Emilia Banou

Minoans overseas: The Peak Sanctuary at Ayios Yeoryios sto Vouno, Kythera

Abstract

The Minoan peak sanctuary at Ayios Yeoryios sto Vouno, Kythera, the only Minoan peak sanctuary undoubtedly identified so far outside Crete, was unearthed by Yannis Sakellarakis in the early 90s. It was founded in the MMIB period and reached its acme in the Neopalatial period, especially in MMIIIB-LMIA.

Centered on the 356-m.-high western end of the Vigla ridge, about one hour's walking distance from the Minoan colony at Kastri, it dominates the southeastern part of the island and offers an unhindered view towards the Southeastern Aegean, as far as Crete to the S, Melos to the E, and Laconia to the NE.

Among categories of votives well known from peak sanctuaries in Crete, the peak sanctuary of Kythera yielded an unexpectedly large number of bronze votives, mostly in the form of statuettes of Minoan adorants, but also of votive limbs, blades and daggers and sheet, and bronze finds not previously known from other peak sanctuaries, such as a human tooth, a bovine leg, and a scorpion figurine.

Resumed excavation of the site by the author in 2011-2015 confirmed the overseas character of the sanctuary, best exemplified in the aforementioned find categories, showing that the sanctuary was frequented not only by inhabitants of the island but mostly by visitors crossing the sea routes of the Aegean in search of raw materials, especially metals.

The paper discusses the Minoan presence overseas in the time of the widest expansion of Minoan power in the Aegean and beyond (MMMIII-LMI), on the basis of bronze finds from the peak sanctuary on Kythera. It addresses issues of religious and political influence of – or dependence on – Neopalatial Crete in the Aegean at that time, focusing on the cardinal role of the metal trade.

Keywords: Minoan peak sanctuary, bronze finds, metal trade, arsenical copper, tin, lead, silver, Kythera, Cyclades, Lavrion

It is generally accepted that the search for metals, especially copper, tin and lead but also gold and silver, was a main concern and the principal motive for the intensification of Minoan contacts with the southern Aegean and beyond during the Palatial Period (Manning 2008, 115; Younger and Rehak 2008, 155-156; Davis 2008, 200-201; Betancourt 2008, 212-213, 215).

The provenance of copper in particular and its alloys for making bronze, such as arsenic, tin and lead, and metal circulation in the Aegean from the end of the 4th millennium B.C. constitute a dynamic field of research; the increase of archaeometallurgical studies in the last decade

provides a sketch of relevant developments during the Bronze Age (Day and Doonan, 2007; Tzachili, 2008; Betancourt and Ferrence 2011; Kassianidou and Papasavvas 2012).

According to the most recent summaries of lead isotope analyses carried out at the Isotrace Laboratory, Oxford in the last 25 years, and as far as Minoan Crete is especially concerned, the Cyclades are considered the main source of copper (Gale and Stos-Gale 2007, 106-107; Gale, Kayafa and Stos-Gale 2007, 14-15; Sherratt 2007) in the Prepalatial period; arsenical copper was circulated and manufactured in the southern Aegean from the very beginning of the Early Bronze Age, as recent analysis of copper ores and slags from Kephala Petras (Catapotis, Bassiakos and Papadatos 2011) has shown. Arsenical copper used for the manufacture of EMI artifacts in Hagia Photia is consistent with copper ores found on the Cycladic islands, like Kythnos, Siphnos and Seriphos (Gale and Stos-Gale 2007, 106-107); the same holds true for arsenic bronze tools from the EMI cemetery at Gournes, Pediada (Galanaki, Bassiakos and Perdikatsis 2011). Arsenic alloyed copper was used at Poros in the EMI-IIA period (Doonan, Day and Dimopoulou-Rethemiotaki 2007, 111-113). The use of arsenical copper remained popular till the beginning of the Protopalatial period, despite the use of tin already from the Early Bronze Age II (Tselios 2008, 83; Gillis and Clayton 2008, 134), according to studies of the smelting process at Chrysokamino (Catapotis and Bassiakos 2006, 346,351; Catapotis and Bassiakos 2007, 72-74).

In the Protopalatial period, lead isotope analyses indicate the exploitation of a variety of copper sources, with the Cyclades being the main but not exclusive copper source (Gale and Stos-Gale 2007, 107-108; Gale, Kayafa and Stos-Gale 2007, 172); the lead isotope analysis of 39 copper and bronze items from Quartier Mu at Malia (Poursat and Loubet 2005, 118) indicating a possible copper provenance from various regions of the Eastern Mediterranean and beyond, like Cyprus, Anatolia or the Levant (Poursat and Oberweiler 2011, 130) is worth mentioning in this respect.

In the Neopalatial period, Lavrion emerges as a main copper source, with Anatolia and Cyprus following (Gale and Stos-Gale 2007; Gale, Kayafa and Stos-Gale 2007, 15) and remained so in the Post-Palatial period, as analyses of different types of objects have shown. Almost 50% of bronze items analyzed, including tools, weapons, vases, small double axes and figurines, are consistent with an origin from Lavrion (Stos 2009, 73-79; Betancourt 2008, 221-222). A large sample of 87 analyzed items from LMI Mochlos, including oxhide and bun copper ingots but also copper lumps, spills of melted copper, discs and strips, may be referred to as an example: almost all ingot pieces are consistent with an origin from Cyprus, whereas many small items are consistent with an origin from Lavrion but also from the Taurus mountains (Stos 2009, 173; Gale 2011).[1] Interestingly, the Cyclades as a copper source reach their minimum in the Neopalatial period, with only 3%.[2]

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1 Three bun ingots from Mochlos, dated in LMIB, however, are found to be made of copper from Lavrion (Gale, Kayafa and Stos-Gale 2007, 18).

2 Regarding copper provenance of Minoan Crete, the following data are given: Prepalatial period: 58% from the Cyclades, 26% from Cyprus, 6% from Lavrion, 6% from Anatolia, 2% from Arabah and 2% of unknown origin (Gale and Stos-Gale 2007, 107, Figure 5; Gale, Kayafa and Stos-Gale 2007, 14-15); Protopalatial period: 66% from the Cyclades, 15% from Cyprus, 11% from Lavrion, 7% from Anatolia and 1% from Arabah (Gale and Stos-Gale 2007, 107, Figure 6; Gale, Kayafa and Stos-Gale 2007, 15); Neopalatial period: 42% from Lavrion, 21% from Anatolia (Taurus), 17% from

A twofold model of metal trade as a probable explanation of this phenomenon is discussed by Stos (2009, 177), with a royal or a rich trading community sector dealing with greater amounts of copper and tin in the form of ingots and their distribution to workshops for making bronze, and a freelance sector, with small-scale merchants traveling across the Aegean and providing coastal communities with supplementary bronze in the form of bronze scraps from local sources, predominantly Lavrion, having no access to tin sources.[3] This model of metal trade finds support by the possible exhaustion of local metal sources in the Aegean in the 2nd millennium B.C. (Bassiakos and Tselios 2012) having led to an increase in metal recycling, and also corresponds with the evidence gained by the shipwrecks of Uluburun and Cape Gelidonya respectively, although these are dated about two hundred years and three hundred years later.[4] As Tartaron summarizes it, "the Uluburun wreck, with its enormously valuable cargo of precious metals and other luxuries, epitomizes the directional, emissary exchange so vividly described in the Near Eastern texts, while at the same time carrying large quantities of non-elite commodities such as poor-quality Cypriot pottery, which merchants on board operating in freelance mode could trade at ports of call". On the other hand, "the Gelidonya ship is seen as a prime example of independent, entrepreneurial cabotage, that is freelance exchange, but with a specific focus on itinerant metal working" (2013, 44).

The Minoan peak sanctuary at Ayios Yeoryios sto Vouno, Kythera, the only Minoan peak sanctuary identified with certainty outside Crete so far, was founded in the MMIB period and remained in use until the LMIb period (Fig. 1). It stands out not only for the quality and the variety of its finds but also for the wealth of its bronze offerings: the excavation of the sanctuary in the early 1990s by Yannis

Fig. 1. The Minoan peak sanctuary at Ayios Yeoryios sto Vouno from the E, with the promontory of Kastri in the background.

Cyprus, 5% from Arabah (Israel), 3% from the Cyclades, 1% from Iran and 11% of unknown origin (Gale and Stos-Gale 2007, 108, Figure 7; Gale, Kayafa and Stos-Gale 2007, 15); finally, in the Postpalatial period, 44% from Lavrion, 19% from Cyprus, 19% from Anatolia, 11% from the Cyclades, 4% from Arabah and 3% of unknown origin (Gale and Stos-Gale 2007, 108, Figure 8; Gale, Kayafa and Stos-Gale 2007, 15). This reduction in the number of analyzed objects with a copper origin from the Cyclades, however, may be due to the exhaustion of the relatively restricted oxidised (secondary) Cycladic copper ores by the end of the 3rd millennium B.C. (Bassiakos and Tselios 2012).

3 During the 2nd millennium B.C., Lavrion was also a basic lead source even for specialised use, according to analyses of lead weights from Crete, the Cyclades and Mainland Greece (Poursat and Loubet 2005, 118).

4 For a recent brief account of the Uluburun and Cape Gelidonya shipwrecks and the state of their current study, see Cemal Pulak, "Uluburun Shipwreck", and George F. Bass, "Cape Gelidonya Shipwreck", both in Eric H. Cline (ed). *The Bronze Age Aegean (ca. 3000-1000 BC)*, New York, Oxford University Press, 2010, 862-876 and 797-803 respectively.

Sakellarakis (Sakellarakis 2011, 2012) and the resumed archeological investigation from 2011 to 2015 by the University of the Peloponnese, under the direction of the author (Banou, in print(1); Banou 2016; Banou and Davis 2016) have brought to light 113 bronze figurines and figurine bases of male and female adorants, in various postures, votive limbs and bronze cut-outs in different shapes, as well as votives never before found at peak sanctuaries, such as a bronze bovine leg, or unique ones, such as a bronze human tooth, a bronze scorpion figurine (Fig. 2-4) and part of a foot of a bronze figure with an estimated height of 0.70-0.80 m. (Banou 2016).

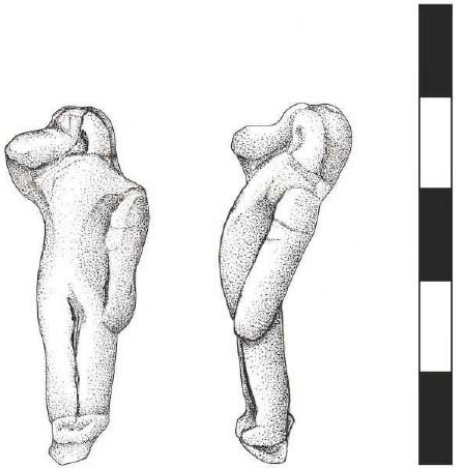

Fig. 2. Bronze statuette of a male adorant.

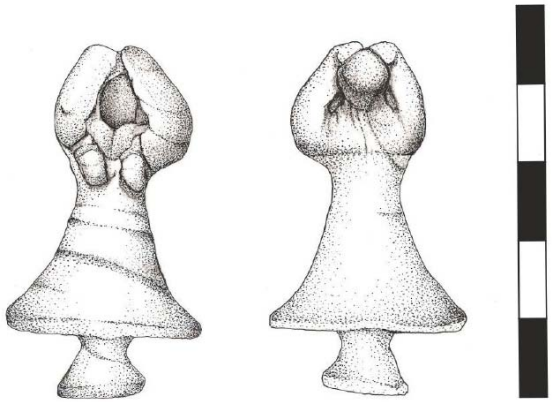

Fig. 3. Bronze statuette of a female adorant.

It is noteworthy, in this respect, that the Kytherean sanctuary has yielded approximately 40% of all Minoan bronze figurines known so far worldwide.

Undoubtedly the sanctuary served the needs of the local community, as finds of everyday life, like clay loom-weights and spindle-whorls, simple stone tools, and tripod cooking pots, and the access to the sanctuary in constant visual contact with the settlement at Kastri, about 4 kilometers

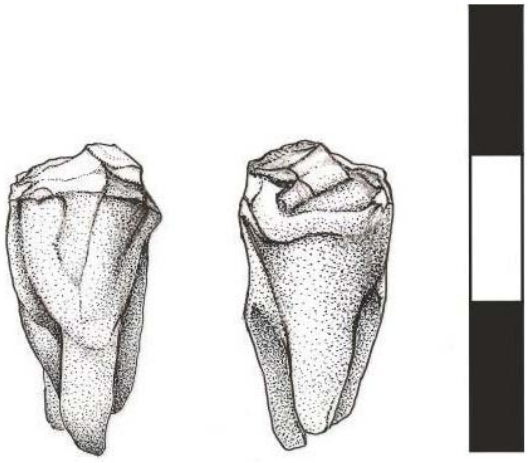

Fig. 4. Bronze human tooth.

to the SW, indicate (Banou, in print). However, this wealth of bronze offerings could not simply be associated with the nearby Minoan settlement at Kastri, not least because of the scarcity of metal finds from the settlement (Coldstream and Huxley 1972, 208, Fig. 59, v64; Broodbank, Rehren and Zianni 2007[5]); it rather points to overseas visitors to the sanctuary involved in metal exploitation, transfer, trade and / or even metal working, passing by the strategically located island of Kythera, which lies on the crossroads of the sea routes of southern Aegean, or stopping at the island to wait for suitable weather conditions before or after rounding Cape Maleas. To put it another way, it is reasonable to assume that people able to dedicate bronze votives even in the case of a toothache, as the tooth votive indicates, would also be expected to have easy access to the raw materials needed for their manufacture, either as metal workers or as metal traders or both.

This hypothesis finds support from the evidence for the occasional manufacture of several bronze votives from the sanctuary, in the form of bronze waste found in the excavation, but also indicated by the rough manufacture of several bronze figurines, visible in the irregularities of the surface – usually in the form of small protrusions in the outline which cannot be explained as part of the original object – caused by incomplete smelting and / or casting or even by mould overuse, and also in the lack of finish (Sapouna-Sakellaraki 2012, 11-76). Moreover, copper fragments belonging to ingots were identified by Sakellarakis (1996, 90, pl. 24b) which may represent offerings *per se*. Additional supportive, indirect evidence may come from the dedication of the bronze scorpion votive, which, as argued elsewhere (Banou and Davis 2016), could not be convincingly explained by the venomous nature of the insect alone but rather by its function as a symbol of the homonymous constellation, of primary importance for ancient sailing. Needless to say, sailing and the search for metals were closely interconnected in the ancient world, and the shipwreck of Cape Gelidonya is a good example of this practice already during the Bronze Age. Finally, the Linear A inscription on a steatite ladle also dedicated in the peak sanctuary, reading *da-ma-te* according to the transliteration of the three signs in their Linear B correspondents and considered an invocation to Demeter (Sakellarakis and Olivier 1984), may offer another indication of the occupation of the visitors of the sanctuary, since this deity, according to ancient mythology, had a special connection with daemons dealing with metallurgy, such as the Cabeiri (Kern 1919, 1444); the same holds true for her equivalents, Rhea and Cybele, connected with the Telchines and the Idaean Dactyls (Herter 1934, 213; Kern 1901, 2018-2019), and the Corybantes (Schwenn 1922, 1445) respectively; and it may not be a coincidence that the same inscription with an additional initial sign read *I* also occurs on two bronze axes of the Arkalochori hoard.

Analysis of six waste fragments from the 1990s excavation at the peak sanctuary by Varoufakis showed that all consisted of arsenical copper, with a very small amount of arsenic, ranging from 0.05% to 1.69%. The two with the largest amount of arsenic (1.19 and 1.69 respectively) also contained lead (7.34% and 29% respectively), which must have been added to the copper deliberately to promote melting. The same fragments also contained silver in very small

[5] Second Palace period material includes five tiny fragments of copper ingots and three thin fragments of silver vessels not included in the original publication.

quantities (0.004% and 0.10%), probably associated with the lead and pointing to Lavrion or the Cyclades as a possible lead source; according to Varoufakis, the presence of arsenic in these two cases may be due to the re-use of older alloys (Varoufakis 2012, 241-246).

Analysis and study of 19 objects from the resumed excavation at the sanctuary in 2011-2015, undertaken by Aikaterini Panagopoulou (2016) for the partial fulfillment of her MA thesis at the University of the Peloponnese, using both XRF and SEM analysis,[6] revealed, among other things, some interesting points: a) Five of the objects that can be attributed to the Neopalatial period – two bronze sheets, one figurine base fragment and two blades – are made of arsenical copper (with arsenic ranging between 0.40, in the case of one sheet, to 2.43, in the case of the figurine base, according to SEM measurements[7]); in the case of the figurine base, the presence of arsenic may have been deliberate, since it improves castability, although re-use of an older alloy cannot be excluded. In the other cases, deliberate addition of arsenic is also a possibility, since the relatively small amount of arsenic might have been reduced due to recycling.[8] b) All five items also contain silver in very small quantities (ranging from 0.17, in the case of the same sheet, to 0.86, in the case of one blade). c) The figurine base fragment also indicates deliberate addition of lead (14.18), also observed in Minoan figurines found in Crete (Varoufakis 1995) and considered to promote melting, and d) One sheet with a high lead ratio (2.49) also shows deliberate addition of tin (2.92). Since lead can cause cracking of the sheet during hammering but tin makes the alloy harder, the coexistence of these elements in the same object indicates advanced knowledge of element properties and control of the manufacture process (Panagopoulou 2016, 77).

Fig. 5. Sheet of a copper-silver alloy, depicting a foot.

Moreover, a rectangular bronze sheet decorated with a dotted line on the perimeter and bearing the incision of a (swollen?) foot on one side (Fig. 5) stands out for its exceptional composition: it is an alloy of copper and silver in a ratio ranging from 50% to 80% (according to the two methods of analysis used). Silver alloyed with copper has been found in two EMII-III daggers from Mochlos and Pyrgos, with 63.8% copper and 34.8% silver, and 90.4% copper and 9.25% silver respectively[9] (Tselios 2008, 79) but also on three fragments of silver cups from the settlement at Kastri analyzed

6 Qualitative and quantitative results of the two methods of analysis have been combined on a relative basis.

7 The elements are presented in weight percentage (wt%).

8 Concentrations of arsenic in copper higher than 2% wt result in the increase of the ductility and hardness of the alloy (Panagopoulou 2016, 55).

9 The latter is thought to represent an attempt at adulteration (Tselios 2008, 79) but it may also be explained as an attempt to strengthen the silver (Broodbank, Rehren and Zianni 2007, 224) or to increase the shine of the object.

recently (Broodbank, Rehren and Zianni 2007, 224-227). An alloy of even 50% copper and 50% silver may give an object a color and shine very similar to that of silver. A silver-copper alloy with silver ranging from 16% to 70% has used for the manufacture of several objects found in the "Prince Tomb" of Malatya in Anatolia, dated in the 3rd millennium B.C. (Palmieri, Hauptmann and Hess 1998, 116-118);[10] and the use of a similar alloy has been reported from EBA Shuna in northern Jordan.[11] The sheet from Ayios Yeoryios sto Vouno also contains a small amount of tin (0.83 wt%) (Panagopoulou 2016, 78).

This preliminary evidence is consonant with the general copper circulation pattern referred to above, with Lavrion emerging as a possible main source of copper together with the Cyclades in the Neopalatial period. Lavrion might also have been the source of lead. Moreover, the visitors of the sanctuary, if involved in metal exploitation, manufacture and trade themselves, were aware of the properties of both lead to promote melting (in the case of figurines) and of tin for hammering (in the case of sheet). Finally, the alloy of copper with silver points to a knowledge of special techniques deriving from abroad. In all these cases the key location of Kythera on sea routes connecting different regions of the Southern Aegean with each other and beyond becomes evident.

Setting this evidence against the historical background of the Neopalatial period, when the widest expansion of Minoans in the Aegean and beyond[12] but also the acme of the Kytherean peak sanctuary is dated, a dynamic picture of metal circulation emerges, involving the search for additional sources other than the long-established ones, beyond the Aegean, and also probable experimentation and further development of melting techniques. The entrepreneurial spirit of the time and the very nature of raw material search and exchange or trade, requiring contact and collaboration of people of different occupations and origin over a long distance, would be more compatible with an exchange / trade model allowing a considerable degree of freedom to deal with it, as that which emerged, *mutatis mutandis*, from the Cape Gelidonya shipwreck.

It should be kept in mind, however, that this might have been a similar response to different historical circumstances, since the Minoan presence at the peak sanctuary at Ayios Yeoryios sto Vouno corresponds to the beginning and the culmination of Minoan involvement and influence across the Aegean and the Eastern Mediterranean, whereas the Gelidonya shipwreck belongs to a period of unrest in this wider area. Moreover, the apogee of the Minoan presence at the sanctuary coincides with the period of Knossian ideological, if not political, supremacy (Soles 2002; Schoep 2002; Schoep and Knappett 2002; Hamilakis 2002; Niemeier 2004; Wiener 2007); and it is reasonable to assume that sea routes of vital importance like those crossing at Kythera would have attracted the interest of Knossos, placing a major part of the metal trade under its control.

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10 Analysis of a large sample of figurines, blades, sheet and waste fragments from the peak sanctuary is planned, expected to yield statistically sound results regarding manufacture techniques of bronze items and probably also the provenance of metal sources.

11 Broodbank, Rehren and Zianni 2007, 227.

12 For a recent discussion, see Colin MacDonald, Eric Hallager and Wolf D. Niemeier (2009), *The Minoans in the Central, Eastern and Northern Mediterranean. Acts of a Minoan Seminar 22-23 January 2005 in Collaboration with the Danish Institute at Athens and the German Archaeological Institute at Athens*, The Danish Institute at Athens.

The continuing study of metal items and artifacts and also of pottery[13] from the peak sanctuary at Ayios Yeoryios sto Vouno is hoped to shed light on more aspects of metal circulation and trade and on their connotations for its relation to the wider world touched upon in this paper.

Bibliography

Emilia Banou (in print), "The Land- and Seascape of Kythera: The Minoan Peak Sanctuary at Ayios Yeoryios sto Vouno", Chr. Gallou, W. Cavanagh, J. Roy and L. Cavanagh (eds.) *3rd CSPS International Conference, Sacred Landscapes in the Peloponnese. From Prehistory to Post-Byzantine Times, Sparti, 30 March - 1 April 2012*.

Emilia Banou (2016), "Foot of a bronze figure from the Minoan peak sanctuary at Ayios Yeoryios sto Vouno on Kythera", Evangelia Papadopoulou-Chrysikopoulou, Vassilis Chrysikopoulos and Gioulika Christakopoulou (eds.), *ACHAIOS. Studies Presented to Professor Thanassis Papadopoulos*, Oxford, Archaeopress, 19-22.

Emilia Banou and Brent Davis (2016), "The Symbolism of the Scorpion in Minoan Religion: A Cosmological Approach on the Basis of Votive Offerings from the Peak Sanctuary at Ayios Yeoryios sto Vouno, Kythera", Eva Alram-Stern, Fritz Blakolmer, Sigrid Deger-Jalkotzy and Jörg Weilhartner (eds.), *Metaphysis, Ritual, Myth and Symbolism in the Aegean Bronze Age, Proceedings of the 15th International Aegean Conference, Vienna 22-25 April 2014* [Aegaeum 39], Leuven-Liege, Peeters, 123-129.

George F. Bass (2010), "Cape Gelidonya Shipwreck", Eric H. Cline (ed.), *The Bronze Age Aegean (ca. 3000-1000 BC)*, New York, Oxford University Press, 797-803.

Yannis Bassiakos and Thomas Tselios (2012), "On the Cessation of Local Copper Production in the Aegean in the 2nd Millennium B.C.", Vasiliki Kassianidou and George Papasavvas (eds.), *Eastern Mediterranean Metallurgy and Metalwork in the Second Millennium B.C. A Conference in Honour of James D. Muhly*, Nicosia, 10th-11th October 2009, 151-161.

Philip P. Betancourt (2008), "Minoan Trade", Cynthia W. Shelmerdine (ed.), *The Aegean Bronze Age*, Cambridge, Cambridge University Press, 209-229.

Philip P. Betancourt and Susan C. Ferrence (2011), *Metallurgy: Understanding How, Learning Why. Studies in Honor of James D. Muhly*, Philadelphia, INSTAP Academic Press.

Cyprian Broodbank, Thilo Rehren and Antonia Maria Zianni (2007), "Scientific Analysis of Metal Objects and Metallurgical Remains from Kastri, Kythera", *Annual of the British School at Athens* 102, 219-238.

Mihalis Catapotis, Yannis Bassiakos and Yiannis Papadatos (2011), "Reconstructing Early Cretan Metallurgy: Analytical Evidence from Kephala Petras, Siteia", Philip P. Betancourt and Susan C. Ferrence (eds.), *Metallurgy: Understanding How, Learning Why. Studies in Honor of James D. Muhly*, Philadelphia, INSTAP Academic Press, 69-78.

Mihalis Catapotis and Yannis Bassiakos (2006), "Reconstruction of the Copper Smelting Process Based on the Analysis of Ore and Slag Samples", Philip P. Betancourt (ed.), *The Chrysokamino Metallurgy Workshop and its Territory*, 329-353.

Mihalis Catapotis and Yannis Bassiakos (2007), "Copper Smelting at the Early Minoan Site of Chrysokamino on Crete", Peter M. Day and Roger C. P. Doonan (eds.), *Metallurgy in the Early Bronze Age Aegean*, Oxford, Oxbow 68-79.

13 The general impression of a more "international spirit" reflected on the pottery from the peak sanctuary in comparison with the pottery from the settlement at Kastri is worth mentioning in this respect (Tournavitou 2014, 24-25).

John N. Coldstream and George L. Huxley (1972), *Kythera. Excavations and Studies Conducted by the University of Pennsylvania and the British School of Athens*, London, Faber and Faber Limited.

Jack L. Davis, "Minoan Crete and the Aegean Islands", Cynthia W. Shelmerdine (ed.), *The Aegean Bronze Age*, Cambridge, Cambridge University Press, 186-208.

Peter M. Day and Roger C. P. Doonan (2007), *Metallurgy in the Early Bronze Age Aegean*, Oxford, Oxbow.

Roger C.P. Doonan, Peter M. Day and Nota Dimopoulou-Rethemiotaki (2007), "Lame Excuses for Emerging Complexity in Early Bronze Age Crete", Peter M. Day and Roger C. P. Doonan (eds.), *Metallurgy in the Early Bronze Age Aegean*, Oxford, Oxbow, 98-122.

Calliope Galanaki, Yannis Bassiakos and Vassilis Perdikatsis (2011), "Silver and Bronze artifacts from the EMI Necropolis at Gournes, Pediada", Philip P. Betancourt and Susan C. Ferrence (eds.), *Metallurgy: Understanding How, Learning Why. Studies in Honor of James D. Muhly*, Philadelphia, INSTAP Academic Press, 79-90.

Noël H. Gale (2011), "Copper Oxhide Ingots and Lead Isotope Provenance", Philip P. Betancourt and Susan C. Ferrence (eds.), *Metallurgy: Understanding How, Learning Why. Studies in Honor of James D. Muhly*, Philadelphia, INSTAP Academic Press, 213-220.

Noël H. Gale, Maria Kayafa and Zofia A. Stos-Gale (2007), "Further Evidence for Bronze Age Production of Copper from Ores in the Lavrion Ore District", Alessandra Giumlia-Mair, Paul Craddock, Andreas Hauptmann, John Bayley, Mauro Cavallini, Gian Garagnani, Brian Gimour, Susan La Niece, Walter Nicodemi and Thilo Rehren (eds.), *Proceedings of the 2nd International Conference: Archaeometallurgy in Europe*, Milan, Associazione Italiana di Metallurgia, 158-176.

Noël H. Gale and Zofia A. Stos-Gale (2007), "Cross-cultural Minoan Networks and the Development of Metallurgy in Bronze Age Crete", Susan La Niece, Duncan Hook and Paul Chaddock (eds.), *Metals and Mines: Studies in Archaeometallurgy*, London, Archetype Publications in Association with the British Museum, 103-111.

Carol Gillis and Robin Clayton (2008), "Tin and the Aegean in the Bronze Age", Iris Tzachili (ed.), *Aegean Metallurgy in the Bronze Age, Proceedings of an International Symposium held at the University of Crete, Rethymnon, Greece, on November 19-21 2004*, Athens, Ta Pragmata, 133-142.

Yannis Hamilakis (2002), "Too Many Chiefs? Factional Competition Neopalatial Crete", Jan Driessen, Ilse Schoep and Robert Laffineur (eds.), *Monuments of Minos. Rethinking the Minoan Palaces. Proceedings of the International Workshop "Crete of the Hundred Palaces?" held at Université Catholique de Louvain, Louvain-la-Neuve 14-15 December 2001*, Liège, 179-199.

Hans Herter (1934), "Telchinen", Wilhelm Kroll and Karl Mittelhaus (eds.), *Pauly's Real-Encyclopädie der Classischen Altertumswissenschaften. Neue Bearbeitung, Stuttgart, J. B. Metzlersche Verhandlungsbuchhandlung*, 197-223.

Vasiliki Kassianidou and George Papasavvas (2012), *Eastern Mediterranean Metallurgy and Metalwork in the Second Millennium B.C. A Conference in Honour of James D. Muhly*, Nicosia, 10th-11th October 2009.

Otto Kern (1901), "Daktyloi" (Kern), Georg Wissowa (ed.), *Pauly's Real-Encyclopädie der Classischen Altertumswissenschaften*, 2018-2019.

Otto Kern (1919), "Kabeiros und Kabeiroi", Wilhelm Kroll (ed.) *Pauly's Real-Encyclopädie der Classischen Altertumswissenschaften. Neue Bearbeitung*, Stuttgart, J. B. Metzlersche Verhandlungsbuchhandlung, 1399-1450.

Colin MacDonald, Eric Hallager and Wolf D. Niemeier (2009), *The Minoans in the Central, Eastern and Northern Mediterranean. Acts of a Minoan Seminar 22-23 January 2005 in Collaboration with the Danish Institute at Athens and the German Archaeological Institute at Athens*, The Danish Institute at Athens.

Sturt W. Manning (2008), "Protopalatial Crete. Formation of the Palaces", Cynthia W. Shelmerdine (ed.), *The Aegean Bronze Age*, Cambridge, Cambridge University Press, 105-120.

Wolf D. Niemeier (2004), "When Minos ruled the Waves: Knossian Power Overseas", Gerald Cadogan, Eleni Hatzaki and Antonis Vasilakis (eds.) *Knossos: Palace, City, State. Proceedings of the Conference in Herakleion, organised by the British School at Athens and the 23rd Ephoreia of Prehistoric and Classical Antiquities of Herakleion in November 2000 for the Centenary of Sir Arthur Evans's Excavations at Knossos*, 393-398, London, British School at Athens.

Alba M. Palmieri, Andreas Hauptmann and Karsten Hess (1998), "The Metal Objects in the 'Royal' Tomb Dating from 3000 B.C., found at Arslantepe (Malatya): A New Alloy (cu-ag)", *Arkeometri Sonuçlari Toplantisi XIII*, Ankara, T. C. Kültür Bakanliği Anitlar ve Muzeler Genel Müdurlüğu, 115-121.

Aikaterini Panagopoulou (2016), *The Minoan Peak Sanctuary at Ayios Yeoryios sto Vouno, Kythera; Technological Investigations of Bronze Finds* (unpublished MSc thesis), Kalamata, University of the Peloponnese.

Jean-Claude Poursat and Michel Loubet (2005) "Metallurgie et Contacts Extérieures à Malia (Crète) au Minoen Moyen II: Remarques sur une Série d'Analyses Isotopiques du Bronze", Robert Laffineur and Emanuele Greco (eds.), *Emporia. Aegeans in the Central and Eastern Mediterranean. Proceedings of the 10th International Aegean Conference, Athens Italian School of Archaeology, 14-18 April 2004* [Aegaeum 25] Université de Liège / University of Austin, 117-121.

Jean-Claude Poursat and Cécile Oberweiler (2011), "Metalworking at Malia, Quartier Mu: High or Low Technology?", Philip P. Betancourt and S. C. Ferrence (eds.), *Metallurgy: Understanding How, Learning Why. Studies in Honor of James D. Muhly*, Philadelphia, INSTAP Academic Press, 125-131.

Cemal Pulak (2010), "Uluburun Shipwreck", Eric H. Cline (ed.), *The Bronze Age Aegean (ca. 3000-1000 BC)*, New York, Oxford University Press, 862-876.

Yannis Sakellarakis (2011), *Κύθηρα. Το μινωικό ιερό κορυφής στον Άγιο Γεώργιο στο Βουνό. 1. Η ανασκαφή,* Athens, Archaeological Society of Athens.

Yannis Sakellarakis (2012), *Κύθηρα. Το μινωικό ιερό κορυφής στον Άγιο Γεώργιο στο Βουνό. 2Α. Τα ευρήματα*, Athens, Archaeological Society of Athens.

Iannis Sakellarakis and Jean Pierre Olivier (1984), "Un vase en pierre avec inscription en Linéaire A du sanctuaire de sommet minoen de Cythère", *Bulletin de Correspondence Hellénique* 118, 343-351.

Efi Sapouna-Sakellaraki (2012), «Χάλκινα ειδώλια», Yannis Sakellarakis (ed.), *Κύθηρα. Το μινωικό ιερό κορυφής στον Άγιο Γεώργιο στο Βουνό. 2Α. Τα ευρήματα*, Athens, Archaeological Society of Athens, 1-212.

Ilse Schoep (2002), "The State of the Minoan Palaces or the Minoan Palace-State?", Jan Driessen, Ilse Schoep and Robert Laffineur (eds.), *Monuments of Minos. Rethinking the Minoan Palaces. Proceedings of the International Workshop "Crete of the Hundred Palaces?" held at Université Catholique de Louvain, Louvain-la-Neuve 14-15 December 2001*, Liège, 13-33.

Ilse Schoep and Carl Knappett (2002) "Dual Emergence: Evolving Heterarchy, Exploding Hierarchy", John C. Barrett and Paul Halstead (eds.), *The Emergence of Civilisation Revisited*, Oxford, Oxbow Books, 21-37.

Friedrich Schwenn (1922), "Korybanten" (Schwenn), Wilhelm Kroll (ed.) *Pauly's Real-Encyclopädie der Classischen Altertumswissenschaften. Neue Bearbeitung*, Stuttgart, J. B. Metzlersche Verhandlungsbuchhandlung, 1441-1446.

Susan Sherratt (2007), "The Archaeology of Metal Use in the Early Bronze Age Aegean – A Review", Peter M. Day and Roger C.P. Doonan (eds.), *Metallurgy in the Early Bronze Age*, (Sheffield Studies in Aegean Archaeology 7), Oxford, Oxbow Books, 245-263.

Jeffrey S. Soles (2002), "The Functions of a Cosmological Center: Knossos in Palatial Crete", Jan Driessen, Ilse Schoep and Robert Laffineur (eds.), *Monuments of Minos. Rethinking the Minoan Palaces. Proceedings of the International Workshop "Crete of the Hundred Palaces?" held at Université Catholique de Louvain, Louvain-la-Neuve 14-15 December 2001*, Liège, 405-14.

Zofia A. Stos (2009), "Across the Wine-Dark Sea … Sailor Tinkers and Royal Cargoes in the Late Bronze Age Eastern Mediterranean", Andrew J. Shortland, Ian C. Freestone and Tihlo Rehren (eds.), *From Mine to Microscope: Advances in the Study of Ancient Technology*, Oxford, Oxbow Books, 163-180.

Thomas F. Tartaron (2013), *Maritime Networks in the Mycenaean World*, New York, Cambridge University Press.

Iphiyenia Tournavitou (2014), «Κεραμεική της Εποχής του Χαλκού», Yannis Sakellarakis (ed.), *Κύθηρα. Το μινωικό ιερό κορυφής στον Άγιο Γεώργιο στο Βουνό. 4. Κεραμεική της Εποχής του Χαλκού*, Athens, Archaeological Society of Athens.

Thomas Tselios (2008), *Copper Metallurgy in Prepalatial Crete. Technological Developments and Social Facets*, Athens, A. Kardamitsa.

Iris Tzachili (2008), *Aegean Metallurgy in the Bronze Age*, Proceedings of an International Symposium held at the University of Crete, Rethymnon, Greece, on November 19-21 2004, Athens, Ta Pragmata.

George J. Varoufakis (1995), "Chemische und metallurgische Untersuchung von 45 minoischen Statuetten", Efi Sapouna-Sakellarakis, *Die bronzenen Menschenfiguren auf Kreta und in der Ägäis* (PBF 1.5), Stuttgart, Frans Steiner Verlag, 153-167.

George Varoufakis (2012), «Μεταλλουργική μελέτη χάλκινων δοκιμίων μινωικής εποχής από τα Κύθηρα», Yannis Sakellarakis (ed.), *Κύθηρα. Το μινωικό ιερό κορυφής στον Άγιο Γεώργιο στο Βουνό. 2Α. Τα ευρήματα*, Athens, Archaeological Society of Athens, 241-246.

Malcolm H. Wiener (2007), "Neopalatial Knossos: Rule and Role", Philip B. Betancourt, Michael C. Nelson and Hector Williams (eds.), *Krinoi kai Limenes. Studies in Honor of Joseph and Maria Shaw*, Philadelphia, INSTAP Academic Press, 231-242.

John G. Younger and Paul Rehak (2008), "The Material Culture of Neopalatial Crete", Cynthia W. Shelmerdine (ed.), *The Aegean Bronze Age*, Cambridge, Cambridge University Press, 140-164.