NEW EVIDENCE FOR THE DARK AGES IN EASTERN CRETE AN UNPLUNDERED THOLOS TOMB AT VASILIKI

by Metaxia Tsipopoulou, Lucia Vagnetti, Maria Liston

I. INTRODUCTION

The area of Vasiliki, in the northern part of the isthmus of Hierapetra¹, is well known in the archaeological literature since the beginning of the 20th century, when Richard Seager uncovered one of the most important Early Bronze Age sites in the Aegean (Seager 1904-5; 1906-7; 1908; Zois 1976). The later remains in this area discovered in these early campaigns, were, however, overshadowed by the fame of the Early Minoan site. Despite this fact these later remains, especially LM IIIC traces of occupation, are numerous. Thanks to recent intensive research they can contribute to a better definition of the whole picture (Fig. 1). Seager excavated a small tholos at Ayios Theodoros, on the Kephala hill, dated to the LM IIIC. It is no longer preserved (Seager 1906-7, 129-32, pl. XXX; Kanta 1980, 146). At a site called Selli another LM III tomb was discovered by Platon (1953, 492; Kanta 1980, 146). In 1990 a third small tholos, at Kamaraki, near Vasiliki, was excavated by the local Ephoreia of Antiquities, under the direction of Metaxia Tsipopoulou. This tomb is the object of the present paper.

Recently two large scale projects operated in the area. L. Vance Watrous carried out an intensive survey, starting on the east edge of the main road to Hierapetra, covering part of the plain and a series of hills. According to the survey's results many sites were abandoned after LM I, while the period LM IIIA-B seems characterized by a significant population drop in the area (Watrous *et al.* 2000). Also plans for a new airport in the immediate vicinity of the Early Minoan site prompted a survey first, and then an excavation on the Kephala hill, carried out by the Greek Ministry of Culture under the direction of Theodoros Eliopoulos (1998). The excavation on Kephala revealed a LM IIIC settlement connected with the Ayios Theodoros tholos, and a shrine of 'goddesses with upraised arms'. The excavator's suggestion that the tomb at Kamaraki is connected with this settlement (Eliopoulos 1998, 301, fn. 4) is highly unlikely, since the tomb lies ca. 3 kms to the east of Kephala.

At equal distance, to the opposite side of the isthmus, on a slopy spur, at the foot of the Thriphti mountains, called Halasmenos, since 1992 another important LM IIIC site is under excavation by Metaxia Tsipopoulou and the late William Coulson. The site, which is very well preserved, revealed an organized plan, with

¹ The village of Vasiliki is 24 kms to the south-east of Ayios Nikolaos. At the census of 1981 it had 245 inhabitants. Vasiliki is not mentioned in any Venetian census, only in a census in 1671, during the Turkish occupation. In 1834 25 families lived there and in 1881 it had 164 Christian inhabitants and 65 Muslims (Spanakis 1991, 179-80).

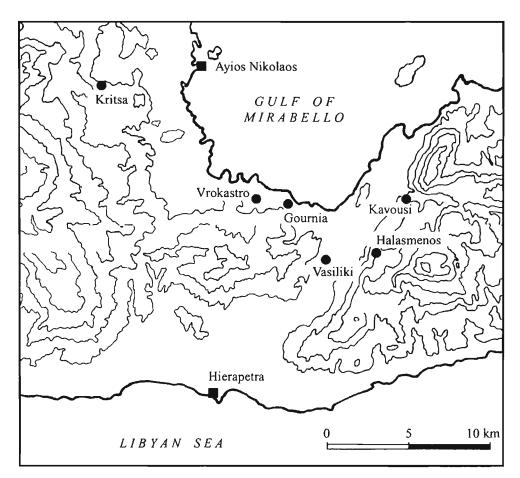


Fig. 1 – The isthmus of Hierapetra with the main sites mentioned in the text (● ancient sites; ■ modern towns).

paved roads and open spaces, four megara and a public shrine of megaroid plan. There more than nine statues of 'goddesses with upraised arms' came to light (Tsipopoulou and Coulson 1992-4; 1995; Coulson and Tsipopoulou 1994; Tsipopoulou 2001; Tsipopoulou in press; Tsipopoulou and Nowicki in press).

(M.T., L.V.)

II. THE EXCAVATION

On June 1 and 2 1990 the rescue excavation of a tholos tomb was conducted by the 24th Ephoreia of Prehistoric and Classical Antiquities of Eastern Crete at the site called Kamaraki ('small arch or vault')², adjacent to the edge of the road to

² The name of the site suggests the possibility of previous discovery of similar tholos tomb(s) in the same area. Yet the local people, including the owner of the field, Sophia Frangiadaki, did not remember any such chance discovery.

Hierapetra. This is some 300 m to the east-northeast from the Kephali hill, where the Early Minoan site is located. The tomb came to light during cleaning operations of the olive grove by a small bulldozer, which resulted in the removal of the key of the tholos³. The hole was left open and the contents of the chamber were untouched when the Archaeological Service intervened (Fig. 2). Three vases were visible on the upper part of the burial deposit (Fig. 5). Due to the circumstances of the discovery and the urgent need for protection of the site, the investigation started from the chamber, and the excavation team had to enter from the hole of the key. The dromos was not excavated until the following day. The original cleaning of the stones of the upper part of the tholos revealed the entrance to the west-northwest.

The chamber, built with irregular stones, has a roughly circular plan, with a diameter of ca. 2.5 m and its height reaches 1.30 m. The entrance of the chamber, measuring 0.82 m (width) by 0.90 m (height), had a lintel and door jambs to the *dromos* and was closed with a slab, found *in situ*. The *stomion* of the tomb, cut into the soft bedrock, had an inclination to the east, where the entrance is. It was found filled with stones, and measured 0.7 m (width) by 1 m (length). Its sides are lined with irregular slabs in two rows, 0.3-0.4 m long (Figs. 3-4).

Following the initial cleaning of the soil, at the northeast side of the chamber, a concentration of pottery was observed, adjacent to the wall (Fig. 6). At a slightly higher level, parallel to the wall, a stirrup jar was deposited (5). A pyxis (1a), its rim facing the wall, was found empty, while two kalathoi (13 and 14) adjacent to each other, were found by the base of the pyxis, turned towards the centre of the chamber. The former contained a handleless globular cup (21). The lid of the pyxis (1b) was found upside down, by the wall, to the east. To the same concentration of vessels belonged a basin with oval mouth (12), an one handled cup (20) and a small flask (9), to the south of the basin. An amphora (6) was found inside the basin.

In the centre of the chamber, parallel to each other, there were two more vases, a globular cup (19), its rim facing the entrance, and a trefoil-mouthed juglet (10), its rim diametrically opposite to that of the cup. Slightly to the north, two more vases came to light, one next to the other, an amphoriskos (7), and a krateriskos (15). Underneath the amphoriskos there was an incised clay bead (27). To the north of the vases there was a femur.

At the east side of the chamber a concentration of metal objects was excavated (Fig. 7). These include four bronze fibulas (29-32), two bronze crescent-shaped pendants (37-38), three bronze rings (34-36), a bronze pin (33), numerous bronze wire fragments, probably belonging to rings, and an iron spiral (40).

³ The discovery was reported to the Ephoreia by E. Koinakis and G. Petrakis. At the excavation participated the archaeologist V. Zografaki, the engineer M. Klontza, who made the plans of the tomb, and the conservator A. Nikakis. The finds were conserved in the Ayios Nikolaos Museum by G. Gerontis. The drawings of the vases are mainly due to C. Chronaki, those of the metal objects are by L. Vagnetti, inked by C. Paschalidis. To A. Mancini are due the general map in Fig. 1, as well as the final version of the tomb's plan, some corrections and improvements of the drawings and their final pagination. The excavation photographs are by M. Tsipopoulou, those of the finds by G. Maravelias. The finds are stored in the Ayios Nikolaos Museum. Our warmest thanks to Prof. D. W. Rupp for correcting our English text and to Lucia Alberti and Daria Marcozzi for a very careful check of the final manuscript. L. Vagnetti is also indebted to I. Kilian-Dirlmeier and to F. Lo Schiavo for useful advices and bibliographical information concerning the metal objects.

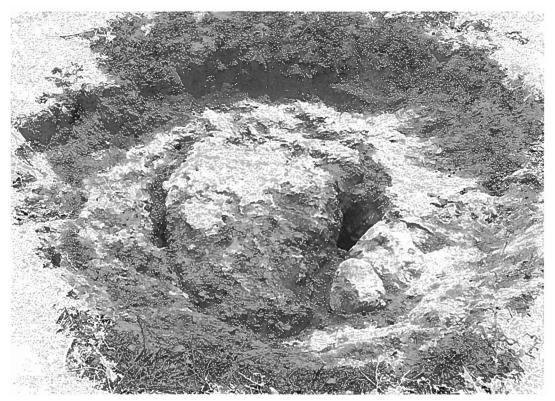


Fig. 2 – The key stone of the tholos before the excavation.

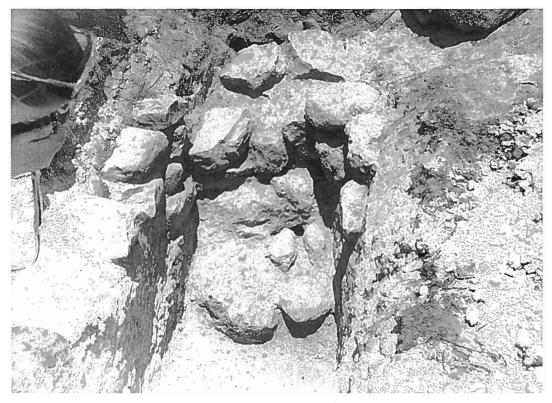


Fig. 3 - Dromos and entrance of the tomb.

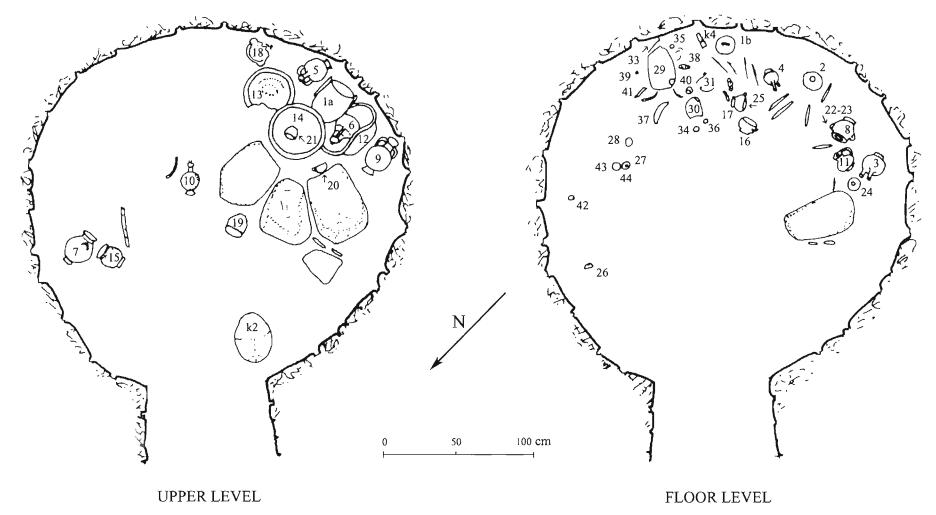


Fig. 4 – Plan of the tomb with the location of the finds. Numbers refer to the catalogue.



Fig. 5 – Vessels in the south side of the tomb before the excavation.

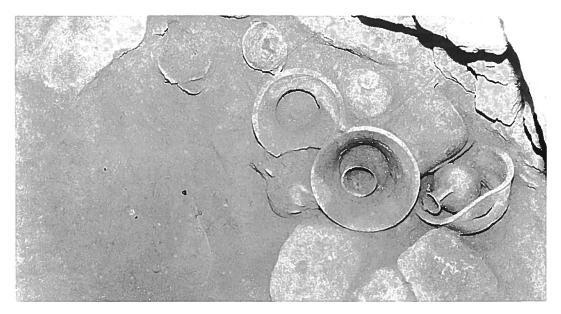


Fig. 6 - Vessels in the south side of the tomb after cleaning.

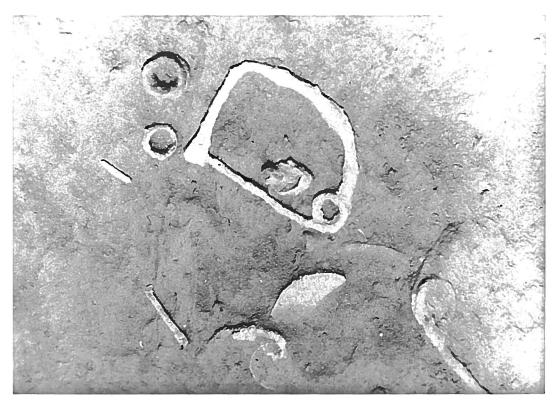


Fig. 7 – Fibulae and other metal objects on the floor of the tomb.

At the north side of the chamber two clay and two stone beads (**27-28** and **43-44**) were discovered. Fragmentary bones, including teeth of a child (or children), and parts of a skull belonging to an older individual, in a bad state of preservation, were scattered all over the surface of the chamber, especially in connection with the metal objects. No traces of cremation were evident.

A second concentration of finds deposited on slabs on the floor of the chamber included a lead bead (42) and a second skull. To the east of the kalathoi mentioned above there was a deep bowl in two fragments (18), adjacent to fragments of a skull. Near the oval-mouthed basin was an amphoriskos with vertical handles, lying on its side (8). This last vase contained two handleless conical cups, found upside down, the smaller one spouted (22 and 23). Immediately below the stirrup jar (5) to the south, there was another stirrup jar (2), upside down.

Following the removal of small stones around the above mentioned vases, a juglet came to light, lying on its side, its rim facing the centre of the chamber (11). Adjacent to it and at the same level was a handleless conical cup (24), which contained two tiny bones. Among the concentration of vases there were many poorly preserved bones. At the same level, in the centre of the concentration there was another stirrup jar (3), found upside down, very close to the wall of the chamber. Under the kalathos (13) part of a skull was found (K-3) and two deep bowls (16-17), the latter containing a handleless cup (25). Below the kalathos (14) there was a

stirrup jar (4) and, to the southeast, fragments of a skull (K-4). To the east of the deep bowls more bones came to light.

More badly preserved bones were situated close to the fragments of the skulls, including a mandible fragment, which was under the deep bowl no. **17** and the skull **K-3**. There were also two rib fragments. Furthermore, femurs and humeri were laying below the concentration of the vases.

The south half of the chamber was paved with irregular slabs, on which the first body has been probably deposited, while the rest of the chamber was unpaved. No finds resulted from the *stomion*.

(M.T.)

III. THE FINDS

A) POTTERY⁴

Pyxis and lid

1a. Figs. 8 and 12. Inv. 12354 (vase 17). Height: 0.155; diam. (base): 0.15; (rim): 0.108. Intact. Flat base. Cylindrical body, with a slighly curved profile. Incurving rim. Two horizontal handles, from rim to base. Buff medium clay. Self slip. Brown orange worn paint. Band at the base. On one side a leaf motif, a rosette and concentric fringed arcs. (FM 17.32, 43). On the other side a panel containing chess-pattern, stemmed spirals and fringed antithetic spirals, filled with parallel wavy lines (FM 50.19, 56.2, 62.32). Chevron patterns under the handles.

1b. Figs. 8 and 12. Inv. 12364 (vase 27). Height: 0.095; diam. (rim): 0.136. Mended from several sherds. Conical shape with flat upper part. Basket handle of elliptical section. Orange medium clay. Yellowish slip. Orange, very worn paint. Two bands on the body and horizontal strokes on the back of the handle.

LM IIIC, probably middle phase. Cylindrical pyxides with domed lids are a typical Cretan variety of this shape, and their origin is traced back to the Neopalatial period (Kanta 1980, 281). In eastern Crete cylindrical pyxides, both small, like the Vasiliki specimen, and large, were very common, the latter frequently used to store the remains of cremations⁵. Small pyxides found at Karphi were considered to contain offerings, along with kalathoi. These two types of vessels were usually decorated in Close style, often including horns of consecration and double axes; the closest parallel to the Vasiliki pyxis, except for the clearly conical body profile, is nr. 6, which had a cylindrical lid (Seiradaki 1960, 18, fig. 12). Handles raised above the rim appeared for the first time in LM IIIB and constitute a characteristic feature of the LM IIIC examples (Kanta 1980, fig. 96:9). The decoration of the cylindrical pyxides is usually organized in panels, sometimes separated by vertical triglyph-like motifs. The handles cut the surface into two distinctive sides, usually each having a

⁴ The catalogue of pottery is organized by shape and chronologically for each shape. Measurements are in meters. Excavation numbers for vases and small objects (M. E.) are given in brackets.

⁵ Cf. for example a specimen from Praesos-Photoula: (Kanta 1980, fig. 68:2) and others from Kritsa (Tsipopoulou and Little 2001, figs. 2-6).

more or less different decoration. In some cases it is obvious which side was considered the 'main' one, whilst in other vases, as is the case with the Vasiliki pyxis, both sides are given equal importance. It is interesting to note in this context that one side of this particular vase is given an almost architectural treatment, with the vertical element filled with chess pattern and two horizontal curvilinear appendixes at either end of it, directly deriving from the earlier 'triglyph and half rosette motif'. In this case fringes are added on every single motif of the composition, securing a dating well into the LM IIIC phase.

For the domed lid cf. examples from Karphi (Seiradaki 1960, fig. 19:3) and also from Palaikastro-Kastri (Sackett *et al.* 1965, fig. 15:P33).

Stirrup Jars

2. Fig. 14. Inv. 12355 (vase 18). Height: 0.132; diam. (base): 0.05; (max.): 0.15. Intact, except for chipping on the spout. Raised base, slighly hollow underneath. Globular body. Stem of the disc low and narrow, with a curved profile and a hole at its base. Disc slightly convex. Spout somewhat oblique, touching the disc and higher than it, with a funnel-shaped rim. Two vertical handles of elliptical section. Orange fine clay. Self slip, initially lustrous. Orange paint, somewhat worn. Bands on the base and the body. On the shoulder Close style decoration consisting of triangles filled with arcs, fringes, concentric chevrons, scale pattern, horizontal and vertical lines, as well as a debased octopus pattern, at the base of either handle. Three bands on the spout. Series of joint semicircles on the interior of the rim. Monochrome handles with a reserved triangle on the upper part. A circle and two opposite concentric semicircles on the disc.

3. Figs. 8 and 14. Inv. 12359 (vase 22). Height: 0.126; diam. (base): 0.042; (max.): 0.107. Intact with some cracks on the body. Raised base, hollow underneath. Depressed globular body. Low and narrow stem of the disc with a curved profile. Slightly convex disc. Vertical spout, touching the disc. Two vertical handles of elliptical section. Buff fine clay. Yellowish slip. Brown, completely worn, paint. Bands from the base to the shoulder. On the shoulder groups of concentric arcs, solid triangles and chevrons. Debased octopus pattern, at the base of either handle. Thin bands on the neck and on the spout. Two vertical bands on the handles, and loops around their attachment.

The two vases are very similar in shape and decoration. Both the details of the body and the Close style decoration assign these stirrup jars to the middle phase of LM IIIC. The arrangement of the decoration, with the shoulder zone reaching almost the middle of the body is typically east Cretan, as in a stirrup jar from Mouliana, tomb A (Xanthoudides 1904, fig. 6). A rather early feature is the presence of thin parallel lines on the lower body as in type 2 stirrup jars from Karphi (Seiradaki 1960, fig. 11:2).

Similar both in shape and decoration is the specimen from Knossos-Gypsades (Hood *et al.* 1958-1959, 248, fig. 27:VII.5), dated by the excavators to the LM IIIB:2, but probably belonging to an early phase of IIIC. For the shape and decoration with parallel bands on the body, see also a probably east Cretan specimen found on Kos (Kanta 1980, fig. 98:1). A very close parallel comes from Kavousi-Vronda, tomb VIII (Gesell *et al.* 1983, 403, fig. 6:14). It is almost identical in shape and with a slightly simpler decoration on the shoulder zone and its body is covered with similar thin bands. The excavators attribute it to the Subminoan phase, on the basis of an analogous specimen from the Gypsades cemetery, very similar in decoration, with a different body profile, which resembles more our n. 5. Very similar is a slightly more

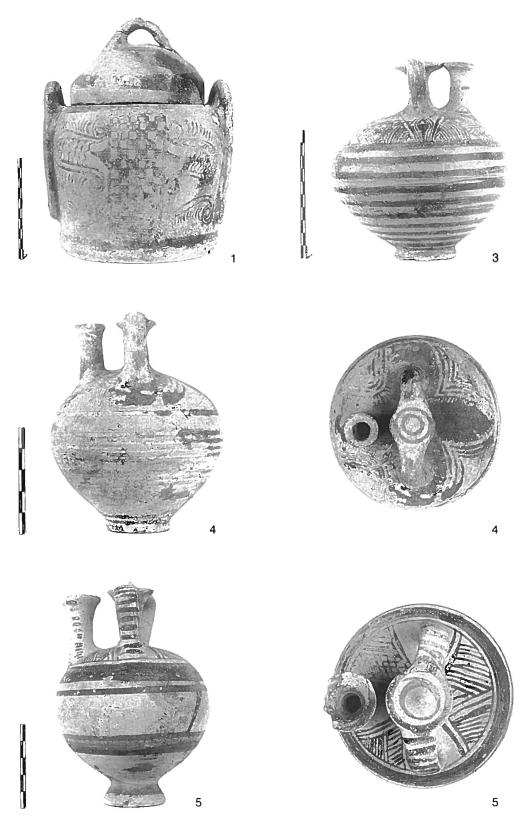


Fig. 8 – 1. Pyxis; 3-5. Stirrup jars.

globular stirrup jar from Kavousi-Vronda (Day *et al.* 1986, 372, fig. 9:17), decorated in Close style with spiraliform motifs and groups of arcs. Also very similar decoration on a LM IIIC sherd from an "indeterminate closed shape", probably also from the shoulder of a stirrup jar, which was found at Kavousi-Vronda (Gesell *et al.* 1991, 166, fig. 6:6). Very similar in shape, with a somewhat more open decoration is a stirrup jar from the tholos at Knossos-Kephala (Cadogan 1967, 259, fig. 4:2).

4. Figs. 8 and 14. Inv. 12363 (vase 26). Height: 0.103; diam. (base): 0.033; (max.): 0.085. Intact. Worn surface. Small chippings on the body and the base. Raised base, flat underneath. Globular body. Low stem of the disc with a curved profile. Flat disc. Vertical spout, slighly lower than the disc with an outcurving rim. Two vertical handles of elliptical section. Orange medium clay. Whitish thick slip. Black paint, almost completely faded. Thin bands on the body. Concentric fringed arcs and angles on the shoulder zone. Monochrome rim of the spout on both surfaces. Wavy line on the handles.

Subminoan. The shape of the body, the relation between spout and disc and the overall decoration are very similar to the stirrup jar found at the Spring Chamber in the Palace of Knossos (Popham 1992, pl. 50:g). The dark decoration on the shoulder zone, where the motif of concentric arcs is actually reserved, should probably be considered a typical feature of this transitional phase.

5. Figs. 8 and 14. Inv. 12339 (vase 1). Height: 0.138; diam. (base): 0.034; (rim): 0.026; (max.): 0.094. Chipped at the rim of the spout. Conical raised base, hollow underneath. Globular-piriform body. Stem of disc with a curved profile. Disc with a conical button. Hole at the base of the stem. Spout slighly lower than the disc, with a funnel rim. Two vertical handles of elliptical section. Orange fine clay. Yellowish-buff slip. Red-brown, partially worn paint, unevenly fired. Thick band with double contour on the shoulder; two bands of different thickness on the lower body, irregular band on the base. On the shoulder zone three triangles, two of them with double contour, filled with oblique lines, and one with a net pattern. Three vertical rows of strokes on the spout. Two concentric circles on the disc. Horizontal bands on the handles. Dribble from the band on the shoulder. Strokes of paint above the base. The interior of the spout is monochrome.

This specimen, both for its shape (globular-piriform body, high knob on the disc, high conical base), as well as for its decoration (elaborate triangle on the shoulder, with straight, not curved lines) is a good example of the Early PG. Parallels are known from Kavousi-Vronda and from Knossos-Ayios Ioannis (Gesell *et al.* 1983, 399, fig. 4:6, tomb IV; Boardman 1960, 132-3, pls. 37:VIII.5, 38:III.2, V.4). Middle PG examples, especially for the shape come from the Knossos area (Coldstream 1963, 38, fig. 11:III.2, pl. 12; Coldstream and Catling 1996, figs. 76:19, 83:12, 84:15, 112:112.2-3, 117:121.2). The decoration is also typically PG. Other specimens, similar in shape, with a less advanced decoration, dated to the Subminoan phase have been found at Archanes (Sakellarakis and Sakellaraki 1997, 464, figs. 445-6) and Axos (Kanta 1980, 201, fig. 83:9).

Amphora

6. Figs. 9 and 14. Inv. 12346 (vase 9). Height: 0.126; diam. (base): 0.061; (rim): 0.054; (max.): 0.125. Intact. Flat base with string marks. Ovoid body. Low, narrow neck with a curved profile. Out-curving rim of triangular section. Two vertical handles of circular section from the rim to the shoulder. Buff fine clay. Self slip. Black-brown paint, unevenly fired. Bands on the

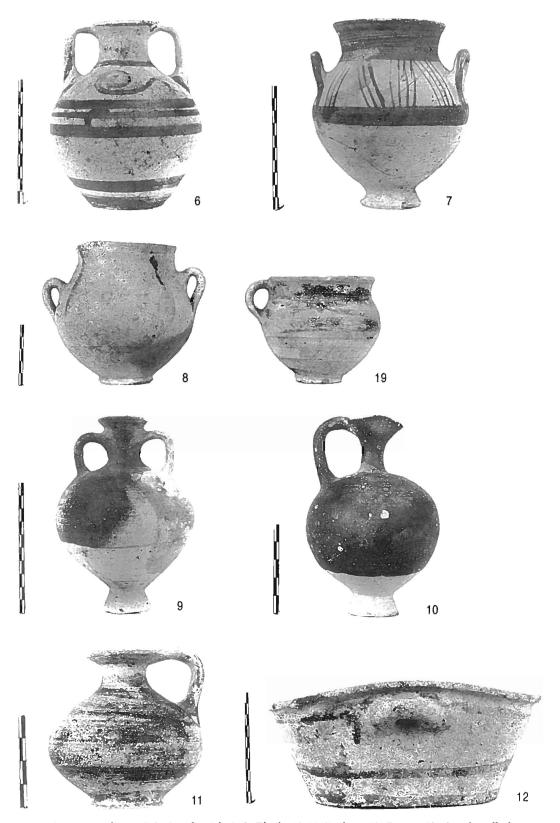


Fig. 9 - 6. Amphora; 7-8. Amphoriskoi; 9. Flask; 10-11. Juglets; 12. Basin; 19. One-handled cup.

body, the base of the neck and on both surfaces of the rim. Loops around the attachment of the handles. Spiral pattern on the shoulder.

LM IIIC late. The type imitates Mycenaean examples, especially from Attica, e.g. specimens from Kopreza (Mountjoy 1999a, fig. 209:322), and Perati (Mountjoy 1988, fig. 16). Similar is an amphora from Vrokastro (Hall 1914, fig. 64). Cf. also for the general shape and decoration a somewhat earlier, larger specimen from Thronos-Kephala (D'Agata 2001, fig. 5) attributed to the LM IIIC early. Similar in shape a fragmentary amphora from Palaikastro-Kastri (Sackett *et al.* 1965, fig. 15:P25). This type of amphora is not represented among the published material from Karphi, where somewhat similar examples have higher and narrower base (Seiradaki 1960, fig. 8:5). A Subminoan example from the North Cemetery has a more ovoid shape, similar decoration and twisted handles (Coldstream and Catling 1996, 131-132, fig. 101). As for the decoration, debased spiraliform motifs of this type are common in Cretan Subminoan-Early PG contexts; cf. a jug or oenochoe from Kavousi-Vronda (Day *et al.* 1986, 381, fig. 13:33).

Amphoriskoi

7. Figs. 9 and 14. Inv. 12343 (vase 5). Height: 0.137; diam. (base): 0.047; (rim): 0,09; (max.): 0.123. Missing small parts of the body. Mended from several fragments. Conical base, hollow underneath. Ovoid body. Wide neck with curved profile. Thin, slightly outcurving rim. Two horizontal, slightly oblique handles, of circular section, on the shoulder. Buff fine clay. Lustrous slip of the same colour. Orange paint, turning to brown, somewhat faded. Monochrome neck on the interior surface, with a reserved rim. On the exterior surface monochrome rim, neck and handles. Groups of three or four oblique lines on the shoulder. Band at maximum diameter.

Subminoan. The shape is common at the end of LM IIIC and into the Subminoan phase. It is a shape of Submycenaean origin (Mountjoy 1988, figs. 7-8). The decoration on the shoulder zone consists either of a wavy line, or of a combination of oblique lines as in our case. There are many published examples from Knossos, and the Spring Chamber shrine (Evans 1928, fig. 69; Popham 1992, pl. 50:e for the shape, and 50:f for the decoration; Boardman 1960, 132, fig. 4:IV.2, attributed to the Early PG). Similar is the specimen from Vrokastro, tomb IV (Hall 1914, fig. 86:D) decorated with a zigzag on the shoulder zone. The examples from Karphi seem to have a slightly more globular body (Seiradaki 1960, fig. 14:9).

8. Figs. 9 and 14. Inv. 12351 (vase 14). Height: 0.118; diam. (base): 0.046; (rim): 0.091; (max.): 0.115. Small chipping on the rim. Raised disc base, flat underneath. Globular ovoid body. Low, wide neck. Thin, slightly outcurving rim. Two vertical, asymmetrical handles of circular section, on the upper part of the body. Buff fine clay. Self slip. Brown black, very worn paint. Dipped in paint twice from the rim.

Subminoan. To our knowledge there are no exact parallels for this vase. The profile of the body follows the general shape of the amphoriskoi/krateriskoi, with two differences: first, the rim is less pronounced and second, they have always horizontal handles. Our vase is somewhat similar to a Helladic type of amphoriskos (FS 69), called also 'collar necked jar' (Mountjoy 1999a, fig. 95:183, from Laconia, dated to the LH IIIC early to middle).

Flask

9. Figs. 9 and 15. Inv. 12342 (vase 4). Height: 0.132; diam. (base): 0.039; (rim): 0.034; (max.): 0.104. Intact, with small chippings. Raised conical base, hollow underneath. Ovoid body. Low neck, with a curved profile. Funnel-shaped rim. Two vertical handles, from the middle of the neck to the shoulder. Buff fine clay. Self slip. Black paint, completely faded. Monochrome upper half of the body.

Subminoan. This is not a very common shape. Cf. examples from the North Cemetery of Knossos, decorated like our amphora no. 6 (Coldstream and Catling 1996, 87, fig. 83).

Juglets

10. Figs. 9 and 15. Inv. 12341 (vase 3). Height: 0.113; diam. (base): 0.029; (max.): 0.077. Intact with small chippings. Raised conical base, hollow underneath. Globular body. Narrow neck with a curved profile. Thin trefoil rim. Vertical handle of oval section, slightly raised above the rim, to the shoulder. Buff fine clay. Lustrous slip of the same colour. Black lustrous flaking paint. Monochrome with reserved base and lower body.

Subminoan. At Knossos there are Subminoan examples, similar in shape and decoration, but with a lower centre of gravity and a handle raising above the rim (Coldstream *et al.* 2001, fig. I.9:e; also Coldstream and Catling 1996, figs. 83:18, 117:121.4). Other specimens, identical for shape and decoration, come from the Ayios Ioannis grave V (Boardman 1960, 133, fig. 4:7, pl. 35: V.10), dated to the Middle PG.

11. Figs. 10 and 15. Inv. 12357 (vase 20). Height: 0.068 diam. (base): 0.033 (rim): 0.035; (max.): 0.068 Missing part of the rim. Raised base, flat underneath. Globular depressed body. Wide, everted rim, short neck. Vertical strap handle from the rim to the shoulder. Buff, fine clay. Black, very worn paint. Monochrome outside; medium band inside the rim.

Subminoan. This is not a common shape in Cretan assemblages and has close paralleles from Mainland Greece (Mountjoy 1988, fig. 10). Similar juglets from Kavousi-Kastro, are dated LM IIIC-PG (Mook 1993, 358-359, fig. 69).

Basin

12. Figs. 9 and 13. Inv. 12350 (vase 13). Height: 0.093; diam. (base): 0.172; (rim): 0.252-0.187. Intact. Small chippings on the rim. Flat base. Conical body. Wide oval mouth with flat horizontal rim. Two horizontal handles of circular section below the rim. Pink yellowish medium clay. Wheel marks on the interior surface. Yellowish thick slip. Black worn paint, unevenly fired. Three horizontal bands on the body on both surfaces. Vertical strokes on the upper part of the rim and dribbles from the rim on the external surface. Loops around the handle attachments.

LM IIIC. Basins, made of medium clay, with a conical body, either shallow, like our specimen, or deeper, are very common in domestic deposits of LM IIIC date. Cf. the Karphi examples, slightly deeper than the Vasiliki specimen, with identical decoration (Seiradaki 1960, fig. 5:11). At Halasmenos basins are either plain or decorated with wide bands, sometimes with a zone under the handles. The interior surface is either plain, with a band on the rim or with several bands (Tsipopoulou in press for the typology). Cf. a deeper basin from Kavousi-Vronda (Day *et al.* 1986, 372, fig. 8:16) and an example from Thronos (Prokopiou 1994, fig. 3). As far as we know no other complete specimen with an oval mouth is published. As this feature seems to be intentional, there is a possibility that we deal here with a simple imitation on a small scale of a bath-tub larnax.

Kalathoi

13. Figs. 10 and 12. Inv. 12348 (vase 11). Height: 0.102; diam. (base): 0.139; (rim): 0.225. Complete. Mended at the rim. Flat base with angular profile. Conical body with pronounced curved profile. Flat horizontal rim. Two horizontal oblique handles of circular section, below the rim. Orange medium clay. Wheel marks on the interior surface. Buff slip. Many fingerprints. Brown paint, unevenly fired. On the interior surface bands on the base and the body. On the exterior surface four bands above the monochrome base and one under the rim. Zone on the body containing two metopes with a net pattern and two solid arcs defined by three vertical bands on either side. Strokes on the upper flat surface of the rim. Paint on top of the handles.

LM IIIC Early to Middle. This type of decoration (similar to FS 65.10) is used on a variety of open shapes, including kalathoi, deep bowls and cups. Very similar decoration from Ayios Theodoros (Seager 1906-7, pl. XXX:d). Cf. also similarly decorated fragments of deep bowls from Phaestos (Borgna 1997, fig. 2).

14. Figs. 10 and 13. Inv. 12356 (vase 19). Height: 0.132; diam. (base): 0.15; (rim): 0.254. Missing the knob on one of the handles. Deep cracking on the same handle caused during firing. Flat base with angular profile. Conical body with pronounced curved profile. Flat, horizontal, outcurving rim. Two horizontal wishbone handles with a conical knob on the top. Buff, medium clay. Lustrous slip of the same colour. Brown-reddish somewhat worn paint, unevenly fired. Monochrome on the interior surface with a reserved circle on the base and two reserved bands below the rim, the lower one decorated with a zigzag. On the exterior surface three bands on the lower body; zone of zigzag filled with oblique lines in various directions; zone of metopes, two on each side, slightly different between them: a) romboid motif filled with oblique lines on one side and chevrons on the other, spirals on the upper part and series of semicircles on the contour of the metopes; the metopes are separated by two vertical bands with horizontal strokes between them; b) Close style decoration consisting of romboid motifs, concentric semicircles, spirals, U-pattern, triangles filled with a fringed scale pattern; on the upper part zone of dots and a band. Strokes on the upper flat surface of the rim and on the back of the handle; paint on the knobs.

LM IIIC Middle. The handles of this specimen are clearly imitating a metal prototype. This feature is not uncommon on specimens with elaborate decoration (FS 290) such as a kalathos, with a narrower base, from tomb VI at Vrokastro (Hall 1914, fig. 92). The decoration with metopes, triglyphs and spiraliform motifs is very common in LM IIIC, for large and medium-sized vases, both open and close, especially for kraters, pyxides and kalathoi, which offer large surfaces for decoration (cf. FM 43.k, 61.17, 70.2, 73.11, 75.29). For a very similar decorative arrangement cf. a krater from Kavousi-Vronda (Gesell *et al.* 1995, 73, fig. 2:1). The dotted and fringed scale pattern finds parallel in a stirrup jar from Karphi (Seiradaki 1960, fig. 22:j).

Krateriskos

15. Figs. 10 and 15. Inv. 12344 (vase 6). Height: 0.982; diam. (base): 0.032; (rim): 0.07; (max.): 0.078. Intact with small chippings on the rim. Raised conical base, hollow underneath.

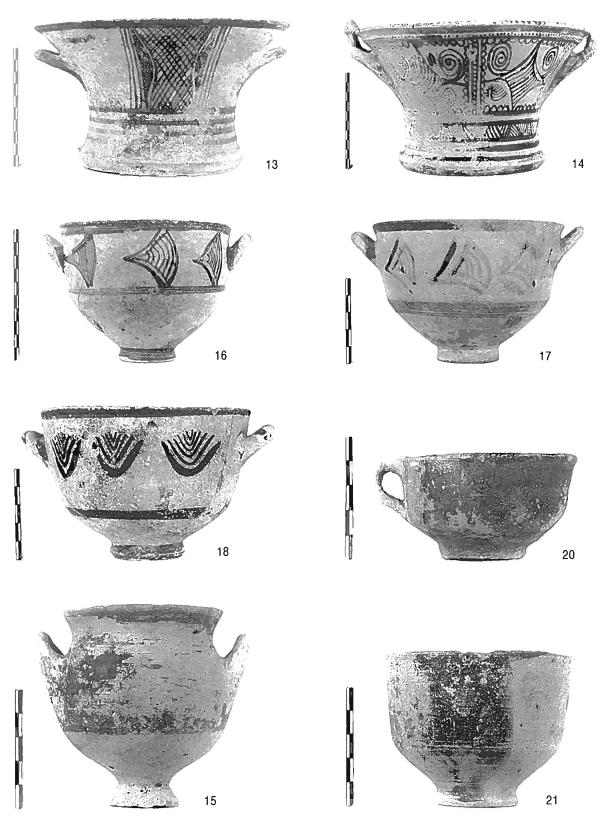


Fig. 10 - 13-14. Kalathoi; 15. Krateriskos; 16-18. Deep bowls; 20. One-handled cup; 21. Handleless cup.

Ovoid body. High, oblique, outcurving rim. Two horizontal, slightly oblique, asymmetrical handles of circular section, below the rim. Orange-buff fine clay. Slip of the same colour, lustrous in origin. Brown-orange paint, almost completely worn. Monochrome on the interior surface and on the upper part of the exterior surface, to the attachment of the handles.

Subminoan. This example, because of its ovoid body and rather high and well defined outcurving rim, is related to the PG examples from Knossos (Coldstream 1992, pl. 51: GA. 2; very similar, also Coldstream and Catling 1996, fig. 59:3). Also similar a specimen from Symi Viannou (Kanta 1991, 494, fig. 30); a krateriskos from Vrokastro has a slightly lower rim (Hall 1914, fig. 79). The type of decoration is common in Subminoan examples and continues into the Protogeometric.

Deep bowls

16. Figs. 10 and 12. Inv. 12360 (vase 23). Height: 0.086; diam. (base): 0.039; (rim): 0.125. Intact with small chippings. Raised base, hollow underneath. Bell-shaped body. Thin, slightly outcurving rim. Two horizontal oblique handles of circular section, below the rim. Buff, fine clay. Yellowish, very worn slip, initially lustrous. Black to brown worn paint. Monochrome on the interior surface. On the exterior surface bands on the base, below the handles and on the rim. Zone between the handles containing stylized papyri. Paint on the middle part and at the attachments of the handles.

17. Figs. 10 and 12. Inv. 12361 (vase 24). Height: 0.112; diam. (base): 0.044; (rim): 0.13; (max.): 0.15. Mended from three fragments and integrated on the rim. Cracking and chippings on the handle and above the base. Raised base, slightly hollow underneath. Bell-shaped, rather asymmetrical body. Thin rim, following the profile of the body. Two horizontal oblique handles of circular section, below the rim. Buff fine clay. Slip of the same colour, lustrous in origin. Brown, slightly worn paint, unevenly fired. Monochrome interior surface with a reserved circle on the base. On the exterior surface bands on the base, below the handles and on the rim. Zone between the handles containing papyri. Paint on the middle part and at the attachments of the handles.

LM IIIC early. The two deep bowls are very similar for shape and decoration (FM 18:149). This particular version of stylized papyrus (FS 286) starts in LH/ LM IIIA:2 and continues later into IIIB and the beginning of IIIC (Coulson 1997, fig. 16:2). The reserved band which appears on the interior side of the rim of no. 16 is a common feature in Crete and, according to Mountjoy, should not be confused with the mainland type of reserved bands (Mountjoy 1999b, 512). Cf. the deep bowls from Palaikastro-Kastri, dated to the beginning IIIC (Sackett *et al.* 1965, fig. 15:P21, P27). Also for the decoration, similar specimens from Phaestos (Borgna 1997, fig. 4).

18. Figs. 10 and 12. Inv. 12347 (vase 10). Height: 0.083; diam. (base): 0.042; (rim): 0.121. Mended from two fragments, cracking from the rim and chippings. Raised base, slightly hollow underneath. Bell-shaped body. Thin, slightly outcurving rim. Two small, horizontal, slightly oblique handles of circular section, below the rim. Buff, fine clay. Thin slip darker in colour than the clay. Black rather worn paint. Monochrome on the interior surface with a reserved circle on the base. On the exterior surface bands on the base, below the handles and on the rim. Zone between the handles containing three groups of pendant concentric semicircles. Paint on the attachments of the handles and on their backs.

LM IIIC middle. The relatively high base and the almost angular profile of the body assign this deep bowl to a more advanced phase of LM IIIC. These features constitute a secure dating point, as the type is well dated in many stratified deposits in the area, including Halasmenos (Coulson and Tsipopoulou 1994, fig. 15, from the settlement, and fig. 19, from the tholos tomb; also Tsipopoulou in press, for the typology). Specimens with similar profile also from Milatos and Mouliana (Kanta 1980, figs. 53:10, 81:6), and from Kommos (Watrous 1992, fig. 68:1920-1921), from non stratified deposits, attributed to an early phase of LM IIIC. Similar deep bowls from Khania-Kastelli (Hallager 2000, 139, pl. 35). The motif (FM 58.12) finds parallel in deep bowls from Palaikastro (Sackett *et al.* 1965, fig. 15:P27) and from Kavousi-Kastro (Mook and Coulson 1997, fig. 18 and Gesell *et al.* 1995, fig. 22:2, lacking the reserved band on the rim). Similar body profile, but decorated with a careless wavy line from Kavousi-Vronda (Day *et al.* 1986, 313-4, fig. 8:13). This particular vase has also a reserved band under the rim on the interior surface.

One-handled cups

19. Figs. 9 and 15. Inv. 12340 (vase 2). Height: 0.09; diam. (base): 0.039; (rim): 0.087; (max.): 0.098. Small chippings on the base and the rim. Raised base, slightly hollow underneath. Globular body. High outcurving rim. Vertical ribbon handle from the rim to the upper part of the body. Yellowish fine clay. Worn slip of the same colour. Black paint almost competely faded. Banded, with monochrome upper third of the outside surface. Monochrome inside.

Subminoan. The type derives from LH IIIC prototypes, decorated with bands and careless wavy lines (Mountjoy 1988, fig. 15). In LM IIIC this type of globular cup with high rim and slightly raised base and generally one-handled cups are not common (Seiradaki 1960, 20). Among the few cups from Karphi, type 2 is related to the Vasiliki example and has the same base, rim and general body profile, but a lower centre of gravity (Seiradaki 1960, fig. 14, pl. 8:e). Cf. also similar PG examples from Ayios Ioannis, grave I (Boardman 1960, pl. 36:I.46) and from Thronos-Kephala (D'Agata 1999, fig. 30.2).

20. Figs. 10 and 15. Inv. 12349 (vase 12). Height: 0.044; diam. (base): 0.037; (rim): 0.076. Intact. Small chippings on the rim. Raised base, slightly hollow underneath. Carinated body. Round, slightly outcurving rim. Vertical handle of elliptical section, from the rim to the middle of the body. Buff, fine clay. Self slip, rather worn. Orange worn paint. Dipped in paint once from the rim.

Subminoan. Very similar examples from Milatos (Kanta 1980, fig. 53:2), Kavousi-Vronda (Day *et al.* 1986, 379, fig. 12:31), and Karphi (Seiradaki 1960, fig. 14, type 1). Similar is also a Subminoan example with band decoration from Thronos-Kephala (D'Agata 2001, fig. 6:b). Examples from Perati in Attica show the same shallow body with a very low carination (Mountjoy 1999, fig. 237:591). The type, usually dipped in paint from the rim, continues well into the PG phase, at least in Knossos-Tekke (Sackett 1976, fig. 4; also Coldstream 1992, pl. 51:GA 3.) The one handled cups dipped in paint from the North Cemetery have a slightly less carinated body profile (Coldstream and Catling 1996, fig. 60:66-67).

Handleless cups

21. Figs. 10 and 15. Inv. 12345 (vase 8). Height: 0.066; diam. (base): 0.037; (rim): 0.037. Intact. Small chippings on the rim. Conical base, flat underneath. Bell-shaped, slightly

carinated body. Thin, slightly outcurving rim. Buff, fine clay. Self slip. Brown black paint, worn especially on the interior surface. Dipped in paint twice from the rim.

22. Fig. 15. Inv. 12352 (vase 15). Height: 0.043; diam. (base): 0.028; (rim): 0.063. Intact with a cracking. Raised base, somewhat irregular underneath. Asymmetrical conical body. Thin rim with a small spout. Buff orange medium clay. Thick slip of the same colour. Orange worn paint, unevenly fired. Dipped in paint twice from the rim.

23. Fig. 15. Inv. 12353 (vase 16). Height: 0.049; diam. (base): 0.03; (rim): 0.079. Intact. Flat base with string marks. Bell-shaped body. Thin, slightly outcurving rim. Buff fine clay. Self slip.

24. Fig. 15. Inv. 12358 (vase 21). Height: 0.061; diam. (base): 0.035; (rim): 0.082. Missing part of the rim and the body. Chippings on the rim and a few crackings. Slightly raised base, somewhat rough underneath. Conical body. Brown clay with few inclusions. Self slip.

25. Fig. 15. Inv. 12362 (vase 25). Height: 0.045; diam. (base): 0.035; (rim): 0.091. Intact. Flat base with string marks. Thin rim. Buff fine clay. Self slip.

Conical handleless cups, the Minoan shape *par excellence*, are present even in tombs of the end of the Bronze Age in Crete and, at least in eastern Crete, they continue down to the Geometric period. It is not easy to date these specimens. Cup 21 is carinated as the one handled cup 20, which has also the same decoration and may be assigned to the Subminoan period. Cups 22 and 23 are practically identical, despite the fact that the former is asymmetrical and somewhat shallower. 24 has the same profile of a conical cup from Building A at Kavousi-Vronda (Day *et al.* 1986, 363, fig. 4, trench 2600.5) attributed to LM IIIC-Subminoan. 25 is close to a PG example from Knossos, also rather shallow, with slightly raised base and thin incurving rim (Coldstream 1992, pl. 51: GB 28).

B) CLAY OBJECTS

26. Fig. 11. Inv. 12479 (M.E. 26). Height: 0.019; diam. (body): 0.021. Spherical bead. Grey clay. Incised decoration divided in three zones; oblique lines around the hole and zigzag motif on the maximum diameter.

27. Fig. 11. Inv. 12474 (M.E. 18a). Pres. height: 0.014; pres. width: 0.017. Fragment of spherical bead, very similar to the previous one. Grey clay.

28. Fig. 11. Inv. 12475 (M.E. 17). Height: 0.012; diam. (max.): 0.02. Conical bead with vertical perforation. Grey clay. Worn on both edges.

The clay beads with incised decoration are quite common in Cretan PG contexts and have been treated in detail by Evely (1996, 626-9, with bibliography). Paralells to our **26** can be found at Vrokastro and at Kavousi-Kastro (Hall 1914, fig. 73; Mook 1993, fig. 46). From the area of Knossos parallels are known from Ayios Ioannis tomb V, as well as from the Tekke Cemetery (Boardman 1960, 146, fig. 10; Catling 1996, pl. 157:Qf12).

(M.T.)

C) BRONZE OBJECTS

Fibulae

29. Fig. 11. Inv. 12464 (M.E. 6). Max. height: 0.089; max. width: 0.119; th.: 0.0012. Arched fibula with thickened bow of oval section. Big one-turn spring. Two globular beads, with one

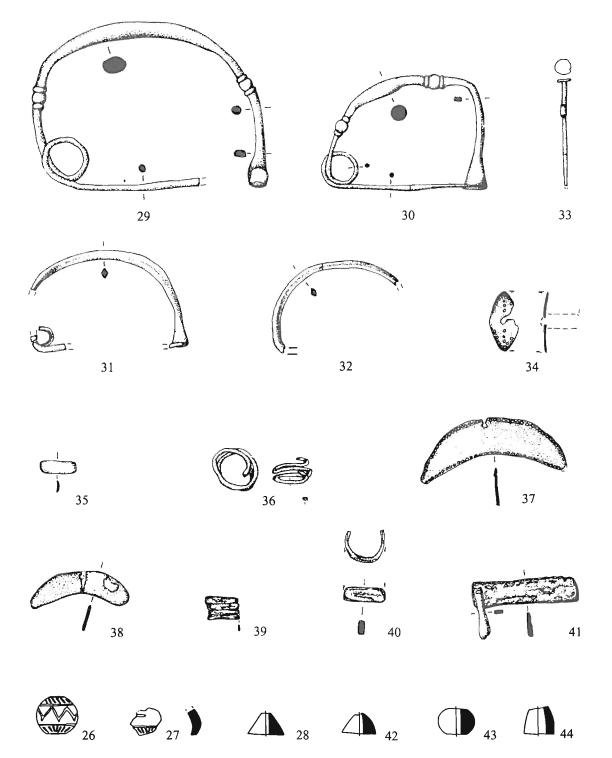


Fig. 11 – 26-28. Clay beads; 29-38. Bronze objects; 39-40. Iron objects; 41. Bimetallic object; 42. Lead bead; 43-44. Stone beads (1:2).

rib at each end, are set symmetrically on the arch above spring and catch-plate. Tip of the pin missing.

30. Fig. 11. Inv. 12461 (M.E. 2). Height: 0.062; width: 0.088; th.: 0.008. Arched fibula with asymmetrical thickened bow and big one-turn spring. Two globular beads with one rib at each end are set above the spring and on top of the arch; the arm above the catch-plate is slightly hammered. Complete, except the bent-up part of the catch-plate.

31. Fig. 11. Inv. 12466a (M.E. 8). Height: 0.05; width: 0.08; th.: 0.005. Arched fibula. Diamond section and hammered catch-plate with triangular outline; one turn spring with circular section. Two non joining fragments, part of the arch above the spring and part of the pin missing; the tip of the pin is stuck on the catch-plate.

32. Fig. 11. Inv. 12466b (M.E. 8). Height: 0.05; width: 0.07; th.: 0.005. Fragments of an arched fibula similar to 31. Only two joining fragments of the arch are preserved.

Fibula **29**, characterized by two symmetrical beads, has no exact parallels either in Crete or in other areas. In fact the nearest pieces belong to Blinkenberg Type II.10-11, with ribs rather than buttons on the arch and the arch section of various shapes (Blinkenberg 1926, 67-68, figs. 11:a-b; Sapouna-Sakellaraki 1978, pls. 7:219-20, 8:221-6). Two specimens from Mouliana, and a further two from Tylissos are datable within LM IIIC (Marinatos 1931; Sapouna-Sakellaraki 1978, nos. 219-222). Another one from Kavousi-Vronda, tomb 3 is somehow related to the Vasiliki one, although the heavy corrosion does not allow to detect all the details (Boyd 1901, 135-6, fig. 2; Blinkenberg 1926, 74, fig. 58; Sapouna-Sakellaraki 1978, 52, pl. 8:223). Outside Crete examples from Argos (Piteros 2001, 107-8, fig. 19), from Elateia-Alonaki (Demakopoulou 1989, 249, no. 258)⁶, from Pylona in Rhodes (Karantzali 2001, 70-1, fig. 42:1352, pl. 47:a) and from Naxos (Vlachopoulos 1999, 308) are equally datable to the LH IIIC.

Fibula **30** differs from the previous one, because of its definitely asymmetrical outline conforming better to the current typology of the D-shaped fibulas (Blinkenberg 1926, 74-76, Type 19; Sapouna-Sakellaraki 1978, 53, type IIk). An example from Vrokastro, tomb I, can be dated to LM IIIC-Subminoan (Hall 1914, pl. XX:C; Blinkenberg 1926, fig. 59; Sapouna-Sakellaraki 1978, 71, pl. 21:638A, erroneously included in her type IVb)⁷. This type finds also some good parallels in the Athens-Kerameikos, in particular from tomb 42 and 108 (Müller-Karpe 1962, figs. 3:10, 5:12)⁸, from Lefkandi-Skoubris 43 (Catling and Catling 1980, pl. 247:18) and also from the necropolis at Nea Ionia at Volos (Batziou-Eustatiou 1999, fig. 19). The type has also strong Cypriot connections. It appears on the island in LC IIIB, (Birmingham 1963, 89; Catling 1964, 243-6; Karageorghis 1975, 65; Giesen 2001, 92-110, pl. 17-21)⁹ and becomes the standard type of brooch during CG I (Karageorghis 1983, 372; Flourenzos 1997, pl. 44:114; Giesen 2001, 109).

⁹ An example from Kourion (Blinkenberg 1926, 234, XIII.1d) said to be associated only with

⁶ For the very important necropolis of Elateia-Alonaki cf. preliminary reports in ArchDelt, 40, 1985 (Chron.), 171; 41, 1986, 65-68; 42, B1, 1987, 231-4; 43, B1, 1988, 229-32. See also several specialistic studies in Proceedings of the First International Conference, The Periphery of the Mycenaean World (Lamia, Sept. 1994), Lamia 1999, 187-222.

⁷ For the revised chronology of the tomb group, see Tsipopoulou 1987.

⁸ The chronology of tomb 42, originally assigned to Submycenaean, has been revised by Mountjoy (1988), who proposes a LH IIIC late date for it. She also reports a similar fibula from an LH IIIC layer at Tiryns, illustrated by Kilian (1985, fig. 13). The piece however is very fragmentary and does not seem to belong to this type, but rather to the twisted bow type.

Fibulae 31 and 32 correspond to Blinkenberg Type II.3 (arc de section rhomboidale, ressort grand ou de grandeur moyenne), which has been included by Sapouna-Sakellaraki in her type IIc, which however is a mixture of several varieties (Blinkenberg 1926, 63-64; Sapouna-Sakellaraki 1978, 47, pls. 5:144-52, 6:154-68). An example of the type from tholos 3 at Kavousi-Vronda is associated with Subminoan material (Boyd 1901, fig. 2; Blinkenberg 1926, fig. 33; Sapouna-Sakellaraki 1978, pl. 5:147). The same date may be accepted for some pieces from the North Cemetery at Knossos¹⁰ and for one piece from Atsipades-Pezoulos, a cemetery dated from the LM IIIC to Subminoan (Agelarakis et al. 2001, fig. 9:M87b; Sapouna-Sakellaraki 1978, 152), while other items of the type from Palaikastro and from Arkades cannot be dated with precision (Sapouna-Sakellaraki 1978, pl. 5:150-2). The type is well known also in other parts of the Aegean. Examples from Athens-Kerameikos and from Salamis come from Subminoan contexts (Müller-Karpe 1962, figs. 1:3-4, 32:5), while others from Lefkandi have been found in Subminoan and in Early PG tombs (Catling 1980, 237-8, pl. 247:7-9). A piece from Mycenae, tomb G 31, is associated with pottery transitional between Submycenaean and PG, according to Desborough (1973, 95, pl. 34:d-e). In Cyprus similar examples appear in LC III and continue into the CG I and, possibly, later (Giesen 2001, 56-64).

Pin

33. Fig. 11. Inv. 12470 (M.E. 12). Height: 0.055; diam. (head): 0.008; th. (shaft): 0.003. Bronze pin. Flat disc head and shaft of round section. A strip of lamina is rolled around the shaft, where other pins have a swelling. Tip missing; edge of the disc head damaged.

This very simple piece does not offer many points for comparison. An example from Vrokastro has a much thicker head (Hall 1914, fig. 70), and one from Lefkandi is considerably bigger in size (Catling 1980, pl. 250). A third one from Olympia has a light swelling along the shaft (Kilian-Dirlmeier 1984, pl. 6:190).

Rings and spirals

34. Fig. 11. Inv. 12472 (M.E. 14). Height: 0.031; width: 0.015; th.: 0.001. Bronze finger ring. Oval bezel of beaten bronze decorated with embossed dots along the edge and along the vertical diameter. Hole pierced in the middle of the bezel for fastening the hoop through a rivet. Broken in two fragments; part of the bezel and hoop missing. Very corroded.

35. Fig. 11. Inv. 12469 (M.E. 11). Height: 0.006; diam.: 0.018; th.: 0.005. Bronze finger ring Complete. Beaten bronze with plano-convex section.

36. Fig. 11. Inv. 12468 (M.E. 10). Diam.: 0.023; th.: 0.0015. Three coiled bronze spiral made of wire, round in section.

Finger rings of beaten bronze with oval bezel riveted to the hoop, also called 'shield rings', are a common feature in Submycenaean tombs in the Kerameikos at

Bronze Age material, has been considered the earliest piece of the series, and the possible ancestor to those found in the Aegean (Catling and Catling 1980, 237). However, since the associated pottery has never been published, some caution on this point seems necessary.

¹⁰ Catling 1996, figs. 158:25.f13, 162:121.f1, 126:f9. The pieces from tombs 25 and 121 come from a Subminoan context; tomb 126 is dated to LG/EO, although Catling, on the base of the fibula, suggests that an earlier burial may have escaped attention.

Athens (Müller-Karpe 1962, figs. 3:3, 6, 4:3, 9; 5, 15). The bezel may be plain, but is often decorated *en pointillé* along the edge, occasionally with some more complex pattern. An example from Skoubris tomb 38 at Lefkandi, too badly preserved for restoration or illustration is said to be of the same type (Catling 1980, 247). In Crete a piece with an apparently plain bezel has been found in tomb 26 of the North Cemetery at Knossos (Catling 1996, 77, 557, fig. 158:26,f1), while another piece from the Diktaean Cave displays a rich rosette decoration, differing from the standard type, as the bezel and the hoop seem to be cut out from the same lamina (Boardman 1961, 37-42, figs. 17:179, 18:190)¹¹.

The shield ring from Vasiliki, although incomplete, conforms very well to the Athenian examples. The chronology suggested for the above parallels, and in particular for the Kerameikos tombs is Submycenaean or Subminoan, although a similar piece from Kalapodi may go back to Late Helladic IIIC (Felsch 1981, fig. 15), while a piece from Volos is assigned by the excavator to the Early PG period, although the tomb may fit well into the Submycenaean (Batziou-Eustatiou 1999, 122, fig. 14a-b)¹². The plain ring **35** and the hair-spiral **36** are common in Subminoan, Submycenean and later contexts and do not call for specific comments.

Pendants

37. Fig. 11. Inv. 12465 (M.E. 7); Height: 0.02; width: 0.0078; th.: 0.001. Crescent-shaped pendant, cut out of a bronze lamina. Line of dots *en pointillé* along the edges. Hole pierced in the middle of the convex side; its upper edge is broken and shows traces of another incomplete hole, pierced too near to the edge. Right corner missing.

38. Fig. 11. Inv. 12473 (M.E. 16). Height: 0.012; width: 0.05; th.: 0.0015. Crescent-shaped pendant with rounded corners, cut out of a bronze lamina. Hole pierced in the middle of the convex side. Broken in two parts with a lacuna near the hole. Traces of corrosion.

No satisfactory parallels are traced for the two pendants. Bronze laminae of various shapes, often decorated *en pointillé*, are known in LM IIIC and later contexts. An example from the so-called 'Kissamos Group' in Oxford has a trapezoid outline, vaguely reminiscent of our crescentic pieces (Boardman 1961, 49-54, 89-94, figs. 24-25, 37:387)¹³.

D) IRON AND BIMETALLIC OBJECTS

Rings

39. Fig. 11. Inv. 12463 (M.E. 5). Height: 0.007; diam.: 0.022; th.: 0.003. Massive ring hoop. Incomplete.

[&]quot; See also a plain gold ring from Vrokastro (Hall 1914, fig. 82).

¹² One may wonder if there is a relationship between the bronze shield rings decorated *en pointillé* and some examples of gold rings decorated with granulation, datable at least in one case to the IIIC, known from Tiryns (Karo 1930, 124, pl. II:4-5b, inv. 6210) and from eastern Crete (Xanthoudides 1904, fig. 13; Platon 1960, pl. 244b-c).

¹³ A small crescentic pendant of steatite, decorated with dotted circles has been found in tomb VI at Fortetsa (Brock 1957, pl. 7:115).

40. Fig. 11. Inv. 12467 (M.E. 9). Height: 0.018; diam.: 0.017; th. of wire: 0.001. Spiral. Four coils of rectangular section.

Bimetallic object

41. Fig. 11. Inv. 12480 (M.E. 15). Iron: height: 0.014; width: 0.055; th.: 0.002. Bronze: length: 0.027; width: 0.006; th.: 0.0015. Bimetallic object with a thick iron part of rectangular shape, with a small bronze appendix with rounded end, fastened through a rivet to the edge of one of the short sides.

The presence in the Vasiliki tomb of a number of iron objects is not particularly surprising, since evidence for the use of this metal has been found in several LM IIIC and Subminoan contexts¹⁴. Tomb groups at Kavousi and Vrokastro, not far from Vasiliki, show that iron was easily available in the area¹⁵. The very simple ring **39** belongs to the most common type of non-utilitarian iron artifacts, while **40** is rather peculiar, since iron is most unusual for producing a spiral¹⁶.

The bimetallic object **41** is of particular interest. It can be ascribed to the series of early tools produced in iron, with certain parts in bronze (bimetallic). These have been discussed at length by various authors, who have also put forward the Cypriot contribution in the early production of such objects (Desborough 1972a; Snodgrass 1971; 1982; Waldbaum 1982; Sherratt 1994; Catling 1996, 529-30). The vast majority of bimetallic objects are knives or swords, and our piece represents an interesting exception to the pattern, both for its typology and its technology. The object is complete and the thickness of its iron part is partially due to corrosion. The small bronze handle does not seem to be designed for fastening a piece of perishable material to the iron part, as in the case of the bronze rivets on the knives handles. Pending convincing parallels, two hypotheses can be put forward. If the small handle were supposed to swindle around the rivet in order to assume different positions, its function could have been similar to that of a modern razor. A second possibility is that the bimetallic element was applied to a more complex object in perishable material (wood, leather?) that, at the moment, is not possible to conjecture.

E) LEAD OBJECTS

42. Fig. 11. Inv. 12478 (M.E. 21). Height: 0.011; diam. (max.): 0.0185. Weight: gr 14.1. Conical bead with vertical perforation. Complete, but worn.

The shape of the bead conforms to that of the ubiquitous stone beads (see below), but the use of lead for this kind of objects is not common. This choice of material may lend some support to the suggestion that these objects may have been used as weigths for clothes (Iakovidis 1977)¹⁷.

¹⁴ The evidence is briefly summarized by Waldbaum (1978, 33-34); cf. also Sherratt 1994, 86-92; Catling 1996, 528-30; Pickles and Peltenburg 1997.

¹⁵ Tsipopoulou 1987. It is interesting to note in this context that at Halasmenos no iron was found, either in the main occupation levels (LM IIIC middle), nor in the limited PG reoccupation of the site.

¹⁶ A coiled iron ring is listed, but not illustrated, from tomb VI at Vrokastro (Hall 1914, 153).

¹⁷ Although the relation of the object to a system of weights is not likely, it may be useful to remember that its present weight of gr 14.1 is close to 1/4 of the Minoan unit of 60 gr and/or to two Phoenician units of gr 7.4, more common in the late II /early I millennium B.C. I am indebted for the information to M. E. Alberti to whom I express my gratitude. Cf. Parise 1991; 1999; Alberti 1999.

F) STONE OBJECTS

43. Fig. 11. Inv. 12476 (M.E. 18b). Height: 0.013; diam. (max.): 0.019. Globular bead with vertical perforation, slightly flattened at both ends.

44. Fig. 11. Inv. 12477 (M.E. 19). Height: 0.015; diam. (max.): 0.016. Bead shaped as an irregular truncated cone, with wide vertical perforation.

(L.V.)

IV. HUMAN REMAINS

The human bone excavated from the tholos tomb at Vasiliki included partial skeletons of seven individuals. Five adults and two children were represented by the recovered bone. The bone was fragmentary and encrusted with hard white deposits, probably of calcium carbonate. These occur when ground water percolating through the soil and stone above the tomb dissolves minerals in the stone and redeposits them on the bone and other material in the bottom of the tomb. Such accretions and staining are not unusual, and do not reflect any sort of cultural activity (Watkinson 1987; Brothwell 1981). The fact that all of the breaks in the bones show staining and accretions like those on the outer bone surfaces indicates that the disturbance and breakage of the bone is ancient, and not the result of recent activity or excavation.

The five adults excavated in the tomb could be identified by the five partially reconstructed crania. These were excavated in four units numbered K-1 through K-4, with K-3 actually consisting of two very fragmentary crania. The K-5 cranium belonged to a young child, and will be discussed later.

The skull numbered K-1 was a young adult, possibly a female. The very fragmentary condition of this skull makes the identification of sex difficult, but the bone was quite smooth and gracile, with none of the conspicuous muscle attachments common in male skulls. The cranial sutures had not yet began to fuse, suggesting that this was a fairly young adult (Bass 1971; Steele and Bramblett 1988).

The front and sided of the cranium labelled K-2 were reconstructed but the back of the head and the face were missing. The morphology of the frontal bone (forehead) and the lack of well developed muscle attachments suggest that this was a female. A partial mandible probably associated with this burial has the small pointed chin typical of a female. This individual had lost all of the teeth in her lower jaw before she died. In addition, the sagittal suture was completely closed and obliterated on the interior surface of the cranium, suggesting that this was an older adult at death (Bass 1971).

The more complete cranium from K-3, now designated K-3-A, includes much of the right half of the cranial vault as well as the left and right temporal bones, forming the lower sided and part of the base of the skull. The morphology of the eye orbits, muscle attachments and temporal bones indicates that this was a female (Bass 1971). The individual was an adult, but it was not possible to assign it to a specific age category.

The second individual's cranium collected with K-3 consists only of the top of the brain case including portions of the right and left parietals and the occipital bone. The occipital bone of K-3-B has well developed muscle attachments and a prominent external occipital protuberance indicating that this skull belonged to a male (Bass 1971). There was also a very robust, square-chinned mandible with the K-3 crania. This presumably belongs with the K-3-B male cranium. The preserved portion of the mandible was not missing any teeth at death, but the tooth crowns had broken away as a result of postmortem damage, making it impossible to evaluate the amount of wear of the teeth. The sagittal suture was completely obliterated on both the inner and outer surfaces, suggesting that this was an older adult (Steele and Bramblett 1988).

The K-4 cranium consisted of a frontal bone fragment including the top of the right eye orbit and portions of the left and right parietals. The preserved portions of the sagittal suture showed initial signs of closure, suggesting that the individual was a mature, but not elderly adult. It was not possible to determinate the sex of this skull (Steele and Bramblett 1988).

Also excavated with this cranium were three partial mandibles, preserving the left half in each case. None of these could be assigned to any particular skull. One of the mandibles had lost both the second and the third molars before death. On each of the other two mandibles, the third molar or 'wisdom tooth' was impacted, indicating that these people suffered from one of the common orthodontic problems which plague modern people.

The post cranial bone associated with these burials was commingled and impossible to assign to individual burials. Most portions of the skeleton were represented, and the repetition of elements indicates that at least three skeletons are present in the fragments. Presumably portions of all five skeletons are in fact represented, but it was not possible to accurately distinguish them.

Two children were also buried in the Vasiliki tholos tomb. One was a small child, less than 3 years old, and the other was older, but not more than 14 years old. Like the adult bone, the children's skeletons were encrusted with carbonate deposits. Because the subadult bone is smaller and thinner than adult bone, less of it survived to be excavated. Some portions of the skull and some long bone fragments were recovered, however.

The K-5 cranium belongs to the young child. It includes fragments of the braincase and the left temporal bone, including the petrous portion surrounding the inner ear. In addition there are unfused portions of four cervical vertebrae. The developmental stage of these vertebrae suggests that this child was less than three years old (Steele and Bramblett 1988).

A tibia shaft fragment probably belonging to the younger child had five growth arrest lines known as Harris lines. These lines develop at the growth plate between the end of the bone shaft and the epiphysis at the articular end. When a child experiences some sort of stress such as disease or malnutrition, growth can be temporarily interrupted. When this occurs, bone minerals continue to be deposited at the growth plate, but the bone fails to lengthen (Steinbock 1976). This results in a line of more dense mineral deposits visible on radiographs, or, as in this case, when the bone shaft is broken to reveal the interior surface. Repeated stress incidents result in a series of these lines such as the five found on this child's tibia. The distance between the first and last of these transverse lines is 11.75 mm and the distance between the lines ranges from 3 mm to 2.25 mm. Hunt and Hatch (1981) suggest that transverse lines resulting from seasonal nutritional stress should be

about one centimeter apart. The close spacing of these lines suggests recurring illness or other stress over the course of a year or a little more, rather than seasonal stress repeated during the child's lifetime. The location of the last of these lines approximately one centimeter from the growth plate indicates that these incidences of stress were probably not directly associated with the cause of death.

From the other child, portions of the right and left humerus, the unfused epiphysis forming the head of the femur, a fragment of a right femur shaft, a left clavicle and the right and left first rib were recovered. Finally there are portions of two lumbar vertebrae whose developmental stage suggests an age of at least 6 and less than 18 years (Steele and Bramblett 1988). The small size of the bone and the lack of epiphyseal fusion on the distal humerus further indicate that this child died between 6 and 14 years.

(M.A.L.)

V. CONCLUDING REMARKS

The Vasiliki-Kamaraki tholos belongs to a tomb type common in LM IIIC, which preserves in a miniature scale an earlier Mycenaean scheme. Most of the examples are concentrated in the south-central parts of Crete and in the culturally more conservative eastern areas of the island, including Lassithi. The architectural features of the Vasiliki tomb are those common in the tholoi of this period. They have small chambers, built with coarse, unworked stones, either circular or square/ rectangular in plan, with a diameter usually less than 2 m and a height of ca. 1.5 m (Belli 1991). It is interesting to compare the Kamaraki tholos to the one excavated by Seager in the immediate vicinity, namely the Vasiliki-Ayios Theodoros which, however, is not preserved and it is known only through the excavator's report. Seager (1906-7) describes the tomb as a carefully built tholos, 2 m in diameter and 1.80 m in height, with a dromos 3 m long. Inside the tomb there was an intact larnax, containing a gold pendant, three carnelian beads and a small bronze dagger. Scanty remains of human bones and of a dog, together with broken vessels were scattered on the floor. The excavator, in consideration of the presence of the dagger and of the leg-bones' size, attributed the human remains to a man. He also suggested that the burial was disturbed in antiquity by pillagers. There are some minor differences in the architecture of the two tholoi, but the general scheme is very similar. It is possible that the people who built and used the Ayios Theodoros tholos belonged to a high social class as suggested by: 1) the accurate architecture; 2) the presence of a larnax; 3) a bronze dagger, a gold pendant and some carnelian beads found in the larnax; 4) the bones of a dog, accompanying the burial. The number of the dead buried in the Ayios Theodoros tholos is not known, but we do know that the vases found in it were a stirrup jar, two kalathoi and a flask. Due to the probable plundering it is not easy to decide whether this tholos contained a single burial or, in case it contained more individuals, the rest of the bones and of the grave gifts were lost. Consequently, the comparison between the two tholoi of Vasiliki (Ayios Theodoros and Kamaraki) cannot be based on secure grounds, as a part of the evidence from the former was probably lacking already at the time of the excavation. They should have been quite similar in their general appearance, the main

differences being the slightly more accurate architecture and the presence of the larnax in the former. Moreover the dagger, associated with the remains of a dog, may have characterized the dead as a hunter¹⁸, while the only adult male buried in the Vasiliki-Kamaraki tomb was not accompanied by weapons.

As it is often the case with Cretan tombs used for multiple burials, especially with chambers of small dimensions, the preservation of the skeletal material in the Vasiliki-Kamaraki tholos was extremely fragmentary and did not allow us to define the exact number of the burials at the time of the excavation. However, the study of the bone material concluded that they belonged to seven individuals. Furthermore, given the fact that no skeleton was found undisturbed, it was not possible to attribute any number of grave goods to a particular burial.

The chronological range for the Vasiliki tomb group is early LM IIIC to Protogeometric. The writers' aim at the beginning of the present study was to contribute towards a better understanding of the internal sequence of the relative chronology from the early phase of LM IIIC to the Subminoan. Yet, the careful examination of the excavation data and of the current knowledge on the typological classification does not allow a firm attribution in most cases. Nevertheless, on the basis of the excavation evidence the finds' sequence can tentatively be arranged as follows:

1. The PG stirrup jar 5 (Figs. 8 and 15) stands isolated from the rest of the material and appears to be the most recent offering in the tholos. Whether it belonged to a burial or was deposited at a later date for a ritual purpose is not easy to decide, although its position on top of all the other offerings, not embedded in the earth of the filling (Fig. 5), may suggest that the latter is more likely.

2. The south half of the chamber contained the majority of the vases, clearly removed from their original position, apparently to make space for the latest burial. The largest group of vases are not homogeneous chronologically and they range between LM IIIC early and Subminoan. The earliest among them are the deep bowls 16 and 17 (Figs. 10 and 12). Some of the vessels are clearly LM IIIC middle, namely the pyxis 1 (Figs. 8 and 12), the kalathos 14 (Figs. 10 and 13), and the stirrup jars 2 and 3 (Figs. 8 and 13). Among the heap of burial offerings removed from their original position there must have been at least one burial of Subminoan date, as we can deduce from the vases 4, 8, 9, 11, 19, 20 and 21 (Figs. 8-10 and 14-15), as well as from some of the metal objects 30-32, 34 (Fig. 11).

3. The latest burial was deposited at the north side of the chamber, accompanied by the vases 7, and 15 (Figs. 9-10 and 15) and the beads 26-28 and 42-44 (Fig. 11). They can be dated to an advanced moment of the Subminoan phase, setting thus the chronology for the final use of the tomb.

It is interesting to note that the Subminoan group of finds includes some examples which do not find good parallels among the Cretan material, but rather belong to the Mainland repertoire. These are the amphora 6, the juglets 10 and 11, the one handled cup 19, the carinated cup 20, and the bell cup 21. The Mainland connection is further strengthened by a detailed analysis of the metal objects. Many of them find exact parallels in the Athenian cemetery at the Kerameikos and were probably imported from that area, most probably the shield ring 34. Also the fibulas

¹⁸ On dog burials cf. Day 1984; Alberti 2001, 176-7.

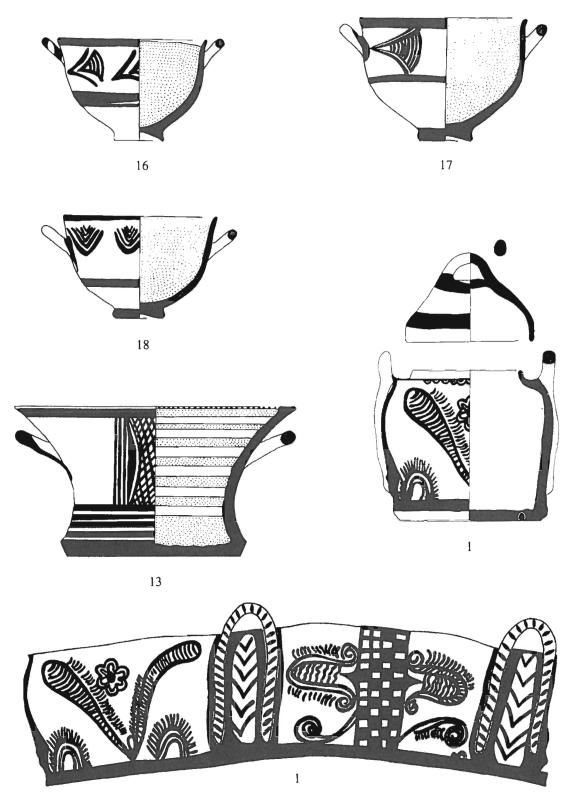
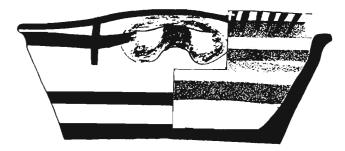


Fig. 12 - 16-18. Deep bowls (1:3); 13. Kalathos (1:3); 1. Pyxis and its side decoration (1:4).



12



14



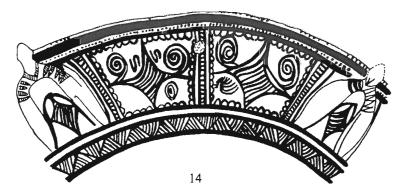
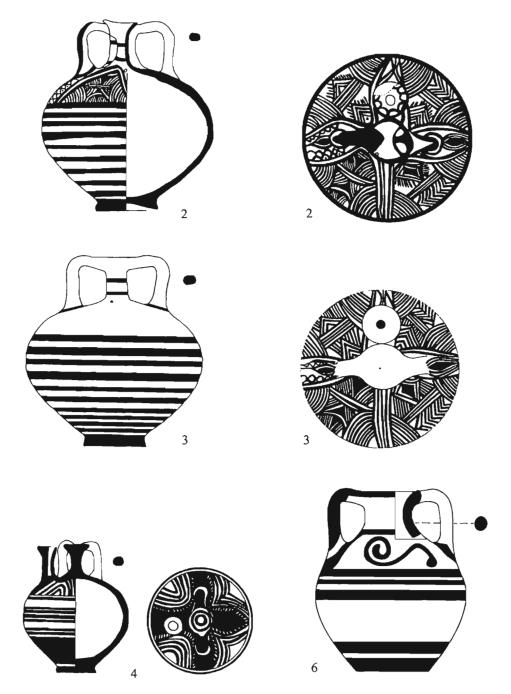
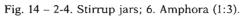


Fig. 13 – 12. Basin (1:3); 14. Kalathos and its complete decoration (1:4).





30-32 have very good parallels in the same cemetery, while the fibula **29**, finds some comparison in Mainland Greece and on Rhodes, as well as in Crete. Although these dress accessories could not have been necessarily gender specific, the presence in the tomb of three females, may suggest a direct attribution. In this case we may perhaps follow the same line of thought and suggest that one or more women were of Attic origin.

The very existence of the concentration of metal jewellery in the Vasiliki tholos, is intriguing. In contrast at Knossos, generally considered the most important, if not the only, gateway for Submycenaean-PG imports from Mainland Greece to the island, nothing similar is known. The great importance which is always given to Knossos in general studies, is surely due to its prominent position throughout the history of the island, but may also be biased by the far more intensive excavations there than elsewhere in Crete. The area of the isthmus of Hierapetra seems rather provincial and isolated compared to Knossos. During the final phase of the Bronze Age and in the early Iron Age, in lack of central power and because of the extreme fragmentation, Crete, along with other areas in the Aegean, presents a complex and still not fully understood pattern of interconnections. Within this framework various peripheral areas, such as the Gulf of Mirabello and the Hierapetra isthmus, seem to have been able to develop direct contacts with many areas in the Aegean and beyond. The means of these contacts could have been small scale trade, exchange of gifts, movement of population, either in groups or by individuals, such as in marriage, and probably also piracy.

It is worth noting in this context that traditionally this area had contacts with Mainland Greece in the earlier Mycenaean times, either direct or indirect, as proved by the presence of imported pottery in many burial assemblages, starting from the LM/LH IIIA onwards¹⁹. The Mycenaean elements in the wider area of Mirabello-Hierapetra, which are particularly frequent especially after the fall of the Mycenaean palaces, has recently become a focus of research. The excavation at Halasmenos has in fact produced enough evidence to show that the population who lived there, had at least mixed cultural characteristics, and probably also mixed ethnic origin, as revealed by the architecture, the pottery shapes, and the loomweights (Tsipopoulou and Nowicki in press, Tsipopoulou in press, Paschalidis in press).

Overseas contacts continue after the end of the Bronze Age, although not always in identical patterns. A recent study by Donald Jones (2000, 216-92), summarizes the evidence and provides catalogues of early Iron Age foreign artefacts imported to Crete from overseas and of Cretan finds abroad. According to Jones' list, which however needs to be used with a cautious and critical approach²⁰, no Attic Submycenaean finds have been discovered at Knossos to date, and the earliest imports there are dated to the Attic Late PG (Jones 2000, 92). This can only stress the importance of the tomb group of Vasiliki-Kamaraki, in which several personal ornaments, closely related to Attica, are concentrated in a single tomb. Apparently

¹⁹ Cf. sites such as Episkopi (Kanta 1980, 154), Gra Lygia (Apostolakou 1998, 55-56, cat. 35, fig. 37, pl. 15) and Kritsa (Kanta 1980, 139; Tsipopoulou and Vagnetti in press).

²⁰ As an example, we remind that the pins from Fortetsa tomb III and from Vrokastro chamber tomb 3 (Jones 2000, 217, no. 20 and 267, no. 4) listed as possible Attic imports, belong to a well known Cretan type.

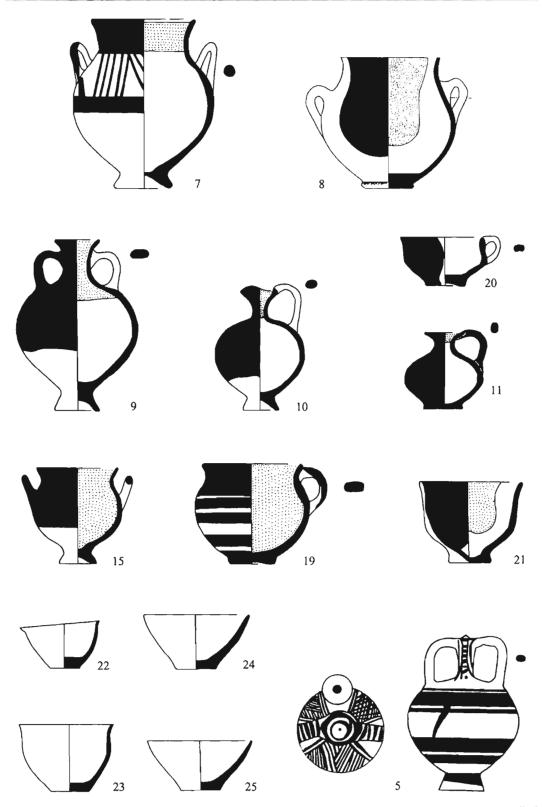


Fig. 15 – 5. Stirrup jar; 7-8. Amphoriskoi; 9. Flask; 10-11. Juglets; 15. Krateriskos; 19-20. One-handled cups; 21-25. Haldleless cups (1:3).

one deals here probably with a special case, either of a person or a family with strong Attic connections; alternatively the objects might have been received as gifts. The rest of eastern Crete, according to the available publications of sites and finds, presents the following picture. There are not any published Attic objects from Karphi or Kavousi. The only known site in eastern Crete which displays relations with Mainland Greece (and also other areas of the Acgean as well as Egypt and Cyprus) is Vrokastro. Vrokastro had a safe harbour and must have been the most open to the maritime contacts site of the early Iron Age in the whole of the so-called 'Eteocretan' region (Tsipopoulou 1987; Jones 2000). So, it could be suggested that the Attic metal artefacts, arrived at Vasiliki probably through Vrokastro, which is the only good harbour in the area.

Among the metal finds of the Kamaraki tholos, the bimetallic object **41** might have some connection with the eastern Mediterranean, namely with Cyprus, where bimetallic items are very common, and appear at an early date (Snodgrass 1982; Waldbaum 1982)²¹. As for evidence for relations with the eastern Aegean and Cyprus, other sites in the wider area offer more examples of direct influence. Examples to this are certain pottery shapes, especially popular in the Mirabello-Hierapetra district with pronounced eastern features and connections, such as the flasks and the bird vases (Desborough 1972b; Tsipopoulou 1997, 460, with further bibliography). The architectural characteristic of some tholos tombs, including tomb A at Kritsa, have been related to Cypriot examples (Belli in press, a-b). The subject is a complex one and obviously outside the limits of the present publication, but one should note that every study of LM IIIC material in the area, does not fail to reveal the mixed character of the period.

The fact that the group of people (a family?) buried in the Vasiliki tholos were accompanied in their grave by an outstanding group of metal objects must be significant. The excavation of a similar in architecture tholos tomb at Halasmenos (Coulson and Tsipopoulou 1994) which was used again for five individuals, but did not contain any metal, showed that not everyone could afford to be buried with objects of this type. As it is known from anthropological and archaeological parallels, almost in every known society, jewellery constitutes a means for social differentiation and personal identity, as well as a statement, to the rest of the community as for the rank to which any particular person belongs²². Furthermore, the absence of weapons both from the tholos of Halasmenos and from that of Vasiliki offers another hint for social differentiation, as an *argumentum ex silentio*. The only man buried in the Vasiliki tomb obviously was not a warrior, nor a hunter.

As for the assignment of the Vasiliki tholos to one of the already known and excavated settlements in the vicinity, there is, unfortunately, only negative evidence.

²¹ Jones (2000, 86, fn. 9) emphasizes the possibility that bimetallic objects may also be related to areas of manufacture other than Cyprus. He points out that there is evidence for early (i.e. 12th century B.C.) iron-working at Karphi and Vrokastro. It must be noted, however, that the pottery of the Vasiliki-Kamaraki tholos does not offer similar evidence for external contacts, showing simply how much overestimated pots are when used as the main evidence for external relations. For a skeptical position about the primacy of Cyprus in iron-working cf. also Zimmermann 2001.

²² For a useful methodological approach to defined archaeological groups cf. Kilian-Dirlmeier 1985, 1986, 1988. More in general and recently Whitley 2002 (with further bibliography) and Pilali-Papasteriou 2000, for evidence different from burials.

It is not possible to connect the tomb with either of the settlements in its immediate surrounding area, i.e. Vasiliki-Kephala and Halasmenos, given the distance of the tomb from both of them, and also to the fact that the cemeteries for both settlements have been located and partially excavated (Seager 1906-7; Coulson and Tsipopoulou 1994). The discovery of the Vasiliki tomb is significant though, because it indicates either that there was another, not yet located settlement on the low plain, or at least that some people lived and buried their dead on lower sites, outside of the main settlements. This could imply a settlement pattern similar to the traditional metochia of Crete, where certain families live, temporarily or permanently, outside of the villages and near their fields. Alternatively, if this tholos is not isolated, but belongs to an organised cemetery, one should imply the presence of another settlement in the area, either on the plain, or at the foot of a hill. This hypothetical settlement should have been more long-lived than Halasmenos, where there is no Subminoan evidence and the Protogeometric reoccupation is very limited. However, it is interesting to note in this context, that the recent intensive survey conducted in the area (Watrous et al. 2000, 477) failed to locate any sites of this period on the lower lands.

(M.T., L.V.)

Metaxia Tsipopoulou 24° Ephoria for Prehistoric and Classical Antiquities GR-72100 Ayios Nikolaos – Crete Lucia Vagnetti CNR-ICEVO Via Giano della Bella, 18 I-00162 Roma

Maria A. Liston Anthropology and Classical Studies University of Waterloo Waterloo, Ontario N2L 3G1 – Canada

ABBREVIATIONS AND BIBLIOGRAPHY

- CG: Cypro Geometric; FM: Furumark Motif; FS: Furumark Shape; LC: Late Cypriot; LH: Late Helladic; LM: Late Minoan; PG: Protogeometric.
- Agelarakis A., Kanta A., Moody J. 2001, Cremation burials in LMIIIC-Subminoan Crete and the Cemetery at Pezoulos Atsipadhes, Crete, in Stampolidis (ed.) 2001, 69-82.
- Apostolakou V. 1998 (publ. 2002), Υστερομινωικοί ΙΙΙ τάφοι στη Γραλυγιά Ιεράπετρας, ArchDelt 53A', 25-88.
- Alberti L. 2001, Costumi funerari medio minoici a Cnosso: la necropoli di Mavro Spileo, SMEA 43, 163-87.
- Alberti M. E. 1999, Il sistema ponderale egeo tra omogeneità e flessibilità: continuità e discontinuità tra il mondo minoico e quello miceneo, in La Rosa *et al.* (eds.) 1999, 339-50.
- Bass W. M. 1971, Human Osteology: A Laboratory and Field Manual of the Human Skeleton (2nd edition), Missouri Archaeological Society, Columbia.
- Batziou-Eustatiou A. 1999, Το νεκροταφείο της Νέας Ιωνίας (Βόλου) κατά τη μετάβαση από την YE IIIΓ στην ΠΓ εποχή, in Acts of the First International Conference, The Periphery of the Mycenaean World (Lamia Sept. 1994), Lamia, 117-30.

Belli P. 1991, Tholoi nell'Egeo dal II al I millennio, in Musti et al. 1991, 425-50.

- Belli P. (in press a), Some architectural features of two tholos tombs at Kritsa-Lakkoi (Eastern Crete), in *Proceedings of the 9th International Cretological Congress* (Ayios Nikolaos 2001).
- Belli P. (in press b), Aspects of monumental funerary architecture in the Aegean and the Mediterranean, in International Symposium " $\Pi \Lambda OE\Sigma$. Interconnections in the Mediterranean" (Rethymno, September-October 2002).
- Birmingham J. 1963, The Development of the Fibula in Cyprus and the Levant, *PEQ* 95, 80-112. Blinkenberg Ch. 1926, *Fibules grecques et orientales*, Copenhagen.
- Boardman J. 1960, Protogeometric Graves at Ayios Ioannis near Knossos, BSA 55, 128-48.
- Boardman J. 1961, The Cretan Collection in Oxford, Oxford.
- Borgna E. 1997, Some observations on Deep Bowls and Kraters from the "Acropoli mediana" at Phaistos, in Hallager and Hallager 1997, 273-303.
- Boyd H. 1901, Excavations at Kavousi, Crete, AJA 5, 125-57.
- Brock J. K. 1957, Fortetsa. Early Greek Tombs near Knossos, Cambridge.
- Brothwell D. R. 1981, Digging up Bones, British Museum (Natural History), London.
- Cadogan G. 1967, Late Minoan IIIC Pottery from the Kephala Tholos Tomb near Knossos, BSA 62, 257-66.
- Catling H. W. 1964, Cypriot Bronzework in the Mycenaean World, Oxford.
- Catling H. W., Catling E. A. 1980, Objects of Bronze, Iron and Lead, in M.R. Popham et al. (eds.), Lefkandi I. The Iron Age, London, 231-64.
- Catling H. W. 1996, The objects other than pottery in the Subminoan Tombs, in Coldstream and Catling 1996, 517-37.
- Coldstream J. N. 1963, Five Tombs at Knossos, BSA 58, 30-43.
- Coldstream J. N. 1992, Early Hellenic Pottery, in Sackett (ed.) 1992, 67-87.
- Coldstream J. N., Catling H. W. (eds.) 1996, Knossos North Cemetery. Early Greek Tombs, London.
- Coldstream J. N., Eiring L. J., Forster G. 2001, Knossos Pottery Handbook. Greek and Roman, London.
- Coulson W. D. E. 1997, The Late Minoan IIIC Period on the Kastro at Kavousi, in J. Driessen A. Farnoux (eds.) 1997, 59-72.
- Coulson W. D. E., Tsipopoulou M. 1994, Preliminary Investigations at Halasmenos, Crete, 1992-93, Aegean Archaeology I, 65-97.
- D'Agata A. L. 1999, Defining a Pattern of Continuity During the Dark Age in Central-Western Crete: Ceramic Evidence from the Settlement of Thronos/Kephala (Ancient Sybrita), SMEA 41, 181-218.
- D'Agata A. L. 2001, Ritual and Rubbish in Dark Age Crete: The Settlement of Thronos/Kephala (Ancient Sybrita) and the Pre-Classical Roots of a Greek City, *Aegean Archaeology* 4 (1997-2000), 45-60.
- Day L. P. 1984, Dog Burials in the Greek World, AJA 88, 21-32.
- Day L. P., Coulson W. D. E., Gesell G. 1986, Kavousi 1983-1984: The Settlement at Vronda, Hesperia 55, 355-87.
- Demakopoulou K. (ed.) 1989, Ο μυκηναϊκός κόσμος. Πέντε αιώνες πρόϊμου ελληνικού πολιτισμού, 1600-1100 π. Χ., Athens.
- Desborough V. R. 1972a, The Greek Dark Ages, London.
- Desborough V. R. 1972b, Bird Vases, CretChron, 24, 245-77.
- Desborough V. R. 1973, Late Burials from Mycenae, BSA 68, 87-102.
- Driessen J., Farnoux A. (eds.) 1997, La Crète Mycénienne, Athènes.
- Eliopoulos T. 1998, A Preliminary Report on the Discovery of a Temple Complex of the Dark Ages at Kephala Vasilikis, in V. Karageorghis, N. Stampolidis (eds.), *Proc. Int. Symposium "Eastern Mediterranean. Cyprus-Dodecanese-Crete 16th-6th cent. B.C."* (Rethymno-Crete, May 1997), Athens, 301-13.

- Evans A. J. 1928, The Palace of Minos, II.1, London.
- Evely D. 1996, Other materials, in Coldstream and Catling (eds.) 1996, 621-36.
- Felsch R. C. S. 1981, Mykenischer Kult im Heiligtum bei Kalapodi?, in R. Hägg, N. Marinatos (eds.), Sanctuaries and Cults in the Aegean Bronze Age, Stockholm, 81-89.
- Flourenzos P. 1997, The Early Geometric Tomb no. 132 from Palaepaphos, RDAC, 205-18.
- Furumark A. 1941, Mycenaean Pottery. Analysis and Classification, Stockholm.
- Gesell G. C., Coulson W. D. E., Day L. P. 1991, Excavations at Kavousi, Crete, 1988, Hesperia 60, 146-77.
- Gesell G. C., Day L. P., Coulson W. D. E. 1983, Excavations and Survey at Kavousi, 1978-1981, Hesperia 52, 389-420.
- Gesell G. C., Day L. P., Coulson W. D. E. 1995, Excavations at Kavousi, Crete, 1989 and 1990, Hesperia 64, 67-120.
- Giesen K. 2001, Zyprische Fibeln. Typologie und Chronologie, Jonsered.
- Hall E. 1914, Excavations in Eastern Crete, Vrokastro, Philadelphia.
- Hallager B. P. 2000, The Late Minoan IIIC Pottery, in E. Hallager, B. P. Hallager (eds.) 2000, The Greek-Swedish Excavations at the Agia Aikaterini Square Kastelli, Khania, 1970-1987, Stockholm, 135-74.
- Hallager E., Hallager B. P. (eds.) 1997, Late Minoan III Pottery. Chronology and Terminology, Athens.
- Hood M. S. F., Huxley G., Sandars N. 1958-1959, A Minoan Cemetery on Upper Gypsades, BSA 53-54, 194-262.
- Hunt E. E., Hatch J. W. 1981, The Estimation of Age at Death and Ages of Formation of Transverse Lines from Measurements of Human Long Bones, American Journal of Physical Anthropology 54, 461-9.
- Jones D. W. 2000, External Relations of Early Iron Age Crete, 1100-600 B.C., Philadelphia.
- Iakovidis S. 1977, On the use of Mycenaean 'buttons', BSA 72, 113-19.
- Kanta A. 1980, The Late Minoan III Period in Crete. A Survey of Sites, Pottery and their Distribution, Göteborg.
- Kanta A. 1991, Cult, Continuity and the Evidence of Pottery at the Sanctuary of Syme Viannou, Crete, in Musti *et al* (eds.), 479-505.
- Karageorghis V. 1975, Alaas. A Protogeometric Necropolis in Cyprus, Nicosia.
- Karageorghis V. 1983, Palaepaphos-Skales. An Iron Age Cemetery in Cyprus, Konstanz.
- Karantzali E. 2001, The Mycenaean Cemetery at Pylona on Rhodes, Oxford.
- Karo G. 1930, Schatz von Tiryns, AM 55, 119-40.
- Kilian K. 1985, Civiltà micenea in Grecia: nuovi aspetti storici ed interculturali, in Magna Grecia e mondo miceneo. Atti del XXII Convegno di Studi sulla Magna Grecia (Taranto 1982), Taranto, 53-96.
- Kilian-Dirlmeier I. 1984, Nadeln der frühelladischen bis archaischen Zeit von der Peloponnes (PBF, XIII:8), München.
- Kilian-Dirlmeier I. 1985, Noch einmal zu del 'Kriegergräbern' von Knossos, JRGZM 32, 196-214.
- Kilian-Dirlmeier I. 1986, Beobachtungen zu den Schachtgräbern von Mykenai und zu den Schmuckbeigaben mykenischer Mannergräber, *JRGZM* 33, 159-98.
- Kilian-Dirlmeier I. 1988, Jewellery Groups in Mycenaean and Minoan 'Warrior Graves' in E. B. French, K. A. Wardle (eds.), Proc. of the Conf. "Problems in Greek Prehistory" (Manchester 1986), Bristol, 161-71.
- La Rosa V., Palermo D., Vagnetti L. (eds.) 1999, ἐπὶ πόντον πλαζόμενοι. Simposio italiano di Studi Egei dedicato a Luigi Bernabò Brea e Giovanni Pugliese Carratelli (Roma 1998), Roma.
- Marinatos S. 1931, Μία υστερομινωική καύσις νεκρού εκ Τυλίσου, AM 66, 112-8.
- Mook S. M. 1993, The Northwestern Building: Houses of the Late Bronze Age and Early Iron Ages on the Kastro at Kavousi, East Crete, Ph. D. Thesis, University of Minnesota.

- Mook S. M., Coulson W. D. E. 1997, Late Minoan IIIC Pottery from the Kastro near Kavousi, in Hallager and Hallager (eds.) 1997, 337-70.
- Mountjoy P. A. 1988, LH IIIC Late versus Submycenaean. The Kerameikos Pompeion Cemetery reviewed, JdI 103, 1-37.
- Mountjoy P. A. 1999a, Regional Mycenaean Decorated Pottery, Rahden/Westf.
- Mountjoy P. A. 1999b, Late Minoan IIIC/Late Helladic IIIC: chronology and terminology, in P. P. Betancourt, V. Karageorghis, R. Laffineur, W.-D. Niemeier (eds.), MELETEMATA. Studies in Aegean Archaeology presented to Malcolm H. Wiener as he enters his 65th Year (= Aegaeum 20), Liège, 511-15.
- Muhly J. D., Maddin R., Karageorghis V. (eds.) 1982, Early Metallurgy in Cyprus, Nicosia.
- Müller-Karpe H. 1962, Die Metallbeigaben der früheisenzeitlichen Kerameikos Gräber, *JdI* 77, 59-129.
- Musti D. et al. (eds.) 1991, Atti del Convegno Internazionale "La transizione dal Miceneo all'alto Arcaismo. Dal palazzo alla città" (Roma 1988), Roma.
- Parise N. F. 1991, Dai pesi egei per la lana alla mina di Dudu, *Quaderni ticinesi di numismatica* e antichità classiche, 20, 13-6.
- Parise N. F. 1999, Alla ricerca dei fondamenti 'micenei' delle misure ponderali greche, in La Rosa et al. (eds.) 1999, 351-3.
- Paschalidis C. (in press), Στοιχεία μυκηναϊκού χαρακτήρα στην Ανατολική Κρήτη κατά το τέλος της εποχής του Χαλκού: Νέα μέγαρα στο Χαλασμένο Ιεράπετρας, in Proceedings of the 9th International Cretological Congress (Ayios Nikolaos 2001).
- Pilali-Papasteriou A. 2000, Τα εξαρτήματα της εξωτερικής εμφανίσης ως δείκτες κοινωνικής διαστρωματώσης, in *Proceedings of the 8th International Cretological Congress*, Herakleion, 31-9.
- Pickles S., Peltenburg E. 1997, Metallurgy, Society and the bronze/iron transition in the East Mediterranean and the Near East, *RDAC*, 67-100.
- Piteros Ch. I. 2001, Ταφές καὶ τεφροδόχα αγγεία τύμβου της ΥΕ ΙΙΙΓ στο Άργος, in Stampolidis (ed.) 2001, 99-120.
- Platon N. 1953, Η αρχαιολογική κίνησις εκ Κρήτη κατά το έτος 1953, CretChron 7, 479-92.
- Platon N. 1960, Ανασκαφή ΥΜΙΙΙΓ θολοτού τάφου Φωτούλας Πραίσου, PAE, 303-5.
- Popham M. 1992, The Sub-Minoan Pottery, in Sackett (ed.) 1992, 59-66.

Prokopiou N. 1994, Η μετάβαση από το τέλος της εποχής του χαλκού στην πρώϊμη εποχή του σιδήρου, in L. Rocchetti (ed.), Sybrita. La valle di Amari fra Bronzo e Ferro, Roma, 249-54. Sackett L. H. 1976, A New Figured Crater from Knossos, BSA 71, 117-29.

- Sackett L. H. (ed.) 1992, Knossos. From Greek City to Roman Colony. Excavations at the Unexplored Mansion II, London.
- Sackett L. H., Popham M. R., Warren P. M. 1965, Excavations at Palaikastro, VI, BSA 60, 248-315.
- Sakellarakis Y., Sakellaraki E. 1997, Archanes, Minoan Crete in a New Light, Athens.
- Sapouna-Sakellaraki E. 1978, Die Fibeln der griechischen Inseln (PBF, XIV:4), München.
- Seager R. B. 1904-5, Excavations at Vasiliki, 1904, University of Pennsylvania. Transactions of the Department of Archaeology, Free Museum of Science and Art 1, 207-21.
- Seager R. B. 1906-7, Report of Excavations at Vasiliki, Crete, in 1906, University of Pennsylvania. Transactions of the Department of Archaeology, Free Museum of Science and Art 2, 111-32.
- Seager R. B. 1908, Excavations at Vasiliki, in Hawes H. B., Williams B. E., Seager R. B., Hall E. H., Gournia, Vasiliki and other Prehistoric Sites on the Isthmus of Ierapetra, Crete, Philadelphia.
- Seiradaki M. 1960, Pottery from Karphi, BSA 55, 1-37.
- Sherratt S. 1994, Commerce, iron and ideology. Metallurgical innovation in 12th-11th century Cyprus, in V. Karageorghis (ed.), *Cyprus in the XI century BC*, Nicosia, 59-106.

Snodgrass A. M. 1971, The Dark Age of Greece, Edinburgh.

- Snodgrass A. M. 1982, Cyprus and the beginning of iron technology in the Eastern Mediterranean, in Muhly et al. (eds.) 1982, 285-96.
- Spanakis S. 1991, Πόλεις και χωριά της Κρήτης, Herakleion.
- Stampolidis N. Chr. (ed.) 2001, Καύσεις στην Εποχή του Χαλκού και την Πρώιμη Εποχή του Σιδήρου, Athens.
- Steinbock R. T. 1976, Paleopathological Diagnosis and Interpretation: Bone Diseases in Ancient Human Populations, Springfield, IL.
- Steele D. G., Bramblett C. A. 1988, *The Anatomy and Biology of the Human Skeleton*. College Station, Texas A & M University Press.
- Tsipopoulou M. 1987, Γεωμετρική και Ανατολίζουσα κεραμεική της ετεοκρητηκής περιοχής, Ph. D. Thesis, University of Athens.
- Tsipopoulou M. 1997: Phatsi Droggara: Un dépôt de céramique de la fin de l'âge du Bronze et du début de l'âge du Fer, provenant de Crète Orientale, in J. Driessen, A. Farnoux (eds.) 1997, 455-84.
- Tsipopoulou M. 2001, A new Late Minoan IIIC Shrine at Halasmenos, Hierapetra, in R. Laffineur, R. Hägg (eds.), POTNIA (= Aegaeum 22), Liège, 237-42.
- Tsipopoulou M. (in press) Destroyed but not Forgotten: The Pottery from the Greek American Excavation at Halasmenos, Hierapetra, in L. P. Day, M. Mook (eds.), Acts of the International Conference "Crete 2000" (Athens 2000).
- Tsipopoulou M., Coulson W. D. E. 1992-1994, Ανασκαφή Χαλασμένου Ιεράπετρας, Kritiki Estia, 366-78.
- Tsipopoulou M., Coulson W. D. E. 1995, Excavations at the Late Bronze Age Site of Halasmenos, East Crete, Paper for the AIA Meeting in San Diego, December 1995, (abstract in AJA 100, 1996, 387).
- Tsipopoulou M., Little L. 2001, Καύσεις του τέλους της Εποχής του Χαλκού στην Κριτσά Μιραμπέλου, Ανατολική Κρήτη, in Stampolidis (ed.) 2001, 83-98.
- Tsipopoulou M., Nowicki K. (in press), Μινωίτες καὶ Μυκηναίοι στο τέλος της Εποχής του Χαλκού στον Ισθμο της Ιεράπετρας· Νεα στοιχεία απο τις ανασκαφές στο Χαλασμένο καὶ τα Καταλείματα, Acts of the Second International Conference, The Periphery of the Mycenaean World (Lamia 1999).
- Tsipopoulou M., Vagnetti L. (in press), LM III Evidence from Kritsa, Mirabello, in *Proceedings* of the 9th International Cretological Congress (Ayios Nikolaos 2001).
- Vlachopoulos A. 1999, Η Νάξος κατά την ΥΕ ΙΙΙΓ περίοδο. Η φυσιογνωμία και ο χαρακτήρας ενός ακμαίνου νησιωτικού κέντρου, in Acts of the First International Conference, The Periphery of the Mycenaean World (Lamia, Sept. 1994), Lamia, 303-14.
- Waldbaum J. C. 1978, From Bronze to Iron, Göteborg.
- Waldbaum J. C. 1982, Bimetallic Objects from the Eastern Mediterranean and the question of the dissemination of iron, in Muhly *et al.* (eds.) 1982, 325-49.
- Watkinson D. E. (ed.) 1987, First Aid for Finds. Archaeology Section of the United Kingdom Institute for Conservation (2nd edition). The British Archaeological Trust, London.
- Watrous L. V. 1992, Kommos III. The Late Bronze Age Pottery, Princeton.
- Watrous V., Blitzer H., Haggis D., Zangger E. 2000, Economy and Society in the Gournia Region of Crete. A preliminary report on the 1992-1994 field season of the Gournia Project, in *Proceedings of the 8th International Cretological Congress*, A3, Herakleion, 471-83.
- Whitley J. 2002, Objects with attitude: Biographical facts and fallacies in the study of Late Bronze Age Warrior Graves, CAJ 12, 217-32.
- Xanthoudides S. 1904, Εκ Κρήτης, ArchEph, 1-56.
- Zimmermann J.-L. 2001, La maîtrise égéenne du fer (XIIe-X^c s. av. J.-C.): un progrès technique ou une necessité économique?, *MeditArch* 14, 111-23.
- Zois A. 1976, Βασιλική I, Athens.

ADDENDUM

Two volumes, published when the present article was already in proofs, are very relevant to the subject :

B. J. Hayden, Reports on the Vrokastro Area, Eastern Crete. 1 : Catalogue of Pottery from the Bronze and Early Iron Age Settlement of Vrokastro in the Collections of the University of Pennsylvania Museum of Archaeology and Anthropology and the Archaeological Museum, Herakleion, Crete. University Museum Monograph 113, Philadelphia 2003.

S. Deger-Jalkotzy and M. Zavadil (eds.), *LH III C Chronology and Synchronisms*. *Proceedings of the international workshop held at the Austrian Academy of Sciences at Vienna, May 7th and 8th, 2001*, Wien 2003. This volume contains a number of very important papers, in some case focussing on Crete. In general the studies are pottery-oriented and do not pay much attention to the evidence from metalwork.

The work quoted in the text as Tsipopoulou 1987, is now in press with the following title : Η κεραμική της Ετεοκρητηκής περιοχής στις φάσεις Υπομινωική ως Ανατολίζουσα. Ministry of Culture, Archaeological Institute of Crete.