Gilded wreaths of the Late Classical and Hellenistic Periods

Volume II



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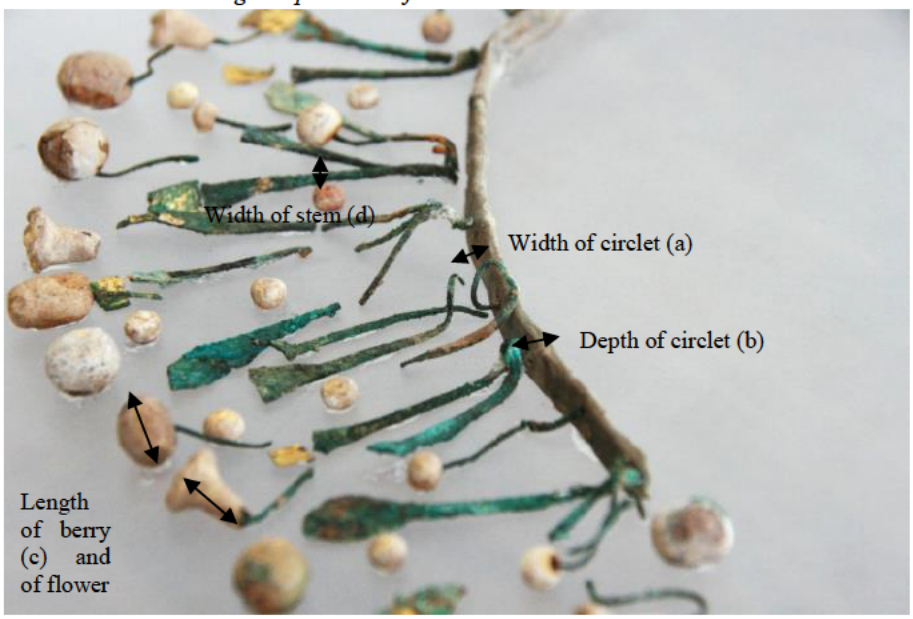
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Notes on Catalogue and Copyright Statement

All dimensions are given in millimetres unless otherwise stated.

The way the measurements were taken is as shown in fig. 1. For the circlet, the 'width' was taken on the front side where the holes were pierced (a); the 'depth' is the measurement across the top of the circlet (b). The oval berries were measured along their length (c). The width of the stems or wire is the dimension (d) shown in fig.1. Length is abbreviated to L, width to W, depth to D, diameter to diam.

Fig.1 Explanation of how measurements were taken



All the catalogue figures are given a reference with a prefix corresponding to the region (e.g. fig. M1.1). References to figures in the main volume are given without a prefix (e.g. fig.7.6). The contents of each item are described in the order circlet, leaves, stems, berries, flowers, unless one or more of these has not survived. Where a number has been given to wreath fragments, this is cited (wherever possible, this is the inventory number of the museum but if a number has been given by the excavators this is also given). Bibliography is given for each item, to save the reader needing to refer to the bibliography in volume 1.

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M1 Agios Athanasios M Th 19422 and 19423
AMTh stores

Provenance and context[1]: Agios Athanasios, Macedonian Tomb. The wall paintings at the entrance to the tomb show a procession with wreathed figures (**fig.M1.1**) as well as a dining scene, in which the participants are also wreathed. The tomb, which was found robbed, originally held a luxurious wooden kline with glass 'lenses' and plaques. Fragments of the gilded silver decoration remain stuck to the glass plaques with Dionysiac scenes. Amongst the other finds were armour, a fragment of an alabastron with the inscription "Krokos" (referring to saffron, and perhaps indicative of its contents) (MΘ 18182) and a gold quarter stater of Philip II (AEN1049). The excavator refers to the cremated remains of a man, no doubt because armour was found in the tomb. The remains of the gilded wreath or wreaths were found with fragments of a small wooden box, as well as two gold rings and two gilded silver rosettes which perhaps decorated the thorax. The gilded wooden lionheads which decorated the epaulettes were also found. The armour included an iron helmet, an iron thorax, iron greaves, a knife and spearheads[2].

Date[3]: last quarter of the fourth century.

Type: 2

Constituents:

19422β

- Five pointed gilded berries, perhaps acorns, made of terracotta with a whitish coating and with a line incised in the terracotta (**fig. M1.2)**. L: vary from 8.3 to 9.8. Diam. of hole: 1.55.
- Three myrtle berries, made of terracotta with a whitish coating with a cross at the end opposite to the hole (**fig. M1.3)**. The gilding has been done very carefully, so as to finish at an incised line in the terracotta, so that only the top (with the cross) is covered. Diam.: 6.9, 5.9 and 6.7. Diam. of hole: 1.25.
- 12 terracotta berries with a whitish coating, flattened spheres without a cross (**fig. M1.4**). Diam.: 6.1 - 6.8. Diam. of holes: 1.28.
- Seven tiny terracotta oval berries with a whitish coating (**fig. M1.2)**. L: 3.1 to 3.9. Diam. of stem protruding from one of berries: 0.6.
- Two beads, not part of wreath (poppy heads?).

19422α

- Fragments of myrtle leaves at least five or six of which have a zigzag edge at the end opposite to the stem (**fig. M1.5)**. The metal on many of the leaves appears to have melted. One leaf has a tiny spiral wire attached to it. W of tiny wire: 0.73.
- Fragments of copper stems with traces of yellowish colour, probably a coating originally underlying the gold (**fig. M1.6)**. W: 0.78, 1.2.
- Stem with a leaf. W: 1.36.
- A fragment of copper which fits neatly around the grey terracotta berry or almond 19423 (**fig. M1.7)**.
- Tubular beads (not from wreath)
- Part of a copper ring with melted gilded leaves on both the inside and the outside edges. The copper ring was clearly lying close to the wreath when subjected to the fire. It would seem that the wreath was cremated with the box, and only the wreath and part of the ring from the box survived.
- Tiny fragments of a wood, possibly from kline rather than circlet. Diam. of holes: 2.15.

19423

- Grey terracotta berry with small impressions which has one single hole at one end. It is not clear what fruit it is intended to represent, but it is perhaps an almond (**fig. M1.7).**
  L: 18.25, maximum diam. 12.25.

[1] Tsimbidou-Avloniti 2005, 106 and 207.
[2] Tsimbidou-Avloniti 2011.
[3] Tsimbidou-Avloniti 2005, 108 and 207.

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Plants represented: one wreath probably intended to represent myrtle, judging by the leaves and berries, the other with small pointed berries (acorns?).
Bibliography: Tsimbidou-Avloniti M. 2005. *Μακεδονικοί τάφοι στον Φοίνικα και στον Άγιο Αθανάσιο Θεσσαλονίκης*.
Tsimbidou-Avloniti M. 2011. 'Άγιος Αθανάσιος, Μακεδονικός τάφος ΙΙΙ. Ο οπλισμός του ευγενούς νεκρού', in S. Pingiatoglou, Th. Stephanidou-Tiveriou and D. Pantermalis (eds), *Νάματα: τιμητικός τόμος για τον καθηγητή Δημήτριο Παντερμαλή*, 351-364, Thessaloniki.
Studied: January 2016.

Fig. M1.1. Part of painted frieze showing wreathed riders. From Tsimbidou-Avloniti 2005, frontispiece ©Archaeological Resources Fund



Fig. M1.2. Pointed berries (acorns?) and small berries 19422b © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M1.3. Detail of myrtle berries 19422b © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

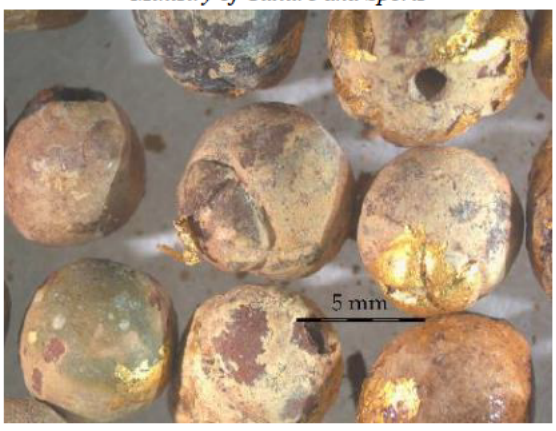


Fig. M1.4 Spherical and oval berries 19422b © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M1.5. Fragments of leaves and stems 19422a. The edges with the zigzags are towards the front of the photo © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M1.6. Detail of colour on stem 1942a © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

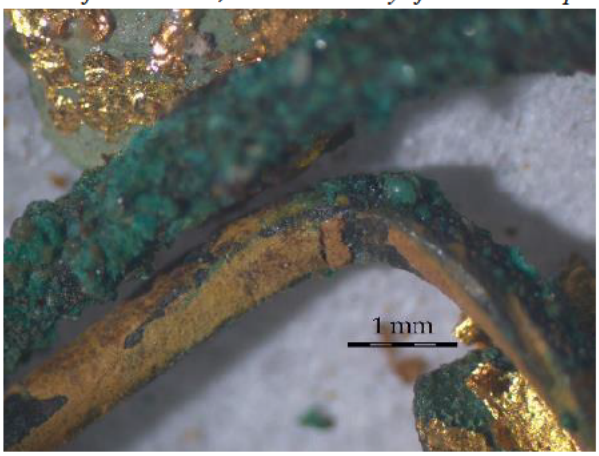


Fig. M1.7. Part of gilded mount 19422a with unusual berry (almond?) 19422b © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M2 Aiani Tomb A Leivadia
Aiani AM on display

Provenance and context[4]: The monumental tomb A is the largest and latest in a series and was looted in antiquity. Two long stones supported the kline. The surviving finds included 12 gilded silver ivy leaves and gold roundels with the Macedonian star in addition to the remains of a wreath. The tomb has not yet been published, but the wreath is mentioned in the catalogue of the museum and the excavation of the royal graves has been recorded[5].

Date[6]: Beginning of fourth c.

Type:1

Constituents:

- 22 pieces of pierced gilded bone, which has long straight ridges. The circlet is round in cross-section. The dimensions are roughly of the normal size for an adult circlet. As reconstructed, the diameter measures 16-16.5 cm. Five fragments have the remains of copper stems. The gold has been laid on the circlet in straight-cut strips. The holes are at varying distances; the gaps are wider where the diam. of the berries is greater. Diam. of holes: 0.65. Some of the holes are pierced in a triangular shape. Diam. of bone: 4-4.7. **Figs. M2.2 and M2.4.**
- 25 gilded oval berries, six with a dimple and a cross indicating myrtle. Some have yellow coating; the fabric is red. L: 5 to 7.2. **Figs.M2.2 -3.**
- Rudimentary remains of stems (diam. 0.8), which appear to have melted and gilded copper leaves.

Plant represented: myrtle.

Bibliography:
Karamitrou-Mentessidi G. 2008. *Aiani. A guide to the archaeological sites and the museum,* 51.
Karamitrou-Mentessidi G. 1993. 'Αιανή', *A.D.* 1988, vol. 43, *Chron* B2, 398-399.

Studied: 17 March 2015.

Fig. M2.1 Overall view of fragments of wreath from Royal Tomb A © Hellenic Ministry of Culture and Sports



[4] Karamitrou-Mentessidi 2008, 51.
[5] Karamitrou-Mentessidi 2008, 114; Karamitrou-Mentessidi 1993, 398.
[6] Karamitrou-Mentessidi 2008, 51.

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Fig.M2.2 Detail of myrtle berries © Hellenic Ministry of Culture and Sports



Fig.M2.3 Detail of back of circlet and berries © Hellenic Ministry of Culture and Sports



M3 Aiani Grave 178
Aiani AM on display

Provenance and context[7]: Eastern cemetery, grave 178. The graves in the part of the cemetery where this wreath was found were organised into ten series of pits. All but two had been looted (the looted graves included the grave with the wreath). In the NE part of middle cluster, there was an oval area surrounded by a channel which was probably the burial place of a prominent individual or a single family. Grave 178 held a male burial, judging by an iron spear tip found in the same grave. It was located towards the edge of the burial area, and about 12m from the oval area with the channel.

Date: Hellenistic, probably second quarter of the third century, on the basis of comparison with a similar wreath at Demetrias (**cat. SCG23**).

Type:4

Constituents (**fig. M3.1**):

- 22 gilded clay berries (**fig. M3.2).** Diam.: 7.41, 8.05, 8.37, 8.8. Diam. of holes: 1.65. Remains of yellowish coating and of gilding.
- 16 bell-shaped flowers with 6 petals which look as if they have been made in a mould: they are very regular, and some of the impressions are quite faint **(fig. M3.2)**. The clay is very red and there are traces of yellowish coating. Some traces of gilding remain. There are no traces of tool marks on the back. Diam.: 9.77 (majority) up to 10.5. L: about 10.5.
- About 30 fine copper stems. Diam. 0.8. Two sets of thin wires are still held together by thread on much wider wires twisted into a spiral shape (diam.1.6). There is one set of threads on each group of wires. The wider wire has been turned back very neatly.
- 13 fragments of gilded leaves, gilded on both sides.
- Two fragments of lead from the circlet. No holes are visible. L: 15 and 11. White corrosion on the surface.

Plant represented: unclear but could be myrtle.

Bibliography:
Karamitrou-Mentessidi G. 2010. 'Αιανή 2007: Η έρευνα στο Ανατολικό νεκροταφείο', *AEMTh*. 21, (2007), 37-46.

Studied: 17 March 2015.

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Fig.M3.1 Gilded wreath from Aiani, grave 178 © Hellenic Ministry of Culture and Sports



[7] Karamitrou-Mentessidi 2010, 45.

Fig.M3.2 Fragments of gilded wreath © Hellenic Ministry of Culture and Sports



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M4 A. Komi

Provenance and context[8]: Ano Komi, Zigres, plot of Sp. Papaioannou. The pit grave was originally dug by a resident of Ano Komi, but not properly excavated until 1983. The contents included four bronze objects (lebes, hydria, phiale and jug). The deceased (a young woman) was wearing jewellery, including gold earrings made of five-petalled rosettes and a pendant pyramid, a gold necklace with a chain and lion-heads at each end, two bow-shaped brooches on each shoulder, a gold ring with an Eros in a circular bezel, and oxidised lumps of iron and silver indicating that she was originally wearing further jewellery, as well as the gilded wreath. Further grave offerings consisted of a clay lekythos with a representation of a flower, a bronze coin of Philip II, a silver perfume container, a clay lamp and towards the feet were found knucklebones, a bronze kylix, a red-figure askos, a clay skyphos and a black glaze plate. The interior component of a silver spool 'saltcellar' is also recorded[9]. A systematic search with trenches projecting 15m from the grave did not reveal any other burial and it was concluded that it was either such a significant grave that it was on its own, or that it belonged to a cemetery which had otherwise been washed away.

Date[10]: after 320.

Type:2.

Constituents:

- Three to four fragments of bone circlet (**fig.M4.1**). L: 9.5-12.6. Diam. of hole: 0.94.
- 12 fragments of gilded myrtle leaves on stems and a small piece of thread or wire.
- Three small, oval berries, which have been painted red at one end; a whitish coating underlies the gold. It does not look as if the gold originally overlay the red, as there appears to be a straight, dividing, line between the red and white coating (**fig.M4.2**).
- About 15 fragments of stems. One of the fragments with a leaf at one end is bound to a piece of strip-twisted wire, which may have supported a berry at an earlier stage (**figs. M4.3**). The twisted wire is still gilded and there is a whitish coating under the gold. Maximum L: 36.4. Diam. of twisted wire: 0.5. W of flat wire: 1.
- Fragments of copper leaves, gilded on both sides, and gilded stems. The gilding on the tiny twisted stems is unusual. Maximum L of leaf: 5.6.

A bag of material contains five pieces of bronze or copper, without gilding, which do not appear to be part of the wreath. The same bag also contains:

- three berries, two of which have a yellowish coating, the other red
- seven leaves and stems, W: 0.9. Maximum L: 33.8
- fragments of gilded leaves
- one fragment of bone circlet. L: 6.8, W: 5.3.

Plant represented: myrtle.

Bibliography:

Karamitrou-Mentessidi G. 1989, *AD* 38 (1983), *Chron* B2, 308.
Touratsoglou I. P. 1998. 'Στην αναζήτηση του Ελληνιστικού χρυσού' in *Μνείας Χάριν: Τόμος στη μνήμη Μαίρης Σιγανίδου*, 235-264.
Zimi E. 2011. *Late Classical and Hellenistic silver plate from Macedonia. 192, 272.*

Studied: March 2015 (at Aiani AM).

[8] Karamitrou-Mentessidi 1989, 308.
[9] Zimi 2011, 169.
[10] Touratsoglou 1998, 367.

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Fig. M4.1 Fragments of bone circlet, berries and copper stems/leaves © Hellenic Ministry of Culture and Sports



Fig. M4.2 Three berries with red paint and gilding © Hellenic Ministry of Culture and Sports



Fig. M4.3 Fragment of stem (with leaf) bound with a piece of strip-twisted wire, perhaps originally to support a berry © Hellenic Ministry of Culture and Sports



M5 Aineia Grave III, 7570
AMTh on display and stores

Provenance and context[11]: Aineia Mound A, Grave III. This was a cist grave in mound A, containing the body of a woman; above the slabs of which were spread the remains of the funeral pyre, which must have been burned outside the limits of mound A. One wreath (**M10**) was found with the pyre fragments. Inside the grave, a total of five wreaths are said to have been found, including fragments around the neck of a bronze kalpis (inv.7552). The five gilded wreaths are numbered 7570-7574 in the publication (**fig. M5.1**)[12]; an illustration of how they were found is at **fig. M5.2** and a plan of the grave is at **fig. M5.3**. The kalpis is dated to 430-420 BC and is older than the burial; in addition to the wreath, it held the bones of a mature woman[13], a gold ring and gold fibulae. From the excavation diary[14], it is apparent that M5 was found at the south end of the tomb, M6 on the east side, M7 on the west, M8 around the kalpis and M9 on the north west. One of the wreaths was found on the floor next to a piece of pottery; M6 was found on the east side of the grave with four alabastra. On the right were three alabastra, near one of which on the floor was a fourth gilded wreath and next to it a piece of wood with traces of blue and red colour. In the centre of the south side the fifth gilded wreath M5 was on the floor near four alabastra. A bronze mirror may have been placed in a box, since a ring handle was found on a box lid[15]. The mirror back shows a *splanchnote*s scene, which appears to be unique on a mirror. Other offerings included a glass calyx-skyphos, a gilt clay kotyle (inv.7550), eight Attic (inv.7540-7547) and a locally made vase coated with yellow paint (inv.7548). One of the two wreaths on display, M5, is almost certainly wreath 7570 as it looks exactly like the one labelled 7570 in the publication. A photograph showing the wreath as found is at **fig. M5.9**.

Type :2

Date[16]: Third quarter of fourth century (beginning).

Constituents of wreath on display (**fig. 7.2**):

- Gilded bone circlet which has one ancient join with overlapping pieces of bone. Not many holes have been pierced towards the back, but there is a single hole (for a ribbon or tie) on one side (**fig. M5.4**). W: 4.95, D: 3.9. Overall dimensions (internal): W: 14.5 cm and L: 16cm.
- Fragments of wood circlet lie behind the bone circlet, using the same holes. The holes are 3 to 3.8mm apart, with the stems almost touching.
- Gilded copper leaves with gold both sides of the leaves with very short stems. Most if not all are broken at one end and all have been made in one piece with stem.
  Leaves L: 10.99 to 1.53
- The 22 berries are oval and mostly have one hole, except in a few cases. There is a yellowish coating beneath the gilding and the fabric is made of red clay. The gilding finishes in neat line leaving some of the coating showing (**fig. M5.6**). Berries L: 8.2, diam.: 4.6
- Stems: two are mounted on the circlet in bunches, most are single. L of stems: 26.2, 26.9, 28 – mainly straight. Diam. 0.95

Fragments labelled 7570 (**fig. M5.5**):

- 51 oval berries, several of which have a red coating (**fig. M5.6**). L:6.98.
- Fragments of leaves, at least one of which shows slight signs of heating (in the pyre?) (**fig. M5.7**).
- Stems, two in bunches, some single. W: 0.7 to 1.
- Eight pieces of glass, three of which have evidence of burning. They have a blue and yellow colour with flower design and were from a perfume bottle.

[11] Vokotopoulou 1990,132 and 49-52.
[12] Vokotopoulou 1990, pl. 39 and 66-67.
[13] The bones were studied by Musgrave (published in Vokotopoulou 1990, 117-120).
[14] Consulted March 2018 in the Ephoreia of the Periphereia of Thessaloniki.
[15] Ignatiadou 2016, 97-98.
[16] Vokotopoulou 1990,133.

DO NOT COPY

- Small ring with red and green corrosion and parallel ridges. Diam.: 9.91 (measured from outer edge to outer edge).
- Piece of soil with impression of shell.
- Photograph of wreath as found in grave III (**fig. M5.8**)

Plant represented: myrtle.

Bibliography:
Ignatiadou D. 2016 'The Aenea mirror. A re-examination' in A.R. Giumlia-Mair and C.C. Mattusch (eds), *Proceedings of the XVIIth International Congress on Ancient Bronzes, Izmir*, 95-101, Autun.
Musgrave J.1990b. 'A report on the cremations from tombs II and III at Michaniona' in Vokotopoulou 1990, 117-120.
Vokotopoulou I. 1990. *Οι ταφικοί τύμβοι της Αίνειας*, 66.

Studied: September 2013 and November 2017.

Fig. M5.1 The five wreaths as illustrated in Vokotopoulou 1990 pl. 39. Clockwise from top left: 7570, 7574, 7571, 7572, 7573
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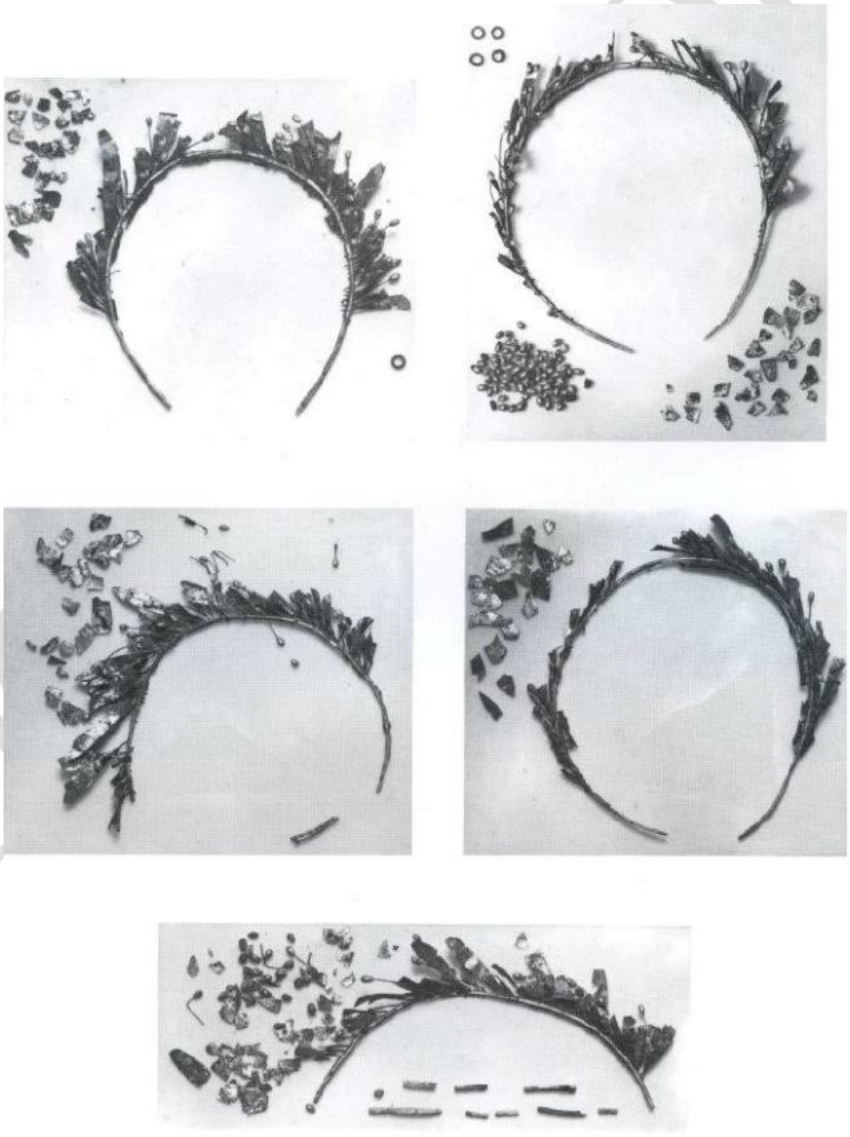


Fig.M5.2 Wreaths in grave III as found. From Vokotopoulou 1990 pl. 30.©Hellenic Ministry for Culture and Sports/Archaeological Resources Fund



Fig. M5.3 Plan of grave III showing phases γ (left) and δ (right). From Vokotopoulou 1990,50 ©Hellenic Ministry for Culture and Sports/Archaeological Resources Fund

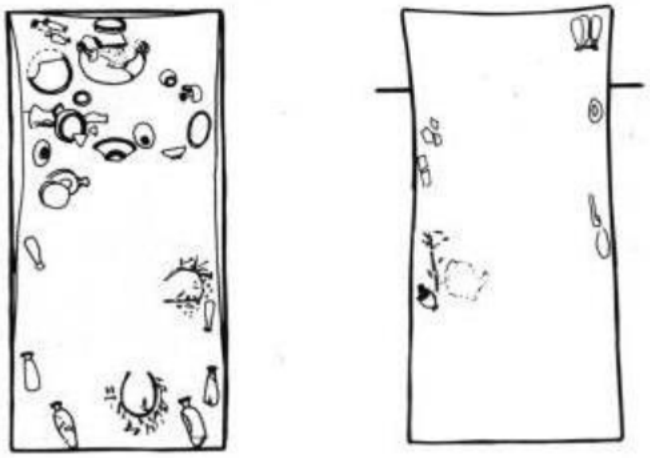


Fig. M5.4 Back of circlet 7570, M5 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M5.5 Fragments labelled 7570 in stores © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M5.6 Some of berries labelled 7570 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M 5.7 One of leaves labelled 7570 bearing signs of heat © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

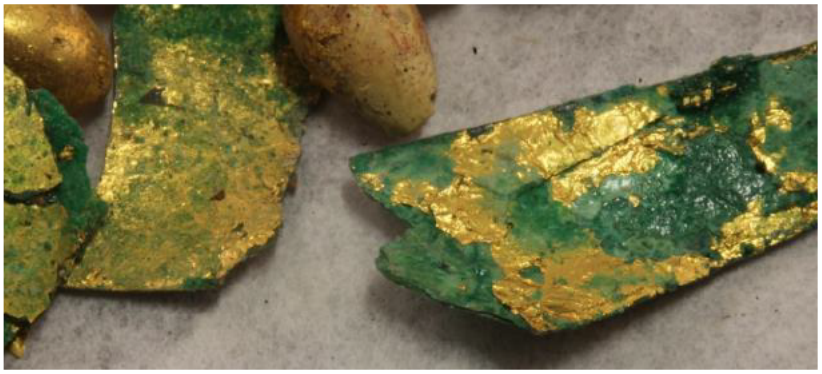


Fig. M5.8 Photograph of wreath as found (kept with wreath fragments 7570 in store) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M6 Aineia Grave III, 7571
AMTh stores

Provenance and context: Aineia Mound A, Grave III (see M5). The wreath was found on the east side of the tomb, with part of the circlet missing[17], and has been reassembled from fragments.

Date[18]: beginning of third quarter of fourth c. (earlier than II and I).

Type: 2

Constituents labelled 7571: **fig. M6.1**

- Fragments of bone circlet at least two of which have been assembled wrongly. The fragment on the left of the image (seen from the back) has been wrongly assembled, as the join is not convincing, and the leaves all point in the same direction, instead of meeting in the centre. When seen from the front, it would appear that some of the fragments have been put together upside down (the right hand fragment, seen from the front is in fact composed of six separate fragments which have been reassembled, not necessarily correctly). The line of gold along the top which is continuous on the larger fragment is broken on the other fragments (**fig. M6.2**).
  The circlet is gilded on the front, and partly gilded on the back (a gold edge can be seen on the back, probably to economise on use of gold). 15 oval berries and 41 leaves mounted on stems are still attached to the largest fragment of circlet. The leaves were made in one piece with the stems. W: 4.02. Holes 2.8 apart.
- There are further fragments of bone circlet in a bag, the total L of which measure 30mm (two have been joined in recent conservation) (**fig. M6.3**).
- Fragments of gilded copper leaves. One leaf is complete, and has curved edges at the end opposite to the stem. L of complete leaf: 60. Stem L: 10 (**fig. M6.4**). W of leaf (max.) 11.
- About 45 further berries and leaf and stem fragments are kept in a plastic bag. L: about 5.5 to 7.7. Stems, W min. 0.49.

There is also a photograph of the wreath as found (**fig.M6.5**)

Plant represented: myrtle.

Bibliography: Vokotopoulou I. 1990, *Οι ταφικοί τύμβοι της Αίνειας*, 66.

Studied: September 2013 and November 2017.

DO NOT COPY

[17] Excavation diary, 75, consulted March 2018.
[18] Vokotopoulou 1990, 133.

Fig. M6.1 Fragments of wreath 7571. The suspicious joins are indicated. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M6.2 Fragments of wreath 7571 (seen from the front) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M6.3 Fragments 7571 kept separately © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

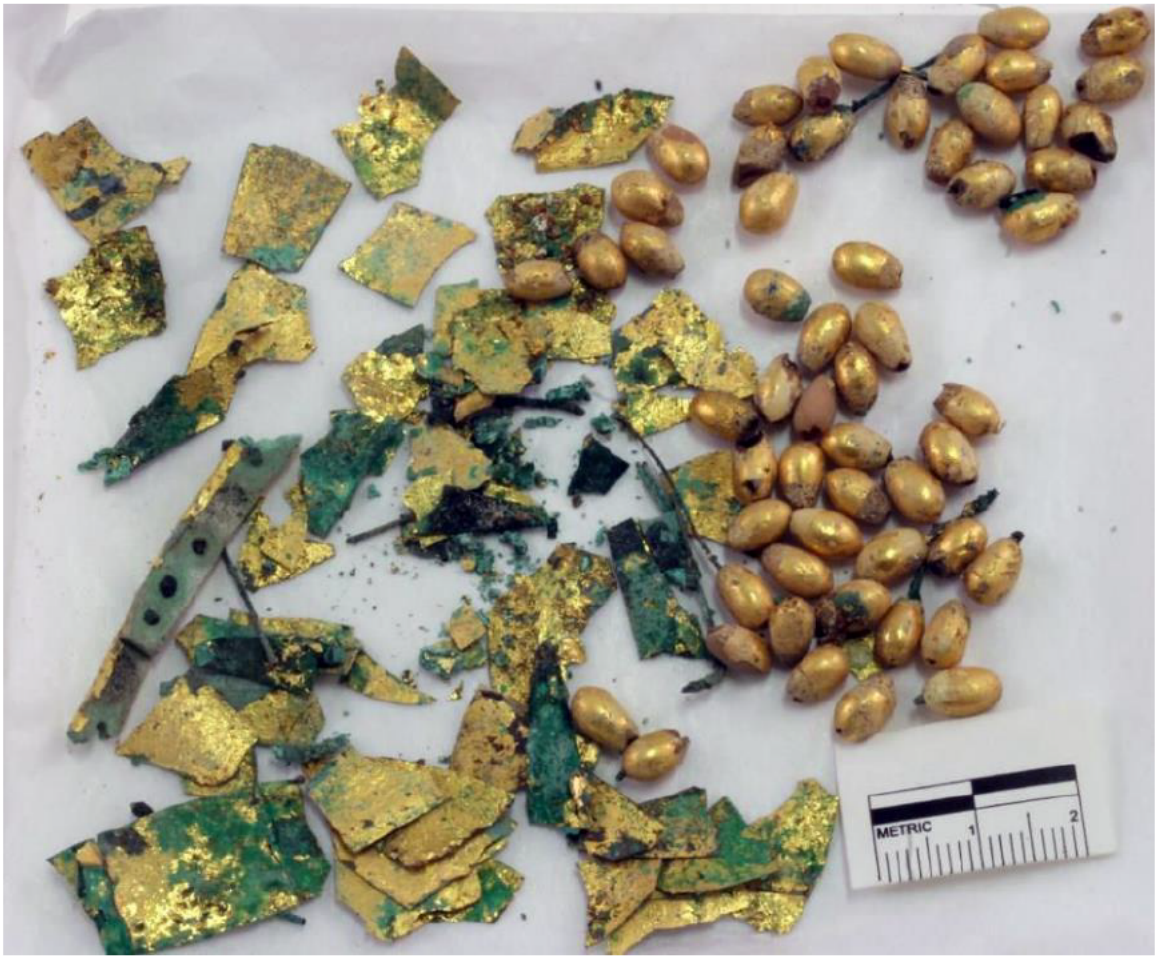
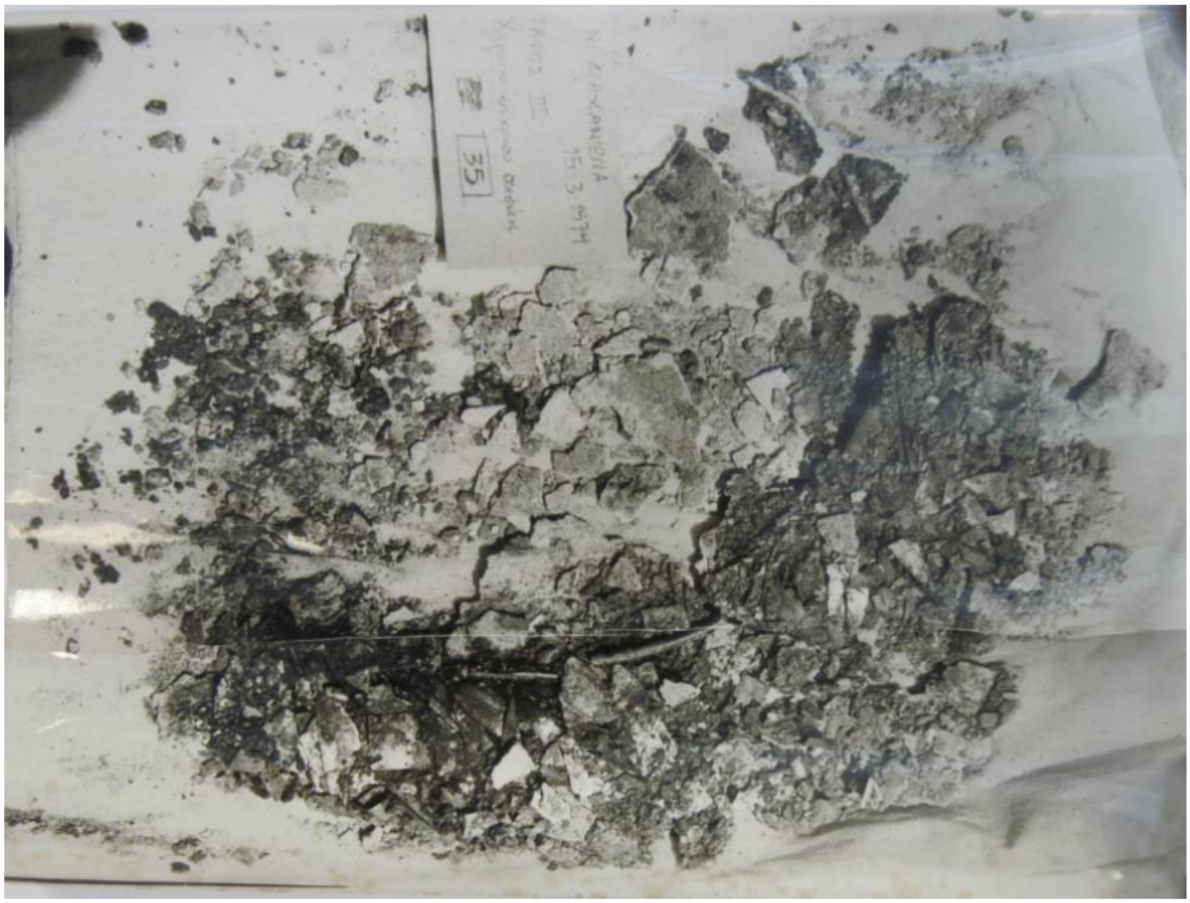


Fig. M 6.4 Detail of leaves 7571 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M 6.5 Wreath 7571 as found ©Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



DO NC

M7 Aineia Grave III, 7572
AMTh stores

Provenance and context: Aineia Mound A, Grave III (see M5). The wreath was numbered as find 36 in Vokotopoulou's diary for 14.3.1979, on the west of the grave, next to the mirror, 7553. Half of the circlet was missing when it was found[19], and it is evident that the material has been reassembled from more than one wreath. The material is kept with several labels not attached to the material, one of which is marked 7572. The larger of the two circlet fragments looks like 7572 in the publication (fig. 39ε). Further material is a kept in a plastic bag with a loose label reading 7572.

Date[20]: third quarter of the fourth century (beginning).

Type: 2.

Constituents of circlet with loose label 7572 (**fig. M7.1**):

- Fragments of gilded bone circlet, which has gold on the front and only partially on the back. There appear to be traces of a substance holding the stems in place on the back (**fig. M7.2).** Arc of large fragment about 15 cm. W: 3.84.
- Leaves, two of which have been reassembled. The tip is rounded. 29 leaves are still in position on the larger fragment of the circlet. L: 5-6cm. Other leaves appear to have been 38 to 23.5 mm long.
- Stems. W: about 1.
- 10 berries are still in position on the larger fragment. Max. L: 7.58.

The material on the smaller fragment is similar, and has three berries and fragments of about ten leaves.
Constituents of fragments in bag with loose label 7572:

- Fragments of leaves, gilded on both sides (**fig. M7.3**). L of complete leaves: 28.6, 30.02. Max. W of leaves, 8.29, 9.29.
- Nine fragments of gilded circlet (**fig. M7.4**). L: 22.2, 17.9, 22.6, 28.16, 29.8, 34.62, 17.8, 22.9, 15.3. W: 4.46
- 25 gilded berries with a white coating; some still have the stems (**fig. M7.5**). Some are green coloured, probably from malachite corrosion. L: 7.89, 8.54, 6.82, 7.57

Plant represented: myrtle

Scientific analysis: HHXRF, AMTH XRF and SEM (one leaf, one berry and one fragment of circlet) (**fig. M7.6**).
AMTh µXRF: The berry was found to have silicon, calcium, iron and lead in both the coating and the fabric (as well as gold and copper); the coating appeared to have less calcium and less iron than the fabric, and could be either a calcareous clay or kaolinite, depending on the amount of calcium.
The gold leaf was found to have both gold and copper, the latter almost certainly from contact with other items rather than as a constituent of the alloy. Silicon, calcium and iron were also found in the analysis of the gold on the berry, from the underlying material. No silver was found in the gold and no mercury. The leaf was found to have copper and no tin, as well as a little gold (from contact with the gold leaf). What appeared to be coating on the leaf contained calcium, iron, coating and gold. The gold on the leaf had no traces of silver; copper was detected, almost certainly from the underlying substrate. The coating on the circlet was found to have silicon, aluminium and calcium, as well as iron and lead (copper and gold were also detected, from contact with the gold leaf on the circlet and contact with other material. The gold on the circlet was found to have no silver, but traces of aluminium, silicon, phosphorus, calcium, iron and copper were detected, from contact with other material.
HHXRF: Lead was detected in the berry and the coating on both the berry and the circlet, almost certainly contamination from the mirror found alongside. No calcium or lead was detected on the leaf.

[19] Excavation diary, 75
[20] Vokotopoulou 1990, 133.

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On analysis in the SEM, the fabric of the berry was found to consist of aluminium, potassium, calcium and iron. The yellowish colour is probably from iron hydroxide (goethite). The leaf was found to consist of copper, with some overlying soil, but no tin, and the gold leaf was almost pure gold, with no silver.

Bibliography: Vokotopoulou I. 1990. *Οι ταφικοί τύμβοι της Αίνειας*, 66.

Studied: September 2013 and November 2017.

Fig. M7.1 Fragment of wreath 7572 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M7.2 Fragment of wreath 7572 with substance holding stems? (from back) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M7.3 Leaves labelled 7572 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M7.4 Fragments of circlet and berries. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M7.5 Berry and fragment of circlet showing coating under gold © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

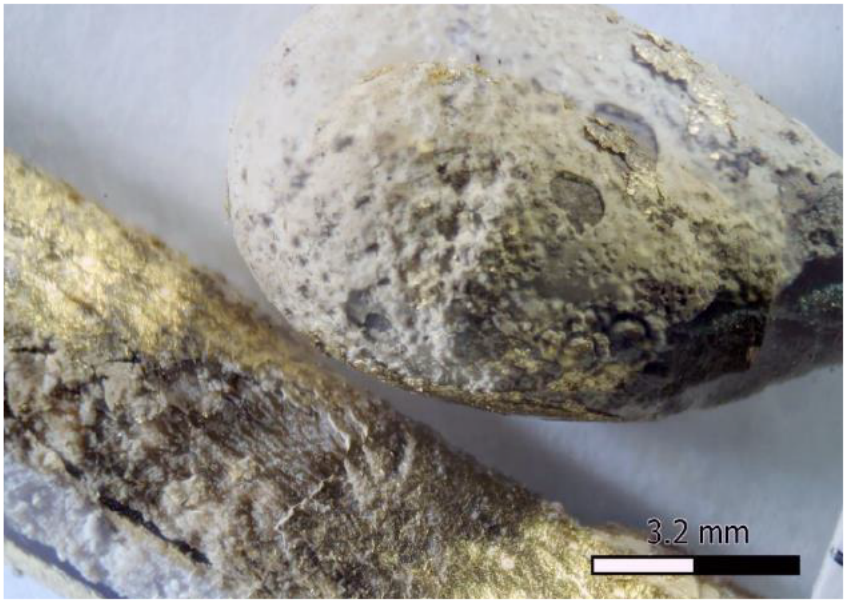


Fig. M7.6 Fragments analysed © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M8 Aineia Grave III, 7573 and wreath from neck of kalpis AMTh stores

Provenance and context: Aineia, mound A, grave III (see M5). The fragments of circlet probably come from the wreath published as 7573 in Vokotopoulou 1990, pl. 39δ[21] (**fig. M8.2**), since there are several fragments of wooden circlet still attached, which match the circlet shown in in pl. 39δ (**fig. M8.1**). Some further fragments are kept in the stores in two separate bags, labelled 7573-4; it is assumed that the fragments in one bag belong with wreath 7573, since those in the other bag belong with 7574. The fragments of 7573, find 2 in Vokotopoulou's diary for 14.3.1979, were from the kalpis[22].

Date[23]: Third quarter of fourthc.

Type: 2

Constituents of wreath which is probably 7573: (**fig. M8.2**)

- Three fragments of bone circlet, still attached to the wooden circlet. Not all belong to the same wreath, and at least one fragment must come from a different wreath, since if joined they would make up more than one wreath. Two pieces of bone are joined together (ancient join). The holes in the circlet are pierced very close together (2.76 apart). Where the berries have been preserved on the circlet, they are 3 to 3.8mm apart.
- Fragments of wooden circlet still attached to the bone circlet. W: 3.49, depth: 3.9.
- Fragments of gilded copper leaves. W: up to 10.5 where broken at one end. Around 20mm long up to break.
- 11 berries on fragments of circlet, one of which has a red coating. L: 7.92 long. Diam.: 4.48.
- 51 berries in separate bag.

Constituents of one of bags of fragments labelled 7573-4 and found 14.3.1979

- Fragments of burnt bone and what appears to be alabaster and fragments of leaves (**fig. M8.3**).

Constituents labelled as being from the neck of the kalpis and found 15.3.1979: (**fig. M8.4**).

- Four fragments of gilded bone circlet. W: 4.53. L: 15.54, 21.73, 8.7, 9.67, 11.11. Space between holes 2.77.
- Fragments of gilded pointed copper leaves. W where broken: 7.89.
- Stems. W: 0.52 to 0.71.

Kept with the wreath material, but probably not part of wreath:

- Button or medallion, diam.: 19.32, with two holes.
- Tiny fragment of glass.
- Raised fragment of copper (part of pendant?)

Plant represented: myrtle.

Bibliography: Vokotopoulou I. 1990. *Οι ταφικοί τύμβοι της Αίνειας*, 52 and 66.

Studied: September 2013 and November 2017.

[21] Vokotopoulou 1990, 66.
[22] Excavation diary, page 72.
[23] Vokotopoulou 1990, 133.

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Fig. M 8.1 Wreath 7573, Vokotopoulou pl.39δ ©Hellenic Ministry for Culture and Sports/Archaeological Resources Fund

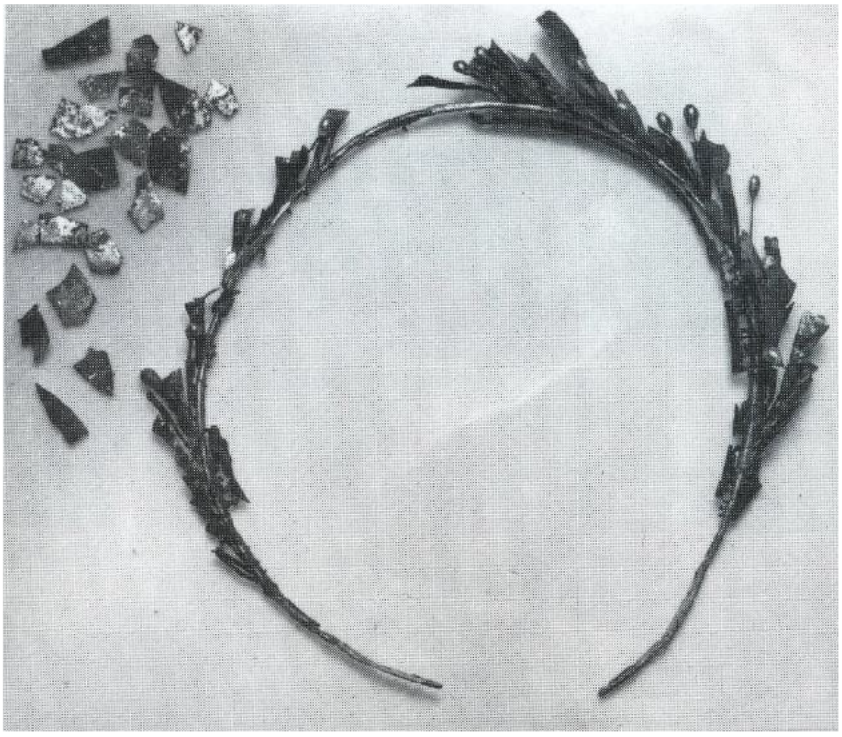


Fig. M8.2 Fragments some of which are thought to be from 7573 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M8.3 Fragments in one of bags labelled 7573-4 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M8.4 Fragments labelled as being from neck of kalpis © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M9 Aineia Grave III, 7574
AMTh stores and on display

Provenance and context: Mound A, grave III (see M**5**). This find was labelled 2α in Vokotopoulou's diary for 14.3.1979.

Date[24]: Third quarter of fourth c.

Type: 2

Constituents[25] (**fig. 2.12**):

- Bone circlet. The holes have been pierced about 2-3mm apart but there are none at the extremities. Diam. 18 cm. W: 4.72. **Fig. M9.1**.
- Oval berries, one of which has two holes. L: 8-9.3. Diam.: approx. 4.9, but not all same size.
- Copper stems and leaves. L of stems 22.9 to 16. W: 0.95. Maximum W of leaves 11.26

Some of the items in the stores labelled 7573 and 7574 probably belong with this wreath, which are kept in two separate bags, but not labelled separately. The smaller group of material, in one bag, is probably what remained of the wreath fragments from 7574 when the reconstruction of the wreaths was done for display, since four rings are shown in the publication with wreath 7574, and there are four rings in this bag of material.

Constituents of fragments labelled 7573-4, kept in one bag with four rings: **Fig. M9.2**

- 50 oval berries. L: 8.5, 7.36
- Four rings, diam.: 9.47.

Plant represented: myrtle.

Bibliography: Vokotopoulou I. 1990. *Οι ταφικοί τύμβοι της Αίνειας*, 66-67.

Studied: September 2013 and November 2007.

Fig. M9.1 Detail of back of circlet on display © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



[24] Vokotopoulou 1990, 133.
[25] Vokotopoulou 1990, 66.

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M9.2 Some of fragments labelled 7573-4 including four copper or bronze rings © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



DO NOT

M10 Aineia Grave III, Pyre
AMTh stores

Provenance and context: [26]: Above the slabs of grave III the remains of the funeral pyre were spread with fragments of a wreath. Among the pyre remains were two clay protomai, alabastra and decorations from the funerary couch as well as gilt terracotta figures of Muses and young cupids as well as rosettes which the excavator though originally formed part of a gilded wreath, as well as other wreath fragments[27], gilt clay buttons decorated with the head of Athena Parthenos and copper or bronze loops.

Date[28]: Third quarter of fourth c.

Type:2

Constituents of material labelled as being from the pyre: (**fig. M10.1**)

- Fragments of bone circlet W:4.52
- 57 gilded oval berries. Some of the berries have a red colour underneath the gold (**fig. M10.2**). A similar colour has been observed on berries from Derveni A. L berries: 5.96 to 6.61.
- Remains of thread, possibly woven material.

Kept with the wreath material but probably not part of the wreath[29]:

- A small gilded pierced object, apparently made of terracotta, with a white coating and the remains of two fragments of wire on back (**fig. M10.3**). This is the item described by Vokotopoulou as being shield-shaped. Diam.: 12.4.
- A copper ring, outer diam.: 10.68.
- A fragment of iron, probably from a strigil.
- A separate bag labelled T.III containing organic material

Plant represented: myrtle.

Scientific analysis

AMTh XRF analysis of pink berry: The fabric of the berry was found to contain silicon, potassium, calcium, iron, and there was also some copper and gold from contact with other material. The gold on the berry was not found to have any silver; iron and calcium were detected, probably from the substrate, and a little copper, probably from contact with other material. The gold therefore appears to be almost pure.

The most interesting result was from analysis of the red coating on the berry; this was found to have silicon, potassium, calcium, iron, copper and gold. There seemed to be less iron in the coating than in the fabric. No mercury was found in the red coating.

The HHXRF also showed a little magnesium and titanium in the berries. No lead was detected on the red berry or mercury. The gold on the berries was almost pure, with a little copper.

Raman analysis in June 2017 did not disclose any clear spectra for the pink colour.

Bibliography: Vokotopoulou I. 1990. *Οι ταφικοί τύμβοι της Αίνειας,* 68, 132.

Studied: September 2013 and November 2017.

[26] Vokotopoulou 1990, 132.
[27] Vokotopoulou 1990,70.
[28] Vokotopoulou 1990, 132-133, 51.
[29] Vokotopoulou 1990, 71.

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Fig. M10.1 Wreath fragments and other items from pyre above grave III © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M10.2 Berry with red coating from pyre © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M10.3 Close up of berry from pyre © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M10.4 Button from pyre © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M11 Aineia Grave II, 7591
AMTh stores

Provenance and context[30]: From Mound A, Grave II, found on 28 February 1979. The fragments labelled 7591 in the stores although more numerous look like those illustrated and described by Vokotopoulou as being from Mound A, Grave II and numbered 7591 (**fig. M11.1**). Grave II (mound A) is a cist grave lined with five limestone slabs and unbaked bricks; it would originally have had a wooden roof. It was found unrobbed but was damaged by a mechanical digger. In it were found the cremated bones of a dead woman and a gilded copper wreath which was lying on the floor partly beneath the bones. The wreath would originally have been on top of or inside a wooden box with the bones of the deceased, placed on a raised brick cube. Fragments of burnt ivory reliefs were found mixed in with the bones, no doubt from a wooden couch that was burnt with the corpse. Osteological analysis revealed that the deceased was a woman aged 25-30. She was pregnant with, or had just given birth to, a foetus that by modern standards would be of 35 ½ -38 ½ weeks but was probably full term[31]. 14 alabastra were found on the plastered floor in the grave, of which two were gilded and several were glass, as well as several buttons and a Cypriot-type amphoriskos (inv.7567)[32] . The glass alabastra are of a type known as 'feathered', and are thought to come from a single workshop possibly in the Aegean; similar alabastra have been found in Derveni Δ[33]. Fine wall paintings perhaps depicting the interior of a *gynaikeion* have been preserved which show various objects hanging from painted nails, including a bronze mirror, a green-coloured myrtle wreath and a circular object, possibly a ball, a clay female protome and wooden chest. 25 iron nails have been preserved and may have held real items on the tomb walls such as clothes or wreaths.

Date[34]: Third quarter fourth c. (mid).

Type:2

Constituents:

- Fragments of gilded bone circlet (**fig. M11.2)**
- Fragments of wooden circlet **(fig. M11.2)**
- Fragments of gilded copper leaves (**fig. M11.2**)
- Fragments of brown material; it is unclear what this is; it may be leather, and seems to be attached to wood, but was not necessarily part of the wreath **(figs. M11.3-4).**
  About 20 gilded oval berries. L: 4.46 to 6.63

Plant represented: myrtle.

Studied: Sept. 2013 and November 2017.

Bibliography: Vokotopoulou I. 1990. *Οι ταφικοί τύμβοι της Αίνειας*, 28.

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[30] Vokotopoulou 1990, 131 and 22-24.
[31] Musgrave 1990,117.
[32] Vokotopoulou 1990, 25.
[33] Vokotopoulou 1990, 26 and pl.16. The Derveni glass alabastra were published in Themelis and Touratsoglou 1997, 106, pl. 119.
[34] Vokotopoulou 1990, 28, cat. 16.

Fig.M11.1 Wreath labelled 7591. From Vokotopoulou pl. 17γ. Courtesy Archaeological Resources Fund.

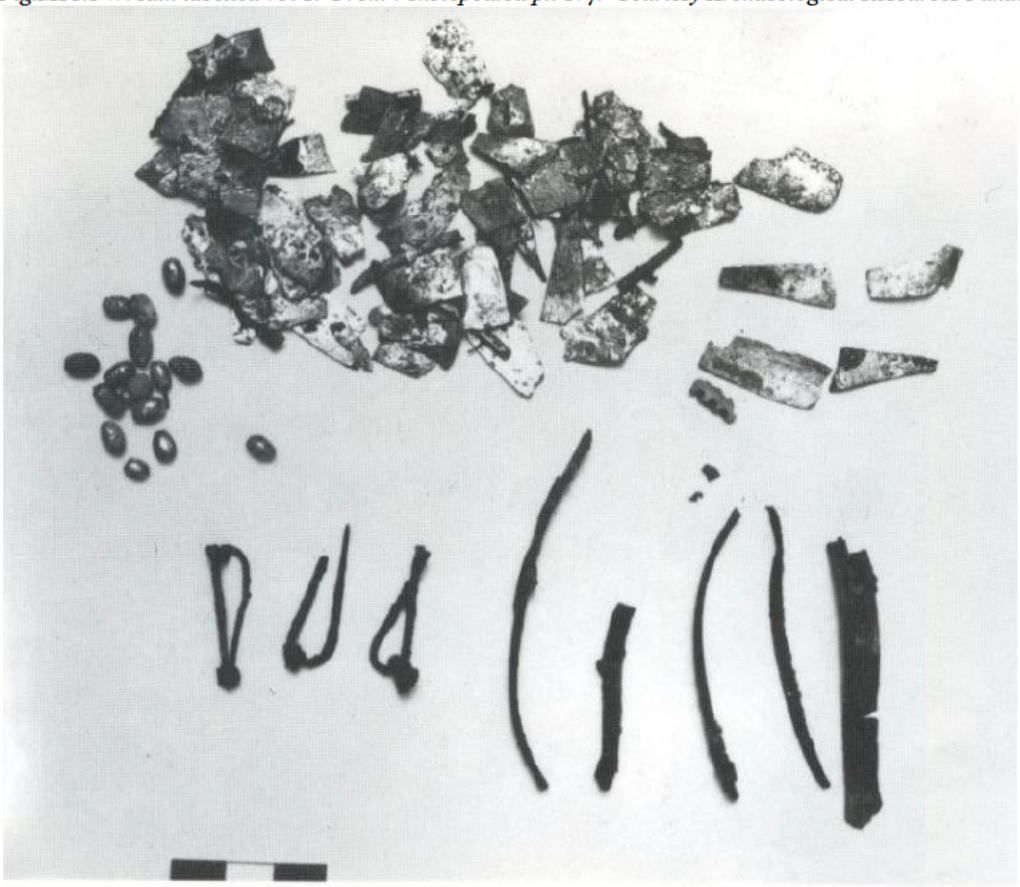


Fig.M11.2 Some fragments of wreath labelled 7591 in stores © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig.M11.3 Unidentified material from 7591 (leather?) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M11.4 Unknown material from 7591 (leather?) x8 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



DC

M12 Aineia
On display in grave II, but possibly from grave I

Provenance and context: possibly from grave I. Fragments of a wreath are on display in AMTh in grave II from mound A (**fig. M12.1**) which have been scattered on the floor to give an impression of how the tomb would have looked. They are said to be 7591 on the label in the museum, but this does not seem likely, given that other fragments are labelled 7591 in the stores (M11) and grave II only produced one wreath[35]. It is not known which grave they were from, but I suggest they may be from grave I rather than grave II, since the pyre above grave I produced fragments from two wreaths[36]. The fragments from Grave I in the publication are unnumbered, and there is nothing to identify them in the museum collection. The curators at AMTh could throw no light on the matter.

Date: Third quarter fourth (end) if from grave I.

Type:2

Constituents: It was not possible to examine the fragments carefully, but the leaves and berries are myrtle, and the circlet is bone.

Plant represented: myrtle.

Bibliography: Vokotopoulou I. 1990. *Οι ταφικοί τύμβοι της Αίνειας*, 21.

Seen but not studied: September 2013.

Fig.M12.1 Scattered fragments of wreath on floor of grave II. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.



[35] Vokotopoulou 1990, 24.
[36] Vokotopoulou 1990, 21. The fragments from grave I are described in Vokotopoulou 1990 at page 21 (unnumbered). Grave 1 was looted but material was found in the pyre – Vokotopoulou 1990, 19.

M13 Aineia Grave IV
Fragments of two wreaths from pyre and of a third wreath found with body. AMTh stores

Provenance and context[37]: Aineia Mound B, pyre (grave IV) and grave IV. Grave IV (mound B) contained several burnt objects including a few remains from three gilded bronze wreaths, one of which was burnt with the body. The deceased was thought by the excavator to be male. The burnt objects included 100 gilt terracotta buttons with a head of Athena, a black glazed kyathos (inv.7701) and a 1/8 stater of Philip II from the Pella mint. There were also glass and ivory ornaments from a wooden kline and beads in the shape of acorns. The fragment of iron could have come from the mouth of an aryballos possibly made of leather.

Date[38]: end of third quarter of fourth c.

Type:2

Constituents of bag labelled Nea Michaniona 28.6.79, Τύυβος Β Πυρά Χρ.4: **Figs. M13.1, 2.14 and M13.4)**

- 122 berries. One of these has a hole down the middle (vertically) which would have held the wire. Some of berries have a red or pink layer under gold, and at least one is blue.

Constituents of bag labelled N. Michaniona 25.6.79, Τύυβος Β Πυρά Χρ.4. **Fig. M13.2**

- 53 similar berries to the 122 berries above, several of which have a pink coating. L:8.34, 7.45, 6.45.
- One bead.

Further bag labelled 3.7.79, Τύυβος Β Πυρά Χρ.1[39](**fig. M13.3**) which contains:

- 36 berries, one of which is a different shape with 2 ridges and larger than the others- L: 11.73. None of these berries is coloured. L: 5.07 to 8.99. Diam.: 4.59 to 5.46.
- Four fragments of bone from a circlet. W: 4.45.
- Fragment of copper or bronze with holes (not part of wreath)
- Copper nail?
- Piece of medallion or button (burnt) with traces of gilding.
- Piece of ivory (burnt) –not part of wreath.

Separate bag labelled Τύυβος Β Πυρά 6.7.79: Large lump of lead or iron, probably part of strigil (not part of wreath)

Scientific analysis: The red when analysed in 2013 with XRF was thought to be hematite[40].

Bibliography: Vokotopoulou I. 1990. *Οι ταφικοί τύμβοι της Αίνειας*, 83 and pl. 51 (pyre) and 85 and pl.53 (grave).

Studied: September 2013 and November 2017.

[37] Vokotopoulou 1990,78-81.
[38] Vokotopoulou 1990, 133.
[39] Vokotopoulou 1990, 80 and 83; also 85 for wreath found with human remains; pl.51 a,γ,ε and pl. 53η.
[40] XRF analysis done in Thessaloniki A.M. 29 September 2013.

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Fig. M13.1 Berries labelled as being from mound B pyre © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M13.2 Further berries from Mound B, pyre © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig.M13.3 Berries, fragments of ivory from couch and part of medallion? © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M13.4 Pink berries from M13 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M14 Akanthos Grave 1467, 887, 888, 940, 941, 1100
Five wreaths. AMTh store

Provenance and context[41]: Akanthos/Ierissos grave 1467, Plot 49[42] (**fig. M14.1**). Grave 1467 contained the single inhumation of a young male. It held two parts of a lekane, two small pots near the feet (708 and 709) and a lopas (710). In addition to the gilded wreath or wreaths found by the head (887 or 888), in the second part of a lekane were found a gilded wreath of ivy (1100), two further wreaths on the chest (939) and another on the feet (887 or 888). 90 gilded flowers (940) were found scattered and probably belong to a myrtle wreath, as well as a clay cicada (941) and ten knucklebones. An iron ring (917) was found on the hand, an iron strigil (918) near to the right knee and near the left knee, a clay figurine (798). By the right arm were three silver tetradrachms - one of Alexander the Great, and two minted in Akanthos (953, 954, 955). Wreaths 887 and 888 are very similar; it is not clear which is which.

Date[43]: end of fourth century.

Types: 2, 6, 3 (inv. 1100)

Constituents:
A large box with label I.49.465 (887?) reads 'pieces of a gilded myrtle wreath in the lekane' but it corresponds to the description in Kaltsas 1998 as being from 887, which was found by the head[44]:

- a large piece of soil which contains fragments of bone circlet with holes, in which the stems of gilded copper and spear-shaped leaves were held. 150 clay gilded fruits[45]. **Fig. M14.2**. One red berry in this section looks as if it may have been painted.
- Fragments of bone circlet, W: 6.42. One fragment has no holes so it was possibly from the back of the head. 3-4 fragments of circlet with holes. W 4.24. Holes approximately 4mm apart.
- Berries (seed pods) with a dimple.
- Berries: not all the same size. At least one appears to have been coloured red. They all have a whitish coating. One berry with dimple (myrtle seedpod) diam. 8.18, smaller berry around 4.06. **Fig. M14.3.**
- Envelope with the section of soil etc contains 4 berries (one of which is a seedpod as it has a dimple).
- Fragments of something burnt, probably bone.

A box labelled I.49.145 (888) reading "pieces of gilded myrtle wreaths on the skull" but the fragments correspond to the description in Kaltsas 1998 as being from the feet[46], containing remains of one or more wreaths (**fig. M14.4):**

- Three gilded flowers (small) with four petals. There are traces of red on one of the flowers.
- Stems.
- Fragments of circlet L: 22.7. Seedpod/bud with dimple and cross. One flower on a stem comes out of the circlet.

Box labelled I.49.429 (939)[47]. This contains the fragments illustrated in Kaltsas 1988 pl. 88γ (**fig.M14.5**) and described as found on the chest.

- Nine flowers with eight petals. Delicate painting on flowers. Four flowers have traces of gold. Flowers diam.: 24.5. White coating underlying red pigment; in some areas, the red pigment lies partly under and partly over the gold. **Fig. 2.28 right.**
- Fragments of bone.

[41] Kaltsas 1998, 84.
[42] Plan in Kaltsas 1998, 21.
[43] Kaltsas 1998, 86.
[44] Kaltsas 1998, item 6 (887).
[45] Kaltsas 1998, 86.
[46] Kaltsas 1998, item 7 (888).
[47] Kaltsas 1998, 85.

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- 12 pieces of gilded bone circlet. W: 5.96 to 6.34. Holes are about 3.5 to 3.8 apart. Narrow strip in the middle of the bone with traces of gilding parallel to the line of holes; strip of gold, W: 3.46.
- Sea shell.
- Two fragments of gilded clay.
- Fragments of wire stuck on leaves.

Box labelled I.49.429 with over 100 berries and fragments of leaves. Fig. M14.6.
Gilding on the front part of the berries only. Gilding on both sides of leaves. Size of berries varies – diam. 5.22 to 3.12. Hole diam. 1.18. One berry has copper wire. Larger berries have dimple and tiny cross (seed heads). Some have broken in half.

940 (I.49.429)[48]

- 32 flowers, each with six petals and gold incised lines. Diam. 22.96.
- 29 flowers, each with six petals diam. 21.67. Hole for wire diam. (outer dimension) 1.96 (**fig. 2.28, left)**
- 36 flowers, some broken.
- 20 small flowers, each with four petals, Diam. 10.198. Hole 2.15 (outer dimension) (fig. **M14.7**).
- label saying 7 clay. 6 berries, diam. 5.2. Piece of stem of flower?

1100 gilded ivy wreath[49] (**fig. M14.8).** L: 14.5cm. Lead, pierced with holes, on which are supported copper stems for ivy leaves and fruits. Each hole has a big stem with ten spherical berries. Three such groups, two with ten berries and one with 9[50].

941 Clay cicada, listed as item 10 in Kaltsas 1998[51] but more likely coming from the ivy wreath (1100). Modelled on both sides (**fig. M14.9**), with five holes on the back (behind the eyes) to hold the wires to attach the insect to the wreath and folded wings. There are traces of gold and gilded wire in the holes could be seen with the USB microscope. There are traces of glue (modern) on the upper side. It is likely to have belonged with the ivy wreath.

Plants represented: myrtle, in light of seedpods, and ivy.

Scientific analysis: On analysis with Raman, one of the flowers was found to have cinnabar in the red but it was not possible to identify the white by this method of analysis.
The HHXRF analysis of the flower showed: mercury, a trace of lead and also iron and calcium.
FTIR All the shades of red and pink had the same components, indicating that the same red and white were mixed together in different proportions.

Bibliography: Kaltsas N. 1998. *Άκανθος η ανασκαφή στο νεκροταφείο κατά το 1979*, 84-86.

Studied: September 2013.

[48] Kaltsas 1998, item 9 and pl. 89.
[49] This wreath could not be located so was not studied.
[50] Kaltas 1998, 85.
[51] Kalsas 1998, item 10, 941.

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Fig.M14.1 Plan showing location of plot 49. From Kaltsas 1988, 21 ©Hellenic Ministry of Culture and Sports

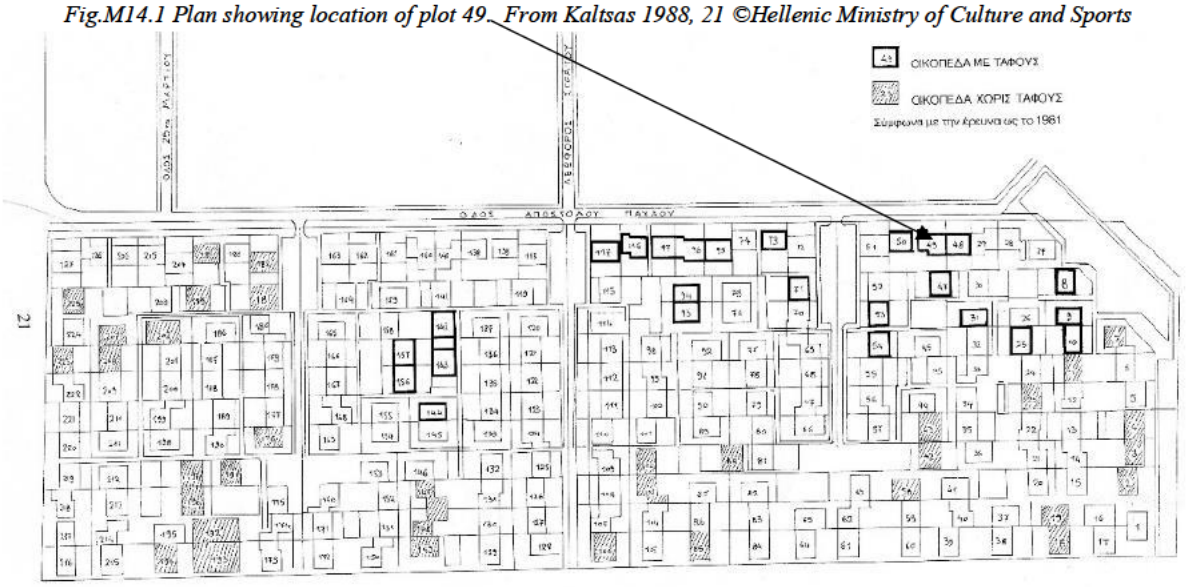


Fig.M14.2 Fragments of I.49.465 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig.M14.3 Some of berries from I.49.465 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig.M14.4 Part of I.49.145 including one flower © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

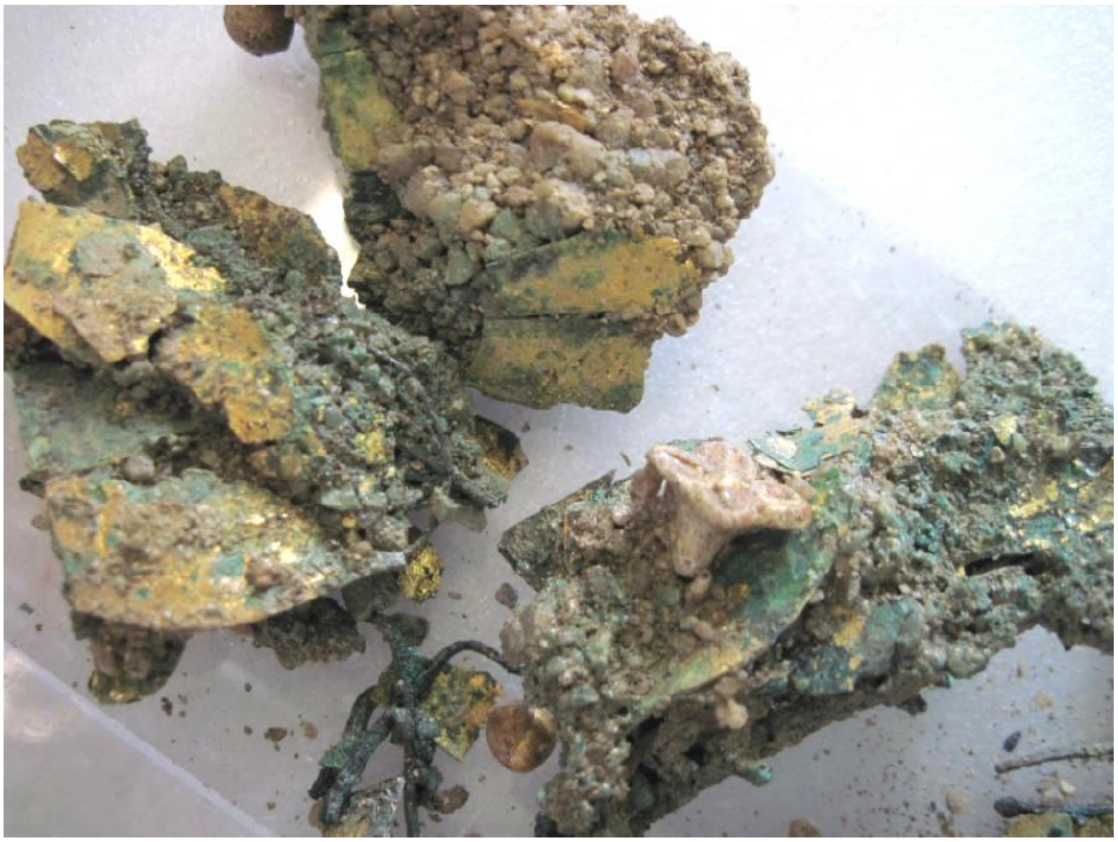


Fig.M14.5 Fragments of wreaths from grave 1467 (939) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig.M14.6 Box of berries and leaves I.49.429 (939) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig.M14.7 One of small flowers from 940 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig.M14.8 Ivy wreath 1100. From Kaltsas 1988, pl. 88a ©Hellenic Ministry of Culture and Sports

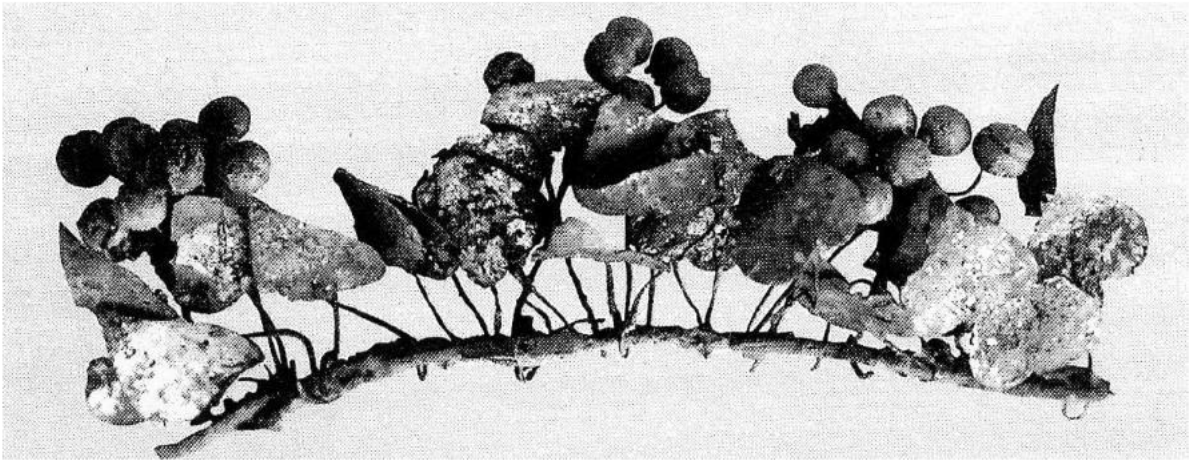


Fig.M14.9 Gilded insect, 941 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M15 Akanthos Grave 1512
AMTh store

Provenance and context[52]: Akanthos/Ierissos grave 1512, plot 117, on what appears to be the edge of the cemetery, by the modern road[53]. The wreath was found with cremated bones in a red figure pelike (inv.1026, pl.111), which was placed in the burial peribolos A, next to grave 1491. The excavator records that the bones are those of a young person.

Date[54]: end of fourth c. based on pelike of group G dated to 320-300.

Type: unclear.

Constituents:
Fragments of leaves and stems, and six gilded fruits charred from the pyre (**fig. M15.1**)

Bibliography: Kaltsas N. 1998. *Άκανθος η ανασκαφή στο νεκροταφείο κατά το 1979*, 102.

Studied: September 2013.

Fig.M15.1 Burnt remains of wreath © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



[52] Kaltsas 1998, 102.
[53] Plan in Kaltsas 1988, 21.
[54] Kaltsas 1998, 102.

M16 Derveni A A60, A4, A4b, A56, A58, A95b, A96d, A98d, A99e, A102d, A114a, A117c
AMTh store. Fragments from at least six wreaths

Provenance and context[55]: Derveni grave A, a cist grave 2.07x0.90m and 1.08m deep. There was a decorative zone with blue leaves and berries on a red ground on the inside walls of the grave and a layer of plaster on the floor. It was full of clay and bronze pots, vessels, jewellery and various small objects, as well as a bronze volute crater and fragments of cloth stuck to the rim. The crater contained cremated bones, parts of a gold oak wreath, fragments of a wooden stem for a wreath with gilded leaves and gilded clay berries. The grave also contained the remains of a gold olive wreath. The earth deposits mainly on the east side of tomb yielded glass alabastra, strigils, ivory fragments from female figures, lumps of pigment, bronze rings and, a large number of gilded roundels/ buttons with a head of Athena Parthenos or small star. Gilded clay beads and roundels were also found in the remains of the funeral pyre on top of a cover slab, as well as gilded leaves and clay berries from wreaths, a carbonised piece of wood, a carbonized papyrus scroll with "Orphic" text, two ivory eyes from a mask or statue and fragments of at least six clay column capitals.

Date[56]: end of fourth century- early third.

Type: 2

Constituents:

A60

The excavators thought there were the remains of five or six circlets most of which appear to have been found on the pyre, although some were in the crater[57]. They seem to have numbered the wooden circlets 3 and the bone circlets 4, and there appear to be at least five wooden circlets ***3α***, ***3βα, 3β, 3δ and 3ε,*** and five bone circlets (two mounted with wooden circlets ***3α and 3γ, 4β, 4γ, 4δ,*** 4ε, ***4στ,*** and further fragments which cannot be definitely attributed to α or β).

Overall dimensions of complete circlets: diam. estimated 17cm ,13.5cm and 17 cm.

- ***A60 3α*** large circlet of wood and bone (the bone has been broken into two pieces, which have been repaired with adhesive in modern conservation) (**fig. M16.1**). There is a substance on the back of the wood and stems, possibly organic material, and a single hole at one end, for fastening (**fig. M16.2).** Overall dimension ***3α***: diam. 17cm. Total L of wood approximately 38cm. W of wood: 12.46. W of bone: 5.48. Holes in bone 3.94 apart.
- A wooden circlet ***3βα*** (**figs. M16.1**). Total L of wood approximately 29cm. It has been bent out of shape but is approximately 14cm x 15 cm. W 11.2.
- ***A60 3β***: wooden circlet in two pieces (**fig. M16.3**). The wooden circlet has two gaps in the centre where there are no holes. W: 12.92 -13.16. It was not possible to measure the diam. of original circlet, but the L of two pieces of wood are 37cm and 7.5 cm (the two fragments join); which would have given a circlet about 17cm in diam.
- Circlet of wood, possibly complete, with bone circlet still attached, labelled ***3γ*** **(fig. M16.4)**. The gap between the holes varies but is approximately 3.46, apart from a gap in the centre of the wood which is 4.6cm wide. There is a break in the wood with a modern repair to the right of the gap in the holes, but the holes resume on the right- hand side of the break. Only one hole has been pierced in the wood towards the back of the head on the right. The bone has been centred in the middle of the wood. Overall dimensions of wooden circlet: diam. 13.5 cm, and about 45 cm of wood in total. About 13 cm of bone, W: 4.02.
- Seven fragments of wooden circlet labelled ***3δ***. L in cm: 9, 10.5, 10.5, 4.2, 3.2, 2.4, 1.7. Two of these two pieces would fit together if joined horizontally; W would be 11.6 if the two pieces are put together.

[55] For the number of wreaths: Themelis and Touratsoglou 1997, 58; for the locations: Themelis and Touratsoglou 1997, 28 and 30.
[56] Themelis and Touratsoglou 1997, 221. Ignatiadou 2017, 261 gives 'around 320'for grave β, thought to be contemporary.
[57] Themelis and Touratsoglou 1997, 58.

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- Two small fragments of wooden circlet labelled ***3ε or perhaps from 3γ***.
- Three fragments of wooden circlet with label ***3ε*** (**fig. M16.5**). The holes are close to the edge, so the circlet could have broken horizontally along the line of the holes. Holes 2.1 to 4.4 apart. L (in cm) 15, 10.5 and 16.5. W: 7.65, 8.77, 8.04.
- 11 fragments of bone circlet labelled ***4β*** in a separate bag, which almost certainly fitted on the front of the wooden circlet ***3β*** (**fig. M16.3**). The holes are approximately 7mm apart. Total L of 12 bone fragments: (in cm): 26.5. W: 5.64mm.
- Seven fragments of bone circlet labelled ***4γ*** **(fig. M16.6).** There is a segment of bone where the two overlapping pieces have been joined, which is not pierced and is about 3cm long, which was probably in the centre of the wreath. W: 4.37. Total L in cm: 35.6. Placed with the fragments still in position on the wooden circlet, the total length would be about 48cm.
- 16 fragments of bone circlet labelled ***4δ***. W: 4.35, holes 4.35 apart. L of fragments (in cm) 42.3.
- 11 fragments of bone labelled 4ε. W: 3.94, holes 2.14 apart.
- 11 fragments of bone circlet in a separate bag.
- In a bag labelled A60, many fragments of bone circlet, of W approximately 4.5.
- fragments of bone with leaves and (copper) labelled 4στ and referring to A60 and A114. A piece of bone circlet has a label saying that it was found in a box with A114α. The other side of the label refers to A109, A111, A114 α and β.

Fragments of leaves, stems and circlet including oak leaves in an unlabelled box (fig. M16.7). Traces of fabric on metal are visible under the microscope (x6.5). The box contains:

- Fragments of myrtle and oak leaves (**figs. M16.8 and 2.20**). Some of the copper has melted from the pyre. The leaves of both myrtle and oak are made in one piece with the stem. All are gilded on both sides. Some of stems and leaves misaligned, probably having melted in the pyre.
- Broad stems with slender wires protruding, diam. of broad stems: 1.73. Diam. of slender wires: approximately 0.92. In some instances, three thin stems protrude from tube (**fig. 7.49**)
- Broad branches, diam.: 1.93 to 2.19 mm. Narrow stems, W about 0.65.
- Fragments of bone circlet, some of which are charred by pyre. W: 3.7. Holes diam. 1.48, 3.35 to 4.07 apart.
- Half a berry. L: 7.14 (oval).
- A piece of sea-shell.
- Pieces of charred wood.
- White substance, possibly organic substance with impression of plaster from inside of cist tomb (not part of wreath).
- Fragments of gilded leather[58] (not necessarily part of wreath).
- a small number of leaves with labels referring to ***3α and 4α*** in eight bags, almost certainly collected from the unlabelled box and kept separately because they are in such good condition. They are mostly myrtle, but some are oak.

A58

- 256 small berries, probably myrtle, made of red clay with a white coating. Some have traces of red or blue green colour under gold (**fig. M16.9**). L: 7.11, 7.44, 6.21 (sample). Diam. of holes: 1.35.
- 172 large oval berries or buds. Some are gilded and there are copper stems on some. L: 9.19, 9.56, 10.37; diam. of holes 1.6.
- 318 oval berries or buds which are long and thin. The gold has been laid in straight line and does not fully cover berry (**fig. 2.18**). L: 8.08, 8.75, 7.28. Diam.: 4.65, holes diam. 1.3
- 291 medium size berries or buds, oval, gilded, a few have a red coating, others a white coating (more berries are white than red) (**fig. M16.10**). Sample sizes L: 7.7, 8.4, 7.67.
- 274 myrtle berries. Some have ridge at the end near the hole (**fig. M16.11**). L 9.18, 8.49, 6.26. Holes: diam. 2.45, and bigger on those with ridge. Another berry (seedpod) has cross and ridge opposite hole.

[58] Identification by D. Kachagias, pers. comm. January 2014.

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A80
Single gilded berry with red coating.

A95β
Four gilded berries one of which has a red coating whereas the others are white. One is more rounded. One tiny seed head has a cross (6.21 long). Diam. of seed head 3.30.
Two oval berries L: 7.39. **Fig. M16.12**.

A96 δ or A96ε.
Four berries:
One of the berries has a ridge (seedpod of myrtle). Blackened. L: 8mm.
Gilded red berry, L 7.20.
Small berry (seed pod) white coating 6.4 with tiny cross.

A98 δ and on reverse 98γ.
Eight berries, oval gilded, grey, burnt from pyre. L: 7.29.

A99ε
Ten berries with red coating, some blackened by pyre. L: 8.28 to 8.62.

A99ζ
Four berries with bronze or copper. One has a tiny ridge at the same end as the hole.

A102δ.

- Nine gilded berries of different sizes. Some have red coating, one has a blue coating and some are blackened by pyre. L:7.5, 8.8, 6.65 (**fig. M16.13)**
- 52 acorns (**fig. 2.21**). The label says that one is from A102 δ, 1 from A117γ and one from A98ε. A piece of copper has stuck to an acorn and part of leaf and stem. One acorn is red (coloured by pigment?), all have reddish clay. One has red on acorn, whereas the cup is brown. Most have gilding. Cup is shown by four tiny ridges. Acorns have clearly been moulded; there is a line down one side from the mould. L: 9.3 to 9.42.

A117γ
The label reads 19 fruits, some of which are blackened by fire and that four are myrtle, seven ivy and six are small. One berry has a red coating with fine high polish on gold (**fig. 7.22**). Another has white coating with similar looking gold. Various sizes: 7.29, 8.66.
Berries in a bag with a label which reads "**pyre from Grave A**", but most of the berries do not look charred. The coating is very white. The berries are of different diams: 9.55 to 7.15.

A 130 one bead with two holes, not from wreath, one piece of earth. One berry 8.8.
One berry unlabelled with small ridge, wire.

99δ in bag. Two parts of a rounded object- perhaps a button? Part of a bead or berry which is probably not part of the wreath.

- Piece of something red (probably clay) with gilding and 2 fragments wire. Not part of wreath.
- Piece of round copper. Diam.: 6.88.

Plants represented: myrtle and oak; Themelis and Touratsoglou suggest there may also be olive[59] (presumably in view of the large size of some of the berries), but since the oval berries are the same shape, it seems more likely that all are myrtle.

Studied: January 2014 and March 2015.

[59] Themelis and Touratsoglou 1997, 58, where they describe the plants represented as being olive, myrtle and oak.

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Scientific study: The HHXRF showed that the coating on the berry from 102 δ had a lot of iron, with no trace of lead or mercury, so was probably hematite.

Bibliography: Themelis P.G. and Touratsoglou I. P. 1997. *Οι τάφοι του Δερβενίου*, 58 and fig. 61.

Studied: September 2013, March 2015, November 2017.

Fig. M16.1 Wooden and bone circlet A60 3α (at front), and a wooden circlet probably 3βα © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M16.2 Single hole at one end of circlet © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M16.3 A60. Fragments labelled 3β (wood) and 4β(bone). There is a gap where there are no holes in centre of wood © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M16.4 Fragments of wooden circlet 3γ and attached bone circlet © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M16.5 Wooden circlet 3ε © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M16.6 Circlet of bone labelled 4γ © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M16.7 Box of leaves, stems etc © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M16.8 Myrtle leaves © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

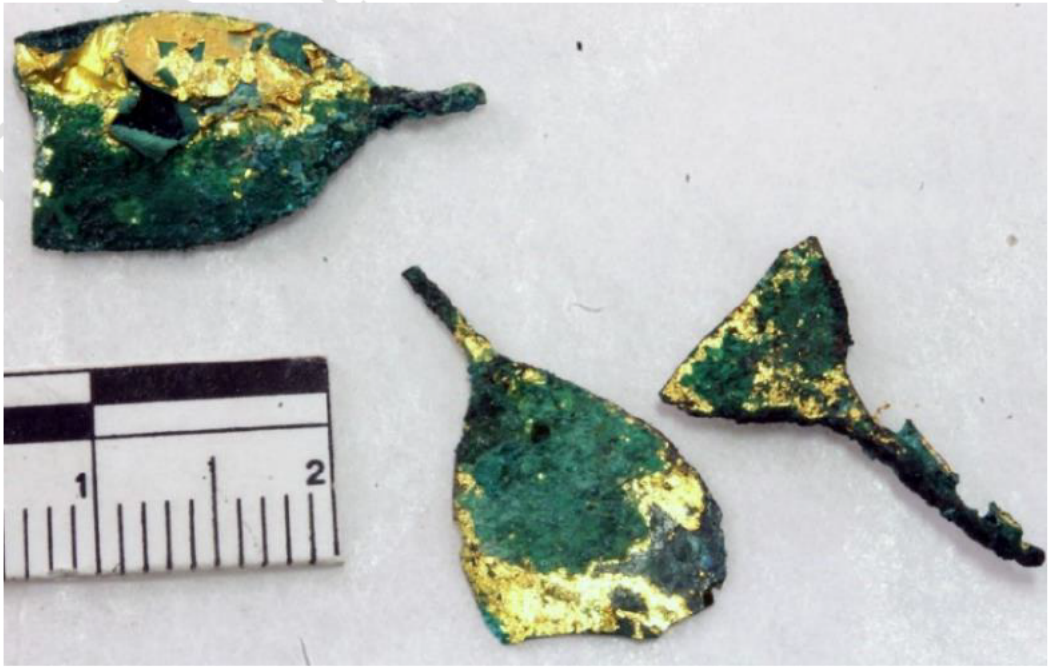


Fig. M16.9 Berries from group of 26. Some have red or blue green coating © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M16.10 Berries from group of 291 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M16.11 Myrtle seedpods A58 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M16.12 Four berries from A95β © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M16.13 Blackened red berries A102δ © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M17 Derveni B B110, B111, B112/Δ20, B141
AMTh store. At least 3 wreaths

Provenance and context[60]: Derveni Grave B. Cist grave (internal dimensions 3.06 x 1.53m and 1.62m deep) with walls coated with lime plaster in red and white with guilloche of olive (?) branches with blue-red leaves and black berries. The grave had plenty of space for grave offerings. The "Derveni crater" with Dionysiac references was found in the grave, as well as a gold myrtle wreath, a coin of Philip II (triobol), 20 silver and many bronze symposium vessels, alabaster and clay vessels. It also held iron weapons, fragments of leather and horse trappings. The bones belonging to a man aged 35-50 and a younger woman had been wrapped in a purple cloth. It is not entirely clear which wreath was found with the crater (and the bones). Themelis and Touratsoglou say that a gilded wreath was found in the crater[61], but give the ref. number B138, which is the gold wreath - perhaps a mistake in the numbering. Clay berries and stems of wreaths were also found during the cleaning of the floor after the removal of the objects.

Date[62]: late fourth - early third c.

Type:2

Constituents:

B110
16 fragments of circlets of which three fragments only have bone, eight only have wood and five have both wood and bone (**fig. M17.1**). The holes go through both the wood and bone. The bone but not the wood is gilded; the gold has been laid very neatly. One of the circlets has a stem about 4.9mm long going through two holes in wood, above the level of the holes (on the wider of the two circlets). Could this have held a medallion or something similar? This is not the way stems are held (**fig. M17.2**). A white substance is holding the stems on the back of the wooden circlet and is possibly calcite or organic material (**fig. M17.3**). The remains of stems/leaves going through holes have been bent to go through the holes. In parts of the circlet where two pieces of bone overlap, there is no hole drilled through the bone or the corresponding piece of wood. Three fragments of wood which are not attached to the bone could have split horizontally. One of these pieces has enough wood to make a virtually complete circlet. One circlet has the remains of leaves on one piece of bone. The bone and wood circlets are attached closely on one of wreaths, and starting to come away on another.
An attempted reconstruction of one circlet is shown in **fig. M17.1**. The fragments of this wreath have a narrow piece of bone mounted on the wood. The reconstruction was done using four pieces of bone and three pieces of bone and wood. Space between holes about 2.2. Diam. of circlet on this reconstruction would be about 11 cm. Bone W: 3.7 to 3.95. Wood W: 7.59, 9.43, 9.16.
A reconstruction of a further wreath is shown in **fig. M17.4**, made of two pieces of bone and one piece of wood and bone. Space between holes 3.14. Gaps in wood between holes 3.5cm, 3.8 cm, 3cm. Space at end of bone with no holes 2.6cm. Where two pieces of bone overlap, there are no holes if there is bone or wood behind it. There is possibly some thread. Distance between holes approximately 5.48. Diam. about 12cm. Bone W: 4.5 – 4.9. Wood W: 8.2.

Box of tiny fragments labelled B111:
Leaves, bone circlet (**fig. M17.5**).

Bag with larger fragments of wood, myrtle leaves, wires, dirt.
Gilding on both sides of leaf fragments. Stems diam.: 0.84.

Box with over 300 berries, labelled Δ20 but label also refers to B112.

[60] Themelis and Touratsoglou 1997, 194.
[61] Themelis and Touratsoglou 1997, 62.
[62] Themelis and Touratsoglou 1997, 221. Ignatiadou 2017, 261 gives 'around 320'.

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It is more likely that the berries come from Δ than B since they are illustrated in Themelis and Touratsoglou 1997, pl.123 and described as being from grave Δ. They will therefore be discussed under grave Δ. They are very similar to some of the berries from grave A.

B141:

- small piece of iron (not part of wreath)
- Fragments of leaves, bone circlet and a berry

Plant represented: as far as can be seen, only myrtle.

Bibliography:

Musgrave J. 1990a 'The Cremated Remains from Tombs II and III at Nea Mihaniona and Tomb Beta at Derveni', *ABSA*, vol 85, 301-325.
Musgrave J. 1990b 'Dust and Damn'd Oblivion: A Study of Cremation in Ancient Greece', *ABSA*, vol 87, 271-299.
Themelis P.G. and Touratsoglou I. P. 1997. *Οι τάφοι του Δερβενίου*, 89.

Studied: January 2014, March 2015, November 2017.

Fig. M17.1 Fragments of circlet B110 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M17.2 Wire above line of holes on B110 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. 17.3 Back of circlet B110 with possible organic substance © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M17.4 Attempted reconstruction of second circlet from Derveni B. B110 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M17.5 Box of fragments B111 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M18 Derveni D Δ18, Δ19 (?), Δ20, Δ21
AMTh store. At least three gilded wreaths.

Provenance and context[63]: Derveni Grave Δ. The cist grave (2.4 x1.8m. and 1.5 m. deep) had no cover slab; the interior was coated with white plaster and had a blue decorative band. The wooden ceiling had collapsed, bringing earth deposits down and destroying most of grave offerings. It seems that some were pushed aside to make room for a second burial. At a short distance from the east wall were found a bronze phiale and an iron spear butt, as well as bronze symposium vessels. A group of objects to the west included a wreath, Δ18, and a (gold) wreath with a solid gold myrtle branch with rich applied decoration. Skull bones from a burial that had possibly been pushed aside were found next to the wreath. In the south-west corner, together with spearheads, was a second gilded copper wreath with the same reference, Δ18, either very similar to the one above or part of it (i.e. it seems that at least two gilded wreaths were found in the grave with number Δ18).

Date: Touratsoglou dates the grave to after 320, approximately the same date as Derveni B[64].

Type: 2

Constituents:

Δ18:

- About 92 fragments of circlet (**fig. M18.1**). Some have joined pieces of bone, which are not pierced in the area of overlap. The gold has been laid on neatly, with a straight line on the back (**fig. M18.2**) and a yellowish coating. Judging by the amount of bone, there must have been at least two wreaths. Spaces between holes (hole to hole) 4mm in the wider bone, 2.58mm in smaller. Diam. of holes 1.46 (wider bone), 0.82 smaller. Wire in holes: W 0.65 to 1.32. Possibly remains of thread wrapped around some of the wire. Total L of 92 fragments of bone circlet: 39.2 cm, which would give a diam. of about 12.5 cm, so probably constituted one wreath (allowing for a gap of about 4 cm at the back). The W of the fragment is about the same, c. 4.3 mm.
  Fragments of bone circlet in a bag labelled Δ18, which has 28 pieces of bone and wood and gilded leaves. The fragments of bone would make one further wreath 15cm in diam., and a third wreath 13 cm in diam. or possibly a little larger (**fig. M18.3**). The space between holes (none at back of wreaths) varies between 3.5 and 3.24. There are variations in the spaces even on the same piece of bone. The wood looks like a soft wood. W of wood: 4.33 – 4.28. One fragment makes it clear that there were originally two circlets, wood behind bone, and something like eyelets to take the stems (**fig. M18.4**).
  The bone fragments which would constitute one large wreath (15cm in diameter), but do not necessarily belong together: (in cm) (total) L 53cm.
  The bone fragments which would make another wreath but do not necessarily belong together: (total) L: 37.9.(13 cm in diameter).
- Several pieces of wooden circlet (**fig. M18.5**). The wood is pierced, so there clearly was a wooden wreath attached to the bone with the wires going through bone and wood. There are no signs that the wood was gilded.
- Amongst the fragments is a copper button or medallion; it is not clear whether this ever belonged to the wreath. Diam. 10.35, same size as the button in Z31
- One piece of wire covered in corrosion, coating or organic material.
- One small tube of gilded copper with 3 tiny wires inside (**fig. M18.13**).

Two sample bags (unnumbered). One has two beads, the second one. Both are made of gilded clay, and are wider at one end than the other. These are very unlikely to be from the wreath. A second small bag has gilded material which is not from wreath and is very light. It has no copper corrosion.

[63] Themelis and Touratsoglou 1997, 196-7.
[64] Touratsoglou 1998. Ignatiadou 2017, 261 gives 'around 320'.

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Δ19γ box of beads, not part of wreath.
Δ20 large box with over 300 oval gilded berries (**figs. M18.6-9**). The berries, of red clay, have not been moulded and are gilded with a light coating, some of which seems coloured red. There is also some green-coloured coating, which is probably discoloured copper. A few still have remains of stems (some gilded), one piece of which still has thread on it. Some of the berries look as if they have been charred by the pyre. Holes in berries: diam. 1.19. W of stem: 0.77. The berries are in various sizes: L: 6.8, 9.2, 7.4.

A further box labelled Δ20 holds fragments of gilded leaves, gilded both sides and gilded stems (**figs. M18.10-18.11**). It also contains about 12-13 fragments of wire, thin (0.53), thicker (1.37) and thick (1.66). There is a lot of copper corrosion on these pieces and it is difficult to tell what is underneath, but it looks as if there is a tiny piece of thread on some. Some of the wires and leaves are stuck together with corrosion. One leaf has straight lines on it (perhaps scored to indicate where it was to be cut). **Fig. M18.12.**

Δ21 box with two metal rings and two small objects (stones?) and a piece of wire. Probably not part of wreath.

Plant represented: myrtle

Scientific investigation: a fragment of coated circlet and leaf from Δ 18, as well as a red berry from Δ20 were examined in the SEM at the Ecclesiastical Academy in Thessaloniki, and the same material was also examined with the HHXRF. The yellowish colour on the coating of the circlet was almost certainly ochre, an iron hydroxide (goethite). The leaf was found to be almost pure copper and the gold was also almost pure.

Bibliography:
Themelis P.G. and Touratsoglou I. P. 1997. *Οι τάφοι του Δερβενίου*, 110.
Touratsoglou I. P. 1998. 'Στην αναζήτηση του Ελληνιστικού χρυσού' in *Μνείας Χάριν: Τόμος στη μνήμη Μαίρης Σιγανίδου*, 235-264.

Studied: January 2014.

Fig. M18.1 Fragments of bone circlet Δ18 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig.M18.2 Fragment of bone showing gold laid on back Δ18 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



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Fig.M18.3 Fragments of bone circlet Δ18 arranged to form two wreaths © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig.M18.4 Fragments of circlet Δ18 – bone, wood and copper © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M18.5 Fragments of wood from circlet Δ18 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M18.6 Some of berries from Δ20 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M18.7 Detail of pink coating on berry from Δ20 (x8) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

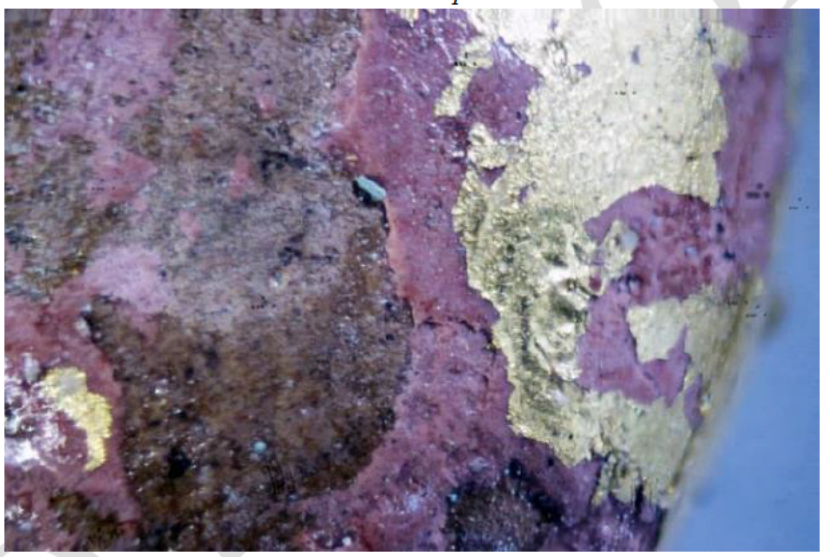


Fig. M18.8 Detail of blue berry from Δ20 (x8) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



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Fig. M18.9 Detail of inside of berry (x8) Δ20 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

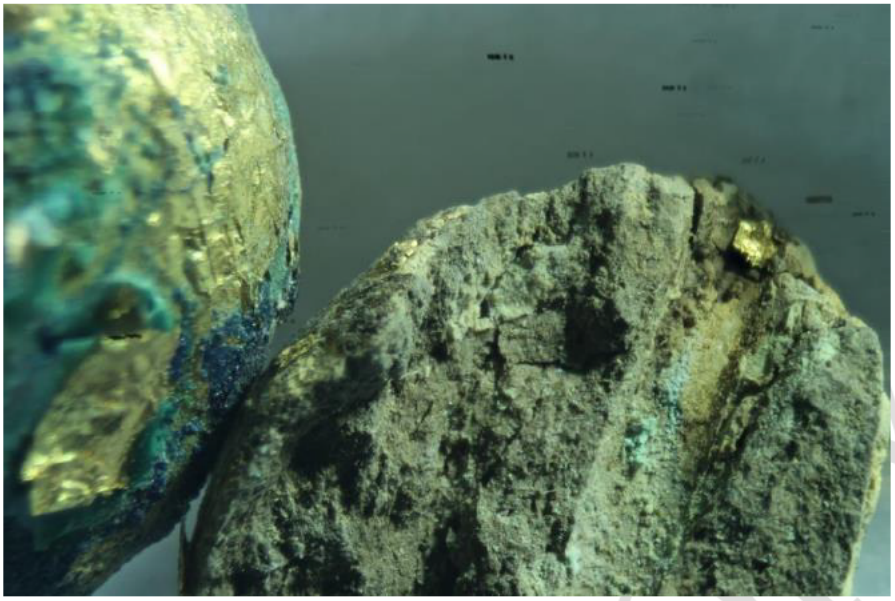


Fig. M18.10 Three sizes of stems Δ20 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M18.11 Gilded leaves and stems Δ20 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M18.12 Leaf with scored line Δ20 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

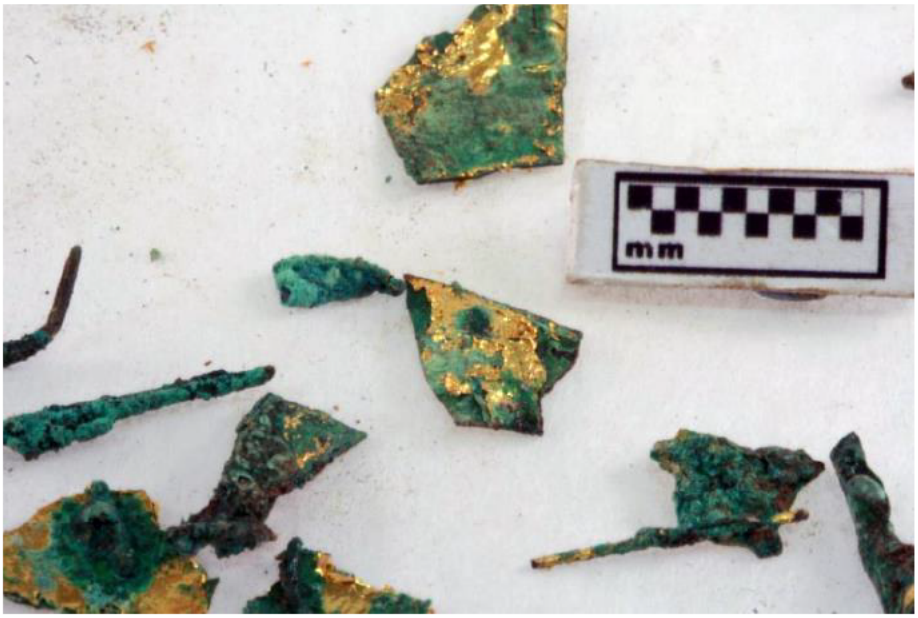


Fig. M18.13 Copper wire with two wires protruding Δ18 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M19 Derveni E E4, E34
AMTh store. Fragments of at least two wreaths

Provenance and context[65]: Grave E. Cist grave (internal dimensions 1.44x1.36m and 0.6m deep). During removal of earth a badly corroded bronze coin was found, as well as part of a bone ornament, fragments of an alabastron, part of a gilded wreath and rusty fragments of iron. There seems to have been a wooden box with cremated bones next to which there lay fragments of a gilded wreath with myrtle leaves and clay berries. Similar fragments and berries were discovered scattered over various points on the floor, as were gilded clay roundels with a repoussé head of Athena Parthenos. Plaques were found and also four alabastra, fragments of two clay female protomai with polos and veil and a sea-shell. To the north were: a 1/4-stater of Alexander III and a gold necklace bead in the shape of an amphoriskos. The grave offerings indicate that it was probably the burial of a woman.

Date[66]: late fourth century to early third (dated by a coin of Alexander the Great found in the grave).

Type:2

Constituents:
3 bags labelled E4α in a plastic box with fragments of circlet[67]. Fig. M19.1.
1st bag: 12 pieces of gilded bone, one of which has a stem. Two strands of wire (stems) in two fragments. Neat gilding, and straight line of gilding visible on back. Diam. of holes 1.35. Spaces between holes fairly large– 3, 2.3. W of bone 3.65. L of fragments (total) 30.8 cm.

2nd bag: 15 pieces. Spaces between holes narrow: 1.3, 17. L: (total) 4.6cm

3rd bag holds 8 pieces. Space between holes variable, about 1.6. L: (total): 4.8cm. W 3.9, 4.1.

In the box: 7 fragments of bone either not pierced or at most one hole. Fragments L: (total): 3.96cm. There is also a leaf/stem, W: 4.3.

Bag labelled Derveni 20.4.62, grave E.
5-6 fragments of bone circlet, gilded on front. Two of these pieces have only one hole. Holes widely spaced (about 5.8 from edge to edge of holes). L of fragments 2.4cm, 3.1, 3, 1.4, 1, 5.2. 1 total 3.77cm. Berry (oval). 6.47 long.

Total L of circlet fragments: 47.93cm, which would make one circlet about 15.2cm in diam.

Fragments of stems and leaves labelled E4β. Fig. M19.3.
Some of the stems are bent into a spiral and some are double. The spiral wire is thin (W: 0.58) and it looks as if it was wrapped around the bone circlet. Diam. of spirals approximately 4.85 (outer edge). Stems have a little gilding left. Some of stems are 0.77x0.77 (square). Longest stems are 5-6cm long. Stems 8.1 cm, 6.2, 4.1, 4.5, 6.1, 8.4, 2.2. The fragments of leaves are at widest 8.25. Two complete leaves L: 32.3 and 30.
The copper leaves are gilded on both sides. The remains of calcite or organic material are stuck to two of branches. The leaves are wider at the end opposite to the stalk, and could be olive. The leaves have a line down the middle (vein) **(fig. M19.2)**. The gold is loose on some of leaves. There is a very smooth finish on the green corrosion, which could perhaps be ancient glue (if there had been some recent consolidation, the gold would not be loose) (**fig. M19.3)**.
There is also a small fragment of bone circlet, diam. 2.8.
The box with the stems and wires also contains two stems held together with thread and another organic material, maybe leather or a tiny strip of wood (**fig. M19.4).**

[65] Themelis and Touratsoglou 1997, 197
[66] Themelis and Touratsoglou 1997, 221.
[67] Themelis and Touratsoglou 1997, 119.

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Bag labelled 4β, which holds three pieces of thread and a small fragment of bone. The thread is twisted and was confirmed as linen[68]. **Fig. M19.5**.

E4γ: 25 oval fruits and one bead. Themelis and Touratsoglou describe the oval fruits as olive[69], and the berries are perhaps more symmetrical than myrtle berries normally are (**fig. M19.6**). There are the remains of stems on six of the berries. The wire for the stem looks as if it was made by folding copper plate. Oval berries L: 6.1, 6.1, 6.53 and 6.17.

E4γ label refers to 93 fruits, described as myrtle in Themelis and Touratsoglou[70] (**fig. M19.7**). They are clearly myrtle seed pods as there is a small protrusion opposite the hole and a cross. There is one tiny loose wire 0.7 diam. There are remains of copper corrosion inside the holes. The crosses could have been made with small sticks or wires (grooves 0.8 to 1.1 wide). **Fig. M19.8.** Seed pods vary in size, L: 5.4 to 7.6. Holes diam. 1.1.

E34 Bag labelled Derveni 12.8.62 which appears to contain the sweepings from the floor; also tiny fragments of wreath

- 3 pieces bone (L:16.5 and 13), 2.77 diam.
- 1 berry oval, L 5.76.
- Fragments of wire 1.17-1.46 cross section, square looking.
- Fragments of leaves, gilded both sides.
- Bent stems.
- Nine buttons.

Plants represented: myrtle and possibly olive.

Bibliography: Themelis P.G. and Touratsoglou I. P. 1997. *Οι τάφοι του Δερβενίου*, 119.

Studied: January 2014 and March 2015.

Fig. M19.1 Fragments of circlets E4a © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



[68] D. Kechagias, pers. comm. January 2014.
[69] Themelis and Touratsoglou 1997, 119.
[70] Ibid.

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Fig. M19.2 Fragments of stems and leaves, E4β © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M19.3 Two complete leaves E4β © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M19.4 Detail of leaf with possible organic glue E4β © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

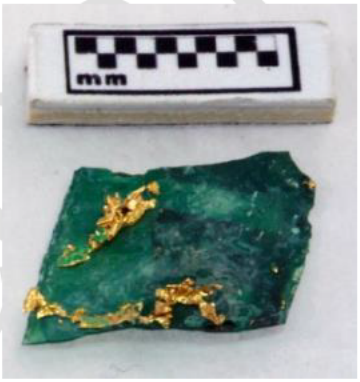


Fig. M19.5 Fragment of thread and leaf E4β © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

M19.6 Oval berries – olives?E4γ © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M19.7 Some of berries from bag with 93 berries E4γ © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

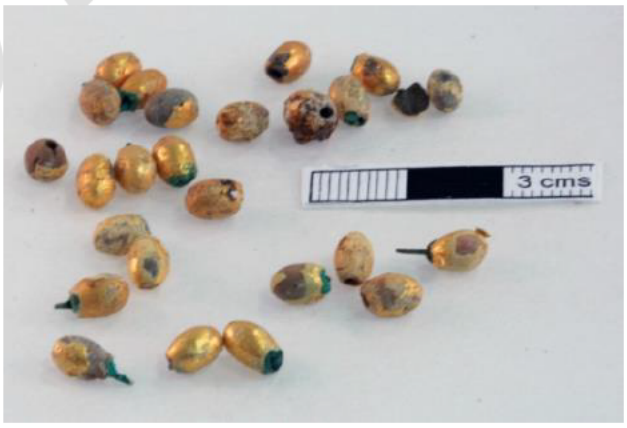
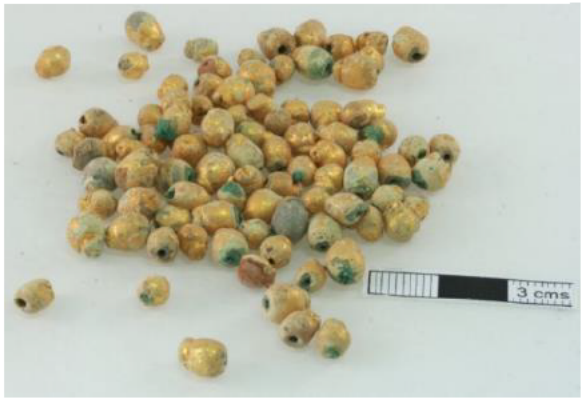


Fig. M19.8 Detail of myrtle seedpod. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports





M20 Derveni Z? Z30 and Z31.
AMTh store. Fragments of wreath labelled as being from Grave Z, and further fragments which could be from Grave H or E, or from Z

Provenance and context[71]: Derveni Z? The pit grave in which the wreath was found had red plaster on the walls. The grave offerings consisted of mainly bronze vessels, a silver calyx and astoid cups, as well as gold jewellery. Female burial?
Themelis and Touratsoglou do not mention any wreath fragments from Z or H.

Date[72]: late fourth/early third c.

Type:2

Constituents:
Z30 contains about 100-110 oval fruits (**fig. M20.1**). The label says 'possibly E'. Some of the fruits/berries have a dimple (myrtle). There is a small fragment of bright red sticking to one berry possibly from plaster. L: 7.39, 6.47 for berries with dimple.

Bag labelled Z31 contains:
- Nine berries of gilded clay. **Fig. M20.2**.
- a copper ring and a small button. Ring diam.: 9.47 (outer), 5.42 (inner). Button diam. 9.41. Probably not from wreath.
- Tiny piece of wire, diam.: 0.58.
- Fragments of leaves (gilded both sides).
- Fragment of bone circlet with holes. W: 4.43.

Box of material probably from Z (fig. M20.3)
- Three fragments of bone circlet
- one stem and leaf
- one branch and stem
- one berry

Fragments labelled as being probably from Z (fig. M20.4).
- Fragments of gilded bone, berries, leaves.
- Copper tubular pieces, made from thin sheet. Remains of organic material, which looks like thread, inside and crystalline material, dark, on the inside of the copper tube. Copper tubes diam. 2.57. Diam. of hole inside tube 1.30. The copper seems to have been hammered and then folded. These objects are unlikely to have been from a wreath.
- A piece of bone circlet with holes. Bone L: 19.63, W: 4.54.
- Oval berries. One or two have grooves probably from wire. Some have crosses. Oval berries L: 6.6, 5.19, 7.6. Stems diam. c.0.94.

Plant represented: myrtle.

Bibliography: Themelis P.G. and Touratsoglou I. P. 1997. *Οι τάφοι του Δερβενίου*, 121 (for grave Z generally).

Studied: January 2014 and March 2015.

[71] Themelis and Touratsoglou 1997, 198. Themelis and Touratsoglou do not list any wreath fragments as having been found in graves E or H.
[72] Themelis and Touratsoglou 1997, 221.

DO NOT COPY

Fig. M20.1 Berries from Z30 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M20.2 Fragments from Z31 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M20.3 Box of material labelled as being probably from Z © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M20.4 Material probably from Z © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M21 Karyochori, Eordaia, grave 4.
Aiani AM store

Provenance and context[73]. The wreath was found in pit grave 4, which was intact, and held two skeletons, apparently male and female. The remains are thought to be those of a woman who was 1.69m tall and wearing jewellery (gold earrings with lion heads and a silver gilded ring with a seal and a second ring made of iron). The wreath was placed to the left of the head (**fig. M21.1**). A large number of finds had been placed in a lekane including a bronze phiale and a black glaze skyphos, as well as eight clay vessels (some of the pottery is shown in Karamitrou-Mentessidi 2005 pl. 12 and 13). Other finds included a protome from a much used mould, two bronze coins (one of Kassander with head of Heracles and the other of Demetrios Poliorketes), and 32 knucklebones which were found scattered.

Date[74]. First quarter of the third century

Type:6

Constituents:

- 14-15 spherical clay berries with traces of gilding. The clay is reddish and there is a layer of yellowish coating underlying the gilding. The holes are square or round, and some have the remnants of copper wire still in the hole (**fig. M21.2**). Diam.: 4.8 to 5.46.
- Seven clay flowers, of which six are virtually complete and the seventh broken up. All are painted. They can be divided into three groups:
  Group 1 has four flowers with distinct petals (**fig. 2.34**). All the flowers in this group have five petals. They were probably made in moulds, and two are so similar that they could have come from the same mould; one has deeper indentations, indicating that it was made before the other. The colours are red, blue and pink with some applied gilding. The painting has been done quite carefully, distinguishing the petals (pink) from the calyxes (blue), and the central area on three is red with a gold boss. The paint has been applied on top of a white coating. Traces of tool marks can be seen on the back, probably from a reed or stick which was used to push the clay into the mould. Diam.: approximately 22.
- Group 2 has two flowers consisting of roundels with a central boss and the petals indicated only by paint (**fig. M21.4**). Both are pink, white and red, but one flower has more petals than the other. A white coating was used. These flowers must have been moulded as they are the same size and shape. The clay of one looks redder than the other, but this could be due to differences at the firing stage rather than it being a different clay. Traces of tool marks can be seen on the back. Diam.: 22.7.
- Group 3 has only one fragmentary flower, which is bigger than the others, with the original diam. estimated at approximately 26.5.
- There is no sign that the wire was twisted while being made, and it was probably simply cut from a piece of sheet metal. Several fragments are in an S-shape, the longest about 30mm. The wire/stems are approximately 1mm wide.
- Fragments of at least 26 copper myrtle leaves, made in one piece with the stem. The shape of the leaves indicates myrtle (**fig. M21.4**). There are also further fragments of gilded copper leaves which have broken off from the stems. The W of the leaves varies from 1 to 2mm at the join with the stem.
- Tiny fragments of copper, gold and the remains of a flower are kept separately. A loose gilded bead with two holes is also kept separately.

There are no remains of a wooden or bone circlet; the excavator (Karamitrou-Mentessidi) suggests that the original circlet was possibly made of fabric or leather[75], but it could have been lead which has disintegrated.

[73] Karamitrou-Mentessidi 2005, 562.
[74] Karamitrou-Mentessidi 2005,563, dated on the basis of the two coins found with the body and the pottery including a kantharos, an askos and a 'salt-cellar'.
[75] Karamitrou-Mentessidi 2005, 62.

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Plant represented: myrtle.

Bibliography: Karamitrou-Mentessidi G. 2005 'Σωστικές ανασκαφές στον νομό Κοζάνης κατά το 2003', *AEMTh*. 17 (2003), 553-565

Studied: March 2015 (at Ainai AM).

Fig. M21.1 Plan of grave 4. The wreath fragments are shown at 2, top left. From Karamitrou-Mentessidi 2005, 561
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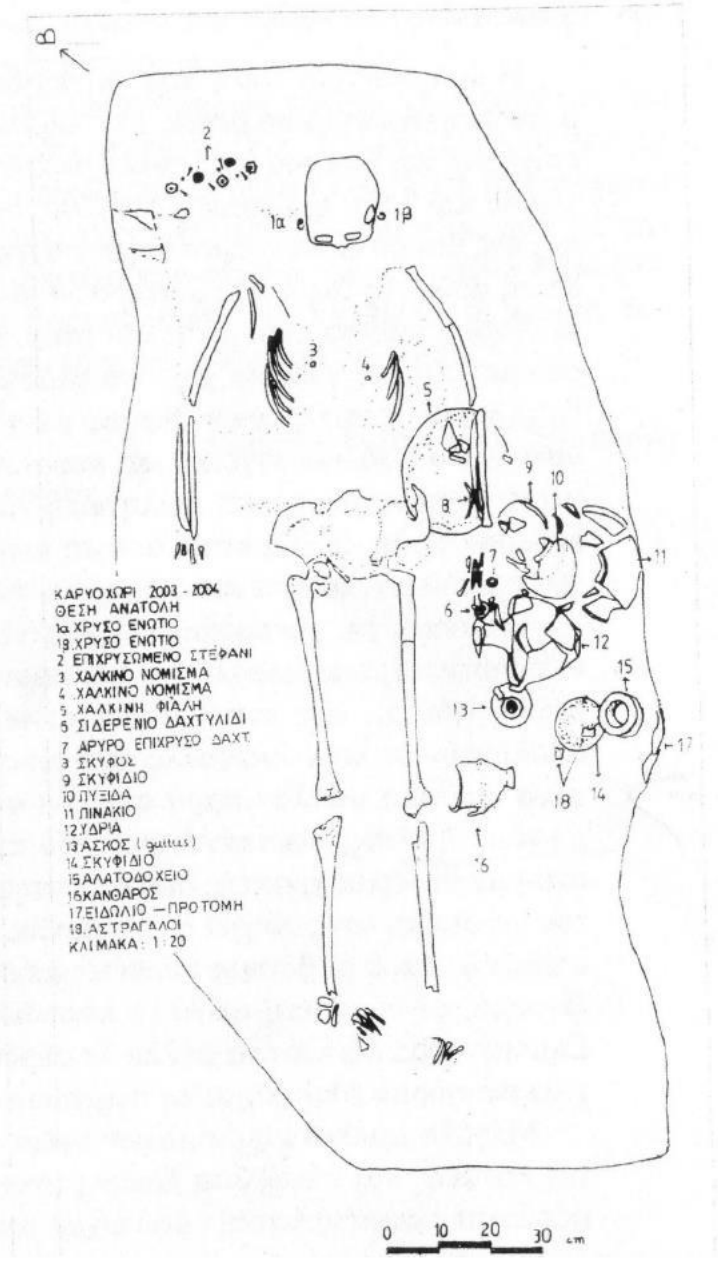


Fig. M21.2 Berries from grave 4 Karyochori © Hellenic Ministry of Culture and Sports



Fig. M21.3 Two round flowers from Karyochori grave 4 © Hellenic Ministry of Culture and Sports



Fig. M21.4 Fragments of leaves and stems © Hellenic Ministry of Culture and Sports



M22 Mieza M1106
Veroia AM store

Provenance and context[76]: Grave 126, a rectangular pit grave with an inhumation. It contained, in addition to the gilded wreath, an Attic Bolsal kylix (Π1726), an exaleiptron (Π1727) with parallels in Athens, Boeotia and Olynthus[77], further pottery fragments and a fragment of bronze.

Date[78]: First half of fourth century (from pottery).

Type: 2

Constituents:

- 18 fragments of bone circlet with a yellowish coating. Three fragments are joined with original thread. W: 4.25. L in cm: 4.8 (no holes), 1.9, 1.2, 2.4, 1, 1.2, 2.8 (with a fragment of leaf), 0.9 (with a leaf), 1.8, 1.1, 2.6 and other smaller fragments.
- A few tiny fragments of myrtle leaves and stems. The leaves are gilded on both sides (**fig. M22.1**)
- 25 oval berries with a yellow coating beneath the gilding. L: about 7mm
- Two fragments of white calcareous matter

Plant represented: myrtle

Bibliography:
Robinson D.M.1950. *Excavations at Olynthus Part XIII: Vases found in 1934 and 1938*, Baltimore.
Romiopoulou K. and Touratsoglou G. 2002. *Μίεζα:νεκροταφείο υστερο-αρχαϊκών πρωιμών ελλενιστικών χρονών*, 114-115.
Sparkes B.A. and Talcott L. 1970. *The Athenian Agora: Black and Plain Pottery,* vol 12, Princeton NJ.

Studied: April 2017.

Fig. M22.1 Fragments of stems and leaves and oval berries. Veroia AM © Hellenic Ministry of Culture and Sports



[76] Romiopoulou and Touratsoglou 2002, 115.
[77] Parallels for the Bolsal kylix include: Sparkes and Talcott 1970, cat. 556 and pl. 24 and for the exaleiptron: Robinson 1950, pl.203, nos. 613-614, pl. 203.
[78] Romiopoulou and Touratsoglou 2002, 114-115.

M23 Nikisiani A Δ 368-373, Δ 375
Probably two wreaths Kavala AM store

Provenance and context[79]: Grave A, a cist grave of schist slabs, contained a male burial. A gilded wreath was found attached to skull. Amongst the other finds were two silver calyces, a clay skyphos (M386), fragments of clay alabasters (A2730-2731; A2732), a pointed amphora (A684/2012), a glass "eye" (from a kline) (Δ 362), a human tooth, three bronze coins of Philip II, one coin showing Alexander the Great and one coin of Cassander. The grave was originally dug illicitly.

Date[80]: c.315.

Type: 6 and 2.

Constituents:

It appears that there were originally two wreaths, one made of lead and wood, and the other of lead and bone.

A box labelled **Δ 372** contains :

- Seven large fragments of lead circlet, some of which have several stems protruding from the same holes. From one of the holes, four pieces of wire emerge. Putting the fragments together, the diam. of the wreath could have been about 15cm (**fig. M23.1**). The fragment which is 39.06 long has a section (L: 34.5) with no holes, and what looks like a fastening hole. The largest fragment (L: 56.9) has five holes, with spaces between the holes of between 11.9 and 13.43. The W of the circlet gets slightly narrower towards the back. Flat wire remains in some of the holes, approximately 1.02 wide; there is also round wire, 0.86 in diam., which appears to have been strip twisted. Two of the stems (flat) emerging from one hole are still complete with myrtle leaves. The round wire emerging from the same hole could have held a berry. W of the lead: 5.06 -6.7.

Four fragments of bone circlet(s) labelled **Δ 373** are wrapped in a piece of paper with further fragments of wreaths from this grave.

- One fragment of bone circlet is partly blue, and partly red, and is pierced with holes 3.8 to 4.8 apart (**fig. M23.2**). Diam. of the holes: 1.19. L: 45. W: 5.5 and depth: 2. A second piece has a long gap between holes (L: 68.8), and was clearly one end of the circlet. W: 4.56, depth: 1.3. A third piece shows evidence of having been worked. W: 5.6, depth 1.98.
- The same piece of paper also holds fragments of wooden circlet (**fig. M23.2**). One fragment has blue on top of the wood; holes have been pierced in it 6.01-8.27 apart. The arc formed is 13 cm across and the total L is about 15.2 cm, W 7.8 to 8.4. The fragment has broken horizontally along the holes. There are eight further fragments of wood, which all appear to have been broken from wider pieces horizontally. One large fragment consists of one strip of wood bent in two; total L of wood: 21.7cm. Another fragment of wooden circlet could have been made up originally of two fragments, now broken horizontally, L: 17.6 cm. Fragments of wire bent back along the grain of the wood confirm that the wooden circlet lay behind the bone circlet.
- There is also one berry with traces of blue and gilding. L: 5.23.
- The same piece of paper also contains 27 copper stems, mostly made of flat wire. On one of these the green corrosion has come away and revealed the red copper underneath. Two stems have been twisted together (L: 36), one of which has a trace of a leaf at one end; the other could have supported a berry. A further two or three stems have remnants of leaves. W of stems: 0.84 to 1.36. Amongst the stems is a piece of corroded metal with holes and protruding eyelets; it is not clear whether this is part of a circlet made of organic material, or even the remains of a copper circlet. Amongst the fragments is a tiny berry. A loose label reads **Δ 370.**

[79] Lazaridis *et al*. 1992, 19-22.
[80] Touratsoglou 1998, 248.

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It is just possible that two fragments of bone circlet found with a small piece of paper labelled Δ 372 came from grave A, although are inside another piece of paper labelled Δ 366, so it is more likely that they are from grave Δ and will be discussed in the entry for M25.

- About 13 fragments of gilded copper myrtle leaves and three stems are probably from **Δ 373**. These have been gilded on both sides. Maximum L 31.25. W of wire 0.95.
- A box contains three large and two small flowers. Three are labelled on the back **Δ 368.** These clay gilded flowers have petals coated with white material and small blue/ green and red calyces between the petals. The centres are red. Diam.: 24.5 (**fig. M23.5**). It is not clear whether they were moulded – possibly not, as one of the flowers has a deeper central area than the others (depth 14.7, whereas the others are 13.09 and 12.5). The two smaller flowers are different from the larger, and different from each other. One has six petals and lines in the clay (**Δ 375**). Traces of white coating remain. The other labelled on the back **Δ 369** looks like five berries put together. Traces of gilding remain. Diam. 14.14. A stem in the hole in the back confirms that it was from the wreath. Both flowers are made of a red clay.
- A box labelled **Δ 371** contains over 80 berries of two kinds, oval and spherical. The diam. of the spherical berries is approximately 7, and the L of the oval berries also approximately 7. Most bear traces of gilding and at least one small oval berry has traces of blue from corrosion. **Fig. M23.3**.
- A small box contains a glass "jewel" (labelled underneath **Δ 362**) with a piece of copper which probably formed its backing. The glass and copper have matching holes. This is unlikely to have been from the wreath, since there are no holes on the back of the copper mount which could have attached the "jewel" to the circlet (**fig. M23.4**).

Plant represented: the remnants of leaves and the oval berries suggest at least one myrtle wreath.

Results of Raman and HHXRF analysis:
Flower Δ 365 (fig. M23.5): the red in the centre of the flower was found to contain mercury with the HHXRF and was confirmed to be cinnabar with Raman. Some lead was observed in the white with the HHXRF, but this must have been from contact with the lead circlet, since no spectra were obtained with Raman for lead white and the white is therefore thought to be a white clay, probably kaolin. The blue contained copper, which would suggest either Egyptian Blue or azurite, but no clear spectra from the blue could be obtained with the Raman instrument to determine which of the two it was. The presence of azurite on other material from Nikisiani indicates azurite.

Bibliography:
Lazaridis D., Romiopoulou K. and Touratsoglou I. 1992. *Ο τύμβος της Νικήσιανης*, 21 and pl. 6.
Touratsoglou I. P. 1998. 'Στην αναζήτηση του Ελληνιστικού χρυσού' in *Μνείας Χάριν: Τόμος στη μνήμη Μαίρης Σιγανίδου*, 235-264, Thessaloniki.

Studied: March 2015, April 2016 (HHXRF) and June 2017 (Raman).

Fig. M23.1 Fragments of lead circlet from grave A, Kavala AM. © Hellenic Ministry of Culture and Sports



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Fig. M23.2 Fragments of circlets from grave A Nikisiani, Kavala AM (Δ 373) © Hellenic Ministry of Culture and Sports



Fig. M23.3 Some of berries from grave A Nikisiani, Kavala AM (Δ 371) © Hellenic Ministry of Culture and Sports



Fig. M23.4 Jewel with the wreath from grave A Nikisiani (Δ362) © Hellenic Ministry of Culture and Sports



Fig. M23.5 Flower from grave A Nikisiani analysed (Δ365) © Hellenic Ministry of Culture and Sports



M24 Nikisiani B Δ 376, Δ 386-90
Probably three wreaths, Kavala AM store

Provenance and context[81]: Grave B which was a cist grave made of schist slabs is thought to be a male burial. There is no information on the precise position of the grave goods, because of earlier illicit excavations. Other finds included a silver phiale (A868 and 2744), a bronze strainer with two handles (M452), a bronze jug (M352), two black-glaze Attic skyphoi (A577, A578[82], pl.9), a pointed amphora (A687), fragments of iron, tiny scattered fragments of silver and bronze or copper objects, three human teeth, one gold stater, and many other coins.

Date: 305(301)[83].

Type: 6 and 2

Constituents:

Δ 388

Fragments of what appear to be three bone circlets (a suggested reconstruction is at **fig. M24.1**, based on the W and shape of the fragments, but other reconstructions are possible). On this basis one circlet would have been about 15cm in diam., composed of 12 pieces about 40cm in total L and bearing traces of red above a whitish coating. A slightly smaller circlet would have been composed of 11 pieces with traces of blue, and a third circlet about 13cm in diam. composed of about 16 fragments, also blue, measuring 30 cm in total L. Some of the fragments still have part of a wooden circlet lying behind and some bear traces of gilding above a whitish coating. Most of the fragments have a flat back, with diagonal striations and neatly made holes, which have clearly been worked. The others are rounded and have blue.

Some fragments have traces of red coating, lying above and below a band of gold (**fig. 2.31**). One of the fragments has been very neatly joined, probably in antiquity, as there are no traces of modern conservation on this piece. One fragment has holes with three wires, diam. 1.44 (holding all three wires), which are 3-4mm apart. W:6.16.

Some fragments have blue material (**fig.M24.2**). The holes are not as evenly spaced as on the red fragments. W of bone: about 5.58.

Two fragments have traces of blue and copper. The holes which once bore stems are about 1 in diam. containing double wires. The holes in these fragments are 1.88 to 2.5 apart. W:4.22.

Six pieces are the ends of a wreath, each with one hole at one end and then a long gap with no holes and no traces of copper corrosion, suggesting that there were originally at least three wreaths.

Δ 390

Fragments of wooden circlets, which originally lay behind the bone circlets. Five of the wooden fragments are large (of which one is bent in two), and four small (two have been broken horizontally). Two or three pieces have traces of blue (**fig. M24.3**). The wood is difficult to measure because it has been crushed, but one piece is at least 23 cm long. The spacing between the holes varies from 3.46 to 5.2. Diam. of the holes at least 1.43.

Δ 376:

Five small flowers with six petals (**fig. M24.4**). The petals have ridges in the clay, which has been covered with a white coating (two of the flowers) and gold leaf. They are very similar to each other and were probably moulded. There is a hole for the stem in the back of each flower. Diam.: 12.8. Depth: 7.7 to 8.87.

Δ 386:

Gilded clay berries in two sizes. There are about 20 medium-sized berries, oval, L: 8.18 to 9.7. One still has the wire stem in the hole. Diam. of hole 1.26. The smaller berries are also oval, L: 5.97 to 6.8.

[81] Lazaridis *et al.* 1992, 22-26 and 66.
[82] With a parallel in the Athenian Agora – Sparkes and Talcott 1970, 260, cat. 352.
[83] Touratsoglou 1998, 250.

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Diam. of hole 1.24.
Five or six of the berries have a blue coating (**fig. M24.5**), and others appear to be green. The gold leaf has a distinct line which left the part of the berry with the blue colour close to the stem visible, suggesting that the blue was applied as a pigment, but the green is likely to be a corrosion product of the blue paint. Others are the natural colour of the clay, and are in both sizes (**fig. M24.6**). The gold leaf on the natural coloured berries has been applied so that only part of the berry is gilded.

Δ 387
Fragments of leaves and stems. There are some pieces of blue material in the box, which are probably from the circlet rather than the leaves or stems. The leaves have been gilded on both sides. There is perhaps blue colouring on some of the leaves, but this may be a corrosion product.

Δ 389
Copper stems, some of which still have the remains of myrtle leaves. Maximum L of stem and leaf: 20. W of wire: 0.86.

Plant represented: At least one of the wreaths represented myrtle.

Scientific analysis: The berries from 386 and 387 coloured green were found to contain iron, copper, gold and calcium and traces of titanium and silica when analysed with the HHXRF. Similar results were obtained from the berries with no trace of colour. No analysis was done with Raman.

Bibliography:
Lazaridis D., Romiopoulou K. and Touratsoglou I. 1992. *Ο τύμβος της Νικήσιανης*, 22-26.
Sparkes B.A. and Talcott L. 1970. *The Athenian Agora: Black and Plain Pottery,* vol 12, Princeton NJ.
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Studied: March 2015

Fig.M24 1 Fragments of bone circlets from M24 from grave B, Nikisiani, Kavala AM (Δ 388) © Hellenic Ministry of Culture and Sports



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Fig. M24.2 Fragments of circlet(s) from M24 from grave B, Nikisiani, Kavala AM (Δ 388) © Hellenic Ministry of Culture and Sports



Fig.M24.3 Fragments of wooden circlet from M24 from grave B, Nikisiani, Kavala AM (Δ 390) © Hellenic Ministry of Culture and Sports



Fig. M24.4 Five flowers each with six petals M24 from grave B, Nikisiani, Kavala AM (Δ 376) © Hellenic Ministry of Culture and Sports



Fig. M24.5 Detail of blue berries from M24 from grave B, Nikisiani, Kavala AM (Δ 386) © Hellenic Ministry of Culture and Sports



Fig. M 24.6 Some of the natural clay berries from M24 from grave B, Nikisiani Kavala AM (Δ 386) © Hellenic Ministry of Culture and Sports



M25 Nikisiani Δ 363-366
At least three gilded wreaths Kavala AM store and display

Provenance and context[84]: Grave Δ, a cist grave, is thought by the excavators to contain the body of a child, and was the only grave that contained figurines, which had been placed on the chest and sides of deceased. One gilded wreath was on the skull and two more between the skull and shoulders. Vases were found at the right edge of the tomb. A gold earring, a gold ring, part of a gold necklace, a silver calyx (A870), a black-glaze skyphos containing ash, a small black-glazed Attic skyphos (A580, pl.18)[85], a red figure Attic skyphos (A576, pl.17), alabastra, a wooden disk-shaped object and 23 bronze coins were also found.

Date: 305 (301)[86].

Type: 2 and 6

Constituents:
Δ 366 Fragments of circlets were found wrapped in a large piece of paper labelled Δ366. Δ366 is described in the publication as many fragments of fine wooden circlet[87].

- Two fragments of bone circlet on which the gilding is still visible. The distance between the holes is approximately 3.5. The bone is whiter at the back and greener at the front, from copper corrosion. There are no holes towards the back. There is no gilding on the back of the circlet, and indeed the gilding may not have covered the whole of the front of the bone; it follows the line of a ridge in the rib bone. Two of the holes in the circlet still have fragments of copper wire (W of hole: 1.35, containing two fragments of wire). These two fragments were found with a loose piece of paper labelled **Δ 372**.
- A further two fragments of bone circlet are very fine and regular, and the holes are evenly spaced at approximately 3.8 (**fig. M25.1**). There are no holes at the back of the wreath on one side (where there is a gap of 77.2 measured up to the break). The other side is broken further towards the middle. There is gilding on the front side of the circlet only. There are possible traces of coating on the left- hand side, and on the right there appears to be a light-coloured substance under the gold. The diam. of the holes is 1.5. The wire is about 0.9 in diam., and looks as if it has been twisted.
- Two small circlets made of wood and bone, constituting one wreath, with a tiny berry and leaves representing myrtle (**fig. 2.30)**. The diam. would have been approximately 11.5 cm. The circlets have a nail in the centre (diam. 2.5) driven through two pieces of bone and wood (**fig. M25.2**). The wood has a long straight grain. The holes have been pierced very close together, at a distance of approximately 2.35, except in the centre, where the leaves mounted on stems, each facing towards the centre, would have met. The wood has broken horizontally along the line of the holes. The wires which once supported stems are folded back on the back of the wooden wreath. There are substantial traces of blue on the wreath. Seven leaves gilded on both sides with stems remain in position. L of leaves: 15.1 and 12.95. W of flat stems: 0.89. A round stem is also visible emerging from a hole in the circlet. A longer stem is supporting a single berry (L of berry, 4.2; L of stem 22.5). The berry has white coating on red clay, with gilding. There is no trace of gilding visible on the bone circlet. This small wreath can definitely be identified as being from Grave Δ, as it is illustrated in Lazaridis et al. 1992 at pl. 22, where it is described as Δ366.

A large piece of white paper labelled **Δ 366** contains fragments of bone and wood circlets**:**

- Seven fragments of bone circlets (**fig. M25.3**). The largest of these fragments has holes which are spaced at distances of 5.1 to 5.8 apart. W: 5.34. There is gilding on the front side only. There are two notches at one end, where this piece must have been joined to another with linen thread.

[84] Lazaridis et al. 1992, 31-39 and 67.
[85] A580 is paralleled by a similar skyphos in the Athenian Agora - Sparkes and Talcott 1970, cat.352 and 353, dated to c.330.
[86] Touratsoglou 1998, 250.
[87] Lazaridis et al. 1992, 38.

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The second piece has less gold and the holes are narrowly spaced at 3.4 to 4 apart. W of bone: 3 to 4.
A third piece has a gap at the end which has been cut in a taper. The holes are 3.1 apart. W 5.3 to 6.1.
There are two further pieces which have a big gap in the holes, indicating that they were at the end of one or two circlets. The sixth piece is 5.4 wide, and the holes are 5.23. The seventh piece has W 5.38 and the holes 4.2 apart.

- There are a further 33 small fragments of bone circlet kept with these large fragments, some of which have split horizontally. Traces of blue pigment remain with the material.
- There are 16 fragments of wooden circlets, some of which have broken horizontally (**fig. M25.4**). There are traces of red on three of the fragments.
- Five tiny spherical gilded berries, L: 3.9 to 4.5. They probably came from the tiny circlet. Diam. of stems: 0.87. The wire is probably strip twisted. One of the berries is mounted on a stem which has been twisted with a stem bearing a leaf (**fig. M25.5**).
- Four long straight gilded stems, some of which are composed of a group of stems, which once bore berries and/or leaves (**fig. M25.6**). The stems are joined with thread. L: 68 to 74, W 0.87.

Δ 365. A box with a large number of berries, stems and leaves (**fig. M25.7**).

- Some of the berries appear to have been painted blue. The gold has been laid on one end of the berry with a definite line, so that the blue was visible, and not just a colour underlying the gold in order to modify its colour. Some of the berries are covered with a white coating, on which the gold has also been applied in a straight line. Some (both blue and red) have a cross, and represent myrtle (**fig. 2.32**). Some of the berries are still mounted on stems made of strip-twisted wire.
- The stems made in one with the myrtle leaves are flat, and made of sheet copper. One fragment of wire has been twisted into a spiral; the loops are too small to have been wound around the circlet, and it was probably twisted around another stem or piece of organic material and supported a berry or a leaf (**fig. M25.8**). Some of the leaves are an oval shape, and their shape suggests olive rather than myrtle, as there is no bulge at the stem end. The berries are both round and oval.
- A copper or bronze ring, ungilded, lies amongst these fragments which was probably not part of the wreath. Outer diam. 9.44, inner diam. 5.19.

Δ 364 box with two sorts of leaves;

- one group are small and pointed and do not have a bulge towards the join with the stem so may be olive. They are gilded on both sides. Several of these leaves have traces of blue; one is still attached to a fragment of circlet on which there are substantial amounts of blue (**fig. M25.9**). L: 18.7, 17, 15.6. Max W: 4.34.
- Some of the leaves and stems are still bound to other stems. The other group of leaves look like myrtle and are gilded on both sides.
- There are some tiny stems, diam. 0.53.
- There are three berries in the same box. One is large and round, the other two small, one of which has blue paint and gold leaf.

Δ 363
Four gilded flowers with white coating on red clay mounted for display (**fig. M25.10**). There is a blue substance on the back of one of the eight-petal flowers, which could be either paint or copper corrosion. There are also traces of tool marks on the back of the flowers. One has six petals and its diam. is 22.67. The other three have eight petals. The flowers look as if they have been moulded, and have small ridges down the petals. Depth: 11.4.

Plants represented: at least one of the larger wreaths represents myrtle (with the seedpods having a cross, coloured red and blue). It is not clear whether the tiny wreath is olive or myrtle: the small spherical berries would suggest myrtle, whereas the shape and blue colour of the leaves and circlet is more suggestive of olive.

Bibliography: Lazaridis D., Romiopoulou K. and Touratsoglou I. 1992. *Ο τύμβος της Νικήσιανης*,1992, 38 and pl.s 21 and 22.
Sparkes B.A. and Talcott L. 1970. *The Athenian Agora: Black and Plain Pottery,* vol 12, Princeton NJ.

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Scientific study: Raman analysis was done on several items from Grave Δ. The spectra obtained for the blue on two of the berries Δ 365 showed that it was azurite. The HHXRF gave results of calcium, copper and iron, which are consistent with azurite. The red on one of the berries was found to be cinnabar, using Raman. HHXRF showed calcium, iron, copper, mercury, lead, silicon and sulphur, which is consistent with cinnabar (**fig.2.32**).
Two fragments of wooden circlet from D366 were also analysed with Raman, which showed that the red was hematite, possibly with some carbon black. The HHXRF gave results of calcium, copper and iron, which is consistent with hematite. The blue on a fragment of circlet was found to be azurite (**fig. M25.11**).

Studied: March 2015 and June 2017 (Raman).

Fig. M25.1 Two fragments of gilded bone circlet from grave Δ Nikisiani Kavala AM (Δ 366) © Hellenic Ministry of Culture and Sports



Fig. M25.2 Detail of small wreath showing central nail and blue pigment from grave Δ, Nikisiani Kavala AM (Δ 366) © Hellenic Ministry of Culture and Sports



Fig. M25.3 Seven fragments of bone circlet from grave Δ Nikisiani Kavala AM (Δ 366) © Hellenic Ministry of Culture and Sports



Fig. M25.5 Two berries from the small wreath from grave Δ, one of which is still mounted with the original leaf from Nikisiani, Kavala AM (Δ 366) © Hellenic Ministry of Culture and Sports



Fig. M25.6 Detail of some of the stems from grave Δ from Nikisiani Kavala AM (Δ 366). © Hellenic Ministry of Culture and Sports



Fig. M25.7 Box of berries and stems from Nikisiani grave Δ, Kavala AM (Δ 365) © Hellenic Ministry of Culture and Sports



Fig. M25.8 Wire in spiral – supporting leaf or berry? From grave Δ, Nikisiani, Kavala AM (Δ 365) © Hellenic Ministry of Culture and Sports



Fig. M25.9 Leaves with stems joined on back, which perhaps once supported another leaf or berry. From grave Δ, Nikisiani, Kavala AM (Δ 364) © Hellenic Ministry of Culture and Sports



Fig. M25.10 Flowers from one of the wreaths from grave Δ, Nikisiani, Kavala AM (Δ 364) © Hellenic Ministry of Culture and Sports



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M26 Nikisiani Γ Δ377 to 385
Probably three wreaths. Kavala AM store

Provenance and context [88]: Grave Γ, a cist grave containing the cremated remains of one individual, thought to be a male by the excavators. A gilded wreath described as 'olive' was found with the skull on the west side of tomb and a gilded oak wreath at the feet of deceased. A silver kantharos containing two gold staters of Philip II, 13 tetradrachms of Philip II and Alexander III and 68 bronze coins of Alexander III and Kassander was also found. The other finds included two pointed amphorae (A685 and 686) and bone plaques, no doubt from the kline as well as a bronze kados (A1403) and a silver jug (A2577). In a second silver kantharos were found traces of ash, fabric (?) and burnt wood. Three glass buttons, presumably from kline, were found in the NE corner. **Fig. M26.1**.

Date: early third c., dated by the coins.

Type: 2

Constituents:
Δ 377 13 fragments of gilded bone circlet (**fig. M26.2**). When put together the fragments would make a circlet approximately 15cm in diam.; three have possible joins in. Two fragments (L: 6.5 and 7.5cm) have holes only at one extremity, and would have been the end pieces of the circlet. Only the front side was gilded. The distance between the holes is fairly constant at 3.35. W: 4.74. Diam. of holes: 1.2.

Δ 383 many fragments of wooden circlet, and at least 15 fragments of bone circlet (**fig. M26.3**). At least nine of the bone fragments have split horizontally. Two of the bone fragments are still joined together with the original linen thread; notches can be seen in the bone, which held the thread (**fig. 7.25**). Seven of the fragments of wood would have made a circlet approximately 15cm in diam. W of wood: 12mm. A second circlet could have been composed of fragments of wood. W: 10.
Further fragments could have made up a third circlet, or been used with the fragments of one of the other wreaths. Amongst the fragments are at least four which would have been the ends of two circlets, as well as one long strip of wood with only one hole. This suggests that there were three wreaths rather than two. W: 7

Δ 385

- Many fragments of gilded copper leaves and stems, which appear to be a mixture of oak and myrtle and/or olive (**fig. M26.4**). The oak leaves have rounded indentations and although none is complete, clearly imitate oak. The leaves are not flat, and could have been hammered against a frame or stamped: one side of the leaf is convex, the other concave. The oak leaves have veins down the centre, and also lines emerging from the centre towards the edges. The L of one fragment of oak leaf is approximately 12, and its max. W approx. 9.5.
- Another group of leaves have straight sides and no veins, and are made of sheet copper with a triangular shape and straight sides, formed in one with the stems. The leaves which appear to be myrtle are 33.6 long (with part of stem), W: 7.9. These leaves were made in one piece with the stems, and a few still have both elements joined, although many have broken at that point.
- There are further large fragments with no veins. These larger fragments are of flat gilded copper, which are made from sheet metal, with no veins, and could be from a larger size of myrtle leaf, or from a third type of leaf, possibly olive.
- There are 8-9 stems, W approximately 1mm. There is one item made of two pieces of wire bound together at one end, which could be meant to represent a branch and stalk or two stalks and another stem composed of two pieces of wire, one thinner piece being wound around the other.
- One of the copper fragments is rectangular and has tiny circles embossed in the metal along two sides. It does not have gilding and almost certainly is not part of the wreath but something else such as the kline.

[88] Lazaridis *et al.* 1992, 66 and 26-31.

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- With this material are four fragments of something soft and white, possibly plaster, which did not form part of the wreath. There is also a fragment of bone circlet.

Δ382
38 oval berries and two or three fragments of berries (one of which could be from a tiny acorn) (**fig. M26.6**). Two of the berries still have the remains of copper stems, W 1.02, which is round and possibly strip-twisted. Some of the berries are coloured; they are now green, and are probably discoloured azurite. The blue/green berries are the same size as the natural, clay-coloured, berries. L: 5.9 to 7.7, but the majority are 7.7.

Δ384
- 44 small acorns, made of moulded, fired clay. L:9. Diam. of hole: 1.2. The line of the mould can be clearly seen (**fig. M26.5**) and the mould appears to have been used many times, since the impressions made to imitate the cup are very faint.
- Two myrtle seedpods/berries with a cross, in the shape of flattened spheres, with an indented line just below the cross going round the berry. Diam.: 5.35, diam. of hole: 1.
- Four small round berries, diam. approximately 5.6, diam. of hole: 0.9.
- One larger round berry, diam. 7.3
- 1 larger oval berry, L 9.2.
- 50 small oval berries. About 25 of them have a definite straight line showing where the gold leaf was applied, some 2-3mm from the hole of the berry. Most of these are the natural colour of the clay, but 2-3 are bluish, probably from corrosion.

Δ 379
A box containing many stems of straight wire. Some of these are still gilded. Some are roundish, and appear to have been strip-twisted. Some still have leaves attached, two of which look like myrtle. Some of the stems have been twisted together. The myrtle leaves are on flat wire,
W: 1.14. Diam.: 0.88. Maximum L 34.

Δ 378 Many copper stems, some of which are fine, as in **Δ 379**, others thicker (W: 1.12). Fragments of myrtle leaves and oak leaves with a stalk, square in section, show that the stem was made in one with the leaves. Many of the myrtle leaves show signs of having been melted, no doubt in the cremation.

Δ 380 Many fragments of copper gilded leaves with veins representing oak. W of stem: 1.5. Fragments of myrtle leaves; stem of these leaves has W:1.5. Fragments of small oak leaves L: 10.08, maximum W: 10.23.
There is a further fragment of copper with no gilding or impressions, W: 10.8. Almost certainly not from the wreath, and possibly from the kline.

Δ 381 Many fragments of large copper gilded leaves (**fig. M26.7**). Two large fragments placed together suggest olive, but do not necessarily together. Two leaves with a sharp point have some blue colour. With these leaves are others, representing myrtle, which have been darkened by the pyre.

Plants represented: oak and myrtle.

Bibliography: Lazaridis D., Romiopoulou K. and Touratsoglou I. 1992. *Ο τύμβος της Νικήσιανης*, 26-31.

Studied: March 2015.

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Fig.M26.1 Oak wreath found by feet (from Lazaridis et al. 1992 pl. 5) © Hellenic Ministry of Culture and Sports/ Archaeological Resources Fund



Fig. M26.2 Fragments of bone circlet from Grave Γ Nikisiani Kavala AM (Δ 377) © Hellenic Ministry of Culture and Sports



Fig. M26.3 Fragments of wood and bone circlets from Grave Γ NIkisiani, Kavala AM (Δ 383) © Hellenic Ministry of Culture and Sports



Fig.M26.4 Fragments of gilded oak leaves showing veins from Grave Γ Nikisiani,Kavala AM (Δ 385) © Hellenic Ministry of Culture and Sports



Fig. M26.5 Moulded clay acorns from Grave Γ Nikisiani, Kavala AM (Δ 384) © Hellenic Ministry of Culture and Sports



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Fig. M26.6 Two myrtle berries with cross (on right) and oval berries from Grave Γ Nikisiani, Kavala AM (Δ 385) © Hellenic Ministry of Culture and Sports



Fig. M26.7 Selection of leaves from Δ 381, including two fragments which may not join. Kavala AM © Hellenic Ministry of Culture and Sports



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M27 Olynthos
AMTh store

Provenance and context[89]: Riverside Cemetery grave 72 was a trench originally covered by 11 Laconian cover tiles and contained a wooden coffin as indicated by iron nails around the skeleton. The skeleton of an adult lay supine, with the arms at the sides. On the skull was a gilded wreath and there were four large black-glazed bowls at the feet. Robinson assumes it was a male[90], but does not explain why.

Date: Robinson originally dated the grave to the late fifth or early fourth c.[91] but in a later publication he dated a skyphos found in same grave to early fourth c.[92], so the wreath can be no earlier than that, although it presumably predates the destruction of the city in 348.

The original wreath can be visualised with the help of a photograph taken following the early 20th c. restoration (**fig. M27.1).** The material was mounted on glass, which was later broken, and fewer fragments now remain than were in the published photograph. Some additional material has been kept with M27 which must be from a different wreath since the fragments clearly represent ivy which is not shown in the photograph of the Olynthos wreath. This material could be from Sedes (M39) or a separate wreath from Olynthos (T2X56) and is catalogued as M27A.

Type:1

Constituents:

- A few fragments of bone circlet: 30cm remained by the time Robinson measured it. Those that remain now measure in total about 17 cm. The bone is more rounded than on most other wreaths, whereas the fragment in the box of material thought to be from Sedes has a flat back. There are traces of a yellowish coating and gold above the bone. (**figs. M27.2 and M27.3**). W of bone: 3.8 to 4. Distance between holes varies: 5.59, 8.35, 9.34, 7.6, 8.25. The diam. of the holes is 1.34.
- Fragments of copper leaves with rounded edges and central vein, gilded on both sides (**fig. M27.4**).
- About 18 fragments of stems, some of which retain traces of gilding. Judging by the photograph in the publication, the stems appear to have been quite short. W: 0.75 to 1.04
- 35 berries all of which have a cross indicating that they are myrtle seedpods (**fig. M27.5**). L: 5.58. Diam. varies but average 4.27.
- Fragments of at least 11 copper rosettes with concave centre (**fig. M27.6**). These are all the same size and very regular, suggesting they were hammered over the same former. One is almost complete with 5 petals and has a central element with raised bosses (**fig.2.5**). The rosettes have a small hole for the stem in the centre. Diam. of the raised boss: 4.98. Diam. of rosette: 10.

Plant represented: In 1941, Robinson suggested myrtle, and in 1950 laurel[93], but it is myrtle, as some of berries have a cross, thus representing seedpods, and the rosette flowers have 5 petals, which is consistent with myrtle.

Scientific investigation:
The HHXRF showed that the leaves had copper and gold. The results for the circlet coating showed copper, iron, calcium, as well as silicon and aluminium. The berry fabric had copper, iron and a trace of calcium.

Bibliography:

[89] Robinson 1942, 17- 18 and Robinson 1950, 360 and pl. 219.
[90] Robinson 1941, 158.
[91] Robinson 1941,159.
[92] Robinson 1950, 352. The skyphos dated to the early fourth c. is 34-XIV-6 (767) but not illustrated.
[93] Robinson 1941, 159.

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Robinson D.M. 1941. *Excavations at Olynthus Part X Metal and minor miscellaneous finds.*
Robinson D.M. 1942. *Excavations at Olynthus Part* XI *Necrolynthia: a study in Greek burial customs and anthropology.*
Robinson D.M.1950. *Excavations at Olynthus Part XIII: Vases found in 1934 and 1938.*

Studied: Sept. 2013 and November 2017.

Fig. M27.1 Wreath as reconstructed when found. From Robinson 1941 pl. XXVIII.



Fig. M27.2 Fragments of circlet © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M27.3 USB microscope image of circlet © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



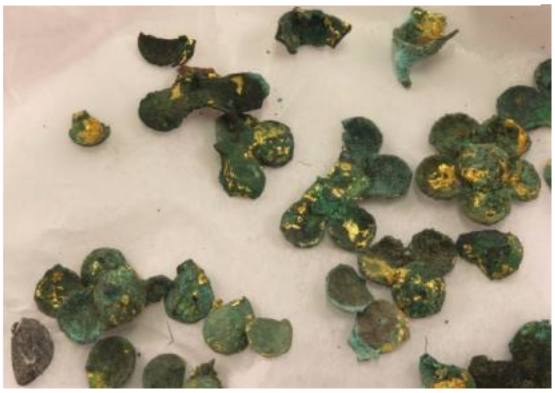
Fig. M27.4 Fragments of leaves © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M 27.5 Myrtle berries © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M27.6 Some of rosettes which once formed part of Olynthos wreath © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M27A Olynthos?
Box of wreath fragments, AMTh store

Provenance and context: not known. The box of fragments was presented to the author for study with material from M27, but they are not from that wreath, as they include ivy berries. The material could be from Sedes (M39) which is very similar or it could be part of the wreath fragments found at Olynthos in Chamber tomb 598 (T2X56).

Type: 3?

Constituents:

- Gilded copper stems. Nine bunches are still bound with the original thread and another substance. W of stems:1.15 **(fig. M27A.1)**.
- Fragment of circlet: 2.7 cm **(fig. M27A.2)**.
- Two medium sized berries (spherical) (ivy). Diam.: 8.57 to 7.03; hole diam.: 1.28 (**(fig. M27A.2)**.

M27A.1 Some of material kept with Olynthos wreath © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M27A.2 Detail of fragment of circlet, gilded stem and ivy berry © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



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M28 Pella East cemetery
Pella AM on display

Provenance and context[94]: This wreath was found "near to" graves in surface soil and probably came from a robbed grave. It is now displayed around the neck of a pelike, 76/770, which is thought to show the sacred marriage of Dionysos and Ariadne, and *epaulia,* on the other side (**fig. 9.8**)[95]. The wreath was found inside the pelike, which had a phiale used as a lid, with the half-burnt bones of the deceased.

Date[96]: Third quarter of fourth century or later (dated by pelike).

Type: 2

Constituents: Reconstructed wreath, supported by modern iron wire. Maximum diam. 16.3 cm. The original circlet was made of wood[97]. (**figs. M28.1**-**28.2**).

- 36 berries: some are in dark red clay, which has been burnt by fire. Traces of gilding remain on some of the charred berries. Others are in lighter clay. Two of the berries have a cross (seed pods) (**fig. M28.3**). There is a yellowish coating under the gold. On two of the burnt looking berries, the coating seems to have merged with the red clay. The berries have big holes, up to 2.23 in diam. This is not because the berries shrank in the pyre, since the holes are all the same, whether in charred berries or not. The gold appears to have been applied in squares or rectangles (straight lines, L of which is about 3.9 to 4.7). Diam. of holes up to 2.23. The berries are of various shapes: thin and round. L: 7.04, 7.78, 8.76 (seed pod).
- Many square stems, some opening out to leaves, which are mainly triangular (broken). One is almost complete (L about 3.5cm). There are several twisted wire stems (block twisted) (**figs. M28.3 and 7.43**). The leaves appear to have been gilded on only one side, though the gold has gone over the edge on two of them. Some of the stems have a yellowish coating, which can also be seen on a broken off leaf. One could have been made in two parts (stem + leaf). This leaf seems to have a line in the middle, on the ochre side, visible with a magnifying glass. There are no veins down the centre of the leaves, but some have faint traces of a design or texture. W of stems: 0.85, 1.06, 0.7.

Plant represented: myrtle, judging by seedpods and leaves.

Bibliography: Akamatis N. 2016. 'Red-figured pelike attributed to the Painter of the Wedding Procession in the Archaeological Museum of Pella' in M. Giannoupoulou and C. Kallini (eds), *Ἠχάδιν: Τιμητικός τόμος για τη Στέλλα Δρούγου,* 100-114, Athens.
Karamanoli-Siganidou M. 1984. 'Αρχαιότητες και μνημεία Δυτικής Μακεδονίας' *A.D.* 31 (1976) *Chron* B1, 255-264.
Karamanoli-Siganidou M. 1989. Catalogue entry in Ministry of Culture, *Eros grec: amour des dieux et des hommes, exposition 1989-90, Paris*, Ministry of Greek Culture, 105-8.

Studied: January 2014.

[94] Karamanoli-Siganidou 1984, 261.
[95] Akamatis 2016, 109-110.
[96] Karamanoli-Siganidou 1989, 105.
[97] Karamanoli-Siganidou 1984, 261.

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Fig. M28.1 Reconstructed wreath© Ephorate of Pella, Hellenic Ministry of Culture and Sports



Fig. M28.2 Detail of wooden circlet © Ephorate of Pella, Hellenic Ministry of Culture and Sports



Fig. M28.3 Detail of twisted stems and seedpod © Ephorate of Pella, Hellenic Ministry of Culture and Sports



M29 Pella East Cemetery Grave 1 89/119, 89/120, 89/122
Pella AM store

Provenance and context[98]: Eastern cemetery, Chatzopoulou, grave 1(**fig. M29.1**). Two cist graves had inscribed leaves (this and grave 3)[99]. All had been robbed. Cist grave 1 was on the edge of the burial plot, near grave 3, and was lined with white and blue plaster, decorated with garlands. It held the inhumation of a mature person (only a few bones remain). The finds included 41 gilded acorn-shaped beads, 46 knucklebones, a bone bead, part of an alabastron, part of a clay figurine (89.65, pl.27β), part of an iron strigil, nails and an iron pin. Glass lenses and flowers were probably from the decoration of the kline. A gold leaf (inv.89.85 – **fig. 2.40**) bore an inscription giving the name of the deceased as Poseidippos, an initiate, addressing Persephone[100]. Dickie suggested that the leaf was a myrtle leaf, rather than laurel, as myrtle was worn by initiates[101].

Date[102]: end of fourth century.

Type: 2

Constituents
89/119: approximately 13 fragments of circlet, made of gilded bone, with pierced holes and copper stems remaining in some of the holes. Where two pieces of bone were joined, they overlap. The gilding is in a neat line on the back. Some holes are very close together (2.01), others further apart (3.68). W of bone varies from 5.57 where the holes are close together, to 4.3 where holes further apart. Holes: diam. 0.65 where they are close together, and 0.8 where further apart. Total L of bone pieces:14.6cm.

89/120: Approximately 150 fragments of gilded copper leaves, gilded on both sides and remains of berries (**fig. M29.2**). There are tiny ridges in the copper under the gold (W of ridge: under 0.5mm), possibly the remains of an ancient adhesive, since there are no traces of modern adhesive under the gold. The same box also contains fragments of plaster.

89/122: Gilded clay berries or fruits. 21 are oval and two are rounded with a cross (seed heads) (**fig. M29.3**). The clay is reddish with a whitish/yellowish coating under the gold. There are large holes in the berries for the stems. Lilimbaki-Akamati suggested that the round objects were possibly buds of myrtle[103], but a cross indicates a seedpod. All the berries are different sizes, and thus hand made. The holes in the berries are up to 1.64 in diam., and smaller on seed pods, diam. 0.6 to 1.44. Round berries, diam.: 5.37 and 6.16. Oval berries L: 6.89, 8.1, 7.59, 7.53, 7.28, 8.28.

Plant represented: Myrtle, judging by seed pods and the shape of the leaves.

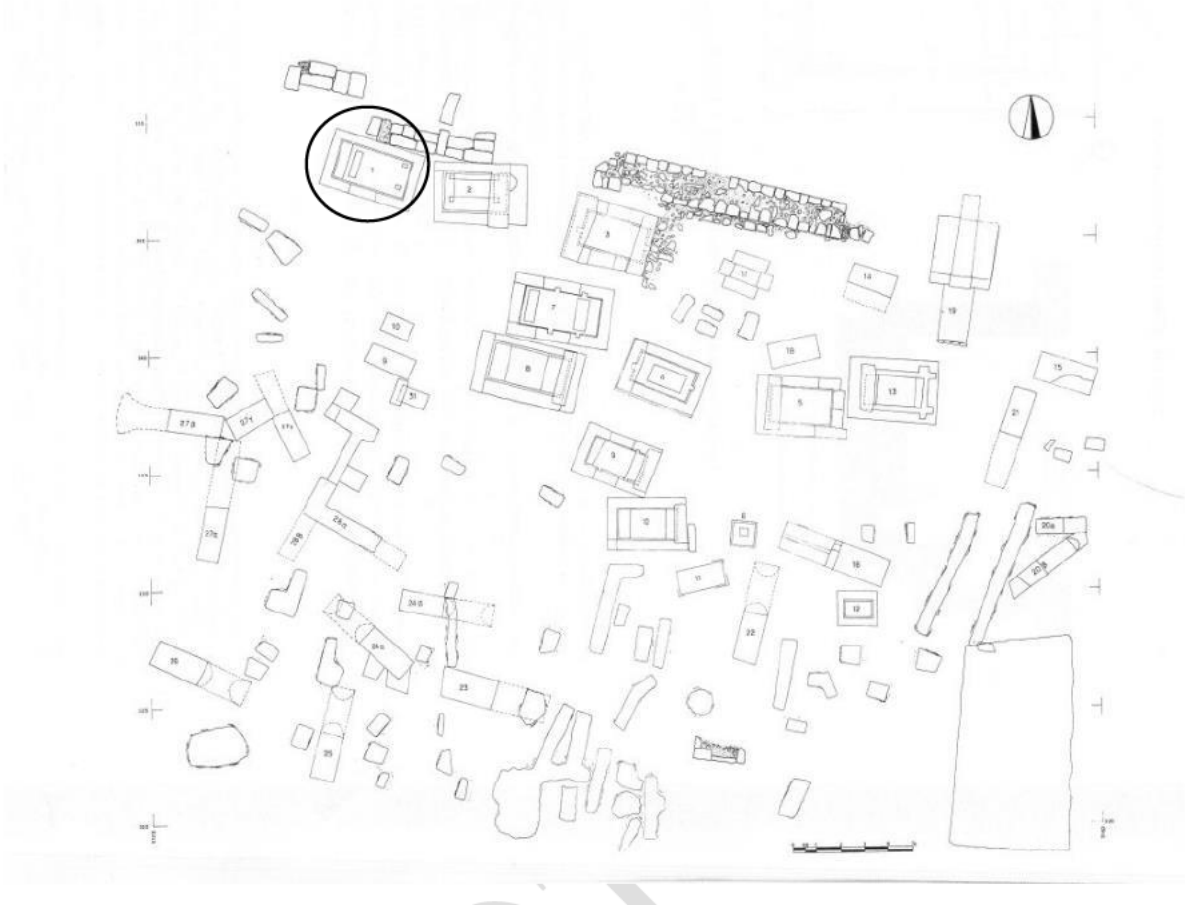
Studied: January 2014 and May 2012.

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[98] Lilimbaki-Akamati1996,77-80.
[99] Lilimbaki-Akamati 1992, 95.
[100] Lilimbaki-Akamati 1996a, 80 and Lilimbaki-Akamati 1992, 95.
[101] Dickie 1995, 86.
[102] Lilimbaki-Akamati1996a, 80.
[103] Lilimbaki-Akamati 1996a, 79.

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Fig. M29.1 Plan of eastern necropolis showing Grave 1. The monument belongs to the Ephorate of Antiquities of Pella ©Hellenic Ministry of Culture and Sports/Archaeological Resources Fund. From Lilimbaki-Akamati 1996a, 76.



M29.2 Box of fragments of gilded leaves and stems © Ephorate of Pella, Hellenic Ministry of Culture and Sports

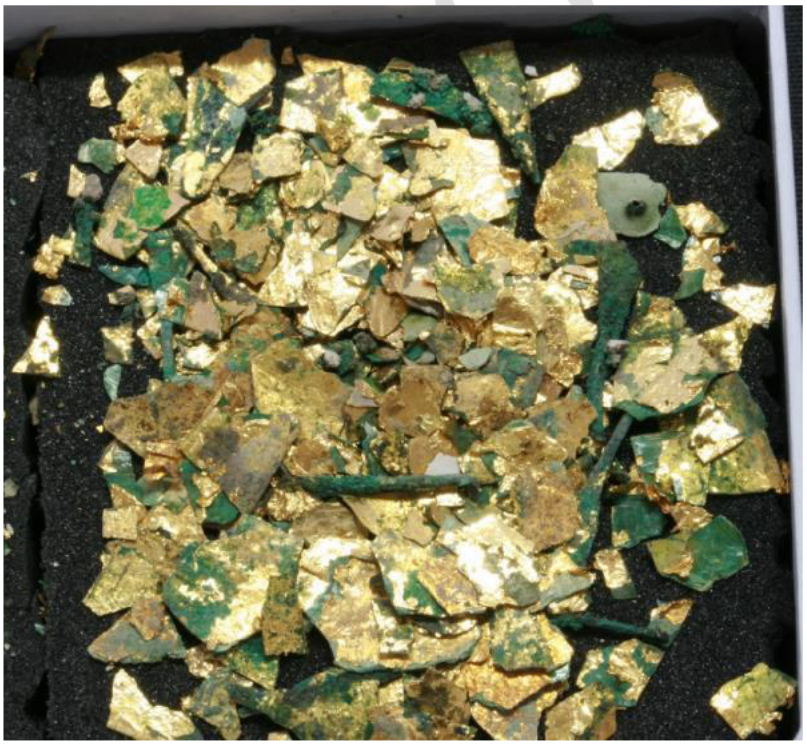


Fig. 29.5 Myrtle seed pod and two berries © Ephorate of Pella, Hellenic Ministry of Culture and Sports



M30-33 Phoinikas Cist grave 5
Four gilded wreaths. AMTh store.

Provenance and context[104]: Kisch tumulus near Thessaloniki. Cist grave 5 was found within this large tumulus, near a smaller tumulus containing the Macedonian Tomb. It is a cist grave 90cm x 60cm and was almost airtight. It once contained a wooden theke with the bones of the deceased wrapped in gold fabric, five gold bow-shaped fibulae, five pins (**fig. M30.1a**), a gold ring with an engraved bezel and a coin of Amyntas III (reigned 393 and 392-370)[105]. Four gilded wreaths, alabastra and lekythoi completed the offerings. The grave was that of a woman aged 45-50 [106]. The bones included a large fragment of the cranial vault and fragments from the left femur (**fig. M30.1b**).

Fig. M30.1a Fibulae and pins from Grave 5 ©Archaeological Museum of Thessaloniki, Ministry of Culture and Sports/Archaeological Resources Fund. From Tsimbidou-Avloniti 2009, fig.5.



Date: Second quarter of the fourth century[107].

Type: 2

Fig. M30.1b Bones from Grave 5 (photograph by Jonathan Musgrave). ©Archaeological Museum of Thessaloniki, Ministry of Culture and Sports



[104] Tsimbidou-Avloniti 1987, 263; Tsimbidou-Avloniti 2009, 439 Tsimbidou-Avloniti 2007, 439; Tsimbidou-Avloniti and Jeffreys forthcoming.
[105] *SNG* Alpha, 214 (Tsimbidou-Avloniti 2007, 678). Tsimbidou-Avloniti (2007, 685) points out that the fibulae fit stylistically between those attributed to the late sixth and the second half of the fourth c.
[106] Musgrave 2007, 30-34.
[107] Based on the coin and pottery. Tsimbidou-Avloniti 1988, 263 and Tsimbidou-Avloniti 2009,439.

M30 Phoinikas 5 Wreath 1

Constituents:

- Fairly complete circlets of bone and wood remain (**fig. M30.2**). The two circlets are still joined together by the stems of leaves passing through holes pierced in both circlets. One large piece of wooden circlet is unbroken, and the two further fragments lying alongside once joined this large piece. Two pieces of bone which were originally joined together, possibly held by a copper or bronze nail, are still joined to the wooden circlet although they are 5cm shorter. The two pieces of bone overlap. There is a gap in the holes in the wooden circlet beneath the overlap of the bone pieces, so no stems would have been supported in this section of the circlet. There are two further pieces of bone circlet lying alongside. The bone circlet retains much of the original gilding but the wooden circlet does not appear to have been gilded. Many pieces of fabric have been preserved and appear to be an integral part of the wreath, since at least two of the stems pass through the fabric which was attached to both sides of the wooden circlet (**figs. 2.7, M30.3 and M30.4**). The purple colour can still be seen in one of the loose pieces of fabric (**fig. 2.8**). The fabric or fabrics still attached to the sides of the wooden circlet looks like very fine hair and is a golden colour. It has yet to be identified **(figs. M30.5-6)**. Its function is not clear, but it would appear to have been either decorative, or intended to protect the head – or both.
  L of fragments of wooden circlet: 41cm, 9cm and 5cm. Total L of wooden circlet: 55cm. L of fragments of bone circlet: 20cm, 17+ 9cm, 10.5cm. Overlap of pieces of bone: 3.5cm. Total L of bone circlet: 53cm.
- At least 50 leaves, which are spear shaped, with a swelling at the end nearer to the stem. Although most leaves are of different sizes, they are all much the same shape and do not have veins. (**fig. M30.7**). The opposite end from the stem comes to a point. The leaves are quite small compared with those on other wreaths from this grave, and in particular smaller than those from wreath 4. About 30 of the leaves are complete or nearly complete. Some are still mounted on the circlet.
  W of complete or nearly complete leaves: 9, 8, 8.7, 10.2, 11.6, 12.2, 9.5, 10.2, 7.9, 9.1, 9.1, 6.6, 10.9. 10.2, 10.1, 10.1, 9.3, 11. L of nearly complete leaves: 31.6, 37.76, 34.66, 25.73, 38.68, 34.1, 37.44, 37.3, 34.5, 33.6, 29.7, 29.7.
- At least 25 spirals, several of which still support berries (**figs. M30.7 and 7.48**). W of spiral stems: 0.55 to 0.8. L of spirals: 25, 35, 25, 29.2.
- Two straight stems emerge from four separate holes in the circlet.
- 29 oval berries. (**fig. M30.7**). Some have a cross and a small ridge. L of berries: 5.9, 6.3, 5.76.
- There is also some further detached fabric, at least one layer of which was dyed purple (**fig. 2.8**). There are two holes in the fabric, which appear to be from stems.

Plant represented: almost certainly myrtle, in view of the cross on the berries and the swelling in the leaves at the end nearer to the stem.

Bibliography: Musgrave J. H. 2007. *Draft report on the human remains from the Macedonian Tomb at Phoinikas, Thessaloniki* (unpublished).
Tsimbidou-Avloniti M. 1988. 'Ανασκαφικές ερευνές σε ταφικούς τύμβους των νόμων Θεσσαλονίκης και Χαλκικδικής', *AEMTh* 1 [1987], 261-268.
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Tsimbidou-Avloniti and Jeffreys forthcoming. 'Gilded wreaths from Phoinikas cist graves 2, 3 and 5', *AEMTh*, in course of publication.

Studied: April 2016, December 2017.

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Fig. M30.2 Fragments of wreath 5,1 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M30.3 Detail of stems passing through wood and fabric © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M30.4 Fabric on either side of wooden circlet (photograph by Dimosthenis Kechagias) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

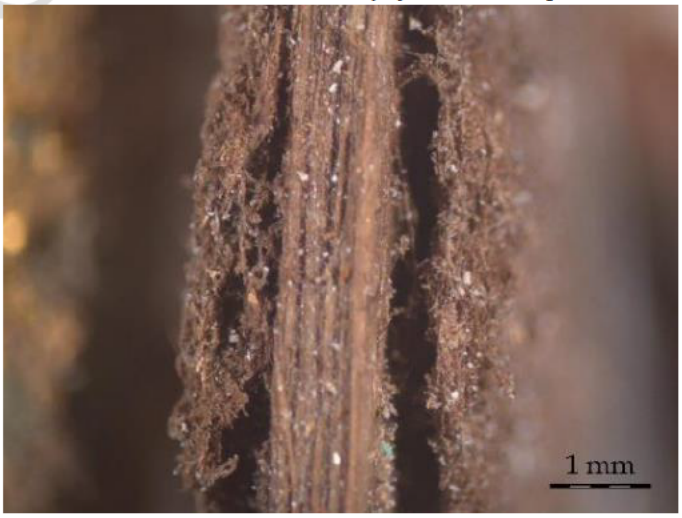


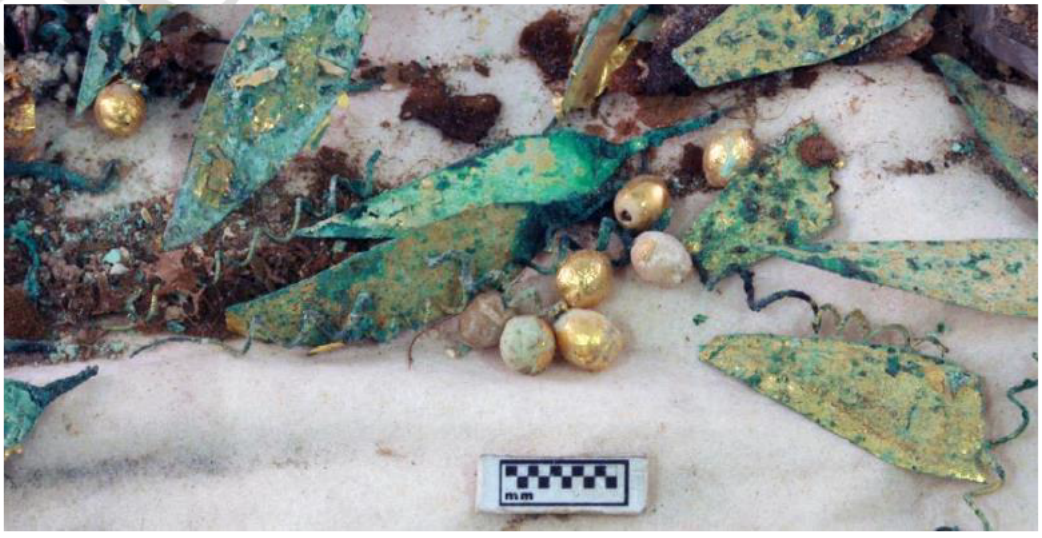
Fig. M30.5 Detail of fabric from wooden circlet. Photograph by Dimosthenis Kechagias © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M30.6 Detail of fabric or fabrics between the wood and bone circlets © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M30.7 Berries, leaves and spiral (with fabric) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



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M31 Phoinikas 5 Wreath 2

- A section of the wooden circlet of this wreath is still attached to a section of bone circlet (**fig. M31.1**). As it stands, the wooden circlet is approximately round, with a diam. of about 13cm. Two pieces of wood appear to have been joined (in antiquity) and are still attached. There is a section where no bone circlet is now attached, located approximately in the middle of the wood. Within this section, there is a stretch with no holes in the wood, where probably a section of joined bone circlet was once attached (these joined pieces are generally not pierced). W of wooden circlet: 8.23-9.36. Gap between holes in wood: 3.38, 3.38, 6.27, 3.28 (several), 3.19. L of section in wood where there is no bone: 45.86. L of section where no holes in wood: 34.
- There are three or four detached pieces of wooden circlet, not attached to any bone circlet. The longest piece is grey, possibly from burning. There is also a small piece of what appears to be burnt wood. L of detached piece of wood: approx.30, 10, 10.
- 4-5 pieces of bone circlet. Three pieces are still attached to the wooden circlet, and a long piece, detached from the wooden circlet, is made of two overlapping pieces of bone which have been joined together. When compared with the bone attached to the wooden circlet and with the wooden circlet, the pieces matched but if all the bone pieces are from the same wreath, the overall diam. of the wreath would be 19cm, larger than seen elsewhere for a head. The bone circlet has yellowish coating between the bone and the gold. The piece still attached to the wood measures as follows: L of pieces of bone attached to wood: 50, 55, 67.44. Total 170. W of bone: 3.4-3.8. L of detached piece of bone circlet (made up of two overlapping pieces of bone): 25cm. There is a large stretch in the bone with no holes, part of which is where two pieces of bone overlap. At one end, the bone has been cut to a taper and still has gilding on the outer surface. Distance between holes in bone fragment: 3.33 (7 times), 9.05. L of piece of bone fragment with no holes: 20.2cm. Area of overlap: 10.5cm.
- A shorter piece of bone circlet is made of two overlapping pieces of bone. This fragment of bone circlet has no holes. L: 40.39.
- Stems have been bent back on the back of the wooden circlet, where there is also what appears to be a sizeable piece of copper or organic material which has been coloured green from contact with the copper corrosion (**fig. M31.2**). There appears to be a substance lying between the wood and the bone.
- At least 41 leaves of different sizes, made in one piece with the stems, and which do not have veins (**fig. M31.3**). They appear to have traces of yellow bole or coating beneath the gold and are gilded on both sides. The sizes of the leaves which could be measured (i.e. those not lying underneath the circlet) were as follows:

L	W	Comment
37.17	13.32	Tip broken
44.89	13.92	Under fabric and tip broken
33.16	13.59	Under fabric
14.65		
33.79	13.26	Curved
29.9	12.25	
26.26	12.7	
29.02	12.21	Partly under circlet
37.32	12.21	Bent upwards
20.02	12.7	Tip broken
30.08	13.93	Tip broken
24.52	10.81	
39.62	15.35	
36.35	1502	
29.46	12.09	
	10.81	
	10.32	

- Six straight stems in the middle of the joined circlets, which are not supporting berries or leaves. Diam. of stems: 0.9, 0.8.

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- One long piece of wire which was probably once wrapped round another Total diam.: 1.02. Two wires protrude from the same hole on the circlet, one of which is still gilded. Diam.: 0.7 and 0.8. A piece of thicker wire lies beneath the leaves and two further wires under the leaves.
- Many of the leaves still have stems.
- Only six oval berries are visible. They have a cross at the opposite end to the stem and represent myrtle. L of berries: 8.05, 8.63, 7.17, 6.84, 7.06.
- There are several large pieces of fabric with a very fine weave lying beside the circlet, which may not have been part of the wreath (**fig. M31.4**). Some of the fabric has an open weave (**fig. M31.5**).
- A lump of Plasticene or similar material used to take an impression from the bezel is lying beside the wreath.

Fig. M31.1 Wreath 5,2 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M31.2 Stems bent back on the back of the wooden circlet © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M31.3 Leaves from wreath 5,2 with no veins © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

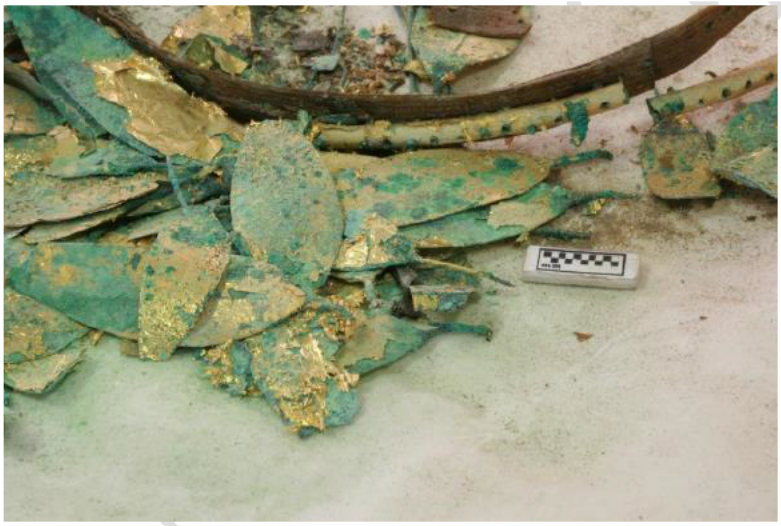


Fig. M31.5 Fabric from grave 5,2 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

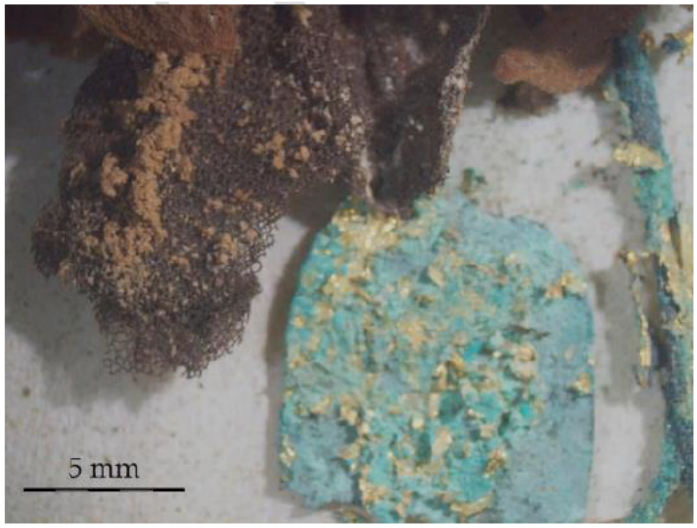


Fig. M31.4 Fabrics from grave 5,2 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M32 Phoinikas 5 Wreath 3

- The wooden circlet looks very nearly complete (**fig. M32.1**) and the bone circlet is still attached to it (**fig. 2.6**). The wooden circlet is narrow, compared with many others. There is a gap where no holes have been pierced. L of arc: 36cm. Gap at the back: 14cm. Gap in wooden circlet where no holes: 15. Diam.: 16cm. W of wood: 6.76
- Two loose pieces of wooden circlet, the larger of which has one hole. L: 26.5 and 15.76.
- Five fragments of bone circlet still joined to the wooden circlet, two of which are bound together with the original linen thread, which lies underneath the gilding (**fig. M32.2**). There is a gap in the holes in the wood at this point, which is in approximately the middle of the circlet. The leaves may have been arranged to cover the gap in the centre: they seem to have been laid out so the stems "grow" towards the centre. Total L: 36.1cm (46, 47, 89, 87.6, 45.8). W of bone circlet:3.18. Distance between holes in bone: about 6.6.
- 34 berries with a cross (myrtle). Some of these are still mounted on stems. Two stems protrude from one hole. L of stems with berries: 29.7, 35, 31.
- At least 70 leaves of different sizes, many with a vein down the middle (**fig. 7.27**). The leaves are spear shaped, coming to a point, with a swelling at the end nearer the stem. The leaves without veins were clearly made in one piece with the stems; those with veins are broken at the join with the stem, so it is not possible to tell if these were also made in one piece. In at least one case, a stem supporting a berry seems to have been stuck into the vein/groove in a leaf which has a second stem on the back, and there are several pairs of stems, some with a leaf still joined to one leaf and another stem joined to one berry, so it may be that all the veined leaves were joined to separate stems (**fig. 7.47**) The veins are the same W as the stems and the gilding has been applied on top of the stem/vein.
  Length of complete or fairly complete leaves: 36, 35, 20, 27, 40, 40, 39, 38, 32, 30, 32, 25, 32, 29, 30, 40, 36, 40, 36, 27, 33, 34, 38, 30, 40, 32, 33, 30, 20 (it was not possible to measure those which were lying under organic material).
- The stems are fairly straight and gilded. They have been bent on the back of the circlet. W of stems: 0.9, 0.6, 0.7.
- There is at least one long spiral with a berry still mounted on it. L: 29.
- Textile remains alongside the wreath. This seems to be of at least three types. One is what appears to be a woven fabric, which has holes of approximately the same size (diam. 1.15) as those in the circlets (**figs. M32.3–4**). This fabric is thus part of the wreath, and the pairs of holes seem to have been made in order to allow stems to pass through them. Another fabric has a distinct purple colour (**fig. M32.5**). A third fabric has a more open weave (**fig. M32.6**).

Scientific investigation:
HHXRF
AMTh XRF The gold on the berry was found to be almost pure, with about 4% copper. No mercury was detected. On analyzing the coating on the berry, calcium and iron were found in addition to gold and copper. The fabric of the berry was found to have sodium, silicon, potassium, calcium and iron as well as copper and gold from the immediate environment. The coating on the circlet was found to have silicon, phosphorus, calcium, iron and copper (the last from the surrounding material). The leaf was almost pure copper, with gold, calcium, phosphorus and sulfur from the surrounding material. What was thought to be coating on the leaf (but could have been debris from the soil) held phosphorus, sulfur, calcium iron and copper as well as gold.
HHXRF The stem and leaf analysed were found to have copper and gold. The berry also had some copper with the gold, as well as some iron and a trace of calcite.
SEM/EDX On analyzing the gold on a leaf, gold was the main element, with about 4% copper (weight percentage) when one fold of gold was present, and about 2.2% when the gold was thicker. The coating on the berry had titanium, calcium, potassium, aluminium, silicon and magnesium. The proportions of aluminium and silicon are nearly equal (between 30 and 40%), and the relatively low quantity of calcium (around 5.5%) suggests that this is kaolinite. A stem was found to have copper and chlorine (from the corrosion).

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Fig. M32.1 Complete wreath 5,3 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M32.2 Detail of circlet, showing linen thread beneath the gold © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M32.3 Fabrics lying beside the wreath showing holes © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M32.4 Microscope image of woven fabric © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

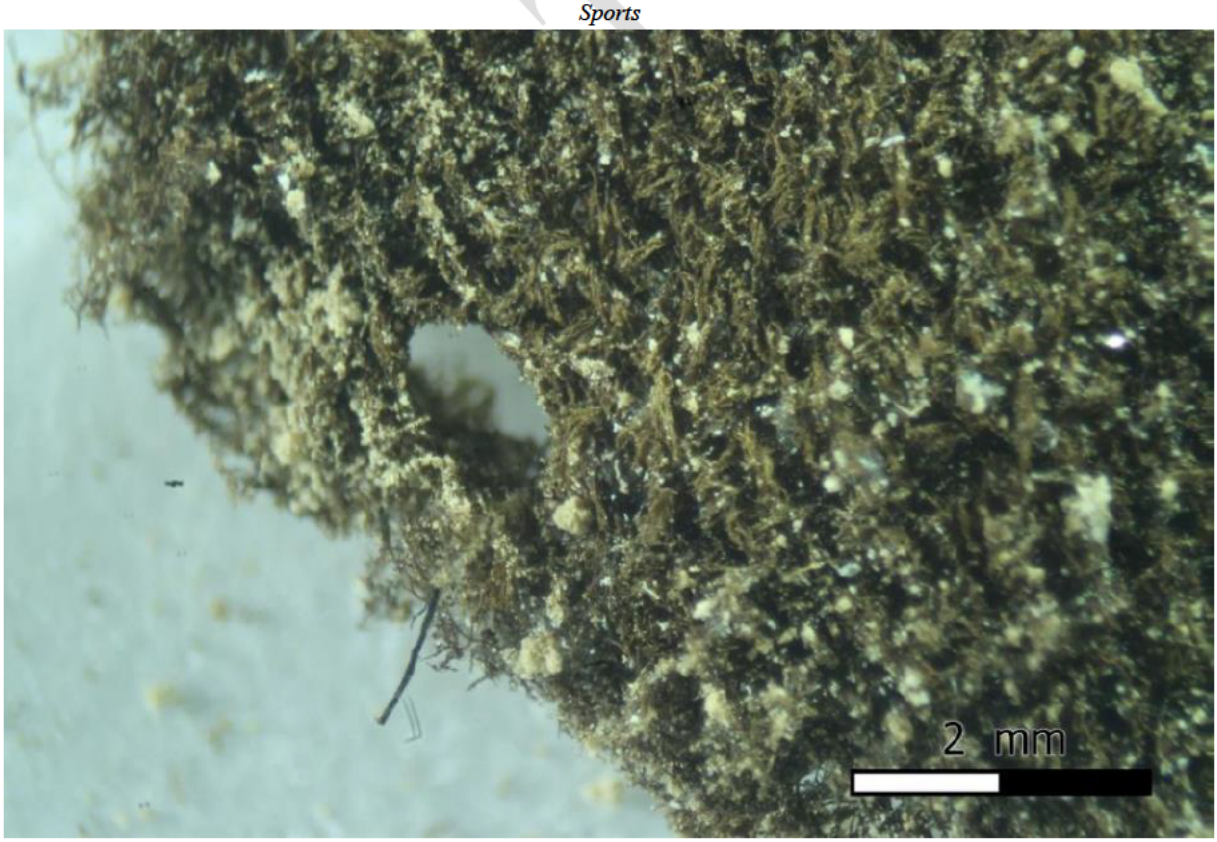


Fig. M32.5 Fragment of purple fragment lying beside a berry © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M32.6 Fragments of open weave fabric lying beside leaves © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M33 Phoinikas 5 Wreath 4

- A large piece of wooden circlet, bent in the middle, is still joined to a fragment of bone circlet (**figs. M33.1-2**). The wood has been pierced with holes, but there is a gap of about 5cm after 15 holes, towards the centre of the wreath (a further 18 holes lie on the other side). There is a gap in the bone circlet which is smaller – about 3cm. This was probably the area in the centre of the wreath where the leaves coming from the two directions met. There is some fine brown fabric behind the wood and beneath the copper stems which is clearly an integral part of the wreath (**figs. M33. 3 and M33.4**). Each strand of the fabric is approx. 0.02mm in diam.
- Two further fragments of wooden circlet, and at least four fragments of bone circlet (**fig. M33.1**). L of large fragment of wood: 28cm. W: 9.64. L of two smaller fragments of wood: 78 and 25. Total L of wood fragments: 38cm. W: 9.64 and 9.64.
  L of bone fragments: 14, 16, 8.5,9, 4 cm. Total 51.5cm. 6173. W of bone: 4.54, 4.17. Distance between holes in the bone: 8.24 (several times), 6.24, 2.24 (four groups, where the holes seem to have been pierced in pairs, very close together). There are long gaps at each end of the bone with no holes, except possibly an odd hole where a string could have been inserted to tie.
  If there was a gap at the back, as seems to be normal with these wreaths, this would give a diam. of perhaps 17cm. There is a white coating on the bone circlet, beneath the gilding (**fig. M33.5**).
- There are at least 30 leaves, which are in the familiar rounded spear shape. The leaves are larger than on the other wreaths from this grave (dimensions below). Their size suggests laurel, but the berries (see below) suggest myrtle. Three or four of these leaves are very nearly complete. There are no veins, and the stems appear to have been made in one piece with the leaves. Very few of the leaves are the same size. They have been gilded on both sides. There appears to be an off-white calcareous-looking material under the gold (**fig. M33.6**).
  W: 19.4, 14.9, 13.8, 13.8, 16.7, 18.4, 12.6, 14.2, 18.45, 19.7, 21.6, 16, 19, 20.7, 20, 17.2, 12.9, 16.9, 18.7, 18.3, 23.5, 16, 16, 16.7, 14.2, 18.3, 18.8, 24.6, 19.1, 19.9.
  L of complete or nearly complete leaves: 51.3, 73.3, 58.9, 48.3.
- 16 berries of various sizes and mainly oval. Many have lost their gilding. Some have a coating beneath the gold (**fig. M33.7**). Four of the smaller berries have a cross at the end opposite to the stem, indicating myrtle. Length: 8.7, 7,6,7.6,7.9,9.2,4.11,6.3,8.9,7.6,8.6,7.6,8.09,10.09,10.24,9.3.
- Stems bent back on back of circlet. Two of the stems have no berries or leaves. Two are still joined to berries, and six to leaves. W: 0.88, 0.6.
- Fragments of fabric have been preserved with the wreath. These include fragments of sprang (**fig. M33.8**) and of purple dyed fabric, as well as a red fabric lying above the gold on a berry (**fig. M33.9**). There are at least two sorts of dark fabric, one of which is made of exceptionally fine fibres.

M33A Phoinikas 5 Pyre

Yet further fragments, numbered **18639a and b** are listed as having come from Τύμβος, τάφος 5 (the label reads χάλκινα στελέχη από τα στεφάνια στη σακκούλα με τα κόκκαλα και λίγα τύλινα), although it is not clear what the relationship is between these fragments and those described above. Given the charring, and scanty remains of the circlets, this is perhaps the remains of a further wreath that was cremated with the body. The material consists of (**fig. M33.10**):

- bone fragments
- 14 berries, one of which is a myrtle seedpod. Some bear signs of burning.
- A few fragments of leaves and stems and (possibly) necklace fragments
- A few fragments of gold (? from clothing)
- Spiral stems
- Fragments of wooden and bone circlet

A further group of material consists of berries (**fig. M33.11**) and a yet further group of fragments of bone circlet

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Fig. M33.1 Circlets of wreath 5,4 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M33.2 Detail of two circlets joined together © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M33.3 Fabric lying behind stems © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M33.4 Fine fabric under microscope © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

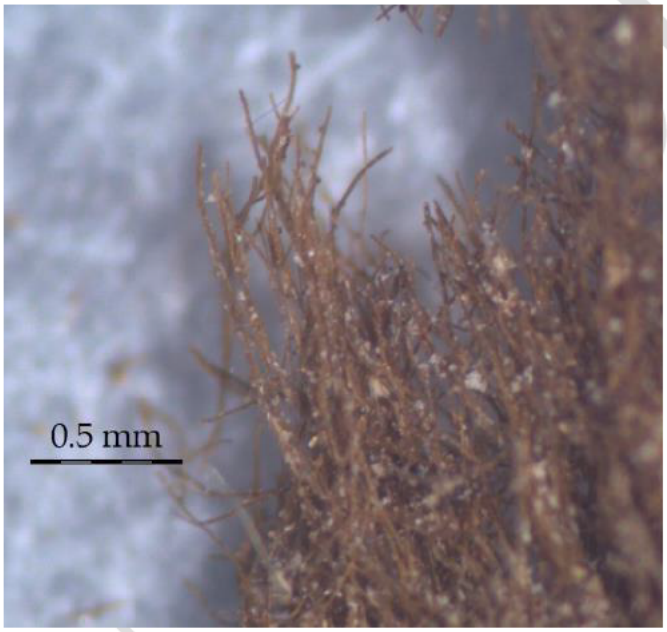


Fig. M33.5 White coating on bone circlet © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M33.6 Detail of leaves from wreath 5,4 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M33.7 Berries with coating © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

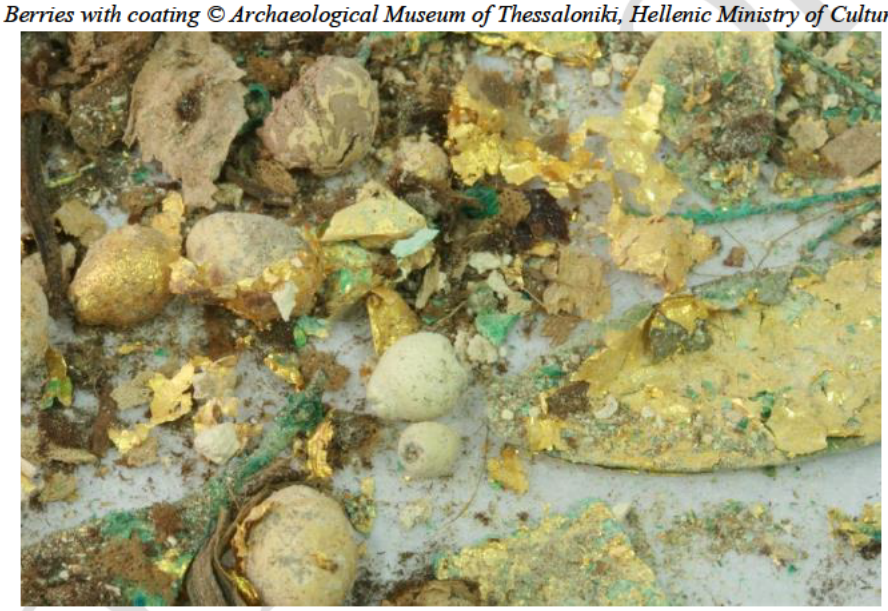


Fig. 33.8 Fragment of sprang © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

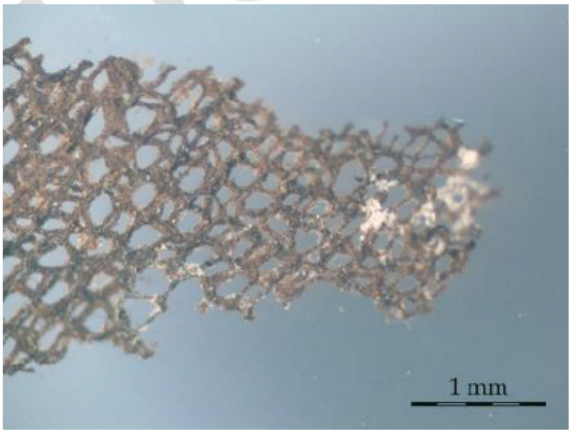


Fig. M33.9 Fragments of red fabric lying above the gold on a berry © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M33.10 Fragments described as being from grave 5 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

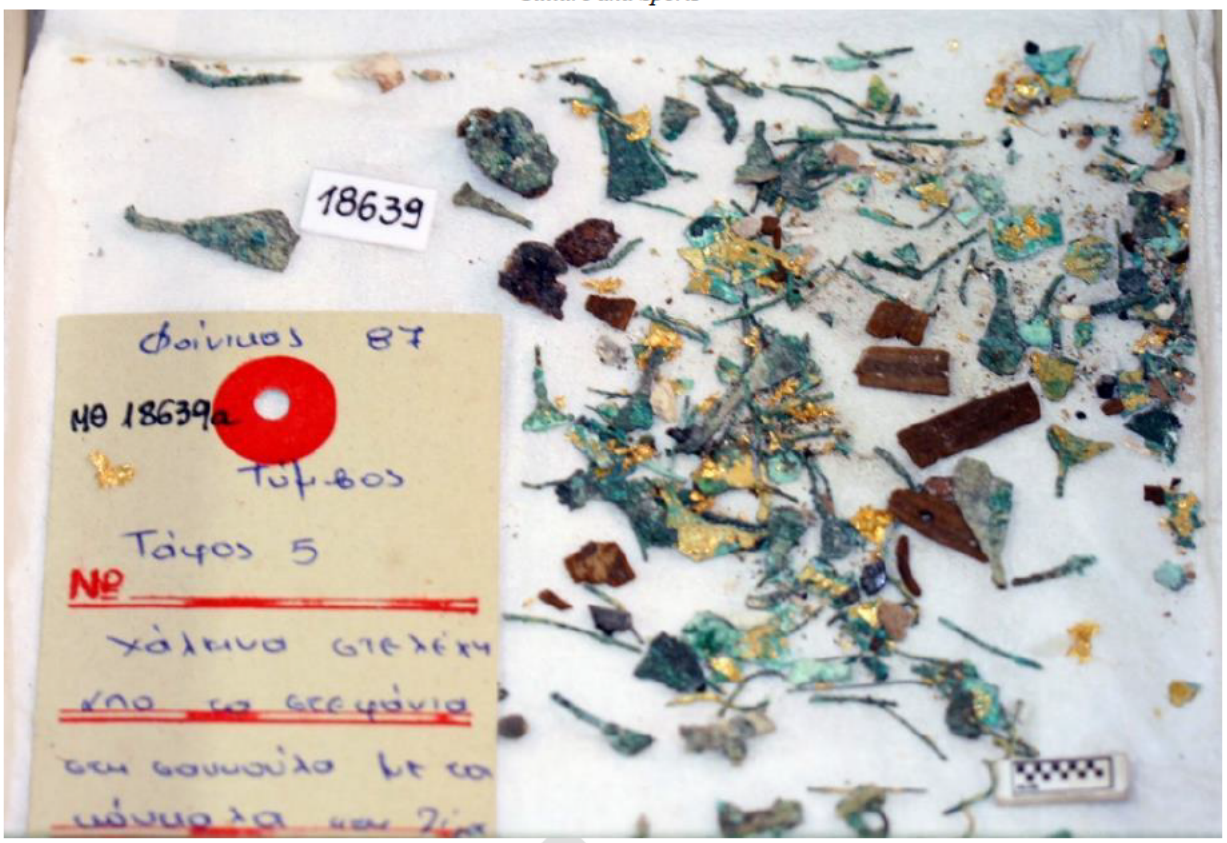


Fig. 33.11 Berries with signs of charring © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M34 Phoinikas Cist grave 3
At least three wreaths AMTh store

Provenance and context[108]: Grave 3 was within the large Kisch tumulus near Thessaloniki. The cist grave was approached by steps from a large rectangular pit (3.20m x 2m) adjoining the prodromos of the Macedonian Tomb. A thick layer with the remnants of the pyre, on which the deceased had been placed on a wooden kline, lay above the grave (**fig. M34.1).** A second kline with ivory decoration had an unglazed vase containing the cremated bones and a gold pendant of exceptional workmanship. Within the burial chamber were found, in addition to gilded wreaths and necklaces, a clay pyxis, an alabaster grindstone and a peplos sewn with tens of gilded clay discs with an embossed eight-pointed star covering the kline. Black-glazed vases from the grave as well as those which had been thrown on the pyre, full of aromatic oils, give a date of the mid-fourth century[109] **(fig. M34.2)**. The deceased was clearly female, on the basis of the peplos, the necklace and the grindstone. Dr Musgrave thought the bones, which had the consistency of chalk, could have been those of a male, aged possibly under 25, but the fragments were smallish and fragile, and would be equally consistent with a female.
The wreath fragments labelled in the Archaeological Museum of Thessaloniki as being from grave 2 are included here. They cannot be from grave 2, which was too small, and are much more likely to be from the larger grave, 3.

Date[110]: end of second quarter of the fourth century.

Type: 2

Constituents:
A large white box with a label reading Φοινικ. '87 κιβ. 3. Χάλκινο στεφάνι κέντρου κοντά στα αλάβαστρα 18620b. 16/4 (i.e. from the lower part of the grave).

- The circlet is made of bone, gilded on the front, and unusually wide, similar in design to a circlet from Vergina (Stenomakre Gamma) (**fig. M34.3**). Holes have been pierced at different levels, apparently in a pattern. The ends of the circlet are tapered. There is a gap at the back of c. 15cm. In addition to five large pieces of bone, there are two much smaller fragments from the wide circlet.
- Four small fragments of circlet, which are more like those from other wreaths, at least two of which are possibly from a second wreath; the other two could be from the wider circlet (**fig. M34.4**).
  Diam. of circlet of wide bone: 15cm. W of wide bone circlet: 9.85-9.63. L of arcs of fragments of wide bone: 16cm, 3.2cm, 1.7cm, 2.4, 10, 5. Total L: 34.5cm. W of narrow bone fragments: 3.1, 3.3, 6.56 and 3.5 (these latter two could be from the wider bone circlet).
- Fragments of at least 42 small myrtle leaves, gilded on both sides, and made in one piece with the stems.
  L of leaves: 12.6, 7.9, 8.57, 15.9 (**fig. M34.5**).
- 33 gilded oval berries made of red clay with an off-white coating beneath the gold. L of berries: 7.83, 6.88, 8.5, 5.74. None of the berries have crosses.
- In the same box were fragments of bone, ivory and perhaps shell as well as a fragment of ceramic, a fragment of glass and a fragment of charcoal. These fragments were not part of the wreath. There were also two pieces of ungilded copper or bronze, again probably not part of the wreath.

A bag labelled πήλινα επίχρυσα + χάντρες στο Ν. τοίχωμα του τάφου 3 κιβ. Κοντά στο λύχνο. 18620α 15/4 contained more berries. Two of the larger berries look like myrtle: one has a ridge and a hole at the same end; another a cross. They can be grouped into three sizes, but they vary a great deal. Some have a red bole beneath the gold and there also appears to be some red pigment. (**fig. M34.6**).

[108] Tsimbidou-Avloniti 1988, 262; Tsimbidou-Avloniti 2007, 678.
[109] Without studying the pottery at first hand, it is not possible to suggest a precise date, but from the photograph, it appears to be consistent with the dates given by Tsimbidou-Avloniti. In particular, the lekythos appears from the photograph to be very like a lekythos from Olynthos in Robinson 1950, 110 which would give a date of the second quarter of the fourth.
[110] Tsimbidou-Avloniti 1988, 263; Tsimibidou-Avloniti 2009, 439; Tsimbidou-Avloniti 2007, 677.

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- 14 small berries L: 5.6, 5.4
- 29 medium berries. L: 7, 7, 8.6
- Seven large berries: L: about 9.
- In the same bag was a large bead (with two holes) and a fragment of ceramic.

A large box made of Perspex labelled Taphos II contains fragments of two wreaths, which have been glued to the bottom of the box (**fig. M34.7**) and the co-ordinates written in the box. Fragments from what appears to be one wreath have been laid out against co-ordinates in red (**fig. M34.8**) and fragments from what is apparently a second wreath against co-ordinates in blue. The wreath at the top right has far fewer fragments, mainly leaves. The other wreath has large, rounded leaves, many of which are in good condition.

Circlet: red co-ordinates

- Two fragments of bone circlet which were joined together in antiquity One is still joined to one fragment of wooden circlet, which lies on the inside of the bone, and would have been in direct contact with the head. At least one copper stem remains in its original position passing through holes pierced in both bone and wood. There is overlap between the two fragments of bone circlet which has traces of gilding on both sides. There are about 50 holes in the bone circlet, pierced at fairly regular intervals when viewed from the front. The holes are less regular when viewed from the back, because they were not pierced straight through the stems. Some of the holes are in pairs, which would have supported closely adjoining stems. The only holes pierced in the overlapping pieces of bone are at one end of the overlap. The area without holes seems to be to one side of the circlet, but the circlet is not complete. L of fragments of bone circlet: 15 and 22cm, with an overlap of 4cm. Circumference of the bone circlet: 34.5 cm. L of arc: 19.5cm. Original diam.: probably 19.5cm. W of bone circlet: 4.21. Distance between holes: approximately 6.6.
- Two small fragments of bone circlet.
- One small charred fragment of bone circlet. L: 16 W: 5.04
- Three large fragments of wooden circlet close to or joined to the bone circlet. L of wooden fragments: 47.7, 68, 101.2 W of wooden fragments: 12.3. It would therefore appear that the original W of the wooden circlet was about 13mm. The holes in the wood are slightly further apart than those in the bone circlet, but the two clearly went together.
- Four smaller fragments of wooden circlet: L of small wooden fragments: 18.09, 30, 25.3, 11. W of small wooden fragments: 5.02, 13.4, 8.3 and 7.6.
- Three fragments of charred wood. L: 16, 12.1 and 25.2 (this last could be made of two pieces of wood stuck together) W: 5, 7.36 and 13.1. Distance between holes: 7.4.

Circlet: blue co-ordinates

- One tiny fragment of wood has been preserved with the fragments at the top right. L:10.7, W:7.08.

Leaves

- The leaves of the larger wreath (with the red co-ordinates) are much better preserved than those of the other wreath (with the blue co-ordinates). They are all a similar shape, with a swelling at the end close to the stem, suggesting myrtle, and a pointed end. Some have a vein down the centre, made in one piece with the stem. The W of the veins is about 0.65. The copper has been gilded on both sides, and there are traces of coating between the gold and the copper which are visible with the microscope (x20). The leaves are not all the same size. Several are complete or nearly complete. The MNI is 40, judging by the number of the base of leaves preserved with the stems. The four leaves preserved in the area of the red co-ordinates which are complete or nearly complete measure: L: 44.52, 40.16 (broken tip), 20.76 (curved), 35.26 (base broken). Maximum W: 16, 14.3, 9.3, 12.25. The maximum W of the other leaves is:12.37, 10.69, 13.13, 13.13, 13.13, 15, 15, 12, 15.67, 10.87, 13.6, 13.6, 10.84, 10.84. The W was measured rather than the L of the incomplete leaves since they generally break at the tip or the base rather than vertically. From the differing sizes it can be seen that the leaves do not appear to have been cut from a template, or at least if so, were cut from templates of many different sizes.
- The stems are made of rounded wire of different Ls, most of which are quite straight. Some of the stems are still gilded. The stems look hollow, and were probably made by rolling a piece of flat copper plate. W of stems: 0.78 and 1.37 (many of each).

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Berries

- There are two berries (myrtle, with a cross) in the Perspex box (L:4.99 and 5.93), they are same shape as smaller berries kept in a separate bag.
- Most of the berries are kept in one bag (**fig. M34.9**) and are in two main sizes. 29 are small (squat shape) and 46 large (oval). All have crosses. The berries seem to have been made by hand and not moulded, given the differences in size. The berries also have a small indentation and have preserved much of their gilding, which was placed all over the berries. There is a yellow coating underneath the gold and the clay looks reddish. L: 5.68, 6.04 (small). W: 4.03 to 4.37 (small). L: about 8.03 (large). W: 5.68 to 6.32 (large).
- Kept with the berries is a bead (L:5.11).

A small bag contains

- Two large berries and one small berry. L: 8.9, 8.9 and 5.7.

A box contains

- Two further berries, probably kept separately because of their very good state of preservation. The co-ordinates refer to 23,30 (and thus to the more complete wreath with the blue co-ordinates in the Perspex box). L 7.9 and 9.22.

A further box contains

- One berry made of very red clay, with its original stem. L:4.4

A further bag contains

- A burnt berry and two stems. L of berry: 7.36. Diam. of wire: 0.88.

The total number of berries is 88.

A small round box labelled τμήματα διαφορά, contains

- A fragment of burnt wood from the circlet
- A fragment of burnt bone
- Two berries (one large and one small) (**fig. 34.10**).
- A large piece of unidentified material, but almost certainly not from the wreath.
- Fragments of leaves and stems. W of stems: 1.45 1.08.
- Fragments of possibly ivory (not from wreath)
- A piece of shell (not from wreath).

A small round box labelled περιοχή EZHΘ (the blue co-ordinates suggest the larger wreath):

Fragments of leaves and stems. Some of the leaves have a whitish calcareous looking material, possibly a corrosion product. The stems have been gilded. They are made in one piece with the leaves. The stems are fairly straight, though two have a bend at the point where the wire was bent back on the inside of the circlet. W of stems: 0.96, 0.65.

A third round box labelled περιοχή ABΓΔ with co-ordinates which probably refer to the larger wreath contains:

Fragments of leaves and stems.

The fourth round box labelled τμήματα διαφορά contains:

- A fragment of shell
- A berry
- Charcoal
- Wood
- Stems and leaves.

Scientific analysis

On examination with the μXRF, it was found that the fabric of the berry contained a large amount of calcium, as well iron and potassium. The coating however only had calcium and iron (with copper and gold from the surrounding area).

On examination with SEM/EDS, it was found that the fabric of the berry contained silicon and aluminium, but not in equal proportions, as well as iron, potassium, phosphorus, a little magnesium, copper and chloride. It was therefore probably montmorillonite. The gold on the berry was found to be pure (**fig. M34.11**).

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Studied: April 2016 and November 2017.

Fig. M34.1 Interior of cist grave 3 during excavation © Ministry of Culture and Sports/Archaeological Resources Fund. From Tsimbidou-Avloniti 2007, 691.



Fig. M34.2 Pottery from grave 3 ©Archaeological Museum of Thessaloniki, Ministry of Culture and Sports/Archaeological Resources Fund. From Tsimbidou-Avloniti 2009, pl. 4, p.438.



Fig. M34.3 Fragments of circlet from cist grave 3 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M34.4 Fragments of narrower circlet with fragments of wider circlet © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M34.5 Berries from grave 3. The red pigment is to the left of the scale © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M34.6 Fragments of leaves and berries © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

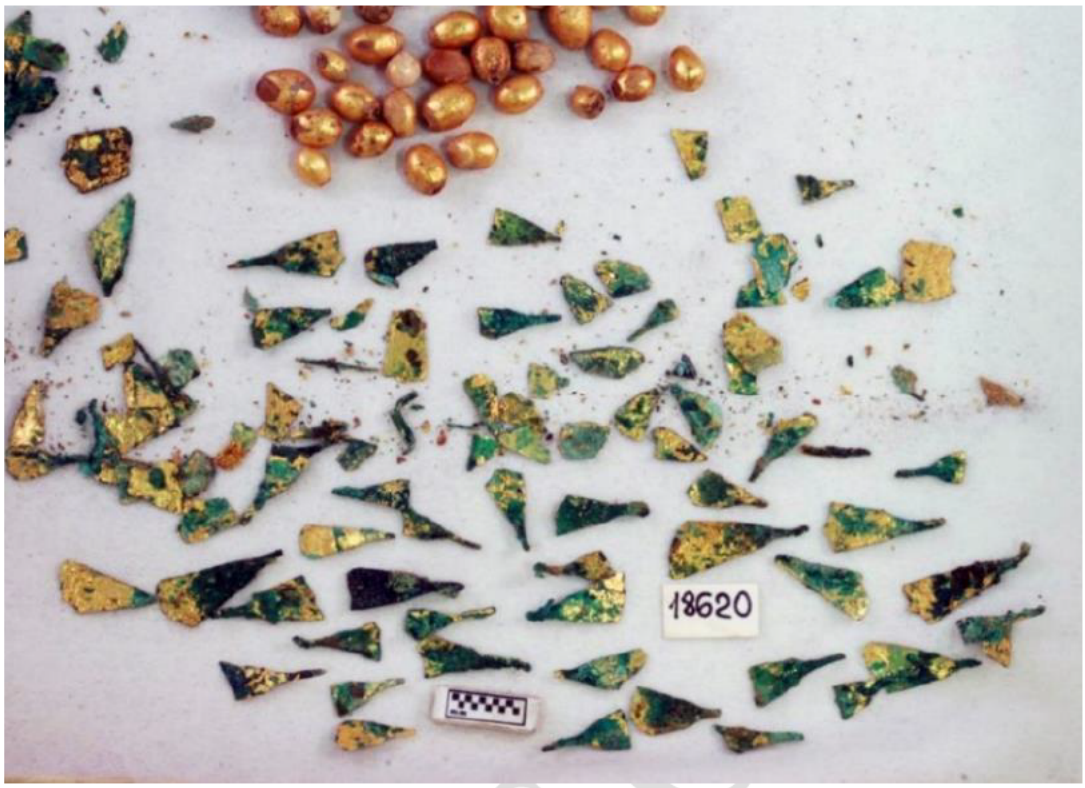


Fig. M34.7 Overview of material in Perspex box © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M34.8 Detail of larger wreath © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



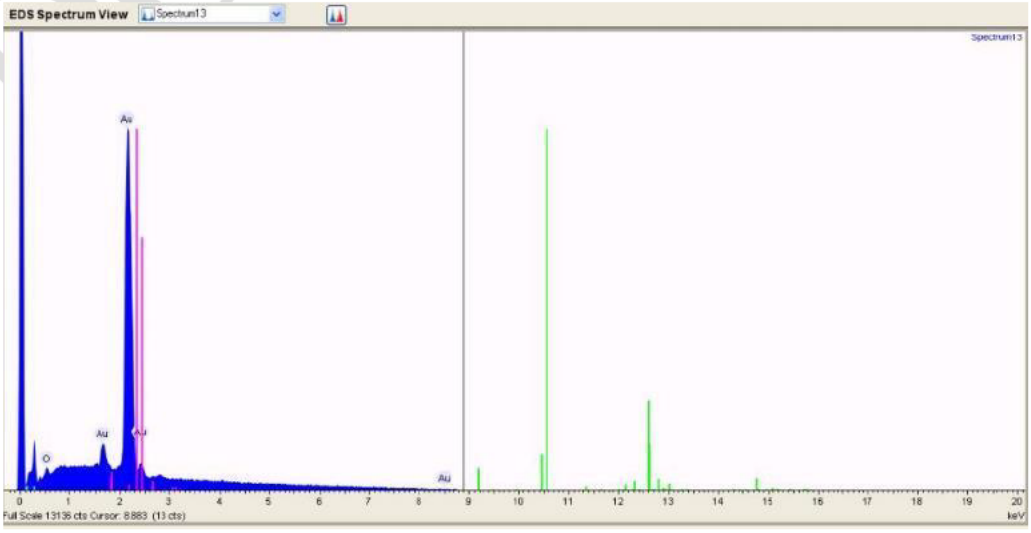
Fig. M34.9 Gilded berries © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M 34.10 Gilded myrtle berries with cross © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture



M34.11 SEM spectra of gold on berry © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M35 Phoinikas Cist grave 2
At least one wreath, AMTh store

Provenance and context[111]: Phoinikas, cist grave 2. The excavators found a small wooden box (0.5m x 0.6m) containing a gilded wreath, two alabastra and a bronze kados with cremated remains (**fig. M35.1**). Some large fragments of bone were preserved and knucklebones were also found. The anthropologist who examined the bones found the bones in the kados to be those of male aged about 20, but the knucklebones would indicate an adolescent[112]. Several groups of material are kept in the museum which are described as being from grave 2, but at least one has been mislabelled (see M34). A small quantity of material with sequence numbers **18599-18602** is said, on the original labels, to be from grave 2/inside the kados, and it is clear that this is indeed from grave 2. The material in a pink box labelled **18630** is said on the museum register and on the original label to be from grave 2 and although the excavation reports mention only one wreath, this material too must be from grave 2. A further cist grave, 6, is described in the publication as having fragments of a wreath, but no traces could be found of this in the museum, and the excavator said they were very scant, so they probably have not survived[113].

Fig. M35.1 Cist grave 2 showing the kados and alabastra ©Archaeological Museum of Thessaloniki, Ministry of Culture and Sports. From Tsimbidou-Avloniti 1988, 266, fig. 4.



Date[114]: (end of) second quarter of the fourth century.

Type: 2.

Constituents:

- A bag labelled **ΜΘ18600** and referring to stems and beads from the wreath inside the kados contains fragments of bone with copper stems and one large oval berry and two beads, which look as if they are from the kind of necklace found with males (**fig. M35.2**).
- A bag labelled λακκοείδης ΙΙ **ΜΘ18602** contains fragments of burnt wood and must be from a different (pit) grave.
- A further bag labelled **18599** and referring to the kados labelled T2 contains knucklebones
- Fragments of lead are in a bag labelled **18601**.

Material labelled 18630 kept in a box and within bags, which according to the museum register and an original label is from grave 2:

- Six fragments of bone circlet, the total L of which is 37cm (diam.17cm). (**fig. M35.3**). There is a yellowish coating under the gold. W:3.9.
- Three fragments of wooden circlet: L: 21.14, 26.44, 9.38. W: 9.12 and 10.34.
- A bag with 19 myrtle berries, from a bag labelled 18630β, mixed large (12) and small (7). All have a white coating (**fig. M35.4**). L:5.6 to 8.7.
- A bag labelled 18630Γ with six berries, only two of which have a cross. The others are oval shaped. L:5.92 to 7.48.
- leaf fragments, with a vein. A coating can just be seen beneath the gold.

[111] Tsimbidou-Avloniti 2009, 439; Tsimbidou-Avloniti 1988, 262.
[112] Musgrave 2007, 5.
[113] Tsimbidou-Avloniti 1988, 263. This grave contained a bronze kados, a sword and three alabastra, as well as a gilded wreath.
[114] Tsimbidou-Avloniti 2009, 437.

Plant represented: myrtle on 18630 material.

Bibliography: Tsimbidou-Avloniti M. 1988. 'Ανασκαφικές ερευνές σε ταφικούς τύμβους των νόμων Θεσσαλονίκης και Χαλκικδικής', *AEMTh* 1 [1987], 261-268.
Tsimbidou-Avloniti M. 2009. 'Ανασκαφικές ερευνές στον Φοίνικα Ν. Θεσσαλονίκης, 1987-2006 - Μια εικοσαετία ανατροπών', *AEMTh 20 years,* 435-446.

Studied: April 2016 and December 2017.

Fig. M35.2 fragments of bone circlet, stems and leaves, and three oval berries from the wreath © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M35.3 Fragments from wreath labelled 18630 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. 35.4 Berries from bag labelled 18630 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M36 Phoinikas Macedonian Tomb 17442 and 17434
At least three or four wreaths, AMTh store

Provenance and context[115]: Phoinikas Macedonian tomb. Several wreaths were found in a tomb with a painted façade, which contained rich grave goods, including ivory decorated klinai and the remains of several bodies, but had been robbed. The remains of at least one gilded wreath were found on base A (to the right of the entrance), which supported a kline (**fig. M36.1**). Amongst the remains of the wooden kline the excavators found, in addition to the gilded wreath or wreaths, a gold oak leaf, thought to be from a gold wreath, and burnt human bones scattered around the base. In front of the platform of kline A were found the cremated remains of what appear to be one mature adult male and one mature adult female with tiny specks of gold. On base B (to the left of the entrance), where the other kline was placed, were fragments of gold necklaces, and a gold wreath, as well as ivory decoration from the wooden kline. A subsequent inhumation on bench B, which stands alongside the pedestal holding the kline, is described by the excavator as accompanied by two gilded wreaths with clay flowers (MΘ 17442) which were once placed or hung at the foot of a simple stretcher, as well as an iron strigil. The bones recovered were those of a male aged 35-40[116]. A silver drachma of Alexander the Great dated to 334-323 was on the chest of the individual. An amphora (MΘ 18182) with an inscription dated to the third quarter of the fourth century was found on bench A, and a gold quarter stater of Philip II (AEN 1049, posthumous issue, dated to 340-328 or 336- 328) in the diadromos. Further finds included two lamps (MΘ 12275 and 12277), alabastra (MΘ17313-5) and a perfume bottle (MΘ12276) and fragments of a silver calyx (MΘ17435). The excavator thought that the grave may have originally been intended for a couple as the finds included gold jewellery and the butts of two spears, which were found stuck in the ground after the tomb was sealed. This may be correct, but it appears that the cremated remains of at least ten people were found in the grave, at least two of whom were probably male and six probably female in addition to the inhumed remains of the man found on base B, which were added later[117].

Date[118]: 17422: end of fourth century or beginning of third; 17434: last quarter of fourth c.

Constituents:
17442: fragments of two wreaths from the inhumation found on bench B, described as Ταφή θρανίου Β by the excavator. A green box containing the finds has inside a smaller white box, several bags with wreath fragments and other loose wreath fragments. The label on the box describes them as two groups of material from wreaths from the inhumation on bench B (2 ομάδες από στεφάνια στην ταφή στο β θρανίο, ΜΘ 17422). The wreaths appear to have accompanied the bones of a man aged 35-40, which according to the label with the bones were found on 8 April on the bench in the South West corner[119]. The excavator considered that there were at least two wreaths associated with this burial, on the head and the chest, although the fragments would be equally consistent with only one.
On the upper layer within the large green box are:

- 13 gilded terracotta flowers coloured pink, red and white and a gilded pottery fragment, probably a handle (**fig. 2.33**). The flowers can be divided into groups:
    - Three flowers with six petals, which are painted pink at the tips, have a white hexagon further towards the centre, a red line around the central knob and a gilded centre (**fig. 7.54**). Diam. of these three flowers: 26, 24.6 and 26.
    - Two further flowers are very similar, but have more rounded petals. Diam.: 5.3 and 28.2 diam. of the holes: 1.5.
    - Two further flowers are similar again but have red lines painted on the petals and a central point set in deeply.
    - Two further flowers of a similar design to the last group, and with six pointed petals. One of these flowers has lines impressed in the petals. Diam.: 31.6 and 34.3, diam. of hole on the back: 2.38, diam. of the wire: 1.3.

[115] Tsimbidou-Avloniti 2005, 206 and 39.
[116] Musgrave 1987, 49.
[117] Musgrave 1987, 16-20.
[118] Tsimbidou-Avloniti 2005, 45; Tsimbidou-Avloniti 2005, 205.
[119] Tsimbidou-Avloniti 2005, 72.

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- Four round flowers with no distinct petals (**fig. M36.2**)

The differences between each of the flowers with six petals make it clear that they were individually painted and individually moulded or shaped, but were designed to be supported by similar sized stems, since the holes are all much the same size.
Within the same box as the flowers, but on the lower level, is a piece of reddish wood, in very poor condition, not from the wreath, and some pieces of plaster, one of which has been painted yellow, which must be from the walls of the chamber.

A bag labelled first wreath from the middle of the inhumation (1 στεφάνι στη μέση της ταφής ΜΘ 17442) was described by the excavator as **a wreath on Bench B**. It contains a label with the same description as on the box and contains:

- Six flowers similar to those described above (**fig. M36.5**). They are all slightly different, but have the same colour scheme of pink, white and red with gilding. One of the flowers has ridges down the middle, another has more rounded petals. A third is similar to the first. Diam.: 29.3, 28.17 and 28.54 respectively.
- The other three flowers are similar and have rounded petals. They have fingerprints, no doubt from when the clay was pressed into a mould, and white coating on the back Diam.: 24.57, 25, 23.5.

A bag labelled wreath from about the middle of the inhumation (unnumbered but must be from wreath 1) (στεφάνι περίπου στη μέση της ταφής) contains

- Fragments of four myrtle leaves and ten stems.
- One gilded berry, almost spherical. L:6. W: 5.66

A small white box is placed within the larger box described above. A label reads **second wreath from the foot of the kline of the inhumation** and a large nail (Φοιν. 87, 2 στεφάνι στο πόδι της κλίνης της ταφής + καρφί μεγάλο **ΜΘ 17442** 8/4). It contains:

- About 35 fragments of gilded copper leaves
- About 30 stems,
- About 15 leaves and stems combined. Several of the leaf+stems have been twisted with another stem (**fig. M36.3).** W of wire stems: each about 1.5. Diam. of the wire: varies from 0.74 to 0.95. There are some thicker stems, which on close examination proved to be made of two double wires twisted together, each double wire being 1.5 in W. Each double wire could have supported a gilded flower, as they match the diam. of the holes on the back of the flowers. The leaves are of different sizes, but are in the shape associated with myrtle, as for example at Aineia. One leaf has a stem attached to the back, possibly soldered. One leaf is more rounded, and might, but does not necessarily, suggest a different plant. Some of the leaves have a yellowish substance, possibly a coloured gesso or bole underlying the gold to intensify the colour.

Within the same box:

- 15 spherical berries with one hole and traces of gilding (**fig. M36.4**). One of the berries still has a stem. Diam. of stem in berry: 1.13. Diam. of berries: ranges from 4.8 to 6.

The same small box also contains two beads, which were not part of the wreath and would have been from a necklace.

A bag labelled as being from exactly the location of the wreath at the foot of the kline of the inhumation (Φοιν. 87 ακριβώς στο σημείο του στεφανιού στο πόδι της κλίνης της ταφής 8/4) (so from wreath 2) contains:

- Ten fragments of leaves, probably myrtle, although one has a rounded end
- Seven fragments of stems, W: 1.06
- Half a spherical berry.

A bag labelled 4/4 contains (**fig. M36.6**):

- Two slightly pointed berries, with traces of gilding. L: 7.7.
- Red berry with gilding at one end only (**fig. M36.7**). L: 6.91.

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- Three further berries in the shape of a flattened sphere. A yellow bole underlying the gold can still be seen on some, and red on others. Diam.: 6.3 to 5.5.
- Seven fragments of stems and a few leaves. Diam. of stems: 0.8 to 1.07.
- One bead made of two spheres stuck together with two holes, gilded, which would not have been part of the wreath.

A small bag stapled to a label with date 4/4 contains:

- Two beads (not part of wreath)
- Three gilded berries. L: 5.8 and 5.15
- Tiny fragments of copper wire W: 1.27.

A small bag stapled to the same label contains human teeth.

A bag of material labelled as gilded bronze/copper found in the pit for the Macedonian Tomb (χάλκινα επίχρυσα από σκάμμα για Μακ. Τάφο 22/5) held the following (**fig. M36.8**):

- 4 gilded bronze or copper rings. There are traces of cherry red material on one of the rings, probably lead corrosion. Internal diam. of rings:11.38. External diam.:15.93.
- Fragments of gilded leaves, with rounded ends and no central vein. Max. W: 9.38
- One gilded bead or berry with two holes
- A fragment of wood
- What appear to be tiny fragments of flowers with red paint.

A bag of material is labelled as being from **the burnt area northwest edge of the pit** (καύση στο ΒΔ άκρο σκάμματος ... στεφανιού + χάλκ. ελάσματα 10-11/6). It is not clear whether this material is also from the Macedonian Tomb or from cist grave 3. It held the following:

- 30 uncleaned spherical berries or beads, each with two holes. Eight of these have a loop and wire at both ends (**fig. M36.9**). One of the berries is mounted on a spiral wire. The wire on one of these is clearly strip twisted. This material appears to be from a necklace rather than a wreath. L of berries:5.7. Diam. of thick stem: 1.6
- Two loose fragments of spirals.
- One piece of thick wire with stump of smaller stems.
- One small fragment of wire, which has a loop at one end
- Six fragments of leaves, which are rounded at one end and come to a point. None is complete. W: 8.4. L: 5.7 (**fig. M36.10**).
- Myrtle leaf made in one piece with stem, which is square in cross section. W of wire: 0.7 Max. W of leaf: 8.4.

17434 is described by the excavator as consisting of wreath fragments found on pedestal/base A15 and as having ten spherical berries, a flower, copper stems and a few leaves, as well as a few fragments of a lead circlet[120]. This material was not available for study in January or April 2016, but there is a photograph in the publication (**fig. M36.11**).

Scientific analysis

On examination with the μXRF at the Archaeological Museum of Thessaloniki, it was found that the myrtle leaf from the pit was mainly copper, with no tin. The gold on the leaf was almost pure (no silver). One of the berries which has traces of what appears to be red colouring was found to have a high percentage of iron, 50%, whereas approximately 15% was found in the coating of a berry from the same site without the red colouring, suggesting that hematite was used to colour the berry.
Raman analysis of the flowers revealed cinnabar and yellow ochre.

[120] Tsimbidou-Avloniti 2005, 67.

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Plants represented: One of the wreaths from the inhumation probably represents myrtle; it is not clear what plant or plants are represented by the flowers, but the rounded petals could be myrtle, rose or pomegranate and the petals with veins, lilies. The wreath from the burnt area seems to have been myrtle, on the basis of the one complete or nearly complete leaf found. One of the wreaths on pedestal A could have represented oak, as there appears to be an acorn in the photograph, but without seeing the fragments it is not possible to be sure.

Summary: Two flower wreaths seem to have been found with the inhumation, and a further wreath or wreaths was at the foot of the kline. A separate wreath seems to have been found on pedestal A, but was not available for study. Fragments of a further wreath were found in a pit for the Macedonian Tomb, which may be from the same wreath as material found in the burnt area on the northwest edge of the pit. There must have been at least three or four wreaths associated with this grave.

Bibliography:
Musgrave J. H. 2007. *Draft report on the human remains from the Macedonian Tomb at Phoinikas, Thessaloniki* (unpublished).
Tsimbidou-Avloniti M. 2005. *Μακεδονικοί τάφοι στον Φοίνικα και στον Άγιο Αθανάσιο Θεσσαλονίκης*.

Studied: January and April 2016.

Fig. M36.1 Plan of Macedonian tomb. From Tsimbidou-Avloniti 2005 © Archaeological Resources Fund

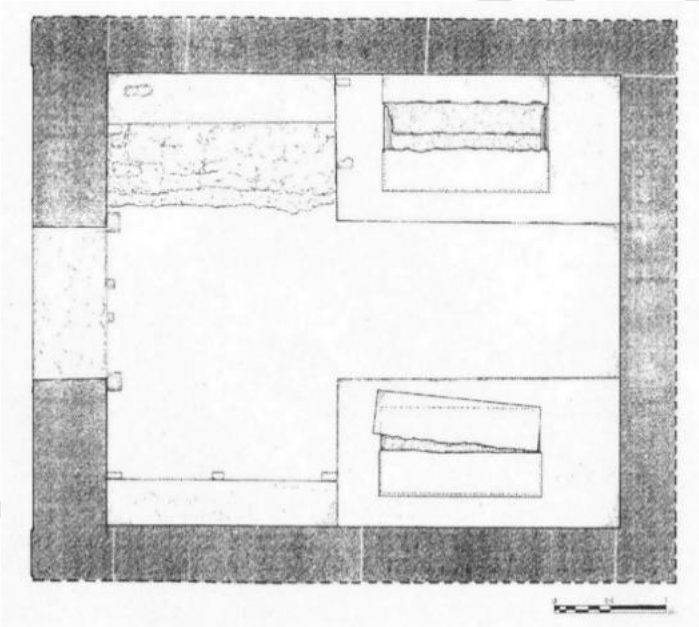


Fig. M36.2 Four round flowers © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



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Fig. M36.3 Detail of stems, including stem twisted with leaf, 17442 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M36.4 Berries and some of the leaves and stems from 17442 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M36.5 Six flowers labelled 17442 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M36.6 Bag labelled as found on 4/4 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M36.7 Detail of red berry © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M36.8 Material found in pit © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



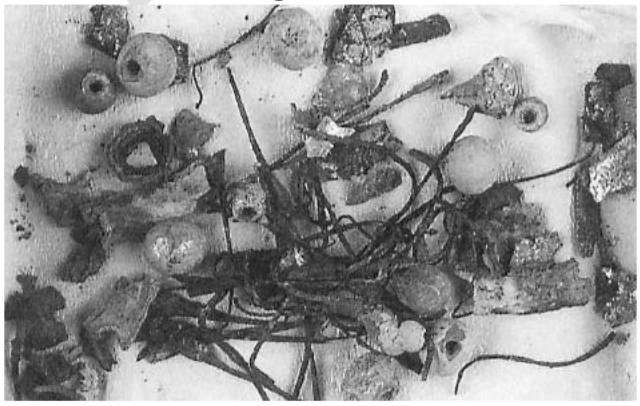
Fig. M36.9 Beads with loops and wires from burnt area



Fig. M 36.10 Fragments of leaves (or flowers?) from burnt area © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M36.11 Fragments 17434. From Tsimbidou-Avloniti 2005,67 ©Archaeological Resources Fund



M37 Potidaia 9.749
AMTh on display

Provenance and context[121]: Macedonian Tomb, Potidaia. The tomb had been robbed, but the wreath was found with fragments of bone and ivory probably from a box on the kline opposite the entrance; there were two broken alabastra in pieces, similar to those found in graves of the second half of the fourth century (as at Aineia). There was also a clay alabastron in pieces, a small clay kantharos of mid fourth-century date[122] and a clay figurine representing a small child, perhaps carrying a bird or hare. The excavator suggests that they were the burials of a man and a woman[123]. The two stone klinai have Dionysiac decoration.

Date: late fourth (last 15 years of century[124]).

Type:3

Constituents:
Overall dimensions of wreath: diam. 21cm.
There is both a lead and a wooden circlet; holes go through both (**fig. M37.1**).

- Lead circlet. At the back of the wreath, remains of holes but they were not pierced right through. Distance between holes, working from L to R: 11.5, 8.87, 16.28 (2 holes together), 16.28, 8.09, 8.09, 11.05, 11.17, 8.41, 12.34, 10.32, 4.7, 26.97, 17.75. There is a gap in the lead circlet, where only wood remains, which is pierced at the following intervals: 8.48, 17.05, 10.84. Break of 4.3cm in lead circlet, compared with wood. The last holes in the wood are 19.45 apart. W of lead 7.5 to 9. Individual fragments, L: 3.5cm, 6cm, 3.5cm, 6.5cm. Depth: 3.6 at front of wreath.
- The wooden circlet is complete and lies behind the lead. One break in the wood has been repaired (modern conservation). Some of the stems have been pushed through a horizontal gap in wood; it is not clear whether the wreath was originally like this, Diam. 21 cm. W of wood: 11.9-15.5.
- 12 flowers (rosettes), in a bell-shape, made of gilded clay. The number of petals varies from 17 to 23 (23, 17, 22, 17, 21). The petals form a spiral. Diam. 12.8.
- 21 spherical berries, gilded clay. There is a red coating on some, white on others. The clay is red. The berries however do not have a ridge, as do those on SI 1 and SCG35. Berries diam. range from 6.4 to 7.8, not completely spherical.
- The berries have been mounted on fairly straight stems, of which the L varies: 36.86, 22.49 67.4, 52.8.
- Six bunches of grapes which have mould marks (**fig. 7.53**). The two on the left have been stuck together. They do not appear to be attached to the stem with a loop. The stems have been glued in (modern conservation). Grapes, W: 19.7, L: 26, depth: 10.
- One whole insect, probably a grasshopper, made of clay (**figs. M37.2 and M37.3**). There is also one broken insect, smaller, with coating and gilding, probably a cicada. It has two holes on its back, for antennae. Grasshopper's L: 32, 8.62 wide (approximately). Distance between eyes 6.44, 4.94 across back of head. Broken insect 7.44 across back of head.
- Ivy leaves, which have been gilded on both sides (**fig. M37.4**). They are joined to the stems by soldering in the same way as on SCG33. Leaves, from right to left, L: 16.29, 14.86 and 11.8 (two stuck together), parallelogram 21.6 along one side, 24, 8, 22.5, 18.5.
  W of stems 1.52 to 2.12. There are narrow stems in the gap near the broken insect, diam. 1.26. Some of the larger wires have been wrapped round circlet.
- Stems with leaf. Measurements of distance from circlet: stem 1: at least 57, leaf 2 comes out of bound wires, stem 26.5 from binding, leaf 3: 26.46 from circlet, leaf 5: 38 from circlet, leaf 6: 33.6 from circlet.

[121] Sismanidis 1997, 29.
[122] Sismanidis 1997, 29, note 37 and pl. 9. There is a parallel for the kantharos in the Athenian Agora (Thompson 1934, cat. A26 (P1829), p.319).
[123] A comb and other bone objects were found in same grave, which must have belonged to a woman.
[124] Sismanides 1997, 29, note 37.

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Scientific analysis with HHXRF: The fabric of the berries was found to contain calcium, and iron, and is probably a montmorillonite. The leaves were copper, with no tin.

Bibliography: Sismanidis K.1997a. *Κλίνες και κλινοειδείς κατασκευές των μακεδονικών ταφών*, 38 and pl. 8a.
Thompson H. A. 'Two centuries of Hellenistic pottery', *Hesperia* 3 (1934), 311-476.

Studied: September 2013 and November 2017.

Fig. M37.1 Wreath on display © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M37.2 Insects and grapes. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M37.3 Detail of grasshopper © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M37.4 Detail of leaves (USB microscope) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

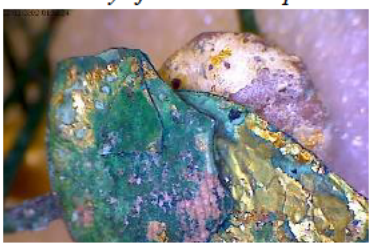


Fig. M37.5 Detail of stem wrapped around wooden circlet © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M38 Pyrgoi, Eordaia, Macedonian Tomb
Fragments of a wreath or wreaths. Aiani AM

Provenance and context[125]: The tomb, excavated in 1995, is thought to be one of the earliest of the Macedonian type and consists of a single chamber with a built dromos. The surfaces inside the chamber were coated with a buff plaster with a dark grey band which ran along the walls. The finds were grouped on the floor just inside the entrance, in the NE corner. The tomb was looted in ancient times but the finds included a skyphos, two strigils, a bronze coin of Philip II minted in the reign of Alexander the Great (similar to one found in Nikisiani – Karamitrou-Mentessidi 1998, 33, n.29) and a red-figure Kerch pelike, which can be dated to 330-320[126]. The scattered bones indicate a secondary burial; the remains of three persons were found in the tomb, consisting of a middle-aged man, aged 35-50, a woman over 50 years old and a child of 1 or 2.

Date: beginning of last quarter of fourth c.[127].

Type: 6

Constituents:

- Fragments of about ten gilded copper myrtle leaves and about five gilded copper stems with leaves, possibly also fragments of bone circlet (uncleaned) (**fig. M38.1**).
- One berry with part of stem (L 4.07), one larger oval berry (L: 7.39) (uncleaned).
- Three fragments of hollow gilded copper tubes, L 14.9, 11.58 and 8.13, almost certainly beads and not part of the wreath.
- Two groups of four pieces of parallel wire joined together with a fragment of wood inside. First group: outer diam. of:1.84, inner 1.09 (**fig. M38.3**). Second group: maximum L 29.02. The groups of wire possibly held berries, but if so, why was there a piece of wood inside?

A box containing

- Gilded copper fragments of stems and leaves,
- Four gilded and painted flowers, partly cleaned. The flowers consist of three identical roundels with a central gilded boss, possibly representing *lychnis coronea*. The fourth is similar but smaller. They have been painted red and pink (**fig. 2.26**).
- Fragments of two gilded flowers, uncleaned. Remains of a white coating and gilding can be seen and they probably represent myrtle (**fig. M38.2**).
- Eight pointed berries or buds. The hole is at the wider end, opposite to the point. L: around 12. The berries or buds have traces of gilding (**fig. M38.4**).
- One myrtle berry with a cross at one end and gilding. L 9.2
- About 43 fragments of stems (flat wire) some with myrtle-shaped leaf. One of the group of wires has something brown inside, probably wood. The shape of the joined stems/wire is similar to that of the joined pieces of copper found in the first group of material (see above).
- Five fragments of leaves gilded on one side only.
- Three beads with two holes, not part of the wreath.
- Seven tiny gilded copper tubes, one of which has thread still inside it. These look like part of a necklace rather than a wreath. Outer diam.: 1.7, inner 0.72.
- Piece of iron (not part of the wreath).

A box containing:

- One flower with six petals. Diam.:31.3x30.73. The flower has a white coating on red clay. Traces of gilding remain.
- A petal from a further flower
- Fragments of gilded copper and flat wire, W 0.93
- One bead with two holes (not part of the wreath).

[125] Karamitrou-Mentessidi 1998, 35-6.
[126] All the pottery is illustrated in Karamitrou-Mentessidi 1997, and the peliki in Karamitrou-Mentessidi 1998, pl.6 and 7.
[127] Karamitrou-Mentessidi 1998, 33, dated by reference to the pelike (second or third quarter of the fourth century, with parallels in Group G Beazley ARV2, 1467, cat. 109-136 and Thompson 1934, 333-334 and figs. 13 and 14), and the coin.

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A box containing

- One nearly complete flower with six petals, partly gilded with buff-coloured gesso
- One oval berry with yellowish coating and gilding, L 7.83. Diam. of hole 0.82.

A box with:

- Five round flowers, uncleaned. One of these is made of much thicker clay than the others. Traces of gilding can be seen in the centre and of red and white paint or gesso. Traces of tool marks can be seen on the back, probably from a reed or brush.

Within the same box are pieces of soil with fragments of copper and a fragment of wood, as well as small fragments of gold. There are also two tubular gilded beads and the remains of another (unlikely to be part of the wreath), as well as

- Seven fragments of leaves
- Two leaves and stems
- One copper stem
- Three berries, of which two are round (diam.:7.3) and one oval (L 8.4) with yellowish coating on red clay. Traces of gilding remain. Diam. of hole: 1.65.

A further box contains

- Two beads (with two holes), not part of wreath
- Six berries, one of which has the remains of a copper stem inside
- Five fragments of gilded leaves and a leaf and stem
- a gilded copper tube with the remains of thread inside. Unlikely to be part of the wreath.
- Three to four fragments of stem

One final box contains (**fig. M38.5**):

- Four flowers, of which two are small and round (diam.:23.5), painted red with a gold centre, one is larger and round and part of a flower with six petals (diam. 32) with white coating and traces of pink paint and gilding.
- One large pointed berry or bud (L 13.46)
- One myrtle berry with a cross (L 9.15)
- 16 berries with one hole (L 1.11)
- Remains of gilded leaves and stalks
- One bead (not part of wreath)
- Three small gilded copper tubes (probably not part of wreath)
- A piece of ivory? (not part of wreath)

Plant represented: myrtle[128] . The cross on the opposite end to the hole on some of the berries, and the shape of the leaves, makes it clear that this is a myrtle wreath.

Summary In total, there are 38 berries, of at least three different kinds, 12 flowers in the shape of a disk and five or six flowers with six petals. This wreath or wreaths contains some unusual features, including the multiple wires (now joined together) with fragments of an organic material, identified as wood when examined under the microscope. These were probably stems, perhaps supporting flowers. Another unusual feature is a total of nine large pointed berries or flower buds. Some other material is kept with the wreath fragments, consisting of small round beads (with two holes) and tubular gilded copper items, which are probably from a necklace. It is not possible to tell whether the flowers and myrtle leaves came from the same wreath. Given that three individuals were buried in this tomb, it is possible that we have the remains of more than one wreath: in particular, the large pointed berries or buds could be from a different wreath from the myrtle berries (with a cross).

Bibliography: Karamitrou-Mentessidi G.1997. 'Ο Μακεδονικός τάφος στους Πυργούς Εορδαίας' *Δυτικομακεδονικά Γράμματα* 7, 91-123.
Karamitrou-Mentessidi G. 1998. 'Ο Μακεδονικός τάφος στους Πύργους Εορδαίας' *AEMTh*. 9 (1995), 25-38 and pl.7.

[128] Karamitrou-Mentessidi interprets the wreath as myrtle rather than olive; she points out that myrtle wreaths are distinguished by a variety of decorations with stems, leaves and flowers, while olive wreaths are plain and with simple spear-shaped leaves (not numerous) and simple flowers and fruit (Karamitrou-Mentessidi 1998, 31-32 note 22).

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Thompson H. A. 'Two centuries of Hellenistic pottery', *Hesperia* 3 (1934), 311-476.

Studied: March 2015

Fig. M38.1 Fragments of uncleaned stems, berries and (possibly) circlet © Hellenic Ministry of Culture and Sports



Fig. M38.2 Contents of box with one flower and fragments of copper wire © Hellenic Ministry of Culture and Sports



Fig. 38.3 Joined copper wires with possibly piece of wood inside. © Hellenic Ministry of Culture and Sports



Fig. M38.4 Eight pointed berries or buds © Hellenic Ministry of Culture and Sports



Fig. M38.5 Contents of box with 16 berries and other fragments of wreath © Hellenic Ministry of Culture and Sports



M39 Sedes Grave Γ 5535, 15359, 15364 -15370, 28252-28254, 28256 Fragments of four gilded wreaths AMTh store

Provenance and context: Sedes grave Γ[129], a large cist grave which held a plinth on which were found the few remains of the skeleton (only a few teeth remained at the time of the excavation[130]). Some remains of the wooden kline remain, which was richly decorated with ivory and decorative reliefs showing Apollo Kitharodos, Demeter and Kore. From the finds, which included a gold diadem, gold brooches, a gold earring, a gold ring and a necklace with 77 gilded beads, it is thought that the deceased was a woman. A gold stater of Philip II was also found in the grave. In addition to the gold jewellery were also found clay and alabaster vases, a silver kylix with relief decoration, a bronze phiale, a black glaze skyphos and stone alabastra, as well as a bronze mirror and a black glaze pyxis of excellent quality[131]. At the four corners of the kline were found the same number of gilded copper wreaths[132], and on the pyre (outside the grave) an iron strigil. Scattered inside the grave, perhaps from decoration on fabric, were found gilded bunches of grapes and discs with a star decoration, as well as that of a gorgon and the head of Athena. A roll or piece of bread in a conical shape (now lost) was thought by the excavator to have been made of flour, honey and oil.

Date: Around 320[133].

Type: 2, 3, no type (ivory circlet)

Constituents:

MΘ 15370 (formerly MΘ 1667) (fig. M39.1)

- 14 fragments of bone circlet with gilding on the front only (**fig. M39.2**). The remains of stems are in several of the holes. There is a small notch in one of the fragments, which must have been made when two pieces of bone were joined to make the circlet. The gold was laid in a neat straight line, although it has not completely covered the front. Some of the bone fragments have wire protruding at the front. It would appear that tiny hollow wires (diam. under 0.68) may have been contained within a larger tube of wire, and have fused together under heat. On examination under the microscope, it appeared that some of the metal had indeed melted, probably from solder, which has dripped in tiny globules under 0.5mm in diam. (**fig. M39.3**). Further remains of tiny tubes of gilded wire were seen on another fragment of bone circlet again showing signs of molten metal (**fig. M39.4**). On examining further fragments of stems (see below) it would appear that copper wires were soldered to make a group of two or more stems. W. of bone: 4.77- 5.6. L. of bone fragments: 14.2, 22.2, 19.3, 20.6, 16.2, 16.58. Total L if fragments joined would be 22.5 cm (approximately right for one circlet). Distance between holes: 3.66.

  A small bag holds:
- Three tiny fragments of painted circlet, apparently ivory, with the remains of holes and gilding. It looks as if they are the remains of a different circlet from that described above. The ivory has red pigment under the gold and tiny parallel incisions, about 0.5 apart (**figs. 2.23 and M39.5**). L. of fragments: 15.4, 13.26. 17.3. Distance between holes: 4.3, 4.1. W: 2.7, as the fragments stand, but two fragments, broken on the hole, put together would give a W of just over 5 (standard W for a circlet). Diam. of holes: 0.7, 09.9.
- Further tiny fragments of a gilded bone circlet, similar to the 14 fragments described above. One has a single hole. One is very deteriorated and has a brownish colour. W: 4.4, 5.8, 2.78.
- A collection of fragments of gilded leaves and stems. The leaves are in the shape associated with myrtle, at Aineia and elsewhere. Some of the wire stems show signs of melting/soldering. W. of stems: 1.02, 1.26, 0.68. W. of leaves at widest part (estimated, since none is complete):

[129] Grammenos 2007, 139-140 (Ignatiadou).
[130] Kotzias 1937, 875.
[131] Some of the pottery including the pyxis is illustrated in Kotzias 1937, figs. 25 and 26.
[132] Kotzias 1937, 885.
[133] Ignatiadou in Grammenos 2007, 139-40, on the basis of the extensive grave goods found.

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6.3. L. of leaves (incomplete): possibly 22, judged by putting two fragments together which are approximately the same W at the break.

- A group of leaves in the shape associated with myrtle (first group) (**fig. M39.6**) W at end with stem: 3-3.7. W at end opposite to stem (broken off): 7.8, 8.5, 10.12.L of broken leaves: 20, 18.
- A second group of 22 fragments of leaves with a more rounded end, and larger (***group 2***) (**fig. M39.7**). These are from larger and more rounded leaves than the myrtle: probably ivy, given the large rosettes which were also found (see below). W (maximum): 16.7
- A third group of petals or leaves made of gilded copper has been grouped into three flowers (**fig. M39.8**). The petals/leaves have rounded ends and are not all are the same size: they could be the ends of rounded leaves or petals. Very nearly all of these petals/leaves are gilded only on one side. W: 7.2 to 8.6 (flower/leaves 1). W: 6.9 to 7.99 (flower/leaves 2). W: 7.4 to 8.3 (flower/leaves 3). L: maximum 20.5.
- Two fragments of copper, with no traces of gilding, which could perhaps have been part of a calyx.

A group of leaves and stems, including

- About 10 myrtle leaf+stems, with gilding on both sides of the leaves. Some of these have been twisted with another stem, which may have once supported another leaf or berry.
- About 10 stems W of stems: 0.76, 1.71 (cut from sheet), 1.04 (twisted), 1.04. L of stems: 24.94, 17.2. At least one of the stems appears to have thread wound round it, to hold it to another stem. The stems are made in different ways; some are twisted, others are folded (**fig. 7.39**), and yet further stems are just flat wire. The stems do not appear to have been gilded. One of the stems has a spot of red, which is the colour of lead corrosion (possibly from the solder). One group of wires has been formed into three stems, joining in the centre (now covered by corrosion).
- One stem with a tiny ungilded rosette and a hole through the middle. It is not clear what function this item had, or which wreath it formed part of, but it was perhaps the fine ivory wreath of which three circlet fragments are preserved (see above) (**fig. M39.9**). The rosette has 14 or 15 petals. Diam. of rosette: 5.2. Diam. of wire in rosette: 0.66; diam. of hole: 1.34
- A group of about nine wires in spirals. The best preserved has five loops. Diam. of wire: 0.93, 1.21, 1.2. L of wire with five loops: 42. L of more extended spiral with four spirals: 60. L of wire with two spirals: 11
- A bent wire with 3-4 loops.
- Many further leaves and stems. At least one leaf and stem have been twisted together. Other stems are in parallel, and appear to have been joined.

Box with label MΘ 15367 (old label MΘ 1665)

- Three fragments of bone circlet. Two of the fragments still have copper wire stems inside them. L. of bone fragments: 27.14, 23.95 and 8.31. W. of bone: 4.98, 5.2, 5.5. Diam. of wire: 0.9. Distance between holes 3.3 to 4.22.
- Four fragments of a wooden circlet with traces of a reddish colour, probably iron corrosion. There are no traces of gilding on the wood. Two fragments have two holes. L. of wooden fragments: 14.23, 36.74, 23.92. L of four wooden pieces (total): 85. Distance between holes: 8.17 and 8.26.
- Three spiral stems. Diam. of wire: 1.3. L of the longest: 90.49. L of the other spirals: 43.6, 28 and 17.37. At least two of the spirals could have been one piece originally.
- Tubular beads (not part of wreath), made of rolled copper leaf. Gilded.

Bag labelled MΘ 5535

- Several fragments of gold and terracotta.
- A repaired large gilded terracotta rosette which originally had 18 petals, probably ivy, made of very red clay (**fig. 2.24**). There is one hole on the back, which would have held one large stem. The rosette is very similar to the three large rosettes on display.
  Diam. of rosette (maximum):42.8. Diam. of hole on back: 1.93.

Material from display

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- Two rosettes. Each rosette would have had 18 petals (one is broken). The rosettes were probably moulded. It was not possible to examine the back. Diam.: 40.
- Eight tiny bunches of grapes These were moulded, as the mould line can be seen. They have a flat back, and are very similar to other grapes which it was possible to examine more closely (see below), which do not have any obvious means of suspension such as a loop and it is difficult to see how they could have been held on a wreath. It is more likely that they were sewn onto a garment or a fabric diadem[134].

The grapes in the display fall into two groups: L of one group (4 items): 14.2. L of other group (4 items) 15.

Bag labelled ΜΘ 15359
Three tiny bunches of grapes (**figs. M39.10 and M39.10a**). Each has one hole on the flat back and finger prints on the back. The grapes are mould-made and they are the same size and shape. They have a white coating on the red clay. There are traces of gilding on two of the grapes. L: 14.14. W: 9.94. Diam. of hole: 0.63.

Bag labelled ΜΘ 28252
Four rosettes and a fragment of a rosette (**fig. M39.11**). Each has one hole on the back which is not completely flat. One has traces of a yellowish coating on the back. They all have 19 petals. Diam.: 24.35, 23.22, 22.8. Diam. of hole: 1.85.

Box with bag labelled ΜΘ 15369 (old label ΜΘ 1676)

- One bag inside the box contains two large beads (not part of wreath).
- The box also contains some 200 berries, some of which are spherical with a cross and others oval (**fig. M39.12**). The berries are the natural colour of the clay. The gold has been laid on in a straight line above a yellowish coating. Diam. of the spherical berries: 3.4, 3.5, 3.6. Diam. of wire in spherical berry 0.77. Oval berries L; 7.35, 6.27, 5.5.
- Fragment of bone circlet.

Box of material labelled ΜΘ 28256 (old label ΜΘ 1654) contains

- 10-11 fragments of at least three flowers. The minimum number of flowers was estimated by counting the number of pieces with a hole for a wire on the back. Traces of copper stems can be seen in these holes. The flowers have traces of red and blue paint, and a white coating underlying the pink. It was not possible to estimate the original diam. of the flowers because the remains are too fragmentary. Diam. of wire in hole: 1
- Around 60 spherical berries, three of which are still on their stems (**fig. M39.13**). The berries have a yellowish coating and traces of gilding. Diam. of berries: 7.46, 5.81, 6.47. Diam. of holes: 1.12.
- Fragments of myrtle leaves (gilded) and stems. Many of the stems are joined together, possibly with solder, although there are no obvious signs of melting (**fig. M39.14**). One of the leaves may have a trace of red paint on it, suggesting that the paint from the flowers was not dry when the wreath was assembled or, perhaps more likely, from corrosion from lead solder.

Box labelled ΜΘ 28254 (old number 1655) (fig. 39.28)
About 45 wires, some of which are twisted (**fig. M39.15**). At least one is still bound with the original linen thread, possibly originally applied to keep the metal strip in a tubular shape (**fig. 7.51**). Two of the stems are very thick, have been bent into curved shapes and could have supported rosettes (**fig.2.24**). Several of the big wires have been twisted with other wires (**figs. 7.39, 7.45 and M39.15**). One of the square stems, made of two strips twisted together, has traces of gilding. Two stems appear to be inside another piece of copper sheet formed into a tube. W of thick wires: 1.32. The material is very similar to M27A.

Bag with label ΜΘ 28253 (within the box with label 28254):

[134] Grammenos 2007, 151 (Tsigarida).

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- Two flowers (**fig. 2.25**). One is round with red around a circular point, and has pink and white coating. Diam. of round flower: 19.5. The other flower is hexagonal, and has been painted pink, red and white. Diam. of hexagonal flower: 21.3. Each side measures 10.45. Both flowers have a wire stem on the back. Diam. of wire stem: 1.47.
- Three berries
- Three fragments of leaves

A bag with an old number, 1655, which contains reddish brown and gold material (old number 1655), not part of the wreath.

Summary and plants represented: It is not possible to tell from the fragments of the wreaths remaining how many wreaths there were originally. Few fragments of the circlets remain, but from these we can deduce that there were at least three (one made of ivory, another of bone and probably lead (now disappeared), and a third of wood and bone). There are at least 260 berries remaining, some of which clearly represent myrtle, since they bear a cross. Some of the leaves are also in the shape associated with myrtle. There is also evidence of ivy, in the large rosettes and the material kept with the Olynthos wreath has a further ivy berry and a fragment of bone circlet. The flowers were probably mixed with myrtle leaves and berries. We have the evidence of the excavator that there were originally four wreaths, and the physical evidence remaining is not inconsistent with this.

Bibliography:
Grammenos D. (ed.) 2007 *Ο χρυσός των Μακεδόνων*, Thessaloniki.
Kotzias N.Ch. 1937. 'Ο παρά το αεροδρόμιον της Θεσσαλονίκης (Σέδες Γ τάφος)', *AE* III, 866-895.

Studied: January and March 2016.

Fig. M39.1 Fragments constituting 15370 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



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Fig.M39.2. Fragments of circlet 15370. Details of two of the fragments are in figs. M39.3 and M39.4 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

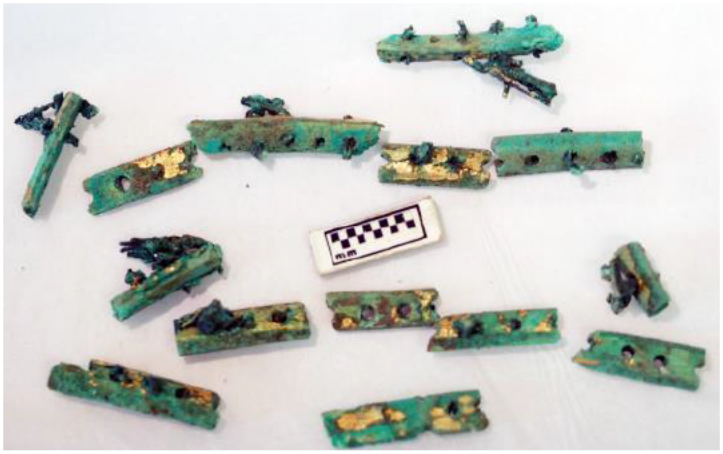


Fig. M39.3. Detail of fragment of circlet with wires protruding and signs of melting (small glassy globules) 15370 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

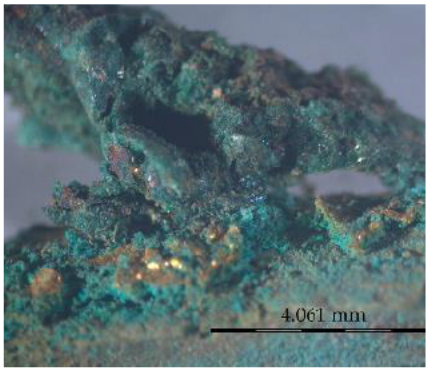


Fig. M39.4 Detail of fragment of circlet with small gilded wire and signs of melting © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M39.5 Detail of fragment of ivory circlet with incisions 5370 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

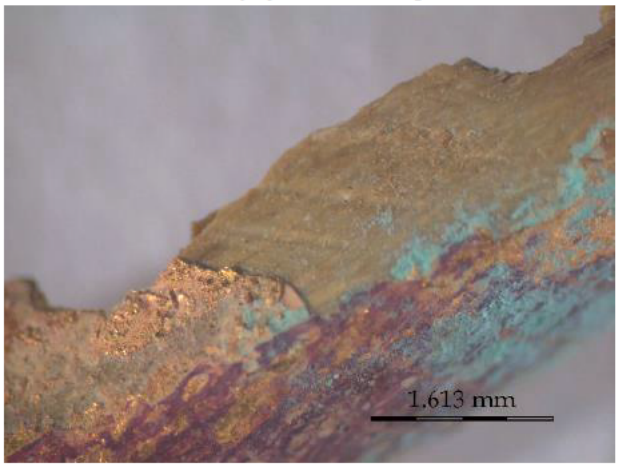


Fig. M39.6. Selection of fragments of myrtle leaves from 15370 (1st group) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M39.7. Selection of fragments of ivy leaves from 15370 (2nd group) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

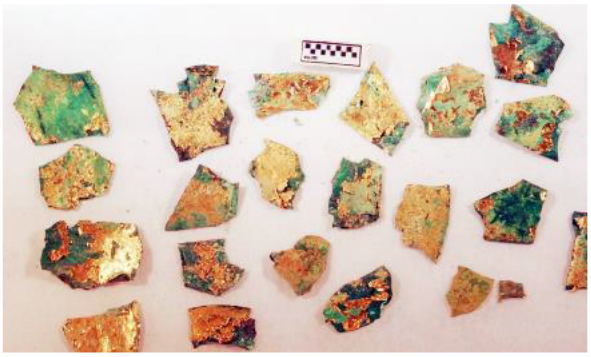


Fig. M 39.9. Rosette on stem from 15370 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M39.8 Selection of fragments of flowers from 15370 (3rd group) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M39.10 Three bunches of grapes © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M39.10a Back of bunches of grapes © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M39.11. Four rosettes © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M39.12. Some of the berries from box labelled 1676 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M39.13. Fragments of berries labelled ΜΘ 28256 (1654) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



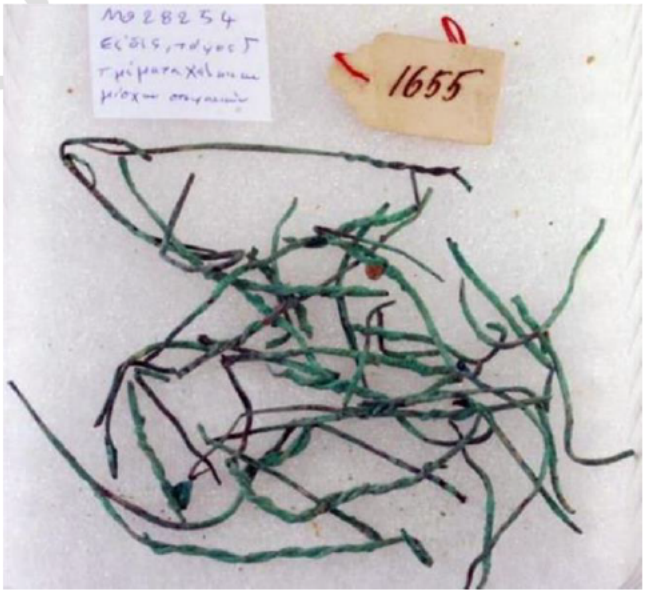
Fig. M39.14. Parallel wires, possibly soldered together, from ΜΘ 28256 (1654) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M39.15 Stems labelled ΜΘ 28254 (1655) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. M39.16 Stems labelled ΜΘ 28254 (1655) ©Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



M40 Thasos Ergatikes Katoikies Grave II
Thasos AM

Provenance and context[135]: Ergatikes Katoikies Plot, grave II. The wreath was found in rescue excavations in 1996 during construction works for the modern city's sewage system. Grave II was a cist grave found with 13 further cist graves and one cremation inside a pit lined with clay. It was one of four female burials with gold jewellery. In the same grave were found a pediment-shaped gold diadem with a Gorgon's head and a bee for decoration[136], a gold ring with a plain oval bezel, a Thasian silver hemiekton coin with a head of Dionysos and on the reverse, Heracles the Archer, a miniature squat lekythos with a simplified palmette and an iron strigil. The grave was that of a young female, 25-28 years old with gracile skeletal features. The anthropological evidence indicates that this woman had engaged in movements that required flexing and extension of the arms and fingers, consistent with weaving[137].

Date[138]: early fourth century.

Type:1

Constituents: Fragments of a gilded circlet and large and small berries, mounted on display in the museum as a circular wreath (**figs. M40.1**). The elements of the wreath have been glued to a modern base, making it impossible to see the underside of these elements.

- 12 fragments of gilded bone circlet which are quite rounded in cross section (**figs. 2.4 and M40.2**). The fragments have horizontal grooves. Holes have been pierced in the bone to support stems (now missing). As far as can be seen, none of the fragments of bone has more than one hole. The bone is greenish from copper corrosion, but none of the leaves or stems which presumably caused the corrosion now apparently remain. The bone fragments measure in total 14-15cm, which would not have been enough for a complete wreath, suggesting that further fragments did not survive. Two of the fragments bear traces of red, which seems to have coloured the coating applied beneath the gold. W of fragments of bone circlet: 4 to 4.22. Total L of fragments:14.4cm.
- 35 large oval berries with one hole (**figs. M40.3**). They were hand made, given the variation in size. Each berry has a small indentation at one end. They have traces of a coating below the gilding, and the fabric is red. There are traces of red colour on the berries. Diam. of hole: about 1.18. L of large berries: 11.66 to 15.2
- 22 smaller oval berries, which are the same shape as the larger berries and have a small cross (**fig. M40.4**). They too have a single hole, and possibly traces of red colour. L of small berries: 7.5, 8.02, 7.8.
- There are some loose fragments of gold leaf lying on the modern base with what may be traces of ochre.

Plant represented: Myrtle.

Bibliography: Sgourou M. 2001 with Appendix by Agelarakis A.P. 'Jewellery from Thasian Graves' *ABSA* Vol. 96, 327-364.

Studied: 18 and 19 January 2016.

[135] Sgourou 2001, 327 and *AD Chron*51 (1996), 553.
[136] The symbolism of the bee is discussed in Sgourou 2001, pages 334-335.
[137] Sgourou 2001, 335
[138] Sgourou 2001, 329, on the basis of the coin.

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Fig. M40.1 Complete wreath from Ergatoikes Katoikies on display in Thasos AM © Hellenic Ministry of Culture and Sports



Fig. M40.2 Fragment of circlet, which is round in cross section and has traces of purple colour (USB microscope x20) from Ergatoikes Katoikies, grave II, Thasos AM. © Hellenic Ministry of Culture and Sports



Fig. M40.3 Detail of large berry with traces of colour from Ergatoikes Katoikies, grave II, Thasos AM. © Hellenic Ministry of Culture and Sports



Fig. M40.4 Cross on small berry from Ergatoikes Katoikies, grave II, Thasos AM. © Hellenic Ministry of Culture and Sports



M41 Thasos Soultou Grave II
Thasos AM, on display and store

Provenance and context[139]: D. Soultou Plot, grave II. The wreath was found in a cist grave, the location of which is shown in **fig. M41.2**, which had two burials. One was in poor condition when found, but appeared to be the bones of an adult; the other was in good condition and was that of a man aged around 65. Like others in the same necropolis it seems therefore that the wreath was found in a male grave[140]. The other finds from grave II, in addition to the wreath, which was found on the skull, were strigils and two cylindrical ivory beads[141].

Date: Fourth century.

Type: 2

Constituents: (**fig. M41.1).**

- Ten fragments of lead circlet, which have been put together with modern materials to make a circlet which has a gap at the back. Holes were pierced in the lead to allow the stems to pass through. Size as reconstructed:14.5cm x 16cm. (**fig. M41.3**). W of circlet: 5.66. Distance between holes: 3.3 to 4.6. L of fragments:18.7cm.
- Some tiny fragments of lead with holes pierced and some further fragments of lead circlet which do not have any holes pierced in them (probably from the ends of the circlet) have been preserved in the stores. L of fragments with no holes: 2.8 cm and 3.3 cm. W of fragments with no holes: 3.93.
- Five fragments of wooden circlet. These are kept in the stores, and have not been assembled for display with the rest of the wreath (**fig. M41.4**). One of the fragments is preserved to its original W, and the other fragments have split horizontally along the line of the holes. W of wooden circlet: about 9.3. W of fragments broken along the line of the holes: 4.28 and 3.74. Space between the holes in the wooden circlet: about 4. Distance across arc of large wooden fragment: 11cm. L of large wooden fragment: about 15cm.
  The wooden fragments when joined together would have made a small wreath about 11.5 cm in diam., but are almost certainly from the same wreath as has been assembled in the museum with the lead circlet. Some of the wood may not have survived.
- The leaves are spear shaped, in a slim oval shape coming to a sharp point. Many are intact. There is a slight swelling at the end closer to the stem. There is no central vein. Many curve upwards at the tip furthest away from the circlet. Some have broken at the point where they curved upwards. They were gilded on both sides and made in one piece with the stems. (**fig. M41.3**). Minimum number of leaves: 181. W of leaves at widest point: 5.1 to 5.6.
- The stems of the leaves are square in cross section, having been cut as strips from sheet copper. They were probably originally bent back against the back of the circlet, as several are bent at an angle of 90 degrees; many look straight in the reconstruction, but this is probably simply due to the way the conservation was done. They protrude from the circlet fairly straight. L of stems supporting leaves: 26.48 (sample). W of square wires bearing leaves: 0.76. Diam. of round wire supporting berries: 0.66. Minimum number of stems: 155.
- A few further tiny fragments of leaves have been preserved in the stores.
- The berries are slightly flattened spheres (**fig. M41.3**). The clay is reddish, covered with a white coating. Very few traces of gold remain. They are still mounted on the original stems. The stems supporting the berries are round in cross section, and look as if they were made of strip twisted wire. Some of these are slightly curved. Minimum number of berries: 75.
  Diam. of berries (max): 5.17. W of stems supporting berries: 0.66-0.76.
- 29 further fragments of stems have been preserved in the stores (**fig. M41.4**). Two are still in the holes in the fragments of lead circlet. Some of these are clearly strip twisted. One or two

[139] Notes in Thasos Museum, consulted 18.1.2016 with permission.
[140] Koukouli-Chrysathaki et al. 1997, 774
[141] Unpublished notes made by excavator; Dr Koukouli-Chrysanthaki to whom I am most grateful for providing me with a copy.

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have preserved traces of gilding. These stems are a mixture of leaf stems (square in cross section) and berry stems (round). Diam. of round stems: 0.53, 0.35, 0.36 (gilded wires). W of stems on leaves: 0.6 to 0.72

Plant represented: probably myrtle, based on the swelling towards the node of the leaves.

Bibliography: Koukouli-Chrysanthaki Ch., Sgourou M. and Agelarakis L. 1997. 'Αρχαιλογικές έρευνες στη νεκρόπολη της Αρχαίας Θάσου 1979-1996', *AEMTh* 10B (1996), 769-794.
Sgourou M. 2001 'Thasos', *ΑΔ* 51 (1996), *Chron* B2, 552-553.

Studied: 18 and 19 January 2016.

Fig. M41.1 Wreath from Soultou II on display Thasos AM © Hellenic Ministry of Culture and Sports



Fig. M41.2 Plan of cemetery, Soultou II, with grave II indicated. From Sgourou 2001, fig. 2. © Archaeological Resources Fund

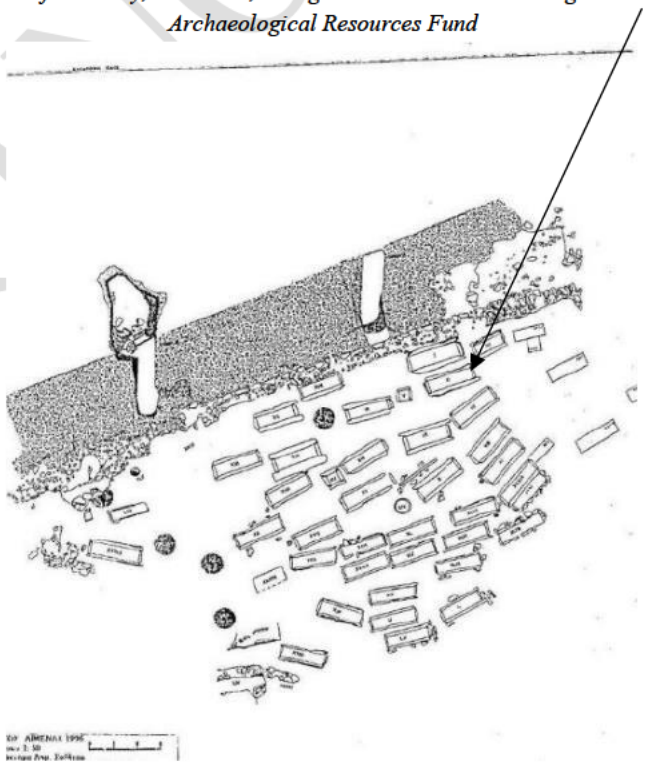


Fig. M41.3 Detail of wreath from Soultou II showing the holes pierced in the lead and the pointed leaves, Thasos AM © Hellenic Ministry of Culture and Sports



Fig. M41.4 Fragments of wreath from Soultou II in stores, Thasos AM © Hellenic Ministry of Culture and Sports



Fig. M41.5 Fragments of leaves and stems from Soultou II in stores, Thasos AM © Hellenic Ministry of Culture and Sports



M42 Vergina Stenomakri Toumba B, B76- B80
Vergina AM store

Provenance and context[142]: Vergina Stenomakri Grave B, which is a stone cist grave inside the tumulus with painted decoration including painted nails alongside real nails, painted garlands and a painted myrtle branch. There were no finds left inside the grave, which had been robbed in antiquity, but the excavators discovered the pyre remains on cover slabs. They found sherds of at least ten white ground hydriai (inc. B41 and B42), an amphora (B423), weapons, at least nine strigils, decorative elements (ivory and metal) probably from a wooden box and parts of a horse bit, thought by the excavators to have been from the sacrifice of a horse[143]. It has been identified as the grave of a Macedonian officer.

Date[144]: end of second quarter of fourth century.

Type:2 probably

Constituents[145]:

- **B79 and 80**: Fragments of round bone circlet, which have clearly been in the pyre (**fig. M42.1**). One has two stems in the same hole.
- Three bags of gilded copper myrtle leaves and dirt (**fig. M42.2**). Max. W of leaves: 9.76. Max. L of leaf up to stem: 22m.
- **B76**, a total of about 250 berries
  One group of berries have a fine white or yellow coating. Most are oval and three have a cross, indicating myrtle (**fig. M42.3**). L oval berries: 6.6 to 7.3 L myrtle berries:4.5
  A second group of berries (the largest) have a coating of yellow and pink (some darkened to brown by the pyre) (**figs. M42.4 and 7.52**) beneath the gold, which is bright and intense. A very few have myrtle crosses. Some of the gilded clay berries are blackened by pyre (**fig. M42.5**). L: 6 to 10.5mm
- Two bags with nine much smaller berries (**fig. M42.6**). L: 3.3 to 4.23
- **B78** gilded clay flower or rosette, conical in shape (**fig. M42.7**).
- A box with plaster and other small fragments from the grave

Bibliography: Kyriakou A. 2008. *Η Στενόμακρη Τούμπα της Βεργίνας*, 273-274.

Studied: April 2017

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[142] Kyriakou 2008, 273-4.
[143] Kyriakou 2008, 274.
[144] Kyriakou 2008, 123
[145] Kyriakou 2008, 108-9 and fig. 121.

Fig. M42.1 Fragments of circlet from B © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



Fig. M42.2 group of leaves and stems © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



Fig. M42.3 First group of berries from B with white coating © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



Fig. M42.4 berries from second group, some with pink or red coating © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



Fig. M42.5 Berry charred by pyre © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports

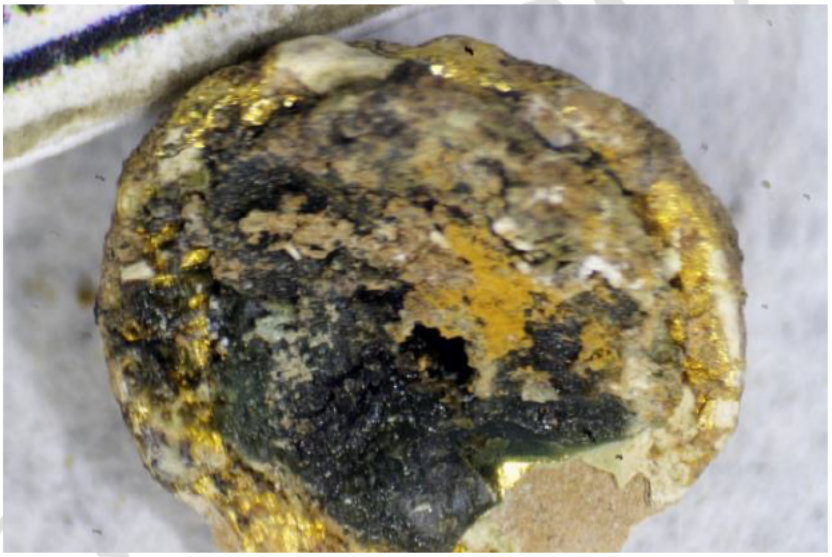


Fig. M42.6 Much smaller berries © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports

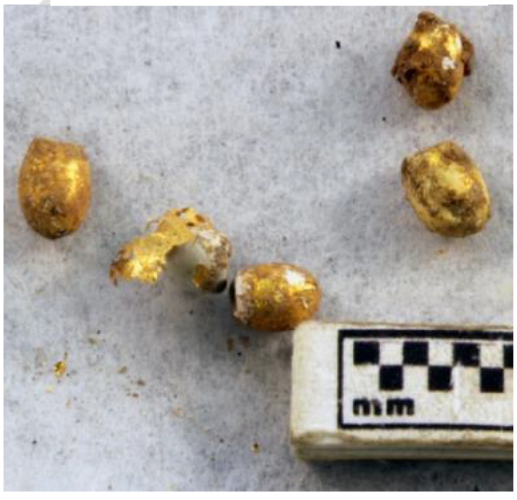
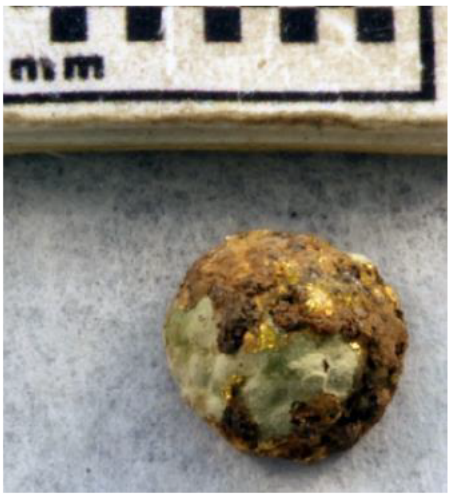


Fig. M42.7 Gilded rosette or flower © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



M43 Vergina Stenomakri Toumba Γ
At least two wreaths. Vergina AM store

Provenance and context[146]: Vergina Stenomakri Grave Γ, a cist grave with interior painted walls. All the grave goods were looted apart from a tinned askos (Γ3) and an alabaster, but on the remains of the pyre impressive remains were found, consisting of at least 15 hydriai, a Kerch acorn-lekythos (Γ22, figs. 151-152, 267), three small red-figure lekythoi (Γ 23. 24 and 25, figs. 153-156) and other pottery, the remains of a silver calyx (Γ35), weapons, clay painted models of figs., and possibly an ivory decorated wooden chest, in addition to the two gilded wreaths. Appliques from a wooden kline were also found. Although clearly a man was buried in this grave, it is believed that the female inhumation found in grave A was transferred from this grave and the acorn-lekythos is associated with her. The grave is believed to have been robbed by Gauls who were mercenaries of King Pyrrhus in 274/3. There appear to have been at least two wreaths in this grave: one, on an ivory circlet, with oak leaves and acorns, and another, myrtle.

Date[147]: just after middle of the fourth century.

Type: 2 or 1 and no type (ivory circlet)

Constituents:
A box of burnt material, mainly wood, probably from the kline, but some of which seem to be part of a wreath consisting of; fragments of bone circlet.

Two boxes with fragments of an oak and a myrtle wreath containing::

- Fragments of gilded bone circlet with a yellowish coating, round in cross section, and wider fragments of ivory, which have a trace of a hole suggesting they were from a second wreath (further fragments of an ivory circlet are kept in a separate box, see below) (**fig. M43.1**). It appears to be ivory from the dense grain of the material. L: 46.7 (x2), 23.1, 26.5, 22 and smaller. W: 5.52.
- 66 oval berries with a whitish coating and 40 acorns, some with a yellowish coating beneath the gold and others with a pinkish coating **(fig. M43.2**). The gilding on the acorns covers the whole berry and not just the cup and they were clearly moulded. The clay of the acorns is reddish or brown. L acorns: 9.93, 8.47
- Fragments of stems with signs of melting. Some of the branches have three or four stems. Total W: 3.37.
- Myrtle and oak leaves (**fig. M43.3 – M43.4**), gilded on both sides. There appears to be a coating on the leaves beneath the gold. Max W of oak leaf: 16.08.
- Ring. Diam. 16.12:

A further box containing

- Iron nails and small objects including fragments of tile and ivory some of which are from the kline, as well as acorns from the wreath, charred wood and beads of the kind worn by males, and a myrtle seedpod (with cross) (**fig. M43.5**). L acorns: 12.47, 13.24 (bigger than in previous box).

A bag labelled 63 contains 160 berries, divided into groups.

- One group contains 15 myrtle seed pods with a cross. L of myrtle berries: 6 mm.
- There are also 15 oval berries, at least one of which has a pink coating under the gold (**fig. M43.6**). Some are reddish, but it is not clear whether this is added colour.
- One myrtle seedpod is in a bag on its own, labelled 63. L:6.5
- Further berries are contained in a separate bag, consisting of a mixture of myrtle and oval berries, with a white coating.

[146] Kyriakou 2008, 274-275.
[147] Kyriakou 2008, 65 and 274. Γ22 can be dated to the decades prior to the mid-fourth.

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- Another bag contains one acorn, 17 myrtle seedpods and 34 oval berries. L acorn: 9.75. L myrtle seedpod: 17. L oval berries: 34.
- Four further bags contain a total of 33 acorns, divided into groups, roughly according to size. Some of the acorns have a pink coating, exquisitely made (**figs. M43.7-8**). L:13.15 (x9), 12.82 (x2), 11.39 (x5). 9.67 (x9) 8.74(x4)

Γ65 one acorn cup with a copper stem (no gilding)

Γ66 contains two bags. One contains:

- Fragments of an ivory circlet with two lines of holes (**fig. M43.9**). W:9.7 to 10. Distance between holes: 3.7, on one strip, distance between upper holes: 3.2, and between lower holes: 2.7. L: 43, 32.6, 11.8, 19.3
- Four oak stems and leaves. L: 41, 20.3, 24.6, 14. W: 9.6

Γ68 Two bags contain further material from the wreath:
One of these contains

- Fragments of charred wood and leaves which appear to have melted. W of stems: 0.9 (together)
- Fragments of ungilded bone, possibly human.
- One bag contains fragments of oak leaves, and circlet (burnt).
  There is a very fine stem, gilded. W:0.45
- In a larger bag, there are fragments of leaves, both oak and myrtle and gilded stems. At least one of the leaves appears to have a stamped design. W stems: 1.5.
  There are fragments of reddish soil (?) with gold (melted). There are signs of melting on some of the leaves, and some are stuck together.
  The circlet was clearly gilded, and there are tiny myrtle leaves still attached to the stems which have been strip twisted. Under the microscope it is possible to see traces of what may be red paint and gold and another fragment of circlet has clear evidence of gold, but no yellowish coating (**fig. M43.10**). Some of these fragments are white from charring, and it is not clear whether they are ivory or bone.

Bibliography: Kyriakou A. 2008. *Η Στενόμακρη Τούμπα της Βεργίνας*, 274-275.

Studied: April 2017

Fig. M43.1 Fragments of bone circlet and of ivory © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



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Fig. M43.2 Oval berries and acorns © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



Fig. M43.3 Oak leaves © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports

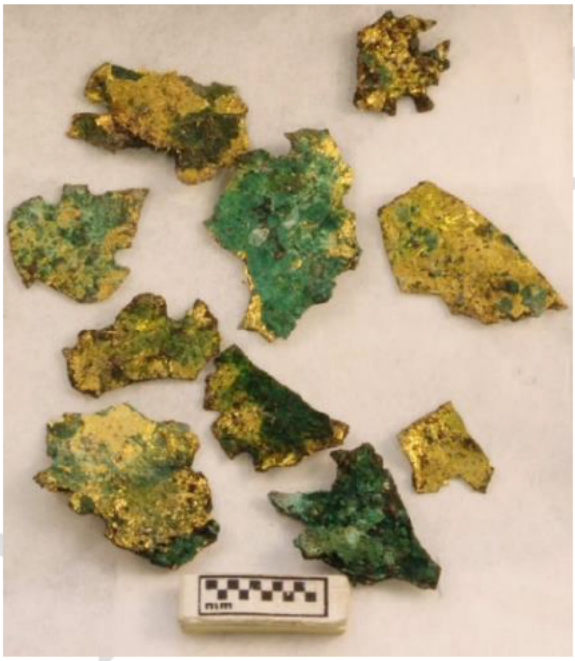


Fig. M43.4 Myrtle leaves and stems © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



Fig. M43.5 Fragments of charred wood, beads (from male necklace), acorns and fragments of ivory, probably from kline © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



Fig. M43.6 Pink oval berry © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



Fig. M43.7 Acorn with pink coating and another with yellowish coating © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



Fig. M43.8 Two acorns © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



Fig. M43.9 Fragments of ivory circlet © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



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Fig. M43.10 Fragments of gilded circlet, and circlet with traces of red © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



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M44 Vergina Stenomakri Toumba A, A24- A27
Vergina AM store

Provenance and context: Vergina Stenomakri Grave A. The deceased were inhumed. The male burial was in the western part of grave; his body was deposited on a decorated kline, finely executed weapons placed around it. The man was around 35, and the many alterations in his bones could have been due to riding a horse since childhood[148]. The grave was looted, probably by the Gauls c 273[149]. A female burial must have occupied the eastern part, as two of the bones found did not belong with the male burial.[150]

Date[151]: beginning of third quarter of fourth century.

Type:2

Constituents:
A24 consists of seven bags of berries. The first bag has 23 myrtle berries with a white coating which have not been cleaned. L:7.53 5.78
A box contains oval berries and smaller berries with a cross to indicate myrtle. They have a yellowish coating providing a smooth surface above red clay. Some of the larger oval berries also have a cross. Some have been cleaned and some appear to have a red coating beneath the gold (**fig. M44.1**). L: 5.43 (small);7.07, 6.09 etc (large). The other bags contain similar material.
A25 consists of tiny fragments of leaves (myrtle) in one bag. This material has not been cleaned (**fig. M44.2**). Another bag contains dirt and a piece of soil with gold.
The leaves have straight sides and are triangular in shape. They appear to have a coating beneath the gold, but it is difficult to be sure. Max. W: 5.5. W stems: 0.8.
Two further bags contain large stems, dirt and leaf fragments.
A26 is a bag with stems, some of which have spirals (**fig. M44.3**). All are gilded. W stems 0.46, 0.71 (spirals)
A further bag contains stems, three relatively thick and one relatively thin. All are gilded. L:6cm, 2.2, 3.2. Diam.: 1.42, 0.6
A27 consists of about 20 tiny fragments of circlet, made of bone (**fig. M44.4**). W: 4-4.5. Distance between holes: 2.7.

Bibliography: Kyriakou A. 2008. *Η Στενόμακρη Τούμπα της Βεργίνας.*

Studied: April 2017.

Fig. M44.1 Berries from Stenomakri Toumba A © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



[148] Kyriakou 2008, 275.
[149] Kyriakou 2008, 274-5
[150] Kyriakou 2008,273-4
[151] Kyriakou 2008, 275.

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Fig. M44.2 Fragments of leaves and stems from M44 © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



Fig. M44.3 Stems etc from M44 © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



Fig. M44.4 Fragments of circlet from M44 © Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports



P1 Pergamon P54
Antikensammlung Berlin

Provenance and context: Conze, the excavator, describes the fragments as having been found in the Palace ruins at the top of the acropolis[152].

Date: Late Hellenistic. The catalogue for the exhibition on Pergamon, at which this wreath was exhibited in 2011, suggests that it may be from the first quarter of the third century, on the basis of comparison with a wreath found in Tumulus II in Pergamon[153]. However, this wreath is very different from that found in Tumulus II, and from other Hellenistic gilded wreaths, and the closest parallel consists of gilded bronze leaves found in the Treasury at Ai Khanoum which can be precisely dated to 149-148[154] (**fig. P1.12**). The design and method of construction of this Pergamon wreath are similar to a clipeus found in the forum of Zuglio dated by Giumlia-Mair and Meriani to Claudian times[155].

Type: 7

Components:

P54 elements of one wreath

- Four fragments of circlet, two of which still have leaves attached (**figs. P1.1** and **P1.13**)). The holes have been pierced on two levels. The stems of the leaves have been folded back at an angle of about 45° and there are traces of white material on the back of the circlet, found to be solder when analysed (**fig. P1.2**). The gold has been attached neatly and does not cover the back. L: 140 (with six leaves), 135 (no leaves), 85 (six leaves), 56. W. of circlet: 14mm.Weight of strip which is 135mm long: 17g. Distance between holes: 13.5. Diam. of holes: 3.5mm.
- A total of 18 leaves, with substantial amounts of gilding preserved. The leaves on the strips of circlet are much better preserved that those kept separately. Each leaf has five curved indentations on each side. Given the clear form of the curves in the oak leaves which have been preserved on the circlet fragments it seems likely that there were cast (**figs. P1.3, P1.13)**. Each leaf has a central vein, and curved veins coming out from the central vein. The veins were formed in the underlying copper alloy (**fig. P1.4**) and appear to have been chased (**fig. P1.5**). It is not clear whether there was ever a coating between the gold and the copper alloy, but no traces are apparent now.
    - Six leaves on the strip of circlet 140mm long (**fig. P1.6**). The veins on these leaves appear to be identical, and the shape of each leaf is almost the same, although they are not quite the same sizes (it was not possible to measure all six) (**fig. P1.7**). The central veins are formed by a double line, and the curved veins are also formed by a double line. L: 80, 87 (two items), 90. Max W: 29.5. Thickness: approx. 1mm.
    - Six leaves on the strip of circlet 85 mm long . The veins on these leaves are also formed by double lines, and are not quite identical (**fig. P1.8**). Some of the veins are formed in the negative. L:69, 61, 66, 85. Max. W 22.
    - Six leaves kept separately, more fragmentary than those on the circlet fragments (P54,5, P54,7, P54,8, P54,9, P54, 10, P54, 14) (**figs. P1.9-11**). These are more crudely made. W of grooves: 0.6mm

Leaf	L	W (max)
54,4	81	31
54,7	67 (broken)	31
54,8	63	31
54,9	64	24
54,10	71	25
54,14	Not enough remaining to tell	

[152] Conze 1913, 249; Grussinger 2011, 496.
[153] Grussinger 2011, 496
[154] Rapin 1992, 270.
[155] Giumlia-Mair and Meriani 2016, 255 and 260.

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Scientific analysis carried out by the Rathgen Laboratory[156]. Using micro-XRF, the gold was found to be almost pure, with 99.43% gold, 0.47% copper and 0.095% iron. Using the same technique, the circlet was found to be bronze, with 95.44% copper, 3.72% tin and 0.299% lead. There were also traces of iron, arsenic and nickel. The leaf analysed was found to have a similar composition, though with a little less lead. The finding that this wreath was composed of bronze elements with a little lead as well as tin, rather than copper (unlike the other wreaths studied), is consistent with the leaves being cast, rather than hammered. Leaf 54,10 was found to contain copper and gold, with smaller quantities of tin, calcium, iron, lead and arsenic. Solder was discovered on the back of the circlet with 78.12% tin, 18.7% lead and 3.1% copper as well as a trace of iron.

Bibliography: Conze A. 1913. *Altertumer von Pergamon, Stadt und Landschaft, Band I*, Text 2, 249.
Grussinger R. (ed.) 2011. *Pergamon: Panorama der antiken Metropole*, Berlin.
Rapin C. 1992. *Fouilles d'Ai Khanoum VIII, la Trésorerie du palais*, Paris.
Giumlia-Mair A. and Meriani S. 2016. 'A Roman portrait head from Iulium Carnicum: composition and technology in the first century AD' in *Proceedings of the XVIIth International Congress on Ancient Bronzes, Izmir*, A.R. Giumlia-Mair and C.C. Mattusch (eds), 253-261, Autun.
Rathgen 2017. *Analytical Report of the Rathgen-Forschungslabor, Staatliche Museen zu Berlin (Report No. 96-081517)*, 18.9.2017 (unpublished).

Studied: May 2017

Fig. P1.1 Four fragments of circlet P54. Photo by Ingrid Geske, courtesy of Berlin Antikensammlung



Fig. P1.2 Detail of back of circlet, showing whitish material (solder).

Fig. P1.3 Detail of leaf on large fragment of circlet, showing veins on underlying copper alloy.

[156] Rathgen 2017.

Fig. P1.4 Corner of oak leaf.

Fig. P1.5 Detail of veins on leaf – chased.

Fig. P1.6 Detail of leaves on longer strip of circlet (140mm long) showing identical veins.

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Fig. P1.7 Drawing of leaves attached to large fragment of circlet 140mm long (courtesy Barbara Niemeyer).

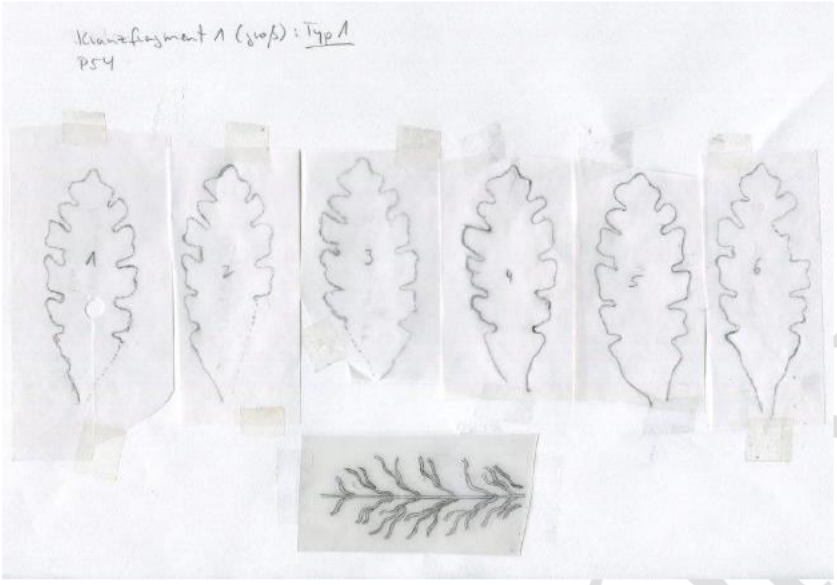


Fig. P1.8 Drawing of leaves from small fragment of circlet (courtesy Barbara Niemeyer).

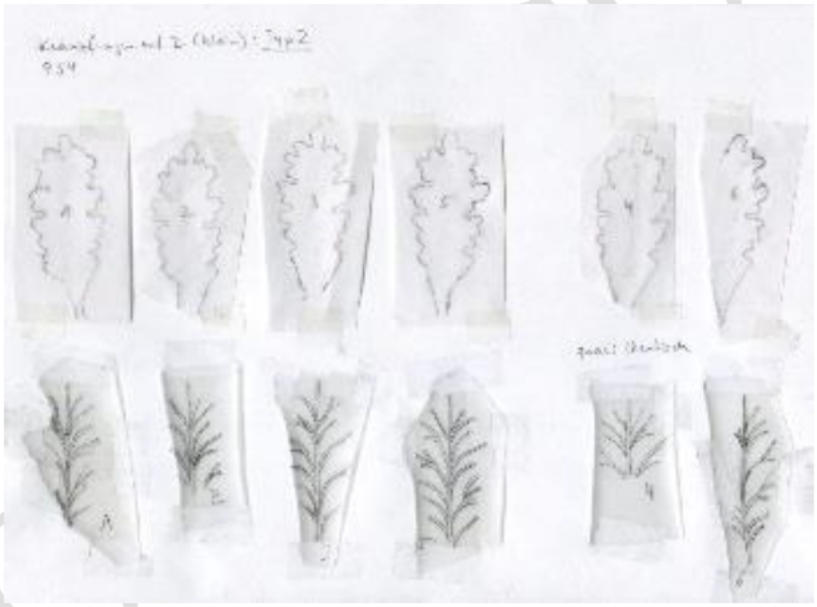


Fig. P1.9 Five of the six detached leaves. Photo by the author, no reproduction permitted.

Fig. P1.10 Drawing of detached leaves (courtesy Barbara Niemeyer).

Fig. P1.11 Detail of one of detached leaves.

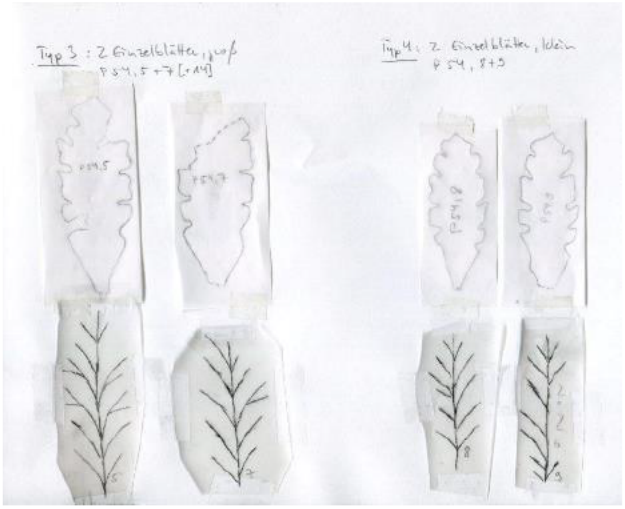
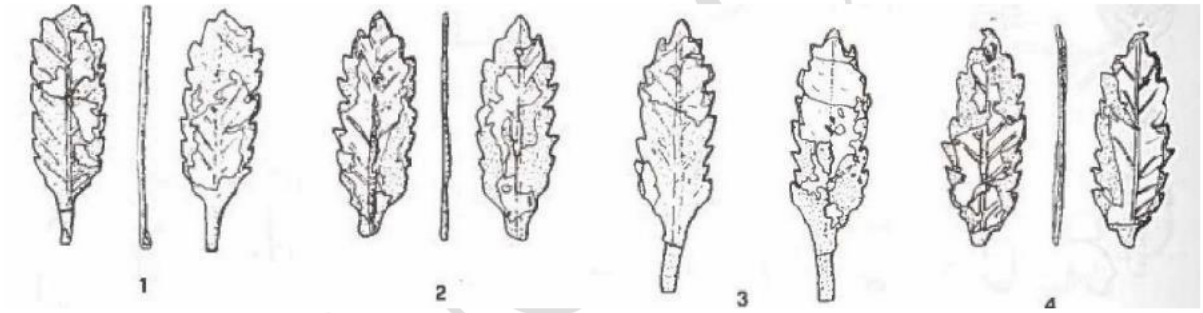


Fig. P1.12 Leaves from Ai Khanoum. From Rapin 1992, pl.80.



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P2 Pergamon P55
Antikensammlung Berlin

Provenance and context: see P54.

Date: late Hellenistic?

Type: 7

Constituents: at least two, and possibly three wreaths
P55a: circlet, which has been bent out of shape and fastens at the back with a nail (**fig. P2.1**). One leaf is still attached to the circlet, possibly laurel, held in place with a stem through the circlet. There appears to be a central device, opposite to the fastening at the back (**fig. P2.1**). The circlet has been gilded on the front, and patchy remains of gold can be seen on the back. There are remains of stems in the holes and stubs on the back. The rigid design and size suggest that this, like P54, was used for a statue. L of leaf: 40mm, W: 13.4. Distance between the holes: 6.8. Circumference: 66.3cm. Diam.: approx. 21 cm.

P55b11-15 (**figs. P2.3-4**) consists of five fragments of tubular copper alloy, and eight leaf fragments. The circlet has been pierced to hold leaves, four of which are still in place. Placed together in this way, the circlet would be about 17.5 cm in diam. The tubes have been inserted one into another, possibly to make the wreath adjustable. B14 and B15 have been crushed at one end. The circlet has been formed by rolling a sheet of copper alloy and is gilded all round. The leaves have been wrapped around the circlet and are attached through a hole. The holes are neatly formed, probably punched. The leaf stems are gilded on both sides and fairly full in shape with a swelling at the end opposite to the stem, probably representing olive. L of fragments of circlet: 124, 80, 140, 152. Diam.: 7.2, 69, 75 (x2). Distance between holes: 7.5, 9, 9. Diam. of holes: 1.4. Original Diam.: min. 15cm.

Leaf	L	Max. W
B12 complete	60	15.8
B13		7.7
B17	60	17.52
B18	66	17.52
B19	67	17.46
B16	42	17.46

P55h (**figs. P2.5-6**) consists of ten leaf fragments, representing laurel. Only P55h5, P55h3 and P55h8 have gilding visible. They appear to have a coating between the gold and the copper alloy.

P55h12 ***(fig. P2.7)*** consists of a white berry with a stem, representing laurel. It weighs 2.6g. Another similar item was perhaps also once a berry. L:14mm.

Scientific analysis[157]: using SEM/EDX, P55b12 and b13 were found to have very little tin or lead, and were almost pure copper. The micro XRF showed copper and iron in b18 and b19, and in the coating traces of calcium, as well as aluminium, silicon, titanium, lead and gold, suggesting a coating made of kaolin. Using micro-XRF, the gold was found to be 90-92% pure, with some copper. The berry was found to consist of almost pure calcium, with sulfur, potassium, iron, copper and strontium also present. It could be gypsum or alabaster, given the presence of sulfur, or marble.

Leaf	L	W
H1	77	39
H2	61	26
H3	66	26
H4	46	14
H5	44	14

[157] Rathgen 2017.

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Leaf	L	W
H6	46	14
H7	37	14
H8 and 9	Broken	
H10	26	0.8

P55 h13 and 15, and P55c and P55d1 (**fig. P2.8**) consist of fragments of copper alloy, which have holes, and could have been part of a wreath. They are very similar but it is not clear whether they were all part of the same circlet. H15 still has a laurel or olive leaf attached. If joined the circumference would be just under 67cm, giving a diam. of approximately 21 cm.

Fig. P2.1 Circlet and single leaf P55a. Photo by Ingrid Geske, courtesy of Berlin Antikensammlung.



Fig. P.2.3 15 Fragments of circlet placed together to form a circlet P55b11-15.

Fig.P2.4 16 Four leaves P55b16-19.

Fig. P2.5 5 Leaf fragments h3, h4, h5, h6, h2.

Fig. P2.6 Leaf fragments h1, h7, h8, h3.

Fig. P2.7 Laurel berries.

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Fig. P2.8 Elements of circlet or necklace, possibly once part of a wreath

DO NOT COPY

P 55 g 1-4 (**fig. P2.9**) consists of four ivy leaves, with no traces of gilding. It is not clear whether these were ever part of the same wreath(s) as the laurel or olive leaves, or whether they were attached to a separate item (**fig. P2.9**)

Leaf	**L**	**W**
G1	24.2	27
G2	24.2	27
G3	24.55	27
G4	24.55	27

P55 g5 and 6 are stems with oval ends (**fig. P2.11**) and **P55 g7** (**fig. P2.10**) is a flower (gilded) on a stem (probably not part of a wreath). The stamens continue into wires which have been twisted and tied with thread, before being encased in a tube formed of copper alloy sheet. The ends of the stamens have been carefully formed. L:10 and 89.

Scientific analysis of P55 g5 (SEM/EDX) found 80-83% copper, 15-18% tin and 1-2% iron.

P55c is a branch or stem with two spirals; it is not clear whether it was ever part of a wreath. There is no sign of gilding. W stem: 1.8. Length of each spiral 65. Length of base: 45 (**fig. P2.12**)

P55e consists of a flower on a stem, with 28 stamens. It is not clear whether it was ever part of a wreath or a separate flower spray. The ends of the stamens have been formed into loops. L:140.

Bibliography: Conze A. 1913. *Altertumer von Pergamon, Stadt und Landschaft, Band I*, Text 2, 249.
Grussinger R. (ed.) 2011. *Pergamon: Panorama der antiken Metropole*, Berlin.
Rathgen 2017. *Analytical Report of the Rathgen-Forschungslabor, Staatliche Museen zu Berlin (Report No. 96-081517)*, 18.9.2017 (unpublished).

Studied: May 2017.

Fig. P2.10 g7.

Fig. P.2.9 Leaves g1-4.

Fig. P2.11 Flower stamens g6.

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Fig. P2.12 Spiral stems P55c and flower and stem P55e.

P55b1-9 consist of vine leaves, one of which is still mounted on a stem (**fig. P2.13A-B, P2.14**). It is difficult to see how they could have been part of the wreath which had the laurel leaves b16-19, and they probably formed part of a separate wreath, perhaps once joining P55c and P55d1. Most still have traces of gilding. The veins have been chased in the copper alloy. The edges of the leaves are uneven and have been cut straight, probably with snips. There is gilding on one side only of the leaves. W of stem: 2.28. L of leaf b1: 94. L of leaf b2: 84.

Scientific analysis[158]: using SEM/EDX, leaf b5 was found to be almost pure copper, with under 0.25% tin and the merest trace of lead. Using micro-XRF, leaf b5 was found to have copper and gold. The coating had potassium, calcium, iron, nickel, lead and gold.

Some further items, unnumbered, are kept separately but probably once belonged to the same wreath. They consist of spherical berries, with traces of gilding and coating, some of which have been bound in groups of four (**fig. P2.15**). **Leaf P774** looks very similar to P55b 1-9 (**fig. P2.16**). Diam. berries: 6.56. W of stem: 1.9

Fig. P2.13A Vine leaves b1-9.

Fig. P2.13B Three vine leaves Photo by Ingrid Geske, courtesy of Berlin Antikensammlung.



Fig. P2.14 Detail of edge of vine leaf.

Fig. P2.15.

Fig. P2.16 (leaf P774).

[158] Rathgen 2017.

DO NOT COPY

SCG1 Boeotia Akraiphia Grave 144
Thebes AM store

Provenance and context[159]: The wreath fragments were excavated in 1993 in cist grave 144, which contained the skeleton of a young woman, aged 18-25 (**fig. 3.31**). Some of the wreath fragments (A2 and A4), were found on a level above the skull with fragments of bone and traces of burning as well as some glass beads. On the same level as the skeleton were further fragments of the wreath (A6) and further glass beads, as well as a Bulas amphoriskos with a net pattern and flowers (43746)[160], a black glaze cup (43745)[161], a bronze mirror, a bronze handle, a bronze 'needle' and remains of a strigil. The amphoriskos is thought to be of local manufacture and to date to the first half of the fourth century whereas the Boeotian cup 43745 is from late in the second quarter of that century (**figs. SCG1.1**). Sabetai interprets the burial as that of an *aore*, a young woman who died before or just after marriage and before her time.

Date[162]: Second quarter of the fourth century, based on the pottery.

Type:4? (prototype)

Constituents: Fragments of a wreath of which the clay of the berries is black from burning. It is not clear why some fragments and not others are burnt. None of the fragments bear any visible signs of gilding.
Box 1 labelled '3.7.95, τάφος 144 ελάσματα χάντρα': Two fragments of leaves each with a stem adhering to a berry. Corrosion and soil made it difficult to study the items (**fig. SCG1.2**).
Box 2 labelled 'Kombos Akraphniou 4.7.95': six black berries with one hole and what appears to be an off-white coating (**figs. SCG1.3 and 4**). Diam: 7.8, 8.6, 8.
Box 3 labelled 'Kombos Akraphniou 4.7.95, A9': fragment of a bell-shaped flower of blackish clay, broken in half with a clay stem, with no obvious coating and no sign of gilding. L:20.42, diam.: 18.96
Box 4 labelled '3.7.95, taphos 144 A2'. Two complete flowers, similar to the first (**fig. SCG1.5**). Each has a small hole, diam. approx. 1.5, not carefully made. No obvious sign of coating. Diam. 21.
Box 5 contains two flowers, which look the same as those in box 4. They are uneven, and of slightly different sizes suggesting they were made by hand rather than moulded. The holes inside the flowers to take the wires appear to have been made with a small stick since ridges can be seen in the clay (**fig. SCG1.6**). Diam. 17.98, 20.26 and 17.57.
Box 6 labelled 'Taphos 144 A1 pylina sphairidia': 14 small black balls, only two of which have obvious holes (the others are probably filled by soil). They are of different diam. and must be hand-made. There are traces of what appears to be a whitish coating. Diam: 7.17, 6.22, 7.99, 7.4, 9.73, 8.86, 6.54, 7.6, 8.69, 7.26.
Box 7 contains bronze particles, probably not from the wreath.
Box 8 labelled '13.7.95, τάφος144 X3 καρφίδιο: a small piece of copper with a lot of corrosion; which is probably not from the wreath. Diam. 2.2
Box 9 contains fragments of corroded copper, which are spherical; it is not clear if they are from the wreath.

Plant represented: Probably myrtle.

Bibliography:
Sabetai V. 2012. 'Burial of a young woman at Akraiphia: an aoros dead of the 4th c. B.C.' in *Δινηέσσα τιμετικός τόμος για την Κατερίνα Ρομιοπούλου*, 305-314, Thessaloniki.

Studied: April 2017.

[159] Sabetai 2012, 305-6.
[160] There is a parallel for this item in the National Archaeological Museum, 2300, dated to the first half of the fourth c. and Beazley ABV 661-663 1.
[161] Late in the second quarter of the fourth c. (Sabetai 2012, 308).
[162] Sabetai 2012, 308 and 31.

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Fig. SCG1.1 Amphoriskos and cup. With the kind permission of Dr Sabetai and the Ephorate of Boeotia (also in Sabetai 2012, fig.2).



Fig. SCG1.2 Copper leaves and berries with soil © Hellenic Ministry of Culture and Sports



Fig. SCG1.3 Charred berries © Hellenic Ministry of Culture and Sports



Fig. SCG1.4 Detail of fabric and coating of berry (microscope image) © Hellenic Ministry of Culture and Sports



Fig. SCG1.5 Two charred flowers © Hellenic Ministry of Culture and Sports



Fig. SCG1.6 Back of two further flowers © Hellenic Ministry of Culture and Sports



SCG2 Boeotia, Tanagra Grave 16
Schimatari AM on display and store

Provenance and context[163]: The wreath fragments were found in a cist grave in a family peribolos with perfume bottles, glass beads and a knucklebone.

Date: late third c.? (based on similarity to other items)

Type:6?

Constituents:
Empty boxes with date of excavation, 17/9/1976, number of grave (16) and museum numbers 21312, 21313, 21316, 21317, 21318 (Andreiomenou gives as the numbers for this grave 21312, and 21315-7), indicating that the contents are on display. The four gilded flowers with calyx described by Andreiomenou (unnumbered) were not available for study.
Items are described by Andreiomenou as ten gilded flowers or rosettes, two of which are like marguerites, four gilded flowers with calyx and petals and two gilded birds.
The items on display are not identified by grave number, but the items from grave 16 are most likely to be the following, on the basis of the description from Andreiomenou:

- four clay palmettes (probably not from wreath but perhaps decorations from a box, as suggested by Andreiomenou) (**fig. SCG 2.1,** lower row).
- nine gilded clay flowers, seven of which have eight petals and two which are slightly different (**fig. 3.8**) (corresponding to those described by Andreiomenou as ten gilded flowers or rosettes, two of which are like marguerites). Diam 11-12mm.
- 6 tubular clay items (probably from a brooch or pendant not wreath). L:19.6, 15.4, 14.4.
- Two or three clay birds (not necessarily from wreath) with max. wing span 17.8. (corresponding to the two birds described by Andreiomenou) (**fig. SCG2.1**, upper row). Andreiomenou refers to a hole underneath the breast, which was not visible in the items as mounted for display.

Some further items are kept in the stores, unlabelled, probably from grave 16, consisting of a flower and decorative elements – the latter may have decorated a box as suggested by Andreiomenou, but the flower almost certainly came from a wreath as the remains of a copper stem can be seen on the back. The flower has eight petals, like seven further flowers that are on display. Diam. of flower 11.5mm. (**fig. SCG2.2**).

Plant represented: Not clear.

Bibliography:
Andreiomenou A. 2007. *Τανάγρα: η ανασκαφή του νεκροταφείου (1976-1977, 1989),* 251-252.

Studied: 4.4.2017

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[163] Andreiomenou 2007, 251-2.

Fig. SCG2.1 Two or three birds and palmettes (probably not from wreath) © Hellenic Ministry of Culture and Sports



Fig. SCG2.2 Unlabelled items from stores – the central flower is very likely to be from a wreath © Hellenic Ministry of Culture and Sports



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SCG3 Boeotia Tanagra B/50
Schimatari AM on display

Provenance and context[164] The wreath fragments were found in grave B/50, a cist grave which was part of a family peribolos, with grave B/53 (containing T4X8). The grave had been robbed, but the items which escaped the robbery were, in addition to the wreath fragments, seven perfume bottles, fragments of kylikes and twelve nails.

Date: late third c.? (based on similarity to other items)

Type:5

Constituents: Andreiomenou lists the wreath items as consisting of 34 gilded ivy leaves (26069), six gilded clay semi-spheres (26063) and nine gilded clay oak leaves (26068)[165].
The items on display are not identified by grave number, but it seems most likely that the items from grave 50 were:

- 11 gilded clay ivy leaves (corresponding to some of the 34 ivy leaves described by Andreiomenou?) (**fig. SCG 3.1**). The leaves have a white coating beneath the gold and faint veins. L:32, W 25, 22. They are most likely to have been moulded.
- Four gilded clay oak leaves (corresponding to some of the nine oak leaves described by Andreiomenou?) (**fig. SCG 3.2**). The leaves were probably moulded (in two different moulds) and have faint veins. The two complete leaves are almost the same size. L:37.7, 36.7, 21.3, 19.3 (last two broken).

The items described as six gilded clay semi-spheres by Andreiomenou were not available for study, but they were probably very similar to those found in grave 61 (**SCG4**).
It is suggested that these wreath fragments and SCG 4 once formed part of a roll or ring wreath, since the leaves look very similar to those on figurines showing roll wreaths. Andreiomenou detected a hole in five of the leaves, which she measured at 1.5mm[166].

Plant represented: oak and ivy.

Bibliography:
Andreiomenou A. 2007. *Τανάγρα: η ανασκαφή του νεκροταφείου (1976-1977, 1989),* 250-251.

Studied: 4.4.2017.

DO NOT COPY

[164] Andreiomenou 2007, 250-251.
[165] Andreiomenou 2007, 251.
[166] Ibid.

Fig. SCG3.1 (it was not possible to place a scale in the exhibition case) © Hellenic Ministry of Culture and Sports



Fig. SCG3.2 Oak leaves © Hellenic Ministry of Culture and Sports



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SCG4 Boeotia Tanagra A/62
Schimatari AM on display and store

Provenance and context[167]: The wreath fragments were found in a pit grave with a clay cover. The finds in addition to the wreath fragments consisted of a skyphos, a West Slope phiale (22037), a small black glaze phiale (22082), a small lekane (22085), an unglazed lagynos (22079) and a black glaze lamp (22034).

Date[168]: end of third c. The date is based on the pottery.

Type:5

Constituents:
Andreiomenou lists 11 small gilded clay ivy leaves (26067) and four gilded clay semi-spheres (26066)[169].

- Three gilded clay rosettes on display and one broken rosette from the stores (corresponding to the four semi-spherical objects described by Andreiomenou). Diam. 23.6, 26.4. (**fig. SCG4.1**). The broken rosette is labelled as being from grave A/62 and has a white coating on brown clay beneath the gold. Diam.25.4.
- Two ivy leaves kept in the stores are labelled as being from grave 62 (**fig. SCG4.2**). Dimensions of nearly complete leaf: L: 30mm, and max. W: 24mm.

It is suggested that these wreath fragments as well as SCG3 and SCG5 once formed part of a roll or ring wreath, since the leaves look very similar to those on figurines showing female figures wearing roll wreaths. Andreiomenou mentions a hole in one of the leaves for the stem[170], but this was not visible on the fragments from the stores which were examined.

Plant represented: ivy

Bibliography:
Andreiomenou 2007 *Τανάγρα: η ανασκαφή του νεκροταφείου (1976-1977, 1989),* 252-253 and pl. 140.

Studied: 4.4.2017.

DO NOT COPY

[167] Andreiomenou 2007, 252-3.
[168] Ibid.
[169] Andreiomenou 2007, 253.
[170] Ibid.

Fig. SCG4.1 Three gilded rosettes (lower row) and three tubular items (upper row), on display ©Hellenic Ministry of Culture and Sports



Fig. SCG4.2 Broken rosette and fragments of two ivy leaves from stores ©Hellenic Ministry of Culture and Sports



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SCG5 Boeotia Tanagra 21308-21309
Schimatari AM store

Provenance and context: not known

Date: late third c.? (given the similarity to SCG4).

Type: 5

Constituents: The inventory numbers of the items studied do not correspond to any of those in the publications.
21309: fragments of five ivy leaves (**fig. SCG 5.1).** Two of the fragments may have a small hole, but if so it looks too small for a stem (under 0.5mm in diam.) (**fig. SCG 5.2**). They have a yellow coating (**fig. SCG 5.3**). Traces of what may be a textile impression can just be seen: if this is correct, the impressions are either from the fabric roll, or a fabric which helped to hold the leaf in position (**fig. SCG 5.4**). The veins are only on one side, suggesting they were only intended to be seen from the front. One of the leaves has faint traces of burning, perhaps from the pyre. L: 32, 35 and W:24, 25.
21308, 21310: fragments of six oak leaves (**fig. SCG5.5**). These have a white and brownish coating beneath the gold, but veins on only one side. These leaves are very similar to SCG3 and were probably formed in a mould, although no mould marks are evident. L:36.05, W:18.7.
Plant represented: ivy

Studied: 4.4.2017.

Fig. SCG5.1 Fragments of five ivy leaves ©Hellenic Ministry of Culture and Sports



Fig. SCG5.2 Small holes in two leaves (too small for stem) ©Hellenic Ministry of Culture and Sports



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Fig. SCG5.3 White and yellow coating beneath gold on ivy leaf (microscope image, x6.4) ©Hellenic Ministry of Culture and Sports



Fig. SCG5.4 Traces of fabric impressions? (microscope image, x6.4) ©Hellenic Ministry of Culture and Sports



Fig. SCG5.5 Oak leaves from front ©Hellenic Ministry of Culture and Sports



Fig. SCG5.6 Oak leaves on back (leaf on top right was photographed on front). One has traces of burning (from pyre?) ©Hellenic Ministry of Culture and Sports



SCG6 Epirus Ambrakia W. cemetery grave 34, 6002, 6003
Arta AM store

Provenance and context[171]: the wreath fragments 6002 and 6003 came from grave XXXIV in the Ambrakia western cemetery. The cist grave contained the scattered remains of the upper part of the skeleton of one person and a black glaze kotyle of the 'Corinthian type' (end fourth c.) and two lamps, a lid of the 'barbotine' type and a lagynos dated to the end of the second/beginning of the first century[172].

Date: Late fourth century? Although only part of one skeleton remains, the wreath looks like many found dating to the end of the fourth century, and could therefore belong to the earlier burial accompanied by the black glaze kotyle.

Type:2

Constituents:
6002 (**fig. SCG6.1**):

- Two fragments of circlet gilded on the front and not the back. Each has two holes. W:3.7, L: 19.7 and 17.9.
- 13 fragments of gilded leaves (gilded on both sides). They have not been fully cleaned and fragments of soil are still attached.

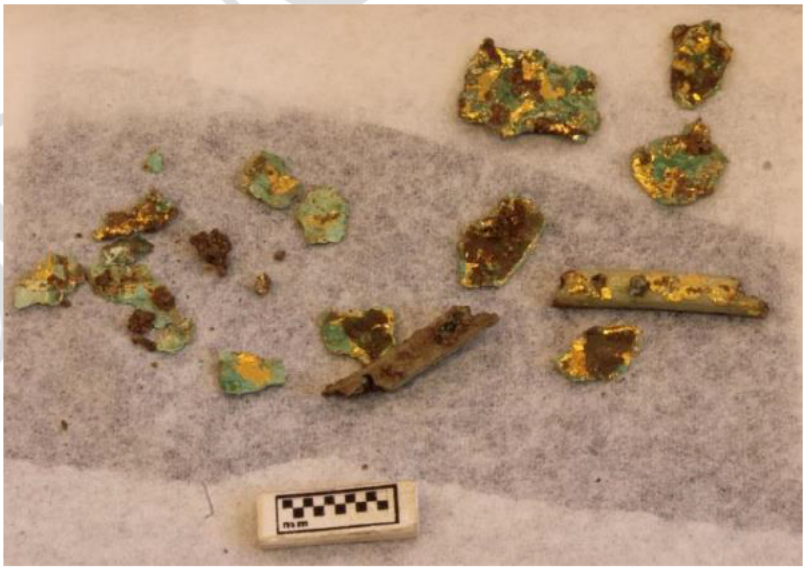
6003
Tiny fragments of leaf similar to 6002.

Plant represented: not possible to tell but probably myrtle.

Bibliography:
Kyrkou Th. 2017. 'Ταφικά στεφάνια από τη δυτική νεκρόπολη της Αμβρακίας' in *Σπείρα επιστημονική συνάντηση προς τιμήν της Αγγέλικας Ντούζουγλη και του Κωνστανίνου Ζάχου, Πρακτικά*, 445-458.

Studied: March 2017.

Fig. SCG6.1 Fragments of circlet and leaf 6002 © Hellenic Ministry of Culture and Sports/Ephorate of Arta



[171] Kyrkou 2017, 450.
[172] No further details are given in Kyrkou 2017.

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SCG7 Epirus Ambrakia W. cemetery grave 38, 6004
Arta AM

Provenance and context[173]: Grave XXXVIII contained the remains of two deceased, one of which was probably a reburial. The grave goods included two black glaze skyphoi (late fourth-early third century) and iron strigils.

Date: late fourth/early third c.

Type:2

Constituents: **6004**

- Six fragments of circlet with white coating and gilding, two of which joined. The coating is very white and looks like plaster (**fig. SCG7.1**). W:4.9.
- Fragments of about 20 stems, one of which was part of a leaf. It can be seen on one that it was made of wire square in cross section (**fig. SCG7.2**). W: 1.47 but as there is a lot of corrosion and the stems are uncleaned the original W may have been less.
- Three acorns made of reddish clay with white coating, moulded as the line can still be seen (**fig. SCG7.3**). One bears clear traces of burning.
- Fragments of gilded myrtle leaves

Plants represented: myrtle and oak.

Bibliography:
Kyrkou Th. 2017. 'Ταφικά στεφάνια από τη δυτική νεκρόπολη της Αμβρακίας' in *Σπείρα επιστημονική συνάντηση προς τιμήν της Αγγέλικας Ντούζουγλη και του Κωνστανίνου Ζάχου, Πρακτικά*, 445-458.

Studied: March 2017.

Fig. SCG7.1 Gilded circlet with white coating 6004 ©Hellenic Ministry of Culture and Sports/Ephorate of Arta



[173] Kyrkou 2017, 450.

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Fig. SCG7.2 Details of two stems, square in cross section 6004 © Hellenic Ministry of Culture and Sports/Ephorate of Arta



Fig. SCG7.3 Three acorns one of which has signs of burning 6004 © Hellenic Ministry of Culture and Sports/Ephorate of Arta



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SCG8 Epirus Ambrakia W. cemetery grave 48, 6007
Arta AM store

Provenance and context[174]: The fragments were found in grave XLVIII which contained an urn consisting of an amphora with a lead stopper, found in the south west corner of the grave. The grave goods included a small oinochoe, a silver olive leaf, an unpainted aryter, a vase-skyphos and a pair of earrings of the fourth century[175].

Type:2?

Date: beginning of third, or last quarter of the fourth, century.

Constituents (**6007**) (**fig. SCG8.1**):

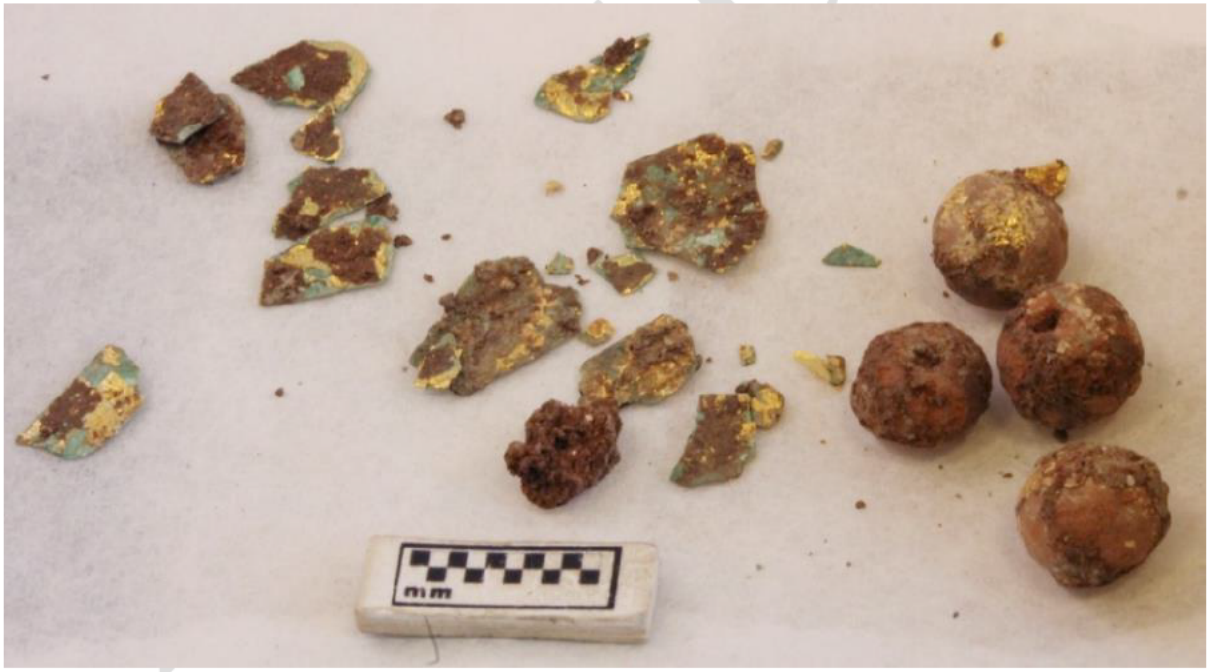
- Four spherical berries, made of red clay with a white coating and traces of gilding.
- Uncleaned fragments of gilded leaves

Plant represented: not possible to tell but could be myrtle.

Bibliography:
Kyrkou Th. 2017. 'Ταφικά στεφάνια από τη δυτική νεκρόπολη της Αμβρακίας' in *Σπείρα επιστημονική συνάντηση προς τιμήν της Αγγέλικας Ντούζουγλη και του Κωνστανίνου Ζάχου, Πρακτικά*, 445-458.

Studied: March 2017.

Fig. SCG8.1 Fragments of leaves and berries 6007 © Hellenic Ministry of Culture and Sports/Ephorate of Arta



[174] Kyrkou 2017, 451.
[175] Kyrkou points out that the earrings are similar to those illustrated in *Gli Ori* 1984,159, but similar earrings are also found in Macedonia, for example at Thermi. Scarlatidou dates these at c.300 (Skarlatidou 2007, 82-3).

SCG9 Epirus Dymokastro Grave 7 ΘΕ 2756, 4048, 554, 5546 Igoumenitsa AM, display and store.

Provenance and context[176]: Cist grave 7 was found in rescue excavations on 26 May 1989. The grave was one of 18 placed in five groups around a small tumulus-shaped natural appendage. Nine of these were pit graves and eight were cist graves and on the top of the mound was a further cist grave, grave 7, which was surrounded by a rectangular peribolos (**fig. SCG9.1**). The grave contained two iron swords, one of which had been damaged, a small bronze perfume container and the remains of the gilded wreath. The 18 clay acorns were placed in a circle, with copper stems and one clay flower close to a burnt area. The gold leaf fragments were located in different parts of the grave. The acorns are on display in the museum, and the stems and fragments of leaves and gold are kept in the stores. The clay flower could not be located. No bones or pottery were found in the grave. A few nails were found inside and outside the grave.

Date[177]: Second half of fourth century, based on the bronze perfume container (metal vessels are not found in third century graves at this site).

Type: local

Constituents:
On display (2756 and 5546) 18 acorns, made of blackened red clay with a white coating and traces of gold. They all have a single hole. The incisions are different on each acorn. It looks as if they were all made by hand, since there is no sign of any mould marks, and the incisions were certainly done by hand (**figs. 3.21 and 3.22).** They are also of different sizes. L:11, 9.3, 7.3. W:6

5541 Stems and fragments of stems with small myrtle leaves, three of which look slightly blackened (**fig. SCG9.3**). The leaves and stems are made in one piece. Some of the stems are square in cross section, others have been folded and hammered (**fig. SCG9.4)** W of stems: 1 or just under. L: 29, 24, 6.

4048: tiny fragments of gold and copper leaves.

Plants represented: myrtle (leaves) and oak (acorns).

Bibliography:
Kanta-Kitsou A., Palli O. and Anagnostou I. 2008. *Αρχαιολογικό Μουσείο Ηγουμενίτσας*.
Preka-Alexandri 1995. AD 44 *Chron* (1989) 302-6 and 312-4.
Preka-Alexandri K. 2019. 'Ταφικές Πρακτικές σε διάφορες περιοχές της Θεσπρωτίας', in course of publication.

Studied: November 2018.

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[176] Preka-Alexandri pers. comm. 9.10, 2018; Preka-Alexandri 1995.
[177] Preka-Alexandri 2018 (pers. comm 9.10.2018) and article in course of publication; Kanta-Kitsou 2008, 118.

Fig. SCG9.1 Plan of peribolos, showing grave 7 in the centre (courtesy of Mrs Preka-Alexandri) ©Ephorate of Thesprotia/Archaeological Resources Fund



Fig. SCG9.2 Acorns from the wreath Igoumenitsa AM inv. 2756 and 5546 ©Ephorate of Thesprotia



Fig. SCG9.3 Stems and leaves Igoumenitsa AM inv. 5541 ©Ephorate of Thesprotia



Fig. SCG9.4 Detail of stems (USB microscope) Igoumenitsa AM inv. 5541 ©Ephorate of Thesprotia



SCG10 Epirus Michalitsi 3994a and b
Preveza AM store

Provenance and context[178]: These wreath fragments are probably from grave 9 at Michalitsi, which contained charred fragments of a wreath accompanying the remains of a man and the later burial of a woman with an oak wreath (SCG11). A bronze oinochoe accompanied the man, as well as a fragment of strigil and four bronze coins (one of Philip II as well as three bronze coins from Corfu). If this wreath comes from grave 9, as is likely, it accompanied the man, since it represents myrtle not oak (see SCG11). Some of the leaves bear signs of burning, consistent with the description by Dakaris of the wreath from grave 9. The oval berries in SCG11A may be from the same wreath.

Date: after 342[179].

Type: 2

Constituents:

3994a

- 13 fragments of gilded circlet, possibly complete. There is a smooth fine white coating under the gold; there appear to be the remains of ancient adhesive underneath (**fig. SCG 10.1**). W:5.6 L: 26.7, 14.1, 8.5, 18.3, 14.7, 20.4, 22.3, 25.4, 20.8l, 35, 30.7, 31.3 (consisting of two fragments overlapping held together with nails), 25. Total L 29.3cm. Distance between holes: 3.4, 6.3, 2.8. Diam. of nails and holes: 1.25.
- One leaf and one stem, the leaf is gilded on both sides. Max. W: 6.9 Total L 34.7.
- 8 oval berries with a yellowish coating, made of brown clay. L:c.6.5 mm (**fig. SCG10.2**)

3994b

Fragments of leaves and stems, representing myrtle (**fig. SCG10.3**). The stems appear to be made of twisted wire, but there is a lot of corrosion, making it difficult to tell (**fig. SCG 10.4**). They are square in cross-section. The leaves show some signs of melting, and also have a lot of corrosion (**fig. SCG10.5**) Diam. wire: 0.75.

Scientific analysis with the HHXRF showed high peaks for copper on the leaves and nothing else; the circlet had gold and no silver. The berry had iron, gold and calcium. No lead was detected.

Plant represented: myrtle.

Bibliography: Dakaris 1963. 'Αρχαιότητες και μνημεία Ηπείρου' *AD* 17 (1961/2) *Chron* 187-199 at189 and 190.

Studied: March 2017.

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[178] Dakaris 1963,189 and 190.
[179] Dakaris 1963, 192.

Fig. SCG10.1 Fragments of circlet, oval berries and one leaf. © Archaeological Museum of Preveza, Hellenic Ministry of Culture and Sports



Fig. SCG10.2 Berries with white coating and red fabric © Archaeological Museum of Preveza, Hellenic Ministry of Culture and Sports



Fig. SCG10.3 Stem, square in cross-section © Archaeological Museum of Preveza, Hellenic Ministry of Culture and Sports

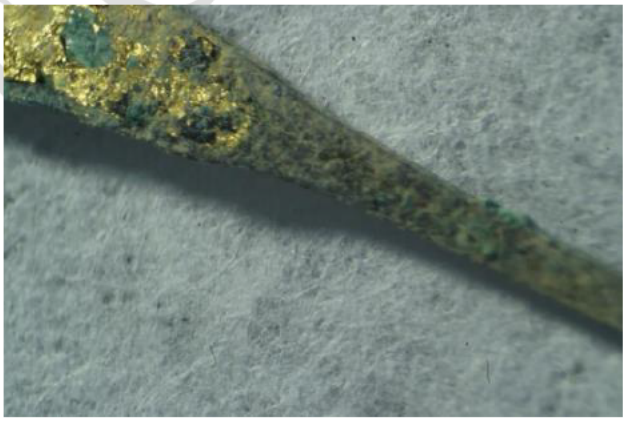


Fig. SCG10.4 Leaves and stems © Archaeological Museum of Preveza, Hellenic Ministry of Culture and Sports

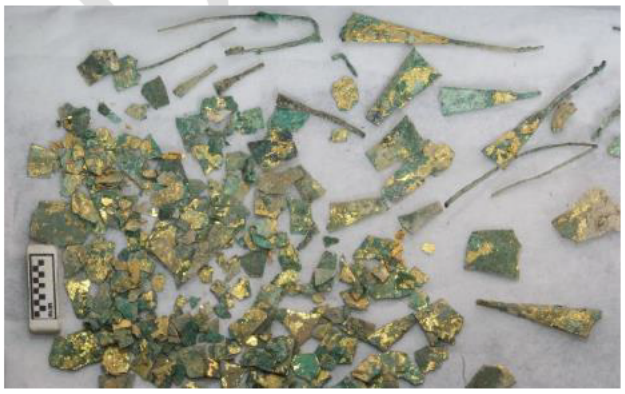
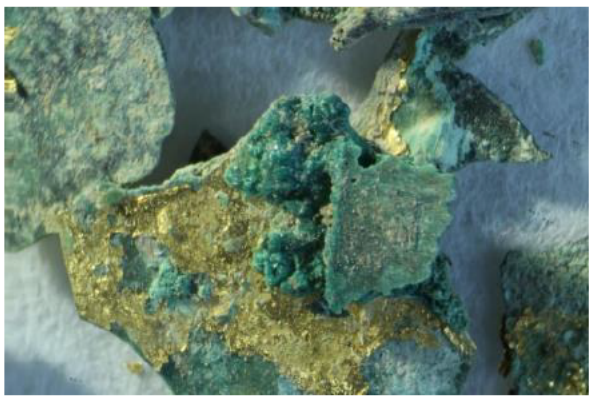


Fig. SCG10.5 Leaf with signs of melting © Archaeological Museum of Preveza, Hellenic Ministry of Culture and Sports



SCG11 Epirus Michalitsi 3996
Preveza AM store

Provenance and context[180]: 3996a and b are likely to be from grave 9 in the cemetery at Michalitsi, which contained the remains of a woman (with an oak wreath) and a male (SCG10). In addition to the wreath fragments, ten gold necklace beads were found (**fig. SCG11.1**). The acorns from SCG11A are almost certainly part of the same wreath.

Date[181]: Last quarter of the fourth century? The burial of the man is dated to around 340, but the burial of the woman (with the oak wreath) is later.

Type: 2

Constituents:

3996a

Fragments of small oak leaves with a chased design in copper under the gold and stems which are also gilded - some are branches with multiple stems (**figs. SCG11.2-3 and 7.36**). These leaves and branches are very similar to those from Derveni A (M16). Max W of leaf fragments: 15.55. W of stem with leaf: 1mm. W of branch 1.33mm.

3996b

28 fragments of circlet, maybe nearly complete (**fig. SCG11.4**). Six have no holes, and were probably from the extremities at the back. The stems have been bent back on the back of the circlet. The gold continues over the back. There are tiny fragments of wood in the stems on the back of the bone circlet, almost certainly the remains of a wooden circlet. Minimum number of holes: 92. There is a white coating on the circlet under the gold. Two wires are still in position through some of the holes (**fig. SCG11.5**). Diam of holes: 1.2, distance apart: 2, 2.5, 4.7. W of two wires together: 1.68. L (total) 59.7cm (which would be approximately the correct circumference for one wreath). W circlet: 5.3mm

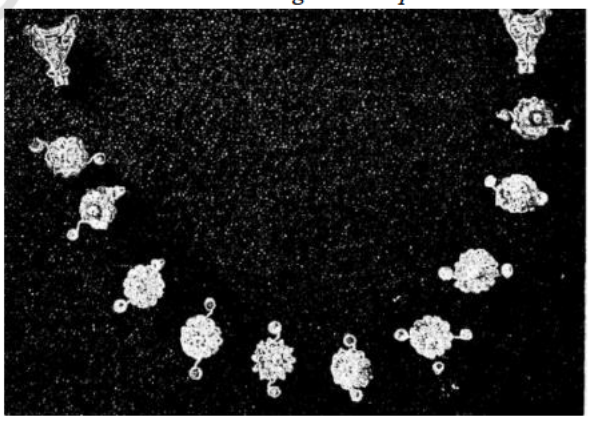
Scientific analysis: the HHXRF showed the presence of copper (no tin) on the leaves and gold (no silver) on the circlet. Calcium but no lead was detected in the coating on the circlet.

Plant represented: oak.

Bibliography: Dakaris S. 1963. 'Αρχαιότητες και μνημεία Ηπείρου' *AD* 17 (1961/2) *Chron* 187-199.

Studied: March 2017.

Fig. SCG11.1 Gold necklace beads from grave 9 From Dakaris 1963, pl.222c ©Archaeological Museum of Preveza/Archaeological Receipts Fund



[180] Dakaris, 1963, 189
[181] Dakaris 1963, 192.

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Fig. SCG11.2 Fragments of oak leaves and stems © Archaeological Museum of Preveza, Hellenic Ministry of Culture and Sports



Fig. SCG11.3 Fragment of oak leaf © Archaeological Museum of Preveza, Hellenic Ministry of Culture and Sports

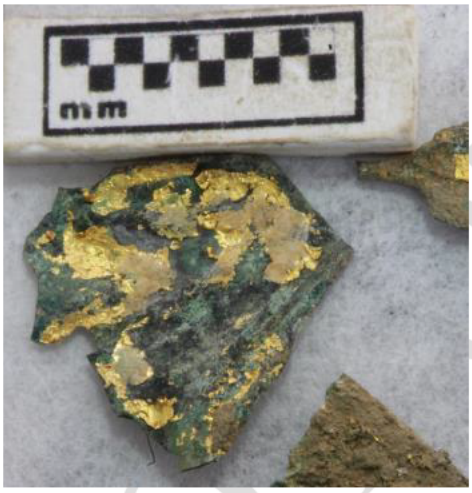


Fig. SCG11.5 Fragments of wood on stem © Archaeological Museum of Preveza, Hellenic Ministry of Culture and Sports



Fig. SCG11.4 Fragments of circlet © Archaeological Museum of Preveza, Hellenic Ministry of Culture and Sports



SCG11A Epirus Michalitsi
Preveza AM store

Provenance and context: It is likely that these fragments are part of SCG11 (acorns) and of SCG10 (oval berries), since Dakaris does not describe any further oak wreaths being found at Michalitsi. In this case, the wreath elements would come from grave 9 (see entries for SCG10 and 11).

Consituents: (**Fig. SCG11A.1**)

- 64 acorns with gilded stems, which go right through the clay, coming out at the opposite end (**figs. SCG11A.2 and SCG11A.3).** The acorns have clearly been moulded as moulding lines are visible on each side. They do not have a red coating, as at Derveni, and the clay is slightly grey. Some have a smooth yellowish coating. Traces of the gold are visible.
- 13 oval berries with traces of gilding made of the same clay as the acorns. L:c.7mm (**fig. SCG11A.3**).

Type: 2?
Scientific analysis with the HHXRF showed gold, iron, calcium and silicon.

Studied: March 2017

Fig. SCG11A.1 64 Acorns and 13 oval berries © Archaeological Museum of Preveza, Hellenic Ministry of Culture and Sports



Fig. SCG11A.2 Acorn and stem © Archaeological Museum of Preveza, Hellenic Ministry of Culture and Sports



Fig. SCG11A.4 Stem passing through acorn with gilding © Archaeological Museum of Preveza, Hellenic Ministry of Culture and Sports

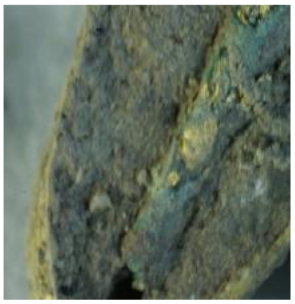


Fig. SCG11A.3 Oval berries © Archaeological Museum of Preveza, Hellenic Ministry of Culture and Sports



SCG12 Epirus Orraon
Arta AM on display

Provenance and context: Nothing is known about the provenance or context of the wreath fragments, other than that they are from the Orraon cemetery, on the west of the settlement. They are on display with various finds from the cemetery, dated from the fourth to the second centuries, including iron weapons, a gold diadem and silver and bronze rings (**fig. SCG12.1**). In the same case are finds from House A.

Date: Third century?

Type:5 or 7

Constituents:

- Three groups of acorns with flat backs, on display. No traces of gilding. The acorns in each group are so similar they were clearly formed by moulding. Each has a distinct cup with indentations.
  Group 1: 4 acorns, blackened, with stems
  Group 2: 6 acorns, not blackened, reddish clay (**fig. SCG12.2**).
  Group 3: 3 acorns with stems, blackened, similar to group 1 (**fig. SCG12.3**).
  L: 19.5, W (Max) 13.3. W of stems: 0.85
- Berries made of red clay, three of which are grey from charring. None have any signs of gilding. Diam.: 10.9.
- Rosettes and flowers:
  The small flowers have six petals; what appears to be a white coating is almost certainly salts (**fig. SCG12.4**). Diam. 10.8.
  The seven larger flowers are all different sizes of which two almost certainly represent ivy, with 25-30 petals (**fig. SCG12.4**).
  Diam. of flowers: 16 (6 petals), 15-23 (12 petals), 27.78 two items (25-30 petals) of which one is charred.
- A terracotta head of a woman with a melon hairstyle is kept with the flowers, but almost certainly does not belong with the wreath.

Studied: March 2017.

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Fig. SCG12.1 Wreath fragments and other material from Orraon, on display © Hellenic Ministry of Culture and Sports/Ephorate of Arta



Fig. SCG12.2 Six reddish clay acorns © Hellenic Ministry of Culture and Sports/Ephorate of Arta



Fig. SCG12.3 Charred acorns © Hellenic Ministry of Culture and Sports/Ephorate of Arta



Fig. SCG12.4 Rosettes and flowers © Hellenic Ministry of Culture and Sports/Ephorate of Arta



SCG13 Epirus Prodromi Thesprotias
Igoumenitsa AM on display

Provenance and context[182]: The grave was in a tumulus, with fragments of an unglazed vase. The bronze urn (kalpis) was removed by the operator of a digger, as well as a breast plate and two helmets, damaging the iron helmet and part of the breast plate (**figs. SCG13.3 and SCG13.4**). The Ephoreia of Corfu completed the excavation. A second grave found nearby contained the remains of a man, but the main grave is otherwise isolated. According to the information provided to Choremis, the kalpis contained burnt bones, green from the copper, and fragments of two different wreaths, one myrtle and the other oak. Other items found during the professional excavation were a sword with its sheath, an iron key and an iron strigil. Choremis suggests that the wreath had perhaps been placed around the neck of the kalpis, which is decorated with a Dionysiac scene. There was no pottery in the pyre.

Date[183]: third quarter of fourth century.

Type:7

Constituents: the fragments of the wreath or wreaths are on display, and are in exceptionally good condition, with the gilding almost intact (**fig. 3.25**). They are displayed in two sections (**figs. SCG13.1 and SCG13.2**). There are no obvious signs of burning from the pyre.
L left section about 10 cm, L right section 11.5.

- The circlet appears to be made of bronze or copper strips wound around a core made of two wires (**fig. SCG13.5**). The iron helmet has what appears to be a small section of wood, which may be part of the original wooden circlet (**fig. 3.26**).
- The four acorns are nearly flat with dimples, made in clay under the gold (**fig. SCG13.1**). They are mounted on stems with leaves. L acorns: 18.6, W 12.8.
- The leaves may be broken; one or two are clearly myrtle and others oak.
- 10 leaves, which appear to be a mixture of myrtle and oak. L leaves: 26.7, 37.3, 24, 24. L oak leaf: 334., max. W: 14.8
- There are two gilded spheres, representing either berries or myrtle buds. Diam. spherical objects: 10.4. L stem with acorn 43.6

Plant represented: oak

Bibliography:
Choremis A. 1980. 'Μετάλλινος οπλισμός από τον τάφο στο Προδρόμι Θεσπρωτίας', *ΑΑΑ* XIII, 3-20.
Choremis A. 1985. 'Προδρόμι', *AD* 33 (1978), *Chron* B1, 223-226 and pl.99.

Studied: March 2017.

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[182] Choremis 1980,13
[183] Choremis 1980, 18.

Fig. SCG13.1 Left hand section of wreath, with two acorns. Igoumenitsa AM © Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



Fig. SCG13.2 Right hand section of wreath. Igoumenitsa AM © Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



Fig. SCG13.3 Armour from Prodromi, on display Igoumenitsa AM © Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



Fig. SCG13.4 Kalpis with Dionisiac motif with which the wreath fragments were found.Igoumenitsa AM © Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



Fig. SCG13.5 Detail of metal circlet. Igoumenitsa AM © Ministry of Culture and Sports/Ephorate of Thesprotia



DO NOT C

SCG14 Epirus Riziani Graves α and β 8126, 8129, 8130, 8133, 8166, 8128, 8129
Igoumenitsa AM on display and store

Provenance and context[184]: Cist grave α was part of the funerary complex at Riziani, published recently by Metallinou, and there is also a short description in the museum guide[185]. The complex seems to have had a period of use from the fourth to the second century. According to the panel in the museum display, the complex contained five cist graves and two funerary *thekai* (**fig. SCG14.1**). The bones of three children and two adults were identified, but it would seem from the burial goods from the graves that there were almost certainly more people originally buried in some of the graves of the complex. Objects from graves α, γ, ε, στ and ζ are on display in cases arranged in the shape of a rectangular grave. Wreath fragments were found in all of these (SCG14 - SCG18), and also in grave β (SCG14), and further fragments were found in fill.

Date[186]: Late fourth/early third c.

Type : 2 ?

Constituents
Cist grave α contained, in addition to the wreath fragments, gilded clay roundels with a Medusa head (320-300), a small earring and a ring (late fourth to early third), as well as a miniature clay vessel (early Hellenistic period), clay apples and almonds, a clay figurine representing a child, a late fourth century skyphos, a knucklebone (fourth to third c) (**fig. SCG14.2**).
8126 Two tiny fragments of square wire (stem) in a stapled bag.
8129 Fragments of leaves and traces of gilding.
8130 Three tiny fragments of stem. W: 0.9
8133 One tiny fragment of stem.
8166 Gilded leaf fragments in one bag (**fig. SCG14.3**); the other contained soil and traces of copper and gold.

Grave β (robbed)
8128 Fragment of stem, square in cross section. W of wire: 0.44. L:4.81.
8139 Tiny piece of glass (not part of wreath), stems and fragments of gilded copper myrtle leaves. One of the stems ends in a hook.

Plant represented: probably myrtle

Bibliography:
Kanta-Kitsou A., Palli O. and Anagnostou I. 2008. *Αρχαιολογικό Μουσείο Ηγουμενίτσας*.
Metallinou G. 2019. 'Ταφικό μνημείο στη Ρίζιανη' in I.P. Chouliaras and G. Pliakou (eds), *Θεσπρωτία Ι, Πρακτικά Α' Αρχαιολογικού και ιστορικού συνεδρίου*, 235-249.

Studied: November 2018.

[184] Kanta-Kitsou 2008, 121, Metallinou 2019.
[185] Kanta-Kitsou 2008, 121.
[186] Metallinou 2019, 238.

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Fig. SCG14.1 Burial complex at Riziani. From Kanta-Kitsou 2008, 121 ©Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia/Archaeological Resources Fund



Fig. SCG14.2 Contents of grave. From Metallinou 2019, 239 ©Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia/Archaeological Resources Fund

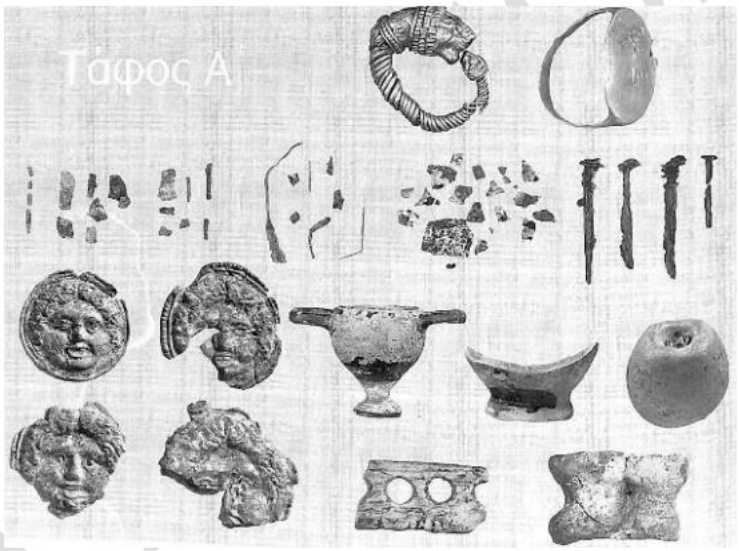


Fig. SCG14.3 Fragments of leaves from grave α Igoumenitsa AM inv. 8166 © Hellenic Ministry of Culture and Sports/.Ephorate of Thesprotia



SCG15 Epirus Riziani grave γ 7969, 7979, 10175
Igoumenitsa AM on display and in stores.

Provenance and context[187]: The wreath was found in cist grave γ in the burial complex at Riziani (see SCG14). In addition to the wreath the grave contained two lamps, two jugs, a small black glaze vessel, an iron ring, a gold strip diadem with the words ΚΛΕΟΜΑΧΕ ΧΑΙΡΕ (**fig. SCG15.1**). The individuals buried there were probably two males.

Date: Late fourth/early third c.

Type:3

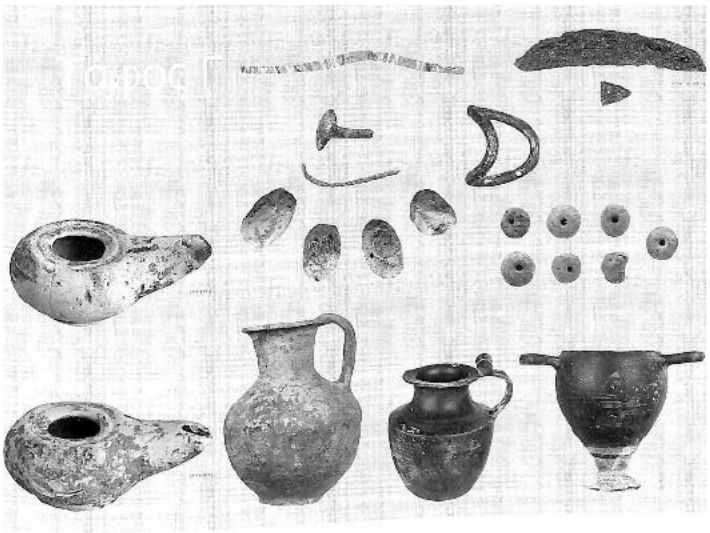
Constituents
On display 7979:
25 Spherical berries which have a single hole. Some have a white coating and traces of gilding; the fabric is made of red clay, the same colour as the red oinoichoe in the same grave, so it is probably local. Some are slightly blackened from charring. They are fairly similar in size but were probably made by hand (**fig. SCG15.2).** Diam spherical berries: 9.4-7.2
There are also four small oval berries, one of which is grey from burning, possibly from a second wreath. L oval berries: 4.8-6.63.

7969 (stores): Five spherical berries with a coating which has a greenish tint, probably from copper. There is no sign of a hole, and the merest traces of gold.

10175 21 spherical berries and four fragments of berries, made of reddish clay with tiny traces of gold. There are holes in the clay, perhaps from firing. The clay feels quite hard, suggesting firing, and the fingernail does not leave any impression. (**Fig. SCG15.3**)

Bags containing further material from the wreath:
Fragments of lead circlet with holes. W circlet: 8.36. Hole diam.: 2.65.
Stems (uncleaned) made of wire square in cross section (**fig. SCG15.4**)
A bit of thread, with a trace of red, possibly lead corrosion.
Fragments of uncleaned leaves, myrtle, with traces of gilding. W approx 1-1.72mm.

Fig. SCG15.1 Objects found in grave γ. From Metallinou 2019, 239 ©Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia/Archaeological Resources Fund



Plant represented: myrtle?

Bibliography:
Metallinou G. 2019. 'Ταφικό μνημείο στη Ρίζιανη' in I.P. Chouliaras and G. Pliakou (eds), *Θεσπρωτία Ι, Πρακτικά Α' Αρχαιολογικού και ιστορικού συνεδρίου*, 235-249.

Studied: November 2018.

[187] Metallinou 2019, 236, 238.

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Fig. SCG15.2 Elements of wreath on display Igoumenitsa AM inv7979 © Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



Fig. SCG15.3 Detail of berries from grave 3 Igoumenitsa AM 10175 ©Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



Fig. SCG15.4 Detail of stems (USB microscope) Igoumenitsa AM © Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



SCG16 Epirus Riziani Grave ε 7977, 7970, 7976, 8119, 8249 Igoumenitsa AM. Two wreaths on display

Provenance and context: Cist grave ε was part of the burial complex at Riziani (see SCG14); the grave contained, in addition to the wreath fragments, black glaze unguentaria (mid-third to second c.), an iron sword (early Hellenistic), perfume bottles (mid-third to second century), a silver padlock cover and iron key (fourth to second c.), a silver vessel handle (late fourth c.), bronze rings (horse trappings? the label in the museum refers to an interlaced bridle ring, but the excavator suggests they have an apotropaic function[188]), three black glaze lamps, a bronze mirror (second century), a pyxis (mid-second century), a black glaze kantharos (third c.), a black glaze small oinochoe (late fourth c.), a black glaze plate (second c.), a bronze pendant and gold jewellery including a gold chain (third century), a gold earring and gold rings, as well as a danake 340-330. The grave contained the remains of at least two individuals who were buried in the early third century and the second century. One was adult and the other a minor[189]. Some of the finds are shown in **fig. SCG16.1**.

Date[190]: Early third and mid-second c.

Type:4 and 3?

Constituents:
First group: 28 spherical berries, 16 of which have no hole or gilding, and 12 of which have a white coating with no signs of gold.
12 moulded flowers with traces of gilding. Diam. 12.88 (**fig. SCG16.2**)
In a separate group: 89 spherical berries of various sizes (from a second wreath). Diam. approx. 9.5 (**fig. SCG16.3**)

7977 A bell-shaped flower (rosette) with seven petals made of red clay, with one hole and traces of white coating. (**fig. SCG16.4).** Diam. 12.7.

7970 Five spherical berries with coating. Not all have holes, and were perhaps part of a roll wreath.

7976 A similar flower (rosette) to 7977.

8119 Fragments of gilded copper, from leaves.

8249 Fragments of copper most ungilded. Some appear to be stems, others may not be from a wreath.

Plant represented: myrtle or ivy

Bibliography:
Metallinou G. 2019. 'Ταφικό μνημείο στη Ρίζιανη' in I.P. Chouliaras and G. Pliakou (eds), *Θεσπρωτία Ι, Πρακτικά Α' Αρχαιολογικού και ιστορικού συνεδρίου*, 235-249.

Studied: November 2018.

[188] Metallinou 2019, 247.
[189] Metallinou 2019, 236.
[190] Metallinou 2019, 239.

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Fig. SCG16.1 Some of material from grave ε. From Metallinou 2019, 240 ©Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia/Archaeological Resources Fund

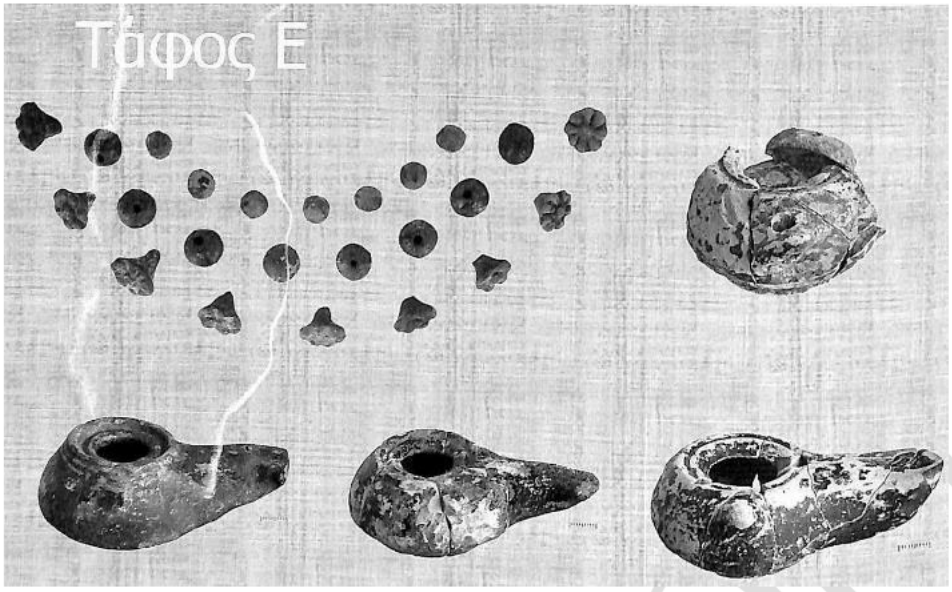
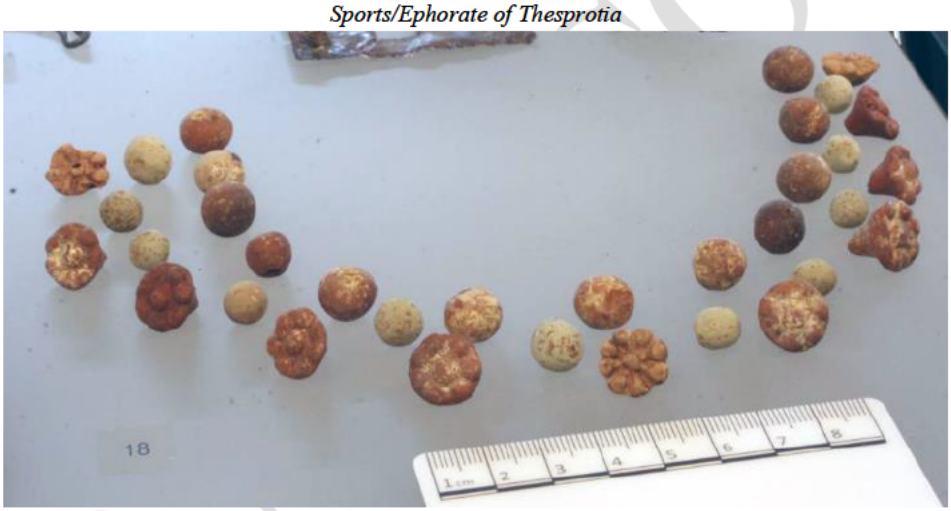


Fig. SCG16.2 First group of berries and flowers (rosettes) from grave 5 Igoumenitsa AM © Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



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Fig. SCG16.3 Second group of berries on display Igoumenitsa AM © Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



Fig. SCG16.4 Detail of flower (USB microscope) Igoumenitsa AM ©Hellenic Ministry of Culture and SportsEphorate of Thesprotia



DO

SCG17 Epirus grave στ, 7971, 7978, 8168
Igoumenitsa AM on display and store

Provenance and context: Cist grave στ was part of the funerary complex at Riziani (see SCG14). In addition to the wreath fragments, it contained an iron spear butt support, a black glaze stamnoid kados (late fourth c.), a black glaze skyphos (late fourth c.), a clay oinochoe (early third c.), a lamp (mid-fourth c.) and figurine fragments (Hellenistic) **(fig. SCG17.1)**.

Date: Late fourth/early third century.

Type:4

Constituents:
On display
- Eight spherical berries
- Four bell-shaped flowers (**fig. SCG17.2**)

8168
A fragment of lead and tiny fragments of gilded copper.
Fragments of stems and gilded myrtle leaves. Possibly signs of burning on the copper.

Plant represented: myrtle or ivy
Bibliography:
Metallinou G. 2019. 'Ταφικό μνημείο στη Ρίζιανη' in I.P. Chouliaras and G. Pliakou (eds), *Θεσπρωτία Ι, Πρακτικά Α' Αρχαιολογικού και ιστορικού συνεδρίου*, 235-249.

Studied: November 2018.

Fig. SCG17.1 Some of the objects from grave στ. From Metallinou 2019, 244 ©Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia/Archaeological Resources Fund



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Fig. SCG17.2 Some of the flowers and berries on display Igoumenitsa AM ©Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



SCG18 Epirus Riziani grave ζ 7938, 7967, 8027, 8088 Igoumenitsa AM on display and store

Provenance and context: Cist grave ζ was part of the grave complex at Riziani (see SCG14). It contained, in addition to the wreath fragments, a bowl (lekane) (275-250), three *oinochoai* (early Hellenistic), two lamps (350-330), two perfume bottles (one of blue glass) (fourth to third centuries), gold jewellery including a gold chain with a Gorgoneion (mid-fourth to early third century) and gold earrings (mid-fourth to early third c.), a glass ring (late third c.), a stone ring bezel (Hellenistic), iron scissors (mid-third c.), a silver spatula (late third c.), two clay heads from figurines, bone roundels probably from furniture (Hellenistic). Some of the jewellery is tiny, suggesting a young girl, but there is also a larger bezel ring (**fig. SCG18.1**). The grave contained the remains of an adult, who had been cremated[191].

Date[192]: Late fourth/early third c.

Type: 4 and 3?

Constituents:
7938 (on display) (fig. SCG18.2) 14 bell-shaped flowers with a rosette and copper stem. The flowers are on the large side, and some are made of darkened clay (from burning). They have 6-7 petals, and are not all the same. Some have traces of gilding. Some have a second hole. Diam.13.6-12.7.
The stems are flat or square and are up to 50mm long. There are no obvious signs of gilding.

8027 (on display) consists of a clay flower and copper stems, still tied together with the original thread. Further material from **7937, 8088 and 8087** is kept in the lekane on display.

7967 18 spherical berries with a copper stem. Like the flowers, they are made of dark red clay.

8027 Stems, one of which has a hook (as seen on SCG35) and one could be in a spiral, perhaps used to wrap stems together (**figs. SCG18.4-5**).

[191] Metallinou 2019, 237.
[192] Metallinou 2019, 239.

8088, 8087 and 7937 A total of 33 berries and three rosette flowers were found in the lekane where they are still kept. Some of the berries are charred, with traces of gilding. One or two have white coating preserved on the red clay (**fig. SCG 18.3**).
The three rosettes have traces of gilding and 6-7 petals. There are traces of a white coating.
Further items within the lekane were two tiny berries with a coating and no obvious hole.
Diam spherical berries 10.5-7.5.
8093 a group of wires, which have perhaps melted and have separate stems
A bag with copper, not part of the wreath, soil and a button. The same bag contains stems and further bound wires which probably supported berries (**fig. SCG18.6**). There is also some gold thread.

Plant(s) represented: The bundle of stems and spherical berries suggest ivy. The flowers could be myrtle or ivy.

Bibliography:
Metallinou G. 2019. 'Ταφικό μνημείο στη Ρίζιανη' in I.P. Chouliaras and G. Pliakou (eds), *Θεσπρωτία Ι, Πρακτικά Α' Αρχαιολογικού και ιστορικού συνεδρίου*, 235-249.

Studied: November 2018

Fig. SCG18.1 Some of the jewellery on display from grave 7. From Metallinou 2019, 245 ©Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia/Archaeological Resources Fund

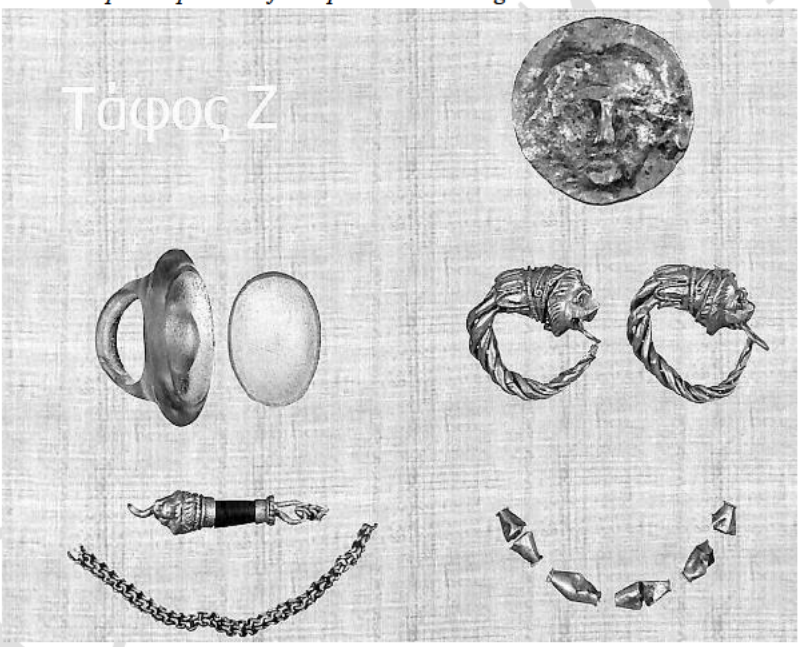


Fig. SCG18.2 Wreath fragments on display Igoumenitsa AM 7938 ©Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



DO NOT COPY

Fig. SCG18.3 Some of berries from the lekane Igoumenitsa ©Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



Fig. SCG18.4 stem formed like hook (USB microscope) Igoumenitsa AM 8027 © Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



Fig. SCG18.5 Square wire formed in a spiral (USB microscope) Igoumenitsa AM ©Ministry of Culture and SportsEphorate of Thesprotia



Fig. SCG18.6 Bundle of stems Igoumenitsa AM ©Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia



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SCG19 Euboea, Eretria
Louvre Bj2414 (CA530)

Provenance and context[193]: The wreath was acquired by the Louvre in 1892 with objects said to be from a child's grave in Eretria. The other objects include miniature furniture, miniature vessels, a mirror, a wooden pyxis, a wooden comb, two pyxides in the shape of a nut also made of wood, 13 gilded clay buttons with a head of Athena Parthenos, a clay incense burner, spindle whorls, basket debris, almonds, a top, figurines and coins. Hasselin and colleagues suggest that the grave was that of a female, on the basis of the cosmetic box and the spindle whorls, and that the miniature vessels refer to the home which the young girl would have had had she lived. They assume the material came from only one grave and one burial.

Date: Late fourth/early third century.

Type:2

Constituents:

- Bone circlet with 47 holes. It is shaped in a semicircle and appears to be nearly complete: there is a single hole at one end, which would have held a string, but not at the other, which has clearly been broken off (**fig. 3.11**). There are traces of gold on the circlet, giving a mottled effect: it is not clear whether this was done deliberately (**figs. SCG19.1 and SCG19.2**). Much of the circlet has a blue colour, described as azurite by Hasselin et al.[194], and similar to the blue on the circlet from Nikisiani, which was also found to be azurite (M25). Some of the leaves and berries are still in position, attached to the circlet with copper stems. There is a gap in the centre between the holes 6.75mm long, which is not blue – there was perhaps a medallion here originally, or it may simply have been a space where the leaves met in the centre The circlet is on the small side for an adult, suggesting the wreath may have been made for a young person; it is very similar in size as well as other respects to the small wreath from Nikisiani M25. Diam. arc of circlet: 10.7cm. W bone: 4.2. Thickness 2.3. Distance between holes: c. 3.7
- The myrtle leaves have been made in one piece with the stems and are gilded on both sides. It is not clear whether any is complete, but in shape they are very similar to those on M25 (Nikisiani) and M5 (Aineia) (**figs. SCG19.3-4**). Some have traces of blue. L of longest leaf: 17.85. Thickness of leaf: under 0.7. W of leaves: 5.5, 5.93, 4.76.
- 28 stems/parts of stems remain, of which 21 are still in one piece with part of a leaf. 11 of these are detached and kept separately from the circlet (**fig. SCG19.5**), and a further three have no attachments. Traces of gilding remain on some of the stems. L of stems: 12.65 to 17.65. W of stems: max 1.38, but also 0.64, 0.89.
- 13 berries have been preserved separately from the circlet, to which a further three are still attached. The berries are of different sizes; all look like myrtle (**figs. SCG19.6-19.7**). Six or seven have a cross, a sure indicator of myrtle. Traces of white and yellow coating have been preserved, and at least nine have traces of blue, which lies beneath the gold (**fig. SCG19.7**). Some of the berries have a white coating, and some have a grey fabric (from the pyre?). L of berries: 4.6, 3.17, 5.28, 3.37, 5.7, 6.7, 4.9, 3.4, 4.98, 3.7 (broken), 5.5, 4.8, 3.9, 4.9.

Plant represented: myrtle

Bibliography:
Hasselin Rous I. and Huguenot C. 2017. 'Offrandes hellénistiques en miniature: le mobilier d'une tombe d'enfant d'Erétrie conservé au musée du Louvre' *RA* 1/2017, 3-63.

Studied: 23.8.2017.

[193] Hasselin et al.2017.
[194] Ibid, 28.

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Fig. SCG19.1 Circlet and leaves ©Musée du Louvre

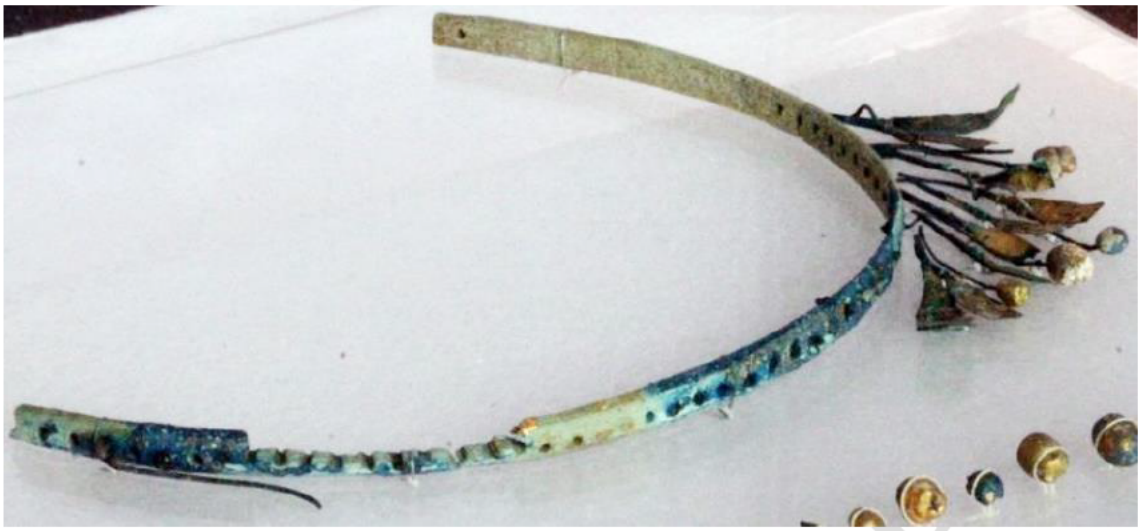


Fig. SCG19.2 Detail of circlet ©Musée du Louvre



Fig. SCG19.3 Detail of back of circlet and leaves and stems still in position on circlet ©Musée du Louvre



Fig. SCG19.4 Leaves without stems ©Musée du Louvre



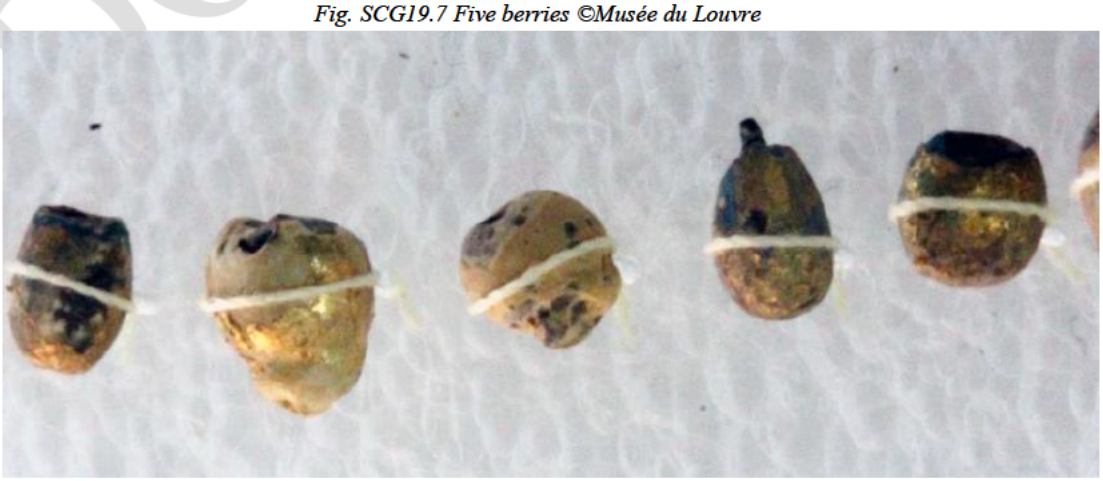
Fig. SCG19.5 Leaves with stems ©Musée du Louvre



Fig. SCG19.6 Six berries ©Musée du Louvre



Fig. SCG19.7 Five berries ©Musée du Louvre



SCG20 Peloponnese Isthmia West Foundation IM 3152, 5042-7, 5055-9 Isthmia AM store

Provenance and context: The West Foundation was excavated by Broneer in the early 1960s (**plan at fig. SCG20.1**), some 2km from the sanctuary at Isthmia. The wreath fragments were found just below the surface of a rectangular pit approximately 2.6 x 2.4m and 0.4m deep, beneath which was the bedrock, and which was filled with ash and carbonized wood[195]. No human bones were found with the wreath, although there were animal bones. In the immediate environment were glass 'lenses' and sherds from a large amphora, IP6601(**fig. SCG20.2**), all of which, like the wreath fragments, had been burnt[196]. The amphora, according the excavation notes, is thought to have contained the wreath fragments[197]. The West Foundation was constructed in three phases, beginning in about 350 as a modest mound over a shallow pit filled with burnt material including iron weapons (phase 1), later covered by a larger oblong tumulus (phase 2) and finally a much larger ashlar monument, surrounded by a stone parapet, which was smashed not many years after it was erected (phase 3) [198]. The wreath fragments are from the first or second phase, and the weapons from the first.[199] Other material found in the pit includes strigils, Glasinac pins and pottery such as a pyxis (found on the surface of the pit) and a pseudo-Cypriot vase as well as iron objects the function of which is not clear (Broneer thought they were table legs, whereas the caption in the museum display refers to chariot elements). The whole monument was looted in antiquity and also recently. Its precise function has not been established: Broneer suggested that it was an exedra from which to view the games[200], but Jackson preferred the idea that it was built to commemorate a deceased warrior, referring to the fact that the weapons are similar to many found in Macedonian graves[201] and were deliberately damaged[202]. Jackson thought that it was a cenotaph because of the absence of bones.

Date: After 338, based on the pottery found with the wreath consisting of a 'Corinthian B' amphora, IP 6601, and a Corinthian conventionalizing pyxis, IP 3448, **fig. SCG20.3**, and the dating of phases 1 and 2.

Type: 2

Constituents:

IM 3152

- One gilded oval terracotta berry with a yellowish coating over a reddish fabric L: 7.71, diam. 5.48.

IM 5042 contains material in two bags. In the first bag:

- 10 oval terracotta berries, which are blackened or grey from burning, with traces of gold on at least three. Both the coating and the fabric have been darkened by burning (**fig. SCG20.4**). Two have the remains of copper stems. The white visible on some of the berries is in some instances the underlying clay and others salts from the soil. L: 7.3, 8.8, .6, 9.8, 9, 9.1, 9.2, 10.

In the second bag are fragments of gilded leaves and other material (**fig. SCG20.5**):

- Fragment of circlet, with remains of a stem. The yellowish colour is the remains of a coloured coating and traces of gilding can be seen (**fig. SCG20.6**). The fragment may have shrunk as a result of burning, but even so is narrower than on most other wreaths (as at Aineia). L: 9.64 W: 2.53
- Three fragments of stem, square in cross-section and folded. W: 0.63, 0.8, 1.00.
- One leaf and stem. L :13.5
- A fragment of gold and red coating.

[195] Broneer 1973 119.
[196] Excavation notebook HCMI Spring 1962, page 72.
[197] Excavation notebook HCMI Spring 1962, page 72.
[198] Jackson 2014, 133.
[199] Jackson 2014, 150.
[200] Broneer 1973, 120.
[201] Jackson 2014, 139.
[202] Jackson 2014, 160.

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- Tiny fragments of leaves which are blackened, and have only traces of gold.
- Tiny fragments of glass
- An object, consisting of three wires stuck together and bent to form something like a buckle with a hollow in the centre, which could have passed around the original circlet. One further wire passes around the inside of the circlet (**fig. SCG20.7**).
  Outer dimensions: W: 6.8, L: 11.44. Inner W: 7.03, height: 4.02, L : 7.03.

IM 5043 contains material in two bags, one of which contains :

- Tiny fragments of gilded leaves and glass. The leaves have been gilded on both sides. Thickness of the leaves approximately 0.4mm.
- The other bag contains two berries, one of which is gilded with a red coating and the second grey. L : 9.1, 8.8.

IM 5044 contains material in two pieces of paper, one of which contains:

- Four berries one of which has a red coating and another an off-white coating (unburnt), and two of which are grey from burning. (**figs. 3.14, SCG20.8 and 6.26**). The colour underlies the gilding and there is no indication that it was intended to be seen.
  The other paper contains :
- Fragments of leaves and of the circlet. The circlet has wires wrapped round it, square in cross-section and the ends of which are buried in the bone (**fig. SCG20.9**).

IM 5045:

- An irregular fragment of copper or bronze, somewhat like the flower or leaves found in the foundations of the temple (IM 2166, see Supplementary Catalogue L3). It has no traces of gilding and was not necessarily part of the wreath.
  L : 30.8. Thickness : 0.8
- Fragments of leaves with gilding.
- 10 gilded berries, which have been burnt. L : 8.5 to 9.4
- One rectangular fragment of transparent glass.

IM 5046:

- One glass 'lens', made of transparent greenish glass. Diam. 14.6
- Fragments of charred material including a much deteriorated piece of glass.
- Fragments of gilded leaves, one of which is myrtle in shape (**fig. SCG20.10**)
- 24 gilded berries two of which have a red coating, while the others are discoloured grey from burning (**fig. 6.26**). One of the charred berries is in two fragments, allowing the greyish fabric and a white inclusion to be seen (**fig. SCG20.12**). Some of the berries have a yellowish ochre coating underlying a red coating (**fig. 6.26**). L of berries: 7.5 to 9.3

IM 5047 consists of material in a bag and a piece of paper containing other items.
In the bag:

- One berry, L : 9.46
- A fragment of circlet., L: 29.01, W :3.38. This clearly came from one end of the circlet, since there is only one hole. There are traces of a yellowish coating

In the paper:

- Two berries and fragments of charred ivory or wood, no doubt from the kline. The paper also contains fragments of terracotta with copper discolouration, which are probably not from the wreath. L of berries: 7.76, 8.89

IM 5055 consists of material in a bag and a small plastic box.
The bag has

- Three leaf fragments, one of which is ungilded and not necessarily from the same wreath as the others (or indeed any wreath). It is oval in shape, probably representing laurel and 1.27 thick (ie much thicker than the copper leaves). L: 22.87. It is reminiscent of the fifth c. wreaths from the sanctuary (e.g. IM 5022, L3), and could be part of an athlete's wreath. (**fig. SCG20.13**).

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- Carbonised wood or ivory fragments.
  The small plastic box contains fragments of gilded leaves
- Two berries. L: 8.1, 9.1
- Fragment of white bone (?) circlet with two stems. L: 9.8, W ;2.7.

IM 5056

- Further fragments of gilded leaves
- Fragments of circlet
- One berry, gilded, well preserved with a red coating. L:9.37.
- Three fragments of stems, square in cross-section. Max W: 1.02

IM 5057
Single berry in very good condition with red coating. L: 8.14, W: 5.77 (max).

IM5058 A few fragments of gilded leaves.

IM5059 One fragment of gilded leaf.

IM 5067 A glass 'lens' of which the base has become detached. It is white/pearly in colour (opaque). Not part of wreath. Diam. 14.25.

IM 5080 A glass lens, white with a goldish sheen (opaque).

IM 5073 Greenish/transparent lens and fragments of goldish material from the glass (**fig. 3.32**). The glass was clearly part of the kline, not the wreath.

Plant represented: myrtle.

Scientific analysis Only IM3152 was examined with the HHXRF. The gold was found to be pure, and there was a high proportion of iron in the clay, suggesting that the clay was coloured with ochre, but an organic pigment or dye is another possibility.

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Raubitschek I.K. 1998. *Isthmia* VII, *The Metal Objects*, 68.
Risser M. K. 2015. 'City, sanctuary and feast: dining vessels from the archaic reservoir in the Sanctuary of Poseidon', in *Bridge of the untiring sea, Hesperia Supplement 48*, E.R. Gebhard and T.E. Gregory (eds), 97-108.

Studied: June 2017 (IM3152) and May 2018 (other items).

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Fig. SCG20.1 Plan of West Foundation (from Broneer 1973)

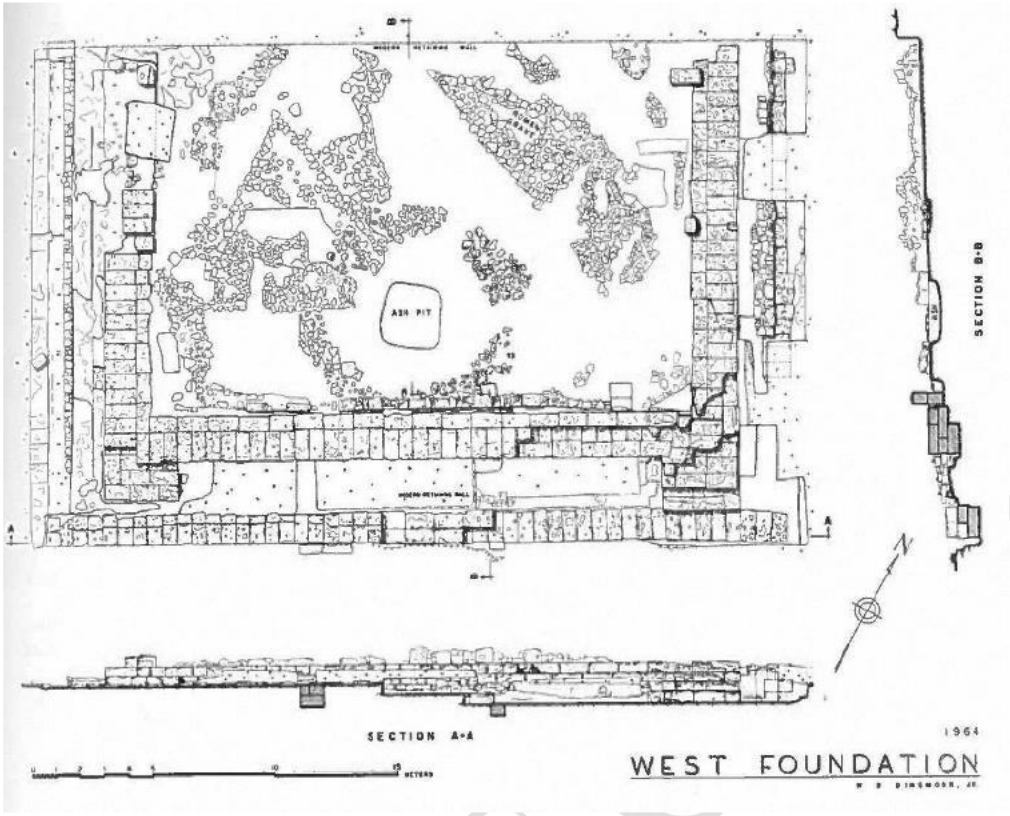


Fig. SCG20.2 Corinthian Amphora IP 6601 in which the wreaths fragments are thought to have been found (photo courtesy of the American School of Classical Studies at Athens, Isthmia Excavations)



Fig. SCG20.3 Corinthian pyxis IP 3448 found near the wreath. Photo courtesy of the American School of Classical Studies at Athens, Isthmia Excavations



Fig. SCG20.4 Berries from wreath, blackened from burning (IM5042) © Ministry of Culture and Sports.



Fig. SCG20.5 Leaves, bone circlet fragment and stems from wreath (IM 5042) © Ministry of Culture and Sports.



Fig. SCG20.6 Part of circlet (IM 5042) © Ministry of Culture and Sports.

Fig. SCG20.7 Wires which passed around circlet (IM 5042). © Ministry of Culture and Sports.





Fig. SCG20.8 Four berries showing the difference in colour in coating with charring and without (red or off-white) (IM 5044) © Ministry of Culture and Sports.

Fig. SCG20.9 Wires wrapped around circlet (IM 5044). © Ministry of Culture and Sports.





SCG20.10 Fragments of glass and myrtle (IM5046) © Ministry of Culture and Sports.



Fig. SCG20.11 Berries from wreath showing differences in colour (IM 5046) © Ministry of Culture and Sports.



Fig. SCG20.12 Half berry with grey fabric and white inclusion (IM5046) © Ministry of Culture and Sports.



Fig. SCG20.13 Leaf (IM5055) © Ministry of Culture and Sports.



SCG21 Thessaly Demetrias N. cemetery grave 206, BE 18063 Volos AM store

Provenance and context[203]: Grave 206 was a pit grave containing an inhumation (supine); the bones were very badly preserved, so it was not possible to tell if the deceased was male or female. Items 872, 874, 875 and 877 (all part of the wreath) were found at the feet of the deceased, as well as two heads of iron nails (perhaps from shoes) and a shell.

Date: Hellenistic. There are no finds to assist with dating.

Type: unclear but may be 3.

Constituents: (**fig. SCG21.1**)

- About 13 pieces thin strips of copper (stems), some of which are bent in an L shape. Three stems are bound together with white material. One piece of flat copper has been bound to a thin strip of tapered flat copper (leaf). Most of the stems are broken. There is a stringy fibrous material joining the stems and a small piece of brown material possibly leather (**fig. SCG21.2**). L of two stems (possibly complete): 26.35.
- 13 pieces of flat copper with traces of gilding, on one side only.

Plant represented: Unclear. The remains of the leaves look like myrtle but clumps of stems look like ivy.

Studied: August 2013 and March 2017

Fig. SCG21.1 Fragments of leaves and stems BE18063, Volos AM. © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG21.2 Detail of white material binding wires (USB microscope). © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



[203] Pers. comm. E.Nikolaou Jan. 2014.

SCG22 Thessaly Demetrias N. cemetery grave 386, BE 18043 and 18060 Volos AM on display

Provenance and context[204]: The wreath was found in grave 386, a cist grave (1.79 x0.88m) which contained two inhumations (superimposed). Most of bones of the first skeleton have been preserved, but the skull has been separated. Some of the bones of the second skeleton have also been preserved (male). Outside the grave, on the NW, a plate was found. Inside the grave on the NW were several alabastra and a silver kylix. In the NE was the wreath, a broken amphora and fragments of wood where the skull would have been. In the SE were a bronze lantern and an aryter (BE 16222). An iron needle or pin was found above the lantern, and iron nails along the left arm of the first skeleton, as well as two lamps (one has more than one spout), a further alabastron beneath the lekane with the first skeleton.

Date[205]: third century.

Type:4

Constituents:

- The circlet is made of wood (in three fragments), which looks like a soft wood. W:9. Overall dimensions - 19 cm long, 11.5cm across arc, but this is not a complete wreath (**fig. SCG22.1**).
- 18 clay berries with coating and gilding, mostly diam. 6.6 (**fig. SCG22.2).** The fabric is a reddish clay, and there is a white coating with what appears to be a yellow coating on top.
- 10 clay flowers with yellow coating on top of a layer of white coating and gilding. The flowers are of at least two different kinds: one with a larger diam. (9.54) and six or seven petals, the other with smaller diam. (7.08-8.12) but longer (8.84-11.09), some with a pronounced ridge. The flowers with a ridge and no modelled petals may represent a different kind of flower. **Fig. 3.28.**
- About 20 copper stems and leaves, some bound with fibrous organic material. There is also a white material on the bound wires; it is not clear what this is: it may be a mixture of calcite with an adhesive. **Fig. SCG22.3**

Plant represented: Asderaki and Rehren regard it as myrtle[206], but there are at least two kinds of bell-shaped objects and there may be a mixture of plants on the wreath. The bell-shaped objects with a pronounced ridge perhaps represent flower buds. The other kind, which is more rounded and has six or seven petals, is perhaps representing full blown flowers. The very few leaves are consistent with myrtle.

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Asderaki-Tzoumerkioti, E. 2000. 'Συντήρηση-αποκατάσταση χάλκινων επιχρυσωμένων στεφανιών από τους τάφους του νεκροταφίου της αρχαίας Δημητριάδας', in *Το έργο των Εφορειών Αρχαιοτήτων και Νεωτέρων Μνημείων του ΥΠΠΟ στη Θεσσαλία και την ευρύτερη περιοχή της (1990-1998), 1η επιστημονική συνάντηση, Βόλος*, 315-318.

Asderaki E. and Rehren Th. 2008. 'Complex beauty: the manufacture of Hellenistic wreaths' in Y. Facorellis, N.Zacharias and K. Polikreti (eds), *Proceedings of the 4th Symposium of the Hellenic Society for Archaeometry, Athens 28-31 May 2003,* 507-514, Oxford.

Studied: 30.8.2013

[204] Pers. comm. E.Nikolaou Jan. 2014.
[205] Asderaki-Tzoumerioti 2000, 317.
[206] Asderaki and Rehren 2008, 508.

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Fig. SCG22.1 Overview of wreath. BE18043 and 18060, Volos AM © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG22.2 Two berries. © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG22.3 White material on bound wires (USB microscope). © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



SCG23 Demetrias N. Cemetery, grave 393, BE 36271393
Volos AM on display

Provenance and context[207]: Cist grave 393 contained two burials. The adult female was supine, with the arms along the torso and the skull in the SE of the grave; only a few bones were preserved. The finds included: lead pyxides, clay pyxides, several unguentaria, aryters, bowls, alabastra, a clay oinochoe, a bronze mirror beneath the left forearm, gilded beads scattered in the grave (i.e. the wreath), copper fragments around the skull and above the chest (i.e. the wreath) , a copper or bronze heart-shaped fragment above the mirror, a bronze needle, clay buttons, a nut (maybe almond), fragments of a pot, a lamp, two or more shells, traces of rope or cord. Three 'omphaloi' were found outside the grave. There was a second burial beneath in the SW part of grave. Amongst the bones was part of a lekane. The bones suggest that it would have been a child. It is likely that these are the graves of a mother and child, very well furnished by contemporaneous standards.

Date: Third century. The second quarter of the third century could be suggested by the pottery, especially the ayrters and bowls (BE 16985, BE 16986, BE 16987, BE 16998, BE 17000, BE 17007 and BE 17014 that find parallels in early third century contexts including Pelinna Sarcophagus A[208].

Type:4

Constituents: (**fig. SCG23.1**)

- A lead circlet with 17 holes, measuring 17 cm across the arc. Tiny fragments of copper stems have been preserved in some of the holes. There are traces of copper wire on the back of the circlet, which had broken in two and been repaired in recent times. Distance between holes varies from 12 to 17.8mm.
- 13 large gilded clay spheres (red clay, with coating and gold) with one hole. They are not joined to the circlet. One still has copper wire stem protruding. Diam.: 11.1.
- Three medium sized clay spheres. Diam.: 7.
- 26 small spheres (red clay, coating, gold). One has two holes, but all the other spheres only have one hole. Diam.: 5.
- 25 leaves, different sizes. Some of the leaves have L-shaped wire up against the lead circlet, though they are not joined. One leaf has a hook in an S shape at one end. The wire was probably bent in different directions originally to look realistic and give a 3D impression. There is some white material on the stems, as on SCG17 (**fig. SCG23.2**). L: 37.87, 48, 48, 42.73, 41.32, 41.32, 43.75, 40.9 (two of leaves broken and gap included in above measurements). Taper from 1.5 to 4.55 (broken) and up to 7.87. **Fig. SCG23.4.**
- Seven flowers/rosettes with six petals. One flower is without petals, but has ridges, as on SCG22. They are not joined to the lead circlet. Both types of flower still have traces of gilding (red clay, gesso, gold). Flowers with six petals, diam.: 8.73, L: 11.39. Flower with ridges (no petals), diam.: 8.19, L: 9.55. **Figs. SCG23.3 and 23.4**
- Five berries not joined to lead circlet. There is a cross on the end opposite to stem indicating myrtle. L: 10.2- 11.65. Diam.: around 7.5. **Figs. SCG23.3 and 23.4.**
- Fine wire/stem diam.: 0.6.

Plant represented: Asderaki and Rehren describe the plant as myrtle, which is consistent with the remains of the leaves, which are the triangular shape associated with myrtle. The five oval objects with a tiny cross are a sure indicator of myrtle. The two different kinds of spherical objects suggest however that more than one plant is represented.

Bibliography:

[207] Pers. comm. E. Nikolaou Jan 2014.
[208] Karapanou and Katakouta 2004, 121.

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Asderaki E. and Rehren Th. 2008. 'Complex beauty: the manufacture of Hellenistic wreaths' in Y. Facorellis, N.Zacharias and K. Polikreti (eds) *Proceedings of the 4th Symposium of the Hellenic Society for Archaeometry, Athens 28-31 May 200*, 508.

Studied: 6.9.2013 and March 2017

Fig. SCG23.1 Overview of wreath BE 36271393, Volos AM © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG23.2 Detail of white material (x6.4). Volos AM © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia

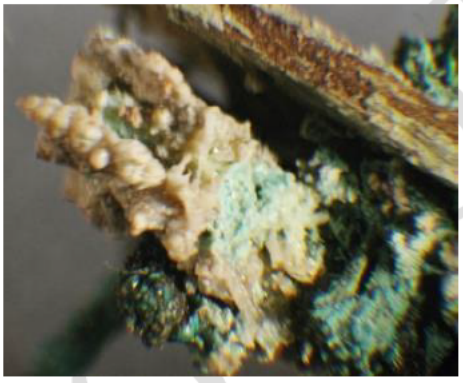


Fig. SCG23.3 Detail of flower and myrtle berry (USB microscope) Volos AM © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG23.4 Flower, leaves and berries BE 36271393, Volos AM © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



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SCG24 Thessaly Demetrias N. cemetery grave 454, BE1878, 18083 and 1877 Volos AM store

Provenance and context[209]: Grave 454 was in a pit grave which contained a single inhumation extended supine. Finds: to N of skull: an iron strigil as well as gilded clay beads, gilded copper leaves (1877 and 1878), a fragment of a vase with a handle in the shape of a flat strap handle. To the south of the skull: an iron needle. In the mouth of the deceased was a copper coin. To the right of the arm: fragments of a vase.

Date: Hellenistic

Type:3?

Constituents:
13 pierced reddish clay flattened spheres with traces of white coating and gilding. Diam. ranges from 4.3-4.9, but several spheres are 4.68. Diam. of holes consistent: 0.73. The holes must have been made with the same sized wire. **Fig. SCG24.1**
Fragments of gilded copper; 7-8 could be leaves. **Figs. SCG24.2 and 24.3.** About 13 pieces of flat copper for stems (W:0.69-0.96mm). Two pieces are still bound together with organic material (**fig. SCG24.4**). About 24 fragments of gilded copper, one of which has strands of organic brown material, probably ancient fabric. The gilding is on both sides of the copper. There are tiny parallel lines on one of piece of copper, parallel to the edge (triangular shape like an arrow head).

Plant represented: probably myrtle, judging by remains of leaves and berries.

Studied: 28.8.2013, 5.9.2013 and March 2017.

Fig. SCG24.1 Berries from SCG24 (BE1878, 18083 and 1877) Volos AM © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



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[209] Pers. comm. E. Nikolaou Jan 2014.

Fig. SCG24.2 Some of leaves and stems (BE1878, 18083 and 1877), Volos AM ©, Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG24.3 Detail of leaf x6.4, Volos AM © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia

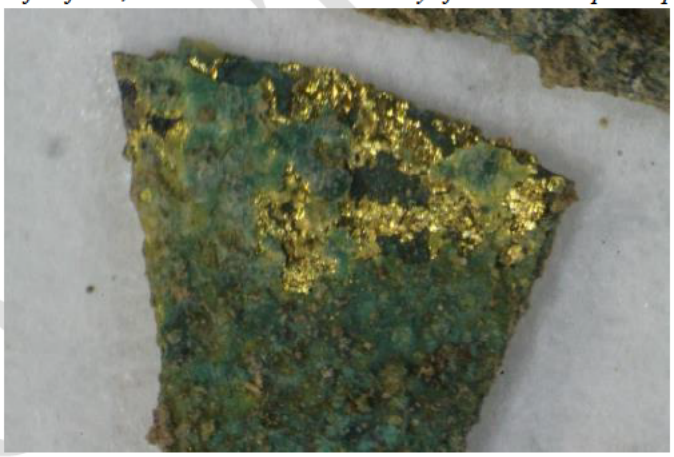
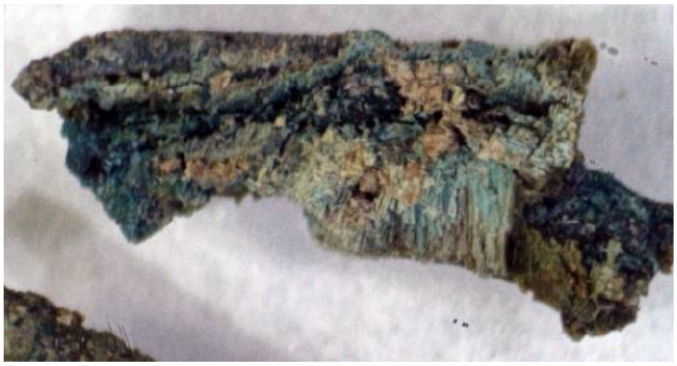


Fig. SCG24.4 Linen thread bound around stem Volos AM © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



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SCG25 Thessaly Demetrias N. cemetery, grave 499, BE18044
Volos AM store

Provenance and context[210]: the wreath was found in the northern cemetery, grave 499, a pit grave with a single inhumation. The finds included the wreath above the skull, a skyphos, copper rings, iron nails by the right foot (perhaps from a shoe) (**figs. SCG25.1 and SCG25.2**).

Date: First half of the third century?

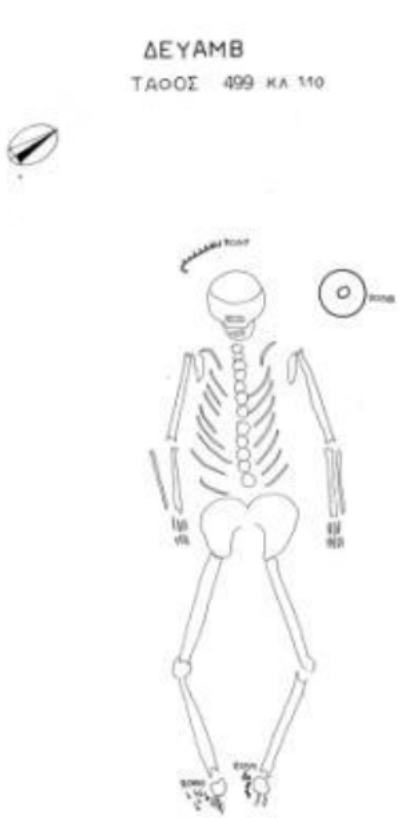
Type:3?

Constituents

- 11 fragments of lead circlet, one of which has one hole and the other two holes, which are 5.15 apart. L: 16.82, 7.07 to 8.21. The other fragment (one hole): L: 14.21, W: 6.98.
- 26 gilded ceramic berries. Modern adhesive is holding the stem on one berry. Diam. of holes in berries: 1.35 to 1.66. Diam. of berries 6 to 7.4. The gold has been applied in neat squares (**fig. SCG25.3)**
- Fragments of copper stems, square in cross section. **Figs. SCG25.4 and SCG25.5.** One large piece is in an S-shape one in an L (three stems). Wire about 1.03 wide, widening to 1.14. Branch W: 0.58, 0.72, 0.76 (2 pieces joined). Wire (in bag 8) about 0.88 W where enters hole in lead.
- Fragments of gilded copper leaves.
- 8 copper stems in bag, some bound, and many loose

Plant represented: probably myrtle.

Fig. SCG25.1 Drawing of body as found with wreath ©Ephorate of Magnesia/Hellenic Ministry of Culture and Sports/Archaeological Resources Fund



Bibliography: Asderaki-Tzoumerkioti E. 2001. *Hellenistic gilded wreaths found in Magnesia, Greece: materials study and conservation.* Dissertation (M.A.), University of London.
Asderaki E. and Rehren Th. 2008. 'Complex beauty: the manufacture of Hellenistic wreaths' in Y. Facorellis, N.Zacharias and K. Polikreti (eds) *Proceedings of the 4th Symposium of the Hellenic Society for Archaeometry, Athens 28-31 May 2003,* Oxford.

Studied: 30.8.2013, 5.9.2013 and 22.3.2017.

[210] Pers. comm. E. Nikolaou January 2014.

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Fig. SCG 25.2 Photograph of skeleton as found with wreath ©Ephorate of Magnesia/Hellenic Ministry of Culture and Sports/Archaeological Resources Fund



Fig. SCG25.3 *Gold square on berry BE18044 (x6.4). Volos AM © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia*



Fig. SCG25.4 Leaves and stems BE18044, Volos AM © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG 25.5 Stems BE18044, Volos AM. © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



SCG26 Thessaly Demetrias N. cemetery grave 688, BE18062 Volos AM store

Provenance and context: The wreath was found in grave 688, a pit grave, dimensions 2.25x1m, at a depth of 1.44m. The deceased was a single supine inhumation with the right arm lying across the body. The wreath fragments were found under the side of the skeleton. The other find was a plain pottery bowl.

Date: Third century?

Type:3 or 4?

Constituents:

- Four flowers made of gilded clay with tiny ridges on the underside (from tools?) (**figs. SCG26.1-2**). The coating is very white. Petals diam.: 1; L: about 11.53. Weight: 0.71, 0.81, 0.8, 0.82g.
- 11 berries, made of gilded clay. No traces of wire or adhesive inside the holes. The fabric is a red clay. Diam.: from 6.4 to 6.8. Weight in grams:0.29 (3 berries), 0.27 (2 berries), 0.26, 0.24, 0.3, 0.25, 0.22 (2 berries).
- Two fragments of lead circlet.

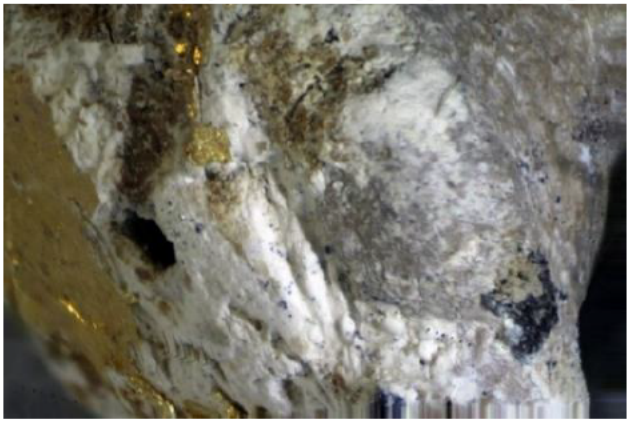
Plant represented: unclear.

Studied: 30.8.2013 and March 2017

Fig. SCG26.1 Four gilded flowers with white coating, BE18062 Volos AM
© Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG21.2 Detail of flower (x6.4)
© Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



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SCG27 Thessaly Demetrias N. cemetery grave 924, BE 18065 Volos AM store

Provenance and context[211]: Grave 924 a pit grave, contained a single inhumation supine. The finds included a lamp and fragments of an unguentarium but they do not necessarily belong with the skeleton. Inside the grave were fragments of gilded wreath on the head and fragments of an iron strigil.

Date first half of third century? (based on pottery lamp[212]).

Type: 3?

Constituents:

- Two fragments of lead circlet; one has two holes, the other has four and the remains of a fifth. Two of the holes have copper wire still inserted and some fibrous material. There is no gilding on the lead. L: 38.95, W: 7.17. Fragment with two holes, W: 1.44. Second fragment with four holes L: 38.95, W: 6.56. 4 holes, diam.: 1.44 and 1.04. **Fig. SCG27.1**.
- Three pieces of corroded iron (probably from strigil).
- 14 gilded spherical berries. Traces of cherry red (lead corrosion), yellowish coating and gold. Diam.: 3.88. **Fig. SCG27.2**.
- Fragments of gilded copper and flat wire with organic green material on copper. One fragment in an arrow shape has traces of an impression parallel to the sides and is gilded both sides (see chapter 7, page 285). Wire 0.36 widening to 2.83. **Figs. SCG27.3, SCG27.4 and 7.32.**

Plant represented: myrtle.

Studied September 2013 and March 2014.

Bibliography:

Asderaki E. and Rehren Th. 2008. 'Complex beauty: the manufacture of Hellenistic wreaths' in Y. Facorellis, N.Zacharias and K. Polikreti (eds) *Proceedings of the 4th Symposium of the Hellenic Society for Archaeometry, Athens 28-31 May 2003*.

Fig. SCG 27.1 Fragments of lead circlet and iron (from strigil), BE18065 Volos AM

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[211] Pers. comm. E. Nikolaou January 2014.

[212] Possible parallels for the lamp are Nikolaou 2004, pl.9 d and e, which has same angular shape and grooves on top of lamp (Attic type 29A-B). In Athens these lamps would be dated from the last quarter of the 4th to the second quarter of the third; in Veroia (Macedonia), the type persisted until the 2nd c. Examples from Pherai have been dated to the second quarter of the third.

Fig. SCG27.2 Berry with yellowish coating (x6.4)
© Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG27.3 Fragments of leaves and stems BE18065, Volos AM ©Hellenic Ministry of Culture and Sports/Ephorate of Magnesia

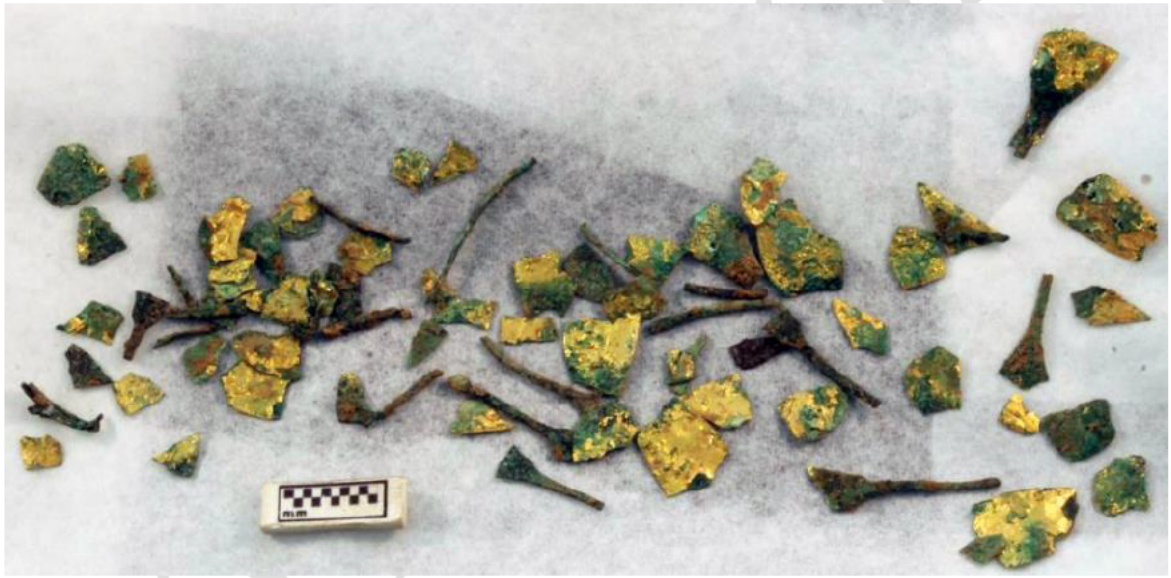
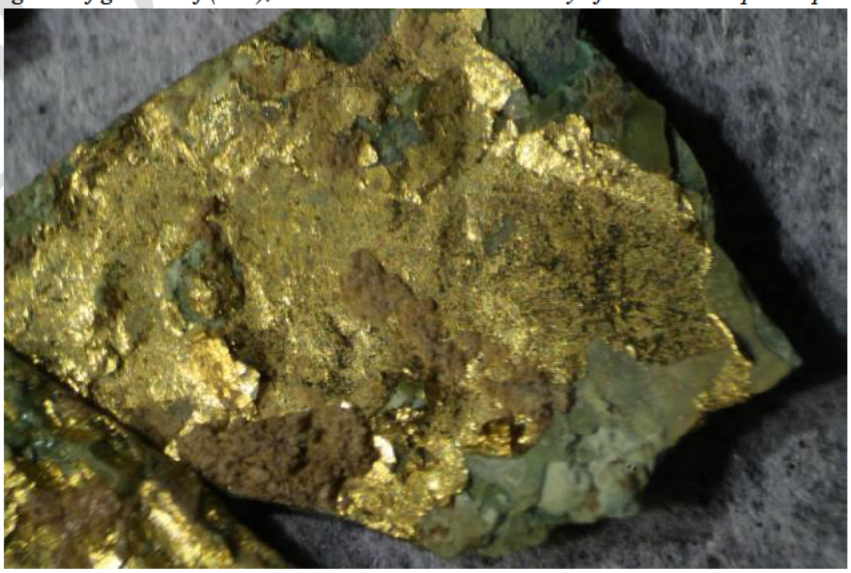


Fig. SCG27.4 Fragment of gilded leaf (x6.4),. Volos AM © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



SCG28 Thessaly Demetrias N. cemetery trench 6 level 6, BE18071 Volos AM store

Provenance and context[213]: trench 6, level 6 (depth 1.56m). The wreath fragments were found with what was probably the head of an iron nail.

Date: Hellenistic.

Type: 3?

Constituents

- Two strips of lead from the circlet, one of which has a hole for a stem. Larger, W: 7.31, L: 43.56, depth: 0.84. Smaller strip, L: 30.91, W: 6.19. There are traces of green material on the longer strip. The hole has a cherry red colour, mixed with a greenish colour (products of lead and/or copper corrosion). The lead has been joined in recent conservation.
- A bag has a copper leaf and two strips of wire. Leaf, L: 36.38 including wire stem.
- One curved piece of wire, which may have held berries. Arc measures 10.63. Wire W: 0.88. **Fig. SCG28.1.**
- One small piece of copper leaf gilded on one side, 5.32 x2.68.
- One small piece of wire, W: 0.62.
- Copper leaf, L: 36.28 including stem for attachment at end.
- Three strips of copper and one small piece of gilded copper.

Plant represented: probably myrtle, from the fragment of leaf.

Studied: 29.8.2013 and 21.2.2017

Fig. SCG 28.1 Fragments from wreath BE18071 Volos AM.
© Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



[213] Pers. comm. E. Nikolaou January 2014.

SCG29 Thessaly Demetrias N. cemetery trench 6 level 8, BE 18077 Volos AM store

Provenance and context[214]: Trench 6, level 8, held the remains of a skull bound with fragments of a gilded wreath.

Date: Hellenistic

Type: 3?

Constituents:

- Four pieces of lead, one of which has two holes, two have one and one none. The wire stem is still in place through three of the holes. Lead W:6.92. Empty hole diam.: 1.62. The wire which is still in the hole has diam.: 0.77. Wire in lead which has 2 holes has diam.: 1.17. **Fig. SCG29.1.**
- 12 pieces of flat copper, triangular shaped. Copper leaf, L: 36.28 including stem for attachment at end; three strips of copper and one small piece of gilded copper. Traces of organic green material on longest strip of copper (ancient glue to hold gold?). One piece of wire has white thread, which becomes green where it touches the copper. A group of wires has fibrous material. The copper is of varying widths c.1.5 in middle to 3.9 at end. On the fragments of copper, the maximum L of a side is 9.34. A piece of copper going through a hole in the lead measures 22.32 up to the bend in L, then 9 after the curve of the L shape. A second piece of copper is approximately the same size. A third piece measures 22.38 up to the bend of the L shape then 14.05. Flat wire for leaves: 2 widening to 4. **Fig. SCG29.2**
- One bag with pieces of gilded copper.
- One bag with piece of L shaped copper.
- No flowers or berries.

Plant represented: unclear.

Studied 29.8.2013 and 22.3.2017

Fig. SCG29.1 Fragments of circlet and stems BE18077, Volos AM. © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG29.2 BE18077, Volos AM. © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



[214] Pers. comm. E.Nikolaou, January 2014.

SCG30 Thessaly Omolio A, Omolio1961
Volos AM store

Provenance and context[215]: The wreath fragments were found in a cist grave in Chouliaras plot. The dimensions of the grave were: 2.06 x10.5m. The finds included, in addition to the wreath fragments, an iron spearhead and seven bronze coins (three of Kassander). At the lower level of the NE corner: a lamp and fragments of pottery, perhaps from a second burial. Above the grave were two stelai, one with the name Menekratidas/Menekrateios and the other Easikrateia. Easikrateia could be a misreading of Pasikrateia, a name which appears in Sicily as well as Asia Minor[216]. The lettering seems to be dated to first half of the fourth century, so the stelai predate the burial[217].

Date: early third century, judging by the coins of Kassander.

Type: unclear

Constituents:

- Six or seven gilded copper fragments of myrtle leaves.
- Wire stems (nine fragments). Fine wire square in cross-section W: 0.7 widening to 3.22 on leaves. Traces of gilding.

It is not completely clear that the wreath fragments found in the cist grave described by Theocharis are those now in Volos Museum described above but it seems likely, given that the fragments of the wreath at Omolio (B) disintegrated when excavated[218], although the surviving fragments described above are also very fragile.

Plant represented: The few leaves which survive have the wider part towards the petiole, allowing the identification as myrtle.

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Robert J. and L. 1951, 'Revue des études grecques', *Bulletin epigraphique*, 64, 119-216.
Theocharis D.P. 1963. 'Omolion' *A.D. 17 Chron.*174-179.

Studied: August 2013

Fig. SCG30.1 Fragments of wreath. Omolio 1961, Volos AM
© Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



SCG31 Thessaly Pelinna Sarcophagus A

[215] Theocharis 1963, 178.
[216] Robert 1951, 122.
[217] Theocharis 1961/2, 178.
[218] Miller 1979, 56.

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Larissa AM store

Provenance and context[219]: The wreath fragments were found in a tumulus 15m in diam. and one metre high in the southern cemetery of Pelinna, in sarcophagus A containing a female inhumation and a bronze lebes with the remains of an infant at her feet. The internal dimensions of sarcophagus A were: 1.90x0.64m, depth 0.88m. Outside sarcophagus A, on its stone cover slab, were two black glazed skyphoi without handles, a broken skyphos, a feeder and a figurine of an actor representing Dionysos in comic form (**fig. SCG31.1**). A portion of the body of the two skyphoi had been cut and abraded to form an egg [220]. Inside the grave was a bronze kados with the remains of a child described by Tziaphalias and Karapanos and Katakouta as 'newborn'[221] but by two other scholars, who had talked to Tziaphalias, as a young child[222]. Other objects found in the grave included a perfume bottle, two aryters, three more skyphoi, a feeder, two gold hair spirals shaped like a snake, a gold danake in the mouth and a bronze coin of Antigonus Gonatas. One lamp had been placed inside an aryter, in accordance with Macedonian custom[223]. The wreath was found on the woman's head and two gold ivy-shaped leaves were on her breasts[224]. Tziaphalias describes the wreath as having a lead circlet) wrapped by a very fine chain, and as having gilded berries, joined to the circlet with 'gold' wire. He continues: 'in the middle of the necklace there was attached a bright jewel with a triple chain and flowers, which had fallen and decorated her forehead' (**fig. SCG31.2**). It is not clear that the pendant was ever part of the wreath and it is more likely to be a separate item. The pyre contained bone buttons from the clothes. Tziaphalias 1992, pl. 27 shows far fewer berries than are kept with the fragments of the wreath described as being from sarcophagus A. This, combined with the fact that iron fragments are kept with the copper wreath fragments described below, suggests that some of the finds from Sarcophagus A and B might have been combined, since a strigil is said to have been found in Sarcophagus B but not A.

Date[225]: second quarter of the third century.

Type: 3?

Constituents:

Box 1.

- 44 berries with white coating and traces of gilding (**figs. SCG31.3 and SCG31.4**). They are made of darkened clay fabric. There are possibly traces of tool marks on two (parallel lines) and traces of gilding on the coating. Each berry has a single hole and a slight flattening on the opposite side to the hole. There are traces of copper wire in hole of several berries and there is possibly gilding on the wire in a hole in one of the berries. Diam. ranges from 6.58- 8.8; diam. of holes: 1.2, 1.27.
- Two beads with 2 holes. Diam.: 3.35, 4.08. Diam. of holes: 1.17, 1.4.
- Three large teeth. One is shiny and slightly green (from copper corrosion), another has brown outer material and green copper corrosion inside. A third is more deteriorated and has not been cleaned. L: 22.1 (2 teeth) and 20. These are human adult teeth with roots[226] and are worn.
- Two smaller teeth, which are the teeth of an infant, not at all worn[227] (**fig. SCG31.3**).
- Four fragments of soil which could have been inside the teeth.
- Wire stems. W: up to 1mm.
- Tiny fragments of gold strips, perhaps from clothing.

Box 2. **Fig. SCG31.4**

[219] Tziaphalias 1992, 134-138.
[220] Karapanou and Katakouta 2004, 123.
[221] Karapanou and Katakouta 2003, 120
[222] Tsatsanouglou and Parassoglou 1987, 3
[223] Parker and Stamatopoulou 2004, 19, n.60.
[224] Parker and Stampatopoulou 2004.
[225] Karapanou and Katakouta, 2004, 122.
[226] M Wylie, dentist, advised from a photograph that the teeth were molars and incisors of an adult, very worn with poor hygiene.
[227] M. Wylie and Dr Th.Antikas advised from a photograph that these were the teeth of a young child (milk teeth), which had no wear so had possibly not erupted. They are not however the non-erupted teeth of a neonate.

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- 14 pieces of lead; four of the fragments have holes. There is a slight ridge along the top and bottom edges on most of the strips, except for two which are broken. There is a slight curve in the lead to fit the head. It looks as if it was pierced from the front as there are slight ridges on the back. One piece with four holes has two vertical cracks; others have broken on the line of holes and/or curvature. Holes, diam. ranges: 1.8, 2.6, 1.26 (last still has copper inside). Distance between holes (centre to centre): 11.24, 10.16, 12.6. Broken hole 9.8. Distance between the holes on the piece that has between one and two holes: 15.76 and 11.69 to broken hole.
  Fragment with four holes, L: 40.52, W: 5.99. One piece has two holes and remains of one further hole, L: 39.7, W: 5.99. One piece with one hole and perhaps remains of one further, L: 23.3, W: 6. One piece with one hole and remains of a further hole, L: 31.4, W: 6.3. One piece with one hole and perhaps remains of two, L: 28.5, W: 6.68. One piece with remains of two holes, L: 13.06, W: 7. Other smaller pieces: 25.98x5.58, 28.08 x 6.18, 11.74x6.38, 9.01 x 0.07, 8.24x6.3, 27.83x6.9.
- Total L of fragments of lead: 28cm
- Copper wires on front; L: 5.
- Pieces of fine gold thread in the box; diam. of gold: 0.1 or even less.
- One piece of soil
- One piece of bone.

Box 3

Fine gold wire, tangled up. Bundle about 40 x 14.8 x 11. (**fig. SCG31.5**).

Box 4

- Four fragments of dark material – iron. Perhaps from a strigil.
- About 21 pieces of copper including one in shape of a semicircle. One has a tiny tube. It is not clear whether the copper fragments were part of the wreath. They are irregular shapes, irregular sizes and very corroded. The biggest, which is not flat, is about 12.7 x 13.7. Another is round and about 13.7 in diam. – it could be the boss from the centre of a pendant. Two of the fragments are flat on one side. One measures 14.79x6.23 and could possibly have lain on lead. The piece of copper with the tiny tube has a hole approximate diam. 1.8 which would take a wire. Remains of a tooth.
- Six rings, one not absolutely complete. Diam. outer edge to outer edge: 9.07, 9.23, 10.61 (with soil or corrosion), 9.93, 9.37, 9.04. Brown colour, but the metal at the break looks white, and it may be silver as it does not seem heavy enough for lead. There is green corrosion on one ring, but not on the others. The wire of the rings has ridges, and it looks as if it was made from drawn wire. If so, it was probably made by drawing through stone beads[228]. Trace of solder where the metal was joined. Some soil is still attached to some of the rings.
- One larger ring diam.: 16.62.
- Tiny fragments of gold

Plant represented: Not possible to tell, but berries could be myrtle or ivy.

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Studied: September 2013 and March 2014.

[228] Ogden 1982, 48.

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Fig. SCG31.1 Some of pottery found outside Sarcophagus A: actor of Dionysos and skyphoi with egg shapes, Larissa Diachronic Museum © Hellenic Ministry of Culture and Sports



Fig. SCG31.2 Gold pendant. From Tziaphalias 1992, 110 ©Hellenic Ministry of Culture and Sports/Archaeological Resources Fund

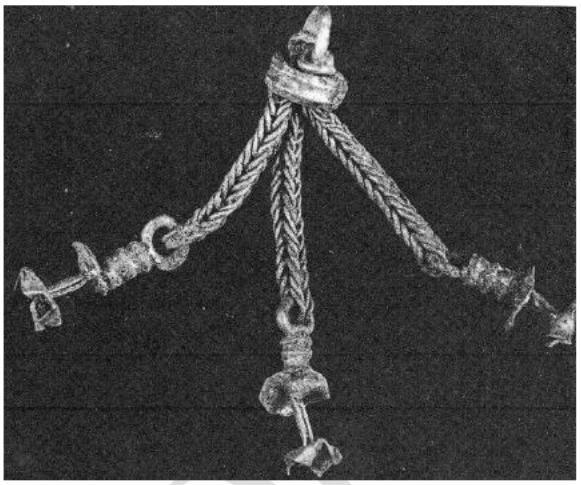


Fig. SCG31.3 3 Spherical berries, Diachronic Museum of Larissa © Hellenic Ministry of Culture and Sports



Fig. SCG31.4 Detail of berries, Diachronic Museum of Larissa © Hellenic Ministry of Culture and Sports



Fig. SCG31.5 Infant's teeth. The larger teeth behind on the left are adult, Diachronic Museum of Larissa. © Hellenic Ministry of Culture and Sports



Fig. SCG31.6 Fragments of lead circlet Diachronic Museum of Larissa
© Hellenic Ministry of Culture and Sports



Fig. SCG31.7 Material from Sarcophagus A (as presented to author for study) Diachronic Museum of Larissa
© Hellenic Ministry of Culture and Sports



SCG32 Thessaly Pelinna Sarcophagus B
Larissa AM store

Provenance and context[229]: the wreath fragments were found in a tumulus in the southern cemetery of Pelinna, sarcophagus B (see SCG31). In addition to the wreath fragments, sarcophagus B held the inhumed remains of a man with an iron strigil. The wreath is described as consisting of a lead circlet, gold chain and gilded clay berries, and as having the same shape as the wreath in Sarcophagus A. Tziaphalias describes the two as very similar[230].

Date[231]: second quarter of the third century (dated by similarity to wreath from Sarcophagus A).

Type:3?

Constituents:
Tissue paper holding fragments (1) **(fig. SCG32.1)**

- Fragments of bone (human, probably from skull)
- Tiny gold wires; diam.: 0.31-0.44, which could possibly have a slight twist.
- Gilded copper fragments of leaves (uncleaned) (**fig. SCG32.2**). The leaf fragments look like myrtle and are gilded on both sides. Largest leaf W approximately 9.6, L: 19.
- Many copper stems made of two pieces of rounded wire twisted together, some of which have traces of gilding and further fragments of copper wire (stems). Some are square in cross section, W: 1.05. Rounded wire diam.: 1.10, which in section looks like a *C* (**fig. SCG32.3**). This is wire which has probably been hammered and folded. There is a slight bend in some of the wires so they can pass through through holes in circlet. About six wires are still bound together, with the original thread.
- One piece of lead circlet with wire stems protruding through it.

Tissue paper holding fragments (2): mainly earth but a few fragments of wreath and a few fragments of plaster (one tiny piece has pink colour, a larger piece is white).

Box labelled 44 **fig. SCG32.4**

- 83 uncleaned berries, round or oval. Some still have copper in the holes and have a coating and traces of gilding (**fig. SCG32.5**). One is broken down the middle with remains of a copper stem inside. The stem goes almost right through the berry. Diam.: 5.08 to 5.57.
- Five beads, with two holes and a slightly different shape from berries, and also smaller.

Plant represented: probably myrtle, judging by the remains of leaves and berries.

Bibliography:
Karapanou, S. and Katakouta St. 2004. 'Ευρήματα από τα νεκροταφεία του Πελινναίου' in *Στ. Επιστημονική συνάντηση για την ελληνιστική κεραμική Βόλος, 17-23 Απριλίου 2000*, Athens, 111-130.
Tziaphalias, A. 1992. 'Αρχαία Πέλιννα Απόπειρα αρχαιλογικής γνωριμίας', *Trikalina* 12, 87-138.

Studied: March 2014.

[229] Tziaphalias 1992, 137.
[230] Tziaphalias 1992, 137.
[231] Karapanou and Katakouta, 2004, 122.

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Fig. SCG32.1 Fragments of wreath (leaves and stems) from Sarcophagus B, Diachronic Museum of Larissa. © Hellenic Ministry of Culture and Sports



Fig. SCG32.2 Leaves and stems, Diachronic Museum of Larissa © Hellenic Ministry of Culture and Sports



Fig. SCG32.3 Detail of stems (USB microscope), Diachronic Museum of Larissa © Hellenic Ministry of Culture and Sports



Fig. SCG32.4 Berries, Diachronic Museum of Larissa © Hellenic Ministry of Culture and Sports



SCG33 Thessaly Pherai
Volos AM store

Provenance and context[232]: Thymarakia Tumulus, grave 18. The wreath was found in a cylindrical ossuary. There is no reference to any grave goods in the excavation report but the museum label says that the wreath was found with a strigil.

Date[233]: mid-Hellenistic

Type:7?

Constituents:

- Three pieces of wooden circlet, put together to form a wreath (**fig. SCG33.1 a and b**). The stems have been placed in the middle of the wood, where it has split. It is clear that this was where the stems were originally because some of the holes remain (**fig. SCG33.2**). One end of the circlet has been scorched by the pyre. W: 11.33.
- Remains of 19 leaves, mainly in fragments. From the one complete leaf we can see that they are oak. The veins are clearly visible, with ridges on the upper side, under the gold and some are curved to give a good impression of oak. The leaves were probably only gilded on the upper side (it is difficult to see because of the way the material has been mounted in conservation). The leaves and stems are separate, with the stem lying under the leaf, which has probably been soldered to the leaf, though it was not possible to turn over to look. The leaves have small semi-circles, like half an eyelet, to imitate the shape of an oak leaf, where pins now hold the leaves in position on the support (**fig. SCG33.3**). Maximum W of leaves: 22.75, 20.36, 20.01, 23.86. Tiny leaf W: 16.29. Semicircles to imitate oak on edge of leaves diam.: 2.1.
- 48 strips of copper remain on the circlet, originally supporting berries or leaves. The stems are made of square or rectangular wire, and in one or two cases a ridge can be seen in the middle of the wire. One of the wires has a flattened end, which was originally fastened to a leaf. Some of the wires are now bent in an S-shape, or otherwise curved, to create a 3D effect for the wreath. As the leaves were apparently only gilded on one side and the acorns are flat on the lower side it seems that the wreath was intended to be seen from one side only. Diam. of wires: 1.26 – 1.44, 1.31 widening to 2.19 (on small leaf).
- Remains of 22 acorns, many of which still have traces of gilding (**fig. SCG33.4**). The acorns have a coating on them, which is white or yellowish, and the clay underneath is brown or reddish or blackened by the pyre. The acorns have a flat back and were probably intended to be this way, rather than with two halves stuck together. They are all approximately the same size, although there are slight variations particularly when the tip is broken, and they must have been formed in a mould, as the cup holding the acorn is identical on each object. Fingerprints can be seen on one of the charred acorns, on the smooth surface on the back, so the finger would have been used to press the clay into the mould. The acorns have 10 dimples on the cups, which are in two rows and are identical. Traces of gold remain on the acorns, so the temperature of the fire must have been below the melting point of gold (1064°C). Traces of something brown remain on two of the cups, and it is possible that the cups were not originally gilded but painted. Some of the acorns look as if they may have been coloured with ochre. Acorns L: 22.07, 22.87, 24.1, 22.1, 22.5, though in some cases a little chipped at the painted end.
- The holes for the wire stems have been carefully formed and in one or two cases are rectangular, to take the rectangular wire (and indeed perhaps the wire was used to make the holes). Some of the holes are a little large for the stems. Although no coating was visible on the leaves or the stems, a coating could be seen under the microscope.

[232] Adrymi-Sismani 1983, 40.
[233] Adrymi-Sismani 1983, 38.

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- Rectangular hole in acorn 2.01x 1.67.

Plant represented: oak.

Bibliography: Adrymi-Sismani, B. 1985. 'Τύμβος Φερών' *AAA* XVI (1983), 23-42.

Studied: 15.1.2014.

Fig. SCG33.1a Left-hand fragment of circlet with acorns and leaves from Pherai © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia

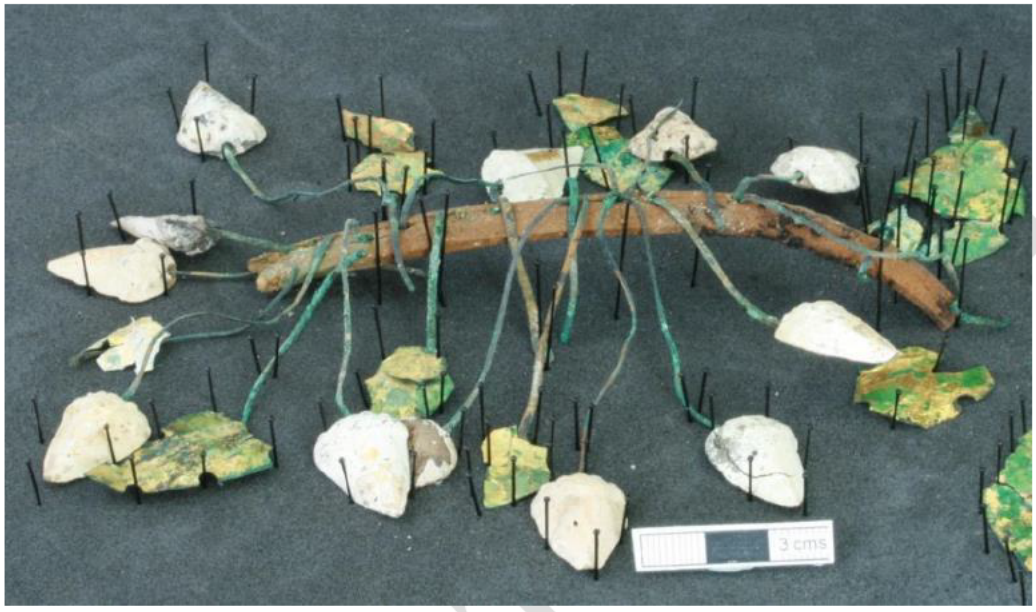


Fig. SCG33.1b Right-hand fragment of circlet with acorns and leaves from Pherai © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG33.2 Stems inserted into middle of circlet from Pherai © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG33.3 Detail of leaf showing punched semicircle and join with stem from Pherai © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia

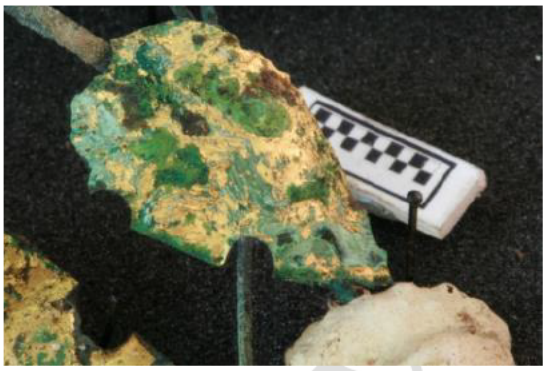


Fig. SCG33.4 Acorns and leaf from Pherai © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG33.5 Detail of back of acorn from Pherai © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



SCG34 Thessaly Phthiotic Thebes, BE476178
Volos AM store

Provenance and context[234].: The grave is from the SE necropolis, KTEO trench 2, grave 9. It is one of many graves found to the SE of Phthiotic Thebes near the modern road connecting Volos and Almyros[235]. Two skeletons were found in grave 9; it was not possible to tell from the bones whether the individuals were male or female. The other finds included two lamps, two unguentaria, pottery, and a roundel with the Macedonian star as well as three rings: it is not clear whether they were part of the wreath or not.

Date: late third century.

Type:3?

Constituents:

- 79 spherical berries with dimple, a yellowish coating and traces of gold. **Fig. SCG34.1**. Diam.: 5.53-5.57. Weight 0.18, 0.14 and 0.16g.
- One bead with two holes.
- Copper fragments.
- Three rings with ridges. Diam.: outer 8.65, inner 5.91.
- Fragments of white material, possibly coating (not heavy enough for lead).
- Tiny fragments of gilded copper leaves, gilded on both sides.
- Two groups of three tiny wire stems bunched together, one of which has fragments of thread. Remains of 3 S- shaped pieces.

Plant represented: the small size of the copper fragments does not allow secure identification.

Bibliography:
Alexandrou St. and Almatzi K.2008 'Νοτιοανατολικό νεκροταφείο Φθιωτίδων Θηβών in A. Mazarakis Ainian (ed.) *Αρχαιολογικό έργο Θεσσαλίας και Στερεάς Ελλάδας, 2. Πρακτικά επιστημονικές συνάντησεις Βόλος* 16.3-19.3.2006, 329-338.

Studied: September 2013.

Fig. SCG34.1 Berries BE476178, Volos AM © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



Fig. SCG34.2 Three rings, fragments of leaves and copper stems BE476178, Volos AM © Hellenic Ministry of Culture and Sports/Ephorate of Magnesia



[234] Pers. comm. M. Alexandrou, Sept. 2012
[235] Alexandrou and Almatzi 2008, 331.

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SCG35 Thessaly Pilaf Tepe 12081
NAM Athens store

Provenance and context[236]: The wreath was found in a tumulus at Pilaf Tepe and excavated by. Edmonds, who dug here as a Prendergast Scholar for the British School at Athens and published a brief account of the excavations, but unfortunately no records of the excavation remain in the School's archives[237]. The tumulus is situated on the top of a hill on the ancient road between Pherai and Pagasai (modern Volos). The remains of a ram were found 3.3m from the top with fragments of pottery in a grave specially prepared for it. The wreath was found in a separate grave in the tumulus. The wreath remains which are under study must be the ones mentioned as being around the rim of the silver situla decorated with a head of Herakles (Athens NAM 12079), which was placed in a *theke* in the centre of the mound[238]. Other objects described by Edmonds as wreaths were probably bands/diadems placed on a block of wood; the function of these objects is not clear, but they are made of very fragile material and look similar to material found in Tumulus II or III at Pergamon, shown with a block of wood and excavated by Jacobsthal[239]. Other finds included four gold diadems, three of which were made of two plain elongated triangular strips of gold tied together in a knot (one with a red stone set in a small gold rosette at the knot), an unguentarium, parts of a cup, a clay lantern and a clay lamp.

Date: Second quarter of the third century (by reference to lamp, dated c.270-250BC[240]).

Type:3

Constituents: (**fig. SCG35.1)**

- A circlet made of strips of lead and of wood lying behind the lead (**fig. 3.29**). A piece of wood towards the rear of the wreath is clearly modern and bears a drawing pin, from the time of the restoration. The lead has eight holes, not an equal distance apart and four fragments of wood with six holes, one of which is pierced through modern and ancient wood. One of the strips of lead is 10cm long. The wood has definite horizontal ridges and seems to be softwood. It has probably been planed to make it thin. There is a trace of gold on the wood near the break. There is some white corrosion on the wood. Lead W: 5.65 and depth: 1. W of wood 10.6, depth. 2.3. Overall dimensions: about 18 cm in diam.
- 40 spherical berries made of clay with a coating and gold leaf which look like ivy berries (**fig. SCG35.2**). All the berries have a ridge; almost all are mounted on modern wire held in with adhesive. Diam. of berries: 6.76, 7.34, 7.11, 7.34 (several).
- Three bunches of grapes hanging on wire, which have no coating or gold and which were made in a mould as they have a vertical join. One bunch of grapes has an impression in the clay, probably from a tool used to press the clay into position in the mould. Another has an iron loop, which is fairly tightly held, and no sign of adhesive attaching it. All the bunches of grapes are slightly different, but they could be from same mould (**fig. 3.29**). Dimensions of the grapes, from right: bunch of grapes 1 L 19.14, W 14.2; bunch 2 L 20.9, W 14.3; bunch 3, L 21.8 and W 14.2.
- Four flowers (rosettes) of clay hanging on wire stems (**fig. SCG35.2**); clay has spread down two of the wires (the clay could be modern although the stems are old) and there is an impression on one of the rosettes from organic material. Each rosette has 21 petals in a spiral shape. One of the flowers has been stuck to ancient copper wire with modern adhesive. Diam.: 14.65.

There are at least four sorts of wire on the wreath.

- Ancient wire, flat or strip twisted, green from copper corrosion.
- Wires which are round and brown, with a copper coating, from recent restoration.

[236] Edmonds 1900, 22.
[237] Pers. comm. Mrs A. Kakissis, archivist at the BSA, August 2013.
[238] Edmonds 1900, 24.
[239] Jacobsthal 1908.
[240] Dated by M. Stamatopoulou, pers. comm. May 2014. A parallel is listed by Nikolaou 2004, 49, pl.5.

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- Iron wire used to support some of the small berries.
- Very thin modern wire which was used to bind round lead and wood parts of circlet.

Some of the ancient wires were bent to go around the wooden circlet. They are square in cross-section and some appear to be bound with thread (**fig. SCG35.3**). Some of the stems have a hook to take the bunch of grapes. Six of the stems holding rosettes or grapes are ancient whereas the other four are modern. There is a piece of flat (ancient) wire on the back of circlet. One larger piece of ancient wire (2.32 wide and 1.27 deep) has remains of linen thread and ancient thinner flat wire, and also two modern pieces of wire wrapped around it. The wire is wrapped around both wider strips of wood and narrower, with no obvious gap where a double width of wood could have gone. L of stem: 28m. Ancient wire W: approximately 1mm.
12 strips of copper are wider and longer, and were possibly leaves.

Blue box with berries and rosettes (**figs. SCG35.4**)

- This material is in a more modern box, but has the same museum number as the restored wreath[241], although it could have come from a different wreath as the material bears little relation to the material on the restored wreath. Some of the berries could have come from the restored wreath, but the flowers and a bead do not look anything like the material on it.The white material on the larger berries looks like salt, as is common on archaeological ceramics
- 22 flowers with faint impressions of petals. They are similar to those on SCG22 and there are traces of gold on face of flower under dust. L: 10.89 but many are broken near the join with the stem. Diam.: 10.74.
- 11 small beads with two holes, probably not from a wreath. They are coated with a very white material. L 4.87. Weight 0.3g.
- 14 medium-sized spherical berries, with single hole. L: 7.2. Weight 0.3g.
- 71 large spherical berries with single hole. Green from copper corrosion. L: 9.5 long; diam.: 8.15. Weight 1g. None of the berries has a ridge as on the restored wreath. Three have wire protruding.

Box with very fragile material

This box clearly contains material found at same time as restored wreath: an old label has the museum number (12081) and the box itself could date from 1900. There are two types of wood in here: some obviously from the circlet, and other, very fragile material, which must be from the 'diadems' (**fig. SCG35.5**).

- The 4-5 large fragments of wood are similar to wood on restored wreath. There are long ridges on the wood 2.96 apart, 2.19, 2.19.
  Fragment 1 has two holes one of which has three pieces of wire protruding. Total L of this piece about 14cm.
  Fragment 2 has no hole. W: 3.93. Arc 11.5cm max. Depth 1.81 to 2.06.
  Fragment 3 has two holes. W: 11.01, depth: 2.89. Arc 13.3cm max.
  Fragment 4 with label has split horizontally. There are at least five holes in wood. L: about 16.5cm. W: 14.06. Upper piece W: 8.42, lower has W: 6.52. Total L about 15cm. One of the broken fragments of wood has copper wires protruding. Total L 16.5cm. 8.05 wide.
  Fragment 5 has holes with two groups of wires and is about 9.75 wide. Same W approximately as upper section of fragment 4 with two holes. The two possibly joined.
  Stem coming out of circlet 1.3 wide. S-shaped wire W: 1.16.
- Fragments of very fragile material, circular in cross-section, which is crumbling, probably the vine branches mentioned by Edmonds. There is a design in gold leaf on them. They are more curved, of a darker colour and twisted than the circlet, and more like roots consisting of fibrous materials. They do not have holes and are not part of the wreath.
- The same box contains one bead.

Small box labelled Karapanos collection: this is not from the Pilaf Tepe wreath
Small wooden box with loose pieces: this is unlikely to be from the wreath

[241] Mrs I. Dalla, conservator, moved the material to a separate box in 2008 (Dalla, pers. comm. August 2013).

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Box with copper material from the restored wreath (**fig. SCG35.6**)

- Two bound groups of wire stems (one has 14 small and one long, second has 17 small and one long).
- 33 fragments of thin ancient wire
- Two fragments larger ancient wire
- One ancient hook
- Five large fragments of leaf
- Tiny fragments of softwood
- Around 60 pieces of gilded copper, the largest of which is 11x17.38. The gilding appears to be only on one side. The curved copper pieces have gold on the inside of the curve. The edges are straight and were perhaps cut with scissors. There is green adhesive under the gold and above the copper which can be clearly seen under microscope. There is an apparent slight pattern on a leaf visible under the microscope possibly from organic material in soil. There is some fibrous material on one bunch of wires. There are no visible traces of solder where the copper and lead join. The lead has corroded and comes away easily.
- A piece of lead has a hole with a small copper leaf. Gold on a piece of lead can be seen under the microscope.

Plants represented: Restored wreath: ivy. Some of the slightly flattened spheres on the restored wreath have a ridge and others do not but all clearly represent ivy. The four rosettes represent ivy flowers with about 21 petals. There are also three bunches of grapes. The leaves are larger than myrtle leaves. This wreath is similar to M37 and SI 1 which also has some of the stems wrapped around the circlet and bunches of grapes and pointed, heart shaped ivy leaves. Its berries are identical to those on this wreath, and look like ivy berries in nature. The leaves and berries on this wreath must therefore surely represent ivy as Edmonds suggested[242].
The spherical berries and flowers in the blue box are myrtle, and not necessarily from the same wreath as the restored wreath. There may well have been two wreaths in the grave.

Scientific analysis: The leaves on HHXRF analysis were found to be copper (no tin) on both leaf fragments and wire. The gold was found to be pure with no silver. The coating on the berries in the blue box was found to have lead, calcium, and iron (probably from the fabric of the berry).

Studied August 2013 and March 2014.

Bibliography: Edmonds, C.D. 1900. 'The tumulus of Pilaf-Tepe', *JHS* 20, 20-25.

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[242] Edmonds 1900, 24

Fig. SCG35.1 Elements from restored wreath and other items, not all of which are necessarily from Pilaf Tepe. National Archaeological Museum. © Hellenic Ministry of Culture and Sports



Fig. SCG35.2 Detail of ivy berries, rosette, grapes and ancient hook. National Archaeological Museum © Hellenic Ministry of Culture and Sports



Fig. SCG35.3 Thread wrapped around ancient wire. National Archaeological Museum © Hellenic Ministry of Culture and Sports



Fig. SCG 35.5 Detail of berries and flowers in blue box (may not be part of same wreath). National Archaeological Museum © Hellenic Ministry of Culture and Sports



Fig. SCG 35.6 Fragments of leaves and group of stems. National Archaeological Museum © Hellenic Ministry of Culture and Sports



SEA1 Crete Chania M426
Chania AM stores

Provenance and context[243]: Chamber tomb A, plot Markaki and Marthoulaki, Kydonia. 16 burials were found in nine loculi in a rock cut tomb approached through a dromos and has rock-cut stairs. Each loculus contained a burial pit with a bench running round the walls, sometimes with grave gifts. 15 names were found inscribed above the entrance, which show that the graves were used for members of the same family. Chamber tomb A, where this wreath was found, was used for five burials of members of the Somvroto family. The last of the burials was that of an adult woman, probably Eupatra Pitthios. The names are Cretan[244]. The deceased were found in a pit, above a layer of sand. They seem to have been buried with some sort of fabric. The wreath was found in fragments above and below the skull of a woman, Eupatra Pitthios (**fig. SEA1.1**). The other objects found included four olpai, four figurines, fabric which possibly covered the head, a leaf (from the wreath?) beneath the head, an alabastron and a bronze mirror in a knitted straw case (πλεκτή ψάθινη θήκη). Further figurines found in the tomb (not with the wreath) are thought to be of Alexandrian provenance[245].

Date: Probably mid-third century, judging by the fact that this seems to have been the last of the family burials in the chamber[246]. Coins were found in the grave dating to the mid-third century.

Type:4

Components:

- Seven fragments of lead circlet and some tiny fragments of wood circlet. The circlet has been pierced with holes, two of which still have the copper stems. Several stems emerge from the same hole. **Fig. 4.13.** W of lead circlet: 7.06 to 8.03. Total L of fragments:14cm. L of largest wooden fragment: 11.54. W of wood fragment: 4.45.
- The stems and leaves were made in one piece. The leaves have a vein down the centre, and have been gilded only on one side. Only one appears to be complete. L of apparently complete leaf: 27.37 (**fig. SEA1.2**). W: 6.85.

  Some of the other leaves have been re-assembled. If the reconstruction is correct, the approximate Ls are as follows: L: 30.4, 33, 36,75.
- 28 stems. Two are curved in an S shape and must have originally held the berries or flowers (**fig. SEA1.3**). W of stems: 1.95, broadening out to 2.35. L: 27.25, 27.7, 22.9, 20.17.
- 19 berries, formed of flattened spheres with gold leaf still adhering to the flattened part of the berries and originally laid on in squares (**fig. SEA1.4**). They have a yellowish/whitish coating beneath the gold. Two of the berries have red impressions made by a piece of fabric (**fig. 4.14**). The original fabric has not survived, and it is the impressions which are now visible. The red colour indicates that the fabric was originally red and the fact that impressions have been made suggests that the coating had not dried when the fabric was placed against it. One of the berries has a second hole, perhaps because this was a roll wreath.
  The fabric is very close to the hole in one of the berries, suggesting that they were embedded in the fabric and that the fabric was part of the wreath. Diam. of berries: 10.2, 9.28, 10.06, 9.2, 9.16, 9.1, 10.08, 9.5, 9.12.
- Six tiny pink cones, probably intended to represent buds (**fig. SEA1.5**). They do not have holes, and the most likely means of attachment seems to have been to wrap them in fabric before attaching this to the stems. The buds appeared at first not to have any coating, and as if the paint had sunk right into the terracotta, but on closer examination it was clear that there was an intermediate layer covering at least part of the cones A meniscus can be seen from the pooling of the liquid coating, suggesting that the berries were dipped into a liquid coating, which was

[243] Markoulaki and Niniou-Kindeli 1990, 43.
[244] Andreadaki-Vlazaki 2009, 132.
[245] Andreadaki-Vlazaki 2009, 132; Markoulaki and Niniou-Kindeli 1990, 70-71, 75 and pl. 19α and β.
[246] Markoulaki and Niniou-Kindeli 1990, 98.

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either itself coloured, or that the coating was still wet when paint was applied (**fig. SEA1.6**). There are traces of fabric also on the cones. Diam. of cones: 6.23, 5.82, 6.32, 7.7. L of cones; 5.2, 6,66, 5.7.

- Five bell flowers and three fragments of at least one more (**fig. SEA1.7**). There are traces of a white material, possibly soil or plaster, on the bell flowers. There were too many accretions of this on the bell flowers for it to be possible to count the petals, but they were probably moulded. They are covered with a white coating and at least one of the bell flowers has traces of fabric, which appear to be original (not impressions). The fabric seems to be sprang, from the diamond pattern of the weave and its open shape.
- There is also a tiny fragment of fabric in one of the boxes containing fragments of leaves and stems.
- One bead in a separate bag, which was almost certainly not part of the original wreath.

The fabric on the berries and the bell-flowers may have originally been part of a roll or ring wreath, the original padding of which has disappeared. Its initial appearance could have been very much like the wreath on a figurine found in the same grave, known as "The Alexandrian Lady" (**fig. 7.5**).

Scientific analysis: The coating on the bell flowers contains aluminium, silicon, sulfur, calcium and mercury, so the original colour of these flowers was red from cinnabar. There is also mercury in the coating on the pink buds, so it would seem that cinnabar was also used for the pigment. Lead was found in the pink. The white coated berry had both lead and sulfur, suggesting that white lead may have been used as a pigment, although the lead could be due to contamination from the circlet. No silver was found in the gold and no tin in the leaves. There was some phosphorus in the bell coating and one of the cones, probably from contact with the skeleton. No potassium was found.

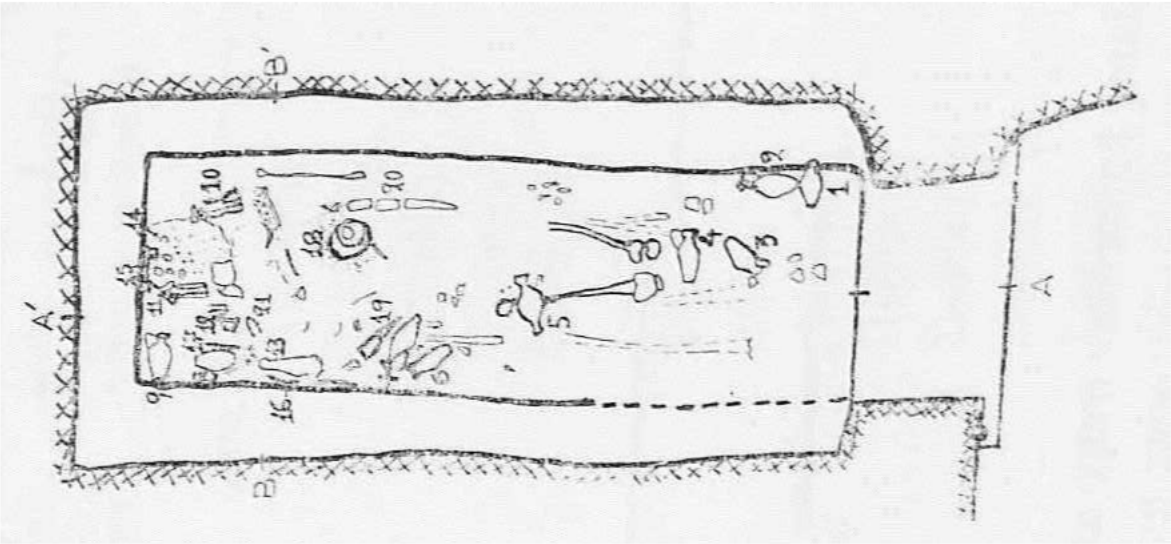
Plant represented: Almost certainly myrtle, judging by the shape of the leaves and the berries. The buds of the myrtle flower are pink.

Bibliography:

Andreadaki-Vlazaki M. (ed.). 2009 *Chania (Kydonia).*
Markoulaki S. and Niniou-Kindeli B.1990. 'Ελληνιστικός λαξευτός τάφος Χανίων' *AD* (1982) *Meletes* 7-118.

Studied: 1 December 2016.

Fig. SEA1.1 Plan of grave, showing where the wreath was found (no.14). From Markoulaki et al. 1982, fig. 24.
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Fig. SEA1.2 Virtually complete leaf and pink berry (M426) ©Hellenic Ministry of Culture and Sport, Ephorate of Antiquities of Chania



Fig. SEA1.3 Stem in S shape (M426) ©Hellenic Ministry of Culture and Sport, Ephorate of Antiquities of Chania



Fig. SEA1.5 Two of the cone-shaped pink buds without a hole (M426) ©Hellenic Ministry of Culture and Sport, Ephorate of Antiquities of Chania



Fig. SEA1.4 Two of the spherical berries with gold leaf (M426) ©Hellenic Ministry of Culture and Sport, Ephorate of Antiquities of Chania

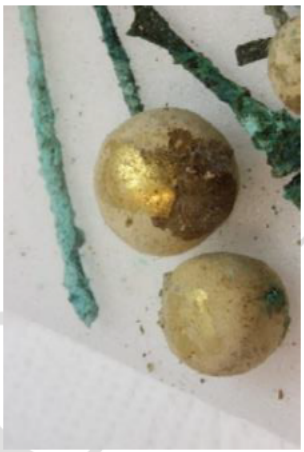


Fig. SEA 1.6 Detail of pink bud showing line of coating between ceramic fabric and pigment (M426) ©Hellenic Ministry of Culture and Sport, Ephorate of Antiquities of Chania.

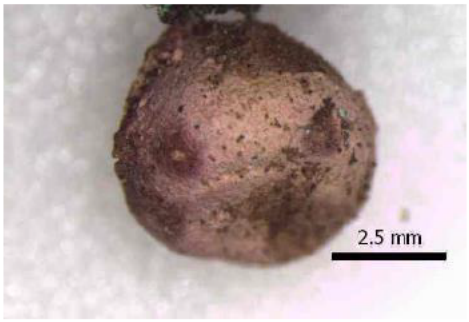


Fig. SEA 1.7 One of the bell-flowers with fabric. (M426) ©Hellenic Ministry of Culture and Sport, Ephorate of Antiquities of Chania.



SEA2 Crete Chania M472
Chania AM Part on display, part in stores.

Provenance and context: Cist grave 3, Xanthoudidi St. The deceased, thought to be female by the excavator, was buried in a supine position and a clay hydria was found on the left side of the skeleton. The accompanying finds were two clay olpai, of local manufacture, a bronze needle, an iron strigil and part of a second strigil. The wreath was found to the left of the hydria (**figs. SEA2.1**). The position of the wreath suggested to the excavator that it was probably originally around the neck of the hydria[247].

Date: Late fourth/early third century, judging by the olpai[248].

Type:2

Components:

- At least four sections of circlet are still intact. One circlet is made of lead, and another (lying on the inside, nearer the head) is made of wood. The radius of the arc on display is 18cm. Many stems are mounted on the lead circlet, through pierced holes. Some of the stems pass through both the lead and the wood circlet (**fig. SEA2.2**). In many cases, several stems (up to six) emerge from the same hole. It appears that the sections of the wreath towards the back of the head are missing, since these sections normally do not have holes, whereas all sections of lead circlet on this wreath have been pierced, although the gaps in one section are much longer than elsewhere. The overall effect is of a wreath dense with many stems, leaves and berries (**fig. 4.9)**. There is no gilding on the lead or the wooden circlet. It is of a size that could have fitted around the neck of the hydria, which was 11cm in diam.[249], but could equally have fitted on the head of the person buried in the grave. The wooden circlet is of a similar W to the lead circlet. L of lead fragments: 7.2cm, 8cm, 7.5 cm, 2.5cm. W of lead circlets: 4.65 to 5.4. Distance between holes in lead circlet: 4 to 15.22.
- The stems and leaves are made in one piece. Many of the leaves are now triangular in shape, but it is clear from the complete leaves in the box that they were all originally spear-shaped and have broken horizontally (**fig. SEA2.3**). These leaves have rounded edges and some are complete. The leaves are gilded on both sides and have a vein down the middle, but are not all the same size. Some of the stems appear to have been wound round with thread (**fig. SEA2.4**). The berries are mounted on longer stems than the leaves. L of complete leaves: 26.62, 25.88, 23.55, 20.57, 31.3, 29. Maximum W of complete leaves: 7.4, 6.85, 6.48, 7, 7.4. The L of the broken leaves on the circlet varies but is from 5.6 to 20. L of stems: 30, 37, 15.9.
- Some of the berries are on the wreath; others are kept in a separate box. They are small and clearly represent myrtle. They have a white coating, underneath the red soil (**fig. SEA2.5**). It seems that the berries are made of local clay, since the colour of the fabric of the terracotta is so close to that of the soil still adhering to the berries. L of berries: 4.78, 5.48, 6.19.

Scientific analysis: Sulfur was found in the coating of the berries, but no lead or mercury. This could well have come from the white coloured coating found on the inside of the cist grave. The other elements found in the coating were aluminium and silicon, as well as potassium. The gold was found to be almost pure, with no silver.

Plant represented: myrtle, judging by the shape of the berries and the leaves.

Studied: 1 December 2016.

Bibliography: Pologiorgi M. 1991. 'Από το κλασικό και Ελληνιστικό νεκροταφείο της Κυδωνίας', *AD* 40 (1985) *Meletes*, 162-177.

[247] Pologiorgi 1991, 167
[248] Pologiorgi 1991, 167 and 168.
[249] Pologiorgi 1991, 167.

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Fig. SEA2.1 Plan of grave. From Pologiorgi 1985, fig. 2. The wreath is shown at XII ©Hellenic Ministry of Culture and Sports, Ephorate of Antiquities of Chania/Archaeological Resources Fund.

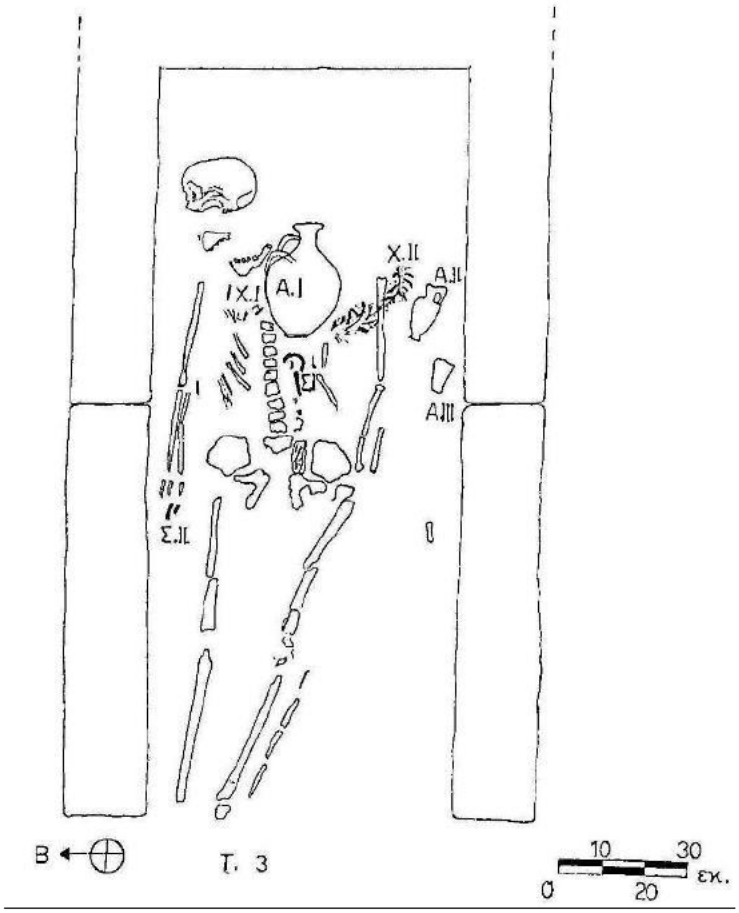


Fig. SEA2.2 Fragments of circlet (lead and wood) showing the copper stems passing through holes in both (M472) ©Hellenic Ministry of Culture and Sport, Ephorate of Antiquities of Chania.



Fig. SEA2.3 Complete leaves and berries (M472) ©Hellenic Ministry of Culture and Sport, Ephorate of Antiquities of Chania



Fig. SEA2.4 Stem with soil and what appears to be thread wound around it (M472) ©Hellenic Ministry of Culture and Sport, Ephorate of Antiquities of Chania

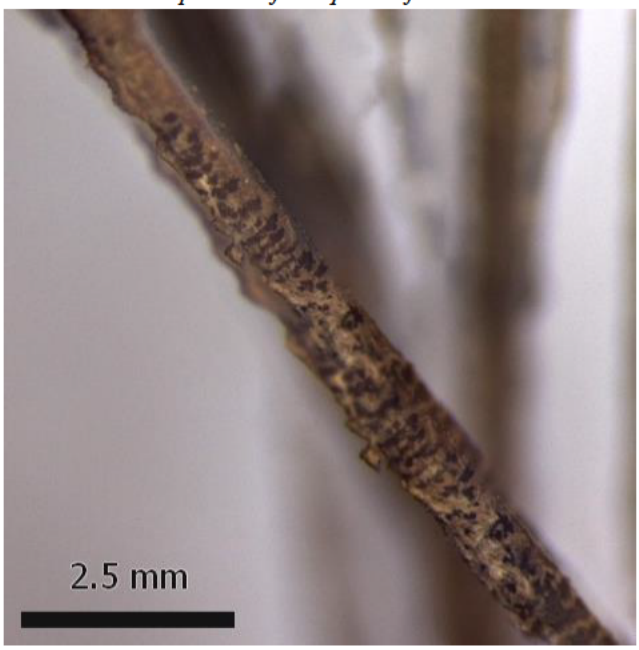


Fig. SEA2.5 Berry with coating (M472) ©Hellenic Ministry of Culture and Sport, Ephorate of Antiquities of Chania



SEA3 Crete Kommos B 95, 100, 101, 158, 281 and 293; HM 4764. Herakleion AM, on display.

Provenance and context: Most of the wreath fragments were found in a late Hellenistic dump to the south of Temple C, in layer 4, but one leaf (B293) was found in the fifth-early fourth layer of the Temple C holding construction stone chips. north of the retaining wall bordering the sanctuary court on the south[250]. This find led the excavator to give a fifth/early fourth century date for the wreath. Other material in the dump included tulip cups, unguentaria, lamps, ladles and cups/bowls dated to the first century[251]. It is not clear whether the leaf found in the late 5th/early 4th century context mentioned by Shaw (B293) has been mounted on the reassembled wreath. Shaw refers to 18 attached leaves and 13 unattached. There are 28 leaves on the reassembled wreath. The museum register refers to a total of 16 leaves, twelve of which were on the wreath and four separate. It is not therefore possible to be certain that the leaf from the late fifth century context is one of those on the reassembled wreath on display in the museum, but there is no reason to doubt that they all came from the same wreath, as stated by the excavator. Nor is there any reason to doubt the late fifth/early fourth c. date given by Shaw. This is the only complete wreath found in Greece to date in a votive context. The context suggests an early date, as do the design and ivory berries which are unique as far as is known.

Date: late fifth/early fourth[252]

Type: none

Components:
The large size of the wreath suggests that it may once have decorated a votive statue, which is confirmed by the fact that the wreath is not flexible, and is held together with rivets (**figs. 4.3 and SEA3.1**)

- The circlet is made of copper and appears to be complete. It is made of at least six sections, some held together with rivets (**fig. SEA3.1**) There are two holes at each end, at what appears to be the back of the wreath, which could have held strings to tie the wreath at the back (**fig. SEA3.2**). The circlet is square in section and appears to have been made by hammering. It is clearly larger than would fit a human head. Diam. 24.34. W of circlet: 2.39. L of sections: 9.5cm, 7 cm, 5 cm, 5 cm, 2cm, 4.5cm, 8cm, 15 cm, 22 cm. The total L is approximately 76.5cm. Diam. of hole for fastening at back: 2.5. Diam. of head of nail in rivet: 2.4.
- The leaves were mounted in pairs and single leaves to give the impression of a cluster and a naturalistic look (**fig. SEA3.3**). They are lanceolate in shape and bear no traces of gold. Their full shape is consistent with laurel and they have a central vein. The leaves are of different sizes. The shortest are not always the narrowest. L of leaves (not including stems): 35.34, 40.6, 39.6, 37.18, 38.2, 37.85, 39, 38.2, 38.1, 38.1, 38.3, 39.02, 34.54, 30.25, 36.11, 37.28, 31.92, 38.02, 38.02. Max. W: 16.16, 14.05, 14.3, 15.4, 14.7, 14.3, 13.03, 14.4, 15.34, 14.9.
- The 21 berries are made of ivory, possibly hippopotamus tusk (**fig. SEA3.4**). They have been discoloured by the copper. The copper or bronze stems pass through the berries vertically, with a tiny stub of metal at the far end from the stem, which increases the naturalistic look. The stem appears to have been split into two and hammered after the stalk was inserted into the berry. This would have increased the naturalistic look, but must have been difficult to do without damaging the delicate ivory of the berries (**fig. SEA3.4**). The berries clearly represent laurel. L of berries: 10.92, 9.08, 10.2(x3), 10.68, 8.36, 10.12 (2), 9.5, 10.18, 10.17 (x3), 10.9 (x2), 10.13 (x2). The berries are mounted on curving stems. L of stems 20-30.

Scientific analysis Six leaves were analysed, back and front, and one berry. No trace of gold was found. The leaves were found to consist of almost pure copper, with no tin. There was no evidence of any coating.

[250] Shaw and Shaw 2000, 348.
[251] Shaw 1981, 229.
[252] Shaw and Shaw 2000, 348.

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Plant represented: laurel, judging by the shape of the berries[253].

Bibliography

Shaw J.W. 1981. 'Excavations at Kommos (Crete) during 1980', *Hesperia* vol. 50.
Shaw J. 1986. 'Excavations at Kommos (Crete) during 1984 and 1985' *Hesperia*, vol. 55, 219-269.
Shaw J.W. and Shaw M.C. 2000. *Kommos IV, The Greek sanctuary.*

Studied: 29 November 2016

Fig. SEA3.1 Rivet joining two sections of circlet ©Hellenic Ministry of Culture and Sports/Heraklion AM



Fig. SEA3.2 Holes at back of wreath. ©Hellenic Ministry of Culture and Sports/Heraklion AM



Fig. SEA3.3 Pair of leaves mounted on same rivet. ©Hellenic Ministry of Culture and Sports/Heraklion AM



[253] Ibid.

Fig. SEA3.4 Detail of berries. The parallel lines of ivory can be seen clearly. ©Hellenic Ministry of Culture and Sports/Heraklion AM



Fig. SEA3.5 Detail of stalk showing split end. The stalk would originally have held a berry which has now disappeared. ©Hellenic Ministry of Culture and Sports/Heraklion AM



SEA4 Kalymnos Damos, BM 1856,0826.670, 671 and 672
British Museum store

Provenance and context: Newton excavated a grave in 1854[254] and found a small circular ornament in bronze, followed by three more bronze disks, the handle of a large bronze vase with rich floral ornaments and, at the bottom of the grave, but not more than eight inches below the surface, a bronze group in high relief in gilded repoussé, representing Boreas carrying off Oreithyia[255]. Two smaller bronze handles were also found. While sifting the earth, Newton found 'a number of small pearls and other fragments of a necklace', which led him to believe that the grave was that of a female, but this item must be the wreath[256]. He was told by a local that the grave had been opened some years before and that it had contained gold ornaments[257]. He also mentions the discovery in an account published much closer to the time of the excavation, where he refers to *two* graves[258]. The fragments of the bronze vessel were eventually acquired by the British Museum and registered under the number BM 1873,0614.1. Other items listed in the register include an iron key, nails and a silver flower.
The Register at the British Museum contains details of the wreath fragments 1856,0826.670, 671 and 672 (**fig. SEA4.1**). 1856,0825.670 is 'several strips of lead, some of them pierced with holes, and thin pieces of bronze wire, some gilt supposed to form part of a necklace'. A note in pencil underneath reads 'thin sheet (silver?) with stamped rosettes (9 fragments); shell or clay seem like object (silver?) lined with gold leaf'. Item 1856,0826.671 is described as: 'Terracotta twenty-six beads or pendants, acorn shaped' (with drawing), 'remains of gilding, L about 6/10 in'. Item 672 is described as: 'Terracotta five beads, globular. Diam. 2/10 inch' (with drawing). Alongside the entry for these three items is a note, signed by Newton, which reads 'I do not at all know whether the fragments of bronze wire formed part of the necklace. They have been gilt. One or two of them are attached to small pieces of some metal which appears to be lead. The gilt acorns formed the pendants of a necklace. Necklaces in this form are to be seen in Greek vase pictures. The fragments of gold leaf are from the bronze reliefs, on which one or two minute portions of gold remain in the hair'. Newton became the Keeper of Greek and Roman Antiquities at the British Museum in 1870 and this note was probably written at that stage. Newton's belief that the acorns were part of a necklace is probably erroneous as there is no reason why they should not have been part of a wreath; some of the gold which he thought came from the bronze hydria may also have been from the wreath. The silver flower was almost certainly not part of the wreath.

Date: end of fourth century, beginning of third? The bronze vessel is dated to c. 400-350, on the British Museum website [259], but may well be earlier than the wreath.

Type: 7?

Constituents:
About 60 small fragments of lead, one of which is labelled 1856.8-26.670, which were once the circlet of a wreath or wreaths. Some of the strips of lead have holes pierced at fairly regular intervals. If all the strips were put together, the size would be 21x13 cm, without allowing for a gap at the back (**fig. SEA4.2**) which could have formed one large wreath, designed to go around the neck of the bronze vessel. Several holes still have the remnants of thin copper wire, and two of the holes have two tiny wires protruding (diam. of tiny wires 0.6), indicating that the holes once held double stems supporting leaves or berries. The circlet has tended to break at the holes. Some are very neat and were probably punched (**fig. SEA4.3**). W of fragments of lead: 6-6.2. L of individual fragments: under 6 to over 45. Fragments of copper stems and about 10 gilded copper leaves, which are in the traditional shape of myrtle commonly found on wreaths; two groups of stems are still in fragments of the lead circlet. One stem (W: 1.4) is wrapped with a piece of wire (W 0.8), both wires being square in section rather than

[254] Newton 1865, 330.
[255] Newton 1865, Plate 15.
[256] Newton 1865, 330.
[257] Ibid, 333.
[258] Newton 1856,35.
[259] http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?assetId=220119001&objectId=461581&partId=1. Website consulted 17.10.2015

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round. Several pieces of wires are strip-twisted. There are further fragments of leaves and stems, which appear to be myrtle (**fig. SEA4.4**). The fragments of leaves (about 50) are gilded on both sides. Within the same box are a few fragments of terracotta and a small fragment of what is probably soil. W of flat wire: 0.6 to 0.8. W of strip-twisted wire: 0.97.
26 acorns contained in a box which is not labelled but must surely be 1856,0826.671, as they correspond precisely to the register entry. They are made of terracotta with a white coating, and there is gilding on the upper part. The lower part (the cup) has possibly been painted red. Most of the acorns have a single hole, although at least one appears to have two holes. The acorns bear traces of mould marks. They have a dimple at the end opposite to the hole (**fig. SEA4.5**). Diam. of hole: 1 to 1.7.
11 fragments of in a box labelled 'found with 1856, 8-26.670'. One fragment might perhaps represent an acorn or grapes, and there are possibly traces of a dimpled effect on some of the fragments. The largest fragment is hollow. It is not clear what the original object was, but it was clearly something curved. The large fragment is reddish under the dark corrosion, possibly from copper corrosion. It is not clear whether these fragments ever formed part of the wreath.
It was not possible to locate a box with five terracotta berries which might have corresponded to 1856,0826.672. They may have been the broken terracotta mixed in with 1856,0826. 670, or be the 11 fragments in the box labelled as found with 670.

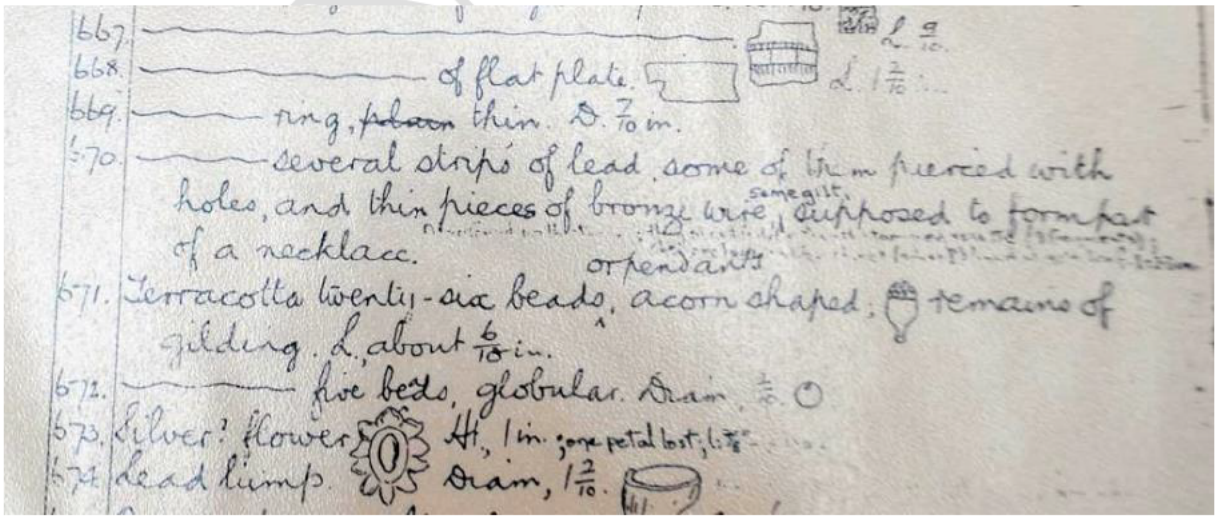
Plant represented: myrtle and oak.

Scientific analysis: The leaves were found to be made of copper, with no tin. The red pigment on the acorns could be hematite, as iron was found, but is not cinnabar, as no mercury was detected. Lead was also found in the analysis of the red.

Bibliography:
Newton C.T. 1856. 'Excavations and Discoveries at Calymnos', *Archaeological Journal*, Vol. 13(1), 14-37.
Newton C.T. 1865. *Travels and Discoveries in the Levant I*,

Studied: September 2015

Fig. SEA4.1 Extract from British Museum register showing entries 670-672 for 26 August 1856. ©Trustees of the British Museum



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Fig. SEA4.2 Strips of lead laid out in rough circle (BM1856,0826,670) ©Trustees of the British Museum

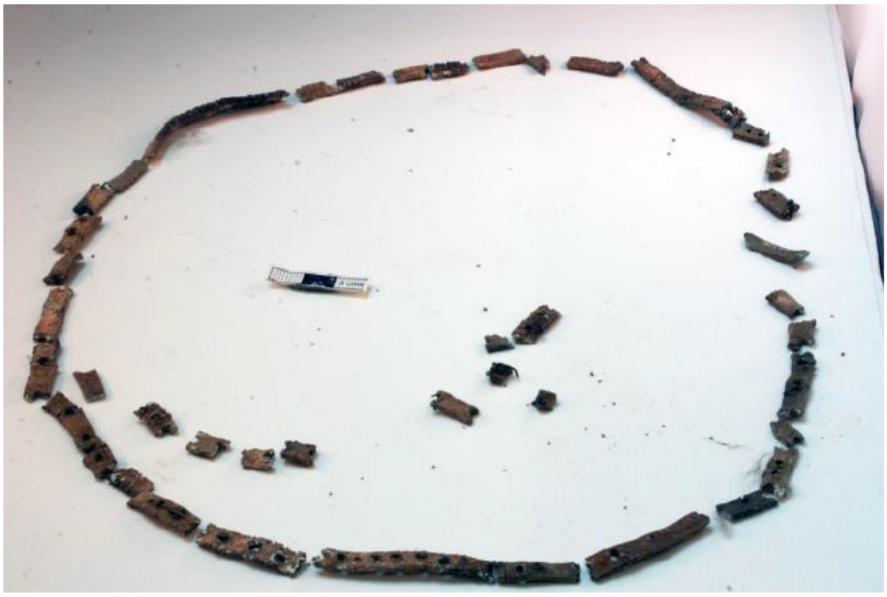


Fig. SEA 4.3 Strips of lead circlet with neat holes (eyelets?) BM 1856,0826,670 ©Trustees of the British Museum



Fig. SEA4.5 Acorns (BM1856,0826,671). There are traces of red paint on the cup of the acorn bottom left ©Trustees of the British Museum



Fig. SEA4.4 Fragments of leaf/stems and of gilded leaves, BM1856, 0826.670 ©Trustees of the British Museum



SEA5 Nisyros Grave 13 Mandraki cemetery
Nisyros AM

Provenance and context[260]: Grave 13 from the cemetery at Mandraki, on the hill of Ai Ianni. Built cist grave with inhumation excavated in October 1982[261], not intact, 6.6m from grave 1[262]. There do not appear to have been any accompanying finds other than a few fragments of an iron strigil.

Date: Probably late fourth or early third century, on the basis of its proximity to grave 1, but could be later[263].

Type: 4

Constituents[264]: **Fig. SEA5.1**.
No elements of the circlet appear to have been preserved.

- Fragments of gilded leaves, which could be either myrtle or ivy.
- 13 spherical berries of reddish clay with white coating. Diam. 7-8.
- 12 bell-shaped flowers with six petals, apparently bearing traces of gilding, which were probably made by moulding. One is still mounted on the original stem. L: 10.
- Two fragments of grapes. L:12-13.
- Fragments of stems, one possibly with traces of gilding. Max. L: 4.
- Two bunches of stems, bound with thread.

Plant represented: Could be myrtle or ivy; also vine

Bibliography:
Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου' in *AD Meletes*, vol.48-49 (1994-5), 97-132.
Philimonos-Tsopotou M. 1980. 'Νισυριακά Ι', *AD* 35 *Meletes*, 60-87.
Stambolidis N., Tasoulas G. and M. Philimonos-Tsopotou (eds) 2011. *Αγόνε Γραμμή,* 363.

Fig. SEA5.1 Fragments of wreath from Nisyros. From Stampolidis et al. 2011, 363 ©Hellenic Ministry of Culture and Sports



[260] Philimonos-Tsopotou 1980, 62.
[261] Ibid, 64.
[262] Ibid, 66.
[263] Ibid, 78.
[264] The wreath fragments have not been studied at first hand. The above description is based on Philimonos-Tsopotou.1980, 71 and in Stambolidis et al. 2011, 363.

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SEA6 Rhodes Istrios M551
Rhodes AM store

Provenance and context[265]: Istrios, Rhodes. The wreath was excavated in 1948 and seems to have been found in a cist grave which also contained red figure fragments dated to after 350 by Kaninia[266] and an alabastron (MA58) (**fig. SEA 6.1**). These items were found with a sharp pointed amphora (A876) and a bronze arytaina (M1148), although it is not clear whether the latter were found inside the grave or on its cover. A few fragments of an earlier red figure bell krater are said to have been found 'outside' the grave, including a fragment with a finely painted wreathed figure, which can be dated to the first quarter of the fourth century (**fig. SEA6.2)**.

Date: Just after 350?[267] Stylistically, the wreath appears to be earlier than the other wreath found in Istrios (SEA7) and is similar to the wreath from Kamiros (SEA8).

Type:1

Constituents: **Fig. SEA6.3**

- 15 fragments of pierced bone circlet, which in cross-section are round. The approximate diam. of the wreath as arranged in the photograph (**fig. SEA6.3**) is 13cm, but it may of course not be complete. The grooves at the ends of the fragments are probably the remains of holes which once held some of the stems where the circlet broke (**fig. SEA6.4**). Many of the holes are placed in pairs and they lie on more than one edge (**fig. SEA6.5**). The bone bears traces of a white ground beneath the gilding. Diam. of bone: 4.4. W of grooves: 1.04. Distance between holes in pairs: 1.87. Distance between holes not in pairs on one large fragment: 9.6. Distance between pairs of holes: 2.48.
- Many of the stems are gilded and are still wrapped around the bone circlet (**fig. SEA6.6**). Diam. of stems on circlet: 0.79.
- About 130 fragments of leaves which are gilded on both sides and have a central vein (**fig. SEA6.7**). The veins were probably made by hammering a piece of copper plate onto a wire. None of the leaves is complete. They are fairly full shaped at the end with the stem; their shape resembles that of leaves in a better state of preservation on other wreaths (such as SEA8) which are thought to be myrtle. The leaves were made in one piece with the stems, which appear to be fairly short, after they emerge from the twist around the circlet and were made from copper plate, trimmed at the point where the stem emerges, and the edges folded back. A join in a stem made by folding or rolling the copper plate can be seen. Some of the leaf fragments have white material, possibly a ground, under the gold. Min. number of leaves: 23 (counting those with the remains of a stem). L of leaves could be: 50, but some are smaller, judging by the W. W of leaves when emerge from stem: 2.15 to 4.2. W of vein: 0.8.

Scientific analysis: On analysis with the HHXRF, two leaves were found to contain copper, gold and iron. A fragment of circlet with the white coating was found to have calcium, iron, copper and gold.

Plant represented: possibly myrtle.

Bibliography:
Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132

Studied: 26 May 2016

[265] Kaninia 1998, 103, note 14.
[266] Kaninia 1998, 117, note 68.
[267] Kaninia 1998 gives a date of second half of the fourth to the early third (116-117).

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Fig. SEA6.1 Red figure fragments from Istrios found with M551. From Kaninia 1998, plate 27a © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund.

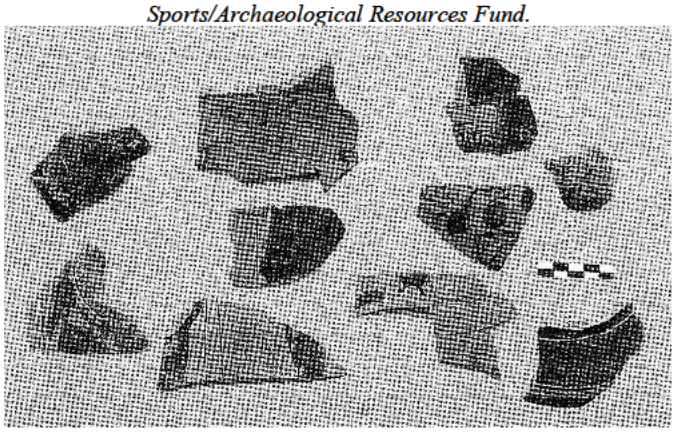


Fig. SEA6.2 red figure fragment of figure with wreath, found outside the grave. From Kaninia 1998, pl. 27b © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund



Fig. SEA6.3 Overview of circlet and leaf fragments from M551 ©Hellenic Ministry of Culture and Sports



Fig. SEA6.4 Details of grooves in circlet of M551 ©Hellenic Ministry of Culture and Sport



Fig. SEA6.5 Stem still in position in circlet (lower fragment) and fragment of round circlet (upper fragment) in section (M551) ©Hellenic Ministry of Culture and Sport



Fig.SEA6.6 Fragments of circlet showing holes pierced at different positions (M551) ©Hellenic Ministry of Culture and Sport



Fig. SEA6.7 Fragment of leaf and stem, showing folding back of metal to make stem (M551) ©Hellenic Ministry of Culture and Sport



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SEA7 Rhodes Istrios M1149
Rhodes AM

Provenance and context[268]: Istrios, during the opening of the road Istrios-Apolakkias at the southern entrance to the village. The relationship of this wreath with SEA6, also found in Istrios, is unclear[269]. Istrios is indicated on the map in **fig. 4.2**. This wreath was found at approximately the same time as SEA6[270].

Date: second half of fourth or early third century[271]. Given the similarity to the Aineia wreaths, it seems probable that it dates to the last quarter of the fourth century.

Type: 2

Constituents: The wreath has not been fully cleaned.

- Two fragments of bone circlet with pierced holes, which is preserved in two fragments that do not quite join, so is not complete. The bone is different from that on SEA6 – it is not round in cross section and is flatter and the holes have been pierced in a line (**fig. SEA7.4**). Many stems and some leaves protrude from the circlet. On the back of the wreath, the stems appear to have been formed in a loop; it is not clear whether the wires have been soldered together, joined with a calcitic material or an adhesive but strands of wire, doubled to form a stem, have been twisted together to form a loop (**fig. 4.7**). The wires/stems have been joined so that the sharp ends did not protrude at the back of the wreath. Diam. of the circlet as it stands: 16.5cm, just over a semi-circle. The original wreath must have been larger, since at least one fragment of circlet is missing. Distance between holes: 3.7, 3, 2.4. L of fragments of circlet: c. 16 and 15 cm.
- Many copper stems remain. One stem protruding at the front of the circlet, made of double wires, ends in a spiral. Another long stem ends in a part of a spiral, doubtless broken off. The stems appear to have been gilded. W of stems protruding from circlet: 0.89 to 1.16 (double wires). L of long stem ending in spiral: 42.
- 44 fragments of leaves. The leaves are straight edged at the point where they emerge from the stem, but seven or eight fragments are more rounded, and one ends in a sharp tip. Two fragments put together (including the fragment with the sharp tip) could form a complete leaf, which judging by its shape is probably myrtle (**fig. SEA7.2**). Some of the leaves curve upwards slightly, particularly those which have a rounded edge, giving them a more naturalistic look. The leaves have been gilded on both sides. Maximum W of leaf on circlet: 7.14. Maximum W of fragments: 9.91, 11.16, 10.01.
- 84 oval berries (**fig. SEA7.3**). The oval berries are made of a reddish clay, some of which have a with white coating. None berries has a cross. Four are still mounted on spiral wires.
- 11 large berries, L 8.14 to 7.6
- 73 smaller berries, L 5.7 to 6.9.
- At least 17 substantial pieces of spiral remain, all of which probably once held berries. There are also other small fragments. There are further, straighter, stems at least some of which probably held leaves. The spirals however also have had a straight piece at the end of the stem nearer the circlet, and it is possible that some of the straight stems could once have held berries (**fig. SEA7.8**). L of stems: between 20 and 30.

Plant represented: myrtle.

Bibliography:
Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132.

[268] *AD* 44 (1989), *Chron* 505.
[269] Kaninia 1998, 103.
[270] Ibid.
[271] Kaninia 1998, 117.

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Studied: 29 May 2016

Fig. SEA7.1 Overview of wreath M1149 ©Hellenic Ministry of Culture and Sports



Fig. SEA7.2 Two fragments put together to form a leaf from M1149 ©Hellenic Ministry of Culture and Sports



Fig. SEA7.3 Oval berries, some on spirals from M1149 ©Hellenic Ministry of Culture and Sports



Fig. SEA7.4 Circlet from SEA7 from M1149 ©Hellenic Ministry of Culture and Sports



SEA8 Rhodes Kamiros BM 1861,0425.2
British Museum stores

Provenance and context: Kamiros. The register at the British Museum says that the 51 objects acquired in April 1861 were found in tombs in Kamiros, but does not specify exactly where. The location I suggest (approximately) is shown in **fig. SEA8.1**.
This object was no. 2 of 51 acquired by the British Museum on 25 April 1861 from Salzmann and Biliotti for £6 out of a total sum of £316.0.0[272]. The register describes it as: 'a number of bronze gilt and myrtle leaves and fragments of leaves from a wreath and several berries terracotta gilt, purchase of Messrs Salzmann and Biliotti'.
The wreath fragments are discussed in a letter from Salzmann of 20 August 1860[273] and although he does not give a precise location, the pair were excavating in the part of the necropolis nearest to the city of Kamiros. Higgins believed that the gold and silver ornaments found in the early Biliotti/Salzmann excavations, and specifically 'most of BMC Jewellery, nos.1103-1211'[274] (including three further objects acquired at the same time[275]) came from the Kechraki Cemetery[276]. It seems likely that the wreath was a chance find in the area between the acropolis and Kechraki.
Salzmann said in his letter of 20 August 1860 that he thought these fragments were very interesting from the point of view of gilding in Antiquity. At first sight, he said, one might think that the gold leaves were made sticky with a resin, but close examination made him think that the gold leaf had been applied onto the bare metal, and then complete adhesion had been achieved by heating. As far as the myrtle berries are concerned, he thought that they were of an earth composition, which he and Biliotti had often found as isolated balls or as part of necklaces (this would suggest that they also found other wreaths, without realising what they were). He returned to the subject in the first of two articles which he published about Kamiros, saying that the 'Telchines'[277] knew the art of gilding on bronze; they applied gold leaf to the metal and heated it, and assisted the adhesion by hammering and burnishing[278]. We now know that Salzmann's first thoughts were closer to the truth; the gold was applied with an intervening layer of gesso or bole and possibly an adhesive, and the copper had been heated (see below, scientific analysis).

Date: Oddy et al. give a date of the fifth c.[279] . It seems more likely that it is about 350, given the similarity to the Istrios wreath, SEA6. Kechraki lies just over a ravine from Kamiros; it was used as a necropolis throughout the seventh and sixth centuries BC and into the fifth[280], which is probably why a fifth century date is given for the wreath by Oddy et al.

Type:1.

Constituents:
The leaves have been preserved, some with fragments of the original circlet (**fig. SEA8.2**).

- About 45 gilded copper leaves (**fig. SEA8.3**), many of which are complete or nearly complete. The leaves have a swelling at the end nearer to the circlet. On some of the leaves a whitish substance can be seen under the gilding (**fig. SEA8.4**). Each leaf has an impression running down the middle of the leaf, consisting of a line made by the craftsman to represent the veining of the leaf, probably by placing a piece of wire under the copper and then hammering the copper plate, since the ridge down the middle of the leaf is about the same width as the wire (0.85). The leaves have been gilded on both sides. White material lies inside some of the lines.

[272] Register entry, Department of Greece and Rome, British Museum.
[273] Published for the first time by Jeffreys (2019a); the letter is discussed in the article.
[274] These numbers refer to the numbers in Marshall 1911.
[275] Including gold plaque 1861,0425.3, Marshall cat. 1107, gold band 1861,0425.1, Marshall cat. 1158 and two fragments of a necklace, 1861,0425.4, Marshall cat. 1176.
[276] Higgins 1954, 23.
[277] Supposed to be the early inhabitants of Kamiros.
[278] Salzmann 1861, 472.
[279] Oddy et al. 1979, 235
[280] Higgins 1954, 24.

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The leaves can be divided into four groups on the basis of length, but not all are complete. The complete leaves measure as follows, taking the L from the beginning of the stem and the W at the widest part:
Group 1:
L: approximately 48.6. W:13.89 to 17.49 (15.23, 17.49, 15.62, 16.35, 15.91, 13.89, 15.73, 16.17, 16.16, 15.51)
Group 2:
L: approximately 42.2. W: 11.2 to 13.6 (12.68, 12.94, 12.2, 12.4, 12,2, 12,4, 12.96, 13.6)
Group 3:
L: approximately 37.7. W: 10.95 to 14.15 (12.04, 10.95, 12.44, 11.55, 11.55, 13.16, 12.39, 14,15, 12,67, 13.45, 13.45)
Group 4:
L: approximately 33.3. W: 9.9 to 16.01 (11.85, 11.33, 11.18, 13.82, 15.03, 9.9, 12.8, 12.2, 13.101, 12.54, 16.01, 13.23).

- Several of the leaves have a twist of copper wire at the end nearest to the stem, which was obviously coiled around the original circlet; several still have small fragments of bone circlet within the curled wires. The bone circlet bears traces of gilding and yellow pigment in the coating (**figs. SEA8.5, 8.6 and 8.7**). W of bone circlet: 3.89.
- The copper stems are short, and have tended to break at the curl. They appear to have been joined directly to the circlet and were made in one piece with the leaves. The stems are round in section and still bear traces of gilding. Diam. of stems: approximately 0.8.
- 17 berries, at least eleven of which can be identified as myrtle, are in a collection of unidentified terracotta objects in the stores in the British Museum (**fig. SEA8.8**). There is no registration number on any of the berries, but given the clear identification in the register and by Salzmann of the wreath as myrtle, that berries were found and that there are no other unidentified myrtle berries in stores in the British Museum, it is likely that these terracotta berries are from the wreath.

Scientific analysis:
BM scientists[281]: Analysis of the intermediate layer beneath the gold on the leaves disclosed clay minerals, probably containing a small amount of quartz. A broken piece of leaf was placed whole in the Scanning Electron Microscope (**fig. SEA8.9**). The dark grey bands are clay and the light grey central area corroded copper. The gold appears as a white line. At higher magnification, the gold layer can be seen to be very thin (2 microns) and is only loosely bonded to the clay. The copper was full of voids and corrosion products. SEM analysis showed that the clay layer contained copper, which must have leached out from the core. Etching showed that the metal had been heated[282]. The scientists also found chlorine, thought to be a corrosion product.
Examination with the HHXRF showed the presence of copper, gold and iron in the gilded leaves. The coating on the leaves contained silicon, calcium, aluminium, titanium iron, chlorine but no sulfur, and also lead. The chlorine may be sodium chloride due to salt spray in the air, but the lead is more difficult to explain, since the circlet was not made of lead. The berries analysed had aluminium, sulfur in both the coating and the fabric, and a trace of titanium, calcium, iron, copper.

Plant represented: myrtle, judging by the shape of the leaves and the description of the berries by Salzmann.

Bibliography:
Higgins R. A. 1954. *Catalogue of the Terracottas in the Department of Greek and Roman Antiquities British Museum.*
Inglieri R.U. 1936 *Carta archeologica dell'isola di Rodi*, Florence.
Jeffreys R.A. 2019a. ''Crowning glory': using archival material to inform the study of fragments of a gilded wreath in the British Museum' in S. Schierup (ed.), *Documenting ancient Rhodes: Archaeological expeditions and Rhodian antiquities*, 114-124.

[281] Oddy et al. 1979, 235.
[282] Ibid.

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Marshall F.H. 1911. *Catalogue of the jewellery, Greek, Etruscan and Roman, in the departments of antiquities, British Museum*.
Oddy W.A., Padley T.G. and Meeks N.D. 1979. 'Some unusual methods of gilding in antiquity' in *Proceedings of the 18th International Symposium on Archaeometry and Archaeological Prospection, Bonn, 14-17 March 1978*, *Archaeo-Physika* Band 10, 230-242.
Oddy W.A., Pearce P. and Green L. 1988. 'An unusual gilding technique on some Egyptian bronzes' in *Conservation of ancient Egyptian materials*, S. C. Watkins and C.E. Brown (eds), 35-39, London.
Salzmann 1860. Letter from Auguste Salzmann, 20 August 1860, Official Papers for Committee 13.10.1860, Central Archives, British Museum (Jeffreys 2019).
Salzmann A. 1861. 'Note sur la nécropole de Camiros', *RA* IV (NS) Juillet à Décembre, 467-472.
Unpublished list of objects with prices sought by Biliotti and Salzmann and prices recommended by Edward Hawkins, Official Papers for Committee 27.10.1860 and 10.11.1860, Central Archives, British Museum.
Unpublished letter from Biliotti 24.2.1861, kept in the archives of the Department of Greece and Rome, British Museum.

Studied: The fragments were studied in January 2013 and December 2013 (leaves), September 2015 (berries) and November/December 2016 (HHXRF and microscope).

Fig. SEA8.2 Overview of leaves BM 1861, 0425.2 © Trustees of the British Museum



Fig. SEA8.3 Whitish coating on the leaves BM 1861,0425.2 © Trustees of the British Museum

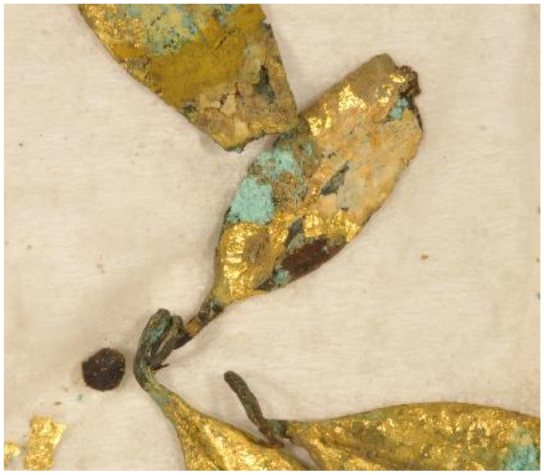


Fig. SEA8.4 Whitish substance under microscope (x6.4) BM1851,0425.2 © Trustees of the British Museum

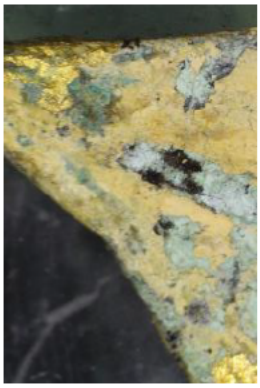


Fig. SEA8.1 Map showing immediate environs of Kamiros and Kalavarda, from Inglieri 1936, Foglio Nord. 106-107 is the acropolis of Kamiros, 108 Macry Langoni, 109 Kechraki, 110 Papa tis Loures, 111 Fikellura, 112 Kazviri, 113 Patelle 114 Visitzia, 115 Arca, 116 Myrtona/Kalathomilo and 117 Kalathomilo (Ingelieri 1936: 43-45). The wreath is thought to have come from somewhere between 107 and 109 (shown in yellow oval)

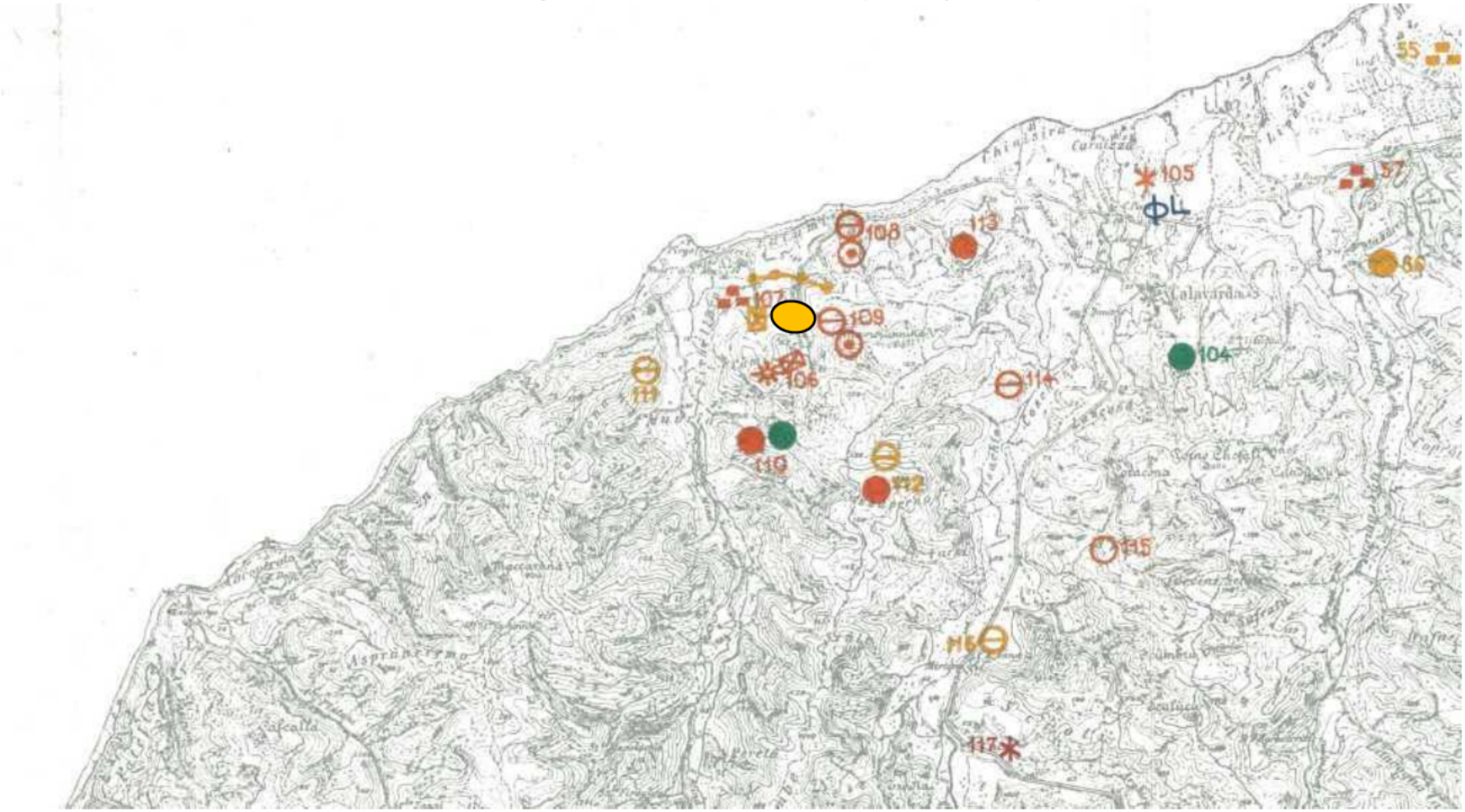


Fig. SEA8.5 Fragment of bone circlet BM 1861,0425.2
© Trustees of the British Museum



Fig. SEA8.6 Fragment of bone circlet inside twisted wire, BM1861,0425.2 © Trustees of the British Museum

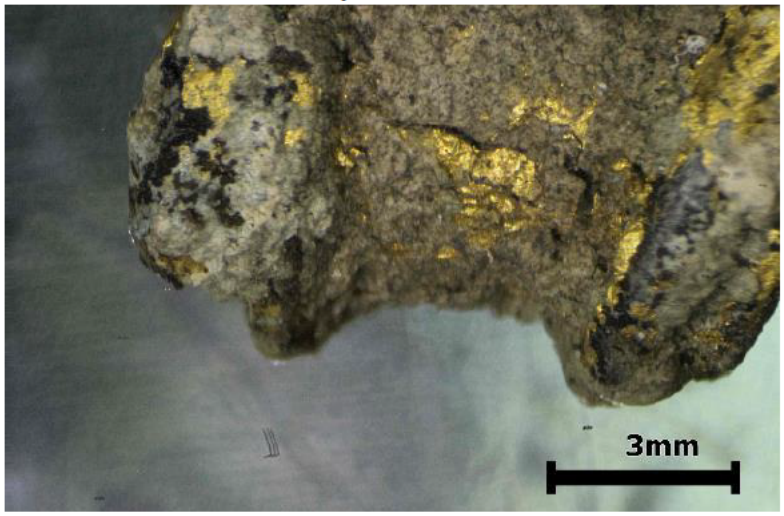


Fig. SEA8.7 Fragment of bone circlet (taken with microscope, x6.4), BM1861,0425.2 © Trustees of the British Museum

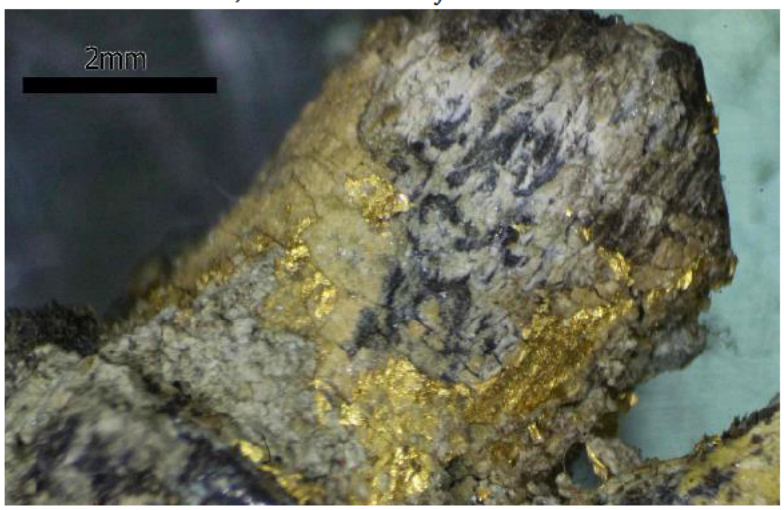


Fig.SEA8.8 Gilded myrtle berries (no reg. no.) © Trustees of the British Museum



Fig. SEA8.9 Details of scientific examination of leaf from BM 1861,0425.2 (from Oddy et al. 1979, figs. 11 and 13)

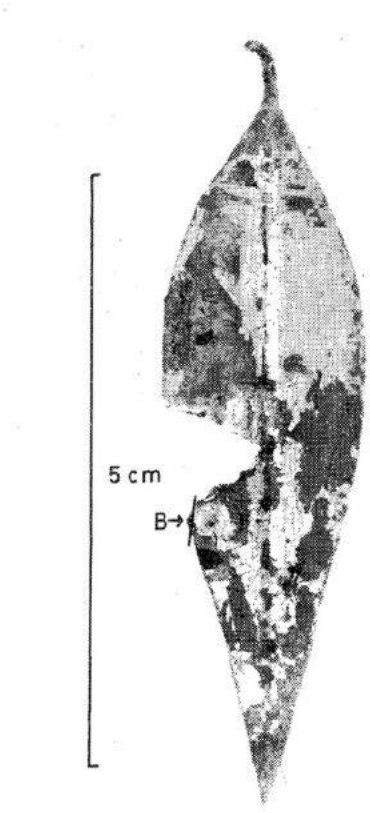


FIG.11 Leaf from a gilt copper wreath (Greek)

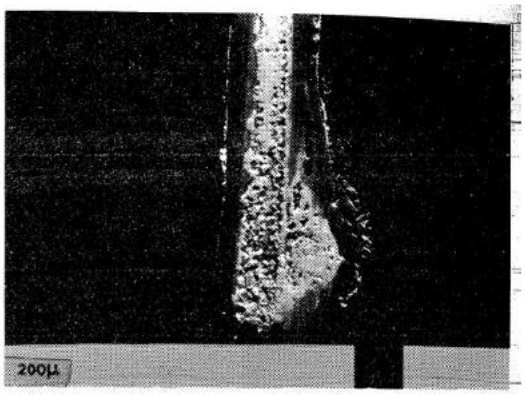


FIG.12 Cross-section on sample from B on fig.11 (x 23)

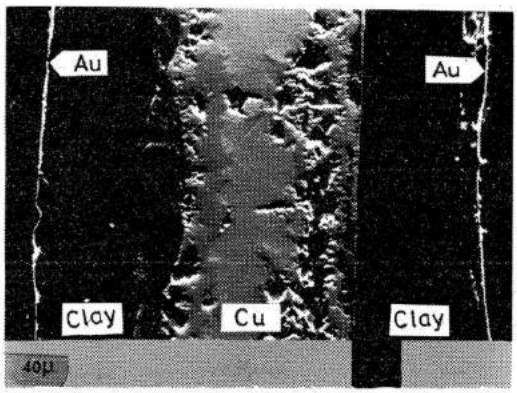


FIG.13 Detail of fig.12 (x 112)

SEA9 Rhodes M516
Rhodes AM

Provenance and context: Fragments were found in 1966 in robbed cist grave 1 in Kamperidi plot, in the western area of the necropolis in Rhodes. The approximate location of the plot is shown in **fig. SEA9.1.** Other finds included an olpe, a gold ring and a gold chain. The olpe is similar to another which was found in grave 2 of Papachristophi plot, dated to the first century[283], but other ceramics were also found which are clearly earlier.

Date: Hellenistic. The date of this wreath is uncertain. Although it was found with an olpe, appearing to date from the 1st century, there were also other much earlier objects[284]. Not enough of the wreath survives to form a view as to its likely date.

Type: not enough survives to tell.

Constituents: no fragments of the circlet have been preserved

- Three fragments of spiral stems made of plate wire which is not gilded (**fig. SEA9.2**). One of these fragments has a further piece of plate wire adhered to one side.
  W: 2.33, 1.42, 2.34. L: 12.97 (spiral), 9.52, 8.2.
- Eight fragments of stems and/or leaves with no gilding. One of these is in an L shape, possibly where the stem was once folded back on the back of the circlet.

L: 12.18	W: 2.71- to 3
8.79	1.91 to 2.3
6.11	1.68 to 2.3
10.8	1.48 to 2.08
10.35	2.38
6.8	1.2
13.11	12.2
12.52+5.86	1.2

- Eight fragments of leaves, which are gilded on one side only (**fig. SEA9.3**). There is an off-white substance under the gold.

Plant represented: possibly myrtle, but not enough is preserved to be certain.

Bibliography:
Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132, cat. 19 and p. 122.

Studied: 26 May 2016.

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[283] Kaninia regards this as too late.
[284] Kaninia 1998, 122 and note 105. There is a general description of the excavation of Kamperidi plot in *AD* 22 (1967), *Chron*, 538.

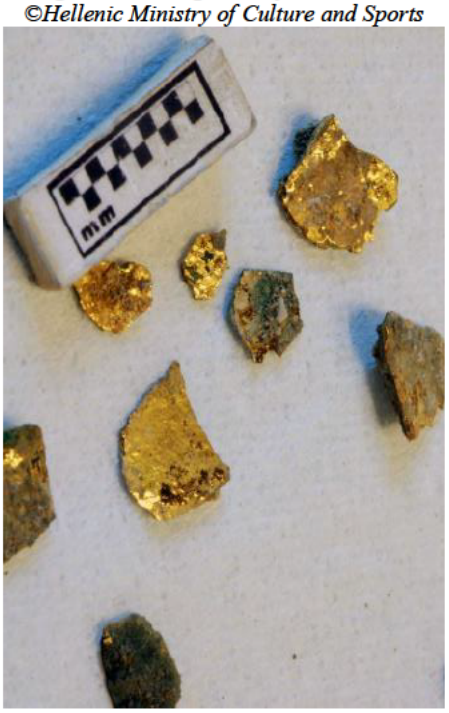
Fig. SEA9.1 Plan of necropolis of Rhodes, showing location of plot where the wreath was found. From Patsiada 2013, fig. 1 © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund



Fig. SEA9.2 Fragments of gilded wreath M516 ©Hellenic Ministry of Culture and Sports



Fig. SEA9.3 Fragments of leaves M516 ©Hellenic Ministry of Culture and Sports



SEA10 Rhodes M674
Rhodes AM

Provenance and context: central area of necropolis, pit grave 5, Keramea plot, Anastasiadi Street. The wreath was found in 1979 in pit grave 5. The burial seems to be that of a man, judging by the strigils and an iron ring found in the grave[285]. The grave has not been published, other than a general description of the excavations in Keramea plot[286]. The approximate location of the plot is shown in **fig. SEA10.1**.

Date: Second half of 4th or early third century[287], but probably fairly early in this timespan, given this wreath's similarity to SEA6.

Type: 1.

Constituents: **Fig. SEA10.2**.

- Nine fragments of bone circlet. The holes have not been pierced in a straight line in the circlet, and some have been pierced in pairs apparently so that the stem could go in and out like sewing. Some of the fragments look as if they have been burnt (**fig. SEA10.3**)[288]. The bone circlet bears traces of a white coating lying under the gold (**fig. SEA10.4**). L of bone fragments: 14.5, 14.5, 10.6, 27.58, 25.82, 29.9, 19.5, 15.5, 15.5 (total 17.3cm). Distance between holes: 5.7, 6.65. Distance between holes in pairs: 1.7.
- All of the leaves have a vein, and represent myrtle, judging by the swelling towards the end with the stem. Four are complete or nearly complete and several appear to have been the same size. Some of the leaves bear traces of a white coating lying under the gold (**fig. SEA10.4**). They come to a sharp point at the end opposite to the stem. The stems of the leaves were wrapped around the bone circlet. Min. number of leaves: 20. L of complete or nearly complete leaves: 35.5 (broken tip), 36.2, 36 (broken tip), 33.7 and 10.27 (leaf folded under). W of complete or nearly complete leaves: 13.5, 12.9, 13.4, 16.12. Thickness of copper sheet: 0.5. W of veins: 0.5
- Only one berry has been preserved, which is a rough oval (**fig. SEA10.3**). L of berry: 6.8.
- A box of tiny copper balls has been preserved, which were found on top of the leaves[289]. They look like the remains of granulation and were probably nothing to do with the wreath, but possibly the remains of decoration from a garment (**fig. SEA10.5**).
  Diam. of tiny balls: 0.5 or smaller.

Scientific analysis: Analysis with the HHXRF of a leaf with gold found copper and gold (no tin or silver). Analysis of a second leaf, with white material, found iron, copper and gold. On a third leaf there was copper and gold. Analysis of the tiny balls revealed copper and calcium.

Plant represented: probably myrtle.

Bibliography:
Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132, cat. 12 and pages 116-117.

Studied: 26 May 2016

[285] Kaninia 1998,116, footnote 66.
[286] *AD* 35 (1980), *Chron*., 540-542, pl. 340-341.
[287] Kaninia 1998,116-117.
[288] Kaninia 1998, cat. 12 refers to it as an inhumation, but the lighting conditions she had available were poor.
[289] Note by excavator on the box.

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Fig. SEA10.1 Plan of necropolis of Rhodes, showing location of plot where wreath SEA10 was found. From Patsiada 2013, fig.1 © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund



Fig. SEA10.2 Overall view of M674 ©Hellenic Ministry of Culture and Sports



Fig. SEA10.3 One of fragments of circlet which looks burnt (M674) ©Hellenic Ministry of Culture and Sports



Fig. SEA10.4 Fragments of circlet and leaf with coating underlying the gilding(M674) ©Hellenic Ministry of Culture and Sports



Fig. SEA10.5 Box of tiny balls (M674) ©Hellenic Ministry of Culture and Sports



SEA11 Rhodes M733
Rhodes AM

Provenance and context: Western area of necropolis, i(b), Giakra I plot. The wreath was found with an inhumation, during excavations conducted in 1982[290]. The approximate location of Giakra plot is shown in **fig. SEA11.1**.

Date: Hellenistic

Type:2.

Constituents: no fragments of the circlet have been preserved.

- About 65 fragments of gilded leaves (**fig. SEA11.2**). The gilding is on both sides. One leaf is probably complete, of the fairly standard shape for myrtle, found at Aineia and elsewhere. The leaves are of different sizes, as can be seen from the different W. The complete leaf is relatively small, and is still attached to fragments of other leaves, stuck together at the stem end, probably where they emerged from the circlet. The joining of these leaves seems to have been part of the design of the original wreath. L of complete leaf: 13.34. Max. W of complete leaf: 4.6. Max. W of other leaves: 7.01, 8.03, 8.71.
- Five fragments of stems, gilded. The stems were probably made by rolling or folding a strip of plate copper.
- Three berries, all of which have crosses at the end opposite to the stem and represent myrtle. L of berries: 6.43, 6-06.

Scientific analysis: the gilded leaf was found to have iron (from the soil), gold and copper. The berry was found to have iron, copper (from contact with the leaves), gold, calcium and phosphorus. No tin was found.

Plant represented: myrtle.

Bibliography: Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου' in *AD Meletes*, vol.48-49 (1994-5), 97-132, cat. 28.

Studied: 27 May 2016

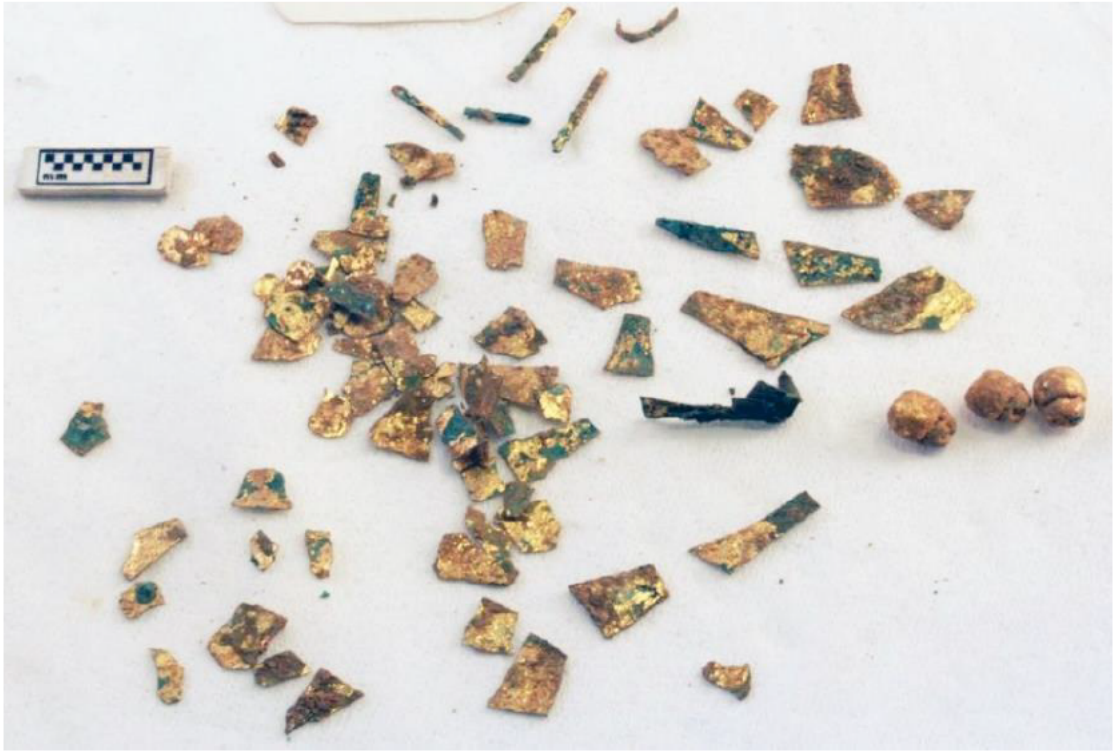
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[290] Kaninia 1998,102.

Fig. SEA11.1 Plan of necropolis of Rhodes from Patsiada 2013, fig. 1. The approximate location of the plot where the wreath was found is shown in a gold box © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund.



Fig. SEA11.2 Overview 733 ©Hellenic Ministry of Culture and Sports



SEA12 Rhodes M1060
Rhodes AM

Provenance and context: Western area of necropolis, (i)(c), Karagianni plot, Kizil Tepe. The wreath was found with an inhumation, during excavations conducted in 1978[291].

Date: Hellenistic.

Type: 2.

Constituents: no fragments of the circlet have been preserved, and no berries (**fig. SEA12.1**).

- About 20 fragments of flat stems and leaves. Some of the stems are bent in an L shape, no doubt where they were attached to the circlet. W of stems: 1.36. L of stems: about 16.
- Three fragments of stems with smaller diam. Diam. of small stems: 0.65, 0.87
- About 30 fragments of leaves and one complete leaf, which is clearly myrtle. There is gilding on both sides of the leaves. The leaves have had very little cleaning, and the soil on them is red. Max. W of complete leaf: 4.8

Scientific analysis: analysis of the stem (with soil) revealed iron and copper (no tin).

Plant represented: myrtle.

Bibliography:
Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132, cat. 27.

Studied: 27 May 2016.

Fig. SEA12.1 Fragments of wreath (M1060). ©Hellenic Ministry of Culture and Sports



[291] Kaninia 1998, 102.

SEA13 Rhodes M1061 and MA325
Rhodes AM

Provenance and context[292]: western area of necropolis, (i)(c), Konstantinidi-Smolensky plot, Kizil Tepe. The approximate location of the plot, at the junction of Tsaldari and Ydraiou, is shown on the plan at **fig. SEA13.1**. Near to the western edge of the plot were found traces of an ancient road, which must have been one of the main roads leading out of the city towards the necropolis and the outlying area. Three groups of graves were found. To the east were ten rectangular rock cut graves; below the level where these were found were three burials and cremations in kalpides. The second group contained eight rectangular graves and two thekai, one of which held, inside a kalpis, the fragments of a gilded wreath as well as cremated remains. The graves had been robbed. The third group to the west of the ancient road contained two small rectangular graves dated to the mid-second century. The label on the wreath refers to theke B, in the second group of graves and is shown on the plan of the site (**fig. SEA13.2**). An Attic black kylix with West Slope decoration (Rhodes AM Π7119) (**fig. SEA13.3**) was an accompanying find which can be dated fairly precisely to the beginning of the third century[293]. It bears the inscription ΦΙΛΙΑΣ.

Date: beginning of the third century[294].

Type:3.

Constituents: the circlet has not been preserved.

M1061

- Fragments of ivy leaves, gilded on one side only (**fig. SEA13.4**). The leaves are of different sizes. Two are complete or nearly complete. Some of the leaves have a tiny vein down the middle. MNI: The minimum number of leaves, each with two rounded lobes and a pointed tip:14. Maximum L of nearly complete leaves: 38.9, 28, 35.3, 24.52. W of these leaves: 33.3, 17, 33, 21.75, and a further leaf: 31.44. Thickness: 0.63
- Three small stems, not gilded, have been preserved. W: 1.44. L of stems: 12,11,20.
- A few fragments of plate metal which are not, or no longer, gilded, have also been preserved. It is possible that these are not from the wreath.

MA325

- 14 rosettes with stalks, representing clumps of small ivy flowers. The rosettes have traces of a white coating and gilding. They are the same size and must have been moulded (**fig. 4.10 and fig. SEA13.5**). Diam.: 13.83.

Scientific analysis: analysis of the ivy leaf revealed copper and gold (no tin or silver). Analysis of the two of the rosettes revealed calcium, iron, copper and lead. There were also traces of strontium. The presence of lead probably indicates that lead white was used to make the coating on the rosettes.

Plant represented: ivy.

Bibliography: Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132, cat. 17 and page 121.
Papachristodoulou I. Ch. 1988. *AD* vol 35 (1980) *Chron*, 538.
Patsiada V. 1990. *AD* 38 (1983) *Meletes,* 105-210.

[292] Papachristodoulou 1988, 538 and Kaninia 1998, 101.
[293] Patisada 1990, 155 no. 38 and plates 55 γ and δ.
[294] Kaninia 1998, 121.

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Studied: 27 May 2016.

Fig.SEA13.1 Plan of Rhodes necropolis. From Patsiada 2013, fig. 1. The approximate location of the plot where the wreath was found is shown in a gold box © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund



Fig. SEA13.2 Plan of site showing Theke B, AD 1980, 539 © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund .

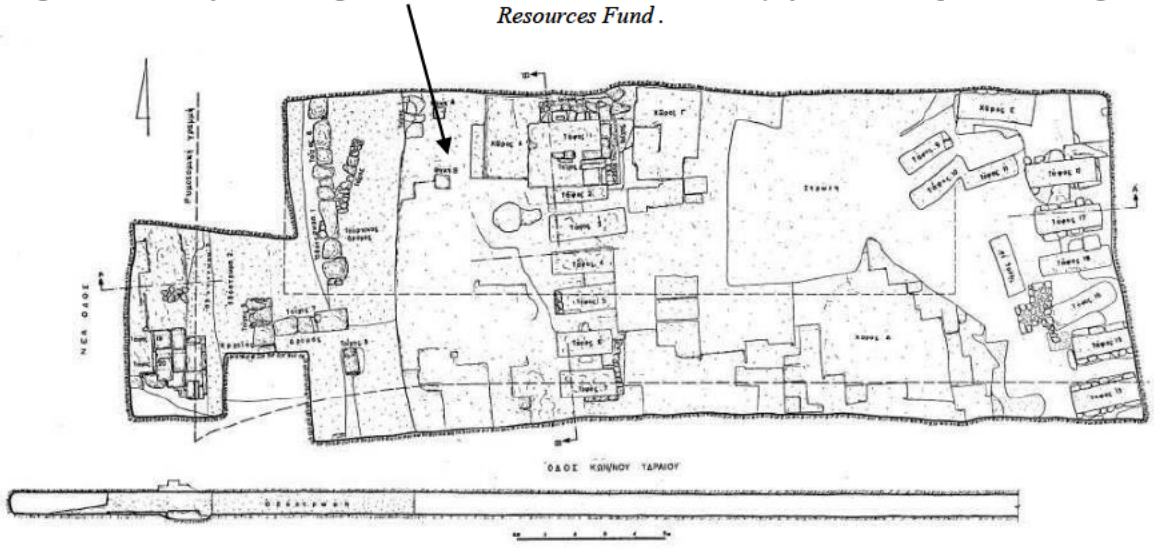


Fig. SEA13.3 Kylix with West Slope decoration, Rhodes AM Π 7119 from Kaninia 1998, pl. 29a ©Hellenic Ministry of Culture and Sports/Archaeological Resources Fund.



Fig. SEA13.4 Ivy leaves ((M1061) ©Hellenic Ministry of Culture and Sports



Fig. SEA13.5 Rosettes (MA325) ©Hellenic Ministry of Culture and Sports



SEA14 Rhodes M1376
Rhodes AM

Provenance and context: Eastern area of necropolis, grave 14, Karamanoli-Pogia-Papanikolaou plot, Phaneromeni, just to the west of Karakonero. The wreath was found in 1990 in a pit grave with two small olpai, Π13970 and 13971, and an iron strigil, suggesting a male burial[295] (**fig. SEA14.1**). A view of the excavated Papanikolaou plot is at **fig. SEA14.2** and a plan of Karamanoli-Pogia plots is at **fig. SEA14. 3**. The approximate location of the plot is shown in **fig. SEA14.4**. It is close to the Odos Dodoni where wreath SEA21 was found. The AD 1991 report refers to a rock cut grave 14 dated to the first half of the third century; it is not clear if this is the same grave 14 which the AD 1989 and Kaninia describe as a pit grave and as belonging to the second half of the third century. The Papanikolaou plot had a wall and 15 graves and four *thekai*. The same wall was found in the plots of Karamanoli and Pogia, which are to the north, while Papanikolaou plot is to the south. The same site of Karamanoli-Pogia-Papanikolaou, grave 3, yielded small gold plaques depicting maenads, similar to plaques found in Photakis plot[296].

Date: second half of the third century[297] or first half of the third century[298].

Type:3.

Constituents: the circlet has not been preserved. The leaves have been preserved with large amounts of grey soil (**fig. SEA14.5**).

- Fragments of leaves, one of which has been preserved almost complete and looks like ivy. There is gilding on one side only. Maximum W of leaf: 14.21. L: 23.
- Three or four stems made of plate copper.
- Three berries, with possibly a yellowish material under traces of gold leaf. They are in the shape of flattened spheres found with ivy Diam.: 5.97.

Scientific analysis: analysis of a gilded leaf disclosed copper, iron (from the soil) and gold. Analysis of a berry disclosed iron (from the clay or the soil), copper, lead and gold.

Plant represented: ivy.

Bibliography:
Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου' in *AD Meletes*, vol.48-49 (1994-5), 97-132, cat. 18 and page 122.
Zervaki Ph.2014. 'Maenads, Bakches, Karyatids, Saltantes Lacaenae: gold-sheet cut-outs from the Hellenistic necropolis of Rhodes', in *Κοροπλαστική και μικροτεχνία στον αιγιακό χώρο από τους γεωμετρικούς χρόνους έως και τη ρωμαϊκή περίοδο*, vol. 2, 249-266,

Studied: 30 May 2016.

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[295] Kaninia 1998, 122. A general description of the excavations at Papanikolaou plot was published in *AD* 44 (1989), *Chron*, 497-8 pl 275b and at Karamanoli-Pogia- in *AD* 46 (1991) *Chron*, 477- 479, plan 18 and plates 173 b to g.
[296] Zervaki 2014, 251.
[297] Kaninia 1998, 122.
[298] AD (1991) vol 46 *Chron* B2, 479.

Fig. SEA14.1 Two olpai from grave 14, found with SEA14, from Kaninia 1998 plate 29b © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund



Fig. SEA14.2 View of excavations at Papanikolaou site. From AD 44 (1989) Chron pl. 275b © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund



Fig.SEA14.3 Plan of Karamanoli-Pogia plots. From AD 46 (1991) Chron, 478, fig. 18 © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund

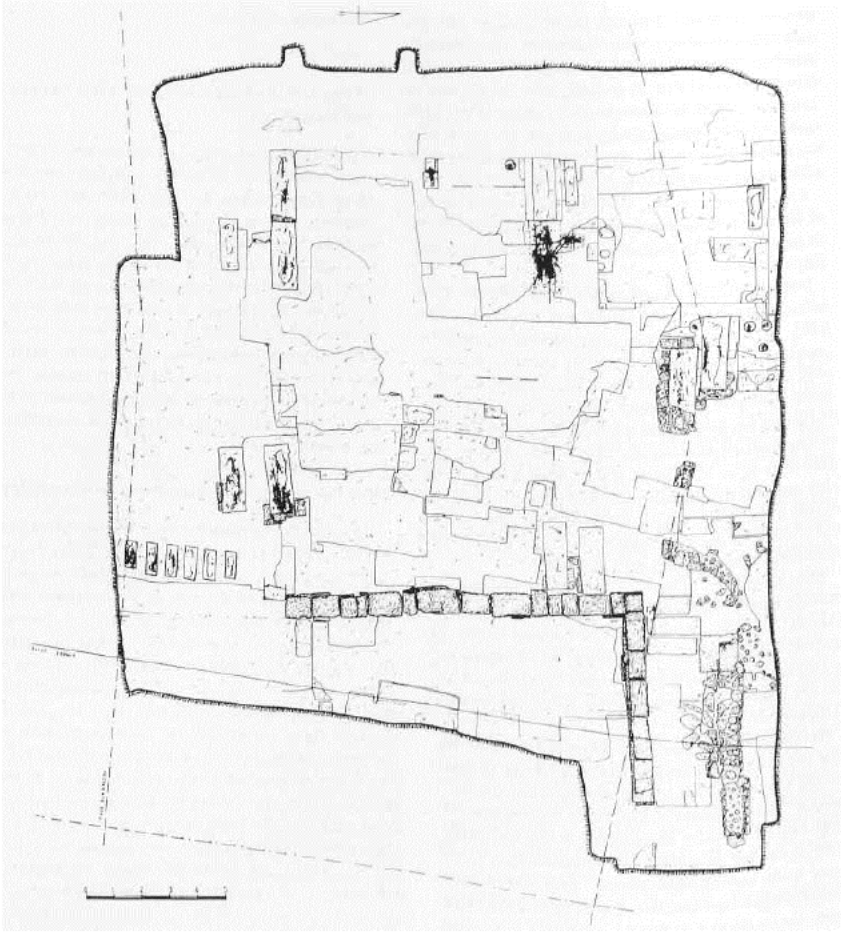


Fig. SEA14.4 Plan of necropolis of Rhodes, showing location of plot where wreath was found. © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund.

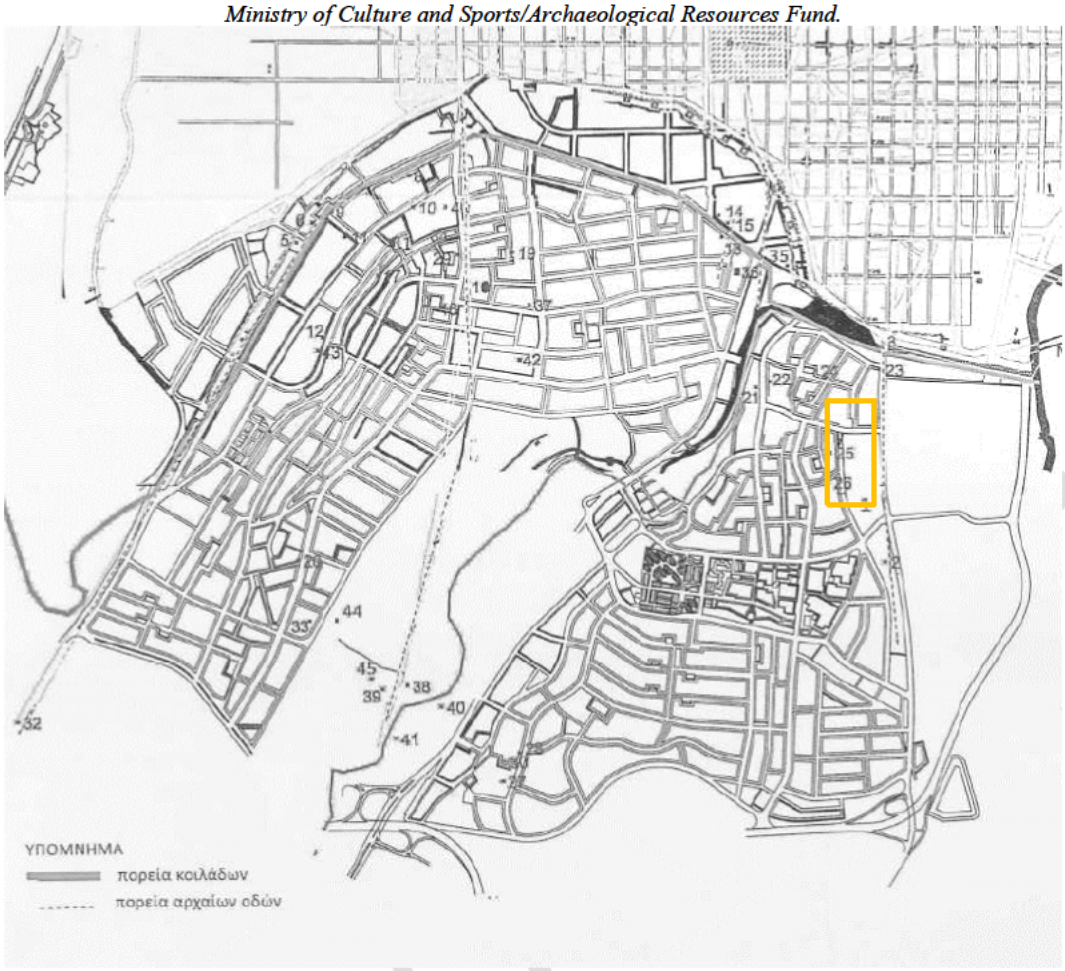


Fig. SEA14.5 Fragments of wreath (M1376) ©Hellenic Ministry of Culture and Sports



SEA15 Rhodes M 1377
Rhodes AM

Provenance and context: western area of necropolis, Kanichi plot. No direct link with any finds[299].

Date: third century[300].

Type: none.

Constituents

- Copper circlet with no holes pierced in it (**fig. SEA15.1**). The stems must have been wrapped around the plate. There are loops at each end which would have held strings to keep the wreath in place. It is semi-circular in shape now. W of copper strip: 2.64-2.82. Diam. as the wreath is now: about 14cm. Thickness of copper strip: 1.27.
- The 36 oval berries are gilded and have small crosses so represent myrtle. There are also three fragments of berries. There are traces of white material beneath the gilding. The clay is very red (**fig. SEA15.2**). L of berries: 5.7, 59.
- 19 fragments of stems are kept in a box with the berries. W of stems: 1.17, 2.19.
- There are also many flat stems in another box which are bound together. They seem to have been bound with strips of metal and possibly some other material. **Fig. SEA15.3**. W of wire: 1.32.

Scientific analysis: The HHXRF showed that the circlet was made of pure copper (no tin). Analysis of the berries revealed of calcium, iron, some copper (from the circlet or the stems), a trace of lead and some gold. Analysis of a leaf showed only copper and gold.

Plant represented: myrtle, judging by the berries.

Bibliography:
Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132, cat.14 and page 118.

Studied: 30 May 2016

Fig. SEA15.1 Copper circlet with no holes (M1377). ©Hellenic Ministry of Culture and Sports



[299] Ibid.
[300] Kaninia 1998, 118.

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Fig.SEA15.2 Oval berries from wreath (M1377) ©Hellenic Ministry of Culture and Sports



Fig.SEA15.3 Stems bound together (M1377) ©Hellenic Ministry of Culture and Sports



SEA16 Rhodes M 1378
Rhodes AM

Provenance and context[301]: Western area of necropolis, Kyri-Vasileiou plot, now Kon. Ydraiou and Ptolemaion Streets. The grave was excavated in 1995. The wreath was found around the neck of a Hadra hydria in a rectangular stone *theke* 58, which had a coating of plaster. The hydria was one of a pair, each containing cremated ashes (**fig. SEA16.1**). Found beneath these vases was a group of offerings (**fig. SEA16.2**). These comprised a sharp-pointed amphoriskos, a double handled phiale, a high-footed kantharos with West Slope decoration, probably Attic, another kantharos with West Slope decoration and an iron strigil[302].

Date: 240-230[303].

Type: 4

Constituents:

- Fragments of lead circlet with stems and myrtle leaves still attached. The dimensions of the circlet, with all the fragments laid out touching and approximately in a wreath shape, are 19cmx23cm, with a small gap at the back (**fig. SEA16.3**). This is a little large for a wreath designed to fit a human head, but the neck of the Hadra vase (not seen) would have been smaller (see Chapter 4 pages 142-143 for the possible arrangement). There are five fragments made of thin lead, with no holes, which doubtless came from one end of the circlet. The rest of the circlet has holes pierced at fairly regular intervals (**fig. SEA16.4**). These holes are round and well made, probably punched. Many of the holes have multiple stems (up to four), which are bent in an L shape on the back. Small myrtle leaves protrude on the other side. L of lead fragments: 15.1, 21.5, 18.5, 7.75, 14.4, 83.52, 90, 48.6, 57.6, 21.8, 19.5, 25.6, 66.3, 359, 82. It is not clear if any of the leaves is compete. L of gap between holes on left end: 66. On the fragment at the right end, there is a gap of 61 between the last hole and the break. Gap between holes towards the centre of the circlet; 5.8, 6.3. Diam. of holes in circlet: 1.42. Diam. of stems in holes: 0.6. L of leaf+stems coming out of circlet: 14.2, 20.6, 15.9, 18.9, 18.5, 20.8, 17.
- There are five clumps of stems, one of which has a stem wrapped around a piece of lead circlet. From this it would appear that the clumps were attached to the circlet by being wrapped around it (**fig. SEA16.5**). These clumps support up to 18 wires. W of wires emerging from clumps: 0.8, 1.3, 0.73. The wire used to attach the clumps to the circlet was wider: 1.47.
- A box contains fragments of leaves and berries. Two fragments of leaf may have constituted a complete leaf (**fig. SEA16.6**). This leaf is joined to a second stem and has a pointed end probably representing myrtle as it has a slight swelling at the stem end. It is not clear whether some of the other leaves had a straight end, or whether this is the way they have broken. The leaves were gilded on both sides. Minimum number of leaves in box: 5. Min. number of leaves on circlet:6. L of leaf (if this is a correct reconstruction): 22.18. The stem at one end is 8.87. L of stem joined to the leaf: 27.66. W of stem: 0.86. L of other fragments of leaf+stem; 13.9, 19.4, 14.2.
- 25 berries, in the shape of flattened spheres. They do not have a cross (**fig. SEA16.7**). Diam. of holes in berries: 0.87. Diam. of berries: 4.74 to 5.86.
- There is also a small bell-shaped flower with six petals and a central stamen (**fig. SEA16.8**). It still has traces of gilding and a hole on the back. It resembles flowers found at Demetrias, Pilaf Tepe and Taras. Diam. of flower: 10.88. Diam. of hole on flower: 1.72.
- There is a further box with at least 50 fragments of stems, made of flat plate bent into crooks or spirals (to support the flowers, as on the Pilaf Tepe wreath?). W of stems: 1.15 to 1.5 (including corrosion).

[301] Christoloudis 2000, 791.
[302] Kaninia 1998, 118-119.
[303] Kaninia 1998, 118.

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Scientific analysis: On analysis with the HHXRF, the berries were found to contain calcium, iron (could be from the soil), copper and strontium. The flower had calcium, iron, copper, gold, lead, and traces of other elements. The circlet had traces of iron and copper and a great deal of lead. The stems had iron, copper and gold.

Plant represented: Not clear, but may be myrtle.

Bibliography: Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132.
Christoloudis N. 2000. *AD* 50 (1995), *Chron*. B2 'Οδός Κων. Υδραίου και Πτολεμαίων'.

Studied: 31 May 2016.

Fig. SEA16.1 Two Hadra hydriai, one of which has wreath SEA16 around its neck. From Christoloudis 2000, pl. 245. © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund.



Fig.SEA16.2 Theke 58 with finds. From Kaninia 1988, pl. 28a and 28b © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund

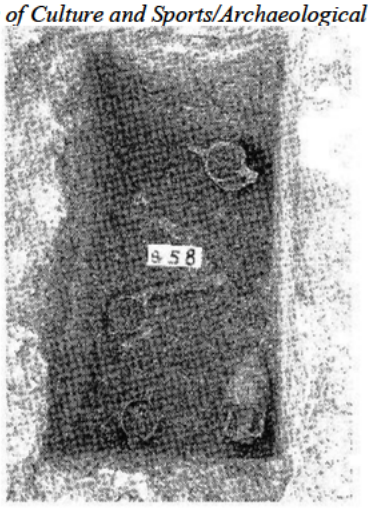




Fig.SEA16.3 Overview of circlet (M1378) ©Hellenic Ministry of Culture and Sports



Fig. SEA16.4 Central part of lead circlet with holes at fairly regular intervals (M1378) © Hellenic Ministry of Culture and Sports



Fig. SEA16.5 Clumps of stems(M1378) ©Hellenic Ministry of Culture and Sports



Fig.SEA16.6 Leaf and stem, joined to another stem (M1378) ©Hellenic Ministry of Culture and Sports



Fig.SEA16.7 Spherical berries (M1378) ©Hellenic Ministry of Culture and Sports



Fig.SEA16.8 Bell-shaped flower (M1378) ©Hellenic Ministry of Culture and Sports



SEA17 Rhodes M1379
Rhodes AM

Provenance and context[304]: Western area of necropolis, stone theke 65, Kyri-Vasileiou plot, now Kon. Ydraiou and Ptolemaion Streets. The grave was excavated in 1996. The Hadra vase containing the ashes and the wreath was decorated with traces of red and blue colour (**fig. SEA17.1**). Also found in the same grave were: two phialai, two amphoriskoi, a glass alabastron and a small cosmetics tool[305]. See catalogue entry for SEA16 for further information on the Kyri-Vasileiou plot.

Date: third quarter of the third century[306] on the basis of a Hadra vase and a silver coin from the same grave.

Type:3.

Constituents:

- 10 fragments of lead circlet have been preserved. Some narrower wires, and some wider stems, still protrude from the holes (**fig. SEA17.2**). The holes have two stems. There are no traces of gilding on the lead circlet. W of circlet: 6.7 to 7.7. L of lead strips: 11, 14, 10.7, 40, 31.4, 41.2, 31.4, 43.8, 43.8, 18.7. Distance between holes in circlet: 27, 21.8. 11.8, 6.7, 23.1, 5.7.
- The stems are made of flat copper plate. Wider strips could have been used to support the clumps of wires, and/or the leaves. None of the stems bear any traces of gilding. Thickness of plate: 0.9. W of wider stems: 1.30 (**fig. SEA17.3**).
- There are eight groups of stems bound together from about ten stems). The thread used to bind them can still be seen. (**fig. SEA17.4**). W of wire in the clumps: 1.2 (which is the same as in the berries, see below).
- 103 berries, in the shape of flattened spheres. The berries clearly fitted on the narrower wires, giving about 10 berries per clump. They represent ivy (**fig. SEA17.5**). Diam. of berries: 5.7, 6.2, 6.3, 6.2, 5.1.
- There are about 40 fragments of leaves, which have been gilded on both sides. Some of the fragments have rounded edges, as found on ivy leaves.

Scientific analysis: Only the circlet was analysed, which was found to contain lead and traces of copper and iron, probably from the leaves and soil or berries.

Plant represented: ivy.

Bibliography:
Christoloudis N. 2000. *AD* 50 (1995), *Chron*. B2 'Οδός Κων. Υδραίου και Πτολεμαίων'.
Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132 cat.16 and page 120

Studied: 30 May 2016.

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[304] Christoloudis 2000,791-2.
[305] Ibid.
[306] Kaninia 1998,121.

Fig.SEA17.1 Hadra hydria Π18843. From Christoloudis pl. 245 © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund

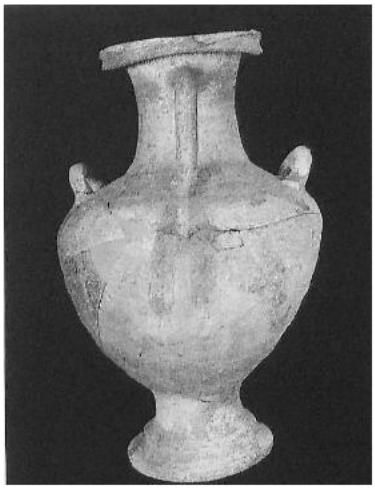


Fig.SEA17.2. Fragments of wreath (M1379) © Hellenic Ministry of Culture and Sports



Fig. SEA17.3 Flat stems protruding through holes in circlet (M1379) © Hellenic Ministry of Culture and Sports



Fig. SEA17.4 Clump of bound wires (M1379) © Hellenic Ministry of Culture and Sports



Fig.SEA17.5 Some of the ivy berries (M1379) © Hellenic Ministry of Culture and Sports



SEA18 Rhodes M 1380 and MA201
Rhodes AM

Provenance and context[307]: Eastern area of the necropolis, in work on the central sewer Mengavles, along the eastern perimeter of Rodiniou zone, *theke* 42 which was excavated in course of the sewage works in 1991.

Date: Hellenistic.

Type: not enough survives to tell, but possibly 3.

Constituents:
M1380
15 fragments of gilded leaves gilded on both sides (**fig. SEA18.1**).
MA201 (**fig. SEA18.2**).

- Five flattened spheres of red clay with one hole and traces of a yellowish coating.
- 11 small beads with two holes. They have a yellowish coating and are not well formed. It is not clear whether they are part of a wreath.

Plant represented: possibly ivy

Bibliography: Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132, cat.29.

Studied: 31 May 2016.

Fig.SEA18.1 Fragments of gilded leaves (M1380) © Hellenic Ministry of Culture and Sports



Fig.SEA18.2 Berries and beads (MA201) © Hellenic Ministry of Culture and Sports



[307] Kaninia 1998, 102.

SEA19 Rhodes M1381, MA203 and 204
Rhodes AM

Provenance and context[308]: Eastern area of the necropolis, central sewer Mengavles, along eastern perimeter of Rodiniou zone. These fragments were found while sewage works were taking place.

Date: Hellenistic

Type: Not enough survives to tell, but possibly 3.

Constituents:

M1381

- Two gilded leaves or petals with rounded ends gilded on one side only (**fig. SEA19.1**).
- One spiral stem (**fig. SEA19.1**). W:1.38. L10.46.

MA 203

Five large rosettes, in the shape of half spheres, perhaps representing ivy flowers (**fig. SEA19.3**). There is a large hole on the back of each of them. Diam. of rosettes: 18.85, 19.26. Size of hole: 6.29 x 5.51.

MA 204

Four berries in the shape of flattened spheres (**fig. SEA19.2**) one of which has two holes. There are traces of a white coating on two of the berries, with a red colour, which might perhaps be traces of pigment. These berries are made of an orange-coloured clay. The others are a browner colour. Diam.: 9.74, 9.97, 8.16.

Plant represented: if the fragments are from one wreath, ivy, on the basis of the rosettes

Bibliography: Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132, cat. 30.

Studied: 31 May 2016.

Fig. SEA19.1 Gilded leaves or petals (M1381) © Hellenic Ministry of Culture and Sports



Fig.SEA19.2 Berries, MA204 © Hellenic Ministry of Culture and Sports



Fig.SEA19.3 Large rosettes, MA203 © Hellenic Ministry of Culture and Sports



[308] Kaninia 1998, 102.

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SEA20 Rhodes M1382
Rhodes AM

Provenance and context[309]: Western area of the necropolis; Sepheris Street or Kamiros Street. These fragments were excavated in 1996 in the course of public works. Other finds are lacking. Pottery collected from a layer of black soil can be dated to the second half of the fourth or the early third century. The approximate location of the find is shown in **fig. SEA20.1.** It is much further south than the other early wreaths.

Date: Second half of the fourth or early third century[310], possibly just after 350, on the basis of the similarity with SEA6 and SEA8.

Type:1.

Constituents: The wreath has not been fully cleaned, no doubt because of the delicacy of the material. A substantial amount of gritty soil remains. (**fig. SEA20.2**).

- Seven fragments of circlet, made of bone which is round in cross-section. Most of the stems were wrapped around the circlet, but traces of three large round holes can be seen which go right through the bone, where apparently the wires were anchored firmly into the circlet (**fig. 4.6**). Holes were pierced in the bone, not in a straight line, which, judging by the stems which remain in position, held stems at various positions (**fig. SEA20.3**). There are traces of a yellowish coating beneath the gold on the circlet. L: 15.26, 9.8, 21.86, 13.95, 13.5, 13.8, 223.1. Diam. of bone:4.5.
- Fragments of short stems and leaves remain, from which it can be calculated that the minimum number of leaves was 25. None of the leaves is complete, but by placing fragments together which did not necessarily join, but are of a similar size, it would seem that the leaves were symmetrical, and could represent olive or myrtle (**fig. 4.6**). They have a pointed end and a central vein. The original L of the leaves could have been about 30mm, but it is not possible to be sure, given that none of the leaves is complete. The leaves seem to have been much the same size. Thickness of the copper plate from which the leaves are made: 0.68.
- Wrapped in a piece of paper are three flowers, made of gilded copper petals (**fig. 4.5**). The petals appear to have been hammered over a template, as they are concave, with the clay stamen in a hollow formed in the centre of the leaves. It appears that there were at least three flowers, each made of five petals, though none is complete. Each flower had a central stamen, made of gilded clay, with a white coating above the red clay. There is a tiny wire in the centre of each stamen.
  Diam. of the gilded white centres: 7.86.

Scientific analysis: On analysis with the HHXRF, the circlet showed traces of calcium, iron, gold and strontium. A leaf with the gritty soil showed calcium, iron, copper and strontium. Analysis of the flower revealed calcium, iron, copper and gold. In order to analyse the white coating, it would be necessary to use further equipment, such as the vacuum attachment for the HHXRF.

Plant represented: almost certainly myrtle. There are no berries. The leaves could represent olive or myrtle, but the flowers, with five petals, look much more like myrtle than olive.

Bibliography: Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132. cat. 13 and plate 21a, and page 116.

Studied: 1 June 2016

[309] Kaninia 1998, 101.
[310] Kaninia 1998,116 and note 67.

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Fig. SEA20.1 Plan of necropolis of Rhodes, showing location of plots where wreath was found. From Patsiada 2013 fig. 1 © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund



Fig. SEA20.2 Overview of fragments of wreath (M1382) © Hellenic Ministry of Culture and Sports



Fig.SEA20.3 Fragments of circlet with holes pierced at various levels (M1382) © Hellenic Ministry of Culture and Sports



Fig.SEA20.4 Fragments of leaves put together (M1382) © Hellenic Ministry of Culture and Sports



SEA21 Rhodes M1387
Rhodes AM

Provenance and context[311]: Eastern part of the necropolis, grave 36, Karimalis plot, now Odos Dodonis. The fragments were excavated in 1997 and found inside ossuary E4771 (no inscription), which held the burnt bones of an adult and a corroded silver fragment. The ossuary was found with 20 *hydriai*, 12 further ossuaries, three *kalpai* with remains of infants, as well as at least 15 further burials, amongst which three further burials of infants in chamber grave 36, all with cremations. The burials were accompanied by an askos guttus, as well bulbous perfume containers. This appears to be the only wreath found there, as it is the only one mentioned in the AD report. A plan of the excavations in Karimali plot is at **fig. SEA21.1** and photographs of the excavation and of grave 36 are at **fig. SEA21.2**. This plot adjoins the Karamanoli-Pogia plot where SEA14 was found. The location is shown in **fig. SEA21.3**.

Date: Second or third quarter of the third century[312].

Type:3.

Constituents: (**fig. SEA21.4**).

- At least 23 ivy leaves, of which 15 are nearly complete (**fig. SEA21.4**). One leaf is lodged in a large piece of bone, probably human. The leaves are gilded on only one side. A piece of fabric has been preserved on one of the leaves.

L	W
19.84	14.2
21.9 (tip broken)	19
16.86	13.86
18.6	15.06
20.58	
19.23	
20.5	19.5
16 (tip broken)	13.4
16.5 (tip broken)	

- Three to four clumps of wire, one of which is still attached to a relatively wide strip of sheet copper which was once wound around the circlet (**figs. SEA21.5-21.6**). The stems in the clumps appear to be bound together but on examination under the microscope, no traces of thread could be seen, and it seems that they were held together with strips of plate wire or some other material. What looked as if it might have been thread was probably corroded copper. From the three loops which have been preserved that were once wrapped around the circlet it would appear that the original W of the circlet (now disappeared) was 10.3 to 11.8. W of wide stem: 1.47. W of stems on clumps:0.94.
- 47 berries have been preserved, which were no doubt originally attached to the clumped stems in groups of around 10 (**SEA21.4**). The gilding on a yellowish base is still just visible. There is no gilding on the stems. The berries are in the shape of flattened spheres. Diam. of berries: 5.7, 6,02, 6.18, 5.9. Diam. of hole in berries: 1.71.

Scientific analysis: On analysis with the HHXRF, it was seen that the stems were pure copper (no tin) and that the ivy leaf had traces of iron from the soil as well as copper and gold.

Plant represented: ivy.

Bibliography: Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132, ex. cat. Note 106.
Zervaki Ph. 2003 *AD* vol 52 (1997) *Chron* B3,1098-1099.

[311] Kaninia 1998, 122, footnote 106; Zervaki 2003, 1098-1099.
[312] Kaninia 1998, 122.

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Studied: 1 June 2016.

Fig.SEA21.1 Plot where wreath was found. From Zervaki 2003, 1086 © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund

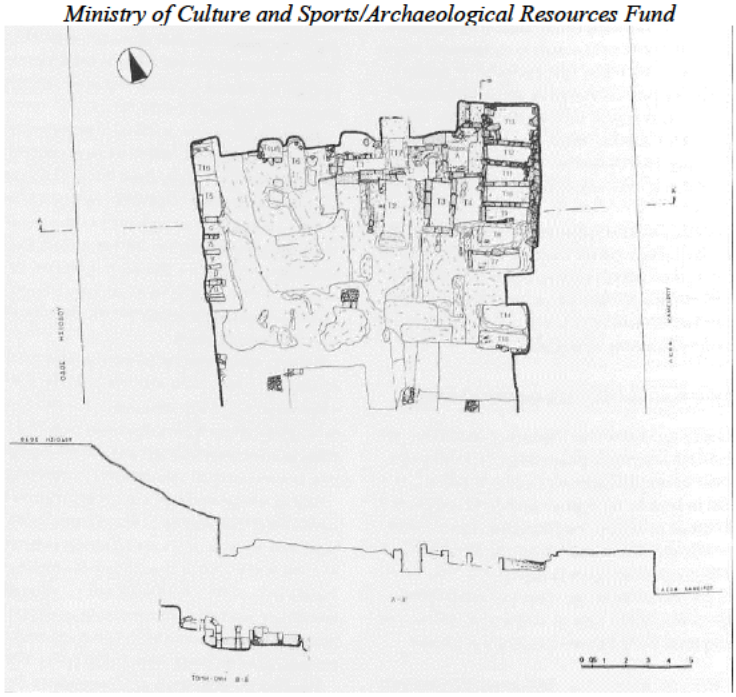


Fig.SEA21.2 View of the excavations and of grave 36. From Zervaki 2003, pl. 413 © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund



Fig.SEA21.3 Plan of necropolis of Rhodes, showing location of plots where wreath was found. From Patsiada 2013 fig. 1. © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund.

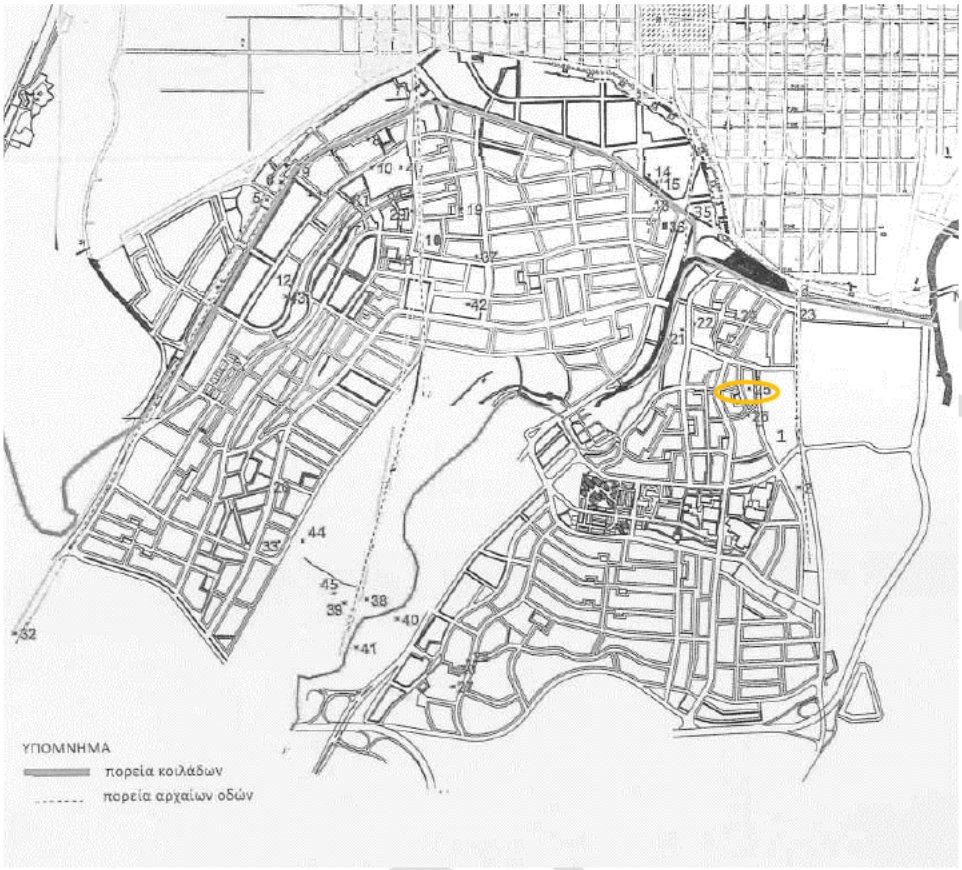


Fig.SEA21.4 Ivy leaves, bone and some of berries (M1387) © Hellenic Ministry of Culture and Sports



Fig.SEA21.5 Clump of wires still attached to strip of copper (M1387) © Hellenic Ministry of Culture and Sports



Fig.SEA21.6 Flat stems (M1387) © Hellenic Ministry of Culture and Sports



SEA22 Rhodes MA176
Rhodes AM

Provenance and context[313]: Perhaps Ag. Ioannou. Found during Italian excavations in 1942.

Date: Hellenistic

Type: Not enough survives to tell. Possibly 3

Constituents:

- 14 berries, in the shape of flattened spheres. They possibly bear traces of white coating but there is no obvious gold. Diam. of berries: 5.78, ,5.26 (three times), 8. Diam. of holes: 1.42.
- Two groups of stems. W of stems: 1.42.
- Six small stems

Plant represented: not possible to tell

Bibliography: Kaninia Er. 1998. 'Χρυσά στεφάνια από τη νεκρόπολη της αρχαίας Ρόδου', *AD Meletes*, vol.48-49 (1994-5), 97-132, cat.31.

Studied: 1 June 2016.

COPY

Fig. SEA22.1 Berries and stems from wreath (MA176) © Hellenic Ministry of Culture and Sports



[313] Kaninia 1998, 102

SI 1 Metaponto Bernalda S. Biagio Grave 1/1972
Metaponto AM

Provenance and context[314]: Grave 1/1972, S. Biagio, Bernalda. The wreath was in a grave which was one of three found in a field close to the sanctuary of Artemis at San Biagio, some 6km to the north of the modern town of Metaponto. The grave was built of rectangular tufa slabs, with a pitched cover carved in three sections. Three carved rectangular pillars were found, two bordering the tomb and the third in line but approximately 30cm away; Gais suggests that they might have functioned as grave markers or stelai. The wreath was found with a Gnathian pelike, a cylindrical pyxis, a guttus feeder, an unguentarium and a strigil (**figs. SI 1.1A and SI 1.1B**). The skeleton of a young man was found inside the tomb. The pelike is decorated around the neck in a pattern like a necklace or a wreath.

Date: The dates given by Gais and Masiello (330-320)[315] are on the early side since the pelike found in the same grave has a contoured foot, matching Lippolis's Phase B2-C (300-225)[316] (**figs. SI 1.1 and 1.2**). The unguentarium with handles is from Lippolis' phase C-D[317] making phase C the appropriate phase (second and third quarters of the third century)[318].

Type:2

Constituents (**fig. 5.8**):

- Fragments of a wooden circlet lie behind a bone circlet (**fig. SI 1.3**), both much restored. One end of the bone circlet appears to have been mended with copper or bronze (probably modern); it has been pierced at intervals of approximately 3mm to take the stems and has fractured at several points where the stems were inserted bearing a heavy group of berries. Diam. of circlet: 17cm x 15cm. Gap at back 5.5 cm. W of bone circlet 6.7. Circumference of bone circlet: c. 47cm. W of wooden circlet: c. 6.5. L of fragments of wooden circlet: 44, 88.2 (across arc), 46.8.
- 23-24 heart-shaped gilded copper ivy leaves in at least two different sizes (**fig. SI 1.4**). The leaves have a line down the middle, indicating a vein and have been gilded on both sides. The stems were not made in one piece with the leaves, and were soldered on. Traces of a white coating can just be seen. L of larger leaves: 35.88. Maximum W of large leaves: 40.94. L of smaller leaves: 28.49. Maximum W of small leaves: 25.7
- Five gilded copper vine leaves which are not identical and have been gilded on both sides (**fig. SI 1.5**). Each section is cut into serrations at the end opposite to the stem. Maximum W of vine leaves: 38, but none is quite complete.
- 11 bunches of grapes, each having originally had an eyelet and been suspended on a hook (**fig. SI 1.6**). The grapes are made of a red clay, and have a white coating beneath the gold. They have clearly been moulded. The stems supporting the grapes were made from strips of sheet metal which have been rolled or bent over to form a round stem. L of grapes:26.34 (several), 23.4 (several), 35.34, 44.76. W (thickness) of grapes: 12.76-13.66.
- 24 gilded terracotta ivy berries, each on a copper stem. The berries are made of a red clay and have been covered with a white coating beneath the gold. There are four groups of berries held together at the stems, which have been bound and possibly also glued. There are traces of the thread used for binding all of the groups of berries. Diam. of berries: 8.5 to 10.
- Two smaller insects which appear to be cicadas with closed wings (**figs. SI 1.5-6**). They are identical and have a moulding line along the side. They are made of gilded terracotta with a whitish ground beneath the gold.

[314] Gais 1982,55-56.
[315] Masiello 1986, 90.
[316] Lippolis 1994, fig. 197 and page 262.
[317] Lippolis 1994, fig. 194.
[318] Lippolis 1994, 243.

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- L 25.33.
- Two larger insects, which appear to be grasshoppers. They have holes in the head which originally held antennae (**fig. 5.9**). These insects are made of gilded terracotta with a whitish coating beneath the gold. L:43

All the insects have been mounted on vertical stems mounted on the underside of the insects and positioned above the circlet. The stems have been inserted into a loop made on the back of the circlet by an ivy stem. The larger insects have incision marks and the underbodies are different from each other, so it seems as if they were made by hand, unlike the smaller, which were moulded.

- About 55 stems are visible. There are about 75 holes visible in the circlet, so some of them have been lost. Several of the stems were made by strip-twisting (**fig. SI 1.6, detail**).

Diam. of stems: 0.87-1.11

Plants represented: grapes and ivy

Scientific study (HHXRF): The gold was fairly pure, with no silver. The leaves are made of copper. The terracotta berries, grapes and the insects have a white coating, which found to be composed of aluminium, silicon, calcium and iron. The fabric of the berries had the same elements as the coating, but with more iron and less calcium.

Bibliography:

Adamesteanu D. 'L'attività archeologica in Basilicata', in *Atti Taranto* 1973, 448, pl. LXXXVII.
Gais R. 1982, 'A crown and consolation in rural Southern Italy', *Archaeology* 35, 1982, November/December, 54-56.
Gli Ori, 90.
Lippolis E. 1994. 'La necropolis ellenisticà: problem di classificiazione e cronologia dei materiali' in *Catalogo* 3.1, 239-281.

Studied: April 2016 and September 2016

Fig. SI 1.1A. Some of the pottery found in the same grave. The pelike is the largest item, towards the right of the photo. The bottle on the left is not from the same grave © Polo Museale Regionale della Basilicata



Fig. SI 1.1B Unguentarium found in same grave © Polo Museale Regionale della Basilicata



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Fig. SI 1.2. Design of pelikai. The closest seems to be the one indicated, with the contoured foot. From Lippolis 1994, 263.

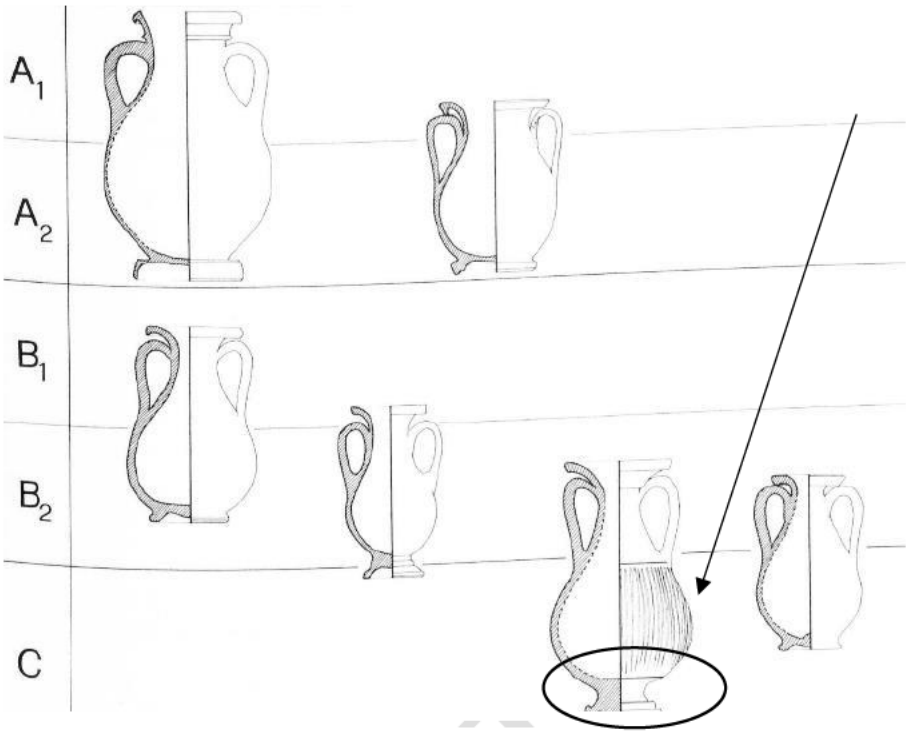


Fig. SI 1.3. Back of circlet, showing wooden and bone circlets (on left) © Polo Museale Regionale della Basilicata



Fig. SI 1.4 Two ivy leaves, of different sizes, moulded grapes and ivy berries © Polo Museale Regionale della Basilicata



Fig. SI 1.5. Vine leaves and bunch of grapes © Polo Museale Regionale della Basilicata



Fig. SI 1.6. Smaller insect (cicada?) on the left, and bunch of ivy berries, bound with thread, on the right © Polo Museale Regionale della Basilicata





Fig. SI 1.7. Detail of smaller insect, probably a cicada © Polo Museale Regionale della Basilicata



SI 2 Taras via Anfiteatro, Palazzo Acquaviva grave 2, 12282 and 212227 MArTA, on display, room XXIII

Provenance and context[319]: Via Anfiteatro, Palazzo Acquaviva, grave 2, excavated 1909. The wreath was found with four figurines, two dolphins, a disc, 19 beads from a necklace and a gold earring[320] (**fig. SI 2.1**).

Date: 2nd century[321]

Type: not enough remains to tell.

Constituents:
12282
Six berries, one of which is spherical and the others oval. Two have traces of a cross indicating myrtle. There are traces of gilding on two of the oval berries. **Fig. SI 2.2**. Diam. of spherical berries: 8.92. L of oval berries: 7.96, 7.95, 7.84, 7.06, 6.74. One or two of the oval berries have a distinctive reddish colour in the clay fabric. There are traces of copper inside the holes of two of the berries, and traces of a pale yellow coating on a berry with an impressed line.

2122227
12 berries, five of which are larger and have a cross indicating myrtle. There are traces of gilding and impressed lines. **Fig. SI 2.3**. L: 7.63 (3), 6.997 (2). Seven smaller, spherical berries with gilding and a yellowish coating. Diam.: 4.7, 4.2, 3.6, 4.42, 4.12, 4.5

Scientific analysis (HHXRF): The gold on the berries was found to be fairly pure. All the berries (myrtle, oval, round and small) were found to have silicon, iron and calcium and traces of aluminium. Some of the berries also had sulfur. Lead was found in the fabric of the myrtle berry, suggesting the circlet (now disappeared) was made of lead.

Plant represented: myrtle

Bibliography: not published.

Studied: 12.9.2016 and 13.9.2016. The berries were removed from the display for the purposes of the study.

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[319] Museum register.
[320] Information on display panel in museum.
[321] Display panel in museum.

Fig. SI 2.1 Some of other material found with berries (indicated in the circle) ©Museo Archeologico Nazionale di Taranto



Fig. SI 2.2 Six berries (12282) ©Museo Archeologico Nazionale di Taranto



Fig. SI 2.3 Twelve berries (2122227) ©Museo Archeologico Nazionale di Taranto



SI 3 Taras 12300
MArTA store

Provenance and context: not known. The wreath was the gift of Prof. Magnini. The register provides no further information than the name of the donor.

Date: Hellenistic?

Type: not enough original remains to tell

Constituents: The wreath has been extensively restored (**fig. SI 3.1**).
The pointed ivy leaves have been mounted on individual stems (modern) which have been joined to form a circlet (**fig. SI 3.2**). Modern material has been cut to form a base for the gilded copper fragments, to which they have been adhered. There is no way of telling whether the original wreath had a circlet made from the stems, or whether the leaves are approximately the original size and shape.

Scientific analysis (HHXRF): the leaves were found to consist of copper, with gold and some lead (from the restoration).

Plant represented: ivy

Bibliography: *Gli Ori*, 79.

Studied: 16.9.2016

Fig. SI 3.1 The wreath mounted on a perspex stand ©Museo Archeologico Nazionale di Taranto



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Fig. SI 3.2 Detail of leaves and stems ©Museo Archeologico Nazionale di Taranto



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SI 4 Taras Madre Grazia, 14753-7
MArTA store

Provenance and context[322]: Madre Grazia, Borgo Orientale, proprietà B. Stifano. The wreath was found in a grave which seems to have been in use for about a century, from the end of the third to the second half of the second century. It contained alabastra, a mirror (14734), fragments of a further mirror (14741), a basin (14733), elements of a hinge (14755), perhaps part of a box, nails, a lopas (14746), a miniature lopas (14747), two baby feeders (*guttus*) (14742-3), a cup (14745), two oinochoes (14739-40), an olpe (14744) and eight unguentaria. The mirror suggests that there was at least one female.

Date: Early second century?

Type: 3 local variation

Constituents: **fig. SI 4.1**
No traces of gilding remain on any of the elements.

- 18 small flowers of at least four types. All have a white coating.
  Group 1: ten flowers with eight petals. These flowers were probably originally moulded, given the precision with which they were made. **Fig. SI 4.2**. Diam.: 14.42, 12.8, 13.7, 14.15 (two). Weight: 0.8g.
  Group 2: four rosette-type flowers with 22 petals made of small balls grouped together. **Fig. SI 4.1**. Diam.: 13.8., 14.2. Weight:1g
  Group 3 bell-shaped flower with six petals (three). **Fig. SI 4.2.** Diam.:10.6.
  Group 4: larger flower with six petals. Diam.:18.45
- Five rosettes (**fig. SI 4.3**). Three still have a white coating. The largest rosette has traces of red pigment. All are made of small balls of clay, which was pressed onto a clay base before firing. Large rosette 18 petals (one complete, one incomplete). Diam. of large rosette: 34.54. Smaller rosettes of 12 petals (three complete). Diam. 26.64, 30.16 (two)
- Eight spherical berries, made of reddish clay with a white coating. No gilding is evident. Diam.: 7.7-8.7.
- Six acorns (**fig. SI 4.4**). The cups have dots and the back is flat as on the Epirot acorns. They were made by moulding and two have a white coating. Finger marks can be seen on the back made when the clay was pressed into the mould. L: 14.85.

Plant represented: more than one (oak, ivy and other flowers)

Bibliography: *Catalogo* 3.2, p.92, 7.4, 7.5, 7.6, 7.7

Studied: 16.9.2016

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[322] *Catalogo* 3.2, 92-96.

Fig. SI 4.1 Fragments of wreath. The flowers named as group 2 are shown in the centre ©Museo Archeologico Nazionale di Taranto



Fig. SI 4.2 Groups 1, 3 and 4 (flowers) ©Museo Archeologico Nazionale di Taranto

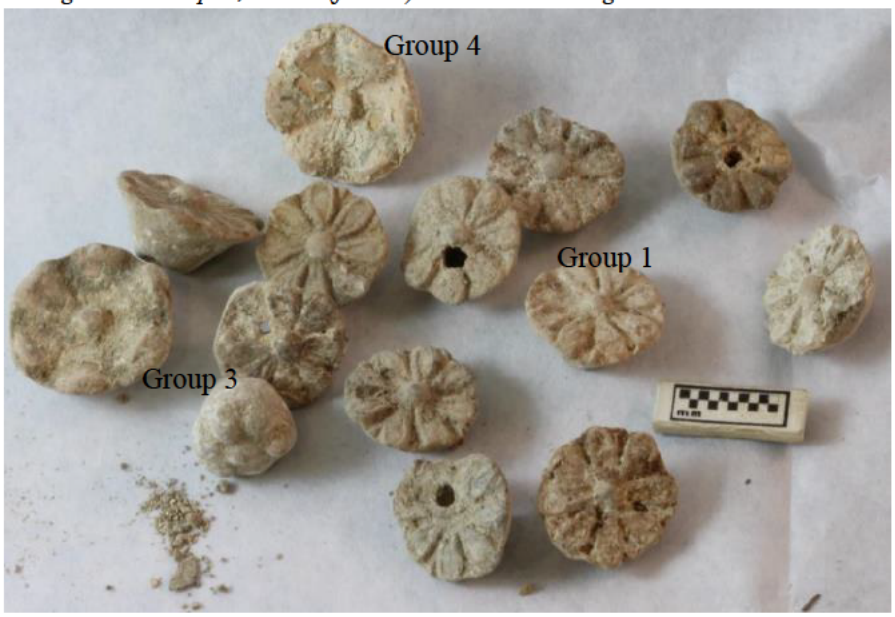


Fig. SI 4.3 One large complete rosette, three small complete rosettes and one incomplete ©Museo Archeologico Nazionale di Taranto



Fig. SI 4.4 Four of the acorns, showing the cups and the fingerprints on the back of one ©Museo Archeologico Nazionale di Taranto



SI 5 Taras Grave 10 Contrada Lupoli, 15774
MArTA store

Provenance and context[323]: Grave 10, Contrada Lupoli, Lo Jucco. The wreath was found in 1905 in a pit grave "containing human bones partly combusted". Other finds included two oinochoes (one Gnathian, inv. 15778, one Apulian inv. 15779), a Gnathian lekythos (inv. 15780), four female figurines, a Gnathian cup (inv.15781), a pendant and two fibulae (inv.15776-15777). (**fig. SI 5.1**)

Date: Last quarter of the fourth century[324].

Type:3 or 4.

Constituents:

- A fragment of the lead circlet remains. L of circlet fragment: 13.5. W: 7.4
- About 13 spherical berries made of reddish clay with a white coating and traces of gilding, as well as many fragments of berries (**figs. SI 5.2 and SI 5.3.**).
- About 34 fragments of stems remain which have no traces of gilding. Two have the ends bent back and one has traces of thread bound round it. W: 1. L of longest: 50.
- Seven bell-shaped flowers. The impressions are not distinct, but it is just possible to see six petals and a centre. They have been moulded, and this is probably an impression of an impression. They have a white coating, and traces of gilding. **Fig. SI 5.6.**
- A small box contains tiny fragments of leaves, which are gilded on one side only, and a stem (**fig. SI 5.7**). The leaves bear traces of melting, possibly from cremation, and look like ivy.
- There are two bags with flowers, berries and stems, which are very well preserved. The berries and flowers are still gilded. The stems of both the berries and the flowers are bent back forming two stems of equal length (but still joined together with thread). Each end had one berry. The pairs are joined in a group. **Fig. SI 5.8**.
- In one bag there are four groups of berries, still tied together with thread.
  The first group consists of nine berries and one flower, the second group of five berries and two flowers, the third has eight berries, the fourth has nine berries. Diam. of berries:10.7.
- The second bag contains:
  Four flowers
  14 berries and stems.

Plant represented: Ivy.

Scientific study (HHXRF): The fabric of the berry was found to contain aluminium, silicon, potassium, calcium, iron, copper and lead. The white coating had the same elements, and also gold and lead.

Bibliography: *Cento anni,* p.395, 32.12i
Catalogo 3.1, 286, fig. 213.

Studied: 28.9.2106.

[323] *Cento Anni*, 393-396.
[324] *Cento Anni*, 396, based on the shape of the oinochoes, the ivy decoration on the cup and the curve of the mouth of the lekythos.

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Fig. SI 5.1 Finds from grave. The two fibulae are in the lower image. From Catalogo 3.1, figs. 213 and 214. The wreath fragments are shown in the upper image.

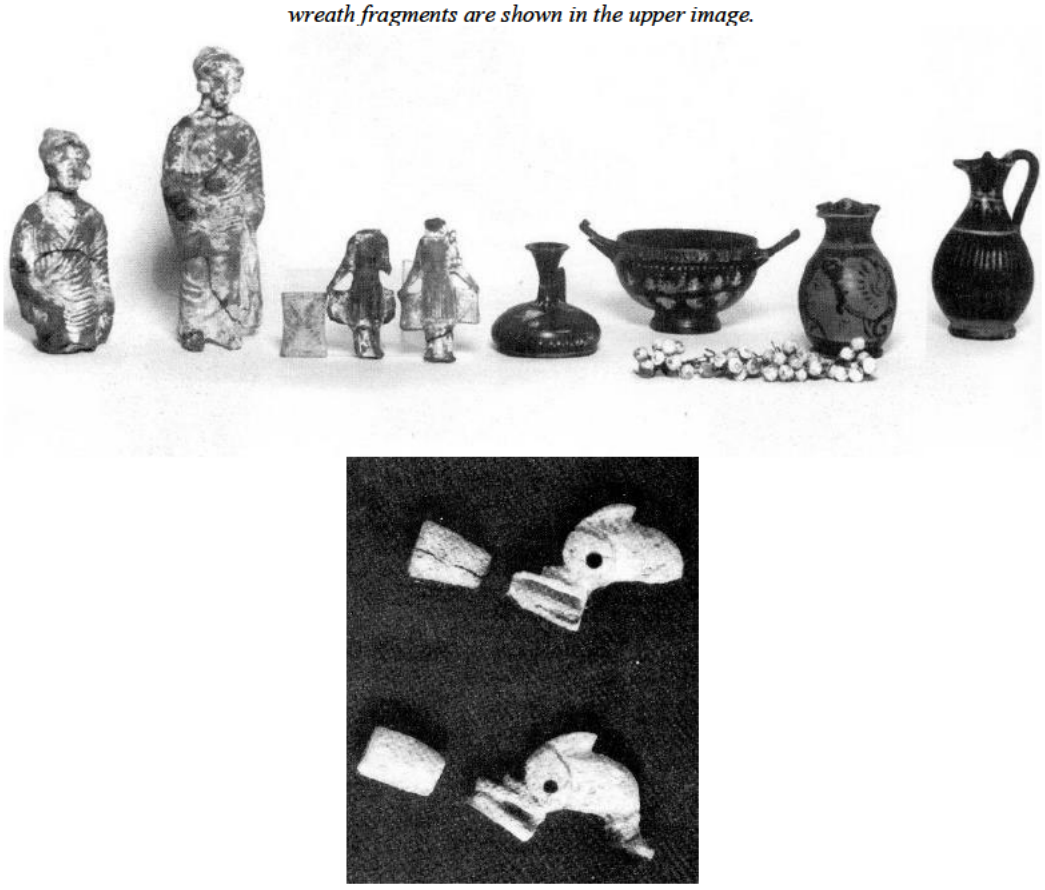


Fig. SI 5.2 Berries, flowers and stems ©Museo Archeologico Nazionale di Taranto



Fig. SI 5.3 Detail of berry ©Museo Archeologico Nazionale di Taranto

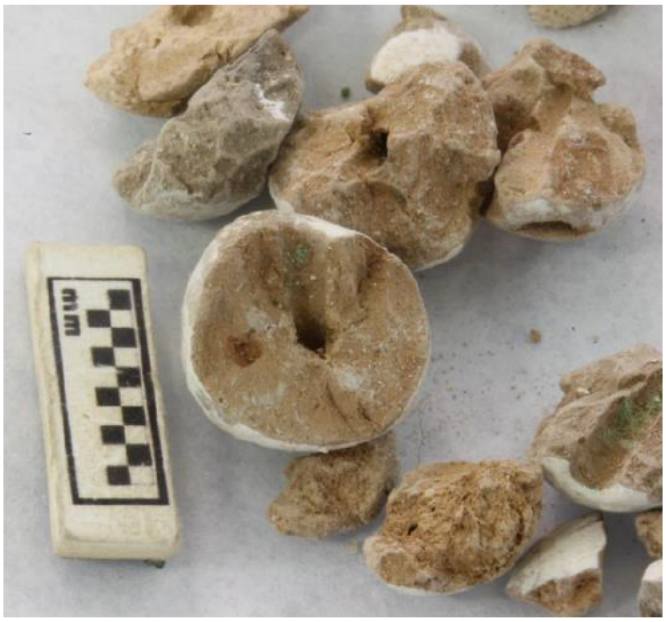


Fig. SI 5.4 Detail of berry (x6.4) ©Museo Archeologico Nazionale di Taranto



Fig. SI 5.5 Detail of hook at one end of stem (x6.4) ©Museo Archeologico Nazionale di Taranto



Fig. SI 5.6 Bell-shaped flowers ©Museo Archeologico Nazionale di Taranto



Fig. SI 5.7 Box with leaves and stems ©Museo Archeologico Nazionale di Taranto



Fig. SI 5.8 Bound groups of berries, showing the loop in the stems formed when the wire was folded back on itself, and the thread holding the wires together ©Museo Archeologico Nazionale di Taranto



SI 6 Taras Contrada Tesoro, 15868
MArTA, on display

Provenance and context[325]:Contrada Tesoro 1909. The following objects were found with the wreath: a miniature mirror (15863), a silver coin (40097), two gilded bronze bracelets (15867A and B, cat. 164 and 165), a gilded bronze ring 3524), two bronze discs (15868), figurines of Aphrodite and Eros (4089), of a female acrobat (4090) and two further figurines (15866 and 15861), a small pilaster (15869), a circular base (15865), a clay mask (15862) and an unguentarium (15864) (**fig. SI 6.1**).

Date[326]: last quarter of the fourth c.

Type:2.

Constituents:
The overall diam. of the wreath is just under 17cm. It is just less than a full circle.

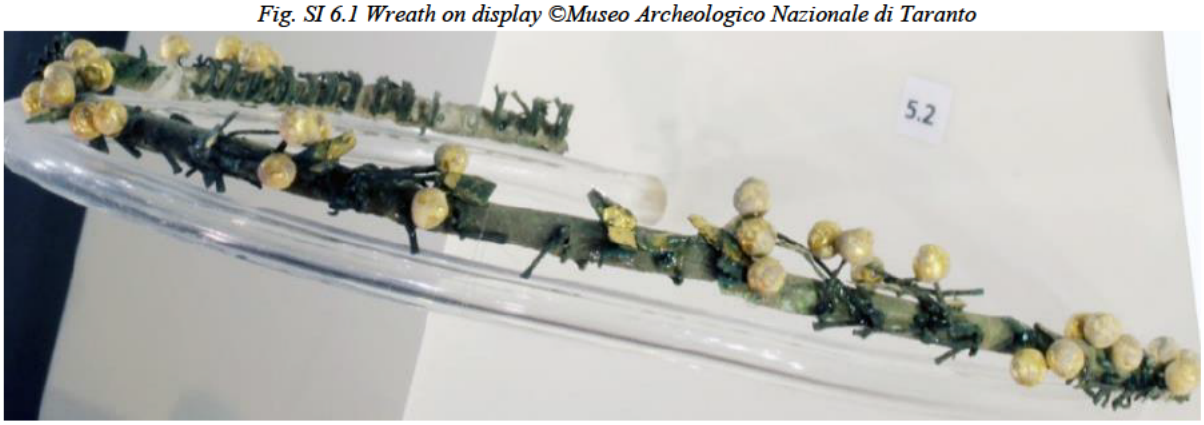
- The remains of a bone circlet can be seen at one end of the wreath, and the remains of a lead circlet at the other end (**fig. SI 6.2**). There seems to have been one circlet in each material. W of circlet: 6.7. Distance between holes in circlet: 8-15.
- The 33 berries are mainly in groups of three. They can be identified as myrtle from the small cross (**fig. SI 6.4**). Diam. of berries: 5-6. L: 6.1, 6.5, 5.5.
- The spear-shaped leaves are small and none is complete. They have been gilded on both sides. W of leaves: c.5.
- The stems pass through holes in the circlet. At the end of the lead circlet several holes have three wire stems passing through the hole. The stems are long, and it appears that after passing through the holes, they were wrapped around the circlet

Plant depicted: myrtle.

Bibliography: *Gli Ori,* p.410.

Studied: 14.9.2016

Fig. SI 6.1 Wreath on display ©Museo Archeologico Nazionale di Taranto



[325] *Gli Ori*, 410-412.
[326] *Gli Ori*, 412.

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Fig. SI 6.2 Detail of the lead circlet ©Museo Archeologico Nazionale di Taranto



Fig. SI 6.3 Detail of leaves and myrtle berries ©Museo Archeologico Nazionale di Taranto



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SI 7 Taras via Crispi, 25428
MArTA store

Provenance and context[327] : Contrada Corti Vecchie, via F. Crispi. The wreath was found in.1932 in a pit grave with one skeleton with a skull, a second skull and an urn with burnt bones. The other objects found included two alabastra (25431-2), two knucklebones (25430), two bowls (25432, 25436), a lagynos (25425), an unguentarium (25429), a female figurine (25427) and fragments of at least two strigils.

Date: Second half of the second century.

Type: 2 or 4.

Constituents:
Fragments of a wreath. Nothing of the circlet has survived (**fig. SI 7.1**).

- 15 gilded berries in the shape of small spheres. It looks as if yellow ochre has been applied dry on top of the coating beneath the gold (**fig. SI 7.2**).
- Tiny fragments of leaves, which have been gilded on one side only. The shape is consistent with myrtle.
- Seven or eight stems. The leaves are made in one piece with the stems.
  Maximum L of stem+leaf 20.5. Maximum W of leaf:8-9. Width of stems: 1.7-1.8.

Plant depicted: probably myrtle, judging by the shape of the leaves.

Bibliography: *Catalogo* 3.2, p.145.

Studied: 16.9.2016

Fig. SI 7.2 Berries ©Museo Archeologico Nazionale di Taranto



Fig. SI 7.1 Fragments of wreath ©Museo Archeologico Nazionale di Taranto



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[327] *Catalogo* 3.2, 145-149.

SI 8 Taras via Dante semi-camera tomb 2, 40044
MArTA on display

Provenance and context[328]: Via D. Alighieri, Da Ciccio, grave 2. The wreath was found in December 1984 in semi-camera tomb 2 with a bronze bezel (40045), a strigil (40046), four nails (40047), an oinochoe (40048) and a cup (40049). The tomb was part of a complex in which a square well and thirteen graves were found. Only two were intact, including tomb 2.

Date: first quarter of third century, on the basis of the pottery (Lippolis phase B2). The oinochoe could be B1 or B2, but the cup[329] is clearly B2 (300-275).

Type: 3 local variation

Constituents: The wreath is large and has elements representing different plants. No leaves have been preserved. **Fig. SI 8.1**. The fabric of all the clay elements of the wreath is a reddish colour.
Overall (internal) diam.: 21cm. There is a gap of 8.5cm at the back.

- The circlet is made of lead, which has broken at the holes for the most part. W of circlet: 7.3 to 7.9.
- About 60 bell-shaped flowers many of which have 20 petals, some of which still have traces of gilding. A second sort of flower has seven petals. L of bell-shaped flowers: 15.1.
- About 56 spherical berries, which have traces of gilding. **Fig. SI 8.2**. A white coating lies underneath the gold. Diam. of berries: 10.7, 8.1.
- 13 bunches of grapes, some of which are still coloured yellow. **Fig. SI 8.3**. One has traces of gold leaf. They have small loops which would have been mounted on stems themselves mounted on the circlet. At present, they are lying on their side. L of grapes: 22.
- Two large rosettes which still have traces of gilding.
- Some of the stems are mounted in groups of 12-14 stems, supporting either berries or bell flowers. These stems are still bound with thread. The stems with the thread are bound with a wider stem passing in a loop around the circlet. **Fig. SI 8.4.** The stems which have been bound and are supporting berries are bigger. W of stems supporting berries: 1.94. W of other stems: 1.3.

Plant depicted: The rosettes almost certainly depict ivy flowers, and the berries appear to be ivy; there are also grapes.

Bibliography : *Gli Ori*, cat 20, 91 and 435.

Studied: 14.9.2016

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[328] *Gli Ori*, 435 and register in museum.
[329] Illustrated in *Gli Ori*, 435.

Fig. SI 8.1 Wreath ©Museo Archeologico Nazionale di Taranto



Fig. SI 8.2 Detail of rosette, berries and grapes ©Museo Archeologico Nazionale di Taranto



Fig. SI 8.3 Loops supporting stems seen from back of wreath ©Museo Archeologico Nazionale di Taranto



SI 9 Taras via Battisti, 50298
MArTA store

Provenance and context[330]: Via Cesare Battisti. The wreath was found on 10 April 1934 in a semi-chamber tomb with the remains of a decomposing skeleton with the skull to the north. Other finds included a miniature oinochoe, a Gnathian oinochoe, architectural fragments and a small cup.

Date: Second century?

Type: 3 or 4

Constituents: Only berries, flowers and stems remain (**fig. SI 9.1**). Traces of gold can be seen in the white-coated elements

- 85 white coated berries. One of these has broken showing the almost unbroken coating (**fig. SI 9.2**).
- 25 bell-shaped flowers with 15 petals, possibly representing ivy. **Fig. SI 9.3**. One of the flowers has traces of red paint (**fig. SI 9.5**)
- Six groups of stems, one of which has a hole which makes it clear that the stems were originally supported by a larger stem. Some of the larger stems have loops and must have originally supported another stem as the loops are too small to have been wrapped around a circlet. The stems are bound with thread, and possibly clay or glue. W of stems: 1.22
- Small fragments of gilded copper, no doubt originally from a leaf.
- A small 'amphora' bead, which must have been introduced from another wreath (**fig. SI9.4**).

Plant depicted: not clear, but could be ivy.

Bibliography: *Notizie degli Scavi* 1936, 146, N.59.

Studied: 19.9.2016

Fig. SI 9.1 Overview of wreath fragments ©Museo Archeologico Nazionale di Taranto



[330] *NS* 1936, 146 and museum register.

Fig. SI 9.2 Broken berry revealing coating and stems bound with central hole (right) ©Museo Archeologico Nazionale di Taranto



Fig. SI 9.3 Flowers from wreath ©Museo Archeologico Nazionale di Taranto

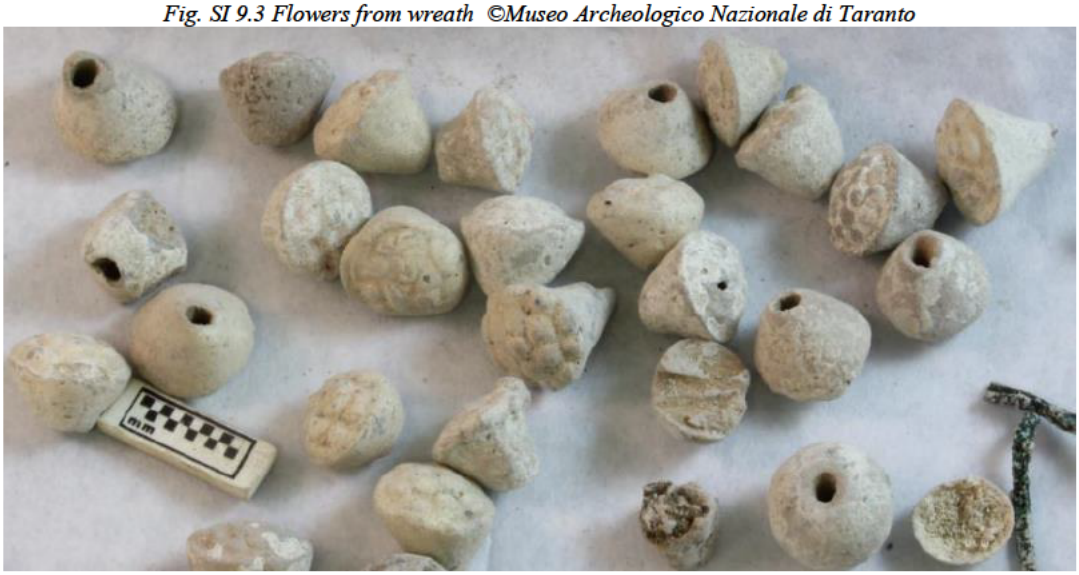


Fig. SI 9.4 Red colour on flower and red 'amphora' ©Museo Archeologico Nazionale di Taranto



SI 10 Taras via Gorizia, 50625
MArTA on display

Provenance and context[331]: The wreath was excavated in 1934. The grave also contained many alabastra (50633), a mirror (50624), shells, a gold necklace (50623, cat. 154) and an earring (50635bis), as well as a gold oak wreath (50622), gold threads and several further finds.

Date: first half of second century

Type:3

Constituents: The wreath is made of ivy leaves mounted on a circlet made of double wires with 14 berries. **Fig. SI 10.1**. The leaves have been soldered to the circlet, possibly during the restoration.

- The circlet is made of metal and does not have any holes. The stems were probably inserted between the two wires.
- 23 ivy leaves of different sizes. Some of the leaves have yellow material, probably a corrosion product. **Fig. SI 10.2**. L along central vein 18.6, 15.5, 14.7, 16.3.
- 14 spherical berries of different sizes. They have a yellowish coating and traces of gold. Diam. 5.7, 6.14, 8.3
- The stems are wide and have been soldered onto the back of the leaves.

Plant depicted: ivy.

Bibliography:
Gli Ori, cat. 22, 93;
Catalogo III.2, 71 ;
Maier F., Raub C.J., Gebhard R., Koller J. and Baumer U. 1998 'Manching und Tarent', *Germania* 76, 177-216.

Studied: 23.9.2016

Fig. SI 10.1 Overview of wreath ©Museo Archeologico Nazionale di Taranto



[331] *Catalogo* 3.2, 71.

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Fig. SI 10.2 Leaves, berries and circlet ©Museo Archeologico Nazionale di Taranto



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SI 11 Taras via Battisti, 50710
MArTA store

Provenance and context[332]: The grave also contained a gold wreath (50703), a mirror (50710), a pin (50710B), three nails (50710C), a key (50710C), six bone rings (50709), part of a distaff (50709C), cylinders (50709F), knucklebones (50709A), discs (50710F), fragments of a foot made of blue glass (50710I), cups (50705), an 'inkwell' vase (50708), six bowls (50706), a skyphos (50709), an oinochoe (50704), a seal showing a man wearing an ivy wreath (50710B) and a thymiaterion (50707). The deceased was probably a young girl. There was a louterion in or by the grave.

Date: end of the third century[333]?

Type:3 local variation

Constituents:

- The circlet has not been preserved. The main constituents are large rosettes, but some flowers, berries and a few stems have also been preserved. **Fig. SI 11.1**.
- 40 rosettes, probably made by hand since the sizes are different. The rosettes are made of spherical balls pressed into a clay base. They are made of a reddish clay with a white coating. What could be traces of colour may just be visible. No gold appears to have been used. **Fig. SI 11.2.** Diam. of rosettes; 10.3, 12.7 (three), 9.74, 11.7, 10.94, 10.6. Diam. of clay balls constituting rosettes: c. 8.2.
- Two larger flowers with four petals, which bear traces of red pigment.
- 14 small flowers with six petals, but of different designs, some of which bear traces of red pigment. These flowers are so regular that they were probably moulded. Diam.: 14.5, 12.9, 9.7, 9.9.
- One larger flower with red pigment.
- One berry with a cross, representing myrtle. **Fig. SI 11.3**
- Nine further berries. Diam.: 8.2.
- About 12 copper stems. W of stems: 1 to 1.15.

Scientific analysis: Analysis of the back of one of the rosettes revealed aluminium, silicon, sulfur, potassium, calcium and iron. The front part of the rosettes with the white coating contained a lot of lead, confirming that white lead was used. Copper was also found. The red on the flowers contained mercury, making it clear that cinnabar was used to colour them, but lead was also found, so it is possible that red lead was also used.

Plant depicted: various. The rosettes represent ivy flowers, there is at least one myrtle berry and the four-petalled flowers could represent either laurel or myrtle.

Bibliography: *Gli Ori*, p.459.

Studied: 20-21.9.2016

[332] *Gli Ori*, 459.
[333] *Gli Ori*, 461.

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Fig. SI 11.1 Overview of wreath ©Museo Archeologico Nazionale di Taranto

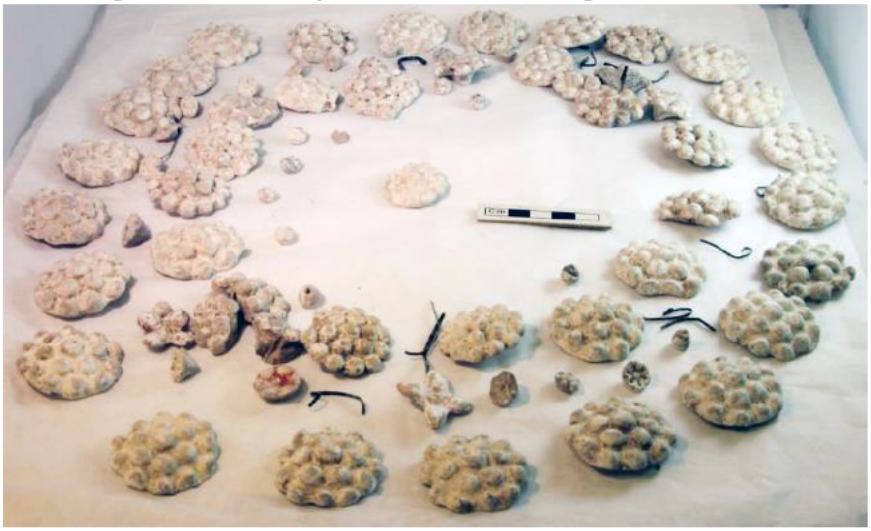


Fig. SI 11.2 Different kinds of flowers ©Museo Archeologico Nazionale di Taranto



Fig. SI 11.3 Myrtle berry ©Museo Archeologico Nazionale di Taranto



SI 12 Taras via Tito Livio, grave 1, 51681
MArTA on display

Provenance and context[334] : The semi-chamber tomb was on two levels and had been used for a family. Grave 1 had a louterion and produced, in addition to the wreath, a lead pyxis (51688) with a miniature lekythos (51699) and a mussel shell inside it (for cosmetics), an oinochoe (51670), a mirror (51671), a guttus baby feeder (51672), an iron nail, a cup (51674), terracotta figurines (4083, 52068, 50772, 51675, 51676, 51677, 51678, 51679) and a bronze handle. Two of the figurines are shown in **fig. 5.22**, and some of the other finds in **fig. SI 12.1**. The grave is thought to be that of a pre-adolescent girl[335]. The location of Via Tito Livio is shown at **fig. SI 12.4**.

Date: second half of third century, dated by the pottery, and in particular the oinochoe[336].

Type: 2

Constituents: **fig. SI 12.2**

- Virtually nothing remains of the circlet, but what there is appears to be lead.
- The stems and berries have been assembled in three groups of three stems, leaves and berries and one further group of one berry and two broken stems and leaves. The stems have been bound with what looks like clay.
- The ten berries taper at one end, and have a small ridge and a hole (**fig. SI 12.3**). They clearly represent myrtle. They have a yellow coating and gold leaf. The fabric of the berries is greyish. At least two have clearly been fired. One of the berries still has a fingerprint. The berries must have been made individually and not moulded, given their different sizes. L of unbroken berries: 6.64, 9.04, 8.61, 8.93, 7.63, 7.63, 8.39, 7.80, 7.80.
- The leaves are incomplete and their length was not measured. The widest part of any of the leaves was 9.25. Diam. of stems:1 to 1.51.

Scientific analysis (HHXRF): Silicon, aluminium, potassium (trace), calcium, iron and copper, were found in a berry. The stem had copper, a trace of iron and a trace of lead. The yellow colour in the coating came from iron oxide. The presence of lead on the berry and the stem suggests that the original circlet was made of lead.

Plants depicted: myrtle.

Bibliography: Dell'Aglio 1999, *Ricordo di una fanciulla del III secolo a.c.* Some of the finds were also shown in *Tanagra Mythe et archéologie* 2003, 285-287, Paris.

Studied: 12.9.2016 and 13.9.2015. The material was removed from the display for study.

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[334] Dell'Aglio 1999.
[335] Dell Aglio 1999,12.
[336] Dell'Aglio 1999,11.

Fig. SI 12.1 Some of the finds. The wreath is shown in the oval. ©Museo Archeologico Nazionale di Taranto



Fig. SI 12.2 the fragments of wreath (overview) ©Museo Archeologico Nazionale di Taranto

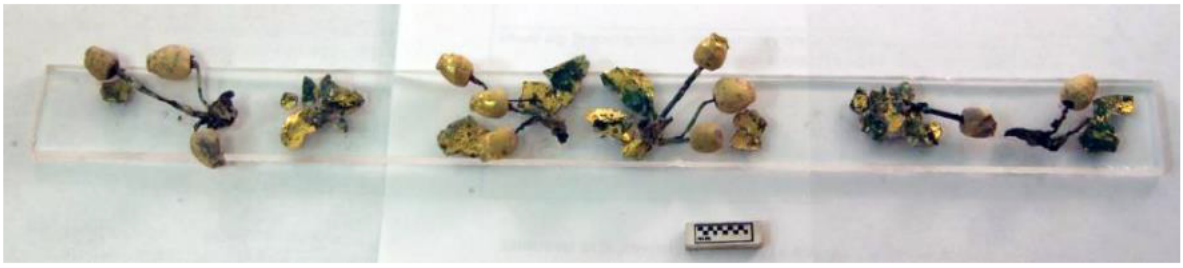
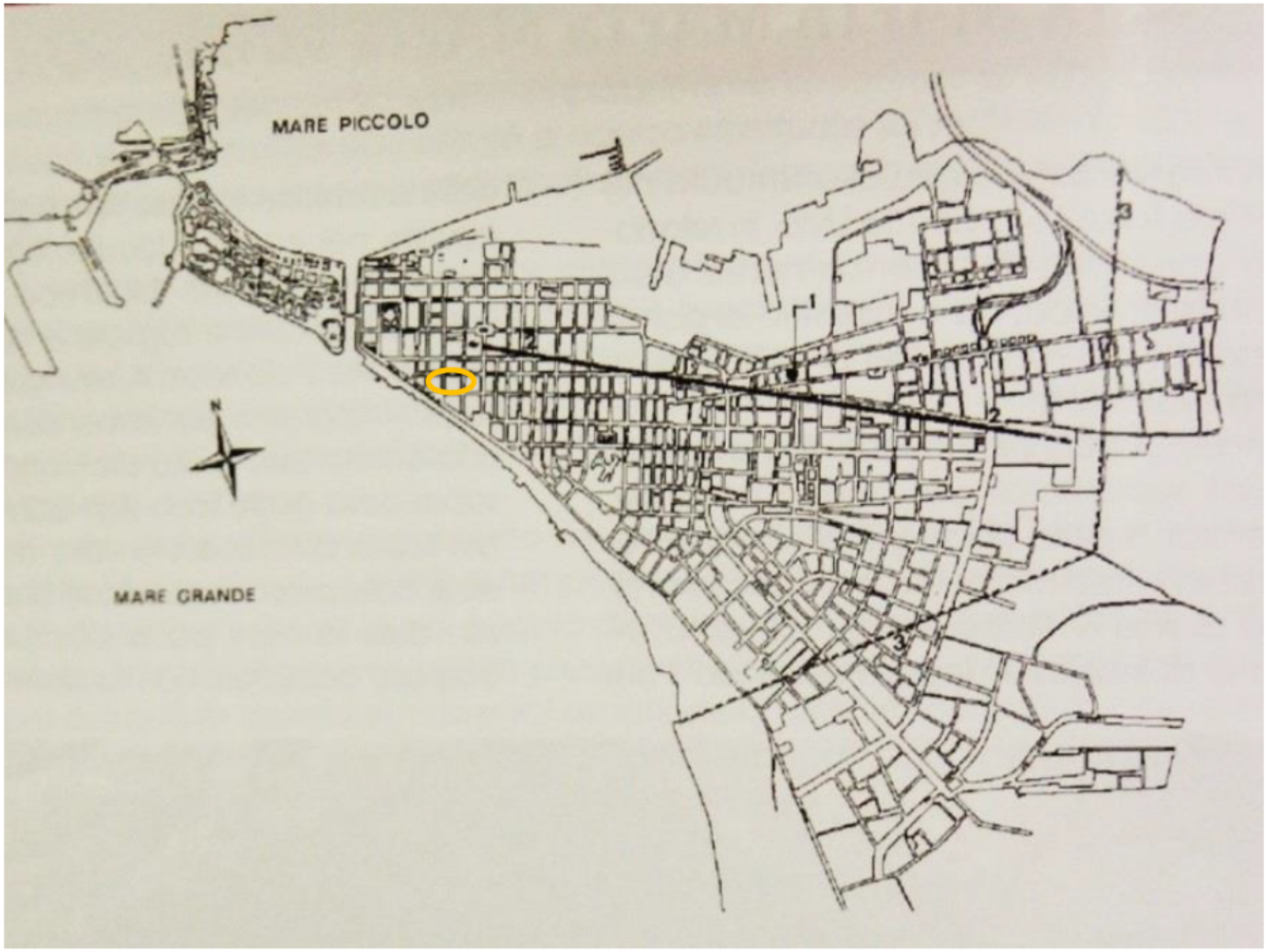


Fig. SI 12.3 Myrtle berries with gold and yellow coating ©Museo Archeologico Nazionale di Taranto



Fig. SI 12.5 Map of Taras showing the location of the via Tito Livio, indicated in the oval. From Dell'Aglio 1999.



SI 13 Taras via Argentina, 52454
MArTA on display S.XIII

Provenance and context[337] The wreath was found in 1947 with a ring, strigil, pelike, oinochoe, cup and unguentarium (**fig. SI 13.2** shows most of these objects). The pelike has the head of a woman, and the oinochoe a head of a man wearing a wreath; a wreath and fillets are also depicted around the neck of the vessel (**fig. SI 13.1**).

Date: end of third century[338]. The oinochoe corresponds to Lippolis's group C-D (end of third century); the cup and pelike are a little earlier, since they correspond more closely to his group C (mid-third).

Type:3.

Constituents:

- A strip of lead circlet with holes pierced for the stems (**fig. SI 13.3**). W: 9.05
- Ten spherical berries with a white coating and no traces of gold or colour on inspection with a magnifying glass. Most are still attached to the stems. Five of the berries have been reassembled so that the stems pass through the pierced hole; four berries still mounted on the stems form a group. The stems for these berries form loops, still bound with the original thread, which is visible with a magnifying glass.

Plants depicted: ivy

Bibliography: unpublished.

Studied: 22.9.2016

Fig. SI 13.1 Neck of oinochoe with wreathed head and other decoration ©Museo Archeologico Nazionale di Taranto



[337] Display panel.
[338] Display panel.

Fig. SI 13.2 Group of objects found with wreath fragments (bottom right) ©Museo Archeologico Nazionale di Taranto



Fig. SI 13.3 Wreath fragments ©Museo Archeologico Nazionale di Taranto



SI 14 Taras 8 via Marche, 54461
MArTA on display

Provenance and context: No other items are listed in the Museum register or on the display panel, although *Gli Ori* refers to a "grave context" (p. 89).

Date: third quarter of the the fourth century[339]?

Type: 2.

Constituents: Diam.: 15cm. (**fig. SI 14.1**).

- Two circlets, one of bone, the other of wood .
- The leaves have been reconstituted by adhering fragments to a modern metal base (**fig. 5.6**). They are lanceolate in shape and symmetrical with no obvious swelling towards the base. The leaves on the left point towards the right, and those on the right point towards the left, meeting in the centre. L of leaves: 37 to 45. W: 11, 12, 14.
- The berries are oval and have a whitish coating beneath the gold. Some of the berries are mounted on modern wire, others on the original round copper stems. At least one of the berries has a tiny cross, indicating myrtle. L of berries: 7.12 or less.

Plant depicted: Myrtle. The berries clearly represent myrtle because they have a small cross. *Gli Ori* describes the leaves as laurel, but the lanceolate shape could also represent myrtle.

Bibliography: *Gli Ori*, cat 16, 88-89.

Studied: 14.9.2016.

Fig. SI 14.1 Overview of wreath ©Museo Archeologico Nazionale di Taranto



[339] Display panel; *Gli Ori* gives third quarter of fourth (p. 89).

SI 15 Taras via Abruzzo grave 20, 54726
MArTA stores

Provenance and context[340]: Via Abruzzo between Via Emilia and Via Toscana, grave 20. Excavated in 1953; with the wreath were two trefoil oinochoes, a silver finger ring and a cup. One of the trefoil oinochoes, inv. 54724, showing a theatrical representation of a man and woman (possibly Odysseus and Calypso (both wearing masks))[341], is shown in **fig. 5.21.**

Date: The figured vase was dated by Lo Porto to c. 350 in 1964.

Type: none

Constituents: Diam.: 15cm. (**fig. SI 15.1)**
48 silver gilt leaves, which are lanceolate in shape. Very few if any are complete. The silver leaves have been mounted on a modern base **fig. SI 15.1**).
The leaves appear to have a central vein with small veins coming out of the central vein. Some of the leaves have a stamped design, like tiny scales (**fig. SI 15.2**).
The silver is very thin and has become slightly iridescent in the ground.
L of leaves: 82. W of leaves: 27.

Scientific analysis: The HHXRF showed silver, gold and lead (probably from the modern support). There was only a trace of calcium on two of the analyses and none on the third, which confirms that there was no coating between the gold and the silver.

Plant depicted: The large size of the leaves and the veins indicate laurel.

Studied: 22.9.2016.

Bibliography:
Gli Ori, p.88.
Lo Porto F. 1964. 'Nuovi vasi fliacici Apuli del Museo Archeologico Nazionale di Taranto' *BdA* 49, 14-20.

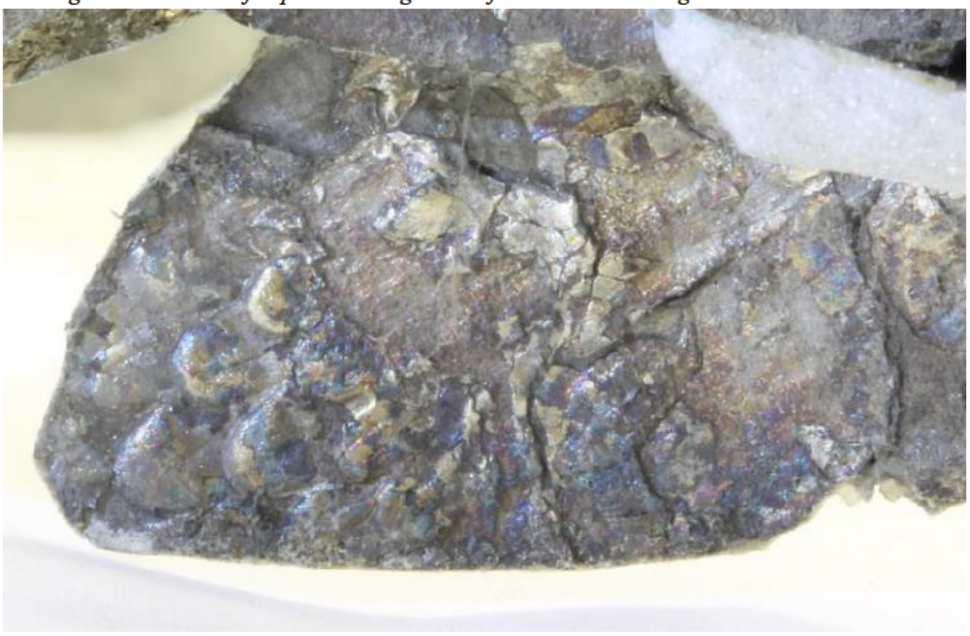
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[340] Information obtained from the Museum register.
[341] Lo Porto 1964, 17-18. See PhV[2]64, no.121.

Fig. SI 15.1 Overall view of wreath ©Museo Archeologico Nazionale di Taranto



Fig. SI 15.2 Detail of impressed design on leaf ©Museo Archeologico Nazionale di Taranto



SI 16 Taras via Batti and via Zara grave 10, 56586
MArTA stores

Provenance and context[342] The wreath was found in a pit grave dug into the rock in building D, near to the Hellenistic walls, excavated in 1953. The grave contained the skeleton of an adult. Other finds were a gold ring (54173), two nails (56588) and a trefoil oinochoe(56587).

Date: Second half of the third c. Masiello suggests the first half of third, based on the Gnathian trefoil oinochoe[343]. Following the Lippolis categorisation, it looks more like phase C/D, now attributed to the third quarter of the third.

Type: 4

Constituents:

- A fragment of lead is the only remnant of the circlet (**fig. SI 16.1**).
- Six bell-shaped flowers with various numbers of petals, with traces of gilding and yellow coating (**fig. SI 16.2**). Moulded. Diam.: 10.8.
- One tiny berry with yellow coating and gold. Diam. 4.9.
- One copper stem still bound with thread
- One fragment of copper or bronze, probably not part of wreath.

Scientific analysis (HHXRF): The yellow coating on the flower was found to contain aluminium, silicon, calcium, iron, copper and gold. The terracotta fabric was found to have aluminium, silicon, a trace of sulfur (probably from a salt in the ground), potassium, calcium, iron, copper, gold and a trace of lead. The outer surface of the flower also contained chlorine, probably a corrosion product formed with the lead.

Plants depicted: Could be ivy, but may not be a specific plant.

Bibliography: *Gli Ori*, 438.

Studied: 19.9.2016.

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[342] *Gli Ori,* 438.
[343] *Gli Ori*, 438.

Fig. SI 16.1 Fragment of lead circlet and bound stem ©Museo Archeologico Nazionale di Taranto



Fig. SI 16.2 Bell-shaped flowers and single berry ©Museo Archeologico Nazionale di Taranto



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SI 17 Taras via Abruzzo grave 59B, 59974
MArTA, stores

Provenance and context[344]: Via Abruzzo, grave 59B, excavated 1953. The wreath was found with a guttus baby feeder, a cup, an amphora, an oinochoe, a strigil and 20 iron nails. The pit grave contained skeletal remains.

Date[345]: c. 215 (dated from coin)

Type:3

Constituents:

-
- Two fragments of lead circlet. L:16.7 and 22.7
- Four small rosettes representing ivy flowers. A white coating has been applied to the reddish clay, but there is no gold leaf. **Fig. SI 17.1**. Diam.: 31.3 (three), 27. Weight: 7.62, 8.34, 9.15 and 5 gr.
- Three flowers, all different, but probably moulded. Traces of white coating remain but no gold. **Fig. SI 17.2**. Diam.: 12.17
- Five strips of copper (stems).W: 1.87
- One leaf, which has a trace of gold.

Plant depicted: The rosettes represent ivy flowers and the leaf is probably myrtle. The three flowers probably do not represent any specific plant.

Bibliography: *Catalogo* 3.1, 365.

Studied: 21.9.2016.

Fig. SI 17.1 Components of wreath ©Museo Archeologico Nazionale di Taranto



Fig. SI 17.2 Three flowers ©Museo Archeologico Nazionale di Taranto



[344] *Catalogo* 3.1, 365.
[345] *Catalogo* 3.1, 385.

SI 18 Taras via Nettuno, 60501
MArTA stores

Provenance and context: The wreath was found in a pit grave with earrings (54744, cat.129), two coins, a Gnathian skyphos (60500), two trefoil oinochoes (60497-8), and two cups (60498-9).

Date: late third[346]. This date is confirmed by the oinochoes and cups, which correspond to Lippolis's category C/D.

Type: 4

Constituents:

- Only a tiny piece of lead remains from the circlet.
- Four groups of stems, still bound together with the original thread (**fig. SI 18.1**).
- 63 large spherical berries which still bear traces of gold and a thin coating (**fig. SI 18.2**). The holes are square and round. Diam.: 11.49, 10.65, 11.95.
- 34 small-medium berries with a yellowish coating (**fig. SI 18.2**). Diam.: 7.55, 6.85, 8.18.
- 15 bell-shaped flowers of different sizes. Some have seven petals, all are quite crudely made (**fig. SI 18.3, 26.4**). One has a white coating and two have a yellowish coating. L: 9.63, 12.46, 9.33.
- 12 myrtle berries with a circle at one end with a yellowish coating and traces of gold (**fig. SI 18.5**). L: 7.55.
- Fragments of copper stems, one of which is bent into a loop. W: 1.6, 1.4.

Scientific analysis (HHXRF): The coating on a yellow berry showed aluminium, silicon, sulfur, potassium, calcium, copper, lead and a lot of iron, confirming that goethite provided the colouring.

Plants depicted: The oval berries are myrtle; the spherical berries could be myrtle buds or a non-specific plant. The bell-shaped flowers seem to represent different plants.

Bibliography: *Gli Ori*, 440.

Studied: 15.9.2016

Fig. SI 18.1 Groups of bound stems with original thread ©Museo Archeologico Nazionale di Taranto



[346] *Gli Ori*, 440.

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Fig. SI 18.2 Large and small spherical berries ©Museo Archeologico Nazionale di Taranto



Fig. SI 18.3 Bell-shaped flowers ©Museo Archeologico Nazionale di Taranto



Fig. SI 18. 3 Bell-shaped flowers ©Museo Archeologico Nazionale di Taranto



Fig. SI 18.4 Myrtle berries ©Museo Archeologico Nazionale di Taranto



SI 19 Taras via Oberdan grave IV, 66777-66781
MArTA, on display, room XI

Provenance and context: The wreath was found with a black glaze two-handled cup and an iron nail.

Date: The design of the cup suggests the last quarter of the fourth century (Lippolis Phase B1) (**fig. SI 19.1**).

Type: 3 local variation.

Constituents: (**fig. SI 19.2**).

- Nothing of the circlet remains.
- 28 rosettes (ivy flowers) in two different sizes. Some have a white coating, others a yellowish coating. **Fig. 5.13**
- About 35 tiny flowers, some of which have traces of dark blue pigment (**fig. SI 19.3**). All have a white coating and some have traces of gold. The flowers are all different.
- 11 acorns, all of which have a yellow coating. Some have gold leaf on the top part (**fig. SI 19.3**).
- Two buds: one is blue, another yellow.
- 9-10 berries made of red clay, with a white or yellow coating.
- Many of the rosettes and flowers have stems, some bound with thread, which looks original.

Plants depicted: various. The rosettes could represent ivy, but the flowers seem to represent different flowers. The acorns obviously represent oak.

Studied: 15.9.2016

Fig. SI 19.1 Black glaze cup ©Museo Archeologico Nazionale di Taranto



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Fig. SI 19.2 Overview of wreath ©Museo Archeologico Nazionale di Taranto



Fig. SI 19.3 Detail of acorns. Traces of gold can be seen on the acorn on the right ©Museo Archeologico Nazionale di Taranto



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SI 20 Taras via Sardegna, grave 6, 107663-5
MArTA stores

Provenance and context[347]:Via Sardegna, quartiere Italia, plot of Calia, grave 6. The wreath was found in a semi-chamber tomb, plastered on the interior, which contained the skeleton of an adult female and the remains of a second inhumation. The other finds were an earring (107659, cat. 128), a necklace (107660), two mirrors (107662 and 107666, a nail (107673), two trefoil oinochoes (107661, 107669) two unguentaria (107667-8), an 'inkwell' (107670), a miniature vase (107671) and a cup (107672).

Date: *Gli Ori* gives the third century[348]. One of the inkwells corresponds to Lippolis's phase C, the oinochoe to phase C/D, which would give a date of the third or last quarter of the third century.

Type: 3 local variation.

Constituents:
There are no traces of gilding now visible, and it seems likely that the individual elements were never gilded (**fig. SI 20.1**).

- Nothing remains of the circlet. There is no obvious sign of gilding on any of the wreath fragments.
- Two large rosettes (ivy flower heads) made of red clay with a white coating. No traces of gilding. Diam.: 47 and 49.3. Diam. of hole in large rosette: 4.8
- Two small rosettes with a white coating. One of these is still mounted on its stem Diam.: 42-42. W of wire in small rosette 2.04
- 17 flowers with four petals made of red clay with a white coating (**fig. SI 20.2**). The remains of red clay or soil can be seen. The flowers are of different sizes but were probably made by moulding. Diam.: 21.1, 25, 25.2, 22.17.
- 17 conical pointed terracotta objects, possibly representing buds or laurel berries, with a hole at the base of the cone (wide end) (**fig. SI 20.3**). L: 12.2, 11.4. Diam. of holes: 2.03
- Two bell-shaped flowers, which have a hole at the narrow end (**fig. SI 20.4**). L: 11.26, 9.5.
- Three groups of stems bound with the original thread (**figs. SI 20.5 and 20.6**). These could have supported the pointed conical objects.
- The remains of two leaves, made in one piece with the stem
- The remains of something made of copper or bronze, probably not part of the wreath 8.61 x23.02.
- The remains of many stems. W: 1.34, 1.36, 1.8

Scientific analysis (HHXRF): Aluminium, silicon, calcium, iron and lead were found in the coating of the flowers and the small rosette. The back of the flower had aluminum, silicon, calcium, iron, potassium and sulfur and only a very little lead. No gold was found. The large fragment of metal, thought not to be part of the wreath, had tin as well as copper.

Plants depicted: there seems to be a mixture of different kinds of plants. The rosettes are ivy; the four-petalled flowers could be laurel or myrtle. The leaves look like myrtle. The pointed conical objects could be laurel berries or could be intended to represent buds of a non-specific plant. The bell-shaped flowers are probably non-specific, but could conceivably be myrtle or ivy.

Bibliography: *Gli Ori*, p. 427.

Studied:14.9.2016

[347] *Gli Ori*, 427-8.
[348] *Gli Ori*, 428.

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Fig. SI 20.1 Overview of wreath fragments ©Museo Archeologico Nazionale di Taranto



Fig. SI 20.2 Four-petalled flowers ©Museo Archeologico Nazionale di Taranto



Fig. SI 20.3 Conical objects, probably buds ©Museo Archeologico Nazionale di Taranto



Fig. SI 20.4 Two bell-shaped flowers ©Museo Archeologico Nazionale di Taranto



Fig. SI 20.5 Stems bound with original thread ©Museo Archeologico Nazionale di Taranto



Fig. SI 20.8 Stems bound with original thread (x6.4) ©Museo Archeologico Nazionale di Taranto



SI 21 Taras via Toscana and via Marche grave 14, 107617
MArTA stores

Provenance and context: The wreath was found in a pit grave with a finger ring of lead (107619), a nail (107618), a seal ring (107620), two trefoil oinochoes (107621 and 107616) and three cups (107613-5).

Date: Second quarter of the third century, judging by the design of the cups (Lippolis phase C). *Gli Ori* gives early third[349].

Type:4

Constituents: (**fig. SI 21.1**).

- Nine fragments of lead circlet, two of which still have copper stems (**fig. SI 21.2**). W: 6.72 to 7.35.
- 12 berries made of red clay with a white coating and traces of gold leaf. Fragments of further berries also remain (**figs. SI 21.3 and 4**). Diam. of berries: 10.7 to 11.5. Weight 1.2, 1, 1.75, 1.3g.
- Tiny fragments of leaves, stems and white material, probably lead
- Stems made of flat copper sheet. A group of eight stems is still bound with thread coming out of the hole in the circlet (**fig. SI 21.5**). Another group of stems has traces of a substance, possibly clay or glue (**fig. SI 21.6**). The wire is square in cross section, and was almost certainly made by folding strips of copper (**fig. SI 21.7**). W of stem as emerges from hole: 0.98.
- 12 bell-shaped flowers, made of reddish clay with a white coating and no obvious sign of gold leaf (**fig. SI 21.8**). It is difficult to count the number of petals, but there seem to be at least 16. Diam. 9.93. Weight of complete flower: 1g.

Scientific analysis (HHXRF): The gilded leaves were found to be made of copper and gold, with some calcium and iron and a trace of lead, probably from the circlet. The fragments from the circlet were found to be pure lead. The stems were pure copper. The fabric of the berry was found to have aluminium, silicon, potassium (trace) and calcium.

Plant depicted: The berries and flowers could be ivy, but the material is too fragmentary to be certain.

Bibliography: *Gli Ori*, 383.

Studied: 15.9.2016.

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[349] *Gli Ori*, 384.

Fig. SI 21.1 Overview of wreath fragments ©Museo Archeologico Nazionale di Taranto



Fig. SI 21.2 Fragments of lead circlet ©Museo Archeologico Nazionale di Taranto



Fig. SI 21.3 Detail of broken berries ©Museo Archeologico Nazionale di Taranto



Fig. SI 21.4 Detail of white coating on berry ©Museo Archeologico Nazionale di Taranto



Fig. SI 21.5 Clump of stems bound with original thread and another substance ©Museo Archeologico Nazionale di Taranto



Fig. SI 21.6 Detail of material used to bind stems (x6.4) ©Museo Archeologico Nazionale di Taranto



Fig. SI 21.7 Detail of stems, showing made by folding copper sheet (x6.4) ©Museo Archeologico Nazionale di Taranto



Fig. SI 21.8 Bell-shaped flowers with white coating ©Museo Archeologico Nazionale di Taranto



SI 22 Taras via Umbria grave 23, 110102
MArTA stores

Provenance and context: The register lists a large number of items found with this wreath including unguentaria, Bacchic figures, a protome, architectural fragments, a lekythos, three kylixes, small cups, a small vase, a small bowls, part of a nail, an oinochoe, gold and gilded earrings, a trefoil oinoche and a pelike.

Date: *Gli Ori* gives second half of fourth[350], but the date should be taken as from the end of this period, given the redating necessary for all the objects in the catalogue.

Type:2

Constituents:
The wreath appears to have been restored before it entered the museum's collection[351](**fig. SI 22.1).** The Diam. is 14cm and it has a gap at the back; the circumference is about 32cm. The wreath has been rebuilt, but parts are original particularly on the left. At least part of the wreath appears to have been burnt, as there are signs that the metal has been melted.

- The original circlet was made of bone with pierced holes (**fig. SI 22.2**).
- Fragments of leaves have been stuck onto a modern metal support, but some look as if they are original and appear to have been made in one piece with the leaves (**fig. SI 22.3**). L: 40, 32.
- The 12 berries have a small cross and are clearly myrtle. They have a yellow coating beneath the gold (**fig. SI 22.4**). The fabric is made of red clay.

Scientific analysis (HHXRF): the leaves were found to be composed of copper and gold, with a trace of calcium and iron. Lead was also found, almost certainly from the metal supporting the leaves, which had lead and copper.

Plant depicted: Myrtle.

Bibliography: *Gli Ori*, cat. 25, pages 94-95.

Studied: 23.9.2016.

Fig. SI 22.1 Overview of wreath ©Museo Archeologico Nazionale di Taranto



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[350] P.95.
[351] Note in the museum register that it had been restored and mounted by Mrs Cacace.

Fig. SI 22.2 Original bone circlet ©Museo Archeologico Nazionale di Taranto

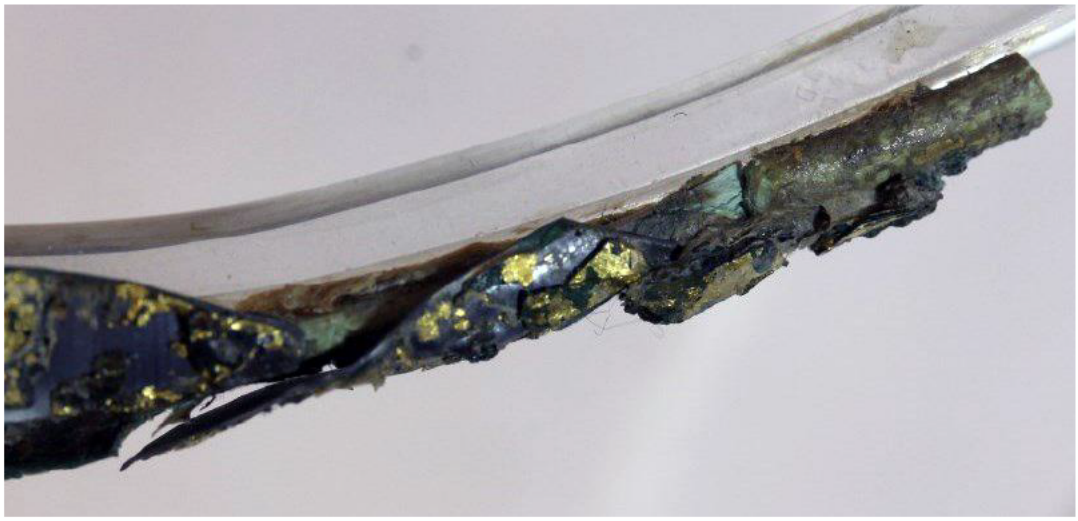


Fig. SI 22.3 Leaves on left side of wreath, which look at least partly original ©Museo Archeologico Nazionale di Taranto



Fig. SI 22.4 Berries on wreath ©Museo Archeologico Nazionale di Taranto



SI 23 Taras via Bellini grave 1, 110291
MArTA on display room XI

Provenance and context: The wreath was found with a bezel ring, representing an ephebe who is perhaps drunk[352].

Date: second half of the fourth century[353], dated by the similarity of this wreath to SI 15, for which there is good contextual dating. The ring is dated to the around 350.

Type: none

Constituents: the wreath is of the silver gilt type (**fig. SI 23.1**). The internal diameter of the wreath is 17.5cm.

- Gilded metal circlet (**fig. SI 23.2**) with pierced holes.
- 24 leaves which are large and probably represent laurel. The leaves have a stamped design on them (**fig. SI 23.3**) and are mainly reconstituted from fragments adhered to a modern metal base, but a few of the leaves are entire. The leaves appear to have been soldered to the circlet, probably in modern times. L of leaves: 45.2, 62.5
- There are small stubs on some of the leaves, which are the remains of the original stems.
- There are no berries.

Plant depicted: Laurel, as indicated by the size of the leaves and the veins on the leaves.

Bibliography: *Gli Ori*, cat. 15, p.88.

Studied: 19.9.2016.

Fig. SI 23.1 Overview of wreath ©Museo Archeologico Nazionale di Taranto



[352] *Gli Ori*, cat. 193, p. 283
[353] Display panel in museum. *Gli Ori* gives mid-fourth (p.88).

Fig. SI 23.2 Detail of metal circlet ©Museo Archeologico Nazionale di Taranto



Fig. SI 23.3 One of the leaves with the circlet, with short stub showing how it was attached ©Museo Archeologico Nazionale di Taranto



Fig. SI 23.4 Detail of stamped design on leaves ©Museo Archeologico Nazionale di Taranto



SI 24 Taras via Toscana no. 24, grave 2, 110388
MArTA on display S.XI

Provenance and context: The wreath was found with an iron strigil, a small cup and an oinochoe with a trefoil mouth.

Date: First quarter of the third century[354].

Type:3

Constituents: (**fig. SI 24.1**).

- The original circlet appears to have been made of lead **(fig. SI 24.2).**
- Fragments of leaves have been mounted onto a modern metal base, to form a total of 17 leaves. They represent ivy. The original stems supporting the ivy leaves seem to have been made separately from the leaves, and joined to them, probably by soldering (**fig. SI 24.3**).
- 21 spherical berries have been mounted on long straight stems, only some of which are original. The berries are made of red clay with a white coating. Diam. of berries: 7.
- The stems of the berries have been bound with modern wire to stems supporting the ivy leaves (**fig. SI 24.4**). The original stems on the berries seem to have been straight rather than spirals. The stems seem to have been attached to another, thicker, stem, which was looped around the circlet. W of stems: 1.5.
- Gilded rosettes with 18-19 petals represent ivy flowers. Diam.: 13.25.
- There are two gilded spirals on the left of the wreath which probably once supported rosettes. Another spiral stem on the right is not, or is no longer, gilded. At least one of these stems was looped around the circlet (**fig. SI 24.5**). Diam. of spiral 0.73 at tip.

Plant depicted: ivy.

Bibliography: *Gli Ori*, cat. 19, pp 90-91.

Studied: 20.9.2016.

Fig. SI 24.1 Overview of wreath ©Museo Archeologico Nazionale di Taranto



[354] Lippolis 1994, Table XVII gives first quarter of the third (cf *Gli Ori*, 90-91, which gives end of fourth century).

Fig. SI 24.2 Detail of wreath showing circlet ©Museo Archeologico Nazionale di Taranto



Fig. SI 24.3 Detail of leaves, berries and stems ©Museo Archeologico Nazionale di Taranto



Fig. SI 24.5 Detail of stem looped around circlet ©Museo Archeologico Nazionale di Taranto



Fig. SI 24.4 Detail of rosettes and berries ©Museo Archeologico Nazionale di Taranto



SI 25 Taras via Tirrenia grave 31, 113503
MArTA on display, S. XI

Provenance and context[355]: via Tirrenia, grave 31, discovered 30.1.1959. The wreath was found round the neck of a hydria, which is exhibited with the wreath. The register does not mention any other items found in the grave. This hydria was the first found in the Tarantine area to have been used as a cinerary urn and is seen as an explicit reference to a Macedonian custom[356].

Date: Second half of fourth century? [357] (based on the hydria).

Type: 2 or 7?

Constituents: (**figs. SI 25.1 and 25.2**)
The diameter of the wreath is about 14.5, and the circumference about 43 cm, with a gap at the back.

- The original circlet was made of bone[358], but this is not visible now.
- About 21 gilded leaves have been reconstituted on a modern base (**fig. SI 25.3**). The stems are not gilded. W of leaves (as reconstructed) 8.6. W of stems: 1. L of leaves (as reconstructed) 24.7
- 45 spherical berries have a yellow coating beneath the gold (**figs. SI 25.4 and 25.5**). The fabric is a reddish colour. Diameter of berries: 7.1 to 7.7.

Plant depicted: Not clear. The leaves have been reconstituted to look like myrtle or laurel, but they were not necessarily originally this shape.

Bibliography: *Catalogo* 3.1, fig. 132, page 157.
Gli Ori cat. 24, 94.

Studied: 15.9.2016.

Fig. SI 25.1 Hydria with wreath around the neck ©Museo Archeologico Nazionale di Taranto



[355] Museum register.
[356] *Catalogo* 3.1, 157.
[357] *Catalogo* 3.1, 157
[358] *Gli Ori*, 94.

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Fig. SI 25.2 Close-up of wreath ©Museo Archeologico Nazionale di Taranto



Fig. SI 25.3 Detail of berries showing yellow coating ©Museo Archeologico Nazionale di Taranto



Fig. SI 25.4 Detail of leaves and berries ©Museo Archeologico Nazionale di Taranto



SI 26 Taras via Polibio, 117362
MArTA, stores

Provenance and context[359]: The grave had many depositions from the first half of the second century to the end of the second century, and was reused later as evidenced by a funerary urn, of a type used between the first century BC and the first century AD. The terracotta figurines seem to indicate the burial of at least two adolescents, one female and one male. There were many other finds in the same grave including a strigil, a shell, three bowls (117378-9), two nails, alabastra (117489-90), figurines (117357-9, 117361) and fragments of figurines.

Date: second century[360]

Type: 3.

Constituents:
Three small rosettes representing ivy flowers. A fourth rosette is in four fragments. There are traces of a white coating, but no gold leaf. **Fig. SI 26.1**. Diam.: 39.42 (two), 37.74 Weight: 14.4g (two), 13.08 (broken). Holes in rosettes (oval) 5.3x40.5.

Plant depicted: ivy.

Bibliography: *Catalogo* 3.2, 96.

Studied: 21.9.2016.

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Fig. SI 26.1 Three rosettes and fragments ©Museo Archeologico Nazionale di Taranto



[359] *Catalogo* 3.2, 96-107
[360] *Catalogo* 3.2, 107.

SI 27 Taras Strada Messina grave 5, 119341-349
MArTA, stores

Provenance and context[361]: The wreath was found in a pit grave with an alabastron (119354), a gold and glass finger ring (119351), a mirror (119350), a pyxis (119340), gold earrings, a cup (119339) and an oinochoe (119338). It is thought to have contained a female burial, on the basis of the finds.

Date: Beginning of second century[362]

Type: 3 local variation.

Constituents: (**fig. SI 21.1**)

- A strip of lead from the circlet. W 9.64. L: 54
- Nine bell-shaped flowers with five or six petals made of terracotta with a white coating (**fig. SI 27.2**). Diam.: 10.5. Weight: 0.84, 0.74 (x2), 0.52g.
- Fragments of copper from the leaves, some of which still have traces of gilding.
- Fragments of stems
- Five large rosettes made of half balls arranged in a circle, with a white coating (**fig. SI 27.1**). Diam.: 46.7
- Two smaller rosettes (broken). Diam. 9.8.
- One spherical berry with a flattened top. Diam. 8.74

Plant depicted: ivy.

Bibliography: *Gli Ori*, cat. 21 ; *Catalogo* 3.2, 1.2, 62

Studied: 21.9.2016.

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[361] *Catalogo* 3.2, 62.
[362] *Catalogo* 3.2, 62.

Fig. SI 27.1 Overview of wreath fragments ©Museo Archeologico Nazionale di Taranto



Fig. SI 27.2 Detail of flowers ©Museo Archeologico Nazionale di Taranto



SI 28 Taras Contrada Cappuccini grave 5, 214732
MArTA, on display, room XI

Provenance and context: Contrada Cappuccini grave 5. The wreath was found in 1986. Other finds were gold earrings with an Eros, a guttus baby-feeder and a trefoil oinochoe. **Fig. SI 28.1**.

Date: Based on the oinochoe and the guttus feeder, Lippolis phase B2 (first quarter of the third c.).

Type: none

Constituents: (**fig. SI 28.2**).
There are no visible traces of gilding on the wreath fragments.

- Four fragments of lead circlet, broken at a hole. W 7.4
- Seven flowers with four petals possibly representing laurel, all broken (**fig. SI 28.3**). Diam.: 20.
- Five bell-shaped flowers with a white coating. Diam. 11.
- A large rosette representing ivy flowers with a white coating, with maybe 18 petals/flowers (**fig. SI 28.3**). Diam.44.4
- Two spherical berries with a white coating. Diam. 7.3

Plants depicted: Ivy and possibly laurel, or a non-specific flower.

Studied: 20.9.2016

Fig. SI 28.1 Trefoil oinochoe and guttus feeder ©Museo Archeologico Nazionale di Taranto



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Fig. SI 28.2 Overview of wreath ©Museo Archeologico Nazionale di Taranto



Fig. SI 28.3 Flowers and rosette ©Museo Archeologico Nazionale di Taranto



Fig. SI 28.4 Further flowers and spherical berry ©Museo Archeologico Nazionale di Taranto



SI 29 Taras Corso Piemonte grave 1, 28255
MArTA, on display room XIII.

Provenance and context: The cremated remains of the wreath were found inside a pelike (28249) which was used as a funerary urn (**figs. SI 29.1, 5.23 and 5.24**). The deceased was probably an adolescent, on the basis of the size of a ring found with the wreath and thought to be female from the accompanying finds[363]. The many finds included a gold ring (28254), a bronze ring, a ritually broken mirror, a gold bead, a bone plaque, a glass button, a pelike (28249), a cup, glass, flesh-coloured pigment, a cosmetics box and a skyphos **(fig. SI 29.3**). The pelike was probably an heirloom, and dates to the last quarter of the fourth century[364].

Date: Mid- third century, on the basis of the pottery and the bevel gold ring[365].

Type:3

Constituents: (**fig. 5.7**)

- Five ivy rosettes with 19 petals and a trace of gilding, as well as traces of red and yellow coating (**fig. SI 29.4**). Diam. 16.44
- Four spherical berries with a slight indentation at the top.
- Remains of eight ivy leaves. L: 28.67, 26.67 (almost complete)
- Remains of stems
  W of stems: 1.5 to 1.75. One of the thicker stems has a loop, and supported a rosette (**fig. SI 29.4**).

Plants depicted: Ivy.

Bibliography: *Catalogo* 3.1, plate VI, page 154.

Studied: 22.9.2016.

Fig. SI 29.1 Pelike 28249 in grave 1. From Catalogo, plate V.



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[363] *Catalogo* 3.1, 154.
[364] *Catalogo* 3.1, 154.
[365] *Catalogo* 3.1, 154

Fig. SI 29.2 Cremated remains of wreath as found inside pelike in grave 1. From Catalogo, plate V.



Fig. SI 29.3 Pottery from grave ©Museo Archeologico Nazionale di Taranto



Fig. SI 29.4 Rosette with looped stem ©Museo Archeologico Nazionale di Taranto



L1 Bassae, Temple of Apollo Epikourios. NAM Athens X13859 and X13859a
NAM store

Provenance and context: In excavations in 1902-1907 led by Kouroniotis, the excavators found some objects in the foundations of the temple of Apollo Epikourios, at a depth of up to 40 cm and at the level of the archaic temple. To the north, on the west side of the excavations, were found aryballoi, burnt remains of pottery, bronze and iron objects (including presumably the leaves) as well as weapons[366]. To the south, in fine soil, were found far fewer objects, with no sign of burning. Many of the objects were associated with battle (helmets, spears, miniature representations of armour). One of the leaves, 13859, was excavated by Kouroniotis[367] . He suggests that the bronze objects were made on the spot, perhaps by itinerant craftsmen, as confirmed by the large number of fragments of bronze sheet from which some of the objects had been cut out[368]. A similar leaf is said to have been found in the first excavation of the temple by Stackelberg[369], which is probably the leaf numbered 13859a in the National Archaeological Museum. Stackelberg refers to finding a gilded metal laurel leaf or leaves in the temple, and suggests that it may have come from a metal wreath decorating a statue of the god[370]. Kouroniotis describes other bronze items, found at the same time, as diadems (χαλκά διαδήματα)[371].

Date: Seventh to sixth century? Other objects such as figurines and weapons found alongside the leaf discovered by Kouroniotis have been dated to the seventh century[372].

Constituents:
Leaf 13859, bronze leaf with no visible traces of gilding (**figs. L1.1 and 8.8**). Length 90.06, W 37.4 (maximum). The shape is symmetrical, with the widest part approximately in the centre. There is a stub at one end which could represent the end of a stem. The indentation representing the central vein is 0.9 wide. The leaf is 0.7 thick (maximum), but it is thinner at one end (0.57) where it has slightly split. It weighs 12.5g. It is doubtful that it was ever part of a wreath, but if so, it is likely to have once decorated a statue, because a wreath with leaves of this weight would have been heavy to wear.

Leaf 13859A is slightly smaller and has no visible traces of gilding (**figs. L1.2 and L1.3**). L 69.17, maximum W 31.4. There is a slight protrusion at one end, representing the end of a branch or stem. The stem was probably formed by folding back the metal on itself, as in the case of the leaves at Nemea. It has a central indentation representing a vein.

Several strips of bronze, described by Kouroniotis as "diadems" were studied at the same time. Permission was obtained to study them in case they were related to the leaves, but this does not appear to be the case. They are numbered 13487/1 to 13487/24. Sizes of 13487/1: 38.6 x 21.7, 13487/16: 92.1 x 10.9 and 13847/13 29.3 x 16.9. It is just possible that they worn at the front of the head, with a string at each end, but they are very small, and there is no reason to associate them with the leaves. It seems more likely that they were armbands.

Plant represented: Kouroniotis describes the leaves as laurel. The symmetrical shape of the leaves, the full shape, large size and the central vein are strongly suggestive of laurel, which would also be consistent with their being found in the Temple of Apollo Epikourios.

Bibliography:
Kourouniotis K. 1910. 'Το εν Βάσσαις αρχαιότερον ιερόν του Απόλλωνος', *AE* 1910, 272-332 at page 329.

[366] Kourouniotis 1910, 274.
[367] Kourouniotis 1910, 329.
[368] Kouroniotis 1910, 330
[369] Kouroniotis 1910, 329; Stackelberg 1826.
[370] Stackelberg 1826, 19 and 98.
[371] Kourouniotis 1910, 323.
[372] Tzortzi 2001, 39.

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Stackelberg O.M. Freiherr von M. 1826 *Der Apollotempel zu Bassæ in Arcadien und die daselbst ausgegrabenen Bildwerke.*
Tzortzi K. 2001. *The Temple of Apollo Epikourios, a journey through time and space.*

Studied: 12 January 2016

Fig. L1.1: Back of leaf 13859 ©National Archaeological Museum, Athens, Hellenic Ministry of Culture and Sports



Fig. L1.2: Back of leaf 13859a ©National Archaeological Museum, Athens, Hellenic Ministry of Culture and Sports



Fig. L1.3 Front of leaf 13859a ©National Archaeological Museum, Athens, Hellenic Ministry of Culture and Sports



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L2 Corfu, Temple of Apollo Korykyraios MR998, 999, 1006
AM Corfu, store and display

Provenance and context[373]: Temple of Apollo Korkyraios, excavated at Mon Repos, area V, 42, 11.8.1967. A

Date: Around the end of the fifth century

Constituents:
MR999 is a leaf made of bronze or copper with deeply engraved veins and a pleated effect, like a pie-crust, on the edges. There is no sign of a join to a circlet, but the edges of the leaf have been hammered at the base to form what looks like a stem (**figs. 7.21 and L2.1**). L: 70mm, max. W: 28mm.

MR998 is similar, but it is a little smaller and the veins are a little narrower. The two sides of the leaf have been hammered to form what might be a hole to hold a stem. L: 62mm, max. W 22mm.

MR1006 consists of gold foil with a triangular impression, which could well be from a leaf tip. If it was from a leaf, it was not attached with coating or adhesive (**fig. L2.2**). Max. L of impressions: 7mm. Max. thickness of foil: 0.1mm.

A further similar leaf is on display in the museum, with other dedications from the same temple (**fig. L2.3**). There is also a tiny parsley branch or a flower and a twig from the Temple at Roda, dedicated to an unknown deity (**fig. L2.4**).

Plant represented: laurel.

Bibliography: Kalligas P. 1969. *AD* 23 (1968) *Chron*, 311 and pl. 251.

Studied: 23 November 2018.

Fig. L2.1 Detail of end of leaf MR999 (left) detail of stem end on both leaves (right)
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[373] Kalligas 1969, 309.

Fig. L2.2 Gold from a leaf © Hellenic Ministry of Culture and Sports



Fig. L2.3 Leaves from Temple of Apollo © Hellenic Ministry of Culture and Sports



Fig. L2.4 Parsley sprig (?) and twig from Temple at Roda. © Hellenic Ministry of Culture and Sports



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L3 Isthmia Temple of Poseidon, IM1337, 5009, 2217, 5022, 2233
Isthmia AM store

Provenance and context[374]: IM1337, 5009, 1227, 2233A and 2166 were found in the foundations of the Temple of Poseidon (trenches 13, Fb, 15, ETI and ETII respectively); IM2217 was found in Tr H (Pit) nearby.

Date: Leaf 2217 can be fairly securely dated, by reference to pottery at the same level, V, in a pit, to between the seventh and mid-fifth centuries[375]. The other leaves were found in the foundations of the archaic temple, which was burnt down in c. 450[376], the earliest date at which they can have been deposited. One of the olive leaves, IM1227, was found next to a bronze coin, IM1226, dated to 277-239 and from Macedonia so a later date is possible for this leaf.

Constituents:
IM 1337 (**fig. L3.1**) This leaf represents celery and has been cut from bronze sheet, not particularly skilfully. The leaves have serrated edges. At the base, a piece of metal appears to have been broken off, probably a stem. Max. W: 44.8, max L: 33.5; thickness 0.44.

HHXRF results: Copper and iron (tr).

Bibliography:
E.R. Gebhard and T.E. Gregory (eds) *Bridge of the untiring sea, Hesperia Supplement 48*.
Raubitschek I.K. 1998. *Isthmia* VII, *The Metal Objects*.
Risser M. K. 2015. 'City, sanctuary and feast: dining vessels from the archaic reservoir in the Sanctuary of Poseidon', in *Bridge of the untiring sea, Hesperia Supplement 48*, E.R. Gebhard and T.E. Gregory (eds) 97-108,

Studied: June 2017.

IM 5009 This leaf represents celery and is almost identical to IM1337, although a little smaller, and was probably cut from the same pattern. It was cut from bronze sheet and a piece of metal at the base has been broken off, probably from a stem.
HHXRF results: Copper and iron

Fig. L3.1 IM 1337 © Hellenic Ministry of Culture and Sports



IM 2217 (**fig. L3.2**). A large fragment of a leaf probably also represents celery and two further fragments have been preserved from the same leaf. The remains of a stem made in one piece with the leaf are still attached to the larger fragment, which is a slightly different shape from leaves 1337 and 5009, having a

[374] Raubitschek 1998, 71
[375] Risser 2015, 85.
[376] Gebhard and Hemans 1998 in Gebhard and Gregory (eds), 6. Se also Risser 2015, Appendix.

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horizontal base. The stem is shaped at one end, probably so as to be inserted into a hole in a circlet (**fig. L3.3**). From stem to tip: 49.2. Max W: 46.2. L of leaf L of stem: 19.9. W of stem: 4.39; thickness of leaf 0.62, thickness of stem: 3.66.

HHXRF results: copper, tin, lead

Fig. L3.2 IM 2217 © Hellenic Ministry of Culture and Sports



Fig. L 3.3 Details of stem, IM 2217 © Hellenic Ministry of Culture and Sports



IM 1227 (**fig. L3.4**). A copper or bronze olive leaf with a central vein. The shape is slightly fuller at the end of the leaf further from the node, distinguishing it from myrtle, and it does not have the fullness of laurel. A short stem has been preserved at the base. Max. L 59.26; max W 17.5; W of vein 0.7; thickness of leaf 0.77.
HHXRF results: iron and copper

Fig. L3.4 IM 1227© Hellenic Ministry of Culture and Sports



IM 50222. This leaf is very similar to IM1227 and also represents olive. It has a central vein and has been bent in the middle.

IM 2233A (**fig. L3.5**). This is an ivy leaf, made of bronze, with a long stem which has been folded over, and a shorter protrusion at the other end. It is similar in shape to a leaf from Herakleia grave 993, south necropolis (T5X28). The stem has been formed by folding and hammering the metal plate. L (without stem) 29.02; L of stem 3.7; thickness of leaf 0.62; max. thickness of stem 2.33.
HHXRF results: copper, tin

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Fig. L3.5 IM2233 © Hellenic Ministry of Culture and Sports



IM2166 (**fig. L3.6**) appears to represent a sprig of leaves, in two groups, one of which has snapped off, possibly representing parsley or celery flowers. There are four to five leaves in each group. The stem is square and has been formed by folding over the metal sheet. The spray has been formed by hammering. Total L (max) 8.4cm; L of each group of leaves 23.55; L and W of stem 2.16; thickness of sheet: 0.7 to 1mm.
HHXRF results: copper and iron (no tin).

Fig. L3.6 2166 © Hellenic Ministry of Culture and Sports



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L4 Nemea BR66, 74, 109, 139, 157, 184, 186, 265, 295, 383, 816, 1043, 1134, 1521.

Nemea AM, 13 leaves. 74, 109, 139, 157, 184, 265, 395, 383, 1043 and 1134 are on display. The other three, 66, 816 and 1521 are kept in the stores.

Provenance and contexts[377]: In excavations led by Stephen Miller, the American School at Athens found at least eleven leaves, in separate locations near the Sanctuary of Zeus. Many of the leaves were found in the foundation fill of the fourth century temple, mixed in with objects from several periods, from the fifth century BC to Byzantine[378]. Miller comments that the southeast corner of the Temple of Zeus was a popular place for dedications throughout the Classical and Hellenistic eras[379]. Leaf BR383 was found in a trench on the west of a circular structure by the southeast corner of the Temple. Leaves BR 66, 109, 139,157 and 184 were found in sectors M14, M15and N15. Leaf BR383 comes from a trench on the west side of the circular structure, beside the Temple. Leaf BR1521 was found immediately to the east of the Temple in a white paved area consisting of pure white clay resembling that also found in the Early Stadium which was pitted with holes apparently for posts of temporary structures and grooves the right distance apart to be from chariot wheels[380]. The find of the celery leaf reinforces the idea that the leaves were from statues originally erected to commemorate victorious athletes, since these statues were once located in an early stadium close to the Sanctuary of Zeus. The construction fill in which the celery leaf found was directly on top of the area of pure white clay.

Date: Fifth to fourth century? The layers immediately beneath BR383 contained pottery from the sixth century. Leaf BR816 was found in a layer with nothing later than the fifth century[381]. The other leaves are so similar that it seems likely that they are from a similar date, confirmed by the fact that they were found in the foundations of the fourth century Temple.

Bibliography:
Miller Stephen G. 1977. 'Excavations at Nemea 1976', *Hesperia* 46, 1-26
Miller Stephen G. 1978. 'Excavations at Nemea, 1977', *Hesperia* 47, 58-88.
Miller Stephen G. 2015. 'Excavations at Nemea 1997-2001', *Hesperia* 84(2), 272-353.

Studied: May 2016

Description and contents:
Leaf BR66. This fragment of leaf was found in sector M14, layer 3G, Lot 5 Roman on 4 June 1976[382]. There were a large number of bronze fragments found in the same area. Both ends of the leaf have been broken and it has a central vein. L: 37.7; max. W: 15.03. W of vein: 0.48.
Scientific analysis: On analysis with the HHXRF it was found to contain copper and a little tin (bronze).

Leaf BR74. This leaf was found in sector O16, Lot 5[383]. It has uneven edges and was broken into two or maybe three fragments, which have now been glued back together (**fig. L4.1**). No stem has been preserved, there is no central vein and it is symmetrical and could represent olive or laurel. It seems to be made of a double layer of bronze. L: 50.44; maximum W: 18.65; thickness: 1.42.
Scientific analysis: On analysis with the HHXRF it was found to consist only of copper.

[377] Miller 1978, 63; Miller 1977.
[378] Miller 1977, 6 and 9.
[379] Miller 1978, 63.
[380] Miller 2015, 301. This is the surface described as a paved surface in the 1970s reports.
[381] Miller 1981, 50.
[382] Archive material in Nemea Museum.
[383] Index card in Nemea Museum.

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Fig. L4. 1 Leaf BR74 © Hellenic Ministry of Culture and Sports



Leaf BR109[384]. This leaf was found in sector M14, layer 3G, Lot 8 (1st c. BC-1st c. AD). It seems to be complete and has a stem, formed out of metal folded back on itself, with a central vein (**fig. L4.2**). It is symmetrical and probably represents olive. Total L: 65.06, L of leaf: 43.5; maximum W:16.9; thickness: 0.6.
Scientific analysis: On analysis with the HHXRF it was found to consist of copper and tin (bronze).

Fig. L4.2 Leaf BR109 © Hellenic Ministry of Culture and Sports



Leaf BR139[385]. This leaf has its stem still attached to a metal circlet, proving that this (and almost certainly the other leaves) once formed part of metal wreaths (**fig. L4.3**). It was found in sector L14 on 30 June 1976, in layer 3B, Lot 5 (Byzantine). It has a pitted surface but is otherwise well preserved. There is a vein down the centre of the leaf, with the groove uppermost. The stem passes through a hole in a fragment of a metal circlet, and then twists around the fragment of circlet (**fig. L4.4**). It has been bent about a third of the way up the leaf, probably in the ground. The circlet has one hole, and about half of a second hole can be seen at the break of the fragment. The circlet is of varying depth of metal. L of leaf: 77.57, including the stem; L of fragment of circlet: 26.9; diam.of hole in circlet: 2.09. Total thickness of circlet: 1.62 to 3.54, at the point where it was pierced to take the stem.
Scientific analysis: On analysis, it was found to consist of almost pure copper, with no tin.

[384] Miller 1977, 6, plate 3c.
[385] Miller 1977, 6, pl. 3c.

Fig. 4.3 Leaf BR139, showing leaf still attached to circlet © Hellenic Ministry of Culture and Sports



Fig. 4.4 Leaf BR139 showing stem passing through hole in circlet © Hellenic Ministry of Culture and Sports



Leaf BR157[386]. This leaf was found in sector M15 in a late Byzantine layer (no. 2) on 2 July 1976. The tip is broken. The leaf has a vein down the centre. The stem has been made in one piece with the stem. The bronze where the leaf ends and the stem begins has been shaped folded back on itself to make the stem (**fig. L4.5**). The leaf is shaped in a curve, bending outwards from the vein with the groove on the inside of the curve. It almost certainly represents olive. L: 55.34 (including stem). L of leaf without stem: 37.2. Max. W: 16.87; W of vein: 0.32

Scientific analysis: When analysed with the HHXRF, the leaf was found to contain copper and tin (bronze).

Fig. L4.5 Leaf BR157 showing detail of the sides folded back © Hellenic Ministry of Culture and Sports



Leaf BR184[387]. This leaf was found in sector L14, Layer 4, Lot 20 on 12 July 1976. No stem has been preserved and the central vein does not quite continue to where the stem would have started. The tip has been preserved, just. The leaf is fairly symmetrical, there is no swelling at the end where the stem would have been – if anything, there is a slight swelling towards the other end and is probably olive. L:47.15; maximum W: 15.9; W of vein: 0.86

Scientific analysis: On analysis with the HHXRF, it was found to consist of copper and tin (bronze).

[386] Published in Miller 1977, 9, plate 53

[387] Published in Miller 1977, 6.

Leaf BR 265. This leaf was found in L15, layer 1E, Lot 3 (Byzantine) on 2 May 1977[388]. It has broken into two fragments and is longer and slimmer than the last two with a central vein. **Fig. L4.6**. Total L: 65.9 (each fragment 26.34 and 38.22); maximum W: 7.04; W of vein: 0.42; thickness: 0.55.
Scientific analysis: On analysis, it was found to consist of copper (no tin).

Fig. L4.6 Leaf BR265 © Hellenic Ministry of Culture and Sports



Leaf BR295. This leaf was found in N14, layer 1, Lot 2 (3rd-4th c.AD)[389]. It is shorter, heavier and thicker than the previous leaves, it is symmetrical and probably represents olive. The central vein has been made by chasing. **Fig. L4.7**. One edge has been slightly folded back on itself, possibly to form a stem (which has now disappeared). It has been bent, probably from lying in the ground. L: 41.87; W: 12.9; thickness:0.78; W of vein: 0.78.
Scientific analysis: on analysis with the HHXRF it was found to consist of copper (no tin).

Fig. L4.7 Leaf 295 detail of vein © Hellenic Ministry of Culture and Sports



Leaf BR 383[390]. The leaf was found in L13, Layer 4B, Lot 76, with blister ware fragments of pottery dated to the 2nd quarter of the fifth century or later, with bases of miniatures, fragments of bone, iron and bronze. The leaf was made in one piece with the stem and the metal was shaped and folded in on itself at the base of the leaf to form the stem with no central vein. It is a symmetrical shape and probably represents olive. Total L: 55.56. L of leaf without stem: 46.4 (approx.); max. W: 12.88.
Scientific analysis: It was found to consist mainly of copper, and traces of other elements, but not apparently tin.

[388] Archive material, Museum of Nemea.
[389] Archive material, Museum of Nemea.
[390] Miller 1978,63, plate 12c.

Leaf BR816[391]. This leaf was found in sector K12 on 2 June, 1980, Layer 1, Lot 8 (3-6c AD) and is the only ivy leaf to have been found so far. It has three points and a stem, which is formed from the continuation of a central groove down the leaf representing a vein (**fig. L4.8**). The leaf is in very good condition, although one of the three points of the leaf has been folded back on itself and one of the others is slightly damaged at the tip.
Scientific analysis: On analysis with the HHXRF, the leaf was found to contain copper and a little tin (bronze). Maximum L: 59.7; maximum W: 37.8 to the fold, plus 8.6 bent back on itself; W of vein: 0.6; L of stem: 9.8.

Fig. L4.8 leaf BR 816 © Hellenic Ministry of Culture and Sports



Leaf BR1043. This leaf was found in sector P14, Layer 3, Lot 3 (Hellenistic) on 5 July 1982. The leaf curves upwards and is made in one piece with the stem. One of the edges curves back slightly, and indicates how the stem was probably formed, by folding back the shaped edges of the leaf at the stem end. It is much less smooth than the others and the stem, in particular, looks as if it has been made by hammering (**fig. L4.9**). The thickness varies from the end where the stem is to the other end of the leaf. Total L: 62.4; L of leaf 48.6; W: 12.13; thickness varies from 0.86 to 1.36; W of vein marks: 1.6.
Scientific analysis: On analysis with HHXRF the leaf appeared to be pure copper (no tin).

Fig. L4.9 leaf BR 1043 © Hellenic Ministry of Culture and Sports



Leaf BR1134. This leaf was found in sector P15, Layer 1, Lot 2 (6th c. AD) on 20 June 1983. The leaf seems fairly complete, but has no stem. It is a much redder colour, on the back, than the other leaves. It has a deep groove forming a central vein. It is slimmer at the base towards the stem than the other end, where there is a distinct swelling and almost certainly represents olive. L: 58.2; W: 18.05; W of vein: 1.27.
Scientific analysis: On analysis with the HHXRF, the leaf was found to contain copper (no tin).

[391] Miller 1981,50, plate 13e.

Leaf BR 1521[392]. This leaf was found, as noted above under 'Provenance and contexts', near the Temple of Zeus in a white area resembling that in the Early Stadium. The leaf has three lobes, one of which has seven points, and the other two probably five or six (there is some damage from corrosion rendering it difficult to count) (**fig. L4.10**). The leaf was carefully made, probably cut with a knife from metal sheet. The leaf is almost certainly celery, which was awarded at the Nemean Games. Celery leaves have also been identified at Isthmia (L3).
Scientific analysis: on analysis with the HHXRF, the leaf was found to consist of copper (no tin); max. L: 18.72; maximum W: 16.4.

Fig. L4.10 Leaf 1521 © Hellenic Ministry of Culture and Sports



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[392] Miller 2015.

L5 Praisos Altar Hill, X900, X901
Herakleion AM stores.

Provenance and context: The altar hill, Praisos [393]. The leaves were found with bronze items of armour and weaponry, fragments of bronze vessels, a fish-hook, a bodkin, a pair of tweezers and many plain rings, nails and studs, as well as a marble leg of a statuette, two button-like discs, a toggle of bone and a glass aryballos. The armour and the other items are thought to have been votive deposits. The current location of the third leaf mentioned by Bosanquet is unknown.

Date: Fifth century[394].

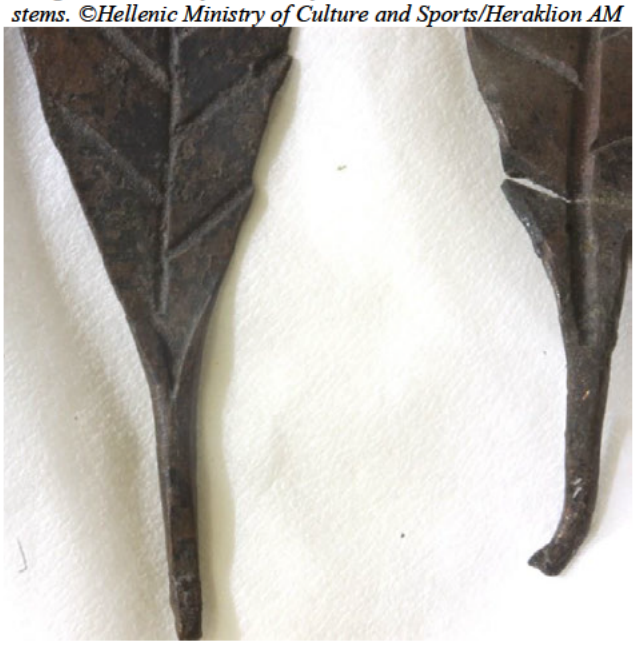
Components:
Both leaves have a central vein and further veins emerging from that vein in a herring-bone pattern (**fig. 8.11**); the veins have been shaped by hammering. On the smaller leaf, X901, all the veins can be seen on the back, if faintly; on the larger leaf, X900, only the central vein. One is larger than the other. The stem is folded back on itself at the point where it merges with the leaf (**fig. L5.1**) and curved stems emerge from the leaves. The total L of the larger leaf including the stem is 7cm (5.6cm from the stem to the tip of the leaf). Maximum W: 18.56. The smaller leaf is 5.7cm long, including the stem and 4.8 without the stem. Max W: 6.44. W of central vein: 0.88 (on both leaves). W of side veins: 0.44. Weight of large leaf: 4.26g. Weight of smaller leaf: 4.16g.
There are no holes in the stem for rivets, so it is not possible to be sure that either of these leaves formed part of a wreath or branch, as is assumed by Bosanquet, but it seems likely that they did form part of a wreath, given the curved stems, and their similarity to the leaves found at Nemea, which came from wreaths decorating statues of athletes. If the leaves had been intended as single offerings, it seems unlikely that they would have had stems.

Scientific analysis: On analysis with the HHXRF, both leaves were found to have only copper and no tin.

Bibliography: Bosanquet R.C. 1902. 'Excavations at Praesos I', *ABSA* 8, 231-270

Studied : December 2016.

Fig. L5.1 Detail of the base of the leaves where it meets the stems. ©Hellenic Ministry of Culture and Sports/Heraklion AM



[393] Bosanquet 1901-2, 258-9.
[394] Bosanquet 1901-2, 256.

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