Petras, Siteia
– 25 years of excavations and studies

Acts of a two-day conference held at the Danish Institute at Athens, 9–10 October 2010

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Preface

It is indeed hard and dull to lead a life, both personal and professional, without celebrations, anniversaries, gatherings of friends and colleagues, symposia of any type. The 25th anniversary of the Petras excavations offered a wonderful opportunity for me to organize a Symposium, and for an international group of scholars, known for many things, including being members of the Petras team, to work hard, and then gather in Athens and present the results of their studies.

It was an exciting experience organizing and conducting this two-day Conference, and also editing the Proceedings and preparing the present book. I was very happy to be able to work during the multiple tasks of the preparation, the coordination of the contributors, the two days of the event itself, the collection of the papers and the editing of the present volume, with two hard working, creative, and very patient colleagues, Ms Garifalia Kostopoulou and Dr Maria Psallida. They are responsible before the event for the invitations, the preparation of the catering, the reservation of the restaurant for the speakers’ dinner, and the printed material of the Conference. During the Symposium they made sure that everything went smoothly. After the Conference they worked for many months to do the pagination, the bibliography and the list of contributors, and they helped significantly with the proof reading and the index (Psallida), and the plates and the cover design (Kostopoulou). The editing of the volume was a very interesting task for me, and having no day job at the Ministry after the end of November 2011, a victim of the crisis that struck Greece, I was able to dedicate myself entirely to it. Furthermore, I am responsible for the transcription of the discussions, an interesting first-time experience. Many thanks go to David Rupp who patiently corrected all the English manuscripts of the 11 non-native speakers, as well as the discussions. Also my warmest thanks to Melissa Eaby for the final proof reading and significant improvements. The specialized text of Konstantinos Toigias, the developer of the Petras website, was translated from Greek by Ms Effie Patsatzi, Museologist, a specialist in the Management of Digital Heritage.

Dr Erik Hallager is responsible for the final pagination and the insertion of the figures into the text.

I wish also to thank the creators of the four posters presented at the Conference: two posters, one of which was in collaboration with the director of the excavation, were by Ms Clio Zervaki, the Petras Conservator, MA in Museology and MA in Cultural Management, and another two were by Garifalia Kostopoulou.

The Danish Institute at Athens, and its two consecutive Directors, Erik Hallager, a dear old friend and member of the Petras team, and Rune Frederiksen, have my gratitude for hosting the Symposium and for including the publication in the series of monographs of the Institute.

The Institute for Aegean Prehistory (INSTAP), which has been supporting the excavations at Petras, the conservation of the finds and the studies since 1987, also funded the Symposium and the publication of the present volume. My deep gratitude goes to INSTAP and its Executive Director, Philip Betancourt, also a good friend and member of the Petras team.

The success of the Symposium, which was really a wonderful and very stimulating experience, is due to all the participants, the speakers, and the chairpersons. More than 100 colleagues, Greeks and foreigners, from the Hellenic Archaeological Service, the Universities and the Foreign Schools of Archaeology in Greece, including senior members and graduate students, were present at the Danish Institute, and were very active during the discussions. They contributed to the creation of a very

Βίος ἀνεόρταστος, μακρά ὁδός ἀπανδόχευτος.
Demokritos (470-370 bc)
friendly and positive atmosphere throughout the Symposium. A very special thanks goes to the chairpersons, Philip Betancourt, Michael Wedde, David Rupp, Erik Hallager, Colin Macdonald, Lefteris Platon, Thomas Brogan, Olga Krzyszowska and Alexander MacGillivray. I am very grateful to Peter Warren, my mentor, who enthusiastically agreed to write the concluding remarks for this volume.

Three generations of scholars participated at the Symposium, some of the younger ones had come to Petras as undergraduate or graduate students, long ago. Their names in the order they presented their papers are: Yiannis Papadatos, Eleni Nodarou, Tatiana Theodoropoulou, Cesare D’Annibale, Philip P. Betancourt, Susan C. Ferrence, James D. Muhly, Olga Krzyszowska, Sevasti Triantaphyllou, Heidi M.C. Dierckx, Donald C. Haggis, Maria Emanuela Alberti, Kostis S. Christakis, Nektaria Mavroudi, Erik Hallager, David W. Rupp, Anna Simandiraki-Grimshaw, Photini J.P. McGeorge, Natalia Poulou-Papadimitriou, Chrysa Sofianou, Thomas M. Brogan and Konstantinos Togias.

The 25 years of the Petras excavations and studies coincided with a period of crisis for Greece that worsened significantly between October 2010, the time of the Symposium, and spring 2012, the time these lines are written. From the beginning my idea for the organization of this event and its publication was an idea of resistance to the crisis. I am very happy that we succeeded and very grateful to all who worked hard and made this success happen.

Athens, Exarcheia, Easter 2012
Metaxia Tsipopoulou
Abbreviations

Archaeological periods

EBA Early Bronze Age
EH Early Helladic
EM Early Minoan
FN Final Neolithic
LH Late Helladic
LM Late Minoan
LN Late Neolithic
LBA Late Bronze Age
MBA Middle Bronze Age
MH Middle Helladic
MM Middle Minoan
MN Middle Neolithic
PPN Pre-Pottery Neolithic

PTSK Petras cemetery
PTSU Petras-Rock Shelter
Σ-palace Stratigraphical trenches of the palace

Other

A.S.L. Above Sea Level
diam. diameter
gr gram
h height
kg kilogram
w width
wt weight
th thickness
lt liter
NISP Number of Identifiable Specimens
MNI Minimum Number of Individuals
SM Archaeological Museum, Siteia
vol. volume

Petras Area

HT House Tomb
L Lakkos
P Petras

The form of the English language for the native speakers (British or American) was the author’s choice. For the non-native speakers the American form was applied.
Pottery fabrics and recipes in the Final Neolithic and Early Minoan I period: the analytical evidence from the settlement and the Rock Shelter of Kephala Petras

Eleni Nodarou

Abstract
This presentation examines continuity and change in pottery fabrics and recipes on the basis of archaeometric analysis carried out on two ceramic assemblages from Kephala Petras, the FN IV–EM IA settlement and the EM IB burial Rock Shelter. The typological study of the pottery showed clear differences between the two periods and raised important questions concerning the technologies involved. The integrated application of thin section petrography and scanning electron microscopy provided valuable insight in identifying local and imported pottery, the technological characteristics of each period, and the changes from one period to the other.

Introduction
The ceramic production of the Final Neolithic (FN) and Early Minoan I (EM I) periods has contributed greatly to the formation of the character of Minoan pottery and has been traditionally connected with historical processes, namely population movements from other areas into Crete, though not without disagreements. However, it is only recently that sites with prolonged use such as Knossos and Phaistos have produced stratified evidence for these periods, whereas in the rest of Crete the existing evidence derives from single-phased domestic assemblages (such as Nerokourou and Kastelli Phourni) or from multi-period, unstratified and/or disturbed funerary assemblages (such as Partira, Trapeza and Lebena), thus impeding a diachronic study of the transition from FN to the Early Bronze Age (EBA) in Crete.

Kephala Petras has provided valuable information in this respect, since excavations of the last decade have produced ceramic evidence from the end of the FN until the end of the EM I period. The settlement located on top of the hill has continuous and undisturbed habitation from the FN IV to the EM IA period, while the burial Rock Shelter excavated on the west slope produced pottery dated from the EM IB period onwards. The analysis of the pottery from these three succeed-

* I would like to thank Dr Metaxia Tsiropoulou for the long-lasting collaboration which started 15 years ago at the excavation of the palace at Petras and continues to this day with the analysis of various pottery assemblages from the site. Sampling permits were provided by the 24th Ephorate of Prehistoric and Classical Antiquities and the Hellenic Ministry of Culture and Tourism.

1 Betancourt 2008.
3 Branigan 1970a, 201; Evans 1974, 19–21; Vagnetti 1996, 39; Papadatos 2008; Papadatos et al. in press.
5 Todaro 2005.
8 Papadatos 2008.
9 Tsiropoulou 2010b; Tsiropoulou 2012.
The earliest occupation: FN-EM I Kephala

ing phases provides the opportunity to examine the ceramic sequence of the earliest Prepalatial at Petras and identify changes that may relate to particular historical conditions. This study forms part of a broader analytical program of ceramic analysis which started with the Neopalatial and Postpalatial pottery from House I.10 and continues with the Prepalatial assemblages from the settlement and the Rock Shelter at Kephala.

The aims of this project are: a) to identify the local fabrics and explore the presence of local workshops and/or ceramic traditions at Petras diachronically; b) to investigate the possibility of imports, both Cretan and off-island, and discuss their provenance; and c) to discuss the continuities and discontinuities detected in the technology of manufacture of the local and imported pottery.

The analytical results

For the analytical program at Kephala Petras a number of pottery samples were selected for petrographic analysis representative of the shapes, wares and macroscopic fabric groups: 105 FN and 137 EM IA samples from the settlement (in collaboration with Drs P. Tomkins and Y. Papadatos respectively) and 45 EM IB samples from the Rock Shelter (in collaboration with Dr M. Tsipopoulou). The thin sections were manufactured at the INSTAP Study Center for East Crete and were examined under a LEICA DMLP polarizing microscope. The analysis identified four main ceramic fabrics according to their mineralogical compositions. Their compositional and textural characteristics are presented below with emphasis on their distribution and the changes observed from the FN IV to the EM IB period.

Fabric group 1: Grog-tempered

This is the most frequent fabric in all three periods (FN IV–EM IB). It is characterized by a non-calcareous, red-firing base clay which is optically active, indicating a low firing temperature (below 750 °C) (Figs. 1, 2). The main non-plastic components are the angular red-brown grog fragments added intentionally as temper by the potter. Although this composition is not diagnostic of origin, the base clay is compatible with the red alluvial deposits of the area. Moreover, this fabric is encountered in high percentages: at the settlement it constitutes 80% of the FN IV and 98% of the EM IA assemblage.11 At the EM IB Rock Shelter the frequency has not yet been estimated (as the study of the material is still in progress), but it seems to constitute the main local fabric used for typical Cretan wares, continuing from EM IA, such as the dark grey burnished and wiped and washed wares. It represents, therefore, a long-last-

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10 Part of the analysis was presented in Nodarou 2007.
11 Papadatos et al. in press.
ing tradition which is commonly practiced across Crete (e.g., Gournes in Central Crete and Aphrodite’s Kephali in East Crete)\textsuperscript{12} during the FN and EBA period.

The vessels represented belong to all kinds of shapes and sizes: bowls and jars in FN IV, cups, chalices, cooking vessels (Fig. 3) and pithoi in the EM IA, and cups and cooking vessels in EM IB. Almost all wares are represented including the burnished and polished wares of FN IV and the dark grey burnished, wiped and washed, red slipped and red painted wares of EM IA and EM IB. This continuity in the practice of grog-tempering is marked by a technological development detected in the transition from FN IV to EM IA: the amount of grog added in the clay mix increases significantly.

\textit{Fabric group 2: Semi-coarse with white mica-schist}

It is a rather rare fabric in the assemblages of Petras. It is characterized by a red non-calcareous base clay which ranges from optically active to moderately active. The non-plastic components consist of muscovite mica-schist and white mica laths giving the vessel a shiny appearance (Fig. 4). This fabric is encountered almost exclusively in the FN IV period at the settlement, in a percentage of ca. 10\% of the assemblage. There are some rare examples in EM IA, and it disappears in EM IB. The rarity of this fabric and the incompatibility with the Cretan geology indicate an off-island origin. The lack of comparative material impedes any secure provenance assignment. However, a Cycladic origin can be suggested on the basis of the typological similarity of the vessels with Cycladic prototypes, such as cheesepots, biconical jars, and bowls with tubular lugs,\textsuperscript{13} and the occurrence of mica-schist deposits in the Cyclades. Similar (but not identical) fabrics have been reported from the FN site of Hagia Eirene on Keos and several EB I–II sites such as Akrotiri on Thera, Phylakopi on Melos, Markiani on Amorgos, and Keros.\textsuperscript{14}

It seems, therefore, that the FN IV settlement of Kephala imported pottery from off-island sources,

\textsuperscript{12} Betancourt 2008, 81; Nodarou forthcoming.
\textsuperscript{13} Papadatos \textit{et al.} in press.
most likely from the Cyclades. However, petrographic analysis showed that some of these offisland shapes have been also manufactured in the local grog-tempered fabric. The most characteristic case is the cheesepot, which is encountered in both the imported micaceous and the local grog-tempered fabric (Fig. 5). This clearly suggests that in the FN IV period the inhabitants of Kephala Petras produced local imitations of foreign prototypes.

Although the white mica-schist fabric becomes extremely rare in the subsequent (EM IA) period, this does not mean that there are no contacts with the Cyclades, as indicated by the next fabric group.

**Fabric group 3: Calcite-tempered**

This fabric is characterized by a fine, red-firing, non-calcareous base clay in which large angular fragments of calcite have been added as temper (Fig. 6a and 6b). The shape and the distribution of the calcite leave no doubt as to the intentional addition of the non-plastics. This practice is encountered in most sites of the North Cretan coast during the EBA, from Nopigeia in the far west\(^{15}\) to Petras in the far east of the island. In the FN IV assemblage from Kephala, this fabric is rather rare

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\(^{15}\) Moody 1987; Nodarou 2011.
(5%) and seems to be imported. Because it occurs in vessels such as jars and bowls, which have typological parallels from many Cretan sites, it most probably represents pottery imported from other areas within Crete.\textsuperscript{16}

Calcite-tempered pottery continues in the EM IA and IB periods but with a significant increase in the quantity and the density of the calcite fragments. With regard to the shape repertoire, the vessels of the earlier Prepalatial period have Cycladic parallels, namely chalices, pyxides and bowls.

In the EM IA period the percentage of calcite-tempered pottery in the settlement of Kephala is extremely limited, less than 2%, and comprises bowls with vertical tubular lugs, hole-mouthed jars, and plates.\textsuperscript{17} In the EM IB Rock Shelter the amount of this pottery is significantly higher.\textsuperscript{18} The shapes, namely bottles, pyxides and bowls, have parallels in the so-called Kampos-group of the Cyclades\textsuperscript{19} but also in sites of the North Cretan coast, such as Hagia Photia,\textsuperscript{20} Gournes\textsuperscript{21} and Poros Katsambas.\textsuperscript{22} The tradition of calcite tempering, often called marble ware in the bibliography, was particularly widespread in the Cyclades throughout the EBA, but the composition of the fabric is not diagnostic of origin. Compared to the Rock Shelter, the Kampos-group calcite tempered pottery from the neighboring Hagia Photia cemetery is more diverse in terms of shapes and constitutes more than 90% of the ceramic assemblage. From the above data it seems safe to conclude that these vases were imported to Petras. However, it not possible to know if they were Cycladic products imported directly from the Cyclades or through the neighboring site of Hagia Photia, or even if they were produced in North Crete (e.g., at Hagia Photia) following a Cycladic manufacturing tradition.

Although it seems that in all phases the inhabitants of Kephala Petras had access to Cycladic-style imported pottery, the change from white mica-schist to calcite-tempered fabrics in the FN IV–EM IA transition may correspond to a real shift in the off-island networks in which the settlement participated immediately before and after the advent of the EBA. This shift is reinforced by the significant drop in the off-island fabrics from 10% in the FN IV period to less than 2% in EM IA. The percentage of Cycladic-style vessels increases again in EM IB, but this picture may be skewed by the fact that EM IA and EM IB are represented by two different assemblages, domestic and funerary respectively.

Finally, it is of interest that compared to the EM IA settlement pottery, the EM IB calcite-tempered vessels from the Rock Shelter display greater variation in terms of clay recipes. There is a higher-fired subgroup with densely packed calcite grains, a lower fired one with less calcite and other non-plastics, such as phyllite, occurring naturally in the raw material, a third subgroup with fewer non-plastics and a fourth with organic tempering (Fig. 6c). This difference may again be context-related, but it is equally possible that it represents a real shift in the character and/or the origin of the imported Cycladic-style calcite-tempered pottery from EM IA to EM IB.

\textbf{Fabric group 4: Fine calcareous with small quartz fragments}

This is a very homogenous group. It is characterized by a very fine calcareous base clay and a few non-plastic inclusions consisting of small quartz fragments, carbonates and clay pellets which are not diagnostic of origin (Fig. 6d). This fabric is rare and is encountered only in the EM IB period in the Rock Shelter. Moreover, calcareous fabrics were absent from the FN IV and EM IA assemblages of the Kephala settlement, suggesting that it constitutes an entirely new manufacturing tradition. The vessels of this group comprise pyxides and bottles in dark grey burnished ware. The bottles frequently have incised decoration\textsuperscript{23} (Fig. 7) and they seem to be Cretan, if not local, imitations of the Cycladic-style bottles\textsuperscript{24} that occur in the calcite-tempered fabric presented above.

\textsuperscript{16} Papadatos \textit{et al.} in press.
\textsuperscript{17} Papadatos \textit{et al.} in press.
\textsuperscript{18} Tsipopoulou 2010b, 124; 2012.
\textsuperscript{19} Zapheiropoulou 1984; 2008.
\textsuperscript{20} Davaras & Betancourt 2004; Betancourt 2008.
\textsuperscript{21} Galanaki 2006.
\textsuperscript{22} Wilson \textit{et al.} 2008.
\textsuperscript{23} Tsipopoulou 2010b, fig. 11; 2012.
\textsuperscript{24} Tsipopoulou 2010b, fig. 12; 2012.
I. The earliest occupation: FN-EM I Kephala

Discussion

The petrographic analysis of the pottery from the settlement and the Rock Shelter of Kephala Petras, extending from the FN IV to the EM IB period, indicate the presence of a strong local manufacturing tradition, which is encountered equally in the domestic and the funerary context. The selection of non-calcareous clays and the addition of grog in the clay paste constitute technological choices unaltered over time, though with slight variations from one period to the other. These technological parameters remain the same even when others change radically, such as the firing technology, the surface treatment and the visual appearance of the vessels. The local workshop(s) manufactured the same recipes for all types of vessels, from small tableware vessels to cooking pots, storage jars and pithoi. It seems that the specific recipe constituted a local tradition which had been tested over time with regard to the properties of the final products and probably relates to the identity of the local potters. It is only in the EM IB period that a major change may be observed, with the introduction of the first calcareous fabrics for the manufacture of small vases, but, since the evidence comes solely from the burial Rock Shelter, further sampling from domestic contexts is needed in order to confirm this observation.

The identification of imported fabrics is revealing about the off-island relations and contacts of the people of Kephala. As early as the FN period there is a special relationship with the Cyclades, as indicated by the pottery in white mica-schist fabric and reinforced by additional evidence such as obsidian and copper metallurgy. The Cycladic connection pertains to the EM IA and IB phases, but there is a change in the fabric of the foreign vessels. The mica-schist fabric disappears and the calcite-tempered becomes the main fabric of the Cycladic-style vessels. This may be related to changes in the origin of the imports or the character of the networks of interaction, but it is difficult to know more on the basis of the available evidence.

Finally, the analysis shed light on the issue of Cretan imitations of Cycladic shapes. In FN IV the imported mica-schist vessels were reproduced in the local grog-tempered fabric, whereas in the EM IB period the Cycladic-style vessels were reproduced in a fine calcareous fabric with quartz. The analytical evidence suggests that despite developments and changes in the local pottery, the picture is not that of a clear break between the FN IV, EM IA and EM IB periods, but rather that of continuity. The same picture can be seen with the imported pottery. Despite differences in fabrics, wares and shapes from one phase to the other, there exists unfailing access to, or familiarity with, off-island areas, particularly with the Cyclades. This evidence reinforces the idea of an important coastal site that was well placed within the Cretan material culture, having roots in existing Cretan technological traditions, but also participating in wide networks of interaction with distant areas beyond Crete.

Fig. 7. Cycladic-style bottle in a fine calcareous fabric with small quartz fragments.

Discussion

Haggis That was very nice. This muscovite, this white mica tempered fabric, the patterns are very convincing, and I very much liked the presentation, it is just an impression, having spent my entire life working in a phyllite quartzite region, where there are white micas and they are intermingled with schist, and so on, is there any way that you can imagine controlling your samples, either on the Cycladic end or on the Cretan end, because Petras, and also the hinterland, is so rich in these local resources to make a convincing case that these are actually Cycladic imports?

Nodarou I know they are not Cretan, because I know how the muscovite mica looks in the Cretan phyllite quartzite series. Yes, you are right. It is not that it is lacking in Crete, but we know what it looks like, we know from Mochlos how the Cretan mica schist like. No, I cannot tell you for sure that this is from the Cyclades. It is mainly the archaeology and the general geology of the Cyclades that says that it must be from there. For example on Siphnos there is nothing but muscovite mica, wherever you go, even on the beach. At the beach there is sand which glitters, all over the place. But, unfortunately I do not have parallels, so, maybe, if somebody comes and says, it is from the Dodecanese, I will not argue. I know it is not Cretan, but it is mainly the archaeology that leads to the Cyclades, rather than the fabric, because I do not have the comparatives.

Muhly It seems to me that despite all the work that has been done over the past ten years, there is still a serious question about the relationship between Crete and the Cyclades in FN and EM I. It seemed to me that you were saying that the Cycladic influence, however it is to be explained, was a phenomenon of the EM I period, but now we are talking about Cycladic influence already in FN, whereas in the rest of your talk, you did not say anything about any Cycladic influence in the FN period.

Nodarou What I am saying is that in the FN we have Cycladic-style vessels in the local grog tempered fabric, although we have a very intense presence also of the real imports from the Cyclades in the mica-schist fabric, and this changes in EM IA and IB.

Muhly You would now say that there are real Cycladic imports in FN IV?

Nodarou Yes, all the mica-schist fabrics, and actually it is not one mica-schist fabric, it is a range of mica-schist fabrics. So it is more than one place of origin for these fabrics.
Greek abstract

Κεραμικές ύλες και συνταγές στην Τελική Νεολιθική και Πρωτομινωική Ι περίοδο: η αρχαιομετρική έρευνα στον οικισμό και την Ταφική Βραχοσκεπή στην Κεφάλα Πετρά

Στην παρούσα ανακοίνωση εξετάζονται οι συνέχειες και αλλαγές που παρατηρούνται στις κεραμικές ύλες και την τεχνολογία κατασκευής κεραμικής, βάσει αρχαιομετρικών αναλýσεων που έγιναν στα κεραμικά σύνολα από τον οικισμό (ΤΝ IV – ΠΜ ΙΑ) και την Ταφική Βραχοσκεπή (ΠΜ ΙΒ) που αποκάλυφθηκαν στο λόφο της Κεφάλας Πετρά. Η τυπολογική μελέτη του υλικού έδειξε σημαντικές διαφορές μεταξύ των δύο περιόδων και προέκυψαν ερωτήματα σχετικά με τις αντίστοιχες τεχνολογίες κατασκευής. Ο συνδυασμός πετρογραφικής ανάλυσης και ηλεκτρονικού μικροσκοπίου σάρωσης έδωσε σημαντικά στοιχεία για την αναγνώριση τοπικής και εισηγμένης κεραμικής, τα τεχνολογικά χαρακτηριστικά κάθε περιόδου και τις τεχνολογικές αλλαγές από τη μια περίοδο στην άλλη.
I do not know about you, but I feel dizzy after two days full time; Petras information overload in some ways. I think like with all excavations and all research projects you come away with more questions than you do answers, but I guess that is why we do it. Like many people yesterday, I should probably start by asking why Metaxia Tsipopoulou asked me. That is possibly because we are such good neighbors, and we have been good neighbors – I worked at Palaikastro since the very beginning. Hugh Sackett and I went in 1983 to Palaikastro though we did not start digging until 1986. We were both younger then, it was a really long time ago. So I have been associated with Petras, and with Metaxia, for all of those 25 years. One thing that does come through is the sheer amount of hard work that is involved, I do not just mean the digging, that is the easy part, it is the bureaucracy, the fund raising, and she had to deal with land owners. That part does not really show in the Symposium. We sit back now and we marvel at these results, but there is a whole back story to this, that perhaps should never be told, or nobody would ever go into archaeology. In Metaxia’s case, it was very complicated, very difficult, and she showed amazing staying power, and we are very grateful that she did. When I first went to eastern Crete in 1983, you would drive by Petras, and there was nothing there, now 25 years later, what Metaxia has done is that she has given us this amazing site, she has put Petras on the map. Bosanquet went through there for a couple of days in 1901, and wrote about it, but Metaxia has effectively put Petras on the map. It has now become a fairly big dot in the discussions of Bronze Age Crete. One of the things she has shown us, and Costas Paschalidis was reminding me that, from the very beginning, from the Final Neolithic IV to the Byzantine period, Petras, I suppose by virtually being by the sea, has an international spirit and it has international connections. We are even talking about connections with Egypt in MM IB, and it functions very well as a harbor town.

What I thought I might do, in order to lead this discussion, and you may want to talk more with the speakers, was really think about what these 25 years at Petras have given us. Being an old school archaeologist I still tend to think chronologically, instead of thematically. I thought it would be simpler really to run through what these excavations have given us in terms of the broader picture of Bronze Age Crete, and then Bronze Age Aegean, and then in the later periods, in Byzantium. Obviously the place to start is FN IV, when we have the first settlers, and we have strong Cycladic influence. What do you think that means? Are the people of Petras like people from Hagia Photia in the next period? I suppose Petras was looking for metals and lithics. The thing that still amazes me is that these people who we see trading abroad, which means that either they are going by the sea, or somebody is coming to them by sea, were not eating fish; there is a problem sailing over all this wonderful food, and not eating it, although we did see the fish hooks.
So, you can look at EM I and EM II and see what that gives us, in terms of the overall picture, what happens in EM III–MM IA, when we have the wonderful ossuaries with their pots, especially that collection of whole vases, at the end of that period. MM IB is a very interesting period when you had very expensive well painted ceramics that were put down in the Lakkos. And there is the wonderful tempting reconstruction that the hill was used, certainly in that period, if not earlier, for social gatherings, people coming together; feasting, if we want to use that trendy term, it is a focal point, for perhaps more than one community going there. What they are consuming is, certainly, when we are looking at the pottery, material locally made, but also imported, and therefore, slightly more expensive. Who are these people, where do they live, are they coming from further afield, to gather at this place? This was obviously important, and then this was replaced by the first palace, which if I am not mistaken, could be fortified; you think that the terrace wall could work as a fortification wall?

Tsipopoulou

Not entirely, one part yes.

MacGillivray

So it gives an impression, like the façades of the other palaces, we then have this change. There is enough wealth, enough power and enough desire to build this larger center, and this coincides with the change, it seems, in the Kephala cemetery, where, instead of re-deposited burials, we have these two males, these two fairly interesting individuals, who are using, presumably, these wonderful seals, that we saw Olga Krzyszkowska present. As they coincide with the construction of the palace, it would be interesting to speculate who were these young men, and why they were buried differently, inhumations, as opposed to whatever their normal practice was.

Then there is the destruction of this first palace, at the end of MM IIB, and we have the archive, that is one of the main reasons why we can talk about it as a palace. How big a center is Petras, is it controlling a wide area, can we tell that from the goods in the archive? I am still not entirely convinced, we might be misleading ourselves with these big state maps that we draw for Middle Minoan Crete. They could be much smaller, like Hellenistic city-state areas, much smaller areas of control. I think we are reading back almost from the modern Greek church boundaries, which currently separate Crete, and so we trying to recreate something like that, but that may have not been the case. That is something we can discuss.

This palace then, like many other buildings throughout Crete, towards or at the end of MM IIB, gets trashed, fortunately for people like Erik Hallager, who then have all this wonderful material to work with, and allows him, or us, to reconstruct what is actually being recorded in this building. And does this palace, that is very well excavated now, much better excavated than Knossos, does this allow us to answer the question that Jan Driessen has posed most recently, is this, are these, social ritual centers, or are they really the palaces of a monarch? Are we meant to view kings, or queens, living here? Or is Crete the only place in the ancient world where you do not have some divinely inspired, or actually divinely stated ruler in charge? Can Petras help us to solve that question in this period?

We then go to MM III, and that is something that we will have to see what it gives us over time, but we have that rather amazing rod, with the Linear A inscription. So, certainly there is administration in that period. But where is the building that has
been used? It is probably the building in which they have the LM IA floor deposits afterwards.

The LM IA period is amazing, I thought that we would never go through a whole two-day conference about a site in the Aegean, talking about its Bronze Age history, without mentioning the Thera eruption. But it came through at Papadiokampos, and it is kind of interesting that it was not mentioned by any of the workers at Petras.

Tsipopoulou We do not have ash.

MacGillivray You would not have ash, because the tsunami does not get up on a hill. That is what is preserving the ash at Mochlos, Papadiokampos, Palaikastro and other places. But even without the ash, you have destruction, you have abandonment, and then you have a change in LM IB, when you have a smaller courtyard, a slightly rearranged building, could that be a reflection of the kind of damage you had in the period, depopulation, etc.? When Zakros and Gournia and Mochlos and other sites have all these wonderful buildings in LM IB, the Late Minoan Renaissance, Petras has suffered somehow, the harbor at Petras may have stilted in, as a result of the debris flows coming back? It is worth discussing.

Then you have the LM IB destructions. Petras comes in line with the rest of the world. You do not seem to have evidence for LM II, so there is no instant reoccupation of the area, and in a sense it is your great LM IA palace with the Linear A that may be the last glory days at the site.

It is interesting that there is that memory of the place, where for some reason, I suppose it is the topography that demands it as well, where people would come and relocate, but not necessarily relocate to live, because in different periods you live in different places but some local community, possibly even just a family, was coming through where you have the LM IIIC settlement and megaron on Kephala.

Then in the Byzantine period, with a time span of 150 years for the use of the cemetery, it would not have been simply serving just one family, one farmstead. And they were manufacturing stuff also, up on the hill, but it remains a sacred place.

The fun thing is that Hill I has now become a sacred place again. Metaxia has fought tooth and nail to keep it from becoming a suburb of Siteia, and instead she has turned it into a place that reminds people from Siteia, or at least should remind people from Siteia, like Giorgos Alexopoulos, that they do have a very long and rich history, with a lot of external communications.

These are some of the themes I am thinking of. Then there is the theme of burial practices. That would be very interesting, changes in burial practices, what happens in MM III–LM I. If anybody would like to start, attacking, commenting on ideas that have come up, please do.

Hallager I was struck by one thing that you mentioned, at the very beginning, the lack of fish, and if I may suggest one possible solution. Based on my experience from the excavations in Khania, is has always been a very great mystery to me why you have no rubbish pits in the LM I settlement. As I travelled around the island I asked all our colleagues excavating LM I settlements “where are your rubbish pits?”, and they were not there. It was Phil Betancourt who gave me an answer, which I am going to suggest also for the missing fish bones. He said that during that period and probably
also in the earlier periods, such organic remains were very important and they were taken out into the fields to be used as manure. This might be one possible suggestion for the missing fish bones.

MacGillivray Interesting.

Vallianou I just want to point out that Metaxia must be a very happy Greek archaeologist. After 25 years of hard work, and having faced many difficult problems, she managed to complete an important work, to excavate a particularly important site, to establish its relations with other areas, to have very good collaborators, to publish a lot, to reach almost the end of her research, and to make the site accessible to the public, with modest but appropriate interventions. I would like to wish her luck in the future, and I believe that she deserved all she has achieved up to now.

MacGillivray Excellent. She has been very clever about getting the right sort of collaborators.

Macdonald Can I just ask about the end of LM IB, perhaps you did not go into detail, at least House II.1 is abandoned, not destroyed by fire?

Tsipopoulou There is fire, especially since the industrial activity taking place there was connected with hearths, heating water, etc. The whole of Room E gave evidence for a fire. In the Shaw Festschrift, the Krinoi kai Limenes volume (Tsipopoulou 2007c), I published, for the first time, several pictures of the destruction deposit over the central court of the palace. There was a thick LM IB destruction deposit, full of blocks fallen from the upper floor, door jambs, from polythyra, many with mason’s marks among them (we have identified 29 on fallen blocks, and some more are in situ). There was this very thick deposit with intense burning, all over the central court and to the east of it. In the central court we had 10 Byzantine graves and also the ossuary. Some of them, as Natalia Poulou-Papadimitriou said, used one Minoan wall and then built another three walls, to have a cist built tomb. In other cases, they excavated in this very thick and compact destruction deposit, which was like the bedrock, and they put their dead in it.

MacGillivray So the LM IB fire destruction reached very high temperatures.

Tsipopoulou It is something very similar to the Phaistos “astraki”. We do not have much LM IB pottery, because what we call the west wing of the palace, the parallel corridors on the plan, are all basement, or rather they are structural features to support the upper floors, so they were practically empty of any traces of the latest use. When we dug deeper, we found the walls of previous buildings. The latest phase of the palace is not well preserved, but we do have the destruction deposit.

Besides the central court, there was a room with an intense LM IB destruction deposit. This room is adjacent to the so-called “shrine” with the 4 m long plastered bench. This room with the bench was Protopalatial, and following the MM IIB destruction was sealed and never re-used. To the northeast of it, there was a long room with a flagstone floor, and in it even the slabs were burnt. It was also full of plaster and mudbricks both from the ground and from the upper floors.
MacGillivray That suggests that in LM IB the building was sufficiently important for someone to need to destroy it.

Tsipopoulou What always makes me wonder is why they kept this smaller, sort of symbolic, central court, and they did all the re-arrangement with the alternating columns and pillars. It has always been a palace with the memory of the earlier glory.

MacGillivray The Linear A tablets come from that?

Tsipopoulou Yes.

MacGillivray So there is administration.

Tsipopoulou Yes, but we do not know about the existence of an archive. There were two tablets, in the same trench, at the west part of the building, the same trench that contained the hieroglyphic archive in a deeper stratum. And in between there was also an LM IA destruction deposit, all that in the same trench, we excavated almost 3 m. Kostas Christakis excavated the LM IA destruction deposit.

MacGillivray I wonder if, maybe Kostas Christakis will talk about the notion of foreigners and locals that Tina McGeorge brought up quite clearly.

Paschalidis I would like to change the subject, based on a comment we exchanged yesterday with Metaxia. In this Symposium, the LM III period was not adequately represented, not because it did not exist at Petras.

Tsipopoulou Right.

Paschalidis So, in order to have a complete picture of the site we should need to include this important period as well.

MacGillivray Is there LM IIIA and IIIB?

Tsipopoulou And also LM IIIC, as we saw.

Paschalidis There was a cemetery, Metaxia, that you showed us yesterday.

Tsipopoulou Yes, there has been a cemetery; we had the larnakes, both chest-shaped and bathtub. The cemetery started in LM IIIB and continued into LM IIIC.

MacGillivray The interesting thing about having a settlement like Petras, that was occupied for thousands of years, is that you can almost visualize populations coming and going. One of the best ways to see them is through their burial practices and to see how these change over time. Because you are dealing with the same spot, but obviously you are not dealing with the same people, you are watching populations come and go.
I would like to remind you about the Achladia tholos, which is Mycenaean in type and construction. This is very close to Petras, only 4 km from the coast, and it was also almost on top of an earlier settlement, a very small one, a *metochi* type, both Proto- and Neopalatial.

Was that the one with the 80-year old in it?

Not 80, she was 45–65 years old when she died.

That is pretty old, anyway.

It was pretty old, and she had suffered from a very significant stress when she was very young, probably malnutrition.

The Thera eruption? No the Mycenaean invasion.

[Laughs from the audience!]

The LM IB destruction. She was an upper class lady.

Does everybody know whatever they possibly want to know about Petras?

I am actually working on Ramnous and I found out about this conference while studying there, with surprise. We are studying with ΕΛΚΕΘΕ [Hellenic Center of Marine Research] the problem of relative sea level change. Relative is the important word here, has the sea gone down and the land gone up, or both phenomena? The question goes back to Spratt and the whole question of what Crete has done, we know about elevation in the west, but something was happening in the east, and we have these submerged buildings at Palaikastro, which we wanted to survey. The whole issue of reconstructing the palaeoenvironment is very important. Now, at Siteia we have a *neoreion* that is classical, too late for our Prehistorian friends, but there you have something which functions with a precise sea level, not far from your site. First the geologists disagree about what has happened to the sea. Secondly the land is not one block, so what applies to Palaikastro will not necessarily apply to Siteia.

No, you have local tectonics.

But, nevertheless, a local study of the evidence for submerged beach lines would enable you to understand what has happened in the later periods, including eruptions, what has happened to the shoreline. Geologists can help with all that. Keep working with geologists, it is a challenge, they do not know how to apply for archaeological permits, and also the jealousies of geologists are far greater than the jealousies of archaeologists.

Impossible!

[Laughs in the audience!]
Blackman  Nevertheless, it is very important for reconstructing communications by sea in the Minoan period, it is very important to try to reconstruct where the coastline was before you can understand the use of harbors, whatever harbors mean. It has been a wonderful conference. Congratulations to Dr Tsipopoulou.

MacGillivray  I think this is probably the best time, to thank not only Metaxia but also her whole crew, for putting together the Symposium, and obviously these two days represent the end-result of 25 years of hard work, but you are probably less than half way there on the site, so we should probably meet every five years and get all the new information. [Laughs in the audience]
   And I hope you will all join me thanking Metaxia and her colleagues for this fantastic Symposium!
Bibliographic abbreviations

**AASOR** – Annual of the American School of Oriental Research

**ActaArch** – Lov Acta archaeologica Lovanensia

**AJA** – American Journal of Archaeology

**AJPA** – American Journal of Physical Anthropology

**AR** – Archaeological Reports

**ArchDelt** – Archaeologikon Deltion

**ArchEph** – Archaiologike Ephemeris

**ASAtene** – Annuario della Scuola archeologica di Atene e delle Missioni italiane in Oriente

**BAR-IS** – British Archaeological Reports, International Series

**BASOR** – Bulletin of the American Schools of Oriental Research

**BCH** – Bulletin de la Société préhistorique française

**BSPF** – Bulletin de la Société préhistorique française


**CMS** – Corpus der minoischen und mykenischen Siegel, Berlin 1964–2000; Mainz 2002–


**CretChron** – Kretika Chronika

**CurrAnth** – Current Anthropology

**JAnthArch** – Journal of Anthropological Archaeology

**JAS** – Journal of Archaeological Science

**JMA** – Journal of Mediterranean Archaeology

**JPR** – Journal of Prehistoric Religion

**Kentro** – Kentro: The Newsletter of the INSTAP Study Center for East Crete

**OpAth** – Opuscula Atheniensia

**Prakt** – Praktika tes en Athenais Archaiologikes Etaireias

**SIMA** – Studies in Mediterranean Archaeology

**SkrAth** – Skrifter utgivna av Svenska Institutet i Athen

**WorldArch** – World Archaeology

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