, in J. Driessen, I. Schoep and R. Laffineur (eds) *Monuments of Minos, Rethinking the Minoan Palaces, Aegaeum* 23: 133–144.

Vagnetti, L.

1996 The Final Neolithic: Crete enters the wider world. *Cretan Studies* 5: 29–39.

Wilson, D. E. and P. M. Day

2000 EM I chronology and social practice: pottery from the early palace tests at Knossos, *BSA* 95: 21–63.

Xanthoudides, S.

1918 Megas protominoikos tafos Pyrgou. *AD* 4: 136–170.

Zapheirou, P.

1984 The Chronology of the Kampos Group, in J. A. MacGillivray and R. L. N. Barber (eds) *The Prehistoric Cyclades* (Edinburgh), 31–40.